NAAB

National Architectural Accrediting Board, Inc.

Architecture Program Report

Yale School of Architecture | Yale University

September 01, 2021

NAAB

Architecture Program Report (APR)
2020 Conditions for Accreditation
2020 Procedures for Accreditation

Institution	Yale University
Name of Academic Unit	Yale School of Architecture
Degree(s) *(check all that apply)* **Track(s)** *(Please include all tracks offered by the program under the respective degree, including total number of credits. Examples:* *150 semester undergraduate credit hours* *Undergraduate degree with architecture major + 60 graduate semester credit hours* *Undergraduate degree with non-architecture major + 90 graduate semester credit hours)*	☒ Master of Architecture 14 semester credit hours
Application for Accreditation	Continuing Accreditation
Year of Previous Visit	2013
Current Term of Accreditation *(refer to most recent decision letter)*	Continuing Accreditation (Eight-Year Term)
Program Administrator	Dean Deborah Berke
Chief Administrator for the academic unit in which the program is located *(e.g., dean or department chair)*	Dean Deborah Berke
Chief Academic Officer of the Institution	President Peter Salovey
President of the Institution	President Peter Salovey
Individual submitting the APR	Brennan Buck, Senior Critic
Name and email address of individual to whom questions should be directed	Brennan Buck Brennan.buck@yale.edu

Submission Requirements:
- The APR must be submitted as one PDF document, with supporting materials
- The APR must not exceed 20 MB and 150 pages
- The APR template document shall not be reformatted

National Architectural Accrediting Board

Progress Since the Previous Visit

The Conditions Not Met listed in the 2013 NAAB Visiting Team Report are:

- Long Range Planning. "Despite the current strengths and admirable legacy of the program, the team could not find evidence of requisite long-range planning strategies and processes by which the program identifies its objectives for continuous improvement. Planning appears to occur ad hoc and at the discretion of a few key individuals. Given the lack of a broadly informed and clearly organized process for planning and implementation, the strengths and assets of the existing program are at risk of loss when the current leadership is transferred."

- Professional Degrees and Curriculum. "The YSoA MArch II program has no plan to change the post-professional degree program's title, which conflicts with future NAAB criteria to have all schools retitle their nonaccredited programs. The school has ignored this requirement, which is a cause of concern."

Program Response

I. Upon becoming Dean in 2017, Deborah Berke initiated a year-long strategic planning process (link to 5.2.1) that redefined the school's mission and articulated a set of guiding principles. This effort in turn led to a comprehensive assessment and redesign of the school's curriculum in 2018-2019. The strategic plan is considered to be a living document and was reassessed and updated in Spring 2021 in order to better reflect the ongoing growth and evolution of the YSoA community. Further information on the impact of the strategic planning process and the mission and guiding principles it lays out is provided in this report.

II. The School of Architecture, in consultation with our peer institutions, has carefully considered the option of renaming the Post-Professional Master of Architecture degree, which is non-accredited. This program attracts talented students from around the world who wish to enhance their design training at Yale, and potentially teach in the future. As such, the name of the degree and its identity and history are crucial characteristics of the program itself and there are no immediate plans to change it. Our communications to potential students and the public at large clearly indicates that the Post-Professional program results in a non-accredited degree, and further we have instructed the University Registrar to place the following language clearly at the top of each transcript issued for our Post-Professional students:

> The Master of Architecture degree described on this transcript is not accredited by the National Architectural Accreditation Board (NAAB) and does not fulfil the education requirement for licensure in those jurisdictions adhering to the requirements established by the National Council of Architectural Registration Boards (NCARB).

We believe this language addresses the potential confusion on the part of licensing authorities about the Post-Professional MArch degree while allowing Yale to continue to grant the degree under its current name. Finally, as we are currently examining the possibility of adding other post-professional degrees to our portfolio, we will re-examine this question further, in consultation with the President and Board of Trustees of the University, with whom the ultimate authority for degree nomenclature lies.

Program Changes

The changes made to the program since the last accreditation in 2013 are numerous and described throughout this report. Changes made in response to the revised 2020 Conditions for Accreditation include the school's Learning and Teaching Policy. Issued in Spring 2021, the new policy is intended to codify and strengthen the school's culture and enable students, faculty and staff to collectively fulfill Yale School of Architecture's mission. The policy highlights values critical to the culture of the school and shared by students, faculty and staff.

The emphasis on self-assessment in the 2020 Conditions added urgency to a number of initiatives already planned for Spring 2021. These included a survey of alumni focused on post-graduation career development; a culture survey of students, faculty and staff; and the strategic plan update.

The Yale School of Architecture will return to fully in-person operations for the 2021-2022 academic year. For information on how the school adapted to the global pandemic in 2020 and 2021, see the Statement on Covid-Related Operations in the Appendix.

Condition 1:

Context and Mission

Setting within Yale University

Mission of the University

Mission of the School of Architecture

Interaction between YSoA and the University at Multiple Levels

Conclusion: Deans Statement

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Context and Mission

To help the NAAB and the visiting team understand the specific circumstances of the school, the program must describe the following:

The institutional context and geographic setting (public or private, urban or rural, size, etc.), and how the program's mission and culture influence its architecture pedagogy and impact its development. Programs that exist within a larger educational institution must also describe the mission of the college or university and how that shapes or influences the program.

Program must specify their delivery format (virtual/on-campus).

Setting Within Yale University

Yale University is a global center for research and scholarship, comprising an undergraduate college, a robust Graduate School of Arts and Sciences, and twelve professional schools. In addition to architecture, these include schools of art, drama, and music; medicine, public health, and nursing; law, management, engineering, divinity, and the environment. The School of Architecture is an independent professional school with equal standing to the other twelve graduate and professional schools within the university.

Mission of the University

The University's Mission Statement declares: "Yale is committed to improving the world today and for future generations through outstanding research and scholarship, education, preservation, and practice. Yale educates aspiring leaders worldwide who serve all sectors of society. We carry out this mission through the free exchange of ideas in an ethical, interdependent, and diverse community of faculty, staff, students, and alumni."

Yale's reach is both local and international. It partners with its hometown of New Haven, Connecticut, to strengthen the city's community and economy. And it engages with people and institutions across the globe in the quest to promote cultural understanding, improve the human condition, delve more deeply into the secrets of the universe, and train the next generation of world leaders.

 The University's mission statement is reviewed periodically by the Institutional Policy Committee of the Yale Corporation, in order to ensure its accuracy and completeness in a changing University climate.

Mission of the School of Architecture

The mission of the Yale School of Architecture is to educate architects, scholars, teachers, and leaders who will shape the future through design. Our collective vision is of a world in which architecture matters, and of architecture in which the world matters.

Guiding Principles:

Upon becoming dean in 2017, Deborah Berke initiated a year-long strategic planning process that redefined the school's mission as stated above and articulated a new set of guiding principles.

The work of the Yale School of Architecture engages a broad spectrum of architectural concerns, from the details of construction to the future of the discipline, explored within an intellectual culture founded on teaching, research and outreach. In all things, we are guided by the following core principles.

We foster creativity and innovation, stretching our modes of study by drawing upon the scholarly ethos of the larger University in which we are situated.

We commit to a culture of collaboration and inclusion that actively seeks many perspectives and backgrounds and integrates architecture with other disciplines.

We act on our intellectual curiosity and spirit of inquiry to explore, research, and experiment and to solve real design challenges.

We engage with the world beyond the academy to create an ethical, relevant architecture that supports a sustainable, resilient planet for all.

Yale School of Architecture
Rudolph Hall

YSoA's role in the University Community

The program's role in and relationship to its academic context and university community, including how the program benefits—and benefits from—its institutional setting and how the program as a unit and/or its individual faculty members participate in university-wide initiatives and the university's academic plan. Also describe how the program, as a unit, develops multidisciplinary relationships and leverages unique opportunities in the institution and the community.

The ways in which the program encourages students and faculty to learn both inside and outside the classroom through individual and collective opportunities (e.g., field trips, participation in professional societies and organizations, honor societies, and other program-specific or campus wide and community-wide activities).

Student Coursework

Students at the School of Architecture are encouraged to avail themselves of the entire University and its many resources, and students regularly take courses in the Graduate School of Arts and Sciences, the other professional schools, as well as in Yale College. The breadth and quality of Yale's academic offerings provide a strong interdisciplinary context for required coursework. Over the past two semesters alone, students from the School of Architecture have enrolled in 137 different courses in departments and schools across the university.

Faculty Teaching

The faculty of the School of Architecture also teach courses in other departments and schools across the university. These include the School of the Environment, the School of Management, and Yale College -- where they lead classes in American Studies, Global Studies, Urban Studies, and of course the undergraduate major.

Interdisciplinary Collaboration:

The Yale School of Architecture offers several dual degrees, allowing students a more formalized way to benefit from other professional schools at Yale. Specifically, YSoA offers an MArch/MBA with the

Yale School of Management; an MArch/MEM with the Yale School of the Environment; and a Master of Environmental Design (MED), a research degree from the School of Architecture.

The School of Architecture's ongoing exhibitions program, lecture series, and academic symposia comprise a significant contribution to the scholarly life of the broader university. Free and open to the entire academic community as well as the general public, these events are consistently well attended by students and faculty from across campus (an average of 200 people attended remote lectures held over the past year with some speakers drawing over 400), as well as by visitors from other academic institutions and local residents of the greater New Haven area. Faculty, administration, and students are all involved in the conception and curation of these events.

University Resources:

Yale University's collection of nearly 15 million print and electronic volumes is housed across the campus's 15 libraries. These include Sterling Memorial Library, the "heart of the university"; the Beinecke Rare Book and Manuscript Library; and of course the Haas Arts Library, located on the ground floor of Rudolph Hall.

Yale's museums and collections—the Yale University Art Gallery, the Yale Center for British Art (YCBA), the Peabody Museum of Natural History, the Yale Collection of Musical Instruments, the WERTL Center, Hume American Furniture Study Center and the special collections held in the University Library—are among the best and most well-supported institutions of their kind in the country. As primary resources for teaching and research, they are fundamental to the intellectual life of the campus. The Art Gallery and YCBA are open to all without cost, and the Peabody Museum is free one afternoon a week, with reduced rates for the many visiting groups. Students, faculty, and staff at the school likewise enjoy access to two of Yale's newest collaborative media laboratories, the Center for Collaborative Arts and Media (CCAM), and the Center for Engineering Innovation and Design (CEID).

Student Organizations and Resources:

The School of Architecture plays host to a number of student-run organizations and extracurricular initiatives whose activities reach well beyond the walls of Rudolph Hall. Among these are Equality in Design (EiD), a coalition of committed students seeking equity in the architecture profession and throughout the built environment; the Yale National Organization of Minority Architecture Students (Yale NOMAS) and YSoA East, which strive to foster greater inclusion, unity, and representation for our increasingly diverse student body, and to support the needs and interests of the School's robust population of international students; Paprika!, a weekly broadsheet written, edited, and autonomously managed entirely by students from the School of Architecture, with graphic design services provided by students from the Yale School of Art; Green Action in Architecture, a student group devoted to addressing issues pertaining to sustainability and environmental health and wellbeing within the School, as well as promoting broader discussion of environmental considerations as they pertain to the built environment; and OutLines, an advocacy group for lesbian, gay, bisexual, transgender, queer, and allied students in Rudolph Hall, which provides a support system and social network focusing on the exploration of LGBTQ issues in the School of Architecture, on the Yale campus and in future professional settings. Beyond these, Architecture students also participate in a range of graduate and professional intramural sports throughout the academic year, including soccer, softball, volleyball, and basketball.

Architecture students likewise participate in, or otherwise seek the services of, a number of campus-wide organizations, clubs, and graduate student groups. These include the Graduate Writing Lab at the Poorvu Center for Teaching and Learning; the Yale Graduate Student Christian Fellowship; the Black Graduate Network at Yale; the Tsai Center for Innovative Thinking; and Yale's Cultural Centers: the Afro-American Cultural Center, the Asian American Cultural Center, the Latino Cultural Center and the Native American Cultural Center.

Excerpts from the Dean's Statement

Architecture is a broad and complex discipline, a profession and a part of culture, an art that shapes the built environment but is also influenced by the world at large. Architects create, respond, direct, and elicit. They can draw inspiration from nearly anything: rap, ballet, philosophy, the social sciences, and the expanding digital universe, but also from meditative moments of solitude, hand-wrought objects, and everyday urban and domestic life. I believe in embracing this expansive interdisciplinary approach.

Here, at Yale, we understand architecture as the most public of arts, and as a discipline that is inextricably linked to others, including the humanities, the social and physical sciences, the applied and fine arts, and business and finance. We seek to respond to the complexity of today's globalized world—rapid urbanization and climate change, contested spatial and geographic borders, the increasing disparities in living conditions—with the claim that architecture has never been more important, more challenging to create, and more potentially transformative. We also approach architecture with curiosity, appreciation, and—when necessary—a healthy dose of skepticism. We encourage lively debate even as we foster inclusion and respect and embrace diverse perspectives. These values are a part of our tradition; I believe strongly that they continue to represent the way forward.

Context and Mission Summary Statement

The school's mission is to educate architects, scholars, teachers, and leaders who will shape the future through design. Toward that end, the larger university plays a crucial role in the experience of students and faculty through student coursework in other schools and departments; faculty teaching outside of YSA; interdisciplinary collaboration through joint degree programs and events; and access to university libraries, museums, and other facilities. Primary among these physical resources is the school's landmark building, Paul Rudolph Hall, designed by Paul Rudolph and most recently renovated in 2008.

The school fosters student initiative, and student-led organizations centered within Rudolph Hall reach outward to the campus, the city and beyond, while Yale's cultural centers and other organizations provide services to YSoA students. As Dean Deborah Berke writes, "We seek to respond to the complexity of today's globalized world—rapid urbanization and climate change, contested spatial and geographic borders, the increasing disparities in living conditions—with the claim that architecture has never been more important, more challenging to create, and more potentially transformative. We also approach architecture with curiosity, appreciation, and—when necessary—a healthy dose of skepticism. We encourage lively debate even as we foster inclusion and respect and embrace diverse perspectives. These values are a part of our tradition; I believe strongly that they continue to represent the way forward."
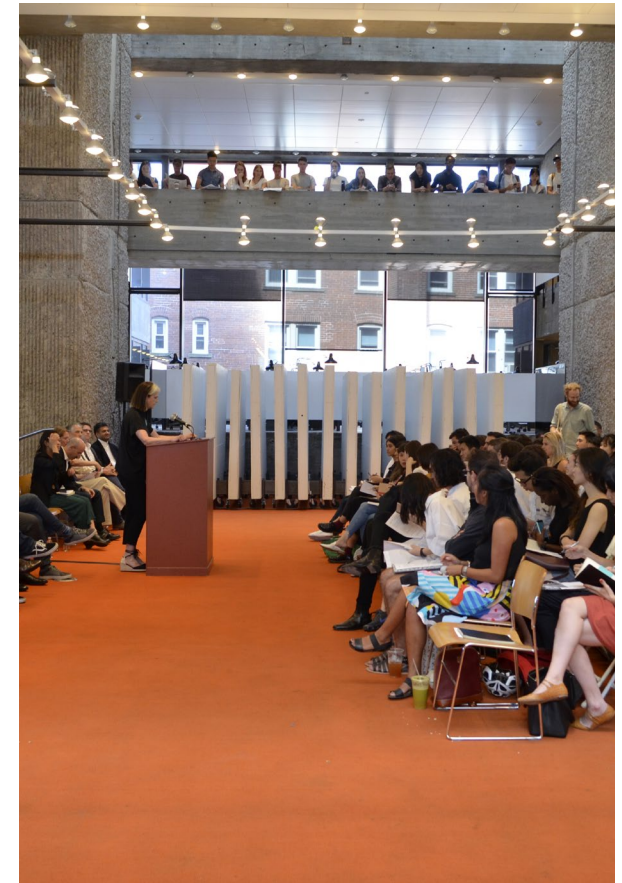
Dean Berke's Semester Introduction
Rudolph Hall

Condition 2:

Shared Values of the Discipline and Profession

Design

Environmental Stewardship and Professional Responsibility

Equity, Diversity, and Inclusion

Knowledge and Innovation

Leadership, Collaboration, and Community Engagement

Lifelong Learning

Design

The program must report on how it responds to the following values, all of which affect the education and development of architects. The response to each value must also identify how the program will continue to address these values as part of its long-range planning. These values are foundational, not exhaustive.

Design: Architects design better, safer, more equitable, resilient, and sustainable built environments. Design thinking and integrated design solutions are hallmarks of architecture education, the discipline, and the profession.

The School of Architecture's mandate is for each student to understand architecture as a creative, productive, innovative, and responsible practice. To this end, design maintains a central place in the overall structure of the curriculum. It emphasizes the breadth of design as an area of both intellectual exploration and studio practice, from the scale of the individual construction detail through that of the global metropolis. Likewise, it emphasizes the depth of design as an area of study, from the fundamentals of aesthetic education and inquiry explored in the four-semester Core studio sequence, to the specificities of applied design work explored in the Advanced studios over the final two semesters.

Studio

The design studio remains central to the School's curriculum, emphasizing the interrelationships between concepts, design, competition, collaboration, innovation, and open discussion in an environment that values risk-taking and experimentation. Each studio section is a workshop in which 9-to-11 students come together to present and discuss projects and proposals with fellow classmates, faculty, visiting critics, professionals, and members of the public. Design studios combine individual and group instruction, varying from desk critiques with individual faculty, to pin-ups before several faculty members, to more formal midterm and final reviews before faculty and guest critics—all undertaken with the intention of fostering critical thinking, spatial form-making skills, and the capacity for tectonic expression and communication. A studio-based education seeks to foster leadership skills,

individual creativity, and the capacity for problem solving in the course of architectural practice.

Curriculum

Design work, as such, is hardly limited to the studio, however, and students are encouraged to apply knowledge developed through design in their work across the curriculum. Throughout the first four semesters, such work often proceeds in close and productive dialogue with specific Core studio projects. The current design curriculum is the product of a recent and ongoing process of curriculum planning and review, initiated in the summer of 2017 and was reassessed in Spring 2021. It runs parallel to a concurrent review of the YSoA Strategic Plan. More information on Design and the Curriculum is included in PC.2 Design.

Core 1: Plan-Unplanned
Student: Lillian Agutu
Faculty: Brennan Buck
Fall 2019

Environmental Stewardship and Professional Responsibility

Architects are responsible for the impact of their work on the natural world and on public health, safety, and welfare. As professionals and designers of the built environment, we embrace these responsibilities and act ethically to accomplish them.

Curriculum

Design studios, other required courses, and elective seminars at YSoA are infused with ethical questions related to social justice and environmental sustainability from the beginning. As the curriculum has continued to evolve since the initiation of a school-wide review in 2017, such questions have become ever more central to the intellectual and design culture of the school, as they have to the broader YSoA community's collective understanding of its mission. More specific descriptions of the courses and initiatives described below can be found in PC.3 Ecological Literacy and Responsibility.

Design and Visualization

In the four-semester sequence of Core design studios, the curriculum has been reformed over the past three years to engage more explicitly with the problem of climate change in an expanded field of intellectual and design inquiry, and to emphasize the architect's professional responsibility to support the development of safe, healthful, and socially just built environments. The Core 3: Design Studio (1021a) plays a central role in defining the broader curriculum's engagement with issues of equity, inclusion, and social justice, facilitating student engagement with a wide array of social and cultural contexts and, likewise, a number of real-world, community-based clients. The Core 4: Design Studio (1022b) addresses sustainability at the urban scale, focusing on issues of ecology, sea level rise, and storm water management through specific lectures, workshops and assignments. More than a studio addressing the urban context at the level of planning or design, Core 4 demands that students consider the full environmental and ecological contexts in which architectural work in the modern city proceeds. These two studios, taken in the second year, are fundamental to YSoA's Integrated Design Studio Curriculum, and are taken in concert with Environmental Design (2021a), Building Envelopes (2018a), Introduction to Urban Design (4011a), and Systems Integration (2022b).

Technology and Practice

Courses in technology explore architecture's material, environmental, and technological contexts; the properties of natural forces and their relationship to architectural form; and building systems. Other courses explore the professional contexts of architectural practice, with a special emphasis on the architect's responsibility for, and stewardship of, the natural and built environment. The heart of this study area is a five course sequence that includes: Structures (2011a & 2012b), Building Project (2016b & 2017c), Environmental Design (2021a), Systems Integration (2022b), and Architectural Practice and Management (2031a).

History and Theory

Courses in History and Theory provide a forum for the examination of architecture's social, cultural, philosophical, and environmental underpinnings, imparting technical knowledge and awareness of intellectual trends that inform the reception and role of architecture around the world. In this way, the curriculum emphasizes the cultural and social heterogeneity that has shaped the built environment throughout history and continues to provide the context for the contemporary practice of architecture. The required sequence includes Modern Architecture (3011a) and Architectural Theory (3012a).

Urbanism and Landscape

Courses in Urbanism and Landscape address the study of aesthetic, economic, political, ecological, and social issues impacting the form and character of large-scale environments. This area deals with how architecture shapes and is shaped by urban and natural contexts. Introduction to Urban Design (4011a) is required.

Interdisciplinary Study

Interdisciplinary study and research focused on social and environmental problems are strongly supported at Yale as well. Faculty and students participate in a number of institutional initiatives related to environmental studies, and in a variety of campus contexts. These include two recently initiated programs, the Yale Center for Ecosystems in Architecture (CEA) and the Ecosystems in Architectural Sciences track for students in the PhD program, as well as numerous interdisciplinary opportunities within the University.

History of Landscape Architecture
Student: Maya Sorabjee
Faculty: Bryan Fuermann
Fall 2019

Equity, Diversity and Inclusion

Architects commit to equity and inclusion in the environments we design, the policies we adopt, the words we speak, the actions we take, and the respectful learning, teaching, and working environments we create. Architects seek fairness, diversity, and social justice in the profession and in society and support a range of pathways for students seeking access to an architecture education.

In July 2020, Dean Deborah Berke wrote to the school community after the murder of George Floyd. That letter read, in part:

"The complicity of the built environment in reinforcing the racial injustices in our culture requires structural change. Letters alone will not bring that change; we must challenge and dismantle racism through action.

"We recognize the culpability of architectural education, at Yale and elsewhere, in perpetuating the structural exclusion of BIPOC voices from positions of leadership in both professional practice and scholarly discourse -- a discourse still predominantly and conspicuously defined by a culture of Eurocentricity and white hegemony. It is our responsibility to recognize the racism underpinning these structures, and to do the work necessary to dissolve them.

"Consequently, the school administration is working together with faculty to develop more inclusive teaching methods, more expansive topics, and more diverse sources to draw from in scholarship and design. We are working in partnership with students to move forward with curricular change, and to increase our support for their organizations. We have been listening to alumni and learning from their experiences while at the school and in the profession since graduating. And we will be asking the University administration to increase the financial support they provide for the urgent work we need to do, including the re-opening of our faculty searches and the hiring of an Equity and Diversity Officer. We have engaged Michelle Wonsley-Ford of the Center for Racial Justice in Education as an advisor.

"How can YSoA better embody the values of equity and inclusion it claims to strive for? Such work is necessarily ongoing, but begins with a commitment to dismantling inequities in the school's culture and curriculum, and to increasing access for BIPOC students. It continues by way of expanding our collective engagement on issues of race and inequity in the areas of architectural education and professional practice, thereby contributing to the construction of a more equitable, inclusive, and fundamentally just built environment.

Over the past year, the Yale School of Architecture has launched a number of new initiatives addressing its curriculum, the composition of its faculty, and the make-up of its student body, with the intention of fulfilling our promise to make the school a more inclusive environment and institution for all. More specific information on these initiatives can be found in PC.8, 5.5 and the Diversity, Equity, and Inclusion at YSoA page on the school's website. More broadly, the School remains committed to nurturing and supporting an intellectual and creative community built on the values of equity, diversity, and inclusion in the following ways:

Diversity and Faculty & Student Body

The composition of the YSoA faculty reflects a variety of professional perspectives and personal life experiences, and its student body encompasses a diversity of backgrounds, interests, and identities. The expansion of choice and diversity in the curriculum, the development of a diverse body of leading architectural educators on the faculty, and the enhancement of recruitment strategies aimed at students of color and other underrepresented groups remain fundamental to the School's long-term goals and objectives. Consequently, the establishment of a climate that is both welcoming and supportive of a diverse body of students and faculty is understood to be absolutely essential.

Equality in Design Meeting
4th Floor, Rudolph Hall

Equity, Diversity and Inclusion

Education and Culture

As noted in the school's Learning and Teaching Policy, "Yale School of Architecture aspires to sustain a school culture that is rooted in inclusivity and collaboration. YSoA welcomes many perspectives and backgrounds. The responsibility of sustaining a positive, respectful learning environment is shared by the entire YSoA community, including the administration, faculty, staff and students."

The faculty and administration are collectively committed to forging an open, evolving and inclusive curriculum that responds to student interests, current circumstances, and a diverse set of constituents and audiences. This commitment extends to all forms of academic learning, including student travel, exhibitions and publications, media resources, and fabrication facilities.

Student groups, including NOMAS, Equality in Design, and the MED Working Group for Anti-Racism focus on a range of academic, cultural, political, and community-based issues extending beyond the general curriculum. The Visibility Project is an initiative led by a group of concerned students and recent alumni, whose goal is to analyze and illuminate the range of structural biases and prejudices endemic to schools of architecture and other, related institutions. The YSoA administration encourages such efforts on the part of its students to engage with these issues, as it strives to construct a culture of collaboration, equality, and inclusivity at the School. The School's recent Climate and Culture Survey of the entire school community has allowed it to assess its educational culture and better understand the experiences of students, staff, and faculty.

Income Diversity and Financial Aid

The School of Architecture is committed to reducing the financial burden associated with a Yale degree, and to making the benefits of advanced design education accessible to students from lower-income families. This is in keeping with the University's broader efforts to expand — and retain — the number of talented low-income students enrolled at the institution. YSoA's Strategic Plan identifies the reduction of student debt as a key long-term goal. To this end, the amount of financial aid awarded annually by the School of Architecture has increased from $3.5 million in 2016 when Deborah Berke became Dean to approximately $5.5 million as of 2020 (see YSoA's 2020 Impact Report). In the 2019-2020 academic year, 84% of the student body received scholarship support. The School is committed to raising $75 million in scholarship endowment to fully support demonstrated need. The School will increase targeted recruitment efforts by creating a new annual fund dedicated to Diversity / Equity / Inclusion. Unlike many of its peer institutions, YSoA does not limit financial aid to Americans, providing financial support to international students as well.

Gender Balance

Recognizing the persistence of gender inequity in the field of architecture at large, and in light of the various structural and cultural factors contributing to the underrepresentation of women in the profession, the Yale School of Architecture assumes as a matter of policy the active promotion of gender balance on its faculty, within its student body, and among its visiting critics, jurors, and guest speakers.   As of the 2020-2021 academic year, women represented 56.3% of the total student population — up from 50.5% in 2016. Given the presence of tenured professorships, turnover on the faculty is a much slower process, however the percentage of women has increased from 29% to 40% since 2016. In 2020-2021, Visiting Professors were nearly evenly split with 13 men and 12 women joining the school with short-term appointments.

Symposia: Beyond the Visible Mental Health Symposia Spring 2021

Equity, Diversity and Inclusion

Ethnic Diversity and Representation

In recognizing and embracing the diversity of architectural culture, YSoA is committed to understanding and supporting the needs of our students and faculty, who come from an increasingly diverse variety of backgrounds themselves. Recent initiatives intended to increase inclusivity in the School community include changes to the curriculum, a critical focus on institutional culture, the expansion of access to School and University resources, and the active recruitment of a more diverse faculty and student body.

YSoA is striving to improve the representation in its student ranks. Since 2015-2016 the share of students who are international, who are women, or who identify as Black / African American or as Asian American have all increased. More detailed information on faculty and student representation can be found in Condition 5.5. Detailed statistics on student enrollment by race/ethnicity, gender, and nationality from 2014-2021 can be found here.

Policy Development

Faculty, staff, and students in the School of Architecture collaborate in the development of policies related to equity, diversity, and inclusion, primarily by serving on the School's many committees — both inside the department, and across the broader University. The Student Curriculum Advisory Committee meets monthly with the administration as a representative body voicing a range of student concerns and policy suggestions. The Dean and associate Deans meet regularly with NOMAS, Equality in Design and other student groups and are available for informal discussions and input on policy through appointments with all faculty, staff, and students. The Yale School of Architecture adheres to and enforces the overall Yale University policies on diversity. These policies are further supported by scholarships targeted at promoting diversity within the School. For more details on YSoA Resources and Student groups related to equity and Inclusion, see PC.8 Social Equity and Inclusion.

Institutional Resources at Yale University

Yale University maintains a wide array of resources, programs and offices devoted to diversity, equity, and inclusion, fostering a learning environment and campus community in which everyone feels a sense of belonging. For more information, see PC.8 Social Equity and Inclusion.
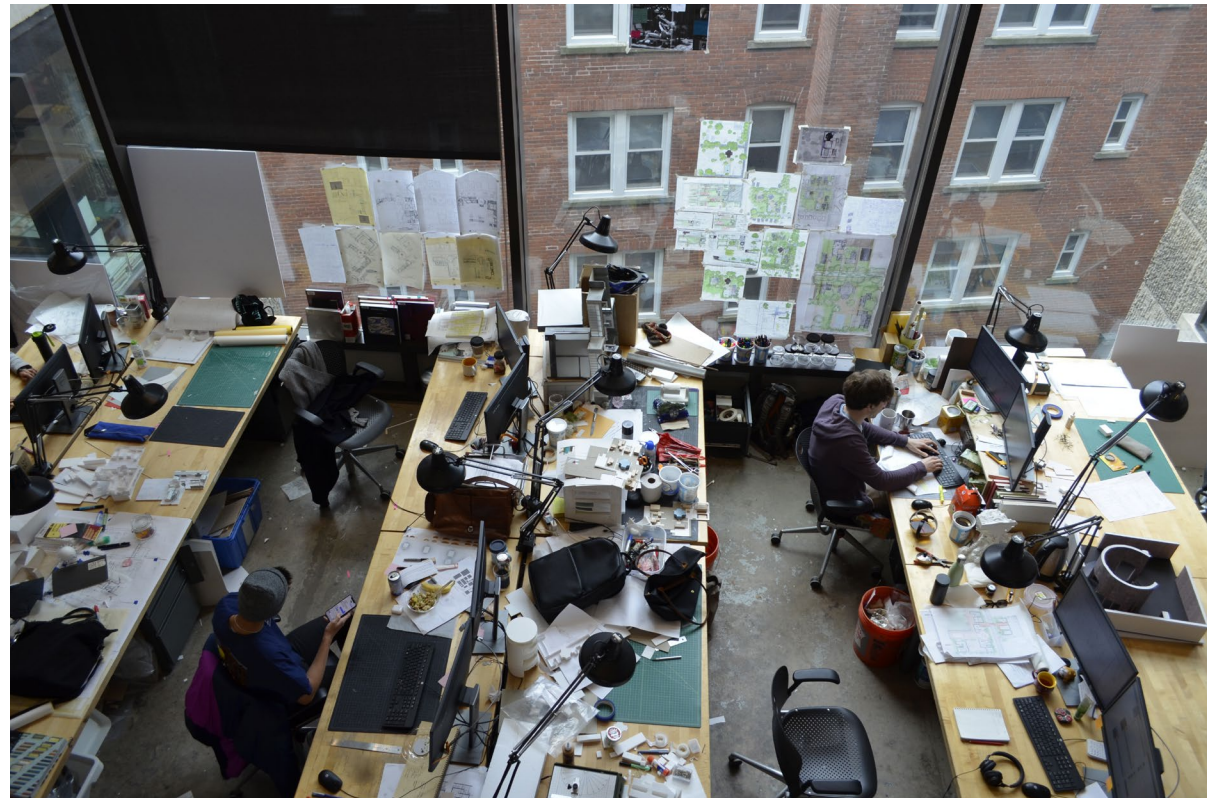
Rudolph Hall, 6th Floor

Knowledge and Innovation

Architects create and disseminate knowledge focused on design and the built environment in response to ever-changing conditions. New knowledge advances architecture as a cultural force, drives innovation, and prompts the continuous improvement of the discipline.

Innovation, supported by rigorous research, is a core tenet of the curriculum at the Yale School of Architecture. The school is committed to sponsoring innovation, among faculty and students alike, through research on technology and the environment, as well as sociological and cultural study. The development of research-based, innovative approaches to environmental design and technological systems integration are supported by major investment in a variety of digital media and fabrication technologies, and by a concerted effort on the part of faculty to fold these technologies into the curriculum and culture of the School.

YSoA also benefits from its integral place within the vibrant and diverse intellectual community of Yale University, where the tenets of academic freedom, intellectual pluralism, and scientific innovation remain fundamental to the culture of the campus. The Yale School of Architecture strives to embody these same ideals, and both its culture and curriculum emerge from a deep, institutional concern for design and the cultivation of architectural knowledge at a range of scales, from the individual building to the urban landscape.

Curriculum

Alongside the studios, courses in Design and Visualization, Technology and Practice, History and Theory, and Urbanism and Landscape provide the basis for a rich and comprehensive approach to architectural design. The diversity of courses and extracurricular programs offered by the school are richly supplemented by offerings from the University's other schools and departments, where students from the School of Architecture are encouraged to take courses. For more information on the role of Innovation in the curriculum, see PC.5 Innovation.

Advanced Technology

Advanced technology and integrated information systems are an integral part of the School's curriculum as described further in PC.5. Innovation in the studio is supported by a wide array of advanced digital tools and fabrication technologies. These include a variety of labs and equipment stations, located throughout the building, and are maintained by the School's in-house Advanced Technology office. The digital media department supports all aspects of the design and fabrication process to allow students to explore design in various phases and with different representational means. All students are provided with a high-end computer workstation, equipped with all of the school's software, and dual LCD monitors. The School provides facilities and resources for students' design, research, computational, communication, and fabrication needs. Students also have access to a robust array of University resources and facilities, including the Center for Collaborative Arts and Media (CCAM), the Center for Engineering Innovation and Design (CEID) and the Digital Humanities Lab.

Advanced Academic Study

Advanced academic study and research in architecture and urbanism are supported throughout the curriculum, and they are a primary focus in the Doctor of Philosophy (PhD), Master of Environmental Design (MED), and Post-Professional (MArch II) programs. These advanced students are integrated with the broader student body in a number of ways: working at their desks in the Rudolph Hall studios, enrolling in courses including advanced studios in the School of Architecture, and serving as teaching assistants and guest critics for courses in the MArch I sequence. For more information on the advanced degree programs, see PC.4 History and Theory.

CEA Lab
Rudolph Hall
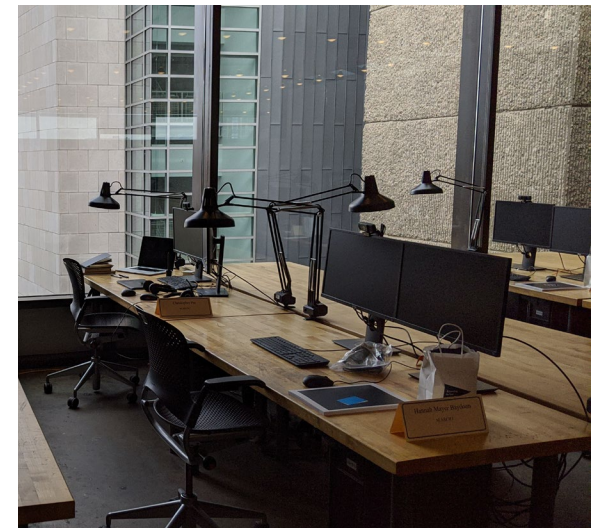
6th Floor - Rudolph Hall
Fall 2020

Knowledge and Innovation

Undergraduate Major

As is the case with most other Yale Professional Schools, faculty members from the School of Architecture participate in the teaching of Yale undergraduates. The undergraduate major at Yale has been conceived within a broad-based and comprehensive liberal arts education. It leads to a bachelor of arts degree with a major in Architecture, a nonprofessional degree. Alumni of the program are prepared for graduate study in architecture, as well as advanced study in a variety of fields, including art, art history, urban planning, environmental studies, social studies and public affairs. The program was expanded in 2019 with the addition of a new Urban Studies major. Master of Architecture students have the opportunity to work in this program through Teaching Fellowships and Assistantships.

Research Initiatives

A number of research-based programs and initiatives at YSoA further expand opportunities for innovation at the School. These include the Center for Ecosystems in Architecture (CEA), focused on the development of transformative systems for the built environment; the Ecological Living Module (ELM), a prototype dwelling unit based on the principles of resiliency, renewability, and sustainability, which was recently installed on the UN Plaza in New York City; and Stalled!, an ongoing project exploring the inclusion of transgender men and women -- and other "non-compliant bodies" -- in the design of public restrooms. For more information on these initiatives, see PC.5 Innovation.

Extracurricular Programs and Publications

Knowledge production at YSoA reaches far beyond the studio, classroom, and other conventional spaces of education. The school supports a robust exhibitions program, a host of scholarly publications, and a broad range of student and faculty initiatives. For more information on these programs, see PC.5 Innovation.

University Resources

The various schools and departments comprising the University are conceived not as individual units, but as connected parts of an indivisible whole. As such, they contribute to an especially lively educational atmosphere at Yale, one where interdisciplinary thinking flourishes, and where the interaction among individual units makes the broader University something more than the sum of its parts. The University provides students at YSoA with access to a wide range of innovation-focused resources, including the Center for Collaborative Arts and Media (CCAM), where members of the University community come together to explore points of intersection between art, science, and technology; and the Center for Engineering Innovation and Design (CEID), a hub for collaborative design and interdisciplinary activity. Both the CCAM and CEID support a wide range of courses, clubs, and student organizations, at both the undergraduate and graduate levels. For more information on university resources, see PC.5 Innovation

Long-Range Planning for Innovation

The School of Architecture is committed to increasing opportunities for long-term innovation among students and faculty alike, to which end the permanent faculty has recently been expanded to include new tenure-track positions in Architectural Design Technology, Architectural Sciences, and Landscape Architecture. These searches were begun in 2019, temporarily frozen during the pandemic and will be reopened next year. The PhD program has likewise been recently expanded to include a second "track," Ecosystems in Architectural Sciences, with the goal of making Yale a major center for sustainable building systems research. More information on Planning for Innovation can be found in Condition 5.2.

Senior Design Studio (Undergraduate Studies)
Student: Hana Davis
Faculty: Turner Brooks
Fall 2019

Leadership, Collaboration, and Community Engagement

YSoA Incoming Students - Fall 2019

Architects practice design as a collaborative, inclusive, creative, and empathetic enterprise with other disciplines, the communities we serve, and the clients for whom we work.

The Yale School of Architecture recognizes that architectural practice proceeds within a complex web of collaborative processes, developed through the coordinated efforts of designers, engineers, clients, community members, and other constituents. Collaboration is sponsored throughout the curriculum in the following ways: among students; with other design professionals and consultants; with clients, stakeholders, and communities; between faculty; and beyond the School.

Cultivating Collaboration and Leadership Among Students

Frequently, design studios and electives require that students work in groups to develop basic research, create site models or complete analytical exercises. There are several courses that specifically require students to work in groups throughout the design process, including the first-year Building Project, Systems Integration, and the fourth-semester Urban Design Core studio. The Building Project in particular contributes greatly to the construction of shared identity among members of the first-year class, demanding that students collaborate on the detailed design and construction of a house, which serves each year as an icon of collective achievement. Reviews for the Core studios are held collectively, encouraging students and faculty alike to take stock of their colleagues' work across the Core, and to understand their mission as a common one. Individual section instructors collaborate with the coordinator to develop the studio brief and, later, to discuss grading across the studio as a whole.

The spatial character of Rudolph Hall, the School of Architecture's home since 1963, encourages this open culture and environment by providing spaces of interaction within the studio floors as well as central review spaces that are open to multiple studios. Students are encouraged to engage in critiques outside of their assigned studios for exposure to multiple viewpoints.

We encourage a culture of leadership among students at the School of Architecture, in required coursework and the community more broadly, by providing ample room for students to assert agency. The School seeks to provide students with a social and academic structure -- formal and informal, curricular and extracurricular -- in which collective, democratic, and fundamentally student-driven initiatives and endeavors can take shape. This occurs by way of generous engagement, activism, and participation, by and within the student body.

Collaboration with Design Professionals and Consultants

Multiple required and elective courses prompt students to work with consultants, clients and other experts, including the Building Project, in which teams work closely with the client, a local non-profit organization; Core 3 Studio; and Systems Integration, where student teams meet weekly with a consultant group composed of an architect, a structural engineer, and a mechanical engineer. For more information on collaboration, see PC.6 Leadership and Collaboration.

Leadership, Collaboration, and Community Engagement

Community Engagement

The School of Architecture emphasizes its role in the community through a variety of curricular and extracurricular courses and programs. These include Building Project, which exposes students to a diverse set of clients, local neighborhoods, and non-profit organizations; Core 3 Studio, in which students work closely with actual client groups on the development and articulation of public-interest programs and civically-minded projects; the Yale Urban Design Workshop, a community design center in which students and faculty collaborate with a variety of clients, consultants, and other stakeholders on projects of public interest; and, for the first time last year, Design Brigade, a 10-week summer program in which students work with city clients and professional mentors to solve a variety of spatial problems related to the ongoing pandemic. For

more information on these programs and others, see PC.6 Leadership and Collaboration.

Public Programs

The School of Architecture lecture series is open to the public, drawing members of the local and architectural communities. Additionally, the School hosts symposia throughout the year that draw students, faculty, local practitioners, and community members alike. The School also maintains an active program of exhibitions. The Architecture Gallery, located on the second floor of Paul Rudolph Hall, is open to the public Monday through Saturday and free of charge.

"garden - pleasure"
Yale Architecture Gallery
March 2020

Lifelong Learning

Architects value educational breadth and depth, including a thorough understanding of the discipline's body of knowledge, histories and theories, and architecture's role in cultural, social, environmental, economic, and built contexts. The practice of architecture demands lifelong learning, which is a shared responsibility between academic and practice settings.

The core curriculum at the Yale School of Architecture has been conceived and developed, from the beginning, to be a platform for future learning. Its primary goal is to leave students intellectually and creatively nimble enough to navigate the vicissitudes of a rapidly changing profession. It begins with the development of architectural skills that are transferable — that is, skills related to the articulation of space and form, and to the visual representation and communication of complex ideas — before asking students to frame and apply those skills within a more involved set of creative and discursive processes. The curriculum stresses the value of collaboration as a fundamental aspect of architectural practice — and indeed of work in design, broadly considered. It encourages collaborative work in a variety of contexts, at numerous scales, from the local to the global.

In addition to the curriculum, several other facets of the School grant current students exposure to a culture of lifelong learning, and to an understanding of architecture not just as a profession, but as a way of understanding and engaging with the world around them. Many of the public events hosted by the School of Architecture are conceived and organized in collaboration with scholars from other departments, providing opportunities for all members of the community to engage in the development and sharing of emerging scholarship. Recent events have included the symposium, My Bauhaus: Transmedial Encounters, which brought together historians, artists, architects, and educators from around the world; and the important and timely lecture by Wendy Chun, "Authenticating Figures," examining the structural biases of various facial recognition platforms.

YSoA lectures and symposia are heavily attended by practitioners hailing from throughout the state of Connecticut; an average of 27 accredited design professionals attended each of the ten conferences held over the last five years. The School hosts many joint events with the Connecticut chapter of the AIA, including an annual meeting with representatives from NCARB to discuss the process of earning AXP credits and taking the ARE exam. Finally, YSoA is beginning a new executive education program in collaboration with the Yale School of Public Health this fall. In November 2021, approximately 20 senior architects will spend three days on campus as part of a program that will serve as a model for expanded offerings in continuing education in the future.

Lectures, exhibitions, and symposia often serve as venues for the sponsorship of student-led initiatives. Each year, the student-editors of Perspecta select and invite a different speaker to participate in the School's lecture series. Recent invitees have included Walter Hood, Tod Williams and Billie Tsien, Francis Kéré, and Tammy Eagle Bull. For a complete list of YSoA lectures from 2018-2021, see Condition 5. Since 2019, the School's North Gallery has been reserved for a host of special exhibitions initiated, curated, and designed by students. And in the fall of 2021, YSoA students convened a special symposium, Beyond the Visible: Space, Place and Power in Mental Health, bringing awareness to the built environment's capacity to affect access to mental health services, and the architect's role in improving cultural perceptions of mental illness.

Direct experience of contemporary and historical architecture and urbanism, as well as firsthand contact with experts in a range of related fields, remain fundamental to the School's educational mission. To this end, many studios and classes incorporate both domestic and international travel into their course work. These include, in particular, a suite of programs offered each summer in Europe: an intensive drawing course in Rome, Italy ("Continuity and Change: Rome"); a course in archival research in Madrid, Spain ("Deploying the Archive: Madrid"); and a program on urban design based in Gothenburg, Sweden ("The Urban Atlas: Gothenburg").

The School provides numerous opportunities for students to gain broad exposure to the global context of contemporary practice and scholarship free of charge. The Advanced Studios travel every semester to sites around the world in Asia, Europe, Africa, North and South America, as well as the United States. These faculty-directed trips and project briefs expose students to the breadth of historical and current issues critical to the academic setting and the profession. Students tour precedents, visit offices, research and study different cities and sites, meet clients and constituents, and engage in realistic contemporary scenarios of architectural practice. Recent studios have included travel to: Mexico, Brazil, Chile, and Costa Rica; Austria, Iceland, Italy, and Greece; Rwanda, Ghana, and Dubai; China, Japan, Indonesia, and Nepal.

My Bauhaus Symposium
Fall 2019

Michielli Smith Guest Visiting Lecture
Fall 2019

Lifelong Learning

Student Empowerment

The School of Architecture's curriculum is built on a tradition of student empowerment, its primary focus being the personal, intellectual and professional growth of our students. Students are involved in every facet of life at the School, from the planning of the curriculum on participatory committees and the development of extracurricular programs, to the editing, design and production of School publications. The School's admissions process, which includes both faculty and students, is intended to assemble a student body of exceptional diversity and independence. Independent student initiative and study are not simply encouraged, they are expected. Structurally, both the University and the School of Architecture are publicly committed to non-discrimination and affirmative action within their descriptive policies. Furthermore, several scholarship funds, traveling fellowships, and internship programs allow students to pursue self-directed summer study abroad, independent research, and travel.

The School hosts a vital culture of student activities and activism highlighted by student-run organizations and publications, student-curated exhibitions and student-initiated symposia and other events. In addition, the school sponsors numerous additional programs outside of regular studio providing students the opportunity to find agency as designers in a variety of contexts. These include Design Brigade, which connects students with local clients and interest groups to create collaborative solutions to design problems in the community; the Dreamer Institute, a new school in Afghanistan designed by students in collaboration with faculty at the Yale School of Architecture and the Yale School of Engineering and Applied Sciences; and the Regenerative Building Lab, under whose auspices students designed and built a new Coastal Research Station on the Connecticut shore.

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Appendix

Syllabi

Condition 3:

Program & Student Criteria

3.1 Program Criteria

PC.1 Career Paths

PC.2 Design

PC.3 Ecological Literacy and Responsibility

PC.4 History and Theory

PC.5 Innovation

PC.6 Leadership and Collaboration

PC.7 Learning and Teaching Culture

PC.8 Social Equity and Inclusion

3.2 Student Criteria

SC.1 Health, Safety, and Welfare in the Built Environment

SC.2 Professional Practice

SC.3 Regulatory Context

SC.4 Technical Knowledge

SC.5 Design Synthesis

SC.6 Building Integration

	Year 1		Year 2		Year 3	
Program Criteria	Fall	Spring	Fall	Spring	Fall	Spring
PC.1 Career Paths		Arch 2016b: Building Project I		Arch 2022b: Systems Integration	Arch 2031a: Architectural Practice and Management	
PC.2 Design	Arch 1011a: Architectural Design 1	Arch 1012b: Architectural Design 2	Arch 1021a: Architectural Design 3	Arch 1022b: Architectural Design 4		
PC.3 Ecological Know. & Responsibility		Arch 1012b: Architectural Design 2	Arch 2021a: Environmental Design	Arch 2022b: Systems Integration		
PC. 4 History & Theory		Arch 3012b: Architectural Thoery	Arch 4011b: Introduction to Urban Design			
PC. 5 Research & Innovation		Arch 2016b: Building Project I	Arch 2021a: Environmental Design	Arch 2022b: Systems Integration		
PC.6 Leadership & Collaboration		Arch 2016b: Building Project I	Arch 1021a: Architectural Design 3	Arch 2022b: Systems Integration		
PC.7 Learning & Innovation	Arch 1011a: Architectural Design 1	Arch 1012b: Architectural Design 2	Arch 1021a: Architectural Design 3	Arch 1022b: Architectural Design 4		
PC. 8 Social Equity & Inclusion		Arch 2016b: Building Project I	Arch 1021a: Architectural Design 3	Arch 1022b: Architectural Design 4		
Student Criteria						
SC.1 HSW in the Built Environment	Arch 2011a: Structures I	Arch 2012b: Structures II	Arch 1021a: Architectural Design 3	Arch 1022b: Architectural Design 4	Arch 2031a: Architectural Practice and Management	
		Arch 2016b: Building Project I	Arch 2021a: Environmental Design			
			Arch 4011b: Introduction to Urban Design			
SC.2 Professional Practice		Arch 2016b: Building Project I	Arch 1021a: Architectural Design 3	Arch 2022b: Systems Integration	Arch 2031a: Architectural Practice and Management	
			Arch 2021a: Environmental Design			
SC.3 Regulatory Context	Arch 2011a: Structures I	Arch 2016b: Building Project I	Arch 4011b: Introduction to Urban Design	Arch 1022b: Architectural Design 4	Arch 2031a: Architectural Practice and Management	
		Arch 2012b: Structures II				
SC.4 Techinical Knowledge	Arch 2011a: Structures I	Arch 2012b: Structures II	Arch 2021a: Environmental Design	Arch 2022b: Systems Integration		
	Arch 3011a: Modern Architecture and Society	Arch 2016b: Building Project I				
		Arch 2017b: Building Project II				
SC.5 Design Synthesis			Arch 1021a: Architectural Design 3			
SC.6 Building Integration				Arch 2022b: Systems Integration		

3.1 Program Criteria

These criteria seek to evaluate the outcomes of architecture programs and student work within their unique institutional, regional, national, international, and professional contexts, while encouraging innovative approaches to architecture education and professional preparation.

A program must demonstrate how its curriculum, structure, and other experiences address the following criteria.

PC.1 Career Paths

How the program ensures that students understand the paths to becoming licensed as an architect in the United States and the range of available career opportunities that utilize the discipline's skills and knowledge.

As a professional school of design within a major research university, the Yale School of Architecture acknowledges its responsibility to instill in its students a commitment to the highest standards of the architecture profession. To this end, the School understands its curriculum to be a testing ground for an expanding variety of approaches to contemporary architectural practice and a laboratory for exploring architecture's broader engagement with real-world problems. Studios and other courses touch on a wide range of issues and scales (from building details to the city) and have a consistently interdisciplinary focus.

The faculty itself embodies a range of approaches and responses to these problems. Among its members are widely published historians and theorists, prominent practitioners of architecture and design, and a dynamic group of lecturers, adjuncts, and studio critics. As a group, the faculty remain intimately engaged with the profession at large. Currently, 55% of all YSoA faculty are licensed architects; 81% of design faculty are licensed.

Curricular Activities

Courses exploring the challenges associated with navigating architecture's rapidly shifting professional and disciplinary landscape include a required course on architectural practice and management (2031a); and elective seminars interrogating the problem of value in design (2230b); architecture and entrepreneurialism (3239b); zoning (4248); and a joint course taught with the law school on supply chain practices.

ARCH 2031a
Architectural Practice and Management
Phil Bernstein

In addition to helping students understand the structure and efficacy of architectural practice, and of the business context in which architects design and realize buildings, this course serves as a critique of current versus future practice models and approaches.

ARCH 2016b
Building Project

The Building Project allows students to take a project from conception through documentation adandn construction, giving them hands-on experience with each step of that process. Students work with consultants and experts in a variety of fields and building trades and their client, a non-profit housing services organization.

ARCH 2022b (Spring 2020)
Systems Integration and Development in Design

Students work with teams of consultants to develop their projects from the Core 3 studio, before proposing and eventually designing a set of appropriate building systems.

ARCH 2230b
Exploring New Value for Design Practice
Phil Bernstein and Brittany Olivari

This course reimagines the value proposition of architecture practice, explores strategies used by better compensated adjacent professions and markets, and investigates methods and models by which architects can deliver — and be paid for — the value they bring to the building industry.

ARCH 3239b
Launch: Architecture and Entrepreneurialism
Keller Easterling

This seminar studies the designer as entrepreneur. It considers both historical and contemporary moments in architectural and urban design when architects conceived of buildings, building components, or formats that, in the aggregate, may have more ramifying consequences to a local or global environment.

ARCH 2242a - LAW 20483
Fighting Slavery in the Built Environment"
Phillip Bernstein and Luis C. deBaca
YSoA/YLS Seminar

This seminar operationalizes recent statutory and regulatory changes in the United States, the United Kingdom, and Australia that extend enforcement of laws against forced and child labor into companies supply chains, and will examine legacies of U.S. chattel slavery in the built environment, including in prisons. Drawing on law, design, construction, and sustainability practices, it seeks to incorporate an anti-slavery ethos into the architectural design process.

ARCH 4248
Curating Cities: The Power of Zoning
Sara C. Bronin

The goal of this interdisciplinary seminar is to explore the tension between law and design, by examining law's influence on the creative enterprise. Students study the implications of zoning rules and processes, both through observation and through translation into graphic form.

PC.1 Career Paths

Non-Curricular Activities

Career Services Program and Licensure Coordinator

The Yale School of Architecture's career services program organizes a series of workshops, panels, lectures, recruiting events and online resources to help prepare students for career opportunities after Yale. The schedule is reviewed and tailored each year, responding to student needs and general market conditions.

The school's Career Development Team consists of :

> Phillip Bernstein, Associate Dean at YSoA and Licensure Coordinator
>
> Rona Walstra, Senior Administrative Assistant for Career Development & Undergraduate Studies
>
> Bimal Mendis, Director of Career Development at YSoA
>
> 2-4 work study positions each year filled by current students

See Condition 5.4 for more information on the Career Development Program.

The School of Architecture's Architect Licensing Advisor is Phil Bernstein (FAIA), Associate Dean and Professor, Adjunct. Professor Bernstein also advises the Career Services Program, teaches both required and elective courses in Architectural Practice, and interacts directly with all students in the MArch program in their third year. He is knowledgeable and trained in all issues pertaining to AXP requirements, NCARB and licensure. He is a regular attendee at the biannual NCARB Licensing Advisor Summit, and organizes numerous AXP information sessions each year, as part of both his required course on Architectural Practice and the School of Architecture Career Services Program.

Associate Dean Bernstein serves on a working group with representatives from the University of Hartford Department of Architecture, NCARB and the licensing board which meets regularly to discuss licensure issues for students in Connecticut. As noted above, the school hosts a number of joint events with the Connecticut chapter of the AIA, including annually hosting a representative from NCARB to speak about the process for earning AXP credits and taking the ARE exam. YSoA lectures and symposia are heavily attended by practitioners throughout the state of Connecticut.

Lectures, Symposia & Outside Perspectives

Throughout the year, nationally and internationally known architects, architectural scholars, and artists are invited to participate in the School's weekly lecture series, and to present their work as part of the School's ongoing series of conferences and symposia. As a group, these speakers bring a wide range of perspectives to bear on the problems of architectural practice, embodying the myriad ways architectural thinking can be applied in the world at large. All lectures and symposia at YSoA are free and open to the public.

Self-Assessment

Direct Assessment
The School's 2021 survey of alumni serves as a broad gauge of how YSoA is preparing graduates for their future careers. It reveals that 72% of alumni have practiced architecture; 59% are licensed (66% excluding the classes of 2017-2020 who are working through AXP); and 42% are in leadership positions - sole proprietors, principals, or partners of their firms. NCARB data show that Yale students have passed each of the 6 AREs at above average rates each of the past 4 years.

Indirect Assessment
At the annual career fair hosted by the School of Architecture's Career Services program, representatives from a host of professional offices visit the School, meet with students, and interview qualified candidates for employment after graduation. This gives graduating students

intensive exposure to the interview and hiring process, but also allows faculty to solicit constructive feedback from outside practitioners about the state of the curriculum, the relative preparedness of our students for professional practice, and the state of the program, more generally.

The outside organizations and individuals engaged in specific specific courses and programs such as the clients for Building Project, community-based organizations involved in Core 3, and consultants that team with students during Systems Integration not only provide students with an understanding of a variety of architectural and affiliated career paths, they also provide the school with feedback on how well the students' skills are suited to those career paths.

The relatively small size of the school and the administration's open-door policy allows staff, faculty, and students to provide input on the school's culture, curriculum, career services and other functions related to students' potential career paths. More information on the range of formal and informal channels used to collect feedback can be found in 5.2.4.

Changes Since Last Accreditation

Changes to the administration, curriculum, and culture of the school related to career paths, based on these assessment mechanisms, include the hiring of Professor Phil Bernstein, who teaches courses related to professional practice and is the School's architecture licensing coordinator, as Associate Dean; ongoing development of the career services program; and the many new courses and events listed above. The School has also worked with its students to revive its chapters of the National Organization of Minority Architecture Students (NOMAS) and YSoA East, which both serve as bridges to the professional world.

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PC.2 Design

How the program instills in students the role of the design process in shaping the built environment and conveys the methods by which design processes integrate multiple factors, in different settings and scales of development, from buildings to cities

At the Yale School of Architecture, design studio occupies the vital center of a rich and varied curriculum. Reflecting recent changes to the curriculum growing out of the Strategic Plan, the four-semester sequence of Core studios has been reconceived as an integrated sequence that emphasizes the materiality of architecture and urban form at a range of different scales from the building detail to the urban metropolis. This represents a shift away from the typological investigations that were central to previous iterations of the Core.

Design Studio Sequence and Structure:

The overall structure of the Core design studio curriculum in the first four semesters of the MArch program is organized around a series of interrelated themes, bridging across semesters, and creating a cohesive pedagogical trajectory.

Core 1: Form and Space
Core 2: Space and Building
Core 3: Building and City
Core 4: City and Systems

Core 1

The first studio in this sequence focuses on the conception and development of architectural ideation and its interrelationship with representation as a tool of invention and communication. Problems related to site, program, and construction are thus addressed through fundamental consideration of space and form and conveyed through the concurrent development of two-dimensional and three-dimensional representational techniques.

Core 1 Studio - In-Between
Student: Hannah Mayer Baydoun
Faculty: Michael Szivos
Fall 2019

Core 2

This second Core studio extends spatial exploration into issues of tecontics and materiality to formulate the design of a building that engages issues of site, scale, and program. The term is organized around a series of projects culminating in the design of a modestly-scaled building that explores the relationship of housing and site as a negotiation between public and private space.

Core 3

As part of the integrated design studio sequence, the third Core studio in the MArch I curriculum concentrates on a medium-scale public building, focusing on the integration of composition, site, program, mass, and form in relation to structure and methods of construction. Studio problems are community-focused and sited in neighboring urban areas, and students actively engage community stakeholders in the development of their projects and the criticism of their final designs.

Core 4

The fourth and final MArch I Core studio expands on the fundamental architectural skills introduced in the previous three terms to examine the role of architecture and the architect at the scale of the city. In this studio, 'the city' is explored as a complex system of layers that include built form, infrastructure, demographics, codes, and ecology to encourage students to think strategically about issues that range from urban disparities to coastal resilience.

Advanced Studios

During their third year, students enroll in their choice of the (typically) nine advanced studios offered each year. These studios explore a wide array of topics, sites, and contexts, and are led by a diverse group of instructors and practitioners from around the world. More information on advanced studio.

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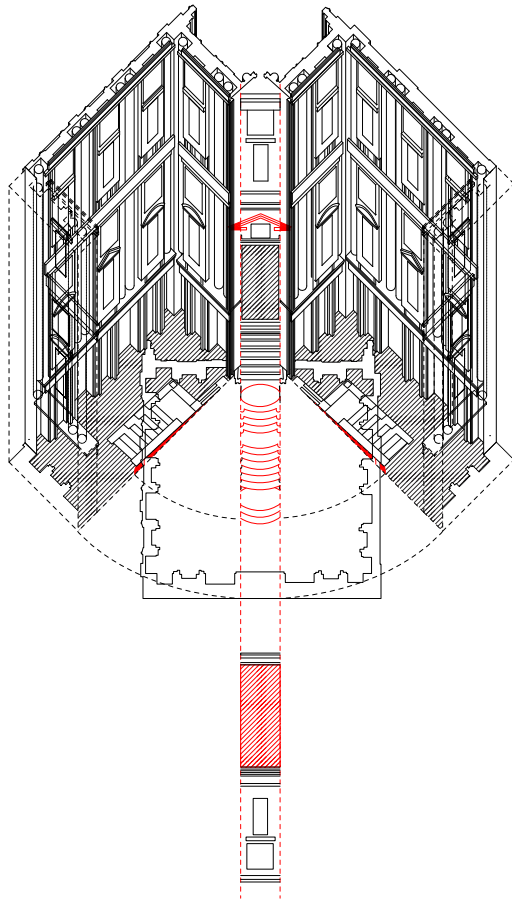
Formal Analysis I - Michelangelo Drawing
Student: Calvin Liang
Faculty: Peter Eisenman
Fall 2020

PC.2 Design

Additional Curricular Activities

At Yale, Visualization and Representation is treated as an intellectual pursuit, where students learn the power of visual thinking to convey ideas. Techniques and technologies of representation allow students to develop the necessary skills to fully express the formal and conceptual intention of design work done by students in the Core studios. Each student is required to take at least 2 visualization and representation courses, one of which must be chosen from the following list of four required electives:

ARCH 1223a
Formal Analysis I
Peter Eisenman

The goal of this class is to learn to see and read as an architect, through a weekly series of texts and comparative analyses, which move from the late-medieval period, to the early renaissance, to the beginning of the enlightenment of the late 18th century.

ARCH 1233a
Composition
Peter de Bretteville

This seminar addresses issues related to architectural composition and form. Across a sequence of four three-week exercises, students explore compositional problems related to assembly and parti, section, structure, and elevation.

ARCH 1289a
Space-Time-Form
Eeva-Liisa Pelkonen and Trattie Davies

This course explores a variety of key concepts, techniques, and media that have affected the design, discussion and representation of architecture over the course of the past 100 years. It is organized around a series of experiments based on those offered in the legendary Vorkurs, or Preliminary Course, offered at the Bauhaus.

ARCH 1289a
The Mechanical Eye
Dana Karwas

This seminar explores how machines see our environment, with emphasis on the role of human subjectivity. It examines the human relationship to mechanized perception in art and architecture as well as the current digital world. The course is connected to the Center for Collaborative Arts and Media at Yale (CCAM).

Additional Required Courses

Both the technical and theoretical portions of the curriculum also encourage students to engage with design as a framework for exploration of ideas outside the studio through the following required courses:

ARCH 2016b
Building Project
Adam Hopfner and Martha Foss

Running in parallel to the Core 2 studio, the Building Project (ARCH 2016b) is a term-long course of research, analysis, design, and technical documentation exploring the conception and construction of dwelling space in the modern city. The integration of these two parallel courses of study and exploration highlights the manner in which Semester 2 in the Core curriculum has been conceived, yielding a synthesis of studio-based exploration of materiality in building construction with a field-based design-build practicum.

ARCH 4011a
Civic Art: An Introduction to Urban Design
Alan Plattus and Andrei Harwell

This course provides an introduction to the theory and practice of urban design within the context of the broader fields of urbanism and urban history. The design of the built environment is considered in relation to patterns and practices of urban life and culture, and as a response to historical transformations of the political, economic and technological forces that have shaped cities since their origins.
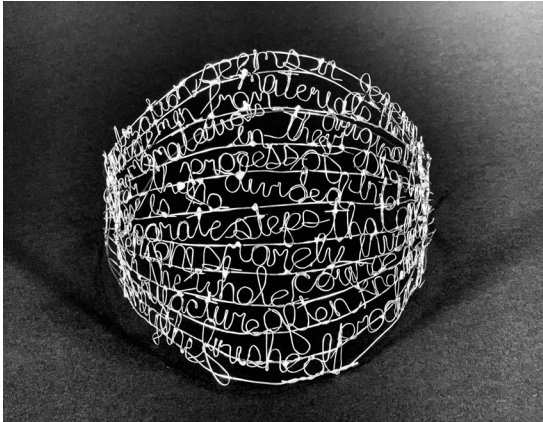
Space Time Form - Masking Estrangement
Student: Charis Armstrong
Faculty: Eeva-Liisa Pelkonen
Fall 2020

PC.2 Design

ARCH 2022b
Systems Integration and Development in Design

This course is an integrated workshop and lecture series in which students learn to develop the technical systems of preliminary design proposals from earlier studio work, thus tying technical decisions to broader design goals and ambitions.

ARCH 3012b
Architectural Theory
Marta Caldeira

This course examines moments of significant change in modern architectural theory through a series of case studies organized thematically and chronologically, from the mid-eighteenth century to the present.

Self-Assessment

Direct Assessment
The initial level of assessment of the Core studio sequence is conducted by the section instructors who meet collectively with the studio coordinator to evaluate student work after each day of midterm and final reviews. Grading decisions for every student are made collectively by the studio instructors, who then meet to evaluate the studio curriculum, in retrospect and relative to previous years, and to outline prospective changes for subsequent iterations of the studio syllabus.

The continuity of the Core sequence is evaluated by the four Core coordinators, who meet in late spring, after the academic year is completed, with Associate Dean for Curriculum and Admissions, Sunil Bald. Studio syllabi and assignments, along with a range of student work from each section, are presented to the group and evaluated as part of an holistic sequence. Changes to individual studios are then recommended for incorporation into subsequent syllabi by the coordinator, in consultation with the team of instructors for that studio.

The review of the curriculum as a whole is an ongoing and continuous process, overseen by an eight-member committee of senior faculty from across the school's four study areas — Design and Visualization, Technology and Practice, History and Theory, Urbanism and Landscape — who are charged with reviewing syllabi for all required and elective courses offered at YSoA. The committee is chaired by Associate Dean Bald.

Rigorous assessments of the design curriculum take place during annual Design Committee reviews, occurring each year prior to the promotion of students to their final year of study and preceding graduation. This regular evaluation of student design and technical competence provides an important opportunity to assess the School's core functions, including curriculum, admissions, and student support. In this way, the Design Committee plays an important role in curriculum evaluation and planning. See 5.3.2.

Indirect Assessment
The Associate Dean for Curriculum and Admissions meets monthly with the student Curriculum Committee. This group of four students, elected by their colleagues, provides input on how subjects are being taught, and communicates student feedback on potential improvements to the broader curriculum.

Student evaluations of courses and faculty are ready closely each semester by the Dean and Associate Dean, and while participation by students is not mandatory, it is typically robust. These evaluations ensure that the administration remains sensitive to student expectations and concerns, even those that don't rise to the level of formal complaints. They inform decisions about hiring and promotion, the renewal of short-term contracts, and the identification of faculty considered for longer-term appointments. More information on the range of formal and informal channels used to collect feedback can be found in 5.2.4.

Changes Since last Accreditation

The Associate Dean and Curriculum Committee initiated a broad-based assessment and revision of the YSoA curriculum in Fall 2017. This project ran parallel to the development of the School's new Strategic Plan, initiated in the same year. The Strategic Plan was updated and re-assessed during Spring and Summer 2021. This process and the curricular changes made over the last 5 years are explained in detail in Condition 5.3.

PC.3 Ecological Literacy and Responsibility

How the program instills in students a holistic understanding of the dynamic between built and natural environments, enabling future architects to mitigate climate change responsibly by leveraging ecological, advanced building performance, adaptation, and resilience principles in their work and advocacy activities.

Curricular Activities

The curricular sequence at the Yale School of Architecture specifically addresses environmental concerns from the perspective of architecture and urbanism, fostering examination of global, regional, community, site, and building-scale environmental problems and responses through architectural design and technology. These include Core studios, advanced option studios, and a variety of electives in environmental design and sustainability.

Design Studios

Design Studios, both Core and Advanced, explore the problems of ecological adaptation and resilience, details of advanced building performance, and the cultural and political ramifications of the climate crisis:

ARCH 1012b
Core 2: Design Studio

The Core 2 studio is focused on the design of a building through studies of scale, site, program, and materiality. Each of these concepts is introduced in an ecological context. In particular, students are asked to consider site as an ecological organism and material as means of connecting program and environment.

ARCH 1022b
Core 4: Design Studio

The Core 4 studio addresses sustainability at the urban scale, focusing on issues of ecology, sea level rise, and storm water management through specific lectures, workshops and assignments. More than a studio addressing the

urban context at the level of planning or design, Core 4 demands that students consider the full environmental and ecological contexts in which architectural work in the modern city proceeds.

ARCH 1119b (Spring 2020)
Advanced Design Studio: Salvador de Bahia, Brazil
Norma Barbacci and Sunil Bald

This studio explored the restoration and future possibilities for the Ladeira da Misericórdia in Salvador de Bahia, Brazil, and provided an opportunity to explore the relationship between cultural heritage, environmental sustainability, adaptive reuse, and the richness of contemporary urban life.

ARCH 1101a (Fall 2019)
Advanced Design Studio: Burkina Faso — New Tools
Francis Kéré and Martin Finio

The studio asked students to consider the informal settlements of Burkina Faso as places of inquiry and inspiration, to approach spaces which are unfamiliar to most contemporary architectural practices, and to understand these spaces — and their associated building practices—as expressions of inherent design ingenuity.

ARCH 1103a (Fall 2019)
Advanced Design Studio: Vienna — Another Day in the City
David Gissen and Surry Schlabs

This studio was conceived as a contribution to ongoing studies sponsored by the city of Vienna, Austria, to reduce the experience of physically debilitating solar heat within Vienna's urban core. Students examined how architecture, in dialogue with urban environmental history and a curated set of modernist architectural and urban precedents, can complement and contribute to efforts to reform the geography of brightness, darkness, heat, and coolth in Austria's capital city.

Core 2 Studio - Living Room Vista
Student: Gustav Nielsen
Faculty: Miriam Peterson

PC.3 Ecological Literacy and Responsibility

Required Courses

Other Required Courses exploring the relationship between the built and natural environments include:

ARCH 4011a (Fall 2019)
Civic Art: An Introduction to Urban Design
Alan Plattus and Andrei Harwell

This course presents itself as an attempt to negotiate between the broader landscape of historical, political, technological, and ecological transformation giving form to the modern city; the specifics of particular cities at critical moments in their development; and the projects which represent the efforts of those cities and their designers to come to terms with the dynamics of urban change.

ARCH 2021a (Fall 2019)
Environmental Design
Anna Dyson and Naomi Keema

This course examines the fundamental scientific principles underpinning the thermal, luminous and acoustic behavior of built environments, exploring the potential of architectural design to sculpt and shape these behaviors. Students learn to "diagnose" the history and development of existing technologies for creating and controlling interior environments and, working together, probe the ways in which architects can once again be protagonists in the design and development of architectural 'technique' and technologies.

ARCH 2022b (Spring 2020)
Systems Integration and Development in Design

Working with teams of consultants to assemble comprehensive environmental design strategies, students begin with a climatological analysis of their respective projects and their proposed sites, calculating probable heating and cooling loads, before proposing and eventually designing a set of appropriate building systems. Active and passive solar control devices, specialty glass

products, and various integrated technologies are explored as means of developing an energy efficient envelope.

Elective Courses

Numerous elective courses also exploring the role of the architect relative to problems concerning environmental sustainability include:

ARCH 3229b
Sustainability: A Critical View from the Urban History of Amazonia
Ana María Durán Calisto

By studying the history, current conditions, and causes for urbanization in the Amazon, this seminar critically probes into current approaches to urban sustainability, keeping in mind that many of the "green solutions" being advanced by the global north demand further extraction of natural resources in the global south. Students analyze the complex intertwining between the global market and the myriad local conditions of this mythical territory, as well as the critical role both are called to play with regard to climate change.

ARCH 4244
Cartographies of Climate Change
Joyce Hsiang

This exploratory seminar uses methods of research and spatial analysis to conceptualize and materialize climate change. More broadly, it examines the implications of considering and conceptualizing the world, in its entirety, as an architectural project, experimenting with ways of mapping and drawing the physical forms, power dynamics, and infrastructures of marginalization and socioeconomic inequity at a planetary scale that have emerged through global urbanization and climate change.
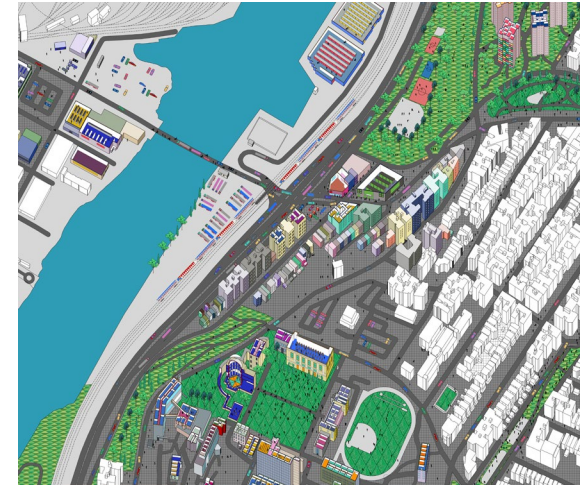
Core 4 Studio - Site Investigation
Students: Mingxi Li, Martin Carillo, Paul Freudenberg
Faculty: Alan Plattus

Core 4 Studio
Students: Jiachen Deng, Alex Olivier, Leyi Zhang
Faculty: Anthony Acciavatti

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PC.3 Ecological Literacy and Responsibility

ARCH 2018a
Building Envelopes: Shaping Energy, Water, Air and Material Flows
Anna Dyson and Mohamed Aly Etman

This course is geared towards graduate students in Architecture who already have an advanced background in bioclimatic analysis and design and who wish to pursue an area of design research in conjunction with their studio projects. It provides an overview of emerging critical theory and technology in the areas of environmental and energy systems. Students are asked to consider a variety of fundamentally novel ways of redirecting energy and water flows, towards the fulfillment of various social mandates to transform the relationship between the built environment and extended ecosystems.

ARCH 4216
Globalization Space: Infrastructure and Extrastatecraft
Keller Easterling

This course considers global infrastructure as a spatial operating system and a medium of polity. Focusing on the special political powers of large spatial and technical systems, it studies networks of trade, transportation, resources, communication, labor, tourism, energy, commerce and finance from the late 19th century to the present.

ARCH 4213
**The City and Carbon Modernity**
Elisa Iturbe

This course focuses on the social and spatial organizations that arise from, and are dependent on, dense and abundant energy. Of particular interest is the way in which society, over the course of the 19th and 20th centuries, reorganized itself around the availability of abundant energy, as fossil fuels established a new horizon of possibility for production. Asserting the need for architecture to declare the death of carbon modernity — and, indeed, of carbon form — this course interrogates the foundations of contemporary human organization in order to lay new foundations for the oncoming transitions in energy and social form.

ARCH 2229b (Spring 2020)
Regenerative Building: Research and Design
Alan Organschi and David Skelly

This seminar, developed collaboratively by faculty at the Yale School of Architecture and the Yale Peabody Center for Biospheric Studies, explores design and building techniques that seek to reduce environmental impacts across the building lifecycle, promoting metabolic, non-mechanistic approaches to the production of the built environment. A sequence of lectures and associated research questions challenge students from the disciplines of design and environmental management to posit and test means to mitigate the significant ecological and climatic impacts of those building sector activities.
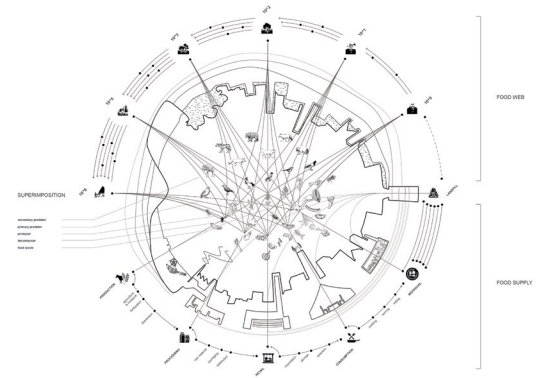
Advanced Building Envelopes
Student: Anjiang Xu
Faculty: Anna Dyson

Mechanical Eye
Student: Joseph Reich
Faculty: Dana Karwas

PC.3 Ecological Literacy and Responsibility

Non-Curricular Activities

Work in the areas of ecological literacy and environmental responsibility is supported by a host of interdisciplinary and interdepartmental initiatives at Yale.

Center for Ecosystems in Architecture

The Yale Center for Ecosystems in Architecture (CEA) seeks to address the complexity of transitioning global construction patterns by uniting deep expertise of current practices with radically new socio-economic and technical approaches. YALE CEA is purposely putting the scientific inquiry of living ecosystems behaviors at the forefront of the research and development of transformative Built Environment Systems.

Regenerative Building Lab

The mission of the Regenerative Building Lab is nothing less than the transformation of the building sector: the cultural, political, economic, and technical means and methods all along the building material supply chain and throughout the building life cycle. Through experimentation and prototyping of material and technical systems, financial models, policy recommendations, and the publication of findings and design solutions though journals and conferences, the Lab seeks to become a major design and technical voice for a system-wide change to the way we form and operate the built environment. The Regenerative Building Lab's inaugural project was the design, fabrication, and construction of a new Coastal Research Station at Horse Island.

Dual Degree: Master of Architecture / Master of Environmental Management

The Yale School of Architecture and the Yale School of the Environment offer a dual-degree program in Architecture and Environmental Management. Capitalizing on the breadth and depth of expertise at the School of the Environment in ecosystem ecology, land change science, environmental economics, industrial ecology, and ecological anthropology, this program fosters students who can innovatively merge ecological science with architecture at the site, city, and regional scales.

New Ecosystems Track in the PhD Program

In the Spring of 2019, YSoA formally introduced a new area of concentration, or "track," within the existing PhD program in Architecture. Students in this track engage in research related to the behaviors of living ecosystems, emphasizing the interconnections between the built environment process and the health and wellbeing of both human and non-human living systems. Though not a part of the MArch I program, MED. and PhD students are integrated within the MArch I student body, sharing space in Rudolph Hall, and populating many of the same courses and events.

YUDW

The Yale Urban Design Workshop is a community design center based at the Yale School of Architecture that provides local governments, organizations and companies with ecological and resilience planning and vision studies.

New Faculty in Landscape Architecture

With an eye toward expanding its course offerings and intellectual resources in the area of landscape and environmental design, YSoA has created a new, tenure-track faculty position, for which the hiring process is currently underway. This new associate professor of landscape architecture will join the faculty in the 2022/2023 academic year, and will be the first full-time, tenure-track faculty member in this study area.

New Haven Union Station Study
Yale Urban Design Workshop

PC.3 Ecological Literacy and Responsibility

Self-Assessment

Direct Assessment

Self Assessment of the school's handling of Ecological Literacy and Responsibility is conducted foremost through the expertise, ongoing research and energy of the faculty. The faculty conduct research through teaching, practice and YSoA-affiliated programs including the Center for Ecosystems in Architecture, The Regenerative Building Lab and the Yale Urban Design Workshop described above. Faculty publish their work widely in a host of peer-reviewed journals. A list of recently published, peer-reviewed projects can be found in Section 5.2.5. Faculty engaged in ecological research serve as regular members of the Curriculum and Design Committees, and in those committees' annual assessments of student work in the context of the YSoA curriculum.
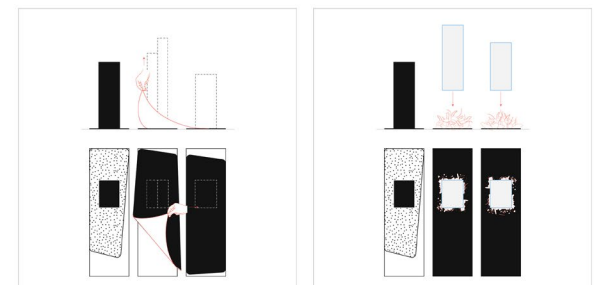
The school's dual degree program with the Yale School of the Environment allows the school and its students to capitalize on the breadth and depth of expertise at YSoE in ecosystem ecology, land change science, environmental economics, industrial ecology, and ecological anthropology. Faculty and administrative engagement with the School of the Environment informs YSoA's approach to environmental issues and allows for collaborative self-assessment.

Indirect Assessment

Student engagement with ecological questions also prompts feedback, from both individual students and student organizations, including Green Action in Architecture, a student group devoted to addressing sustainability and environmental health and wellbeing issues within the school and promoting broader discussion of environmental considerations in architecture more generally. More information on the range of formal and informal channels used to collect feedback can be found in 5.2.4.

Changes Since last Accreditation

Changes initiated to the administration, curriculum, and culture of the school related to ecological literacy and responsibility, based on these assessment mechanisms, include the hiring of a new tenure-track faculty position in landscape architecture, the founding of the Center for Ecosystems in Architecture and the many new courses listed above. In particular, ecological content is now more more explicitly addressed in the second and fourth semester Core Studios, and far more Advanced Studios centrally position ecological issues.

The City and Carbon Modernity
Student: Deo Deiparine
Faculty: Elisa Iturbe

TOC

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PC.1

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PC.3

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PC.6

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PC.8

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Appendix

Syllabi

PC.4 History and Theory

How the program ensures that students understand the histories and theories of architecture and urbanism, framed by diverse social, cultural, economic, and political forces, nationally and globally.

The YSoA faculty includes a number of leading historians and theorists of architecture and the built environment. This is an area of the curriculum which is particularly well-supported at Yale, one of the country's top universities for study in the Humanities, and the only one of its peer institutions supporting four separate professional schools of fine and performing art (Art, Architecture, Music, and Drama). In addition to full-time and tenured faculty in this area, the Vincent Scully Visiting Professorship of Architectural History allows the School to invite leading scholars in the history of art and architecture to teach lecture and seminar courses, and to support advanced scholarly work at the School. Since the previous accreditation visit, Kathleen James-Chakraborty, Annabel Wharton, Anthony Vidler, Mary McLeod, Esther da Costa Meyer, Mario Carpo, and Joan Ockman have held this professorship, playing a crucial role in defining the form and character of the History & Theory curriculum at Yale. What's more, a number of studio faculty at YSoA hold PhDs themselves, helping to ensure an integral and mutually beneficial relationship between design and history-theory within the curriculum.

Courses in History & Theory emphasize the cultural and social heterogeneity that has shaped the built environment throughout history and continues to provide the context for the contemporary practice of architecture. The school has moved to broaden the historical and cultural diversity covered by these courses and shift the euro-centric bias in its course offerings. The content of the required courses in history, theory, and urbanism have been integrated and the history and theory courses have been redesigned for fall 2021. These courses are supplemented by advanced electives in the school and in other departments of the University, which focus on the complexity of contemporary society and of the disciplinary connections that are necessary to think about and respond to rapidly changing conditions. Students learn to formulate questions and seek answers through research and writing.

Strong thinking and verbal skills are developed in weekly discussions with faculty. Research is likewise fundamental to coursework in History, Theory, and Urbanism, where students are expected to produce original work through in-depth research and analysis, culminating in a written paper of original research.

Curricular Activities

Course content in the following three required classes is coordinated to emphasize thematic continuity across scales and areas of intellectual inquiry in the built environment, and to support the development of both historical literacy and conceptual thinking in students:

ARCH 3011a
Modern Architecture in a Global Context: 1750-Present
Craig Buckley

This course surveys central buildings, projects, and discourses that have marked architectural culture over the last two-and-a-half centuries. Key themes include: the invention of new building types, architecture's changing relationship to politics, the impact of new technologies on construction, the explosion of cities, the dialogue of architecture with works of modern art and new forms of audio-visual media. The goal is to enable students to develop their own critical interpretations of works of modern architecture and to pose challenging questions about the past, present, and future of our built environment.

ARCH 3012b
Architectural Theory
Marta Caldeira

This lecture course examines moments of significant change in modern architectural theory through a series of case studies organized thematically from mid-eighteenth century to the present. It explores the different forms that architectural theory assumed both as an internal dialogue that consolidates the disciplinary body and as a response to key social, political, philosophical and technological developments.
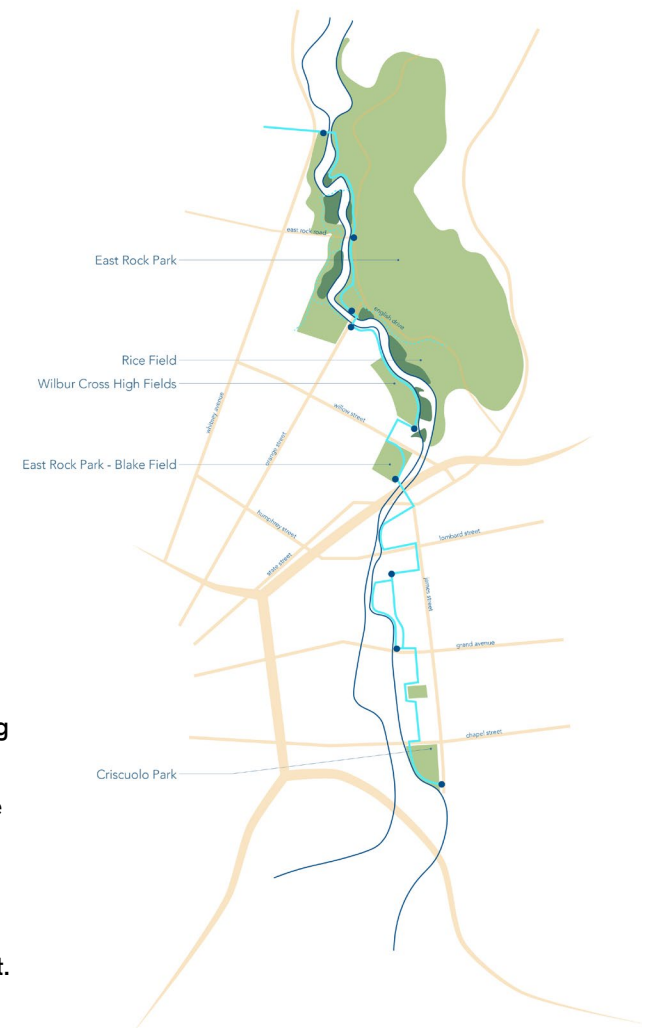
Introduction to Urban Studies
Student: Abby Reed
Faculty: Elihu Rubin

PC.4 History and Theory

ARCH 4011a
Civic Art: An Introduction to Urban Design
Alan Plattus and Andrei Harwell

This course provides an introduction to the theory and practice of urban design within the context of the broader fields of urbanism and urban history. The design of the built environment is considered in relation to patterns and practices of urban life and culture, and as a response to historical transformations of the political, economic and technological forces that have shaped cities since their origins.

Elective Courses

The following elective courses invite students to explore the social, cultural, political, economic, and historical forces giving form to the built environment. Each student is required to take at least 2 visualization and representation courses which include:

ARCH 4219a
Urban Research and Representation
Elihu Rubin

ARCH 4219 is a theory and methods class in urban research, with a focus on archives, field work, photography, and filmmaking. The seminar sets out to strengthen the designer's tool kit of social and historical methods; to bring storytelling to site research. To this end, students engage in an interdisciplinary manner with work in urban sociology, cultural geography, architectural history, critical theory, and the politics of representation.

ARCH 3240a
Spatial Concepts in Japan: Their Origins and Development in Architecture and Urbanism
Yoko Kawai

This seminar explores the origins and development of Japanese spatial concepts, and surveys how they have helped for the contemporary architecture, ways of life, and cities of Japan.

ARCH 3211b
Abstraction and Architecture: A Critical History
Pier-Vittorio Aureli

This course traces the history of abstraction in architecture from the advent of sedentary societies to today by focusing on pivotal moments: the rise of calculus, geometry and architectural drawing; the building of large-scale structures such as Egyptian Pyramids and European cathedrals, the planning of monasteries and the engineering of infrastructure; the building of houses, glasshouses, factories and data centers.

ARCH 3264b
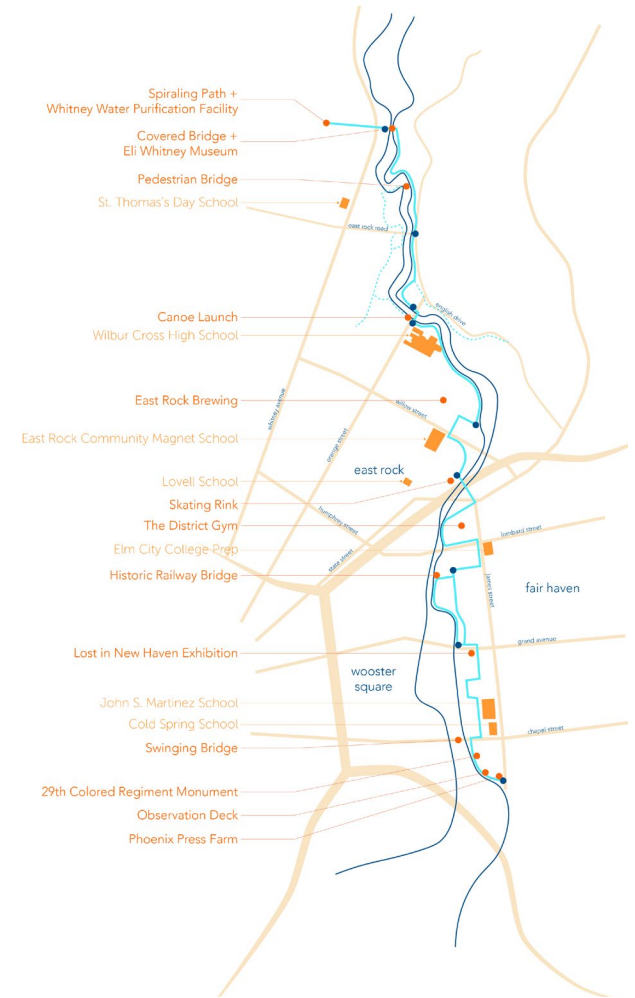**XS: 'Mirco' in Japanese Architecture and Urbanism**
Sunil Bald

This seminar focuses on trends in Japanese architecture and design culture that embrace the diminutive. Topics include the contemporary Japanese house, micro-urbanism, return to nature movements, and concepts of both the cute and monstrous. These are explored through a series of lenses that engage tradition, pragmatism, commercialism, sustainability, gender, and nationalism.

ARCH 3300b
The Idea of an Avant-Garde in Architecture
Joan Ockman

This seminar undertakes a close reading of one of Manfredo Tafuri's richest and most complex books, The Sphere and the Labyrinth: Avant-Gardes and Architecture from Piranesi to the 1970s. The course's concern is equally with history and historiography: with specific material and ideological contexts, and with the ways they are written into architectural literature. Its central aim is to explore the role and function of avant-gardes in the history of architecture.

YSoA is fortunate to share a building with Yale's world class History of Art Department. A number of art history courses are cross-listed and many are enrolled in by YSoA students.

Spiraling Path +
Whitney Water Purification Facility
Covered Bridge +
Eli Whitney Museum
Pedestrian Bridge
St. Thomas's Day School

Canoe Launch
Wilbur Cross High School

East Rock Brewing
East Rock Community Magnet School

east rock

Lovell School
Skating Rink
The District Gym
Elm City College Prep
Historic Railway Bridge

fair haven

Lost in New Haven Exhibition

wooster square

John S. Martinez School
Cold Spring School
Swinging Bridge

29th Colored Regiment Monument
Observation Deck
Phoenix Press Farm

Introduction to Urban Studies
Student: Abby Reed
Faculty: Elihu Rubin

PC.4 History and Theory

Non-Curricular Activities

Advanced Degree Programs: Master of Environmental Design and Doctor of Philosophy Students from the Advanced degree programs serve as teaching assistants and reviewers for courses in the MArch I sequence. MED and PhD students are integrated within the MArchI student body sharing space in Rudolph Hall, populating many of the same courses and events.

The Master of Environmental Design (MED) program is a two-year research-based program culminating in a Masters thesis. Started in 1967, the MED program remains one of the first and most intensive of its kind, with a history that is particularly relevant today. Situated to cross reference all the programs at YSoA and all the disciplines within the University, MED students have a special agency within the school. They generate a rich interdisciplinary discussion of social, political, economic, technical, and aesthetic material. Emphasis is placed on rigorous methods of research and scholarship leading to a substantial written thesis. Graduates become writers, curators, teachers, and often go on to PhD programs.

The Doctor of Philosophy (PhD) program at YSoA has two tracks: History & Theory and, since 2018, Ecosystems in Architecture. Both tracks aim to educate teachers capable of effectively instructing future architects in their own field and its manifold connections with the culture at large. Entering students with sound professional preparation engage in a concerted course of study that leads directly to a research-based dissertation and a doctoral degree. Students in the PhD program in Architecture are likewise expected to teach or serve as research assistants for four terms. All assignments are carried out under the direct supervision of senior faculty. Each year, students in the PhD program elect one of their number to represent the interests of graduate architecture students as a member of the Yale Graduate Student Assembly.

The PhD students are also responsible for coordinating two series of student-run lectures and discussions: the "Dialogues," in which distinguished in-house and visiting faculty are invited to respond to student research projects and other scholarly work-in-progress from members of the PhD program; and the "Architecture Forum," an interdisciplinary series of seminar-scale lectures curated in collaboration with students in the History of Art Department. Both series are free and open to the public, and are well-attended by students and faculty alike. The PhD students also serve as teaching fellows within both the History and Theory curriculum and Design Studios, elevating the level of academic rigor and scholarship in the core sequence.

YSoA is fortunate to share a building with Yale's world class History of Art Department. A number of art history courses are cross-listed and many are enrolled in by YSoA students.

Symposia, Events, Publications & Exhibitions

The study of history and theory, and the production of scholarly work in these areas, are directly supported at YSoA by a robust publications program; a public series of lectures, symposia, and other events; and a rich series of public exhibitions.
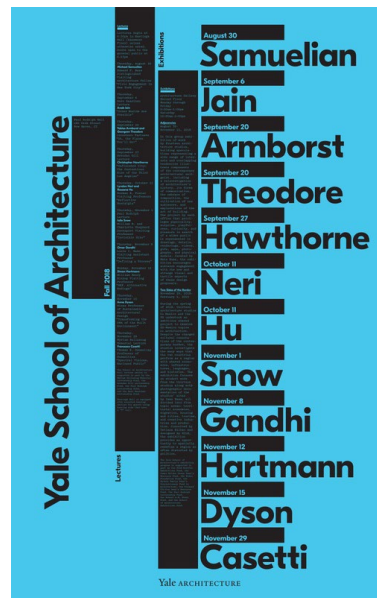
Lecture Series Posters
Fall 2018, 2019 ; Spring 2019

PC.4 History and Theory

Self-Assessment

Direct Assessment
Assessment of the History & Theory Curriculum is an ongoing and continuous process, engaged most directly by the faculty in relation to their expertise and ongoing research. Faculty serve on juries and forums for other classes in the school and publish their work widely in a host of books, periodicals and peer-reviewed journals. A list of recent publications can be found in the appendix.

Assessment is also carried out by the curriculum committee and the Associate Dean for Curriculum and Admissions. In 2017, the Associate Dean and curriculum committee initiated a broad-based assessment and revision of the YSoA curriculum. In the case of History and Theory, this discussion led to resequencing the required classes in relation to the Core studio as described below. More on this process can be found in 5.3.

Indirect Assessment
Paprika, a weekly, student-edited broadsheet newspaper, serves as a forum for lively debate on a wide array of issues. Students, faculty, and others outside the school write essays, stories and responses to issues raised in classes, events, and pieces from past issues. The paper is widely read by students, faculty and the administration, and it serves as an ongoing feedback mechanism with a particular focus on issues related to History and Theory.

Changes Since last Accreditation

Changes made to the curriculum since the last accreditation review include an emphasis on better coordination between the required history & theory courses and the sequence of Core design studios. The progression from history to theory to urban design corresponds with a parallel progression in the first three semesters of studio instruction, allowing students to bring knowledge of history, critical thinking skills, and an urbanist imagination to bear on their design work from the beginning, thus allowing both faculty and students to test the general efficacy of the interplay between design and history/theory in the School's broader curriculum.

In Memoriam
Yale Architecture Gallery
February 2020

The history and theory courses have also been restructured and re-named for the upcoming 2021-2022 school year, decentering Modern Architecture as the primary narrative that they trace. A number of new elective courses have been added that engage race and architectural contexts and histories beyond Europe. A greater number of classes with a global as opposed to solely western outlook are now offered, and additional classes have a greater emphasis on non-western content.

PC.5 Innovation

How the program prepares students to engage and participate in architectural research to test and evaluate innovations in the field.

Curricular Activities

Students develop an understanding of applied research and its value to the design process throughout the Core Design Studios, which require students to develop design strategies in relation to research about site, construction, and environmental and building concerns. Research and innovation are most explicitly addressed in a sequence of three required courses: 'Building Project' (2016) where collective research — technological, environmental, social, and political — is applied in the development and construction of an actual house; 'Systems Integration' (2022), which examines the technical and practical value of applied research relative to design; and 'Environmental Design' (2021a) which invites students to engage in research-based design.

ARCH 2016b
Building Project

Students are required to apply a course of rigorous research to the innovative design, selection, and integration of building technology and environmental systems, and to the physical construction of a house. Building Project encourages students to think about energy use by reconciling the desire for transparency and connectivity between indoor/outdoor space with thermal, air, and vapor resistance. Passive heating and cooling systems, alongside necessary active systems are a major theme.

Students work with landscape architects and engineers, who provide consultation on landscape strategies and structural analysis during conceptual and final design phases. Various suppliers of products come and give talks including: Huber Engineered Woods, Fox Blocks, Pella Windows, and VEFLUX Skylight Performance.

ARCH 2022b
Systems Integration and Development in Design

This course explores the careful advancement of structural form and detail; environmental systems; issues of egress and accessibility; and envelope design. These are approached systematically, as part of a research-based design strategy. Students develop an understanding of the constructive process from which architecture emerges as one in which technical and performance goals both reinforce and reinform the conceptual origins of design work.

ARCH 2021a
Environmental Design

In this required course, students develop an understanding of the significance of research and innovation of environmental factors as a key means of determining form, function, site location and system integration. The overarching premise of the course is that the understanding and application of the physical principles by the architect must respond to and address the larger issues surrounding energy and the environment at multiple scales and in domains beyond a single building.

ARCH 1019c
Visualization and Computation

In parallel to the Building Project during the summer term at the end of the first year, students enroll in 2 of 5 offered courses focused around emerging technologies. In 2021, these courses centered on Building Information Modeling (BIM), Geographic Information Systems (GIS), Virtual Reality, Grasshopper and scripting, and image making.

Kitchen Sink Realism - Advanced Studio
Students: Serena Ching, Kay Yang
Faculty: Pier Vittorio Aureli, Emily Abruzzo

Nairobi Students
Center of Ecosystems in Architecture

PC.5 Innovation

Non-Curricular Activities

A number of school-sponsored research initiatives, programs and publications push the boundaries of research-based innovation in architecture, in terms of both building technology and cultural criticism:

Center for Ecosystems in Architecture

The Center of Ecosystems in Architecture (CEA) is a joint academic initiative between the Yale School of Architecture and The Yale School of the Environment. CEA unites researchers across multiple fields in the development of transformative systems for the Built Environment, purposefully prioritizing the requirements of living ecosystems towards the development of innovative methods for buildings and cities that support biodiversity with clean energy, water, and materials.

In collaboration with UN-Habitat and UN-Environment, Yale CEA recently partnered with Gray Organschi Architecture (directed by Yale faculty members Alan Organschi and Lisa Gray) to design and construct a prototype dwelling unit, based in the principles of resiliency, renewability, and sustainability. The first Ecological Living Module (ELM) was installed on the UN Plaza in the summer of 2018, during that year's UN High-Level Political Forum.

Stalled!

Stalled! is an ongoing project directed by Joel Sanders in collaboration with Susan Stryker (professor of Women's and Gender Studies, University of Arizona) and Terry Kogan (professor of Law, University of Utah), exploring the implications of recent debates on the inclusion of transgender men and women -- and other "non-compliant bodies" — in the design of public restrooms. A related symposium, Non-Compliant Bodies: Social Equity and Public Space, was convened by Joel Sanders and Susan Stryker, who assembled a cross-disciplinary group of designers and scholars to explore the relationship between architecture and the demands for social justice voiced by people who have been marginalized and oppressed on the basis of race, gender and disability.

Exhibitions

Since its founding in 1979, the Exhibitions program at YSoA has evolved into a critical space for the exploration of architectural ideas and discourse in New Haven and beyond. Today, the Yale Architecture Gallery — situated at the very heart of Rudolph Hall — hosts four exhibitions per year, including the annual year-end show of student work.

Publications

In addition to Perspecta, a peer-reviewed academic journal published annually by the School of Architecture and distributed by MIT Press, YSoA is also home to Retrospecta, an annual journal of student work; Constructs, a bi-annual news magazine highlighting events and activities at the School of Architecture; and a number of books documenting the work of advanced studios.

Student and Faculty Initiatives

The School of Architecture supports a range of initiatives developed by faculty in parallel to their work as teachers and scholars at Yale. Likewise, our faculty and advanced students publish widely and, each year, participate in a wide variety of conferences, symposia, and design competitions. For instance, Gary Huafan He (PhD '20) and Skender Luarasi (PhD '18) chaired a panel at the annual conference of the ACSA in 2018, entitled "On the Advantages and Disadvantages of Instrumentality for Architecture." More recently, a group of advanced MArch students recently won first place in the 2020 Innovation in Affordable Housing Student Design and Planning Competition, sponsored by HUD. The winning proposal, submitted by students Helen Farley (MArch '20), Kelley Johnson (MArch '20), Eva Leung (MBA '21), and Jackson Lindsay (MArch '20), is a mixed-use and mixed-income community, focusing on young families in Santa Fe, NM.

Two Sides of the Border
Yale Architecture Gallery
February 2019

Yale Center for British Art

PC.5 Innovation

Yale makes a wide range of innovation-focused resources to all members of the University community. These include an array of courses, clubs, and student organizations, as well as libraries, laboratories, and research centers.

The Center for Collaborative Arts and Media (CCAM) is a media laboratory, open to all members of the Yale community, exploring intersections of art, science, and technology through research, programs, and exhibitions. Located at 149 York Street in New Haven, just down the street from YSoA, the 5,000 square foot space boasts state-of-the-art facilities, including a motion capture studio, immersive media research, projection mapping system, creative suites, computerized audio and light systems, video studio, equipment lending library, wide-format printers, open workspace labs, and exhibition gallery.Past and current CCAM supported Courses include Mechanical eye (ARCH 2222), The Mechanical Artifact (ARCH 2238), and Sensitive Machine (ART 912).

The Center for Engineering Innovation and Design (CEID) is a hub for collaborative design and interdisciplinary activity, whose 8,700 square foot design lab is equipped with 3-D printers, hand-tools, electronics work stations, and a state-of-the-art machine shop, wood shop, and wet lab.

The Dreamer Institute

In 2019, students and faculty from the Yale School of Architecture, the Yale School of Engineering and Applied Sciences, the Whitney and Betty MacMillan Center for International and Area Studies, and the CEID, embarked on the collaborative design and development of a new technology school for high-school students in Afghanistan, a project conceived and spearheaded by Associate Dean Sunil Bald and Afghan entrepreneur, Roya Mahboob. The new school, to be called The Dreamer Institute, is particularly remarkable because it will be attended by both boys and girls. In a country that has only recently started to accept women in science, such a school would have been impossible just a few years ago. The Dreamer Institute, to be built in Kabul, will focus on robotics, artificial intelligence and blockchain, and will consist of two interlocking buildings on the campus of Kabul University. One building is the high school, to be attended by girls for one half of the day and by boys the other half. The other is an innovation center based partly on Yale's CEID, which would be shared by the high school students and students from Kabul University.

Digital Humanities Lab

The Digital Humanities Laboratory (DHLab), a unit of Yale University Library, offers space, community, and resources for Yale scholars who are using computational methods to pursue research questions in the arts, humanities, and humanistic social sciences. The lab is a hub for consultations, training, and opportunities that support Yale students, faculty, and cultural heritage professionals in their engagement with digital tools and techniques.

Poorvu Center for Teaching and Learning

The Poorvu Center provides training, consultations, and resources designed to make teaching and learning more public and collaborative, so that every Yale instructor experiences the satisfaction that results from teaching well, and every student develops the critical reflection that marks deep and independent learning.

Libraries

Students and faculty at the School of Architecture share generous access to a wide range of physical resources across the University. The Haas Arts Library, located on the first floor of Rudolph Hall, serves as the working library and visual resources collection for the School of Architecture, the School of Art, the History of Art Department, and the Yale University Art Gallery, and as an adjunct library for the Yale Center for British Art. Additionally, students have access to the University's library system in its entirety — the second largest university-based library in North America — including diverse holdings in Yale Manuscripts and Archives, the Beinecke Rare Book and Manuscript Library, the Yale Law Library, and the Wurtele Study Center for object-based teaching and learning.

PC.5 Innovation

Self-Assessment

Direct Assessment
Self Assessment of the School's approach to innovation is conducted foremost by the faculty in relation to their own work in a number of fields and initiatives. Faculty research is integral to a number of required and elective courses offered at the School, and often proceeds in relation to centers and laboratories based here on the campus. These include the Center for Ecosystems in Architecture (CEA), Stalled!, and the Yale Urban Design Workshop, as well as Yale's Center for Collaborative Arts and Media (CCAM), the Center for Engineering Innovation and Design (CEID), and the Yale Digital Humanities Lab. Faculty publish their work widely in a host of peer-reviewed journals. A list of recently published, peer-reviewed projects can be found in Section 5.2.5.

At the administrative level, the school's guiding principles related to innovation are described in the strategic plan. The first guiding principle is fostering creativity and innovation. One of the key strategies articulated in the plan is to increase opportunities for innovation through the implementation of faculty/student research units.

Indirect Assessment
Outside organizations, client groups, and other consultants involved with specific courses provide a real-world check on strategies for innovation developed in an academic setting, while introducing a range of innovative practices and techniques developed outside the School. These include local clients for the Building Project, community organizations involved in Core 3, and consultant teams engaged with students for Systems Integration, among others.

Multiple student groups also focus in part on innovation and provide feedback to the school through meetings with faculty and the administration. These include Green Action in Architecture, The Architecture Lobby, and The Yale Architecture Forum. More information on the range of formal and informal channels used to collect feedback can be found in 5.2.4.

Changes Since last Accreditation

Changes related to innovation, based on the strategic plan and faculty and student feedback, include the founding of the Center for Ecosystems in Architecture within the School of Architecture and the hiring of Professor Anna Dyson. The School has also developed its relationship to University Centers including the Digital Humanities Lab which directly supports YSoA courses and the Center for Collaborative Arts and Media. CCAM's director, Dana Karwas, teaches two courses cross listed in the architecture school including "The Mechanical Eye" (1289a).
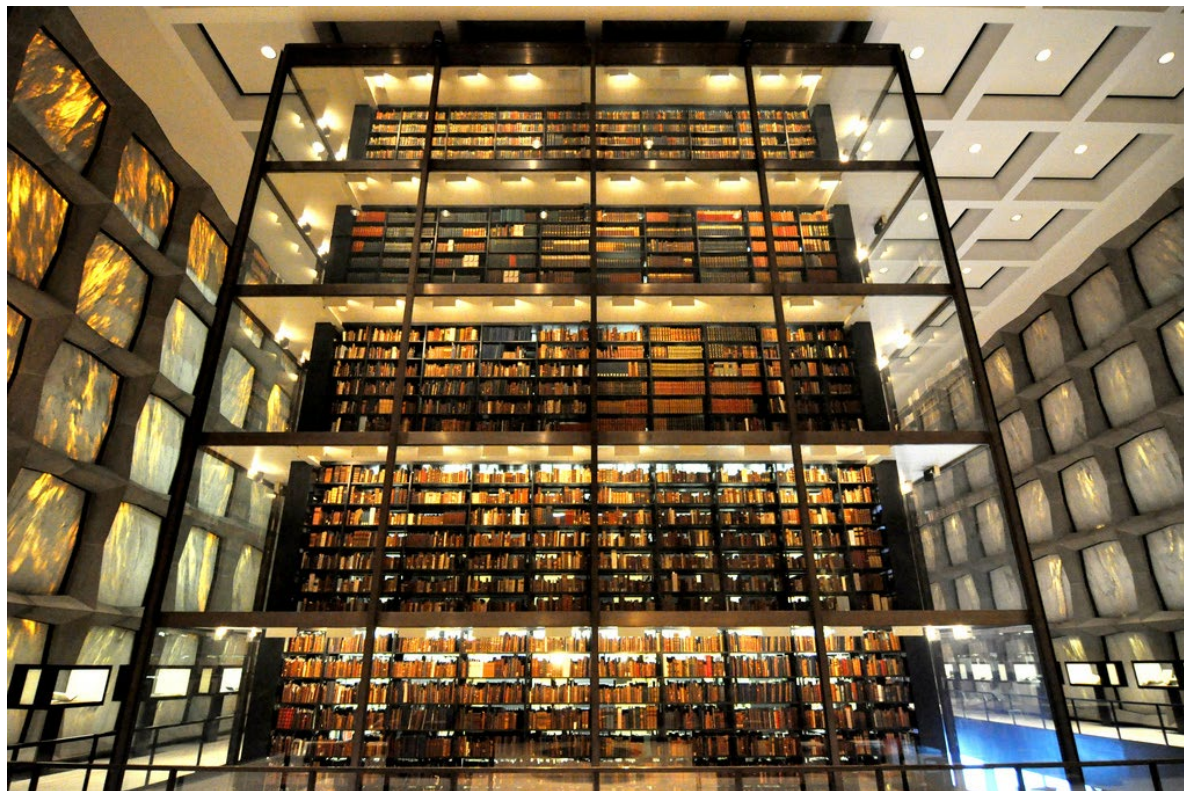
Beinecke Rare Book and Manuscript Library
Yale University Campus

PC.6 Leadership and Collaboration

How the program ensures that students understand approaches to leadership in multidisciplinary teams, diverse stakeholder constituents, and dynamic physical and social contexts, and learn how to apply effective collaboration skills to solve complex problems.

Leadership skills in the context of collaborative work are developed at virtually every stage of the curriculum at the Yale School of Architecture, and are a fundamental part of each student's studio experience. The architecture studio is a collaboratively intensive space, by nature, and most design studios begin with a phase of group-based research and analysis, whose findings may then be adapted to individual student projects.

Collaboration and communication among students and with consultants and clients remain a fundamental part of a number of courses at YSoA, but are absolutely central to the first-year Building Project and second-year Design Studios, where group-based work with outside organizations and community stakeholders plays a central role in the development of design proposals.

ARCH 2016b
Building Project

Throughout the design process, students work with visiting consultants and experts in a variety of fields and building trades. In addition, students are involved with the client for the Building Project house from the beginning, and are conscious of the client's involvement and role in the design process. For the past few years, YSoA has collaborated with New Haven's Columbus House, a non-profit housing services organization serving the local homeless and housing-insecure population. Representatives from Columbus House assume an intimate role in the design process, as they attend reviews and desk critiques and contribute to the final choice of building design to be developed and constructed. Students additionally participate in community workshops and meetings to establish the local culture and requirements. They interview specific community representatives to help inform an appropriate design.

As a part of Building Project and in coordination with the Core 2 studio, student presentation, communication, and workplace collaboration skills are emphasized and reinforced through meetings with experts from the Yale School of Management. Meetings include individual feedback on verbal presentations and discussion of broader issues related to workplace management and business communication.

ARCH 1021a
Core 3: Design Studio

This studio serves as an introduction to the design of civic spaces, providing students with a broad look at the forces giving form to our local communities, and the various ways architects can work to serve their neighbors. Students work closely with actual client groups on the development and articulation of public-interest programs and civically-minded projects.

ARCH 1022b
Core 4: Design Studio

The first half of the Core 4 'Urbanism Studio' requires students to work collaboratively on research and design. Though each section will have a distinct take on the problem, there will be times throughout the semester when the class will convene as a group to share our individual approaches, research, methodologies, and progress. Through reviews with outside jurors, sessions in which critics swap sections, and lectures, and workshops, each section will have several opportunities to get a sense of the diverse approaches being taken by the group as a whole.

Building Project Construction
Summer 2019

Core 3 Studio
Student: Louis Koushouris
Faculty: Gavin Hogben
Fall 2019

PC.6 Leadership and Collaboration

ARCH 2022b
Systems Integration and Development in Design

The fourth-semester course in Systems Integration also requires a high degree of collaborative work. Student teams are matched with teams of faculty consultants, composed of an architect, a structural engineer, and a mechanical engineer. Students meet with this assigned team on a weekly basis to review progress and to plot the course of group work. These critics give assignments intended to provide a structure within which to pace the development of each project.

Advanced Studios

Advanced Studios, in particular, often require group work on the part of students, whether as part of a collective and collaborative course of research preceding design work, by encouraging students to work in teams, or by requiring the development of collaborative relationships with real-world clients, stakeholders, and partners. MArch I students take two advanced studios during their third year.

ARCH 1115b (Spring 2020)
Advanced Design Studio: Kitchen Sink Realism
Pier-Vittorio Aureli and Emily Abruzzo

This studio explored the emergence of the home as a stable structure providing security and enhancing a sense of possession, which gradually expanded from the house to its surrounding environment. Students spent the first half of the semester engaged in a rigorous course of collaborative research, tracing back to the home the rise of the idea of property, a concept which, up until the present day, remains the most important spatial and political datum of our society. This research comprised the basis of a studio book presenting the studio's findings, published at the end of the semester.

ARCH 1103a (Fall 2019)
Advanced Design Studio: Vienna — Another Day in the City
David Gissen and Surry Schlabs

This studio began with the collaborative design and execution of two large murals, incorporating critical visual analyses of a host of modernist architectural and urban precedents which, when taken together, presented competing visions of the 20th century metropolis in its relationship to light and dark, transparency and opacity, warmth and coolth, morality and depravity.

ARCH 1107a (Fall 2019)
Next Generation Tourism: Touching the Ground Lightly
Patrick Bellew, John Spence, Henry Squire, Timothy Newton

This studio — a collaboration with real estate and resort developer, John Spence; and Patrick Bellew, of the environmental design consultancy, Atelier Ten — focused on the impact of global tourism on the fragile environment of the Gili island group, in Indonesia.

ARCH 1107a (Fall 2018)
Life Cycle Studio
Lisa Gray and Alan Organschi

The LifeCycle Studio was funded by a grant from the Sitra Foundation, and was conducted contemporaneously and in collaboration with an advanced Master level studio at the Department of Architecture at Aalto University in Otaniemi, Finland. Both studios worked on the same architectural project—a program of new, high density housing for Jätkäsaari, an urban development zone in a former industrial district on Helsinki's western waterfront. Students shared research, analytical methods, and design approaches, and even entered into direct design collaborations with their Finnish counterparts through a series of meetings in Helsinki during the YSoA travel week and subsequently through on-line meeting and information exchange platforms. Two Yale Students, Davis Butner and Millie Yoshida, presented their work from this studio at the World Circular Economic Forum, in Helsinki.

Advanced Design Studio: From Domesticity to Commons
Group Drawing
Faculty: Tatiana Bilbao
Spring 2020

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PC.6 Leadership and Collaboration

Required and Elective courses

A number of elective courses demand student collaboration in pairs or groups to produce design, research, or fabrication projects. Others require students to engage with a variety of community members and other stakeholders in the city of New Haven.

ARCH 4242a
Introduction to Planning and Development
Alexander Garvin

This course demonstrates the ways in which financial and political feasibility determine the design of buildings and the character of the built environment. Working in teams through a series of different "games," students propose projects and then adjust them to the conflicting interests of financial institutions, real estate developers, civic organizations, community groups, public officials, and the widest variety of participants in the planning process. Subjects covered include housing, commercial development, zoning, historic preservation, parks and public open space, suburban subdivisions, and comprehensive plans.

ARCH 2234a
Material Case Studies
Emily Abruzzo

In this course, which culminates in a collaborative design-build spatial proposal, students build their intuition for material use in both the execution and generation of design. Part lecture, part research lab, and part field work, this intensive research seminar exposes students to a broad overview of the role of materials in the formation and execution of a spatial concept, and provides a venue for intensive work with specific materials. Working in groups, students identify a specific site within the School of Architecture for the design and temporary fabrication of a site specific installation.

ARCH 4219a
**Urban Research and Representation**
Elihu Rubin

Arch 4219 is a theory and methods class in urban research, with a focus on archives, field work and community engagement, photography, and filmmaking. The seminar sets out to strengthen the designer's tool kit of social and historical methods; to bring storytelling to site research. To this end, students engage in an interdisciplinary manner with a variety of local stakeholders and community members, working at the boundaries between urban sociology, cultural geography, architectural history, critical theory, and the politics of representation.

Theory and Practice of Design Leadership
Laura Weiss (new fall 2021)

Historically, architectural education has been dedicated to teaching skills that produce superior design concepts, authored by an individual talent, while the skills required to transform these concepts into reality are developed primarily through professional practice. This course seeks to change that tradition by focusing on what it takes to actuate design; it references a variety of design disciplines and enables students to experiment with leadership skills in the context of learning to be great designers.
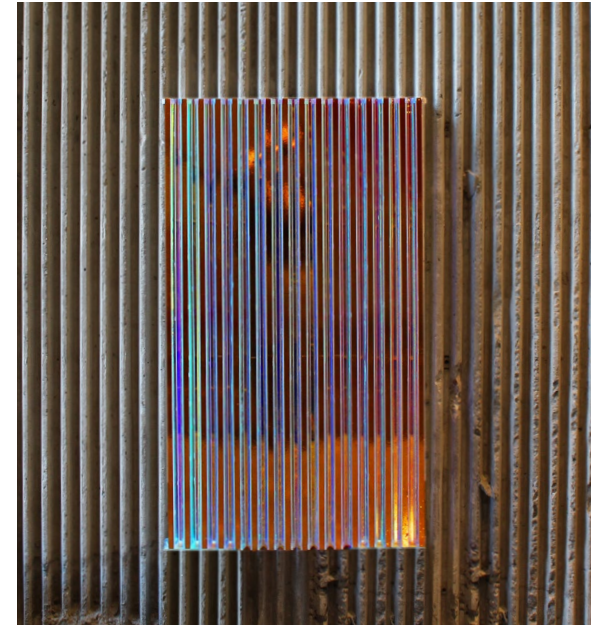
Material Case Studies
Students: Daniella Calma, Mari Kroin, Alper Turan
Faculty: Emily Abruzzo
Fall 2019
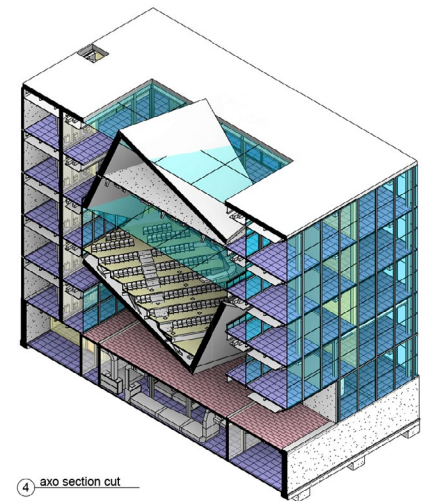
④ axo section cut

Systems Integration and Development in Design
Leanne Nagata
Spring 2020

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PC.6 Leadership and Collaboration

Non-Curricular Activities

Other School-sponsored initiatives built on partnership and collaboration with outside clients, community-based organizations, and local stakeholders include:

The Yale Urban Design Workshop (YUDW) is a community design center based at the Yale School of Architecture. Students and faculty from the School work with communities all across the state of Connecticut, and even internationally. The program provides planning and design assistance on projects ranging from comprehensive plans, economic development strategies, and community visions to the design of public spaces, streetscapes, and individual community facilities. Clients include small towns, city neighborhoods, planning departments, Chambers of Commerce, community development corporations, citizen groups, and private developers. Students are encouraged to become involved with the YUDW during the academic year or as paid employees during the summers. Recent projects include "Resilient Bridgeport," a prospective study of coastal resilience strategies for Bridgeport, CT, developed in collaboration with Waggoner & Ball Architecture/Environment, of New Orleans, LA; a study of the area around Union Station in New Haven's Hill neighborhood; and the "Thames River Heritage Park Plan" for the cities of Groton and New London.

The Yale Center for Ecosystems in Architecture (CEA) under the direction of YSoA Professor Anna Dyson and Gray Organschi Architecture - led by YSoA faculty members Lisa Gray and Alan Organschi - a team of Yale students - collaborated with UN Environment and UN Habitat on the design, construction, and exhibition of a new eco-housing module. The 22-square-meter Ecological Living Module (ELM) sparked debate and proposed new ideas on how to redesign the way we live. The first demonstration unit was installed on the UN Plaza in New York City, during the 2018 High-Level Political Forum, and contained features relevant to the local climate and context of New York.
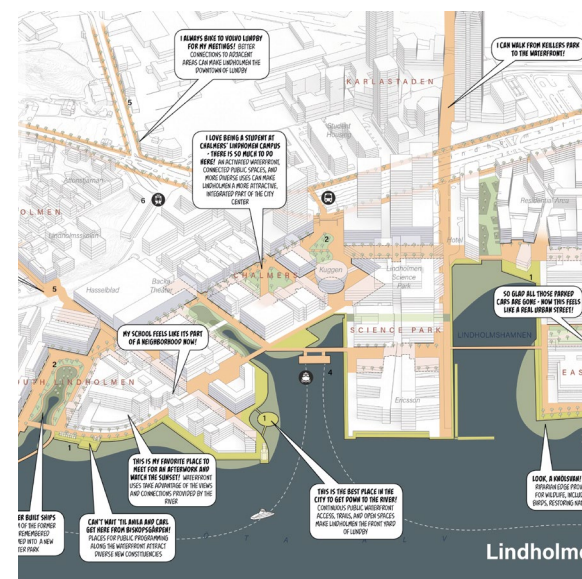
Design Brigade

Rooted in the values of equity, inclusivity, and transparency, Design Brigade creates collaborative solutions to design problems emerging from the ongoing COVID-19 pandemic. Through a collaboration with Atelier Cho Thompson and Yale's Center for Collaborative Arts and Media, Design Brigade launched in New Haven, Connecticut in June 2020. Multi-disciplinary teams made up of Yale undergraduates and graduate students research key conceptual questions surrounding the changing social and cultural rituals facing the world. Guided by practicing designers and academics, the teams then work towards built solutions. By serving and working with community clients, students will develop design skills through real-world problem solving and will deliver plans that can be implemented.

Regenerative Building Lab

The School of Architecture's Regenerative Building Lab's inaugural project was the design, fabrication, and construction of a new Coastal Research Station at Horse Island, one of the outermost islands of the Thimble archipelago off Branford, Connecticut, for Yale's Peabody Museum. Ten YSoA students developed the project over a two course sequence, designing the new building during the Spring 2020 seminar 2229b: Regenerative Building: Horse Island. Fabrication took place at Yale's West Campus, and the building was erected over a 10-week period on Horse Island that summer.

The Yale Center for Ecosystems in Architecture
UNEP Ecological Pavilion, Nairobi, Kenya
2019

The Yale Urban Design Workshop
Gothenburg, Sweden

TOC

1
Condition

2
Condition

3
Condition

PC.1

PC.2

PC.3

PC.4

PC.5

PC.6

PC.7

PC.8

SC.1

SC.2

SC.3

SC.4

SC.5

SC.6

4
Condition

5
Condition

6
Condition

Appendix

Syllabi

PC.6 Leadership and Collaboration

Self-Assessment

Direct Assessment
Direct assessment of student learning is most directly evident in the evaluation of coursework by faculty, external consultants, and clients. Such evaluation takes many forms. The selected design is then developed, documented and built by students, and opened to the entire school and local community in the fall. The successes and shortcomings of technical innovations and novel design strategies are manifest in built form for all to see.

Indirect Assessment
In the fall of 2020, YSoA launched its first Climate and Culture Survey, soliciting feedback on a range of issues from across the School community. A primary goal of this survey was to gauge the sense of community and shared purpose among students, faculty, and staff at the School. 165 community members responded. By gathering confidential input from across YSoA, the School takes an evidence-based approach to reinforcing our successes and addressing future challenges. Dean Berke also meets regularly with students in open 'Town Halls,' a forum allowing students to raise concerns and ask direct questions of the administration in a safe and open setting. The first of these town halls was held in late 2016, as a forum in which to address student concerns about current events. Typically student-initiated, they have since evolved into a more regular and structured means of exchange between students and the administration. The Dean held 14 town hall meetings in 2020, many of which were focused on smaller groups of students. In the spring and then again in the summer of 2020, the Dean held individual sessions with the MArch I classes of '21,'22, '23, as well as MArch II students, MED, and PhD students to discuss the school's preparations amid Covid-19.

Student Groups are both a vehicle for student leadership and a source of feedback on the school's culture and leadership-related efforts. Representatives from most student groups meet with the Dean at least once every semester. Associate Dean Sunil Bald also meets regularly with NOMAS and Equality in Design to discuss the school's inclusivity initiatives. More information

on the range of formal and informal channels used to collect feedback can be found in 5.2.4.

Organizations external to YSoA provide valuable feedback on the school's culture of leadership and collaboration and often serve as models for our own initiatives. The community-based organizations involved in Core 3 studio (which have included [list 3 from last 3 years]) are examples. Faculty work closely with these organizations in developing the studio brief and organization leaders not only provide feedback on student work but also on group dynamics and studio culture.

The Yale Poorvu Center for Teaching and Learning promotes equitable and engaged teaching throughout the University, meeting with YSoA administrators to evaluate policy, with individual faculty to provide feedback on course syllabi, teaching techniques, and remote teaching platforms and skills. In advance of the fall 2020 and spring 2021 semesters, the Poorvu Center offered a "Guided Support" program for course instructors. Poorvu staff members offered workshops and consultations to help instructors design classes for predominantly online delivery.

Changes Since last Accreditation

Based on these assessment mechanisms, changes initiated to the administration, curriculum, and culture of the School since the last accreditation include a major restructuring of the curriculum to incorporate more external organizations and stakeholders, and a number of individual initiatives and programs designed to facilitate the cultivation of leadership and collaboration among students. These include Design Brigade, the Regenerative Building Lab, the Ecological Living Module, and others described above.

Introduction to Planning and Development
Students: Andrés Lin-Shiu, Charles Gress, Lucas Holter, Joshua Tan, Sam Landay
Faculty: Alexander Garvin
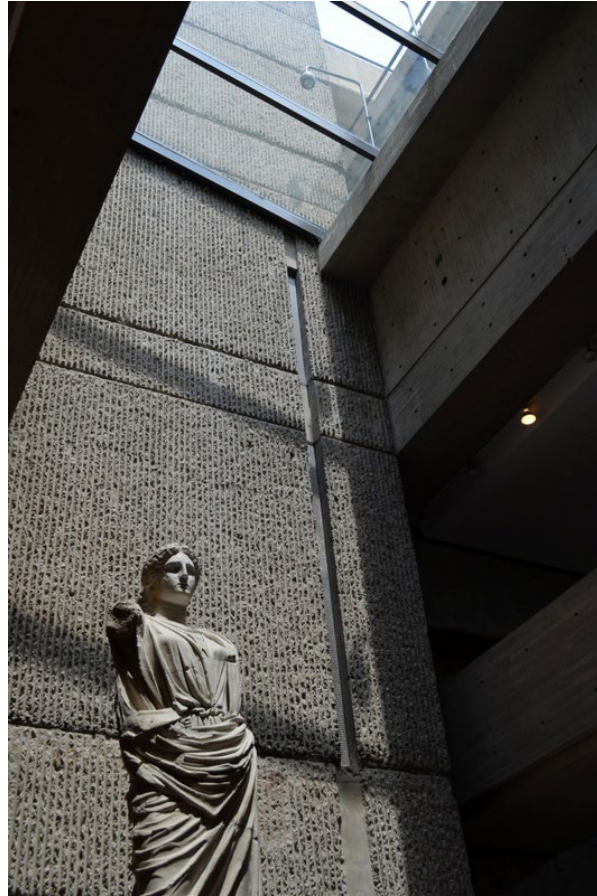
PC.7 Learning and Teaching Culture

How the program fosters and ensures a positive and respectful environment that encourages optimism, respect, sharing, engagement, and innovation among its faculty, students, administration, and staff.

In Spring 2021, the Yale School of Architecture issued a new Learning and Teaching Policy intended to codify and strengthen the School's culture, and to ensure that students, faculty, and staff are able to fulfill the School's primary mission: to educate architects, scholars, teachers, and leaders who will shape the future through design.

The policy was collectively outlined, written, and edited by a committee of 2 students and 3 faculty members, including Associate Dean Sunil Bald. The process began with a meeting with Yale's Poorvu Center for Teaching and Learning, whose staff made recommendations on how to create, assess, and maintain the policy, and who collected precedent policies from YSoA's peer institutions. The committee also referred to the school's Strategic Plan, the AIAS's Model Learning and Teaching Policy, and the Code of Conduct and Social Rules developed by the student group, Equality in Design. The policy is intended to be a collaborative and active document, annually reviewed and updated by members of the student body, faculty, staff and administration.

The policy highlights values critical to the culture of the school and shared by students, faculty and staff:

Yale School of Architecture is committed to excellence in architectural design and the education of architects, scholars, and leaders prepared to positively impact the future of the built environment. In pursuit of these goals, the school supports a series of initiatives that expand learning, research, and engagement beyond the walls of YSoA to the University, the community, and the profession.

Yale School of Architecture aspires to sustain a school culture that is rooted in inclusivity and collaboration. YSoA welcomes many perspectives and backgrounds.

The responsibility of sustaining a positive, respectful learning environment is shared by the entire YSoA community, including the administration, faculty, staff and students. While Yale School of Architecture acknowledges the intensity of studio-based architecture education, the school community values a healthy work-life balance as much as it values intellectual pursuits. Time management and well-being are encouraged by YSoA's faculty and administration and valued within YSoA's school culture. The policy articulates expectations for faculty, students, and guests in the studio and the role of formats such as desk crits, pin-ups and studio reviews.

YSoA's school culture creates a safe environment for free expression, values intellectual curiosity, and encourages a spirit of inquiry. All YSoA members are subject to the rules of academic integrity, and are responsible for holding each other accountable.

Architecture education is rooted in collaboration and the exchange of diverse perspectives both in and out of the school environment. All members of YSoA are encouraged to actively engage with the world beyond the academy to create ethical, relevant architecture and critical, open discussion that supports a sustainable, resilient planet.

At YSoA, the administration, faculty, staff and students have a collaborative relationship and share the same goals. The school encourages open communication between members of the community and active engagement in all academic and school activities. Members of YSoA work together to shape the future of the school through honest feedback and open discussions enabled by mechanisms such as semesterly evaluations, joint faculty and student committees, annual environmental surveys and regular town halls.

Fourth Floor Pit
Rudolph Hall

Badminton Tournament
Fourth Floor Pit - Rudolph Hall

Studio Travel - London
Advanced Design Studio - Unreal City

PC.7 Learning and Teaching Culture

The size and character of the student body are critical to the long-term maintenance of this culture. Enrollment of around 180 students in the three-year MArch program (60 per class) means that the student body is small enough for the whole faculty to know students individually and for students to know each other. It is large enough to allow for a breadth of ideas, perspectives and pedagogies. This is also fostered by the Admission Committee's active interest in attracting and admitting a diverse student body with a vast range of backgrounds, interests and experiences.

The School also fosters a collaborative learning environment of healthy competition among students. Students all work in Rudolph Hall, taking advantage not only of the physical and digital resources provided by the School, but the intellectual exchange and engagement provided by working in a common studio space. In addition, group work forms a critical part of the curriculum. Outside the classroom, the School encourages dialogue between its faculty and students through the many events held at the School throughout the year, including public lectures, symposia, exhibitions, and other special events. Widely-attended post-lecture receptions occur weekly, providing an informal environment for lively discussion and debate.

The full Yale School of Architecture Learning and Teaching Policy can be found here.

Planning

The School of Architecture's Strategic Plan, developed in 2017, identifies a number of goals and objectives concerning the culture of teaching and learning we aim to foster and nurture. Among these are:

· Offer an integrated curriculum and programming that respond to the needs and conditions of building in the 21st century.

· Attract and support a diverse community of creative intellectuals who will be prepared to lead and influence the future of the discipline.

· Attract, support, and develop a diverse body of leading architectural educators.

· Engage fully with communities and issues beyond the school, in the field, the University, and the wider world.

· Model a culture that sets the standard for contemporary architectural education, practice, and research.

Resources and Additional Policies

Teaching and learning at the Yale School of Architecture are supported at the university level by the Yale Poorvu Center for Teaching and Learning, founded in 2014 to promote equitable and engaged teaching throughout the University, and to support students across the curriculum as they take ownership of their learning. As part of a world-class research institution, The Poorvu Center provides training, consultations, and resources designed to make teaching and learning more public and collaborative, so that every Yale instructor experiences the satisfaction that results from teaching well, and every student develops the critical reflection that marks deep and independent learning.

The School of Architecture remains committed to the principle of academic freedom, as laid out in 1975 by the Committee on Freedom of Expression at Yale, chaired by Professor C. Vann Woodward:

The primary function of a university is to discover and disseminate knowledge by means of research and teaching. To fulfill this function a free interchange of ideas is necessary not only within its walls but with the world beyond as well. It follows that a university must do everything possible to ensure within it the fullest degree of intellectual freedom. The history of intellectual growth and discovery clearly demonstrates the need for unfettered freedom, the right to think the unthinkable, discuss the unmentionable, and challenge the unchallengeable. To curtail free expression strikes twice at intellectual freedom, for whoever deprives another of the right to state unpopular views necessarily also deprives others of the right to listen to those views. (Yale Faculty Handbook, p. 5)

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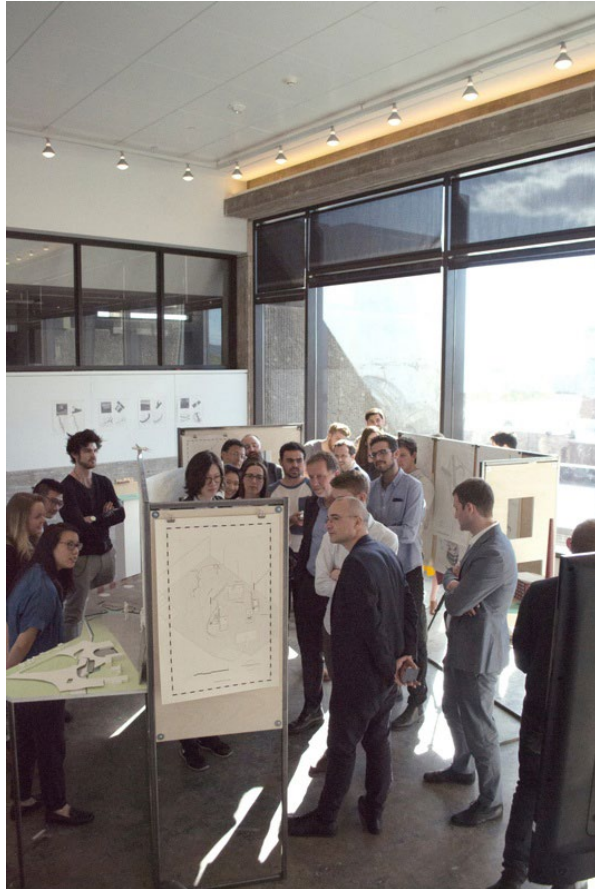
PC.7 Learning and Teaching Culture

Yale School of Architecture, like Yale University, is committed to basing judgments concerning the admission, education, and employment of individuals upon their qualifications and abilities and affirmatively seeks to attract to its faculty, staff, and student body qualified persons of diverse backgrounds.

In accordance with this policy and as delineated by federal and Connecticut law, Yale does not discriminate in admissions, educational programs, or employment against any individual on account of that individual's sex, race, color, religion, age, disability, status as a special disabled veteran, veteran of the Vietnam era or other covered veteran, or national or ethnic origin; nor does Yale discriminate on the basis of sexual orientation or gender identity or expression. The University policy is committed to affirmative action under law in employment of women, minority group members, individuals with disabilities, special disabled veterans, veterans of the Vietnam era, and other covered veterans. Title IX of the Education Amendments of 1972 protects people from sex discrimination in educational programs and activities at institutions that receive federal financial assistance.

Self-Assessment

The School's Learning and Teaching Policy, developed in Spring 2021 as described above, sets expectations for YSoA's school culture, academic culture, and in particular, studio culture. The policy articulates expectations for both instructors and guest critics at reviews and desk crits, and for students. Moving forward, these expectations will serve as specific criteria for the assessment and evaluation of School culture.

Dean Berke's regular 'Town Hall' meetings with students -- of which there were 14 in 2020 alone -- provide an important forum for the presentation and discussion of student concerns, and the solicitation of student feedback on various School initiatives. More information on the range of formal and informal channels used to collect feedback can be found in 5.2.4.

Changes Since last Accreditation

Changes initiated to the learning and teaching culture at the Yale School of Architecture are highlighted above, and described in greater detail in the School's recently developed Learning and Teaching Policy.

7th Floor Pit - Review
Rudolph Hall

PC.8 Social Equity and Inclusion

How the program furthers and deepens students' understanding of diverse cultural and social contexts and helps them translate that understanding into built environments that equitably support and include people of different backgrounds, resources, and abilities.

As noted in Berke's letter on Diversity, Equity, and Inclusion at YSoA in July, 2020, the School has made specific commitments intended to combat racism and serve the cause of racial justice. This work was coordinated by Associate Dean Sunil Bald, working closely with faculty curricular teams and students from the Yale chapter of the National Organization of Minority Architecture Students (NOMAS) and Equality in Design (EID), who have energetically coordinated town halls to collect student input and ideas.

Broadly speaking, in terms of the curriculum and faculty, we will:

- expand the number of courses that explore inequalities of the built environment
- commit to diversity in lecturers, jurors, visiting faculty
- ensure that our academic environment aligns with our values
- expand and strengthen our efforts to hire, promote, and retain a diverse faculty
- continue to hire and support faculty with expertise in urban inequality, environmental injustice, accessibility, non-western and non-colonial architectural history and theory, and community engagement

For our students, we will:

- continue to increase the funds available for financial aid
- continue and expand our efforts to diversify the student body
- actively recruit students from Historically Black Colleges and Universities and public universities with diverse student bodies
- grow funding for student groups including NOMAS and EID and increase targeted recruitment efforts by creating a new

annual fund donation option dedicated to Diversity | Equity | Inclusion
- do more to foster a more equitable, supportive, and inclusive learning environment with classes and discourse with relevance to people of all backgrounds

For our educational environment, we will:

- recognize the narrow focus of the models, drawings and artifacts in our building and expand and diversify it
- diversify our exhibitions
- address the non-neutral nature of iconography specific to the representation of architecture and architectural education
- This list, which is not at all finite, makes it clear that there is much to be done. We will push forward on this effort; it is an enduring and meaningful commitment we must make.

At the beginning of Dean Berke's tenure, the School of Architecture developed its Strategic Plan which commits to a "culture of collaboration and inclusion that welcomes many perspectives and backgrounds and integrates architecture with other disciplines". Broader discussion of these principles can be found in 2.3 Equity, Diversity and Inclusion. Specific manifestations of this commitment can be found throughout the curriculum, and in numerous programs and initiatives at YSoA and Yale University, including the following examples.

Building Project - Team G
Rudolph Hall - 2018

PC.8 Social Equity and Inclusion

Curriular Activities

Design Studio plays a central role in defining the design curriculum's broader relationship to issues of equity, inclusion, and social justice, facilitating student engagement with a wide array of social and cultural contexts and real-world, community-based clients.

ARCH 1021a
Core 3: Design Studio

Since 2018, the third Core Studio has focused on the design of a medium-scale public building through the lens of community-based, social-justice-oriented programs, developed in collaboration with a number of on-the-ground "clients," working in cities across Connecticut and the greater New York area. Each fall, students in the MArch class work on one of three different sites, with three different clients, who are identified in collaboration with Impact Justice, a national innovation and research center advancing new ideas and solutions for justice reform. Working in this way allows the class to build a collective body of research on a host of different social-justice issues and, in the process, to form relationships and partnerships with a wide variety of local community groups.

ARCH 1022b
Core 4: Design Studio

The fourth studio in the Core sequence addresses urbanism and assumes that meaningful participation in our cities involves not only designing buildings, but understanding and envisioning the communities in which these buildings reside. Each year, the studio is focused on a different neighborhood and the most pressing economic, social, cultural, and political issues in that neighborhood. In Spring 2021, the studio addressed one of New York City's most socio-economically and racial segregated public school districts and asked students to envision projects that address those inequities in myriad ways.

ARCH 2016b
Building Project

A crucial aspect of the Building Project is it's New Haven context. For the past few years, YSoA has collaborated with New Haven's Columbus House, a non-profit housing services organization serving the local homeless and housing-insecure population. Students participate in community workshops and meetings to establish the local culture and requirements. They interview specific community representatives to help inform an appropriate design.
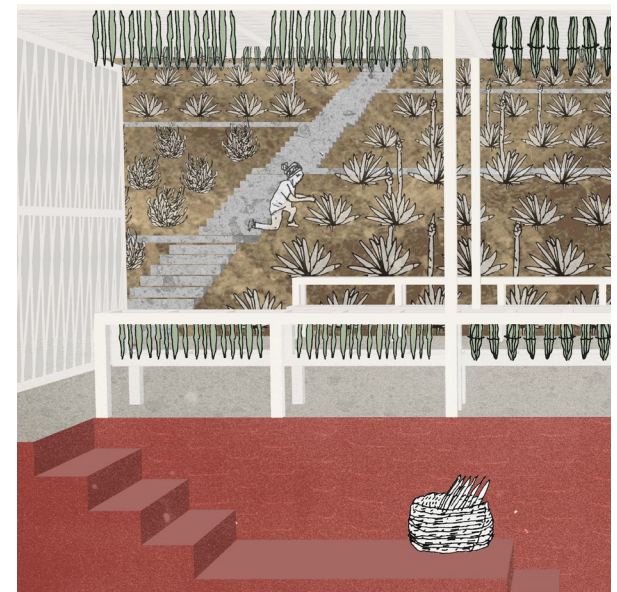
Advanced Studios

A number of Advanced Studios also address issues related to social equity and inclusion and the built environment, whether in terms of political and socio-economic marginalization, gender relations and indigeneity in the contemporary city, or broad ecological and environmental concerns. MArch I students take two advanced studios during their third year.

ARCH 1113a (Fall 2019)
Advanced Design Studio: Women's Museum for the 21st Century
Cazú Zegers and Kyle Dugdale

This studio confronted the challenge of a new paradigm emerging with the rise of what some herald as new culture: one that re-emphasizes an intimate, even sacred, relationship to land, and territory, in the Americas. This change of paradigm is necessarily accompanied by rebalancing the role and influence of feminine and indigenous communities in the cultural process.

Advanced Design Studio : Cross-Border
Students: Rhea Schmid, Maya Sorabjee
Faculty: Teddy Cruz, Fonna Forman and Marta Caldeira
Fall 2019

Core 3 Studio
Student: Naomi Ng
Faculty: Annie Barrett

PC.8 Social Equity and Inclusion

ARCH 1102a (Fall 2019)
Advanced Design Studio: Cross-Border Commons — Tijuana, Mexico
Teddy Cruz, Fonna Forman and Marta Caldeira

This studio intervened at the site of the US-Mexico border, recognizing that the environmental ravages of border wall securitization are not only problems of Mexico, but problems shared by the US as well. It sought to ask how, in our present geopolitical moment, the two border cities of San Diego and Tijuana might tackle this condition collaboratively, in order to protect their shared water and environmental resources.

ARCH 1111b (Spring 2020)
Advanced Design Studio: Urban Eco-Communities — Auroville, India
Anupama Kundoo and Sarosh Anklesaria

This studio investigated the problem of co-housing prototypes in high-density urban contexts, with a focus on redefining the character of private and shared spaces in community living situations. The context of Auroville — a South Indian model "city-in-the-making" founded in 1968 — is radical in its consideration of land as a non-ownable resource belonging, instead, to the "commons."

Spatial, Architectural, and Urban Intervention Courses

A variety of elective courses explore the potential of spatial, architectural, and urban interventions to affect a landscape of inclusivity and equity — in the face of historically and politically (and architecturally) determined patterns of marginalization, exclusion, and expulsion:

ARCH 2242a - LAW 20483
Fighting Slavery in the Built Environment"
Phillip Bernstein and Luis C.deBaca
YSoA/YLS Seminar

This seminar operationalizes recent statutory and regulatory changes in the United States, the United Kingdom, and Australia that extend enforcement of laws against forced and child labor into company's supply chains, and examines legacies of U.S. chattel slavery in the built environment, including in prisons. Drawing on law, design, construction, and sustainability practices, it seeks to incorporate an anti-slavery ethos into the architectural design process.

ARCH 3272b (Spring 2020)
Exhibitionism: Body Politics, Technology, and Design
Joel Sanders

This class treats the art museum as a Case Study building type through which to consider how institutions like art museums can enlist digital technologies and sustainable building practices to transform public buildings into immersive multi-sensory environments that meet the needs of "non-compliant bodies," people of different ages, genders, races, religions and abilities.

ARCH 4219a
Urban Research and Representation
Elihu Rubin

The seminar sets out to strengthen the designer's tool kit of social and historical methods. In bringing storytelling to the problem of site research, student projects engaged with under-researched aspects of the surrounding city and members of the local community, making legible — and therefore visible — otherwise unregistered histories and cultural narratives.

ARCH 3232a
Politics of Space: Cities, Institutions, Events
Mary McCleod

This seminar explores the relation between space, power, and politics in the urban environment from the Enlightenment period to the present. In contrast to some Marxist approaches that see architecture primarily as an ideological reflection of dominant economic forces, this seminar investigates how power is actually produced and embodied in the physical environment.

Non-Curricular Activities

Student Groups

The school supports a number of student-led initiatives and groups including the following. More information and a complete list of student groups at YSoA can be found in Condition 5.3.

The Visibility Project

The Visibility Project is an initiative led by a group of concerned students and recent alumni, whose goal is to analyze and illuminate the range of structural biases and prejudices endemic to schools of architecture and other related institutions, beginning with our own.

NOMAS

The Yale chapter of the Yale National Organization of Minority Architecture Students (Yale NOMAS) strives to foster greater inclusion, unity and representation of a plurality of voices at the YSoA.

Equality in Design (EiD)

Equality in Design is a coalition of committed students from the Yale School of Architecture seeking equity within the architectural profession and the built environment.

YSoA East

YSoA East is a student group at the Yale School of Architecture dedicated to fostering critical discourse and knowledge of Eastern architecture. The aim of the group is to consolidate and drive interest for eastern architectural and urbanist trends.

PC.8 Social Equity and Inclusion

YSoA Christian Fellowship

The Christian Fellowship is a community and discussion group of Yale architecture students that meets weekly to explore the overlap of ideas relating to the Christian tradition, our work, and architecture.

OutLines

OutLines is a social and advocacy group for lesbian, gay, bisexual, transgender, queer, and allied students in Rudolph Hall.

The Architecture Lobby

The Architecture Lobby is an organization of architectural workers advocating for the value of architecture in the general public and for architectural work within the discipline.

School Resources

Assistant Dean Tanial Lowe is YSoA's Harassment Resource Coordinator. Designees have been identified by Yale College and the Dean of each school as community members with the responsibility to receive student concerns and offer advice and guidance related to diversity and inclusion, discrimination and harassment, and equal opportunity. Deans' Designees may also help facilitate informal resolution

The Assistant Dean for Diversity, Equity and Inclusion (DEI), Bimal Mendis, coordinates and leads efforts within the School of Architecture to shape a more diverse, equitable and inclusive culture, environment and pedagogy. This new position was created in Spring 2021, in acknowledgement of our need to to consider issues related to DEI both creatively and proactively, and to position the School as a leading advocate for change. By defining priorities, directing initiatives, fostering dialogue, implementing policies and advocating for students and faculty alike, the position will create a holistic framework for action.

Assistant Dean of Academic Affairs Eeva-Liisa Pelkonin coordinates academic advising at all

levels (peer to peer, faculty-student); evaluates and processes various course-related requests (e.g. adding and dropping classes, independent study proposals); coordinates design reviews with particular attention to diversity of the invitees; advises students on how to meet their individual academic goals on an individual basis; and attends to students' overall wellbeing on both individual and collective levels.

University Wide Resources

Belonging at Yale

Belonging at Yale supports our community's ongoing and long-term efforts to increase diversity, ensure equity, and enhance a sense of inclusion and belonging for everyone. As it looks to the future, Belonging at Yale draws on the work of generations of students, faculty, alumni, and staff who have striven and sacrificed to dismantle systemic deficiencies and let in greater light and truth.

Office of Institutional Equity and Access

The Office of Institutional Equity and Access oversees the University's affirmative action programs and monitors compliance with policies and laws which ensure equal opportunity for students, employees and applicants for employment or admission. Any student, employee, or applicant for programs or employment at Yale who is concerned about affirmative action, equal opportunity, sexual harassment, racial harassment, or fairness in admissions or employment at Yale, either in a general sense or with respect to his or her own situation, is encouraged to contact the Office of Institutional Equity and Access. All inquiries are treated in a confidential manner.

Office of Diversity & Inclusion

The Yale Office of Diversity & Inclusion (ODI) collaborates with departments and individuals across the Yale campus to promote a respectful, accessible and inclusive community for all Yale employees. The core goals of the ODI include the transformation of University systems:

- Strengthen diversity recruitment efforts
- Development of internal talent
- Creation and enhancement of mentoring programs
- Cultivation of Yale Affinity Groups
- Offer diversity education opportunities
- Develop a system of metrics to track and assess diversity progress
- Develop strategies to communicate and publicize Yale's diversity milestones

YSoA

EiD 2019
November 13,
6pm, 4th Floor Pit

Debate:

Is providing architectural services to under-served communities more likely to benefit local residents or lead to gentrification and displacement?

Moderated by Elisa Iturbe

Equality in Design (EiD) Event
Fall 2019

PC.8 Social Equity and Inclusion

The ODI provides a range of information, consultation and educational support to the Yale community on issues related to workforce diversity, inclusion, and mutual respect. The office works closely and collaboratively with a number of Campus Diversity Partners, including the Graduate School of Arts and Sciences, the University's various professional schools and programs, and a host of Cultural Centers across the Yale campus. These cultural centers foster a sense of cultural identity and educate people in the larger community. They also act as optional social centers and community bases for students of a variety of ethnic and cultural backgrounds. Yale is home to:

 The Afro-American Cultural Center
 The Asian-American Cultural Center
 La Casa Cultural: Latino Cultural Center
 The Joseph Slifka Center for Jewish Life
 The Native American Cultural Center

Yale University maintains an Equal Opportunity Statement that is found in all University Bulletins and online at (http://www.yale.edu/equalopportunity/policies/). Furthermore, the Office for Equal Opportunity Programs updates the University Affirmative Action Plan annually in the fall and is available for review in the Office for Equal Opportunity Programs. Affirmative Action Deputies are appointed in each of the professional schools to assist faculty search committees in their school with the recruitment of women and members of minority groups. The School of Architecture's Affirmative Action Deputy is Assistant Dean Tanial Lowe.

Poorvu Center for Teaching and Learning

The Yale Poorvu Center for Teaching and Learning provides all members of the University community with extensive guidance on best practices for establishing and maintaining inclusive environments in the classroom. These include recommendations for modeling inclusive language in class discussions, strategies for establishing personal connections between faculty and students, and methods for encouraging in-class collaboration, as well as guidance on promoting awareness of socioeconomic diversity and implicit biases and strategies for developing diversity statements and inclusive teaching strategies. The faculty and administration of the Yale School of Architecture work closely with the Poorvu Center to ensure that the School remains a respectful and inclusive environment, in which all students feel supported intellectually and academically, and are extended a sense of belonging in the classroom regardless of identity, learning preferences, or education.

Office of LGBTQ Resources

The Office of LGBTQ Resources works to create a visible LGBTQ community that includes staff, faculty and students from all of Yale's schools and from a wide variety of life experiences. The office actively networks with other entities at the University to advocate in support of tolerance and diversity.
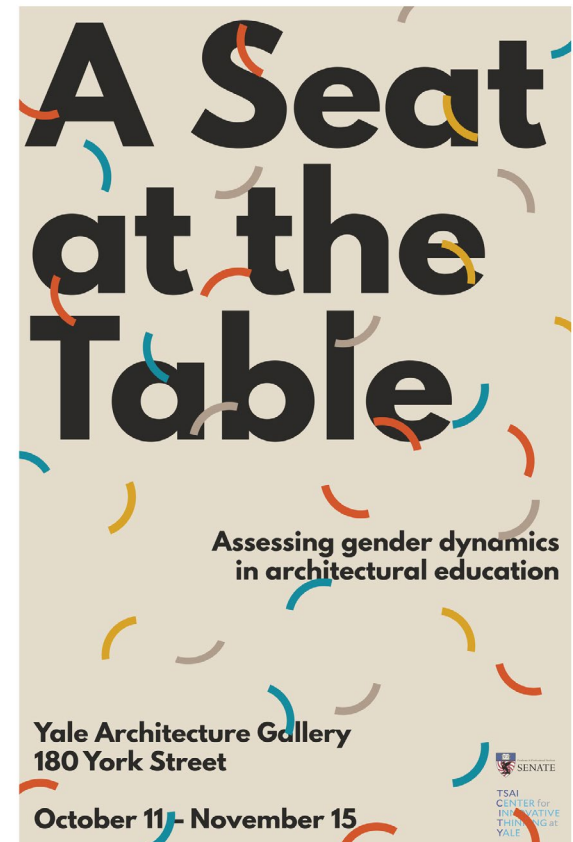
Yale Women's Center

The Yale Women's Center, while open to all genders, is primarily a space for the women of Yale. Its mission is to improve the lives of all women, especially at Yale and in New Haven. The center hosts small events, such as feminist discussion groups and seminar-style "Femininiteas"; as well as larger, annual events: the Amy Rossborough Memorial Lecture and Take Back The Night.

Minority Student Coordinators

Each academic year, Minority Student Coordinators are appointed in the Graduate School and in each professional school, including the School of Architecture, to focus on minority student education and recruitment.

Office for Graduate Student Development and Diversity

The Office for Graduate Student Development and Diversity (OGSDD) is committed to building a supportive community in which graduate students from underrepresented backgrounds are empowered in their intellectual pursuits and professional goals. This office provides both thematic programming and individual advising for students across disciplines.

A Seat at the Table

Assessing gender dynamics in architectural education

**Yale Architecture Gallery
180 York Street**

October 11 – November 15

Equality in Design (EiD) Event
July 2018

PC.8 Social Equity and Inclusion

Student Accessibility Services

The primary mission of Student Accessibility Services (SAS) is to facilitate individual accommodations for all students with disabilities throughout the entire University, and by so doing, work to remove physical and attitudinal barriers, which may prevent their full participation in the University community.

Office for International Students and Scholars

International students at YSoA are part of a community of over 6,000 international students and scholars working across the University. This community is supported by the Yale Office for International Students and Scholars (OISS). OISS provides resources and programming for the international students, scholars, and family members of the Yale community.

Graduate and Professional Student Senate

The mission of the student senate is to foster interaction among students through community service and engagement, social gatherings, and academic and professional events, as well as to support official and unofficial student groups.

Chaplain's Office

The Yale Chaplain's office strives to create an environment that feels welcoming to all people, whether you are part of a particular religious/spiritual community or not.

The Good Life Center

Born out of a growing awareness and enthusiasm for wellness on campus, the Good Life Center is a cultivated space to inspire, teach, and practice living the good life. All Yale students are extended a warm welcome to explore the spaces and attend events.

A complete list of Yale University Resources can be found here.

Self-Assessment:

Direct Assessment

Student understanding of issues related to inclusion and accessibility in the built environment is assessed primarily by individual instructors and guest consultants in the context of regular discussions and reviews, but also in the context of the Design Committee's annual review of student portfolios. In evaluating every student in terms of design and technical competence, the committee is able to consider whether proposed changes to the curriculum have been successfully implemented, and how these changes might be reflected in student work.

Indirect Assessment

The School continually assesses its efforts to create an inclusive, welcoming environment for all community members, and evaluates its methods for teaching content and skills related to making the built environment more universally accessible. The 2020 Climate and Culture survey has bolstered YSoA's increased focus on the foundational experiences underlying community members' engagement in architectural education at Yale. Key topics addressed in the survey included community and belonging, diversity, equity and inclusion, and well-being at the School.

While the results suggest that many YSoA community members feel well-supported and included—with 87% agreeing their interactions with colleagues and peers at YSoA are positive, and over 75% of participants feel YSoA is working towards fairness, justice, and equity in architecture education, representation, instances of microaggressions, and the issue of class were raised in relationship to DEI considerations. The school is in the midst of working through the results with the faculty and administrative staff, and will be reporting over the summer and into the fall about concrete steps that will come from the survey. There will be continued progress on DEI efforts in curriculum, faculty hiring, and admissions next year, much of which has already been put into place. Ultimately, the aim is to create an equitable and diverse community where all members feel welcome.

In addition to broad assessments like the culture survey, Dean Berke has created many forums and exchanges for students to express concerns and contribute ideas to the school. REgular Town halls are described elsewhere in this report. One additional example is the open zoom sessions made available to any first year student at the end of the fall 2020 term and into early January. These sessions did not have set agendas and provided an opportunity for small groups of students to interact with the dean in a safe and casual setting. Associate Dean Bald also meets regularly with student groups, including NOMAS and Equality in Design, to discuss the School's ongoing inclusivity efforts. More information on the range of formal and informal channels used to collect feedback can be found in 5.2.4.

Changes Since last Accreditation

Based on these assessment mechanisms, changes related to issues of social equity and inclusion, and initiated since the last accreditation, are described above, particularly in the excerpts from the Dean's July 2020 letter.

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Appendix

Syllabi

3.2 Student Criteria

SC.1 Health, Safety, and Welfare in the Built Environment

How the program ensures that students understand the impact of the built environment on human health, safety, and welfare at multiple scales, from buildings to cities.

The Master of Architecture Professional Degree Program curriculum at YSoA is coordinated such that required courses across the first two years of the program are highly complementary, in terms of both content and sequence. Issues related to health, safety, and welfare are addressed at a range of scales, and in a number of registers, in design studios, technology courses, even history and theory surveys.

Health, safety and welfare are initially introduced in depth during the Building Project (2016b) in which students explore the problem of dwelling and materiality in the context of construction technology and real-world building practices. 2016b runs parallel to second-semester Core 2: Design Studio (1012b) in which similar questions are framed relative to abstract and/or existential questions pertaining to privacy and publicity, light and air, domesticity and space. Work in the field is supported by coursework on the analysis and design of building structural systems in Structures I and II (2011a and 2012b) and through lectures on professionalism and Health, Safety, and Welfare in Professional Practice (2031).

Similarly, the third-semester Core 3: Design Studio (1021a), which involves the design of a medium-sized public building, is taken concurrently with Environmental Design (2021a), thus laying the groundwork Systems Integration (2022b) in semester four.

Introduction to Urban Design (4011a), likewise taken in the third semester, surveys the history, analysis, and design of the urban built environment, exploring issues related to sustainability and urban ecology, which are then addressed in the Core 4: Design Studio (1022b) the following term.

Courses and Materials in Evidence:

> 1012b, Core 2: Design Studio
> 2011a, Structures I
> 2012b, Structures II
> 2016b, Building Project
> 1021a, Core 3: Design Studio
> 2021a, Environmental Design
> 4011a, Introduction to Urban Design
> 1022b, Core 4: Design Studio

Self-Assessment

Direct Assessment
The school evaluates the teaching of Health, Safety and Welfare at several levels. First, individual instructors evaluate each student's work to ensure understanding and competency, particularly in the courses mentioned above. Written evaluations are provided to each student during the Core studio sequence and warning letters written to students falling behind. Evaluations and warning letters are copied to the registrar's office so that the administration can ensure that additional instruction and aid can be provided and can track student performance broadly.

Second, the Design Committee reviews a comprehensive portfolio from every student moving into their final year of the program. This portfolio includes all of the work the student completed over their first 2 years of the curriculum, allowing the committee to annually evaluate whether the curriculum is successfully implementing these skills and whether the students collectively are learning them.

Third, the curriculum committee, chaired by the Associate Dean for Curriculum and Admissions, regularly assesses the success of the curricular structure and content in conveying these competencies. In 2017, the Associate Dean and curriculum committee initiated a broad-based assessment and revision of the YSoA curriculum. More on this process can be found in 5.3.

Indirect Assessment
Outside organizations, client groups, and other consultants involved with specific courses provide a real-world check on strategies for innovation developed in an academic setting, while introducing a range of innovative practices and techniques developed outside the School. These include local clients for the Building Project, community organizations involved in Core 3, and consultant teams engaged with students for Systems Integration, among others.

Modifications to the curriculum since the last review include the following:

The Building Project (2016b), which had previously been taught as part of the Core 2: Design Studio (1012b), was made its own course and moved from the Design and Visualization study area to Technology and Practice, in part to more thoroughly emphasize the development of building systems related to health, safety, and wellness.

The overall course load in the core curriculum was reduced in order to give students more opportunities to engage with problems related to building technology, and its impact on human health and wellness, in their elective coursework.

The scale of projects given in the Core 3: Design Studio (1021a) were reduced, in order to allow greater focus on egress, lighting, and other issues pertaining to health, safety, and wellness.

In the spring of 2020, in response to the global Covid 19 pandemic, YSoA moved all of its courses, including design studios, online, shifting to a fully remote model of education. The Building Project (2016b) schedule had to be adjusted, construction of the Building Project house postponed, and a new course, (2239a) Building Project III, on technological building systems integration, based in case study analysis, was added. In 2021, the Building Project house was again constructed by students working on an adapted schedule that was shifted from early to late summer.

SC.2 Professional Practice

How the program ensures that students understand professional ethics, the regulatory requirements, the fundamental business processes relevant to architecture practice in the United States, and the forces influencing change in these subjects.

The Master of Architecture Professional Degree program at YSoA fosters an understanding among students of the regulatory, professional, and ethical frameworks underpinning architectural practice, first by modeling multiple modes of practice in Core Studios and then building knowledge around that framework through additional required courses, including Systems Integration in the second year and Architectural Practice and Management in the third. Students design and test solutions to real-world problems during the Building Project (2016b), and the Core 3 and Core 4 Design Studios (1021a and 1022b). Each of these courses addresses a problem based on the needs of local communities and requires active engagement on the part of students with a variety of local clients, non-profit organizations, and other stakeholders. Representatives from these groups often come to YSoA to present their work, are involved in formulating and planning studio project briefs, and play the role of client throughout the development of student designs. In some cases, regulatory agencies may even be engaged as clients, as in the recent Core 3: Design Studio (ARCH 1021a) project for an immigration center.

The role of consultants and other design professionals in the design development process is emphasized throughout the MArch curriculum, and is a primary focus of both Systems Integration (2022b) and Environmental Design (2021a). In the Core 2: Design Studio (1012b), students are introduced to the regulatory framework of building codes and zoning ordinances governing the design and construction of residential architecture. In the Core 4: Design Studio (1022b), students often work with consultants on problems related to water management and other infrastructural issues, while Architectural Practice and Management (2031a) addresses the construction of project teams, the roles and responsibilities of consultants vis-à-vis various project delivery models, and the nature of

contractual relationships between consultants and architects. The important role played by structural engineering consultants, in particular, and the division of labor among members of consultant teams on architectural projects more broadly, are explored in Structures I and II (2011a and 2012b).

In Architectural Practice and Management (2031a), students explore the evolution of professionalism in architecture, the idea of architectural ethics, and how the statutory and ethical frameworks giving shape to the profession are described and enforced. The course examines a variety of business processes and project delivery models, presenting students with a broad overview of approaches to worker compensation, contract negotiation, contracts, schedules, and risk management.

Courses and Materials in Evidence:

2031a, Architectural Practice and Management
1012b, Core 2: Design Studio
1021a, Core 3: Design Studio
1022b, Core 4: Design Studio
2016b, Building Project
2021a, Environmental Design
2022b, Systems Integration
2011a, Structures I
2012b, Structures II

Self-Assessment

Direct Assessment
As is the case with other core competencies, the school evaluates the teaching of Professional Practice at several levels. First, individual instructors evaluate each student's work and provide written evaluations during the Core studio sequence, as well as warning letters written to students falling behind. Evaluations and warning letters are copied to the registrar's office so that the administration can ensure that additional instruction and aid can be provided and can track student performance broadly.

Second, the Design Committee reviews a comprehensive portfolio from every student moving into their final year of the program. This portfolio includes all of the work the student completed over their first 2 years of the curriculum, allowing the committee to annually

evaluate whether the curriculum is successfully implementing these skills, and whether the students collectively are learning them.

Third, the curriculum committee, chaired by the Associate Dean for Curriculum and Admissions, regularly assesses the success of the curricular structure and content in conveying these competencies. In 2017, the Associate Dean and curriculum committee initiated a broad-based assessment and revision of the YSoA curriculum. More on this process can be found in 5.3.

Indirect Assessment
Many of the faculty practice architecture (81% of design faculty are licensed) and the faculty and administration maintain many relationships with practitioners who provide valuable feedback on the professional preparedness of students and graduates. At the annual career fair hosted by the School of Architecture's Career Services program, representatives from a host of professional offices visit the School, meet with students, and interview qualified candidates for employment after graduation. This gives graduating students intensive exposure to the interview and hiring process, but also allows faculty to solicit constructive feedback from outside practitioners about the state of the curriculum, the relative preparedness of our students for professional practice, and the state of the program, more generally.

Modifications to the curriculum since the last review include the following:

The Core 3: Design Studio (1021a) curriculum was revised to emphasize smaller-scale, "real-world" projects, set in nearby communities with identifiable — and actively engaged — stakeholders

The scope of Architectural Practice and Management (2031a) was expanded to include a sharper, more broadly defined critique of the profession, whereby students engage in a dialectical exploration of architecture's fundamental premises, from the origins of architecture's identity as an area of professional expertise, to the vicissitudes of contracts and compensation models.

SC.3 Regulatory Context

How the program ensures that students understand the fundamental principles of life safety, land use, and current laws and regulations that apply to buildings and sites in the United States, and the evaluative process architects use to comply with those laws and regulations as part of a project.

The regulatory context of architectural practice, including laws and regulations governing land use and life safety, is explored throughout the core curriculum, beginning in the first-year Building Project (2016b), where students learn the process of applying for variances in residential construction, create drawing sets for approval by municipal permitting authorities, and learn to evaluate their work relative to building codes and local zoning ordinances. Courses in Structures (2011a and 2012b) provide general knowledge of structural system design and analysis, which is then deployed in the detailing and construction of a multi-family house during the summer following the first year.

Drawing on their experience in Introduction to Urban Design (4011a), students in the Core 4: Design Studio (ARCH 1022b) develop a general knowledge of urban planning codes and ordinances by way of projects requiring the exploration and articulation of floor area ratios, setbacks and building envelopes, and water/runoff management.

Architectural Practice and Management (2031a) includes a sequence on regulation in the built environment from the perspective of licensure, interrogating the origins and fundamental premises of building codes, how these have evolved, and why regulators impose constraints on the building process.

Courses and Materials in Evidence:

2016b, Building Project
2011a, Structures I
2012b, Structures II
4011a, Introduction to Urban Design
1021b, Core 4: Design Studio
2031a, Architectural Practice and Management

Self-Assessment

Direct Assessment
The school evaluates the teaching of architecture's regulatory context at several levels. First, individual instructors evaluate each student's work and provide written evaluations during the Core studio sequence and warning letters written to students falling behind. Evaluations and warning letters are copied to the registrar's office so that the administration can ensure that additional instruction and aid can be provided and can track student performance broadly.

Second, the Design Committee reviews a comprehensive portfolio from every student moving into their final year of the program. This portfolio includes all of the work the student completed over their first 2 years of the curriculum allowing the committee to annually evaluate whether the curriculum is successfully implementing these skills and whether the students collectively are learning them.

Third, the curriculum committee, chaired by the Associate Dean for Curriculum and Admissions, regularly assesses the success of the curricular structure and content in conveying these competencies. In 2017, the Associate Dean and curriculum committee initiated a broad-based assessment and revision of the YSoA curriculum. More on this process can be found in 5.3.

Indirect Assessment
Individuals and organizations external to YSoA provide valuable feedback on the school 's teaching of core competencies. These include city agencies involved in Core 3 studio and multiple municipal and regional entities involved in Core 4. Faculty work closely with these organizations in developing the studio brief, and organization leaders provide informal feedback on course structure and student work.

Modifications to the curriculum since the last review include the following:

- The Building Project (2016b), whose split from the Core 2: Design Studio (1012b) has been described above, was reformed to provide students more time to develop and produce a permitting drawing set.

- By shifting focus away from abstract typology and emphasizing work with real-world client groups on community-based projects, students in the Core 3: Design Studio (1021a) have been brought into closer, more direct contact with local regulators and government officials engaged in the development and construction of architectural projects.
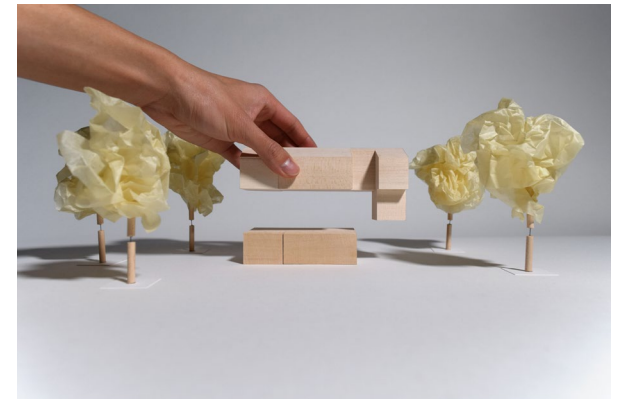
Building Project 2019
Team D

SC.4 Technical Knowledge

How the program ensures that students understand the established and emerging systems, technologies, and assemblies of building construction, and the methods and criteria architects use to assess those technologies against the design, economics, and performance objectives of projects.

The development of technical knowledge related to building systems and construction technology is a primary focus of the MArch program at YSoA, beginning in Structures I (2011a) and continuing through Structures II (2012b) and the first-year Building Project (2016b) which, since 2019, has been re-conceived as a design practicum, as opposed to a specific project in the context of a standalone design studio. This allows students in the course to focus more intently on a variety of innovative building practices and technologies, which vary from year to year depending on the specificities and challenges of a given year's house.

Recent projects have included experiments in mass-timber construction and off-site prefabrication, as well as a more thoroughly integrative approach to project design and management facilitated by a move to Revit, a BIM-based platform. Indeed, training and instruction in BIM is now a major component of both Visualization and Computation (1019c), offered in parallel to the summer Building Project II (2017c), and Systems Integration (2022b).

Environmental Design (2021a) explores the fundamental scientific principles underpinning the environmental performance of buildings, as well as the various applied technologies most frequently employed to affect and control such performance. For advanced students, Advanced Building Envelopes (2018a), required for anyone who places out of Environmental Design, provides students with an overview of emerging technologies and theories in the areas of environmental and energy systems.

Finally, Modern Architecture and Society (3011a), charts the historical evolution of building tectonics and their relationship to advances in building technology throughout the modern era.

Courses and Materials in Evidence:

2011a, Structures I
2012b, Structures II
2016a, Building Project
2017b, Building Project II
1019c, Visualization and Computation
2021a, Environmental Design
2018a, Advanced Building Envelopes
2022b, Systems Integration
3011a, Modern Architecture and Society

Self-Assessment

Direct Assessment
As is the case with other core competencies, the school evaluates the teaching of Technical Knowledge at several levels. First, individual instructors evaluate each student's work and provide written evaluations during the Core studio sequence, as well as warning letters written to students falling behind. Evaluations and warning letters are copied to the registrar's office so that the administration can ensure that additional instruction and aid can be provided and can track student performance broadly.

Second, the Design Committee reviews a comprehensive portfolio from every student moving into their final year of the program. This portfolio includes all of the work the student completed over their first 2 years of the curriculum allowing the committee to annually evaluate whether the curriculum is successfully implementing these skills and whether the students collectively are learning them.

Third, the curriculum committee, chaired by the Associate Dean for Curriculum and Admissions, regularly assesses the success of the curricular structure and content in conveying these competencies. In 2017, the Associate Dean and curriculum committee initiated a broad-based assessment and revision of the YSoA curriculum. More on this process can be found in 5.3

Indirect Assessment
As noted with other Student Criteria, the faculty rely on their research and their roles as practitioners to frame their evaluation of student work and keep up to date on innovations in technical practice. External consultants, designers, regulators and organizations all provide feedback on the school's curriculum related to core competencies.

Modifications to the curriculum since the last review include:

- The Environmental Design (2021a) curriculum has undergone a major overhaul since being taken over by Professor Anna Dyson in 2018, and has been supplemented with a course on Advanced Building Envelopes (2018a), now required of all students who, based on undergraduate experience, waive out of 2021a.

- A new summer course in computation was recently added to the curriculum, which now includes a robust and fully integrated sequence of classes exploring the application of BIM within the design and construction processes: Building Project (2016b), Visualization and Computation (1019c), Building Project II (2017c), Systems Integration (2022b)

- General technology and software-related instruction is available to students by way of a growing library of online videos and tutorials.

- In response to the Covid-19 pandemic, students, faculty, and School administrators relied heavily on a variety of tech-intensive platforms to facilitate this unprecedented shift to remote learning, and to accommodate students residing all over the globe. These lessons are being brought to bear on the School's reopening plans for Fall 2021, and have already begun to impact the way the YSoA community approaches collaboration and communication throughout the curriculum.

SC.5 Design Synthesis

How the program ensures that students develop the ability to make design decisions within architectural projects while demonstrating synthesis of user requirements, regulatory requirements, site conditions, and accessible design, and consideration of the measurable environmental impacts of their design decisions.

Throughout the studio curriculum at YSoA, students engage in the assessment, analysis, and development of architectural programs and projects, learning to evaluate client requirements relative to site conditions, local building regulations, and community values. As part of the second-year, integrative studio sequence, students in the Core 3: Design Studio (1021a) and Systems Integration (2022b) explore the design and articulation of a programmatically and technologically complex public building, emphasizing the socio-cultural and environmental contexts (and impacts) of their work in collaboration with local social-service organizations. In this way, program, site, client, and community are shown to find synthesis in the architectural project. The focus of these two courses is the exploration of methods used to incorporate and coordinate the contextual relationships and technological systems that ultimately transform design ideas into built form. Specific, community-oriented programs are inflected for each individual project, as student work is informed by specific research on users, service providers, and site context. Projects are tailored to community needs, and evolve relative to existing community resources.

In 2018, the Core 3 studio developed "Community Justice Centers" designed to accommodate the processes of Restorative Justice in three Connecticut towns neighboring Yale and New Haven. Restorative Justice brings together those who have harmed, their victims, and affected community members into voluntary processes that repair harms. The program was formed in collaboration with Connecticut based nonprofit Impact Justice.

In Fall 2019, the studio program involved the design of a new Center for Immigrant Services for three Connecticut cities, emphasizing a variety of needs and program resources specific to recent immigrant communities: legal clinics and counseling; language and literacy classes; vocational instruction and job placement assistance; citizenship courses; and economic advising. Students worked with the Yale Law School Immigrant Rights Clinic New Haven Legal Assistance; Building One Community (https://building1community.org/StamfordCT); Institute for Refugees and Immigrants (https://cirict.org/Hartford); and Junta for Progressive Action (https://www.juntainc.org/en/New Haven).

In Fall 2020, Core 3 studio focused on the design of a facility for an educational, mentor-based, diversionary art program for New Haven youth. It looked at New Haven's NXTHVN, "a new national arts model that empowers emerging artists and curators of color through education and access," (www.nxthvn.com) as architectural precedent and model. Over the course of the semester, students heard from and collaborated with NXTHVN, as well as with artists and diversionary practitioners.

The Core 3 program requires a high degree of sensitivity to the simultaneous public-ness of community service organizations, and the concomitant need for privacy on the part of those seeking such services. In this light, the development of a highly articulate approach to site, sequence, views, and social context is critical to course methodology.

Courses and Materials in Evidence:

1021a, Core 3: Design Studio

Core 3 Studio
Student: Araceli Lopez
Faculty: Peter de Bretteville

SC.5 Design Synthesis

Self-Assessment

Direct Assessment
The school evaluates the teaching of Design Synthesis at several levels. As with every Core studio, the Core 3 coordinator and critics collectively review the presented work of every student, after both midterm and final reviews. With the close involvement of the Dean, the coordinator and critics evaluate the success of that year's brief, program, and stakeholder involvement against previous studios and the goals of the studio. This assessment directly informs the next year's brief which deals with new topics and engages different organizations and stakeholders.

Work from Core 3 studio plays an important role in the Design Committee's evaluation of student portfolios, receiving particularly close attention and evaluation as the principle example of design synthesis. This allows the committee to assess how successfully Core 3 is performing as the first part of the integrative studio sequence.

Finally, the curriculum committee, chaired by the Associate Dean for Curriculum and Admissions, regularly assesses the success of the curricular structure and content in conveying these competencies. More on the recent curriculum re-assessment process can be found in 5.3.

Indirect Assessment
The studio coordinator and instructors, in direct consultation with the Dean, collaborate with multiple organizations and agencies (see above) to develop the studio brief. Leaders and representatives of these organizations then provide valuable feedback on the theme and structure of the studio.

Modifications to the curriculum since the last review include the following:

- Students in the Core 3: Design Studio (1021a) now collaborate with a rotating group of local organizations engaged in community-based, social-justice work in New Haven and other Connecticut cities. Working together with these stakeholders promotes an understanding among students of the architectural project's synthetic relationship to site, context, and community. More information on the multi-year programming of Core 3 can be found in PC.8.

Core 3 Studio
Student: Scott Simpson
Faculty: Annie Barrett
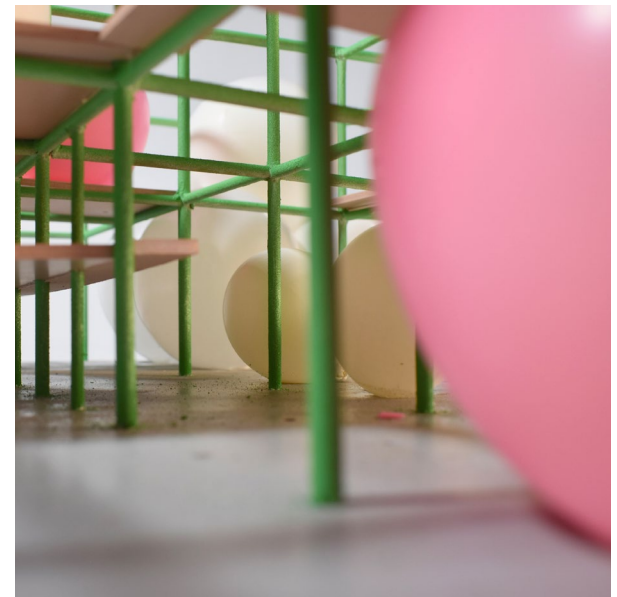
Core 3 Studio
Student: Rachel Mulder
Faculty: Emily Abruzzo

SC.6 Building Integration

How the program ensures that students develop the ability to make design decisions within architectural projects while demonstrating integration of building envelope systems and assemblies, structural systems, environmental control systems, life safety systems, and the measurable outcomes of building performance.

The integration of building systems and assemblies within architectural projects is addressed throughout the Core curriculum, but is of primary concern in Systems Integration (2022b), taken in the fourth semester. Groups of students work closely with "teams" of consultants, comprising a diverse group of design faculty and outside professionals. Working on the articulation of designs developed over the course of the previous semester's Core 3: Design Studio (1021a), students are encouraged to think and work collaboratively, to embrace the inherent complexity of project development and delivery, in terms of both building systems integration and design team composition.

In doing so, students develop ways of working which mirror the processes of project development and management in professional practice. Students learn to identify and integrate technologies appropriate to the implementation of a given architectural scheme. They propose and develop, as fully as possible, building systems related to structure, envelope, climate, and light, the integration of mechanical, environmental and life-safety system design with that of the structural system and building envelope being fundamental to the premise of the course. The investigation and development of these systems is based on their respective technological roles in the building, considered synthetically, and on their suitability relative to broader issues related to architectural and designerly intent. The development of structural form and detail, the articulation of construction and construction methods, the compliance with life safety measures and the control of sound, light, and air are all approached systematically and technically, as intrinsic components of the design process.

Student teams are matched with teams of consultants, composed of an architect, a structural engineer, and a mechanical engineer. Students meet with this assigned team on a weekly basis to review progress and to plot the course of group work. These critics give assignments intended to provide a structure within which to pace the development of each project. Each team begins with a climatological analysis of their respective projects and their proposed sites, calculating probable heating and cooling loads, before proposing and eventually designing a set of appropriate building systems. Active and passive solar control devices, specialty glass products, and various integrated technologies are explored as means of developing an energy efficient envelope.

Architects rely heavily on the expertise of those trained in such fields as structural, mechanical, or electrical engineering to propose plausible systems of structure, climate, and infrastructure. But ultimately it is the architect who must coordinate, adjust, modify, advance or abandon propositions in the interest of resolving the architectural problem into an efficient, well performing, and intelligible whole. Students in Systems Integration (2022b) learn to communicate this synthesis in the form of documents that represent a thorough and comprehensive understanding of every surface, system, and their interrelatedness.

Courses and Materials in Evidence:

2022b, Systems Integration

Self-Assessment

Direct Assessment
The school evaluates the teaching of building integration at several levels. The lead course instructor, together with their co-instructors and consultants review the presented work of every student, after the final review. In particular, the wide array of consultants involved in teaching the course provide a broad survey of student knowledge and competency. This allows the instructor, together with the Associate Dean for Curriculum and Admissions, to evaluate the success of the structure and content of the course and also the preparation provided by

earlier courses. For instance, training in BIM was introduced earlier in the curricular sequence based on an assessment of Systems Integration as described below.

Work from Systems Integration is reviewed during the Design Committee's evaluation of student portfolios, and building integration is part of the curriculum committee's regular assessment of the success of the curricular structure and content. More on the recent curriculum re-assessment process can be found in 5.3.

Indirect Assessment
The studio coordinator and consultant-instructors, as part of the direct evaluation of student work, also evaluate the theme and structure of the course. At a more distant level, through informal interaction and formal platforms such as the 2021 alumni survey and career services programs, the faculty and administration collect feedback from practitioners about the relative preparedness of our students and the state of the curriculum, more generally.

Modifications to the curriculum since the last review include the following:

- Where training in BIM had previously been part of the Systems Integration (2022b) curriculum, instruction in Revit was shifted to the previous summer's Visualization and Computation (1019c), allowing students to develop these skills earlier in the Core sequence of courses and, therefore, to concentrate more closely on course content in ARCH 2022b.
- In light of changes and advancements in environmental systems technology, and the growing body of knowledge regarding architecture's relationship to — and mitigation of — trends in climate change and global warming, course faculty for Systems Integration (2022b) have shifted focus to emphasize the design of building envelopes. Student projects have likewise been able to develop more fully, since BIM/Revit has been addressed earlier in the studio sequence. This has opened up space in the course for a renewed focus on aspects of building systems integration not previously emphasized, including a new unit on Electrical Lighting.

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Condition 4:

Curricular Framework

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4.2 Professional Degrees and Curriculum

> Professional Studies

> General Studies

> Optional Studies

4.3 Evaluation of Preparatory Education

> Prior Academic Coursework and Admissions Process

> Course Waivers, Transfer Credits, Time-to-Degree

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4.1 Institutional Accreditation

Every 10 years Yale University undertakes a comprehensive and wide-ranging self-study to inform its re-accreditation by the New England Commission of Higher Education, or NECHE (formerly the Commission on Institutions of Higher Education of the New England Association of Schools and Colleges, NEASC). The most recent self-study cycle culminated in an evaluation by a visiting team of faculty and administrators from peer institutions who came to campus in November 2019. Related information, including a copy of the self-study, a statement from Yale University President, Peter Salovey, and rosters of the accreditation team and all related university committees, can be found on the 2019 Yale NECHE Reaccreditation site:

https://accreditation.yale.edu/2019-reaccreditation

NECHE
New England Commission
of Higher Education

March 26, 2020

Dr. Peter Salovey
President
Yale University
105 Wall Street, P.O. Box 208229
New Haven, CT 06520-8229

Dear President Salovey:

I am pleased to inform you that at its meeting on March 6, 2020, the New England Commission of Higher Education took the following action with respect to Yale University:

that Yale University be continued in accreditation;

that the University submit an interim (fifth-year) report for consideration in Fall 2024;

that, in addition to the information included in all interim reports, the University give emphasis to its success in:

1) updating and evaluating the effectiveness of its Capital Planning Framework;

2) evaluating the effectiveness of the reorganization of the decanal structure of its Faculty of Arts and Sciences;

3) assessing student learning outcomes and using the results to make improvements with emphasis on assuring that expected learning outcomes are consistent with Yale's aspiration to be the research university "most committed to teaching;"

4) achieving its goals for faculty diversity;

that the next comprehensive evaluation be scheduled for Fall 2029.

The Commission gives the following reasons for its action.

3 Burlington Woods Drive, Suite 100, Burlington, MA 01803-4514
Toll Free: 855-886-3272 l Tel: 781-425-7785 l Fax: 781-425-1001
www.neche.org

4.2 Professional Degree and Curriculum

The Master of Architecture Professional Degree Program curriculum provides a disciplined approach to the fundamentals of architecture in a setting that ensures the flexibility and latitude necessary for students to develop their individual talents and skills. This program, leading to a degree in the Master of Architecture Professional Degree Program (MArch), is for students holding undergraduate liberal arts degrees, such as a BA or BS, who seek their first professional architectural degree. It typically requires three years of full-time residency to complete the degree requirements.

Entering students, with a sound liberal arts background assumed, are required to follow a curriculum in which their creative powers are stimulated through a sequence of problem-solving exercises involving basic and architectural design, building technology, drawing, and an introduction to design methodology, as well as courses in architectural theory and the planning, design, and development of the urban landscape. Architectural design problems in the first year start in the fall term at limited scale and by the spring term progress to an investigation of dwelling. During the spring term of first year and until mid-June, a community building project is undertaken, which provides an opportunity for the design of an affordable house, as well as the experience of carrying that design through the construction process.

During the second year, the fall term is dedicated to the design of a public building, and the articulation of a public-interest program; while the spring term is devoted to urbanism. During the fall and spring terms of third year, students, through a lottery system, are at liberty to choose from a variety of advanced design studios, many of which are led by the profession's leading practitioners and theoreticians. A number of courses in Design and Visualization, Technology and Practice, History and Theory, Urban Studies, and visual studies are also required over the three-year curriculum.

Summer Visualization Review
6th Floor Pit - Image by Hyeree Kwak

4.2 Professional Degree and Curriculum

Curricular Framework and Required Credits

MArch I total requirements: 114 credits

First Year (Fall)

Required	Credits
1221a/1000c, Architectural Foundations or Visualization Elective*	3
1011a, Architectural Design	9
1200, Visualization Elective	3
2011a, Structures I	3
3011a, Modern Architecture	3
	18

First Year (Spring)

Required	Credits
1012b, Architectural Design	9
2012b, Structures II	3
2016b, Building Project	3
3012b, Architectural Theory	3
	18

First Year (Early Summer)

Required	Credits
2017c, Building Project II**	3
1019c, Visualization and Computation	3
	6

Second Year (Fall)

Required	Credits
1021a, Architectural Design	9
2021a, Environmental Design	3
4011a, Introduction to Urban Design	3
Elective***	3
	18

Second Year (Spring)

Required	Credits
1022b, Architectural Design	9
2022b, Systems Integration	3
Elective***	3
Elective***	3
	18

Third Year (Fall)

Required	Credits
Advanced Design Studio	9
2031a, Architectural Practice and Management	3
Elective***	3
Elective***	3
	18

Third Year (Spring)

Required	Credits
Advanced Design Studio	9
Elective***	3
Elective***	3
Elective***	3

*This course is required for those students so designated by the Admissions Committee. Typically, this course will be required for students who do not have significant pre-architectural training. This five-week course ordinarily begins in mid-July and concludes in mid-August. In 2020—2021, this course is being taught during the fall term and replaces the required visualization elective. The first-term visualization elective is required for those not enrolled in 1221a/1000c.

**This course concludes in late June.

***One elective must be a qualified Visualization elective (in addition to the required Visualization elective taken during the first year of study); two electives must be in History and Theory and must require a written paper of at least fifteen pages in length; and one elective must be in Urbanism and Landscape. These required electives may be taken in any term(s). Courses taken outside of the School may fulfill these requirements provided they are listed in the appropriate study areas or they have been approved by the area coordinators. Students not on academic warning or probation may substitute independent elective course work. (See the School's Academic Rules and Regulations for procedures and restrictions.)

Architectural Design I: Image-Object
Student: Diana Smiljkovic
Faculty: Joyce Hsiang

4.2.1 Professional Studies

Professional Studies at the Yale School of Architecture are divided into four broad categories of inquiry: Design and Visualization, Technology and Practice, History and Theory, and Urbanism and Landscape.

Design and Visualization
Brennan Buck and Mark Foster Gage, Study Area Coordinators

This study area encompasses required studios, elective advanced studios, and courses that concentrate on design logic and skills and that support design thinking and representation. For the M.Arch. I program, required courses in this study area include a core sequence of four design studios, two advanced studios, and two visualization elective courses; one of these visualization electives must be completed in the fall term of the first year. The Core studio sequence progresses from spatially abstract exercises to more complex programs that require integrative thinking at various scales and situated on sites of increased complexity, while integrating ecological, landscape, and tectonic demands. The first course (1000c) is a summer course required for entering students who have not had significant prior architectural training. A further visualization course (1019c)—in the early summer of the first year—is required of all M.Arch. I students.

Required Design and Visualization courses:

1221a/1000c, Architectural Foundations
(Required of incoming MArch I students with little or no academic background in architecture.) In 2020—2021, this course is offered during the fall term.

1011a, Architectural Design: First MArch I Core Studio
(Required of first-year MArch I students.)

1012b, Architectural Design: Second MArch I Core Studio
(Required of first-year MArch I students.)

1019c, Visualization and Computation
(Required of first-year MArch I students, early summer. No waivers allowed.)

1021a, Architectural Design: Third MArch I Core Studio
(Required of second-year MArch I students.)

1022b, Architectural Design: Fourth MArch I Core Studio
(Required of second-year MArch I students.)

Advanced Design Studio
Advanced Design Studio

Technology and Practice
Anna Dyson and Kyoung Sun Moon, Study Area Coordinators

This study area explores fundamental theories and methods of building technologies and the relationships among these technologies, architectural design, and the larger natural environment. Courses examine materials, construction, structural systems, and the environmental technologies that provide healthy, productive, sustainable, and comfortable environments. This area also covers professional practice and examines the relationship between methods of construction, procurement, and management. Advanced courses investigate specific technical systems in greater detail, survey emerging methods and technologies, and explore the relationship between building technologies and architectural design in current practice and writings. For the M.Arch. I program, requirements in this study area include six courses that survey common technical systems used in buildings and integrate the consideration of these technical systems into architectural design through a series of projects of increasing complexity. In addition, there is a required course on architectural practice.

Required Technology and Practice courses:

2011a, Structures I
2012b, Structures II
2016b, Building Project
2017c, Building Project II
2021a, Environmental Design
2022b, Systems Integration and Development in Design
2031a, Architectural Practice and Management

Architectural Design I: Image-Object
Student: Audrey Hughes
Faculty: Nicholas McDermott
2019
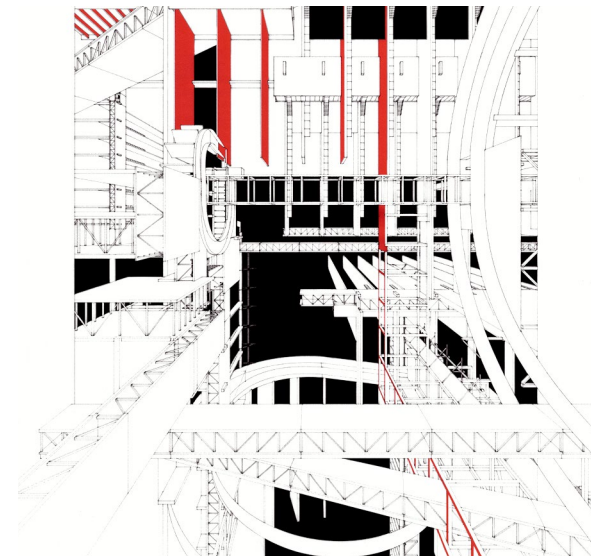
Drawing and Architectural Form
Student: Zack Lenza
Faculty: Victor Agran
2019

4.2.1 Professional Studies

History and Theory
Keller Easterling and Eeva-Liisa Pelkonen, Study Area Coordinators

This study area explores the relationship between design, history, and theory through a broad range of courses in which the analysis of buildings, cities, landscapes, and texts supports the articulation and criticism of fundamental concepts, methods, and issues. Historical and contemporary projects and writings are studied in context and as part of the theoretical discourse of architecture. For entering MArch I students who have not had significant prior architectural training, the pre-first-year visualization course (1000c) includes a broad survey of Western architectural history to the nineteenth century. For all MArch I students, there is a first year required survey course of nineteenth- and twentieth-century architectural history (3011a) followed in the second term by a required course on architectural theory (3012b). In addition, MArch I students must satisfactorily complete two elective courses from this study area that require at least a fifteen-page research paper.

Required History and Theory courses:

3011a, Modern Architecture
3012a, Architectural Theory
History and Theory Electives 1 and 2 (See 4.2.3: Optional Studies)

Urbanism and Landscape
Alan J. Plattus and Elihu Rubin, Study Area Coordinators

In this study area, a broad range of courses explore the aesthetic, economic, social, and political influences on the spatial form of urban places and the urban, suburban, and rural landscapes that form our design ecology. For the MArch I program, required courses in this study area include an introduction to urban design (4011a) and the satisfactory completion of one of the elective seminar courses from this study area. Courses offered outside the School may fulfill this elective requirement provided permission from the study area coordinators has been granted.

Required Urbanism and Landscape Courses:

4011a, Introduction to Urban Design
Urbanism and Landscape Elective 1 (See 4.2.3: Optional Studies)

The City and Carbon Modernity
Student: Deo Deoparine
Faculty: Elisa Iturbe
2019

History of Landscape Architecture
Student: Maya Sorabjee
Faculty: Bryan Fuermann
2019

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4.2.2 General Studies

The School believes that the educational experience of its program is enriched by students who have diverse educational backgrounds and, therefore, embraces students who in their undergraduate education have majored in a wide spectrum of disciplines, from architecture to any of the arts, sciences, or humanities. Applicants to the MArch I program must hold a bachelor's degree, or the equivalent, from an accredited college or university, and thus have prior academic experience relative to this requirement. The following college-level courses are required as prerequisites to this program, all to be completed by June 1 of the year matriculating:

1. A studio course such as freehand drawing, sketching, painting, sculpture, or basic architectural design. (Ceramics, photography, graphics, or film will not satisfy this requirement.)

2. Two courses in the history of art and/or architecture. It is recommended that one course be a survey, the other a course in modern architecture.

Also recommended, but not required, is a course in classical physics. Advanced standing is rarely granted to incoming students. Course waivers may be granted to students whose undergraduate coursework in these areas is confirmed to have been especially rigorous. (See also 4.3.3)

Summer Preparation Courses for Incoming MArch I Students

In the six weeks before the beginning of the fall term, the School offers four summer preparation courses that are required for incoming MArch I students.

1. Architectural Foundations (1000c).

This five-week course is offered at no charge for those newly admitted students who do not have significant pre-architectural training. This course is required only for those students who have been informed in their acceptance letter that they must take this course. Students required to take the summer session must satisfactorily pass this

course before being admitted to the School's first-year MArch I program in the fall. Classes are held each day, Monday through Friday. The average day is broken into morning and afternoon sessions. Students are expected to complete assignments outside of class.

2. Summer Shops Techniques Course.

This one-week course introduces incoming students to the School's fabrication equipment and shops. The course stresses good and safe shop techniques. Students are not allowed to use the School's shops unless they have satisfactorily completed this course.

3. Summer Digital Media Orientation Course.

This two-part course, which occurs during the same week as the Summer Shops Techniques Course, covers accessing the School's servers, the use of the School's equipment, and the School's digital media policies and procedures. This course is required only for those MArch I students who did not take Architectural Foundations (1000c); see paragraph 1 above.

4. Arts Library Research Methods Session.

This ninety-minute session covers various strategies to answer research questions pertaining to course curricula and topics by using tools such as the Yale University online catalog, architecture databases, image resources, print resources, and archival resources.

Design and Visualization: Composition and Form
2019

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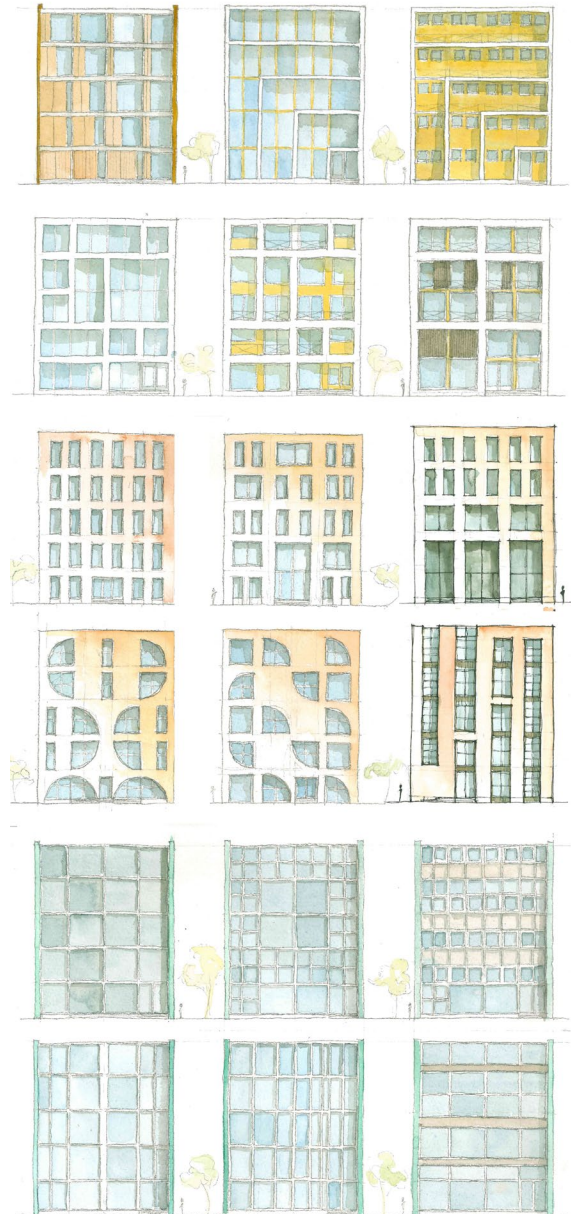
4.2.3 Optional Studies

Within the limits of certain required credit distributions, students are encouraged to explore elective course options. Courses—falling into the broad categories of Design and Visualization, Technology and Practice, History and Theory, and Urbanism and Landscape — support and augment the pivotal studio offerings. Courses offered by other schools and departments within the University may be taken for credit. Emphasis throughout the program is on architectural design and decision-making. Students enrolled in the MArch I program take at least eight elective courses, including two electives in the area of Design and Visualization, two in the area of History and Theory, and one in the area of Urbanism and Landscape. The School offers a wide variety of elective courses in each of its major study areas, but students are welcome to take electives in any department or school at Yale University.

Electives in Design and Visualization:

1219a: Designing Social Equality: The Politics of Matter
1223a: Formal Analysis I
1233a: Composition
1289a: Space-Time-Form
1225b: Design and Visualization
1225b: Formal Analysis II
1227b: Drawing Projects
1228b: Ruins and Ruination
1243b: Graphic Inquiry
1245b: Color in Architecture
1246b: AI Aesthetics
1299a or b, Independent Coursework

Electives in Technology and Practice:

2018a Advanced Building Envelopes
2021a Environmental Design Anna Dyson
2211a Technology and Design of Tall Buildings
2222a The Mechanical Eye
2242a Fighting Slavery in the Building Supply Chain
2207b Architectural Writing and Journalism
2209b Skin Deep: Envelope as Potential Energy
2226b Design Computation
2229b Regenerative Building: Horse Island
2230b Exploring New Value in Design Practice

2238b The Mechanical Artifact: Ultra Space
2241b Building Disasters
2299a or b, Independent Coursework

Electives in History and Theory:

0551 Fall 2020 Approaches to Contemporary Architectural Theory
(The seminar is open to PhD and MED students and to other advanced students by permission of the instructor.)
3100a The Plan
3101a Textile Architectures
3102a Topics in the History of Architecture after 1945
3240a Spatial Concepts of Japan: Their Origins and Development in Architecture and Urbanism
3267a Semiotics
3280a Medium Design
3290a Body Politics: Designing Equitable Public Space
3103b Introduction to Islamic Architecture
3256b Renaissance and Modern II
3272b Exhibitionism: Politics of Display
3283b After the Modern Movement: An Atlas of Postmodernism
3297b From Shigeru Ban to IKEA: Designing Refugee Camps
3298b Topics in the History of Architecture Education
3301b New York as Incubator of Twentieth-Century Urbanism: Four Urban Thinkers and the City They Envisioned
3312b Textile Architectures: A Transhistorical and Global Perspective into Architectural Historiography
3313b A Critical History of Domestication: The House
3314b Lightness and Modernity: Architecture, Design, Energy

Electives in Urbanism and Landscape:

Fall 2020 - Spring 2021
4209a Territorial Cities of Pre-Colonial America
4222a History of Landscape Architecture: Antiquity to 1700 in Western Europe

4224a Out of Date: Expired Patents and Unrealized Histories
4242a Introduction to Planning and Development
4246a Introduction to Urban Studies
4247a Difference and the City
4216a Globalization Space: International Infrastructure and Extrastatecraft
4220b Port Cities
4221b Introduction to Commercial Real Estate
4223b History of British Landscape Architecture: 1600 to 1900
4245b The City Before and After the Tubewell
4249b Urban Landscape and Geographies of Justice
4250b A Critical History of Domestication: Environments of Subsistence
4299a or b, Independent Course Work

Electives in the University:

Yale University is home to over 100 departments and programs, in a wide range of disciplines. Students at YSoA are free to take elective courses in any of these, and the structure of the University makes it very easy for students to move between schools and departments. In the 2020-2021 academic year, YSoA students enrolled in 137 different courses outside the School of Architecture across 31 departments. These included everything from basic language courses to advanced research seminars. Among the most popular were:

ANTH 415, Culture, History, Power
ART 264, Typography!
ART 575, Going Outside
CPSC 100, Intro Computing & Programming
244, Motion Graphics & Film Production
ENV 573, Urban Ecology for Local and Regional Decision-Making
ENV 756, Modeling Geographic Objects
ENV 755, Modeling Geographic Space
HSAR 455, Conceptualization of Space
MGT 502, Foundations of Accounting & Valuation
URBN 417, Fugitive Practice
WGSS 712, Readings in the History of Sexuality

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4.2.3 Optional Studies

Dual Degree Programs:

The School of Architecture maintains close ties with the School of Management and the School of the Environment through its dual degree programs, numerous cross-listed courses and joint faculty appointments.

School of Architecture/School of Management
Phillip Bernstein, Coordinator

The Yale School of Architecture and the Yale School of Management offer a dual-degree program in Architecture and Management. This program is especially oriented to individuals who wish to integrate the design, urban development, and management professions in pursuing careers in government or the private sector.

Dual-degree students in the three-year first professional MArch program must complete all requirements for the degree, including six terms of design studio, with the first four terms taken consecutively. This is an accredited, professional degree and specific requirements may not be bypassed, except when waivers are granted for course work previously completed at other institutions. Students in this program will have their overall number of course credits required for the MArch degree reduced from the normal 114 credits to 96 credits. This means they will take 18 fewer elective credits (six elective courses) and may be waived from the History and Theory and/or Urbanism and Landscape elective requirements. Normally this adjustment will allow the student to divide the final (fourth) year schedule between the two required advanced studios at the School of Architecture and courses at the School of Management.

At the conclusion of the required studies, the dual-degree program awards both a Master of Business Administration (MBA) and a Master of Architecture Professional Degree Program (MArch). Withdrawal or dismissal from the School of Management will automatically obligate a student to complete all normal requirements for the MArch degree (114 credits for first professional degree; 72 credits for post-professional degree option). The MArch degree will not be awarded to dual-degree candidates until they have completed all requirements for both degrees.

Admissions are determined independently by the two schools. Students may apply to both schools at the same time and, if accepted, will begin their studies at the School of Architecture, since admission to the School cannot be deferred; or they may apply to the School of Management prior to their final year at the School of Architecture. Students enrolled at the School of Management may apply to the School of Architecture during their first year. Those who apply simultaneously should so indicate on both applications. Applications to the School of Architecture must be approved by the Committee of the dual-degree program.

4.2.3 Optional Studies

School of Architecture / School of the Environment
Elisa Iturbe, Coordinator

The Yale School of Architecture and the Yale School of the Environment offer a dual-degree program in Architecture and Environmental Management. This program is directed to individuals who wish to become leaders in sustainable architecture and ecological design, with a focus on the integration of ecological science, energy systems, and global urbanization patterns with architecture and urbanism. Capitalizing on the breadth and depth of expertise at the School of the Environment in ecosystem ecology, land change science, environmental economics, industrial ecology, and ecological anthropology, this program fosters students who can innovatively merge ecological science with architecture at the site, city, and regional scales. The dual-degree program offers a focused and restricted curriculum that enables a student to obtain both a Master of Architecture (MArch) degree and a Master of Environmental Management (MEM) degree one year earlier than would be required if each degree were pursued independently; that is, in four years if admitted to the first professional Master of Architecture (MArch I) program.

Individuals seeking admission to this dual-degree program must apply and be admitted to one of the two School of Architecture Master of Architecture programs (MArch I or MArch II) and also apply and be admitted separately to the School of the Environment and Master of Environmental Management program. Consequently, applicants must submit all required admissions materials and prerequisites for application to each of these programs, indicating their desire to be, in addition, considered for the joint program.

Yale Center for Collaborative Arts and Media

The Center for Collaborative Arts and Media (CCAM) is Yale's media laboratory for everyone. At CCAM students and faculty investigate intersections of art, science, and technology through research, programs, and exhibitions.

Yale Center for Engineering Innovation and Design

The Center for Engineering Innovation and Design (CEID) is a hub for collaborative and interdisciplinary design activity at Yale University. The 8,700 square foot design lab combines an open studio, lecture hall, wet lab, and meeting rooms.
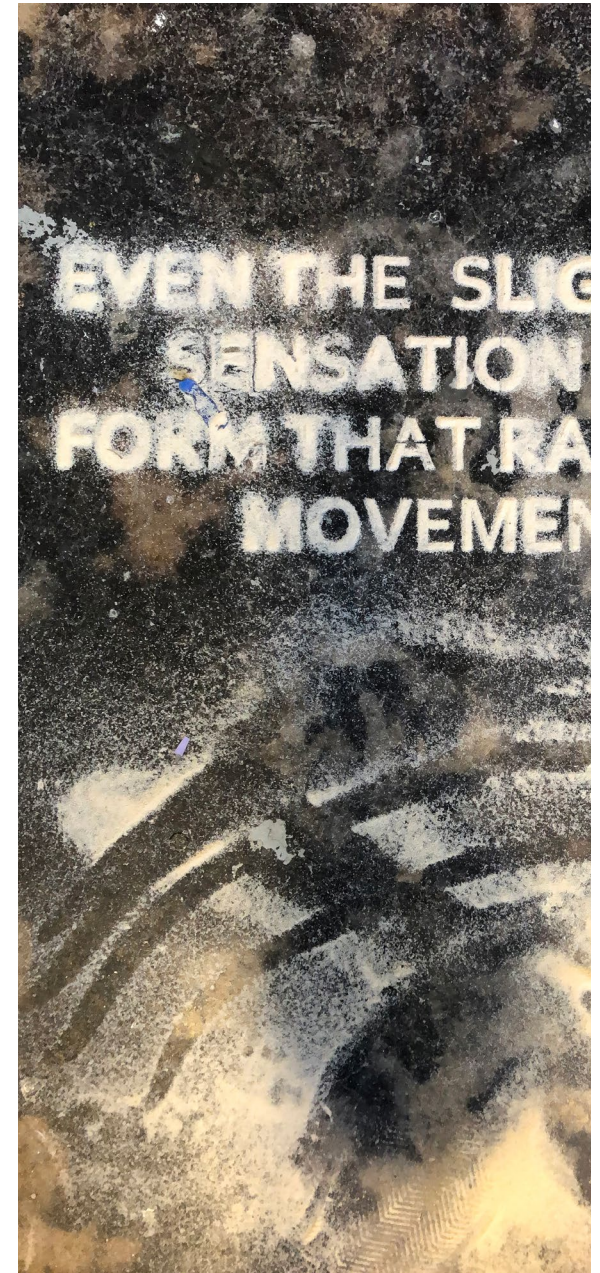
Space Time Form
Student: Max Wirsing
Faculty: Eeva Lisa Pelkonen
Fall 2019

4.3 Evaluation of Preparatory Education

4.3.1 Prior Academic Coursework and the Admissions Process

Admissions

Applications are rigorously reviewed by a committee of 10 faculty and six students. The committee takes an open and holistic approach, reviewing transcripts, portfolio, essays, and recommendations in the context of each applicants' background. The committee also participates in workshops that encourage an unbiased review and a consequently diverse student body.

Application to the School is an online process. While completing the online application form, students will be asked to supply information regarding themselves, their education, their test scores, and their references; upload their transcripts, personal essay, and curriculum vitae (résumé); and pay an application fee. In addition, applicants for the MArch programs will be required to upload a portfolio. See below for more detailed information on each required component of the application process. YSoA's admissions policies and requirements can be found on the school's website: https://www.architecture.yale.edu/admissions/requirements.

The online application can be accessed at https://apply.architecture.yale.edu/apply, when it is available. Applications for programs beginning in the 2020—2021 academic year must be submitted no later than January 2, 2020.

Transcripts

A transcript or academic record indicating degree earned or anticipated is required from each college or university attended and listed in the Academic Record section of the online application. Applicants upload a scanned copy of the applicant's official transcript or academic record to the application.

Applicants who have attended international institutions must submit transcripts or certified attestations of study. If such documents are not written in English, certified English translations are required. Once translated, the original transcript as well as the certified translation should be uploaded to the online application.
Applicants expecting to graduate this academic year but still attending their college or university must upload their current, in-progress college or university transcript to the application.

Applicants who are offered admission and who accept that offer will be required to have their respective institutions directly submit final, hard-copy official transcripts to the School.

Standardized examinations

All applicants, including international students, are typically required to take the General Test (verbal, quantitative, and analytical writing) of the Graduate Record Examination (GRE) administered by the Educational Testing Service. Although the test may be taken at any time, it should be taken no later than December preceding the application due date. This requirement was suspended for applicants applying in 2021.

The Internet-based Test of English as a Foreign Language (TOEFL iBT) is required of all applicants whose native language is not English. The requirement for the TOEFL iBT may be waived only for applicants who have studied in residence for at least three ③ years at a university or college where English is the primary language of instruction and who will have received a baccalaureate degree, or its foreign equivalent, from that institution prior to matriculation at Yale. Final candidates are interviewed by members of the committee to assess language abilities

Applicants are required to record their examination scores in the online application for each test date taken.

Personal essay

Applicants respond to two questions recently rewritten to garner responses more specific to each applicant and why they are interested in YSoA: Question 1. Please describe a significant experience, idea, passion, or pursuit that has led you to apply to the Yale School of Architecture. Question 2. What excites you about the future of architecture and what would you like your role to be in that future? The School of Architecture seeks to draw students from all racial and ethnic groups in society. Applicants who wish to identify themselves as a member of a minority group may do so in this essay.

Curriculum vitae

A curriculum vitae (résumé of academic and employment experience) is required and must be uploaded to the online application.

Letters of recommendation

Three letters of recommendation are required and must be uploaded by each recommender no later than the application deadline. Letters of recommendation should be from individuals with direct knowledge of the applicant's professional potential and/or academic ability.

Portfolio

A digital portfolio (a single pdf document optimized not to exceed 2GB) must be uploaded to the online application. The portfolio should be a well-edited representation of the applicant's creative work. Anything submitted that is not entirely the applicant's own work must be clearly identified as such.

For the MArch I program, the portfolio should demonstrate the applicant's creative and spatial sensibilities. Work represented may be wide-ranging in nature, including drawings, paintings, sculpture, sketches, furniture and architectural designs, or other materials.

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Appendix

Syllabi

4.3.2 & 4.3.3 Course Waivers, Transfer Credits, Time-to-Degree

Advanced Standing:

Advanced standing is rarely granted at YSoA, and is only considered for students who have completed at least one year of M Arch education at a peer institution.

Course Waivers:

If an entering student can demonstrate competence and passing grades from an accredited school in the material covered in any of the program's required support courses (except for 2031a), that student may request a waiver of those courses. A waiver of any required course, however, does not reduce the number of course credits required to fulfill the program's degree requirements. Time to degree, even for those students who waive out of certain required support courses, remains 3 years.

Such waivers are granted by way of a rigorous, three-stage review process. Requests for a waiver must be submitted to one of the course's study area coordinators within one week of the start of the first term of the student's enrollment. A transcript, course syllabus, and a notebook or examples of work accomplished must be presented to relevant course faculty and study area coordinators for review. Course waivers are then reviewed and, if appropriate, approved by the Curriculum Committee. The Rules Committee will then review the student's transcript and degree checklist and make the final determination as to whether a waiver will be granted.

Waivers are rarely granted for either the required History and Theory surveys, or for the required course in Environmental Design. Any students granted a waiver from Environmental Design are required to take ARCH 2018a: Building Envelopes. Faculty in these areas bring unique and powerful perspectives to bear on the material, which the School considers fundamental to a professional education in architecture.

Final Review
Fourth Floor Pit
Rudolph Hall

Condition 5:

Structure and Governance

Planning and Assessment

Curricular Development

Human Resources and Human Resource Development

Social Equity, Diversity and Inclusion

Physical Resources

Financial Resources

Information Resources

5.1 Structure and Governance

The program must describe the administrative and governance processes that provide for organizational continuity, clarity, and fairness and allow for improvement and change.

5.1.1 Administrative Structure: Describe the administrative structure and identify key personnel in the program and school, college, and institution.

5.1.2 Governance: Describe the role of faculty, staff, and students in both program and institutional governance structures and how these structures relate to the governance structures of the academic unit and the institution.

Bauhaus Symposium
Hastings Hall
2019

Dean Deborah Berke
Learning / Doing/ Thinking Symposium

5.1.1 Administrative Structure

The Yale Corporation & the University President:

The Yale Corporation, or board of trustees, is the University's principal governing body.

The Yale Corporation is the governing board and policy-making body for Yale University. Yale's charter of 1701 was amended by the Connecticut Legislature in 1792 to provide that the President and Fellows of Yale College would be known as "The Corporation" and "shall have the government, care and management of the college." Compared to the governing boards of other educational institutions, the Yale Corporation is small and plays an unusually active role in University governance.

As fiduciaries, the trustees ensure that Yale's academic and administrative leadership are guided by sound policies and practices, and equipped with adequate resources, to further Yale's mission. In this work, they balance the needs of today's faculty, students, alumni, and staff with those of future generations.

The Corporation is comprised of the president and sixteen trustees: ten appointed successor trustees, each limited to two six-year terms; and six elected alumni fellows, chosen by alumni for staggered six-year terms. Successor trustees and alumni fellows carry the same responsibilities and duties. In addition, the governor and lieutenant governor of Connecticut are board members ex officio. The Corporation has thirteen standing committees with responsibilities outlined in the by-laws.

The Corporation convenes in person several times a year to review and discuss issues with Yale's academic and administrative leaders, and to vote on matters such as faculty and senior leadership appointments, the conferral of degrees, major building projects, and operating and capital budgets. During and between meetings, trustees consider issues of strategic importance, offer guidance, and gather information that supports the stewardship of the University.

While on campus, the trustees meet with members of the Yale community, including faculty, staff, and students. Some meet formally, in regular meetings with student government and faculty; and others informally, at lunches, university teas, and campus events. Off campus, trustees represent the University at events and engage on issues of importance to Yale and higher education in general.

In addition to the Yale Corporation, the University has several advisory boards whose members are alumni and friends of Yale. These boards provide advice and counsel to the President on a number of topics. Some of the boards have a specific focus, such as the President's Council on International Activities, which advises the President on Yale's international initiatives, or advises a Dean about the work of a School. Others have a broad mandate, such as the University Council, which studies and makes recommendations to the President on a range of topics concerning University life.

5.1.1 Administrative Structure

Office of the President:

The President, Peter Salovey, is the chief executive officer of the University and as such is responsible for the general direction of all its affairs. The President is ex officio a member of every faculty and governing board, and of every committee of the faculty, administration, and Corporation, except Audit, Compensation, and Trusteeship. The President will make himself available to these committees and may attend at the invitation of the respective Chair. The President may discharge the duties and exercise the powers of any officer of the teaching or administrative staff who may be absent or unable to act, or appoint temporary officials to discharge such duties and exercise such powers. The President shall present to the Corporation recommendations from the faculties and other units of the University which require the approval of the Corporation. The President shall prepare and submit for approval to the Corporation at or before its final meeting of the fiscal year a proposed operating budget and a proposed capital budget for the ensuing fiscal year. The final budgets shall be adopted by the Corporation prior to June 30. The President shall appoint a Chief Investment Officer, who shall be responsible for recommending and carrying out investments of University assets in accordance with the policies of the Investments Committee. At the request of the President, and upon nomination by him, the Corporation may elect such Vice Presidents (one or more of which may be Senior Vice Presidents) as the President deems appropriate to carry out responsibilities for areas of institutional activity as may be assigned, including but not limited to finance, business operations, campus development, government affairs, human resources, communications, development and alumni affairs, student affairs, international affairs, and strategic affairs. The responsibilities and authority of each such Vice President, including, if applicable, designation as an officer of the University, may be set forth in these By-Laws or a resolution of the Corporation.

Office of the Provost:

Provost Scott A. Strobel is Yale's chief educational and budget officer after President Peter Salovey. The Office of the Provost oversees academic policies and activities university-wide. The provost is an ex-officio member of every faculty and governing board and of all committees concerned with educational policy or faculty appointments. He has direct oversight of all academic support units and holds institutional responsibility for the allocation of resources. In collaboration with the vice president for finance, the provost presents the University's annual operating and capital budgets to the president and to the Yale Corporation. The vice, associate, and assistant provosts, together with the provost's administrative and operations staff, support the provost in carrying out these responsibilities.

Yale School of Architecture: Administrative Structure and Key Personnel:

The School of Architecture is one of thirteen graduate and professional Schools of Yale University. The Executive Officer of the School is the Dean, appointed by the Yale Corporation upon the recommendation of the President. The Dean reports directly to the Provost and the President.

The School has two Associate Deans, appointed by the Dean in consultation with the Provost's Office, that report directly to the Dean. One Associate Dean is responsible for academic affairs of the School and the other is responsible for the administration and finance of the School. The school has Assistant Deans for Student Affairs; Diversity, Equity and Inclusion; and Academic Affairs. The School also has a Director of Undergraduate Studies for both of the undergraduate majors, responsible for coordinating the undergraduate program and acting as liaison between the undergraduate and graduate programs.

Study Area Coordinators are responsible for overseeing a particular study area. All Directors and Coordinators are appointed by the Dean.

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5.1.2 Governance

University Governance:

The students, faculty, and administrators at the Yale School of Architecture contribute to the governance of the University by serving on a variety of institutional committees as well as by taking a participatory role in campus planning for Yale University. In addition, students, faculty, and administrators contribute to the intellectual and social life of the institution through a variety of activities and initiatives.

Numerous faculty and staff from the School of Architecture serve on university-wide committees or otherwise participate in formal initiatives of the American academic community. These include Assistant Dean for Student Affairs Tanial Lowe, who serves as the School's Affirmative Action Deputy and Title IX coordinator; Associate Dean Phil Bernstein, who serves as ACSA councilor; serves as ACSA councilor; Associate Dean Sunil Bald who serves on the University Academic Affairs Committee; faculty members Alan Plattus and John Jacobson, who sit on Yale's University Tribunal; and Keller Easterling who serves on the tenure review committee.

Faculty and Staff at the Yale School of Architecture contribute greatly to both the Yale and New Haven communities, which they do as members of Local 34, the University's clerical and technical workers' union; by participating in the Yale-United Way campaign, which aims to improve education, financial stability, and health for local New Haven residents; and by taking part in Yale's annual Day of Service every spring.

School of Architecture Governance:

All faculty, staff, and students play a role in the structure and governance of the School. Through self-assessment procedures and a series of committees, all members of the Yale School of Architecture community are able to assess the School's progress and growth and voice their opinions. One of Yale's strengths is the administrative autonomy of the School and its strong coordinated relationship with the University. This allows decisions and actions on architectural education, pedagogy and accreditation to be made in an considered and responsive manner.

Faculty:

The faculty of the School is composed of scholars and professional practitioners. With the exception of scholarships and fellowships, teaching and grading of graduate students' course work for credit in the School is the exclusive responsibility of the faculty. In addition, the faculty is responsible for the curriculum, the awarding of degrees, and establishing the rules and procedures of the School as allowed by the university.

The Dean's Office schedules regular faculty meetings, chaired by the Dean. Any member of the student/faculty body may submit items to be included in the agenda of these meetings to the Dean's Office no later than one week prior to the scheduled faculty meeting. The Dean's Office distributes minutes of each meeting to the faculty. Quorum is established by the presence of one-third of the members of the faculty with multi-year and tenure appointments, but all members of the faculty may vote. Voting is decided by simple majority of those faculty members in attendance at the time of the vote.

For more details regarding the faculty, refer to the Yale University Faculty Handbook. (https://provost.yale.edu/sites/default/files/files/Faculty%20Handbook_8-22-19.pdf , https://provost.yale.edu/faculty-handbook)

5.1.2 Governance

Standing Committee Structure:

Various standing committees, composed of faculty members appointed by the Dean and in some cases elected student representatives, assist the Dean in the formulation and implementation of policies governing activities of the School. The Dean appoints the chairperson of each committee and also appoints faculty members in consultation with the respective chairperson. Each committee's chairperson is responsible for the committee's organization, activities and reports. For student committees, with the exception of the Dean's Advisory Committee on Student Grievances and the Admissions Committee, the student body shall elect the designated student committee members.

In the standing committees, except the Executive and Design Committees, quorum is established by the presence of one-half of the appointed and elected committee members. For the Executive Committee, quorum is established by the presence of one-half of the committee members not on leave. For the Design Committee, quorum is established by the presence of one-half of the faculty members hired on a one year or longer contract and who teach in the design studio. For all standing committees, except the Executive Committee, voting is decided by simple majority of the committee members in attendance at the time of the vote. For the Executive Committee, voting is decided by simple majority of the committee members in attendance at the time of the vote that are qualified to vote on the particular issue.

Academic Leadership:

Deborah Berke, Dean
Sunil Bald, Associate Dean for Curriculum and Admissions
Phil Bernstein, Associate Dean for Administration
Tanial Lowe, Assistant Dean for Student Affairs
Bimal Mendis, Assistant Dean for Diversity, Equity, and Inclusion
Eeva-Liisa Pelkonen, Assistant Dean of Academic Affairs
Elihu Rubin, Director of Undergraduate Studies (Urban Studies)
Surry Schlabs, Director of Undergraduate Studies (Architecture)

Yale School of Architecture
Committee + Faculty Assignment List

3/21/21 3:37 PM
2020 - 2021

Executive	Admissions	Awards	Curriculum	
tenure +	*9 faculty*, 4 students*	*7 faculty*		Bald, *chair*
Berke, *chair*	Bald, *chair*	Finio, *chair*	*Dean*	Berke
Bald	Barrett	Abruzzo	*Des & Viz*	Buck
Bernstein	Brooks	Benner		Gage
Dyson	Caldeira	Davies	*Tech & Pract*	Dyson
Easterling	Davies	Easterling		Moon
Gage	de Bretteville	Gage	*Hist & Theory*	Caldeira
Harris	Easterling, (MED)	Sanders		Pelkonen
Moon	Finio		*Urb & Land*	Rubin
Pelkonen	Iturbe			Plattus
Plattus	Organschi (or Buck)			
Rubin	Sanders (PP)			
Sanders				
Stern				
		Bass Scholars Review	**Technology +**	
(Wrzesniewski, Risvi, Casetti)			*3 faculty, 1 staff, 3 stds*	
		Caldeira	Gage, *chair*	
		Sanders	Bernstein	
			Keena	
			Guerrero	

Curriculum Advisory	Design	Dual Degree	Lectures Plus	Library Liaison
3 faculty, 4 students	*all studio faculty*			*3 faculty, 1 student*
Bald, *chair*	Gage, *chair*	Bernstein, *chair*	Artemel, *chair*	Easterling, *chair*
Pelkonen	all design faculty	Agron	Acciavatti	Pelkonen
Shahane		Dyson	Bald	Plattus
		Iturbe	Brooks, M.	
		Wrzesniewski (SOM)	Easterling	
			Rubin	
			Sanders	
			Szivos	

MED Program	Ph.D Admissions - H/T	Ph.D Admissions - CEA	Student Grievances	Undergrad Planning
faculty, 2 students			*3 faculty, 1 student*	
Easterling, *chair*	Ockman, chair	Dyson, Chair	Plattus, *chair*	Rubin, *chair*
Plattus	Eisenman	Organschi?	Moon	Acciavati
Rubin	Forster		Pelkonen	Barrett
	Pelkonen			Davies
	Rubin			Hatfield
				Purves
				Schlabs

Associate Dean	Associate Dean		Rules	
Administration	*Admissions & Curriculum*		*4 faculty, 3 students*	
Bernstein	Bald		Moon, *chair* F	
			Bald	
Assistant Dean	**Assistant Dean**		Pelkonen *chair* S	
Student Affairs	*Career Development*		Plattus	
Pelkonen	Mendis		Rubin	

Directors				
Ph.D. Studies	*Post Pro Studies*	*MED Studies*	*DUS - Architecture*	*DUS - Urban Studies*
Ockman	Sanders	Easterling	Schlabs	Rubin
Center for Eco in Arch	*Building Project*	*Carbon TBD*	*UDW*	
Dyson	Hopfner	Organschi	Harwell	

Study Area Coordinators				
Design & Visualization	*Technology & Practice*	*History & Theory*	*Urbanism & Landscape*	
Buck	Dyson	Caldeira	Rubin	
Gage	Moon	Pelkonen	Plattus	

Affirmative Action Deputy	Title IX Coordinator	ACSA Councilor	University Tribunal	NAAB Coordinator
Lowe	Lowe	Bernstein	Plattus	Buck
			Jacobson	

IDP / NCARB
Bernstein

5.1.2 Governance

Executive Officers:

Deborah Berke, BFA, BArch, MUP, HDFA., Dean
Sunil Bald, BA, MArch, Associate Dean
Phillip G. Bernstein, BA, MArch, Associate Dean
Tanial Lowe, M.Counseling, Assistant Dean for Student Affairs
Bimal Mendis, BA, MArch, Assistant Dean
Eeva-Liisa Pelkonen, MArch, MED, PhD, Assistant Dean

Committee Structure:

The following committees, composed of faculty members appointed by the Dean and elected student representatives, assist the Dean in the formulation and implementation of policies governing activities of the School:

1. Executive Committee (permanent and other faculty members). Participates in policy making, operational decisions, and faculty appointments.

2. Rules Committee (four faculty members, three students). Reviews, interprets, and implements the Academic Rules and Regulations of the School; recommends policy and procedural changes to the Academic Rules and Regulations of the School; and oversees the Disciplinary Procedures of Unacceptable Conduct. Student representatives are not privy to, nor may they vote on, issues regarding individual student cases.

3. Admissions Committee (ten faculty members, six students). Reviews and makes recommendations on admission policies; reviews all applications for admission and makes admission recommendations to the Dean.

4. Curriculum Committee (Dean, assistant Dean responsible for curricular affairs, and study area coordinators). Reviews and recommends curriculum changes; is responsible for the development of detailed curriculum for each term.

5. Design Committee (design faculty). Discusses and reviews issues that involve the teaching of design; evaluates student design performance.

6. MED Program Committee (faculty members, two students). Acts as directive body for the MED program and recommends curriculum changes.

7. Undergraduate Planning Committee (faculty members). Plans and reviews courses in architecture offered to Yale College undergraduate students; oversees Yale College Architecture major.

8. Arts Library Liaison Committee (four faculty members, one student). Advises the Arts Library on acquisition and maintenance issues.

9. Dual-Degree Committee (four faculty members). Recommends to the Rules Committee student course of study proposals for the dual degrees with other professional schools of the University.

10. Curriculum Advisory Committee (three faculty members, four students). Makes curriculum recommendations to the Dean.

11. Dean's Advisory Committee on Student Grievances (two faculty members; two members who may be faculty, administrators, or other individuals employed by the University; one student). Implements General Student Grievance Procedures of the Grievance Procedures of the University

12. Awards and Prizes Committee (seven faculty members). Makes award and prize recommendations to the faculty.

Administrative Offices:

The Registrar's and Admissions Office handles all matters relating to student admissions and records.

The Financial Aid Office handles all student financial aid matters.

The Business Office is responsible for dealing with administration and finances of the School.

The Digital Media Office is responsible for maintaining the School's academic digital equipment.

Fabrication and Assembly Course- Veil
Mengi Li, Yipeng Cui, Wei-Shih Tsai, Jacob Schaffert

Introducing Deborah Berke
Fourth Floor, Rudolph Hall
Event, 2015

Learning Doing Thinking
Symposium
April 2016

5.1.2 Governance

Administrative Staff:

AJ Artemel, Director of Communications.
Regina Bejnerowicz, Lead Administrator.
Andrew Benner, Director of Exhibitions.
Terence Brown, Senior Administrative Assistant, Academic Support.
Zelma Brunson, Operations Manager.
Nathan Burnell, Assistant Shop Manager.
Richard DeFlumeri, Senior Administrative Assistant—Lectures, Exhibitions, Special Events.
Vincent Guerrero, Director of Advanced Technology.
Robert Liston, Senior Systems Administrator.
Tanial Lowe, Assistant Dean for Student Affairs, Title IX Coordinator, and Admissions Administrator.
Andre Massiah, Financial Aid Administrator.
Tim Newton, Director of Fabrication.
Adelia Palmieri, Senior Administrative Assistant to Registrar/Admissions and Financial Aid Offices.
Kate Rozen, Executive Assistant to the Dean.
Alison Walsh, Exhibitions Administrator.
Rona Walstra, Senior Administrative Assistant, Undergraduate Studies and Career Services and Receptionist.
Rosemary Watts, Senior Administrative Assistant to Financial Administrator.
Jill Westgard, Senior Director of Development.
Donna Wetmore, Assistant Registrar and Assistant Admissions Administrator.
Trevor Williams, IT Support Technician.

Center for Ecosystems in Architecture (CEA):

Anna Dyson, Director of the Center for Ecosystems in Architecture at Yale.
Hind Wildman, Director of Communications and Research Development.
Nick Novelli, Director of Research Engineering

Yale Urban Design Workshop:

Marta Caldeira, Director of Research
Alan Plattus, Founding Director
Andrei Harwell, Director, Design and Administration

Robert B. Haas Family Arts Library:

Heather Gendron, Director of Robert B. Haas Family Arts Library
Jennifer Aloi, Senior Administrative Assistant
Dana Eckstein Berkowitz, Library Services Assistant
Frank Boateng, Team Leader, Evening/Weekend
Roselyn Cruz, Library Services Assistant
Molly Dotson, Assistant Director for Special Collections
Lindsay King, Assistant Director for Access and Research Services
Teresa Mensz, Library Services Assistant
William Richo, Library Services Assistant
Shawana Snell, Team Leader, Daytime
Maria Zapata, Library Services Assistant

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5.2 Planning and Assessment

The program must demonstrate that it has a planning process for continuous improvement that identifies:

5.2.1 The program's multiyear strategic objectives, including the requirement to meet the NAAB Conditions, as part of the larger institutional strategic planning and assessment efforts.

5.2.2 Key performance indicators used by the unit and the institution.

5.2.3 How well the program is progressing toward its mission and stated multiyear objectives.

5.2.4 Strengths, challenges, and opportunities faced by the program as it strives to continuously improve learning outcomes and opportunities.

5.2.5 Ongoing outside input from others, including practitioners.

The program must also demonstrate that it regularly uses the results of self-assessments to advise and encourage changes and adjustments that promote student and faculty success.

5.2.1 Strategic Objectives

Strategic Plan

The central tool in YSoA's planning and assessment process is the School's Strategic Plan, the result of a year-long planning process initiated by Deborah Berke upon becoming Dean in 2017. It is considered to be a living document and is continually updated, most recently during the spring '21 semester in order to better reflect the ongoing growth and evolution of the YsoA community. In March 2021, a core group of 19 YSoA staff, faculty, and administrators met to outline updates to the strategic plan. In preparation for this session, the participants reviewed three documents as the basis for discussion: the all-school climate and culture survey, a survey of all faculty and staff with feedback on seven specific areas of the strategic plan, and a more in-depth survey of the session participants themselves. The session was both an opportunity to assess the school's performance over the previous 3 years based on the goals and

strategies laid out in the original strategic plan and to revise those goals and strategies for the future. While small revisions were made to the school's values and guiding principles, three new major goals were articulated:

> Address issues of social justice and climate change in the built environment
> Secure funding for all to graduate without tuition debt
> Continue building a culture of belonging

Based on the committee's input, the revised 2021 Yale School of Architecture strategic plan was completed and released in June 2021. The original 2018 Strategic Plan and the updated 2021 Strategic Plan are both included in the appendix to this report.

Curriculum Review

A general review of the School of Architecture's curriculum was initiated the same year, under the guidance of Associate Dean Sunil Bald, and in collaboration with an eight-member board of School faculty. This process set out to identify areas of friction and redundancy in the existing School curriculum; to update and articulate curricular objectives in line with evolving accreditation requirements from NAAB; and to develop a road map for curricular reform consistent with the School of Architecture's comprehensive Strategic Plan.

In the short-term, School performance relative to mid-range curricular reform goals and long-range strategic planning is assessed by way of biannual student evaluations of courses, and through regular consultation with faculty — both formally, in their capacity as members of School committees, and more casually, at monthly faculty meetings convened by the Dean. (See also: Condition 5.3)

5.2.2 Key Performance Indicators

While the administration gathers feedback from students, faculty and staff through a range of formal and informal channels as described in Section 5.2.4 below, key ongoing performance indicators include the following:

Course Evaluations

At the end of every semester, students are asked to submit detailed evaluations of all courses in which they were enrolled, along with feedback on the teaching work of associated faculty. These evaluations are coordinated via a centralized, online system, and include both numerical rankings and written responses to specific questions. The Dean and associate Dean read these evaluations closely, and while participation by students is not mandatory, it is typically robust. These evaluations ensure that the administration remains sensitive to student expectations and concerns, even those that don't rise to the level of formal complaints. They inform decisions about hiring and promotion, the renewal of short-term contracts, and the identification of faculty considered for longer-term appointments.

Annual Design Committee Reviews

The Design Committee conducts portfolio reviews of the MArch I and MArchII students preceding promotion into final year(s) of the program and preceding graduation. By evaluating student design and technical competence of every student, the committee annually evaluates multiple school functions including the curriculum, admissions, and how the school provides additional help to students not meeting expectations. The design committee also plays an important role in curriculum evaluation and planning. See 5.3.2.

Culture Survey

In the fall of 2020, YSoA relaunched its first Climate and Culture Survey of the entire community of students, staff, and faculty. Originally launched in February 2020, collection was paused during the pandemic and resumed in October. The survey was developed with help from the Poorvu Center for Teaching and Learning, which distributed and analyzed the results. 165 community members responded to the survey, including 116 students, 23 staff, and 29 faculty. The data collected bolsters YSoA's increased focus on understanding the foundational experiences that underlie community members' engagement in architectural education

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at Yale. Topics include community & belonging; diversity, equity, & inclusion; and well-being at the School. The school's objectives are to gather confidential input from across the YSoA community and to take an evidence-based approach to strengthen successes and work towards resolving challenges. Results of the survey include the following:

• Many YSoA community members feel well-supported and included, with 87% agreeing their interactions with colleagues and peers at YSoA are positive.

• Over 75% of participants feel YSoA is working towards fairness, justice, and equity in architecture education, although the community was split on whether opportunities are equal for all members.

• Representation, instances of microaggressions, and the issue of class were raised in relationship to DEI considerations.
• Participants are split regarding the promotion of well-being at YSoA: ~50% feel well-being is mostly/completely emphasized, ~20% say not at all/a little, and the remaining ~30% are neutral.
• Participants desired more transparency on YSoA policies and procedures, particularly in relation to budget, evaluation metrics (e.g., promotions and advancement), and student teaching opportunities. Streamlined communication, particularly during remote education, was also a large theme.
• Better accommodation for disabilities was requested. Half of the population felt negative or neutral towards this aspect.

The school is in the midst of working through the results with the faculty and administrative staff, and will be reporting over the summer and into the fall about concrete steps that will come from the survey. One project that has already begun immediately is an examination of the TF/ITF/TA selection process. In addition, there will be continued progress on DEI efforts in curriculum, faculty hiring, and admissions next year, much of which has already been put into place. Ultimately, the aim is to create an equitable and diverse community where all members feel welcome.

Alumni Survey

In Spring 2021, YSoA conducted a survey of alumni from 1954 through the present. The school received 1033 responses from approximately 2900, a 36% response rate. At least one person from 66 of the last 67 graduating classes responded. The survey included questions on graduates' careers and licensure status as well as their thoughts in retrospect on their education at YSoA. The findings include:

• 72% of alumni have practiced architecture during their careers
• 59% are licensed; 66% excluding the classes of 2017-2020 who are working through AXP
• 42% are in leadership positions (15% are sole proprietors, 27% are principals or partners of their firms)

In addition to these initial findings, the survey gives the school extensive data and a set of narrative responses from alumni for reference during future consideration of issues from career services and teaching professional practice to the school's mission and culture.

Assessing Progress

The Administration and the University

Prior to the start of fall semester, the Dean of the School of Architecture meets with the president and provost of the University to discuss the previous academic year and to present goals and initiatives for the coming year. Data on fundraising, faculty hiring, and curricular changes and improvements are weighed against previously identified goals and expectations. Topics discussed include fund-raising, faculty hiring, curricular improvements and development, and yield.

The Dean then meets every 4-6 weeks with the president to discuss the School of Architecture's mission and its ongoing institutional development, and monthly with the provost on issues related to hiring, promotions, budget, and any other areas of concern requiring immediate input or action from the University. The Dean also participates

in a weekly working session with the provost and all of the University's other fourteen Deans. The Yale Cabinet — a group including all fifteen Deans; the president, provost, university secretary, and senior vice-presidents; and the Yale general counsel and chief communications officer — also meets monthly to discuss how operations, budget, and finance-based initiatives serve to support the educational mission of the University's academic departments and professional programs.

Strategic Plan

The Strategic Plan lays out goals, objectives, and strategies in six key areas: Pedagogy and Program, Students, Faculty, External Engagement, Institutional Resources, and Culture. The original 2018 plan articulated strategies for each area in both the near term and three to five years out. The revised 2021 plan is even more specific, defining a baseline and goals for year 1 and year 3 for each strategy. The 35 strategies in the original plan provided a precise gauge of the school's progress during the recent plan update for all faculty and staff to assess via a survey and for the core group of YSoA staff, faculty, and administrators to consider during the planning session in March. The updated plan articulates a revised set of objectives that will be specifically reassessed in 2022 and 2024. The original 2018 Strategic Plan and the updated 2021 Strategic Plan are both included in the appendix to this report.

Assessing Strengths, Challenges and Opportunities

Students, Faculty, and Staff provide the School with feedback and advice through a range of formal and informal channels. Informally, the Dean and other members of the YSoA administration maintain an open-door policy at the School of Architecture, where the Dean's office literally has no door. Staff, faculty, and students provide input that shapes the School's long-range planning goals, and often meet individually with the Dean and Associate Dean to raise concerns and discuss issues of more immediate urgency. In addition, all three groups provide feedback on the school's strengths and challenges through

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a number of more structured forums and events including the following:

Faculty Input

Committees

Faculty are appointed by the Dean to sit on a number of specific committees, where they often serve alongside elected student representatives. These committees meet regularly to review, revise, and refine the School curriculum, and to help develop School policy. Among those playing the strongest advisory role vis-à-vis the School's performance relative to established goals and objectives are:

The Executive Committee is the governing board of the School of Architecture and consists of all members of the faculty with tenure, as well as others appointed by the Dean. This committee participates in the formulation of educational and administrative policy, and reviews all multi-year faculty appointments and promotions.

The Design Committee consists of all of the faculty teaching in the design studios, discusses and reviews issues that involve the teaching of design and evaluates student design performance, through portfolio reviews of the MArch I and MArch II students preceding promotion into final year(s) of the program and preceding graduation. See 5.3.2.

Faculty Meetings

Faculty meetings at the School of Architecture provide a collective forum where faculty discuss issues of special concern to the School, vote on faculty initiatives, and present questions to the Dean. These meetings are held once each month during the academic year, are attended by 50-60 members of the faculty — of every rank, from lecturer to full professor — and are considered to be active work sessions. The Strategic Plan and general review and reform of the School curriculum were developed along similar lines, demanding a high level of faculty engagement.

Student Input

Town-hall meetings

A culture of common purpose and mutual respect is supported by a series of semi-regular, informal town-hall meetings. These are student-led affairs, with chairs and participants arranged in a circle. While faculty and administrators are not always invited to attend, both the Dean and Associate Deans make themselves available to field questions from students, and to address student concerns in a spirit of community and candor. These sessions have grown into a more regular and structured exchange between students and the administration. The Dean held 14 town hall meetings in 2020, many of which were focused on smaller groups of students. In the spring and then again in the summer of 2020, the Dean held individual sessions with the MArch I classes of '21,'22, '23, as well as MArch II students, MED, and PhD students to discuss the school's preparations amid Covid-19. Dean Berke also held open Zoom sessions available to any first year student at the end of the fall 2020 term and into early January providing an opportunity for small group interaction with the Dean.

The Visibility Project

The **Visibility Project** is an initiative by concerned students and alumni of the Yale School of Architecture to analyze the deeply entrenched prejudices and biases that exist within architectural institutions, beginning with our own. By highlighting inequities in our learning environment, the Visibility Project helps promote introspection, create actionable goals, and facilitate the continuing dialogue between the administration and the students.

Student Curriculum Committee

The Student Curriculum Committee meets monthly with the associate Dean to provide input on how subjects are being taught, and what students feel can be done to improve or broaden the curriculum. Members of this committee are selected each year by way of a student-run election.

Course Evaluations

Student course evaluations (described in more detail in 5.2.2 above) ensure that the administration remains sensitive to student expectations and concerns and inform decisions about hiring and promotion, the renewal of short-term contracts, and the identification of faculty considered for longer-term appointments.

Input on Visiting Faculty & Speakers

Each year, students are invited to submit lists of architects, teachers, thinkers, and other practitioners whom they would like to see invited to YSoA, either as participants in the School lecture series, speakers at School-sponsored conferences and symposia, or as faculty in studios and other classes. These lists are reviewed by the Dean and other members of the administration, and efforts to accommodate student wishes are considered in the context of concrete curricular and scheduling demands.

Student Groups

A vital culture of student initiative and engagement is encouraged by an array of **student groups** that maintain a high level of autonomy and agency, in keeping with the School's commitment to academic freedom and dedication to the principles of democracy and student empowerment. Representatives from most student groups meet with the Dean at least once every semester. Associate Dean Sunil Bald also meets regularly with NOMAS and Equality in Design to discuss the school's inclusivity efforts. The following students groups are currently active at YSoA:

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NOMAS - The mission of the Yale National Organization of Minority Architecture Students (Yale NOMAS) is to champion diversity within the design profession by promoting the academic excellence, community engagement and professional development of its student members. Our chapter strives to foster greater inclusion, unity and representation of a plurality of voices at the YSoA by creating spaces and opportunities for peer-to-peer and alumni mentorship, increased cultural exposure to and engagement with a more variegated architectural discourse and meaningful partnerships with the New Haven community.

Equality in design (EiD) - Equality in Design is a student led organization that seeks to promote diverse voices in the design community. EID's role strives to look beyond YSoA, to ensure openness and a will to seek multiple perspectives in design. We seek to provide a platform that values the plurality of ideas and conversations through events, partnerships, talks etc associated or indirectly related to design.

Equality in Design is a coalition of committed students from the Yale School of Architecture seeking equity within the architectural profession and the built environment.

YSoA East - YSoA East is a student group at the Yale School of Architecture dedicated to fostering critical discourse and knowledge of Eastern architecture. The aim of the group is to consolidate and drive interest for eastern architectural and urbanist trends. (https://www.instagram.com/ysoaeast/)

YSoA Christian Fellowship - The Christian Fellowship is a community and discussion group of Yale architecture students that meets weekly to explore the overlap of ideas relating to the Christian tradition, our work, and architecture.

OutLines - OutLines is a social and advocacy group for lesbian, gay, bisexual, transgender, queer, and allied students in Rudolph Hall. OutLines functions as a discussion group, support

system and social network focusing on the exploration of LGBTQ issues within the YSoA, Yale University at large, and future professional settings. (https://lgbtq.yale.edu/resources/outlines-school-architecture)

The Architecture Lobby is an organization of architectural workers advocating for the value of architecture in the general public and for architectural work within the discipline.

Green Action in Architecture is a student group devoted to addressing sustainability and environmental health and wellbeing issues within the school, as well as promoting broader discussion of environmental considerations as they pertain to architecture generally.

The Yale Architecture Forum serves as a place for discussion between Ph.D students from both the School of Architecture and from the History of Art Department who share an interest in architectural history and theory.

Paprika! is a student-edited broadsheet newspaper, published weekly on issues of concern to the student body, and serves as a window into emerging discourse from Yale School of Architecture and Yale School of Art. Every issue is student-curated and aims to broadcast diverse voices in the fields of art, architecture and design. Founded in 2014, Paprika! is named after the vibrant orange carpet in Rudolph Hall. Every issue of Paprika! is designed by a different student from Yale's Graphic Design program. No two issues are alike.

Weather and Its Media
MED Colloquium
Spring 2018

5.2 Planning and Assessment

Ongoing Outside Input

Faculty and students at the Yale School of Architecture engage with, and solicit feedback from, a variety of sources, both within and outside the School community.

Informal Feedback

Formal reviews of work done in the studios at the Yale School of Architecture are held twice each semester, and provide an opportunity for faculty and students alike to engage and converse with active practitioners in the field, scholars and consultants working in other disciplines, and peers from other institutions. Outside jurors and critics thus play a valuable, if informal, role in the ongoing review of Yale's curriculum, student work, and the general efficacy of School policies relative to those of other programs. Yale faculty are likewise regularly invited to participate in midterm and final reviews at other schools throughout the region, and across the country, allowing our faculty to be part of the national conversations about design pedagogy.

Individual faculty and the school as a whole gathers feedback from an array of other organizations and individuals through specific courses and programs. These include the clients for Building Project, community-based organizations involved in Core 3, and consultants that team with students during Systems Integration.

At the annual career fair hosted by the School of Architecture's Career Services program, representatives from a host of professional offices visit the School, meet with students, and interview qualified candidates for employment after graduation. This gives graduating students intensive exposure to the interview and hiring process, but also allows faculty to solicit constructive feedback from outside practitioners about the state of the curriculum, the relative preparedness of our students for professional practice, and the state of the program, more generally.

Peer Review

Faculty at the School of Architecture are actively engaged in a variety of scholarly research projects, and publish their work widely in a host of peer-reviewed journals. The process of peer review, by which scholarly work is reviewed and evaluated by other members of the discipline for quality, originality, and contributions to the field, thus plays an important role in verifying and validating the work done by our faculty. Recently published, peer-reviewed projects include:

"Interactive Visualization for Interdisciplinary Research" - by Naomi Keena, Mohamed Aly Etmana, Josh Draper, Paulo Pinheiro and Anna Dyson by the Society for Imaging Science and Technology, 2016.

"Timber City: Growing An Urban Carbon Sink With Glue, Screws, And Cellulose Fiber" - by Alan Organschi, Andrew Ruff, Chadwick Dearing Oliver, Christopher Carbone, Erik Herrmann for the WCTE World Conference on Timber Engineering, 2016.

"Clark's Crow: A Design Plugin to Support Energy Analysis Decision Making Towards Sustainable Urban Ecologies" — by Naomi Keena, Marco Raugei, Mohamed Aly Etmana, Daniel Ruan, and Anna Dysonin Ecological Modelling, 2018.

"New Haven Building Archive: A Database for the Collection, Study, and Communication of Local Built Heritage" - By Elihu Rubin, Saima Akhtar, Benedict Brown, and Holly Rushmeier for the EUROGRAPHICS Workshop on Graphics and Cultural Heritage, 2018.

"Built Environment Ecosystems Framework towards Sustainable Urban Housing Infrastructure" - By Anna Dyson, Naomi Keena, Alan Organschi, Lisa Gray, Nick Novelli, Kipp Bradford, Mohamed Aly-Etman, Matt Gindlesparger, Hind Wildman, Jonathan Duwyn, Martina Otto, Sophie Loran, Catherine Beltrandi, and Mark Radka for the IOP Conference Series: Earth and Environmental Science, 2020.

"Buildings as a Global Carbon Sink," Alan Organschi and others, in Nature Sustainability, 2020.

"Conjoined Towers for Livable and Sustainable Vertical Urbanism" - By Kyoung Sun Moon and Miguel Darcy de Oliveira Miranda in the International Journal of High-Rise Buildings, 2020.

The Architect is In - Yale Day of Service
New York
May 2020

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5.3 Curricular Development

The program must demonstrate a well-reasoned process for assessing its curriculum and making adjustments based on the outcome of the assessment.

Programs must also identify the frequency for assessing all or part of its curriculum.

A broad-based assessment and revision of the YSoA curriculum was initiated by Associate Dean Sunil Bald in Fall 2017. This project ran parallel to the development of the School's new Strategic Plan, initiated in the same year. From the beginning, this process was understood to be both reflective and iterative. That is to say, the School curriculum is considered to be a living document -- growing, evolving, and renewing itself through an ongoing process of collective analysis, critique, and revision. This broad-based process of reassessment and revision is described below.

Program Assessment and Curriculum Development

As a matter of self-assessment, the School's evaluation of the curriculum began with a comprehensive review by members of the curriculum committee, along with other key faculty members, of all course syllabi in each of the School's major study areas — Design and Visualization, Technology and Practice, History and Theory, and Urbanism and Landscape. Each review group met independently to discuss overlaps and redundancies in existing course offerings; to explore opportunities for greater curricular efficiency; to identify "holes" in the existing curriculum; and to evaluate the general structure and sequence of required coursework.

Study groups then convened to present their findings, which were considered relative to both NAAB's Conditions for Accreditation and the curricula of a number of Yale's peer institutions. These findings were then presented to the broader faculty and YSoA executive committee, who proposed the following changes:

- Limit the number of courses delivered in traditional lecture format, in favor of more seminar and discussion-based learning.

- Reduce overall course-load by one in each of the first four semesters to align more closely with those of Yale's peer institutions.

- Encourage curricular diversity by increasing the number of elective courses available to students by 33%

- Increase the number and overall presence/prominence of courses in the area of Technology and Practice by treating Building Project as a Design Practicum.

- Reconceive the sequence of Core studios to reflect a shift away from typologically-based projects — wherein students explore the design of buildings at a range of scales, from the individual dwelling unit to the urban district — to those based in the exploration of conceptually- and methodologically-oriented issues — from representation, to material, to context, to systems.

As of the 2019-2020 academic year, these recommended changes have been fully implemented.

Ongoing Curriculum Evaluation and Development

Curriculum review is an ongoing and continuous process, overseen by an eight-member committee of senior faculty from across the school's four study areas — Design and Visualization, Technology and Practice, History and Theory, Urbanism and Landscape — who are charged with reviewing syllabi for all required and elective courses offered at YSoA. See the Committee and Faculty Assignment List.

Each year, the Dean's office issues an open call for proposed courses to all YSoA faculty. The associate Dean then meets with the rest of the Curriculum Committee to consider whether or not there exists a need for such courses, and to determine if these are sufficiently developed to be offered.

The Dean and associate Dean also meet regularly to review Core studio programs/options, in order to guarantee these meet both in-house curricular goals and NAAB accreditation requirements. To this end, the associate Dean works directly with Core studio coordinators and members of the Curriculum Committee to ensure continuity of study and NAAB compliance across this four-semester sequence. Additionally, students in the Master of Architecture Professional Degree Program submit to an annual portfolio review, coordinated by the Design Committee. The primary intention of this review is to ensure that every student in the program is developing core competencies in line with institutional standards. Secondarily, it provides design faculty the opportunity to evaluate the curriculum as a synthetic whole, and to consider the relative efficacy of individual courses to impart specific skills and knowledge.

Finally, visiting jurors play an informal, but important, role in the ongoing process of curriculum review at YSoA. While internal faculty or in-house jurors tend to predominate at many other schools, Yale's midterm and final reviews are characterized, in part, by the wide range of academics, practitioners, and other stakeholders from outside the school invited to take part. These visitors provide important feedback and input to studio faculty and administrators alike.

5.3 Curricular Development

Student Involvement:

Students participate both directly and indirectly in the curriculum review and planning process. The Student Curriculum Committee is made up of four students — one each from years 1-3 in the MArch I program, plus one from the post-professional program — and meets monthly with the Associate Dean to provide input on how subjects are being taught, and what students feel can be done to improve or broaden the curriculum. Members of this committee are selected each year by way of a student-run election.

At the end of every semester, students are asked to submit detailed evaluations of all courses in which they were enrolled, along with feedback on the teaching work of associated faculty. These evaluations are coordinated via a centralized, online system, and include both numerical rankings and written responses to specific questions. The Dean and Associate Dean read these evaluations closely, and while participation by students is not mandatory, it is generally quite robust.

This process has prompted a number of significant changes and improvements to the YSoA curriculum. These include the reduction of required credits in the first four semesters and expansion of elective options mentioned previously and a recent shift in focus in the Core 3 studio from traditional architectural typology to more socially-oriented, community-based projects, as well as the aforementioned increase in elective coursework and general reduction in the number of classes required to graduate. Recent projects in the third semester have included an Immigration Center and a Center for Restorative Justice — programs that have challenged students to reconsider the role of the architect vis-à-vis the community, and to nourish an understanding of architectural practice as relevant to problems and issues pertaining to policy, planning, and social-scientific research.

Introducing Deborah Berke
Fourth Floor Pit, Rudolph Hall
Event 2015

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5.4 Human Resources and Human Resource Development

5.4.1 Faculty Achievement

The Yale School of Architecture holds firmly to the principle that graduate architectural education is greatly enriched by the diversity of its faculty members. Accomplished architects, engineers, historians, theoreticians, planners, developers and visual artists actively shape the life of the School, providing students an education in architectural design conceived as a comprehensively creative process.

Composition and Structure of the Faculty

The School maintains and develops its mix of resident and visiting, tenured and adjunct appointments to ensure that its faculty comprises those beginning their academic and professional careers as well as those with greater experience. All of the faculty—permanent, yearly and visiting, regardless of rank— are active participants in the life and administration of the School. For example, the governance of the School, as represented by the composition of appointed assistant Deans, academic directors, study area coordinators, and committee members, is equally represented by all types of faculty. The overall goal has been to build a faculty balanced between faculty who are committed to the School on an 80% to 100% basis, and faculty who participate as part-time or visiting faculty practitioners and scholars. A full teaching load for a regular faculty member in architectural design consists of a studio and a seminar or lecture course each semester. Non-design faculty typically teach two to three courses. All regular faculty participate on the committees of the School, as do many part-time faculty. The Dean is responsible for all short-term faculty appointments (one year or less). Dean Berke recently created the positions of "senior lecturer" and "senior critic" to provide three-year appointments to lecturers and critics who have made significant contributions to the school through successive one year appointments. Multi-year appointments are proposed by the Dean or found through a search, approved by the School's Executive Committee, and reviewed and then approved by the Provost's Office.

Recruitment & Approval Process for Faculty Appointments at Yale University

(The following is taken from the 2020 Yale University Faculty Handbook, Section III. Faculty Ranks, Appointments, and Policies: University-Wide pg 9

Recruitment and Approval Process for Faculty Appointments Faculty positions are announced, and nominations for them solicited, in ways that will ensure appointments of the highest possible quality, and an appointments process that is consistent with the University's goals of open access and affirmative action. Usually recruitment for initial appointments will include advertisements, such as announcements in professional journals and newsletters and at professional meetings, as well as contact with representatives of relevant departments and schools by letter, e-mail, or telephone. When general announcements are unlikely to be successful, departments and schools are expected to undertake recruiting efforts that reflect the special characteristics of the position and relevant pool of candidates. In general, new appointments to the ranks of professor, associate professor, and assistant professor, including adjunct ranks, require written documentation of the entire search process. This documentation is reviewed by the Office for Equal Opportunity Programs and must be approved by the Provost's authorized representative before an appointment is offered. Affirmative Action Deputies are appointed in each of the professional schools, and individuals are asked to serve on search committees in the Faculty of Arts and Sciences, to assist search committees in their schools and departments with the recruitment of women and members of minority groups. More detailed information about appointments procedures can be found in memoranda prepared and distributed by the Provost and Deans of the FAS and the professional schools.

Equal Opportunity

All official Bulletins of Yale University, including that of the School of Architecture, include the following statement:

The University is committed to basing judgments concerning the admission, education, and employment of individuals upon their qualifications and abilities and affirmatively seeks to attract to its faculty, staff, and student body qualified persons of diverse backgrounds. In accordance with this policy and as delineated by federal and Connecticut law, Yale does not discriminate in admissions, educational programs, or employment against any individual on account of that individual's sex, race, color, religion, age, disability, status as a protected veteran, or national or ethnic origin; nor does Yale discriminate on the basis of sexual orientation or gender identity or expression. University policy is committed to affirmative action under law in employment of women, minority group members, individuals with disabilities, and protected veterans. Inquiries concerning these policies may be referred to Valarie Stanley, Director of the Office for Equal Opportunity Programs, 221 Whitney Avenue, 4th Floor, 203.432.0849. For additional information, see.

5.4 Human Resources and Human Resource Development

Faculty at the Yale School of Architecture

(The following is taken from the Yale University Faculty Handbook, Section V "School of Architecture" pg 58-63 updated August 22, 2019:

The School of Architecture offers graduate and post-professional education in the fields of architecture and environmental design. It also offers a program that leads to a PhD. and programs of study to Yale College students that may lead to an undergraduate major in architecture. For the School of Architecture, policies and practices specified in this section take precedence over conflicting policies and practices designated in other sections of the Handbook.

Governance: The Executive Committee is the governing board of the School and consists of all tenured faculty members holding appointments in the School and others appointed by the Dean from the ranks of associate professor on term, associate professor adjunct, professor adjunct, and professor in the practice. The Dean may invite non-voting members from other ranks at the School to meet with the Executive Committee in an advisory capacity. The Executive Committee participates in the formulation of educational and administrative policies and reviews proposed faculty appointments and promotions.

Composition and Ranks of Faculty: The faculty in the School of Architecture is composed of scholars and professional practitioners. Faculty members are expected to devote a portion of their time to research or practice in their areas of professional interest and expertise. The faculty is composed as follows:

Ladder Faculty:

The ladder faculty comprises the ranks of assistant professor, associate professor on term, associate professor with tenure, and professor. With modifications as appropriate for faculty holding appointments in the School of Architecture or as modified in this section, ladder faculty appointments in the School of Architecture follow the definitions, policies, and procedures for appointment and reappointment of these ranks as established for the Faculty of Arts and Sciences

under FASTAP 2007 protocol (see Section IV.H.I). Appointees within this category are considered members of the regular faculty; are considered full-time faculty members; and are responsible for teaching and other duties, such as participation in faculty meetings, juries, School committees, student advising, and other forms of School and University service.

Term Appointments: Assistant professor and associate professor on term are non-tenure appointments made for a stated number of years. Initial appointments of assistant professors are normally for four years. No one may serve in the rank of assistant professor for more than seven years plus any extensions as described in Section III.F. The cumulative time on term appointments in the ranks of assistant professor and associate professor on term may not exceed nine years plus any extensions as described in Section III.F

Tenure Appointments: Associate professor with tenure and professor are tenure appointments and are made without term.

Non-Ladder Faculty:

The Adjunct Faculty comprises the ranks of assistant professor adjunct, associate professor adjunct, and professor adjunct. Appointees within these ranks are considered members of the regular faculty. Appointments in these ranks are given to those who are active as practitioners in their professional field, and are defined as requiring less than full-time participation in teaching and other activities expected of faculty holding full-time appointments in the School. Adjunct faculty will not be appointed to less than half of full-time employment. Appointments to these ranks are normally for a term of one to five years and may be renewed one or more times without either the expectation or the promise of tenure. Adjunct faculty members are responsible for teaching and other duties, such as participation in faculty meetings, juries, School committees, and student advising.

Learning Doing Thinking
Symposium
April 2016

Learning Doing Thinking
Symposium
April 2016

5.4 Human Resources and Human Resource Development

Appointments as Instructor, Lecturer, Senior Lecturer, Critic, and Senior Critic may be offered to outstanding scholars and distinguished professionals who may or may not hold a rank from another academic institution. Such appointments may be full- or part-time. Faculty members appointed within these ranks are responsible for teaching and may be responsible for other duties, such as participation in faculty meetings, juries, School committees, and student advising. The ranks of instructor, lecturer, or senior lecturer are normally given to those who are involved in the teaching of non-design studio courses, such as lecture or seminar courses. The ranks of critic and senior critic are normally given to those who are involved in the teaching of design studio courses or who are involved in the teaching of both design studio and non-design studio courses. Faculty appointed as senior lecturers or senior critics are expected to hold advanced standing in their fields and have four or more years of teaching experience or its equivalent. Appointments to the ranks of instructor, lecturer, or critic, may be for a term of one year or less. Appointments and reappointments at the rank of senior lecturer or senior critic may be for a term of up to three years.

Appointments as Endowed Visiting Professor, Endowed Professor in Practice, and Endowed Visiting Fellow may be offered to distinguished professionals who may or may not hold an academic rank from another academic institution. Faculty members appointed within these ranks are responsible for teaching. Although endowed visiting professors, endowed professors in practice,endowed visiting fellows normally are not required to participate in administrative responsibilities within the School, those appointed to these ranks may be required to participate in faculty meetings, juries, School committees, and student advising. Appointments at the ranks of endowed visiting professor and endowed visiting fellow are normally for a term of one year or less. Appointments at the rank of endowed professor in practice are normally for a term of up to five years and may be renewed one or more times without either the expectation or the promise of tenure.

Professors in the Practice will be distinguished practitioners who demonstrate eminence in the field, sustained accomplishment, and sustained activity in their area of practice. They will hold national or international reputations for their innovative and transformational contributions to their practice, through creative work, professional leadership, practice-centered publications, or other demonstrations of significant accomplishment. Exceptional contributions as a practitioner are the basis of evaluation. This appointment is not intended for those whose field of practice is primarily that of teaching or pedagogy. Appointments in this rank are for terms of up to five years, with the possibility of reappointment in accordance with applicable policies and procedures. Initial appointment or promotion to this rank will require review by the appropriate Standing Advisory and Appointments Committee (SAAC), approval of the Provost, and approval of the Corporation.

Visiting Appointments may be given to distinguished scholar-professionals who hold an academic rank from another academic institution. Their visiting Yale appointment will carry the same rank as they hold at the other institution. These appointments normally carry only teaching responsibilities and are made in lengths of time varying from one week to nine months. These appointments are made in accordance with Section XVI and are subject to benefit limitations as described in Section XVIII.D.2.

Brunelleschi + Rossi
Colloquium
September 2017

5.4 Human Resources and Human Resource Development

Appointment, Reappointment, and Promotion Policy and Procedures:

Open searches are required to fill initial appointments within the ranks of ladder and adjunct faculty. Searches are not required for appointments to any other ranks or for reappointments or promotions within the ranks of ladder and adjunct faculty. Ladder positions are normally open only to persons who hold the Ph.D. degree, its equivalent, or an appropriate terminal professional degree. Rules governing ladder appointments and promotions are consistent with FAS policies as described in Section IV under the protocol for FASTAP 2007. Qualifications for an initial appointment as assistant professor include promise of success as a teacher and achievement as a scholar or professional. Reappointment as assistant professor requires evidence of success as a teacher and achievement as a scholar or professional. To be considered for appointment or promotion as associate professor on term, candidates must present original significant creative and professional accomplishments or published research and scholarship representing early demonstrations of disciplinary or interdisciplinary leadership, excellent teaching and mentoring of students, and engaged university citizenship. For candidates being considered for promotion to associate professor on term, review criteria shall include, if appropriate, a statement of professional practice together with documentation of built or design work.

Term Appointments, Reappointments, and Promotions:

Proposed term appointments, reappointments, and promotions to the ranks of Non-Tenured Ladder, Adjunct Faculty, and Professors in the Practice are presented by the Dean to the Executive Committee for review and recommendation. Voting is limited to members of the Executive Committee at the rank under consideration or higher without distinction between ladder and non-ladder status, e.g., all professor, professor adjunct, professor in the practice, associate professor on term, and associate professor adjunct members of the Executive Committee may vote on appointment or reappointment for an associate professor

on term. The Dean forwards appointments, reappointments, and promotions recommended by the Executive Committee to the Provost. If the Provost approves an appointment, reappointment, or promotion, in consultation with the Provost's Standing Advisory and Appointments Committee (SAAC) when appropriate, the recommendation is forwarded to the Corporation for final approval. Proposed term appointments and reappointments of one year or less to Other Term Faculty are made by the Dean and forwarded to the Provost for approval. Those appointments longer than one year are proposed by the Dean for approval by the Executive Committee, with voting as described in the above section, and then forwarded to the Provost for approval.

Tenure Appointments and Promotions:

A candidate for appointment or promotion to a tenure position, whether at the rank of professor or associate professor, must have attained distinction of a high quality in scholarly, creative, or professional accomplishment as demonstrated by both (i) written or professional work and (ii) teaching. Candidates for the rank of associate professor with tenure will be expected to have produced a substantial body of significant professional work or have published or have accepted for publication a substantial work or body of scholarship. Criteria for promotion shall include, if appropriate, documentation of built or design work. Proposed appointments to tenure as well as proposed promotions from associate professor with tenure to professor are presented by the Dean to the Executive Committee for review and recommendation. Only tenured members of the Executive Committee at the rank under consideration or higher may vote. The Dean forwards appointments and promotions recommended by the Executive Committee to the Provost. If the Provost approves an appointment or promotion, with the advice of the Provost's Standing Advisory and Appointments Committee (SAAC), the recommendation is forwarded to the Corporation for final approval. Associate professors with tenure are expected to be reviewed for promotion to professor within five year of hire or promotion to that rank. At any time after seven years have passed from the date of appointment or promotion to associate professor

with tenure, the Provost, in consultation with the Dean, may recommend that individual directly to the Corporation for promotion to professor.

Non-reappointment Notification Policy for Term Appointments:

Faculty members in the Ladder, Adjunct, and Professor in the Practice ranks holding appointments of three or more years shall receive written notice of non-reappointment at least one year before the terminal date of the appointment.Appointments for terms of fewer than three academic years shall receive notice of non reappointment at least six months before the expiration of the appointment. Failure to provide such notice does not create any right to extension or reappointment.

For Other Full-Time Faculty in the fifth or any subsequent year of successive years of appointment in the non-ladder and non-adjunct ranks, notice of non-reappointment normally will be given by December 31 of the final year of appointment. There is no requirement of notification of non-reappointment for any ranks not mentioned above.

5.4 Human Resources and Human Resource Development

Leave Policy and Procedures:

Leave policies for the School of Architecture conform in general to those set forth in Section XVII and Section III.I. Tenured faculty are eligible for Triennial Leaves of Absence, Sabbatical Leaves of Absence, and Senior Faculty Fellowships. Adjunct faculty and professors in the practice are eligible for Sabbatical Leaves of Absence after having taught in those ranks at Yale for twelve semesters without a paid leave.

Assistant Professors are eligible for a one-year leave at full pay in the second, third, or fourth year of teaching at that rank at Yale, provided they return to Yale for a full year of teaching. Such leaves are awarded to assistant professors who present, in the fall of the previous academic year, a leave proposal that is evaluated by a subcommittee of the Executive Committee and then approved by the Dean and the Office of the Provost. The leave proposal shall consist of a five-page single-spaced explanation of the scope and significance of the proposed research or professional practice and the opportunities for publication and realization. It shall include a detailed plan to achieve the stated intention regarding research, publication, or professional practice.

Assistant Professors who are appointed or promoted to the rank of associate professor on term are eligible for a one-year leave at full pay provided that at least two semesters of full-time teaching in residence have elapsed since their last leave and that they return to Yale after the leave for a full year of teaching. Such leaves follow the same application process and criteria as leaves afforded assistant professors.

Research/Travel Funds:

Faculty members may apply to the Dean for research or travel funds. Over the past 4 years, these funds have supported faculty projects at the 2017 and 2020 Venice Biennale and the 2019 Seoul Biennale, as well as faculty work on the Dreamer Institute in Afghanistan, Stalled!, and

MIXMuseum, a partnership with museums in the US, UK and Europe to meet the needs of 'non-compliant bodies' organized by Professor Joel Sanders.

5.4.2 Architect Licensing Advisor

The School of Architecture's Architect Licensing Advisor is Phil Bernstein (FAIA), Associate Dean and Professor, Adjunct. Professor Bernstein also advises the Career Services Program, teaches both required and elective courses in Architectural Practice, and interacts directly with all students in the MArch program in their third year. He is knowledgeable and trained in all issues pertaining to AXP requirements, NCARB and licensure. He is a regular attendant at the biannual NCARB Licensing Advisor Summit, and organizes numerous AXP information sessions each year, as part of both his required course on Architectural Practice and the School of Architecture Career Services Program.

5.4.3 Professional Development on the Faculty

The School of Architecture proudly sustains this dynamic learning environment by maintaining an accomplished faculty body experienced in both academic and professional practice. This faculty composition reflects the School's view that architecture is an intellectual discipline, both an art and a profession. In addition to teaching, research and scholarship, many of the regular faculty maintain independent practices in various fields, including architecture and urban planning. The Yale School of Architecture studio tradition is strengthened by this roster of regular faculty who are active practitioners in the field of architecture, equally committed to teaching and practice. In addition, many of the School's practicing faculty are also principals of their own practices, highly invested in the School, and strengthening the quality of the School's education through their experiences.

The School offers several resources supporting professional development and continuing education for faculty. As part of their continuing education, faculty members are encouraged to attend all lectures and symposia held at the School. The School is a registered provider with the American Institute of Architects Continuing Education Systems and credit earned by attending

any of the School's symposia can be reported to CED Records for AIA members. Certificates of Completion for non-AIA members are also available upon request.

The School's public lecture series also provides the opportunity for the regular faculty to share their work with an expanded audience outside the School. Videos of these well-attended events are also streamed or available online, expanding the outreach of faculty work. A number of Faculty including Anna Dyson, Kyle Dugdale, Robot A.M. Stern, Stella Betts, and Justin Garrett Moore have lectured in recent years. The School's symposia are also organized by the faculty and students and provide an important forum for the School's faculty to hear and discuss ideas with the entire architecture community outside the School. In addition, many self-initiated and School-supported opportunities abound. Recent faculty-Initiated symposia include My Bauhaus: Transmedial Encounters, Natures of Ornament, and Clouds, Bubbles and Waves.

Faculty of the School are encouraged and partially supported to participate in scholarly and professional conferences, such as the Society of Architectural Historians Annual Meeting and national and regional ACSA meetings. For eligible ladder faculty, the Provost's Office will provide funds for travel to professional meetings where the individual is reading a paper or chairing a session. For tenured faculty, the maximum amount of reimbursement is $600 per academic year; for non-tenured faculty, the maximum is $1,200 each academic year. For non-ladder faculty, travel and participation is also available and supported at the discretion of the Dean, see above.

Yale School of Architecture periodical publications such as Constructs and Perspecta offer faculty members opportunities to publish scholarly articles, exhibition reviews, and academic research. In addition, each year the Yale School of Architecture publishes several books authored or edited by faculty members.

The School of Architecture's Exhibitions program provides the faculty opportunities to curate shows and/or display work. These exhibitions enable the School and the faculty to not only create new knowledge, but also disseminate it to other schools and institutions.

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5.4 Human Resources and Human Resource Development

Many of the School's design faculty maintain significant professional practices locally, in Boston, and in New York City. Appointments and class schedules are structured to ensure both quality teaching and encourage independent practice and research. The long list of awards won by the collective faculty testifies to the level of aspiration expected of the design faculty and communicated to the students. Sabbatical and leave policies permit faculty to take time for professional development, academic development, or public service. The resumes of the faculty show the range of their individual achievements in practice, research and scholarship, critical and theoretical publications, community and professional service and academic and professional recognition and awards. In addition, the faculty is supported by a strong administrative staff.

The Dean provides funding to faculty for research and travel. Over the past 4 years, these funds have supported faculty projects at the 2017 and 2020 Venice Biennale and the 2019 Soul Biennale, as well as faculty work on the Dreamer Institute in Afghanistan, Stalled!, and MIXMuseum projects. The University also provides faculty with opportunities for funding through such organizations as the Whitney Humanities Center, which awards the A. Whitney Griswold Faculty Research Fund and the Frederick W. Hilles Publication Fund.

The School also awards the Professor King-lui Wu Teaching Award each year to a faculty member who combines architectural practice with outstanding teaching. Recipients are selected by the vote of graduating students.

The School's fabrication facilities, digital resources, and presentation equipment are unparalleled and provide some of the most advanced technologies available. These resources are primarily designated for the School's academic programs. Faculty may, however, use these facilities and equipment for purposes beyond the scope of course activities upon prior approval of the Dean. Proposals are evaluated for the projects' relevance to the activities of the School, as well as resource availability and management.

5.4.4 Student Advising and Support

Student Advising and Support are led by the school's three Assistant Deans. Assistant Dean Tanial Lowe is responsibile for offering advice and guidance related to diversity and inclusion, discrimination and harassment, and equal opportunity as YSoA's Dean's Designee. Bimal Mendis, coordinates and leads efforts within the School of Architecture to shape a more diverse, equitable and inclusive culture, environment and pedagogy as Assistant Dean for Diversity, Equity and Inclusion. Eeva-Liisa Pelkonin coordinates academic advising (both peer to peer, and faculty-student) as Assistant Dean of Academic Affairs. She advises students on how to meet their individual academic goals on an individual basis and attends to students' overall wellbeing on both individual and collective level.

The three-year MArch degree curriculum is specifically structured to provide students coming from a variety of backgrounds with thorough and rigorous preparation for careers as architects. Goals concerning intellectual and personal growth are integral to this process.
The School emphasizes the importance of being educated by leading practitioners who maintain active practices and the School maintains a constant debate and dialogue on the state of architectural practice from the studio critiques to the lecture series.

It is the stated goal of most entering students at the School of Architecture to become independent practitioners, and a high percentage of the School's graduates have achieved that goal via professional education and registration. According to the 2021 Alumni survey, 72% of alumni have practiced in the field of Architecture. The structure of organizations that control licensure, including NCARB and AXP, and the legal and ethical issues concerning the profession, are covered in the required course Architectural Practice and Management (2031a).

The Yale School of Architecture is a tight-knit community, and the School strives to maintain a close relationship between faculty and students. Nothing is more critical to fostering this environment, an important benchmark of the

School's approach to architectural education, than the size of the School and its classes. In each design studio, regardless of level, the average faculty to student ratio is 1:10. Seminars are capped at 12 students to ensure that discussion and participation is fruitful and stimulating.

All faculty are required to maintain office hours, attend faculty meetings and other events as specified in their appointment letters. Faculty at every level are likewise expected to advise students, in addition to their other responsibilities.

Teaching assistantships and fellowships allow faculty and students to interact in other ways. Students gain important teaching experience and/or more advanced knowledge, under the guidance of faculty. The one-on-one working relationships fostered by these collaborations are mutually beneficial for both students and faculty members. In addition to the teaching assistantships for graduate courses in the School of Architecture, Yale has the distinct benefit of supporting a liberal arts undergraduate major. Undergraduate architecture courses are taught by the same faculty as the graduate school, and offer highly competitive teaching fellowships. Student Teaching Fellows have the opportunity to work with faculty to lead sections and workshops, give presentations, provide design instruction, and discuss curriculum. YSoA typically lists approximately 80 TA and TF positions each semester.

5.4 Human Resources and Human Resource Development

Mental Health:

In the Spring 2021 semester, Krista Dobson was hired as a full-time non-clinical counselor for the Schools of Art, Architecture, and Drama. This new position supports students with short term mental health and wellness needs including, but not limited to, development of strategies related to time and stress management, conflict resolution, social and cultural belonging, and self-care. As a non-clinical counselor, she partners both with Yale Mental Health to refer students with immediate and long-term clinical needs, as well as each School's Title IX Coordinator to refer students to the appropriate Yale resources for these concerns.

Yale Health provides all students enrolled at least half time in a degree program with counseling and other mental health-related services completely free of charge, regardless of whether they have waived Yale Health coverage. The Yale Health website states:

"Yale Health Mental Health & Counseling provides free, confidential mental health treatment to members of the Yale student community. We offer a wide range of services including individual therapy, group therapy, and medication consultations and management…. We have a long history of providing quality treatment to Yale students and understand the challenges facing students today. We partner with you to understand the issues you are facing and to develop a plan for treatment that will help you gain the insight and skills to thrive at Yale."

Career Services:

The career services program organizes a series of workshops, panels, lectures, recruiting events and online resources to help prepare students for career opportunities after Yale. The schedule is reviewed and tailored each year, responding to student needs and general market conditions. Due to the extraordinary circumstances of COVID-19, the 2020-2021 calendar was adjusted to be done remotely. Additional programming was added to respond to the abrupt changes students were facing including the development of an Alumni/Student mentorship program. Events and workshop for the 2020-2021 academic year included:

Fall 2020

Documentation Workshop with Luke Bulman
Presentation which outlines tools and tactics for documenting work effectively and prepping it for portfolio use

Formatting Materials with Luke Bulman
Presentation which outlines book formatting, page layout techniques and typography for student portfolios

Changes in Office Functionality & Work Culture Panel
Discussion with alumni about work culture during the pandemic and forecasting a post-covid workplace

Yale Women in Architecture Panel Discussion
Part of a larger series, this panel explored alternative Careers to Architecture in the Visual Arts

Spring 2021

Resume and Cover Letter Presentation with Luke Bulman
Presentation and discussion on resume, work sample and cover letter layout and content

Employment Strategy and Opportunities in Today's Market with Phil Bernstein

Zoom Interview & Networking Etiquette
Panel with alumni in different office settings/current students about how to present work digitally and what has worked best for them

Salary Negotiation Presentation with Nancy Alexander
Presentation on contract negotiation, ins and outs of contracts for different roles / internships

Virtual Career Fair

Historically a 1.5 day event held at the school in New Haven, this year's Career Fair was held virtually with 49 participating architecture firms. Firms were asked to give brief presentations allowing students to ask questions and "meet" them informally. Students then submitted resumes and work samples to the YSoA career services team which compiled and sent them to the 49 participating firms. Interview dates and format were determined by firms. The fair was open to last year's graduating class since they missed out on the Career Fair in Spring 2020.

Perspecta 50 Launch Party
Van Alen Institute
Event, 2017

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5.5 Social Equity, Diversity, and Inclusion

In July 2020, Dean Deborah Berke described the Yale School of Architecture's commitment to social equity, diversity, and inclusion in a letter addressed to the entire School community, and published on the School website. Penned in the context of widespread nationwide protests against police brutality stemming from the murder of George Floyd by officers of the Minneapolis police department, and in response to demands on the part of students and alumni that the School of Architecture address its ongoing complicity in the perpetuation of structural racism in the American university -- and in the field of Architecture, specifically -- Dean Berke's letter lays out a pointed strategy for addressing the inequities still endemic to the architecture profession and architectural education, addressing the need for clear-eyed analysis, critique, and reform of the School's approach to faculty hiring, curriculum development, and student support. The following is excerpted and adapted, in part, from this document.

5.5.1 Commitment to Diversity, Equity, and Inclusion

The complicity of the built environment in reinforcing the racial injustices in our culture requires structural change. We must challenge and dismantle racism through action.

Consequently, the school administration is working together with faculty to develop more inclusive teaching methods, more expansive topics, and more diverse sources to draw from in scholarship and design. We are working in partnership with students to move forward with curricular change, as well as increasing our support for their organizations. We have been listening to alumni and learning from their experiences while at the school and in the profession since graduating. And we will be asking the University Administration to increase the financial support they provide for the urgent work we need to do, including the re-opening of our faculty searches and the hiring of an Equity and Diversity Officer. We have engaged Michelle Wonsley-Ford of the Center for Racial Justice in Education as an advisor.

This work is ongoing, but begins with a commitment to dismantling inequities in the school's culture and curriculum, and to increasing access for BIPOC students. It continues by expanding our collective engagement on issues of race and inequity in the areas of architectural education and professional practice, thereby contributing to the construction of a more equitable, inclusive, and fundamentally just built environment.

This work was coordinated by Associate Dean Sunil Bald, working closely with faculty curricular teams and students from the Yale chapter of the National Organization of Minority Architecture Students (NOMAS) and Equality in Design (EID) who have energetically coordinated town halls to collect student input and ideas.

5.5.2 Faculty and Curriculum

Broadly speaking, in terms of the curriculum and faculty, we will:

- expand the number of courses that explore inequalities of the built environment
- commit to diversity in lecturers, jurors, visiting faculty
- ensure that our academic environment aligns with our values
- expand and strengthen our efforts to hire, promote, and retain a diverse faculty
- continue to hire and support faculty with expertise in urban inequality, environmental injustice, accessibility, non-western and non-colonial architectural history and theory, and community engagement

5.5.3 Student Support

For our students, we will:

- continue to increase the funds available for financial aid
- continue and expand our efforts to diversify the student body
- actively recruit students from Historically Black Colleges and Universities and public universities with diverse student bodies

- grow funding for student groups including NOMAS and EID and increase targeted recruitment efforts by creating a new annual fund donation option dedicated to Diversity | Equity | Inclusion
- do more to foster a more equitable, supportive, and inclusive learning environment with classes and discourse with relevance to people of all backgrounds

For our educational environment, we will:

- recognize the narrow focus of the models, drawings and artifacts in our building and expand and diversify it
- diversify our exhibitions
- address the non-neutral nature of iconography specific to the representation of architecture and architectural education

School of Architecture Strategic Plan

The Strategic Plan lays out a number of goals and actions prioritizing the construction and maintenance of a diverse and equitable culture at the School of Architecture. These include:

- Address issues of social justice and climate change in the built environment
- Secure funding for all to graduate without tuition debt
- Continue building a culture of belonging
- Attract and support a diverse community of students who will be prepared to lead and influence the future of the discipline.
- Attract, support, and develop a diverse body of leading architectural educators. To this end, appoint more junior faculty, diversify high-visibility senior appointments, and work to improve retention among faculty of color.
- Model a culture that sets the standard for contemporary architectural education, practice, and research.
- Model a culture characterized by diversity, engagement, and supportive climate, setting the standard for contemporary architectural education and practice.

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5.5 Social Equity, Diversity, and Inclusion

Student and Faculty Demographic Change

YSoA is striving to improve the representation in its student ranks. Between the 2015-2016 and 2020-2021 school years, the share of international students has increased from 28% to 53%. Last year, international students hailed from 27 different countries and joined a community of over 6,000 international students and scholars working across the University. Among YSoA students who are US. Citizens, 6% identified as Black or African American last year (up from 1% in 2015-2016), 7% as Hispanic (11%), 17% as Asian (11%), and 6% as multi-racial (4%). Detailed statistics on student enrollment by race/ethnicity, gender, and nationality from 2014-2021 can be found here. While complete statistics for the 2021-2022 school year are not yet available, the 2021-2022 incoming MArch I class of 76 students is 62% International and 38% are US Citizens. Among these two groups combined, 9% identify as Black, 8% as Hispanic, 46% as Asian, and 31% as White.

Given the presence of tenured professorships, turnover on the faculty is a slower process, however the percentage of women has increased from 29% to 40% since 2016. In 2020-2021, Visiting Professors were nearly evenly split with 13 men and 12 women joining the school with short-term appointments. In 2016, the faculty was 89% White, 9% Asian, 1% Black or African American, and 1% Hispanic/Latinx. This past year, the faculty was 78% White, 11% Asian, 4% Black or African American, and 7% Hispanic/Latinx. The school has made significant strides in several areas over the last two years, including hiring five Black faculty and initiating new collaboratively taught shared seminars - with Morgan State University each fall, taught by Justin G Moore, and with Howard University each spring taught by Jerome Haferd and Curry Hackett.

5.5.4 Equity and Access at Yale University

A list of the expansive set of University Wide resources and the role they play in relation to YSoA is included in PC.8 Social Equity and Inclusion. In addition, YSoA and Yale's policies and planning support the goal of providing equity and access in a number of ways.

Yale University Faculty Excellence and Diversity Initiative (FEDI)

In November 2015, President Peter Salovey and then Provost Ben Polak announced that Yale would contribute more than $50 million in resources to build on the excellence and diversity of our faculty, university-wide. In December 2019, President Salovey announced that he and the Provost are extending this initiative for another five years. In the Office of the Provost, the Faculty Development and Diversity team is responsible for implementing this initiative, which includes the following components:

Recruiting exceptional faculty to Yale:

As the cornerstone of this initiative, the Provost's Faculty Development Fund will provide support for select ladder faculty and presidential visiting fellows who would enrich diversity or contribute on another dimension of strategic importance to the University.

Faculty Development Guidelines:

To support best practices in faculty searches, tenure and promotion processes, and to cultivate faculty leadership, the Faculty Development and Diversity team continues to expand resources and programmatic offerings, including:

- Workshops for faculty search committees on best practices for faculty searches
- Guidelines for generating diverse and inclusive candidate pools
- Workshops for tenure and appointments committees on inclusion and implicit bias
- Workshops for decanal search committees on inclusion and implicit bias
- Resources on implicit bias
- Poorvu Center for Teaching and Learning Diversity and Education Series
- Workshops on negotiation skills for women academics and work-life balance

Support the pipeline to faculty excellence and diversity through new and enhanced programs for PhD students:

We are committed to expanding and developing the pool of young scholars who will contribute to the excellence and diversity of future generations of faculty. Yale sponsors a number of "pipeline programs" that help our students and alumni transition into graduate programs and into the academy, including the Edward A. Bouchet Fellowship, the Mellon Mays Undergraduate Fellowship Program, the James and Mary Pinchot Fellowship at the School of Forestry & Environmental Studies, and the Diversity Fellows program in the Graduate School's Office for Graduate Student Development & Diversity.

Still Facing Infinity: The Tectonic Sculptures of Erwin Hauer
Exhibition
August 2019

5.5 Social Equity, Diversity, and Inclusion

To expand on these efforts, the Faculty Development and Diversity team has partnered with the Graduate School of Arts and Sciences to create the Emerging Scholars Initiative supporting recruitment and retention of outstanding graduate students who demonstrate outstanding academic promise and achievement and whose backgrounds and/or research interests contribute to this pipeline:

- 15 Dean's Emerging Scholars Fellowships, providing renewable supplemental funding to incoming PhD students
- 10 competitive Dean's Emerging Scholars Research Awards, providing one-time awards to support conference and/or field work expenses for current PhD students
- 6 Dean's Emerging Scholars post-baccalaureate pre-PhD fellows who pursue a one-year research education program

University-wide Participation:

Diversity and inclusion are shared responsibilities, and this initiative builds on many effective programs already under way in schools and departments across the University.

For information on the demographics of Yale faculty, see here.

Yale University Equal Opportunity Statement

The University is committed to basing judgments concerning the admission, education, and employment of individuals upon their qualifications and abilities and affirmatively seeks to attract to its faculty, staff, and student body qualified persons of diverse backgrounds. In accordance with this policy and as delineated by federal and Connecticut law, Yale does not discriminate in admissions, educational programs, or employment against any individual on account of that individual's sex, race, color, religion, age, disability, status as a special disabled veteran, veteran of the Vietnam era or other covered veteran, or national or ethnic origin; nor does Yale discriminate on the basis of sexual orientation or gender identity or expression.

University policy is committed to affirmative action under law in employment of women, minority group members, individuals with disabilities, special disabled veterans, veterans of the Vietnam era, and other covered veterans.

Inquiries concerning these policies may be referred to Valarie Stanley, Director of the Office of Institutional Equity and Access, 221 Whitney Avenue; 3rd Floor, 203-432-0849.

Title IX of the Education Amendments of 1972 protects people from sex discrimination in educational programs and activities at institutions that receive federal financial assistance. Questions regarding Title IX may be referred to the University's Title IX Coordinator, Stephanie Spangler, at 203.432.4446 or at titleix@yale.edu, or to the U.S. Department of Education, Office for Civil Rights, 8th Floor, 5 Post Office Square, Boston MA 02109-3921; tel. 617.289.0111, fax 617.289.0150, TDD 800.877.8339, or ocr.boston@ed.gov.

Students Posing on Roof with Apples
Rudolph Hall

5.5.5 Adaptic Environments and Different Abilities

Student Accessibility Services (SAS, formerly the Resource Office on Disabilities) is a University-wide resource that facilitates individual accommodations for all students with disabilities throughout the entire University, and by so doing, works to remove physical and attitudinal barriers, which may prevent their full participation in the University community. Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act guide much of our work.

In addition, the needs and rights of those with different physical and/or mental abilities is explored in the curriculum in courses including Body Politics: Designing Equitable Public Space (ARCH 3290a) and the symposium, Non-Compliant Bodies: Social Equity and Public Space, which was convened by Joel Sanders and Susan Stryker, who assembled a cross-disciplinary group of designers and scholars to explore the relationship between architecture and the demands for social justice voiced by people who have been marginalized and oppressed on the basis of race, gender and disability.

Advanced Design Studio - Walter Hood Midterm
Student: Gabriel Gutierrez Huerta
Spring 2020

5.6 Physical Resources

5.6.1 Rudolph Hall: Studios

The School's activities are centered in its landmark building, Paul Rudolph Hall (formerly the Art & Architecture Building), designed between 1958 and 1963 by Paul Rudolph, who was then the chairman of the Department of Architecture. In 2007-2008, Paul Rudolph Hall underwent an extensive renovation overseen by Gwathmey Siegel and Associates Architects.

The design of this landmark building fosters the open and collaborative environment of discussion and discourse that is vital to the School's learning culture. The design studios take advantage of light-filled, loft-like open floors. Students' individual workstations surround common areas where group discussions and reviews take place. Studios are located on the top four floors (fourth, fifth, sixth, and seventh floors). Graduate studios occupy all of these spaces, except for a portion of the seventh floor occupied by the Yale College undergraduate architecture majors. Each graduate student is provided with a workstation comprised of two worktables, a 3-drawer cabinet, a drawing drawer, a rolling desk chair, a computer, twin monitors, and desk lamps.

5.6.2 and 5.6.3 Rudolph Hall: Learning and Working Environments

Floors four and six each have a large jury review space in the center; the seventh floor has two jury review spaces. These review spaces are reserved for pin-ups, discussions, and juries, but are also used, formally and informally, almost continuously. These open review spaces, centered in the midst of open studio spaces, enable Yale's pluralistic approach to the teaching of architecture to flourish and shine. The School's objective of providing students the opportunities to become well acquainted with a wide range of contemporary design approaches is on daily display for all, faculty and students alike, to learn from. The School's Gallery and Hastings Hall, support the School's packed exhibitions, lectures, symposia and events calendar. In addition to the formal academic learning environment, accommodated for and encouraged by the building's spaces, review "pits" are frequently appropriated by students and faculty alike for informal extracurricular activities, including panel discussions, screenings, informal exhibitions, and social interaction. These all contribute to the unique collegial environment at Yale School of Architecture.

The third floor consists of a conference room and administrative and faculty offices. There are additional faculty offices on the fifth, sixth, and seventh floors. The second floor includes our Exhibitions Gallery and Exhibitions Office. The School has two large classrooms, one on the second floor and one on the sixth floor; two seminar rooms, one on the second floor and one on the seventh floor; a drawing studio in the basement; two computer labs, one in the basement and one on the sixth floor; and the main lecture hall, Hastings Hall, located on both the basement and sub-basement floors. In addition, when needed, the School has access to the classrooms in the Loria Center next door, home to Yale's History of Art department. The Robert B. Haas Family Arts Library is located on the basement and first floors of the complex, spanning both Rudolph Hall and Loria.

All of the School's eight classrooms and labs are outfitted with a digital projector, motorized screen, a school workstation, a DVD player and a touch screen Creston control system. The classrooms also have the ability to allow a laptop to be connected to the projector. Most classrooms also have a document camera (digital version of an overhead projector) and video conferencing equipment. In addition, the School has nine 50" and 60" LCD presentation monitors located throughout the studio floors. These presentation screens are connected to a school workstation and are also equipped with various video conferencing technologies. They are available for student use 24-7. In 2020, the School also overhauled its audio and visual systems in Hastings Hall, the main lecture hall, including an enlarged projection system, two high definition video projectors, and a new microphone system.

The School's Fabrication Labs and Imaging Lab are located in the sub-basement. In the last decade, a huge explosion of technologies in digital drawing and digital fabrication has revolutionized the way architecture schools and offices operate. The School has made it a priority to bring these new and exciting technologies into the School and to place them directly in the hands of the students. Under the leadership of Timothy Newton and Nathan Burnell, the Yale School of Architecture has become the standard by which many other schools of architecture evaluate their facilities. However, as technologies mature and become commonplace in architecture schools and architecture offices across the world, the School has shifted its emphasis from simply attaining new software and equipment to finding ways to better fold these technologies into the curriculum and culture. The School continues to invest heavily in digital media technology, but now with more focus on providing the right technology to meet the ever more specific demands placed on it by students and faculty.

As part of the budgeting process, the University requires the School to put aside money and, by extension, create an endowment for renovation and modifications that will inevitably be required. These funds guarantee that the building, as one of the school's most crucial assets, will be maintained in excellent condition on a continuing basis. Recent projects paid for in this manor include maintenance to the roof, upgrading the dust collection system and re-carpeting the entire building.

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Syllabi

5.6 Physical Resources

Fabrication Labs:

Graduate and undergraduate students use the School's fabrication shops in support of studio and course work assignments, as well as for independent projects. They include fully equipped facilities for building models, fabricating furniture, sculpting, and exploring building systems. Students work with a wide variety of materials, including wood and wood products, plastics, and ferrous and nonferrous metals. Beyond the normal fabricating equipment and tools usually found in wood and metal shops, the School's equipment includes laser cutters, a waterjet cutter, three-axis CNC mills, a five-axis robotic-arm CNC mill with a six-foot reach, a digitally controlled foam cutter, and plastic 3-D printers. Students with shop experience may apply to the fabrication shop's coordinator for positions as shop monitors.

In addition to these facilities in the School of Architecture, Yale has a machine shop in the Chemistry Lab that offers a course on machining. Gibbs Lab offers machining services to students at reasonable rates and sells a range of industrial materials. The New Haven area boasts a large number of suppliers of all types of materials.

All incoming students take the Summer Shops Techniques Course during the week before classes begin. This intensive course teaches students how to work safely in the shop while exposing them to a wide range of tools and procedures. During the year, staff is available to assist students with their projects. Individual instruction is always available from the staff and monitors. First-year MArch I students use the fabrication shops to fabricate elements for the Building Project.

5.6.4.2 Fabrication Equipment:

Analog items:
Saw stop table saw
16" joiner
24" helical planer
24" Thickness Sander
4 — drill presses
2 — chop saws
5 - bench sanders
1 spindle sander bench
1 spindle sander
1 vertical belt sander 1"
1 horizontal belt sander 6"
1 mortise
2 scroll saw
1 clamp rack (60 Bar Clamps various sizes)
1 lamination vacuum bag
Hand tools (wide variety)
1 wood lathe
1 panel saw
2 large SCMI band saws
Formech vacuum thermoformer
1 TIG welder
2 MIG welders
1 arc welder
2 oxy/acetylene torches
TOS testing machine
1 Clausing metal lathe
1 Acer Bridgeport mill
2 horizontal bandsaws
1 Baliegh tube bender
1 solid linear bender
1 electromagnetic brake
1 3in1 sheer/brake/metal sheet roller
1 Scotchman ironworker 50 ton, 5 station brake/sheer/punch
1 44" sandblasting cabinet
1 Metal Ace English wheel
1 metal bandsaw (upright)
3 grinders bench
Multiple abrasive cut off wheels
1 walk in spray booth
1 hand plasma cutter
Acorn Table

Shop Orientation for Incoming Students
Fabrication Lab
Summer 2018

Shop Orientation for Incoming Students
Fabrication Lab
Summer 2018

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CNC driven:

    2 Roland MDX 540 bed mills, 3 axis
    2 Patriot 4'x 8' x 10" 3 axis bed mill
    1 water jet cutter (20"x40")
    1 Kuka robot (6axis), 7th axis via turntable
    Kern Coherent laser cutter, 50"x52" bed, ¾""
    capacity cut
    Foam cutter 12'x10'x10'

Digital Media Facilities:

Digital media and integrated information systems are an integral part of the School's curriculum. The School provides students with a high-quality and robust information infrastructure, including roaming server space. The School has its own proprietary digital media facilities that consist of a centralized server-pool for high-quality distributed information systems, two advanced computer labs, dedicated printing rooms and plotting clusters throughout the School, architectural software solutions, and integrated design tools. All students are provided with a high-end computer workstation, equipped with all of the school's software, and dual LCD monitors. The School also provides facilities and resources for students' design, research, computational, communication, and fabrication needs. In addition, wireless access points are located throughout the studios and classrooms to allow students, if they desire, to supplement their school-supplied computer with their own laptop. The School provides large mobile LCD screens with workstations, digital cameras, large-format plotters, 2-D and 3-D printers, and scanners for individual student use. These facilities are open to all students and faculty of the Yale School of Architecture.

The digital media department supports all aspects of the design and fabrication process to allow students to explore design in various phases and in different representational means. Personal interaction between students and faculty at the studio desk and in the lab encourages experimentation through all forms of study and representation through studio and all courses.
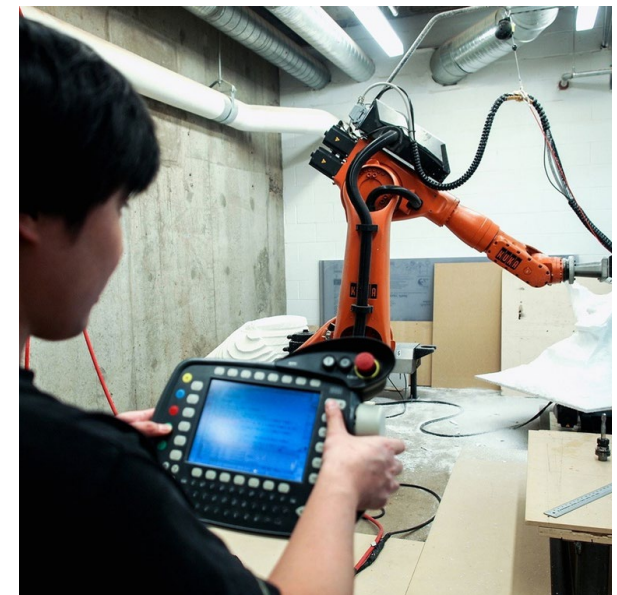
In addition to the individual student workstations, the School has a digital media lab located in the sub-basement. The lab is used for general software instruction. It is equipped with 35 workstations, each installed with all of the School's software. In addition to bringing in new technologies, the school actively replaces and expands its existing digital media infrastructure on a constant basis to ensure that the School and the students are always on the leading edge of technology. The School has provided a computer at each student's desk installed with all the School's software.

Despite these significant resources, the School is constantly monitoring usage, particularly during peak demand periods before reviews. As a case in point, the School has recently replaced its older print tracking system with PaperCut. This system not only makes it easier for students to track their printing costs, it reports on the equivalent number of trees that have been used by a student's printing activities, hopefully encouraging students to print only what they really need.
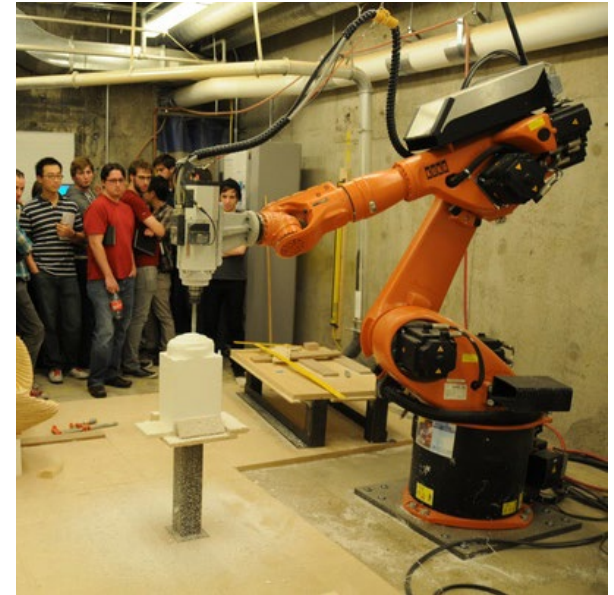
Shop Orientation for Incoming Students
Fabrication Lab
Summer 2018

Student Operates 5-Axis CNC Mill
Fabrication Lab

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5.6.4.4 Advanced Technology Equipment:

Workstations:
Students, studio, classrooms, labs, presentation (pits), equipment

> HP Z240 Workstation: Quantity 350
> Processor: Intel Core i7 6700 @ 3.40Ghz
> RAM: 32GB DDR4
> Video Card: NVidia Quadro M2000
> Hard Drive: 1TB SSD

Faculty, staff, signage, equipment

> Intel NUC Workstation: Quantity 105
> Processor: Intel Core i5 8259U @ 2.30GHz
> RAM: 32GB DDR4
> Video Card: Intel Iris Plus 655
> Hard Drive: 1TB SSD

Faculty, clusters, virtual workstations, equipment

> Dell T3600 Workstation: Quantity 65
> Processor: Intel Xeon E5 1620 @ 3.60GHz
> RAM: 16GB DDR3
> Video Card: NVidia Quadro 2000
> Hard Drive: 500GB SSD

Monitors:

> **Students (studio graduate)**
> 2 × Dell 23" 1080P monitors

> **Students (studio undergraduate)**
> 1 × Dell 20" 1080P monitor

> **Labs, equipment, faculty, staff, signage, clusters**
> Various monitor types and sizes: 1080P, 4K

Printers and Plotters:

> 2 HP DesignJet Z6800 plotters with 60" wide roll capacity (bond)
> 4 HP DesignJet T7200 plotters with 42" wide roll capacity (bond)
> 4 HP DesignJet T7200 plotters with 24" wide roll capacity (Bristol)
> 4 HP DesignJet T1700 plotters with 44" wide roll capacity (manual feed)

1 HP DesignJet T795 plotter with 42" wide roll capacity (clear mylar)
1 HP DesignJet T795 plotter with 42" wide roll capacity (semi-gloss)
1 HP Pagewide XL 5000 with 36" wide roll capacity (draft bond)
4 Kyocera CS 5551ci KX BW and color (up to 11×17 with color scanner)
2 HP LaserJet M750 11X17 (clear and frosted Mylar)
1 HP 5200 BW (up to 11×17, PHD)
2 HP Office Jet Pro 7720 (up to 11X17 manual feed)
Various desktop printers for faculty and staff
4 Rotatrim 60" paper cutters

3D Scanners:

> 1 Artec Eva
> 1 Artec Spider
> 1 HP Sprout with built-in 3D scanner
> 1 HP Z 3D scanner
> 1 HP Pro S3 structured light scanner
> 2 Occipital Structure sensors with iPad Pro

3D Printers:

> 1 3D Systems ProJet 360 powder printer
> 1 Stratasys Dimension SST 768 plastic printer
> 1 Stratasys Fortus 250 plastic printer
> 1 3D Potter Micro 8 clay printer
> 1 Prusa i3-MK3S plastic printer
> 1 Photocentric LC Pro resin printer
> 4 Lulzbot Taz 6 infused plastic printer
> 1 Lulzbot Taz 6 bring your own filament printer
> 2 Ultimaker S5 dual extrusion plastic printer
> 37 Ultimaker 2 plastic printer
> 10 Ultimaker 2 Extended plastic printer

Cameras: Checkout equipment for students

> 16 Nikon D5600 SLR cameras with 28-55mm lens and 55-200mm lens
> 4 Sony 4K Handycam camcorders
> 1 Panasonic Professional AVCHD camcorder
> 2 GoPro Fusion 5K
> 1 Osmo Pocket
> 1 Kodak PixPro SP 360 4K
> 4 Kodak PixPro SP 360
> 1 Ricoh Theta S
> 1 Ricoh Theta V
> 6 Microsoft Kinect cameras
> 1 Telephoto Zoom lens
> 1 Sigma lens
> 2 52mm wide angle lens
> 6 Logitech 1080P webcams
> 8 tripods
> 2 IKAN smartphone/GoPro gimbals

Other checkout equipment for students:

> 17 Microsoft Surface Pro tablets
> 1 mobile VR kit with Oculus setup and high powered laptop
> 3 mobile VR kit with HTC Vive Pro setup and high powered laptop
> 3 backlit drawing boards
> 1 Hisonic portable PA system
> 15 Wacom Bamboo drawing tablets
> 2 Wacom Cintiq 13HD tablets
> 3 DBPower T20 portable mini projectors
> 1 Optoma GT1080 projector
> 1 portable projector screen
> 7 voice recorders
> 6 portable DVD writers
> 2 portable BluRay writers
> 10 portable remote presenters
> 16 Sunnypeak VR headsets
> 6 portable adjustable stands
> 3 portable multifunction USB card readers

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Fabrication Equipment:

4 Universal PLS laser cutters with 4" lenses
4 Universal PLS laser cutters with 2" lenses
and air assist
1 Kern Industrial Laser Cutter
2 Roland MDX 540 3-axis CNC Mills
2 Patriot freedom 4X8 3-Axis CNC Mills
1 Flow Bengal Waterjet
1 Croma foam cutter
1 Kuka 5-axis robot and turntable
1 Mimaki CF2 digital cutter

Mobile Presentation Screens:

12 85" 4K LCD monitors on adjustable mobile
carts

Scanners:

2 Epson Expression 12000 XL 11X17 flatbed

Wide Format Scanners:

1 HP Designjet HD Pro 42"
1 Contex SD 3600 36"
1 HP Pagewide XL 5000 plotter (functions as a
36" scanner)

**Software: (All software listed below is installed
on every student-facing workstation):**

Operating System: Windows 10

2D software:

Autodesk Autocad
Autodesk Sketchbook
Pepakura Designer

3D Modeling software:

AutoCAD Map 3D
Autodesk 3D Studio Max
Autodesk Design Assistant
Autodesk Maya
Autodesk Motion Builder
Autodesk Mudbox
Autodesk Recap
Autodesk Revit
FreeCAD

Rhinoceros
Sculptris
Sketchup
Z Brush

Business and Productivity software:

Adobe Acrobat
Adobe Bridge
Adobe InCopy
Microsoft Access
Microsoft Excel
Microsoft OneNote
Microsoft Outlook
Microsoft Powerpoint
Microsoft Publisher
Microsoft Word
Skype

Engineering and Sustainability software:

SAP2000

3D Printing and Fabrication software:
3D Print
Autodesk PowerMill
Codebreaker
Flow Cut and Flow Path
MadCAM for Rhinoceros
Slic3r

Graphics and Web Design Software:

Adobe Animate
Adobe Dreamweaver
Adobe Illustrator
Adobe InDesign
Adobe Lightroom
Adobe Photoshop
Gimp
Inkscape
Scribus

Rendering and Video Software:

Adobe After Effects
Adobe Audition
Adobe Media Encoder
Adobe Prelude
Adobe Premiere Pro
Brazil for Rhino

Camtasia Studio
Enscape
Keyshot
Lumion
Maxwell
V-Ray for 3D Studio Max
V-Ray for Rhino
VLC

Utility Software:

7zip
Arduino IDE
Ghostscript
Infrarecorder
Papercut client
Processing
TreeSize

Web Browsers and FTP Software:

Chrome
Edge
Firefox
Internet Explorer

5.6 Physical Resources

Yale Center for Ecosystems in Architecture

The Center of Ecosystems in Architecture (CEA) is a joint academic initiative between the Yale School of Architecture and The Yale School of the Environment. CEA unites researchers across multiple fields in the development of transformative systems for the Built Environment, purposefully prioritizing the requirements of living ecosystems towards the development of innovative methods for buildings and cities that support biodiversity with clean energy, water, and materials. Led by Professor Anna Dyson, the center's goal is to leverage the ongoing explosion of knowledge in life sciences and information technology to fundamentally re-inform the built environment process, which is currently the sector responsible for the largest consumption of toxic, non-renewable resources and greenhouse gas emissions globally.

Together with partners in the Architecture, Engineering, and Construction (AEC) Industry, YALE CEA seeks to address the complexity of transitioning global construction patterns by uniting deep expertise of current practices with radically new socio-economic and technical approaches. YALE CEA is purposely putting the scientific inquiry of living ecosystems behaviors at the forefront of the research and development of transformative Built Environment Systems.

The Yale Urban Design Workshop

The Yale Urban Design Workshop (YUDW) is a community design center based at the Yale School of Architecture. Students and faculty from the School work with communities all across the state of Connecticut, and even internationally. The program provides planning and design assistance on projects ranging from comprehensive plans, economic development strategies, and community visions to the design of public spaces, streetscapes, and individual community facilities. Clients include small towns, city neighborhoods, planning departments, Chambers of Commerce, community development corporations, citizen groups, and private developers. Students are encouraged to become involved with the YUDW during the academic year or as paid employees

during the summers. Recent projects include "Resilient Bridgeport," a prospective study of coastal resilience strategies for Bridgeport, CT, developed in collaboration with Waggoner & Ball Architecture/Environment, of New Orleans, LA; a study of the area around Union Station in New Haven's Hill neighborhood; and the "Thames River Heritage Park Plan" for the cities of Groton and New London.

University Resources and Facilities

Finally, students at the School also have access to a number of university facilities listed below.

The Center for Collaborative Arts and Media (CCAM) is a media laboratory, open to all members of the Yale community, exploring intersections of art, science, and technology through research, programs, and exhibitions. A unit of Yale College Arts, CCAM focuses on guiding students, faculty, and collaborators in expanding and exploring all manner of projects.

Located at 149 York Street in New Haven, just down the street from YSoA, the 5,000 square foot space boasts state-of-the-art facilities, including a motion capture studio, immersive media research, projection mapping system, creative suites, computerized audio and light systems, video studio, equipment lending library, wide-format printers, open workspace labs, and exhibition gallery.

CCAM creates opportunities and room to play with ideas. There is an open door policy: resources are available to all Yale students, faculty, and staff. The projects brought in can be in development or in progress, or completed and shared. Programming is free and open to the Yale community with select programs open to the public. Beyond the Yale campus, CCAM also holds special events and partner exhibitions nationally and abroad.

Dana Karwas, the director of CCAM, is trained as an architect, and teaches two courses in the School of Architecture:
2222a The Mechanical Eye
2238b The Mechanical Artifact

Yale Center for Engineering Innovation and Design

The Center for Engineering Innovation and Design (CEID) is a hub for collaborative and interdisciplinary design activity at Yale University. Since opening in 2012, its goal has been to enable the design, development, and actualization of ideas, from the whiteboard to the real world. Students, staff, and faculty from across Yale have access to CEID resources, participate in courses and events, and collaborate with CEID staff on a wide range of projects. The CEID acts as both an educational resource as well as a focal point for design and engineering at Yale. The 8,700 square foot design lab combines an open studio, lecture hall, wet lab, and meeting rooms. The studio is equipped with 3-D printers, sewing stations, hand-tools, electronics work stations, and a variety of materials for our members to use. Members have 24/7 access to the studio space, as well as to a state of-the-art machine shop, wood + plastics shop, and wet lab while CEID staff are present.

Digital Humanities Lab

The Digital Humanities Laboratory (DHLab), a unit of Yale University Library, offers space, community, and resources for Yale scholars who are using computational methods to pursue research questions in the arts, humanities, and humanistic social sciences. Located inside Sterling Memorial Library, the Franke Family Digital Humanities Laboratory is a hub for consultations, training, and opportunities that support Yale students, faculty, and cultural heritage professionals in their engagement with digital tools and techniques.

5.6 Physical Resources

Poorvu Center for Teaching and Learning

The Poorvu Center for Teaching and Learning was established at Yale in 2014 to support students and faculty across the campus. It supports effective course design and promotes evidence-based teaching methods for instructors from across the University, including faculty and teaching fellows at the Yale School of Architecture. As part of a world-class research institution, The Poorvu Center provides training, consultations, and resources designed to make teaching and learning more public and collaborative, so that every Yale instructor experiences the satisfaction that results from teaching well, and every student develops the critical reflection that marks deep and independent learning.

The Center provides resources including writing workshops and tutorials, as well as seminars and professional development sessions. Advanced teaching and course planning workshops are held throughout the year, and one-on-one consultations are likewise available to faculty seeking feedback on syllabi and overall course design. Associate Dean Phillip Bernstein sits on the advisory boards of both the Poorvu Center for Teaching and Learning and the Center for Collaborative Arts and Media.

Yale West Campus

In 2007 Yale purchased the 136-acre Bayer Pharmaceutical facility increasing its real estate by one third. Only a few miles from New Haven, the West Campus facility provides state-of-the-art research facilities and expansive indoor and outdoor working space and storage. The Building Project and Regenerative Building Lab are among the YSoA programs that have taken advantage of these facilities, building full scale mock-ups and prefabricating building components on West Campus.

TSAI Center

The Tsai Center for Innovative Thinking at Yale (Tsai CITY) has a mission to inspire students from diverse backgrounds and disciplines to seek innovative ways to solve real-world problems. Launched in 2017, Tsai CITY serves students from across Yale's campus through programs, funding, and mentorship. We're building a new kind of innovation center, one rooted in inclusivity: here, students from all backgrounds tackle issues like climate change and civic engagement, develop creative projects from documentary films to digital platforms, and launch high-growth ventures and movements.

Tsai CITY is a transformative addition to the Yale campus landscape, dedicated to advancing the University's goal of creating an interdisciplinary learning environment that cultivates innovators, leaders, creators, and entrepreneurs in all fields and for all sectors of society. We aim to draw existing university resources into closer partnership with each other, to complement curricular programs, and to provide new and effective avenues for students to develop the skills crucial to an innovative mindset.

5.7 Financial Resources

The School of Architecture has continued to develop its financial resources since its last accreditation and is financially strong. Yale University is in the quiet phase of a comprehensive campaign. One of four top priorities for the campaign is building financial aid at the graduate and professional schools, including the School of Architecture. Since the arrival of Dean Berke, the School has raised $42 million in gifts and pledges, and the Yale Campaign began in July 2018, two years after her appointment; $34.2 million is counted toward the campaign goal, which Yale has yet to establish. The School of Architecture now has 151 individual endowments whose total value is $283 million. The fundraising priorities for the school are:

1) Financial Aid towards the goal of debt-free education: Toward this end, the school has increased its Annual financial Aid Budget from $3.6M in 2017 to $5.6M in response to focused outreach by Dean Berke. 18 new endowment funds have been created since July 2016 representing $34.2 million in endowments for financial aid. In 2019-2020, the School gave scholarship aid to 84% of its student body. Recent growth in financial aid has cut the average student's tuition debt in half and enabled the school to increase enrollment by historically underrepresented groups.

2) Faculty Support towards the goal of recruiting and retaining the most talented and diverse teaching staff: Increased financial resources have allowed the school to create two new endowed faculty positions, one existing and one incremental, representing $9 million in endowment. In addition, the school has also formalized joint teaching relationships with the schools of Management, Environment, and Law. The school achieved gender parity among studio faculty and students.

3) Research and Technology towards the goal of expanding the body of knowledge and the school's impact on the profession: The school has launched YSoA's Center for Ecosystems in Architecture and Regenerative Building Lab for advanced design-build and sustainable materials research. In 2020, the school engaged students to work with local nonprofits on pro-bono design projects that address COVID-19 problems.

Development staff and Infrastructure

The Yale School of Architecture's development efforts are directed by Jill Westgard, Director of Development and Alumni Relations for the Yale Schools of Architecture and Art. The school receives resource support from the Yale Office of Development, including shared database, research team, and gift processing. The Director of Development collaborates with Yale colleagues in Principal, Major, International, Parents, Planned, and Reunion Giving areas to cultivate and steward donors. The school does an Annual Fund campaign yearly and solicits major gifts and planned gifts for endowment and capital needs.

Yale School of Architecture Dean's Council

The Yale School of Architecture Dean's Council brings together a distinguished group of architects and friends of the School from around the world with an interest in architecture. Council is led by co-chairs John Carrafiell of London and Philadelphia, Pennsylvania, and Ian Gilchrist of Dallas, Texas, and New York. The Council has 65 members and is focused on increasing support for the objectives and goals of the School of Architecture in order to ensure the School's ability to realize its full potential in educating the next generation of leading practitioners. Council members form the core of the School's continuing development activities, serving as advocates for excellence in architecture education, assisting with key introductions and helping to host events. Council meetings combine in-depth reporting on the School's fiscal health, short and long-range plans, as well as presentations of initiatives by the School and the University dealing with environmental, master plan and physical planning issues and opportunities to experience architecturally significant sites. The Council meets at least twice a year. One meeting always occurs in New Haven.

The School of Architecture Annual Fund

The Annual Fund is a yearly gift drive to seek support from all alumni of the School of Architecture in order to provide unrestricted current use dollars to be used at the discretion of the School. The Alumni Fund is co-chaired by Elisabeth Martin (MArch 1983) and Michael Duddy (MArch 1984), who leads a group of 31 volunteer class agents. Alumni are solicited by a combination of communications including an annual letter from Dean Berke, personal letters from class agents, a letter from co-chairs Elisabeth Martin and Michael Duddy, calls from students in the University's Phone Program, and an email program to keep in touch with donors who give yearly. Top donors to the Alumni Fund are identified for individual strategies to maximize their annual gifts. In 2019-2020, the Annual Fund raised $364,254 with a participation rate of 16%.

5.8 Information Resources
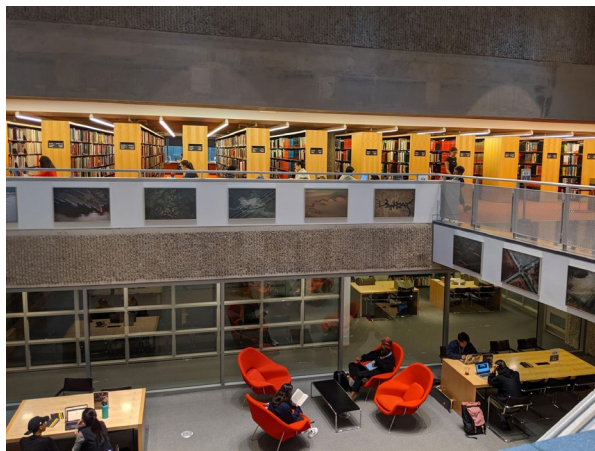
Robert B. Haas Family Arts Library
Rudolph Hall

The Yale University Library, as one of the world's leading research libraries, collects, organizes, preserves, and provides access to and services for a rich and unique record of human thought and creativity. It fosters intellectual growth and supports the teaching and research missions of Yale University and scholarly communities worldwide.

Its collection of nearly 15 million print and electronic volumes is housed in 15 libraries, including Sterling Memorial, Beinecke, and Bass libraries, the Marx Science and Social Science Library, the Haas Family Arts Library, as well as many other school and departmental libraries. Yale's collections range from ancient papyri and early printed books to digital collections and electronic databases; and they transcend a wide array of formats including text, photographs, video, audio, data, maps, and ephemera. The Yale Library employs a dynamic, diverse, and innovative staff of over 500 who have the opportunity to work with the highest caliber of faculty and students, participate on committees, and are involved in other areas of staff development.

Robert B. Haas Family Arts Library

The Haas Family Arts Library opened in 2008. Its origination was as the Arts Library in the 1860's when the School of Fine Arts was established. Since the completion of the Art & Architecture building (now Paul Rudolph Hall) in 1963, the Arts & Architecture Library was housed in the same building as the School of Architecture. With the completion of the Paul Rudolph Hall and the Jeffrey Loria Center for the History of Art, the University opened the Robert B. Haas Family Arts Library, which bridges these two buildings.

The Arts Library serves the following Yale academic, museum, and professional programs: History of Art Department, the Yale University Art Gallery, and the Schools of Architecture, Art, and Drama. Its collections also act as a supplemental resource to the Yale Center for British Art research library. Onsite, the Haas Arts Library contains more than 120,000 volumes on architecture, the visual arts, and drama. This includes basic reference works, monographs, exhibition

catalogues, and periodicals in both print and digital formats. Additional volumes in art and architecture fields may be found in related collections and in the Library Shelving Facility. The Yale University Library System contains a combined collection of over 450,000 volumes in architecture and the visual arts.

The Haas Arts Library also includes Arts Library Special Collections (ALSC) which features 18th- and 19th-century works on artists and architecture, a broad selection of fine press and artists' books, rare research materials in support of these subject areas, and the Faber Birren Collection of Books on Color. In addition, ALSC has manuscript and archival holdings in book arts, art history, and drama. An important related collection is the Architectural Records Collection, which is managed by Yale's Manuscripts and Archives Department, located at Sterling Memorial Library. An architectural records archivist oversees a collection featuring the papers of many prominent figures in the field. Among its holdings are the papers of Eero Saarinen, Pelli Clarke Pelli Associates, Robert A.M. Stern Architects, Vincent Scully, and Balmori Associates.

The Haas Arts Library is conveniently located in close proximity to the School's studios, classrooms, and faculty offices within the same building. Haas Arts Library is staffed by five librarians and ten library staff charged with helping students and faculty navigate and access the university's rich collection of library resources. Outreach, instructional, and exhibition programs created by library staff teach, inform, and inspire on topics related to architecture, the visual arts, and drama.

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Appendix

Syllabi

5.8 Information Resources

Arts Library Collections

Yale University Library's written collection development policies and statements adhere closely to the research and teaching needs of the Yale community. The Haas Family Arts Library's collection development policies and practices follow Yale's long-standing approach of investing in historic collection strengths while advancing new collecting initiatives in response to the evolution of curricular and research programs, but also in response to unique collecting opportunities. "Request for purchase" forms are readily available electronically on the library's webpage and nearly all recommended purchases are approved. Typically, the annual budget for Arts Library collections is over $800,000.

The collection is international in scope and grows at a rate of 5,000-6,000 volumes annually. Among the many available e-resources that include architecture content are the Avery Index, Art & Architecture Source, and Design and Applied Arts Index, Building Types Online, MADCAD, MaterialConneXion, and the Building Green Suite. Over ninety percent of the serials in the Association of Architecture School Librarians 2019 Core Fundamental list are currently being received, as well as the majority of its Recommended titles. The Arts Library's digital image teaching collection is comprised of over 300,000 images accessible via JSTOR Forum and supplemented by the ARTstor and Archivision image collections.

The Arts Library's special collections are comprised of standard original editions of books on architectural history from antiquity to the present, the Birren Collection on color (which includes treatises on color theory and materials samples), as well as design archives (e.g., Paul Rand, Keneth D. Love).

Arts Library Services: Access, Reference, and Research Education

Yale University Library provides robust access services programs that conveniently connect students and faculty with collections across campus and beyond. Through Scan and Deliver

and Interlibrary Loan services, scans are emailed and books delivered to locations across campus. Through Borrow Direct, patrons have access to the circulating collections of twelve other partner libraries (Brown, Columbia, Cornell, Dartmouth, Duke, Harvard, Johns Hopkins, Massachusetts, Princeton, Stanford, University of Chicago, and University of Pennsylvania). The Arts Library at Yale circulates its collection to these partner institutions in a reciprocal lending/borrowing arrangement.

Research education reaches Robert B. Haas Family Arts Library's patrons in a variety of forms, namely: library Orientation, course-related Instruction, and workshops. Since 2002, the School of Architecture has mandated that library research-based orientation sessions be required for all incoming graduate students. In 2019, we reintroduced these sessions for incoming architecture undergraduate students. Faculty frequently request course-related sessions with a librarian to support research conducted in their classes. Our Arts Librarian for Research Services serves as the library liaison to the School of Architecture and conducts reference and research consults, and teaches research skills courses to students in the program. She often collaborates with the Architectural Records Archivist and the librarian for Environmental Sciences to support student learning and research. A GIS librarian and Statistical Support Services are also available through the Marx Science and Social Science Library. A regularly updated architecture research guide points researchers to these services and to our growing resources in architecture (https://guides.library.yale.edu/architecture).

In the 2018/19 school year, students in nearly 20 courses and orientation groups were taught architecture research skills at the library. A typical session includes tips on navigating the library's vast print and digital collections while assessing and selecting resources appropriate to their particular research interests. Complementing these courses are online resource guides, which are posted to the Robert B. Haas Family Arts Library and Yale University Library Subject Guides website.

Reference service is delivered remotely by email, text, or telephone via Yale University Library's Ask Yale Library (@askyale), which is a centralized service. During the academic year, this service is available weekdays from 9:00am to 5:00pm. Access Services staff members address most directional and informational questions at point of need but routinely refer readers to the reference librarians for professional assistance.

Finally, a regular program of exhibits at the Arts Library draws upon special collections at Arts and other collections at Yale. Exhibits of artists' books during 2018/19 featured themes on text and textile, numbers, and scientific topics. Recent exhibits have included a celebration of the Yale School of Art's 100th year anniversary, Women in Theater at Yale (for Yale's 50/150 celebration).

5.8 Information Resources

Other University Library Resources

Sterling Memorial Library:

Housing approximately 4 million volumes, Sterling Memorial Library is the largest library on the Yale campus and serves as the center of the library system. Designed by James Gamble Rogers, the library was built to house these volumes in a book stack tower, intended to be the dominating feature of the façade. Although technically seven stories high, the book tower and library actually contains sixteen levels of stacks and eight floors of reading rooms, offices, and work areas. The collections, devoted primarily to the humanities and social sciences, are housed mainly in the book stacks, which are open to those with a valid Yale picture identification card or a special visitor's access pass. Sterling's main public services and reading rooms are on the first and basement floors. Also on the basement level are a lounge and the entrance to the tunnel that connects Sterling to the Bass Library. A major renovation of the book stacks and several reading rooms was completed in 1998, as was the Irving S. Gilmore Music Library, whose entrance is on Sterling's first floor.

Bass Library:

Connected to Sterling Memorial Library via an underground tunnel, Bass Library houses the intensive-use collection. It accommodates a 150,000-volume core collection and a variety of study areas in a two-story, 60,000-square-foot underground structure. The library underwent reconstruction in 2004, generously funded by Anne T. and Robert M. Bass '71 and designed by former Dean of the School of Architecture, Tom Beeby, and was completed in fall of 2007. The new design included the introduction of an above-ground entrance and a naturally day-lit lounge near the entry, creating a focal point for both Bass and Sterling libraries and encouraging student movement between the two. The renovation dramatically improved available facilities, creating new classrooms and group study areas in the remodeled portion of Sterling. In addition to creating a handsome, light-filled environment, the Bass Library introduced a new concept of study space specifically designed

for the types of learning and research activities typical of today's students. The library features areas for independent study, group study, and interaction with librarians and faculty, as well as flexible gathering spaces where the most up-to-date technology is available for collaborative study. The renovation also added a new library Café, a collaboration between Yale Dining Services and the Yale Sustainable Food Project; and the 'Collaborative Learning Center,' a place where faculty and students are able to co-explore pedagogical techniques, instructional technologies, and library resources with librarians, curators, and other experts from around campus. (http://www.library.yale.edu/bass/)

Beinecke Rare Book and Manuscript Library:

The Beinecke Rare Book & Manuscript Library is Yale University's principal repository for literary papers and for early manuscripts and rare books in the fields of literature, theology, history, and the natural sciences. In addition to its general collection of rare books and manuscripts, the library houses the papers of significant architects including Peter Eisenman and a growing collection of books, journals, and other items related to post-war modernism and aesthetic culture. The Beinecke collections afford opportunities for interdisciplinary research in such fields as medieval, Renaissance, and eighteenth-century studies, art history, photography, American studies, the history of printing, and modernism in art and literature. Books and manuscripts at Yale have been extensively described since 1926 in the "Yale University Library Gazette," which is available in many libraries.

One of the largest buildings in the world devoted entirely to rare books and manuscripts, the library has room in the central tower for 180,000 volumes and in the underground book stacks for over 600,000 volumes; it now contains about 500,000 volumes and several million manuscripts. Temperature and humidity controls ensure that stored materials are protected for future generations.

The building, constructed of Vermont marble and granite, bronze and glass, was designed by Gordon Bunshaft, of the firm of Skidmore,

Owings and Merrill and completed in 1963. The white, gray-veined marble panes of the exterior are one and one-quarter inches thick and are framed by shaped light gray Vermont Woodbury granite. These marble panels filter light so that rare materials can be displayed without damage. From the exterior, however, the building's powerful stone geometry serves to dominate the space it occupies in Hewitt University Quadrangle, amidst neo-Classical and neo-Gothic neighbors. Also visible across the plaza is Alexander Calder's "Gallows and Lollipops".
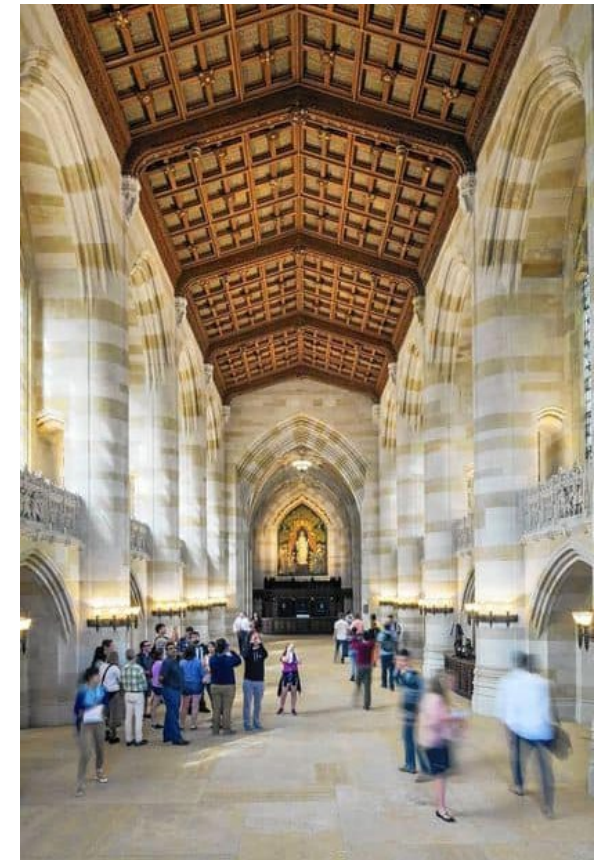
Sterling Memorial Library
Yale University
Credit: Shah Alam

5.8 Information Resources

Manuscripts and Archives:

The resources held by Manuscripts and Archives include over 1700 collections of personal and family papers and organizational records that document a variety of areas, including the Yale University Archives. The department also holds and makes available a multitude of Yale publications and many microfilm collections.

Manuscripts and Archives collects broadly in the areas of public policy and administration; diplomacy and international affairs; political and social thought and commentary; science, medicine, and the environment; legal and judicial history; the visual and performing arts; urban planning and architecture; environmental policy and affairs; psychology and psychiatry; and lesbian, gay, bisexual, transgender history and culture. In addition, the department has extensive holdings on New Haven, Connecticut, and New England history. The collections held by Manuscripts and Archives document a wide array of persons, institutions, and subject areas. Most of these areas have a strong link to Yale, either to the institution itself; to the faculty, students, alumni, and other members of the Yale community; or to areas in which Yale has had strong teaching and research interests.

In order to guarantee that future students and scholars have access to the rich publication tradition of the University and its history, the University archives acquires and preserves permanent record copies of Yale publications. As with current practices for other archival records, all publications are non-circulating and must be used during the normal reading room hours in Manuscripts and Archives. (http://www.library.yale.edu/mssa/)

Visual Resource Collection:

The Visual Resources Collection (VRC) is charged with collection development for digital visual media in the fine arts and architecture and provides digital images in all areas of visual culture in the Arts and Humanities. Located in the Robert B. Haas Family Arts Library, the Visual Resources Collection offers a Digital Library of more than 250,000 images reflecting faculty teaching and research interests. The historic collections of 35mm slides, lantern slides, and study photographs are archived in the Library Shelving Facility. The staff is available to assist the Yale community with their image needs.

The Map Collection:

The Map Collection, a department of Sterling Memorial Library housed on the 7th floor of Sterling, has the largest collection of maps in Connecticut and one of the largest university collections in the United States. Its collections are geographically comprehensive and consist of over 200,000 map sheets, 3,000 atlases, and 900 reference books. The Collection receives maps and charts on deposit from the U.S. government agencies, and through gift and purchase. The Collection also houses approximately 15,000 rare (pre-1850) sheet maps. Though these cover many areas of the world, most pertain to North America, the United States, and New England. There is also a sizeable reference collection and a small, selective serials collection. The Map Collection has recently obtained geographical information system (GIS) software for general use. These packages include ArcView, Census CD, Maptitude, and StreetAtlas USA.

Yale University Campus

5.8 Information Resources

Art Galleries and Museums of Yale University

Yale's museums and collections—the Yale University Art Gallery, the Yale Center for British Art (YCBA), the Peabody Museum of Natural History, the Yale Collection of Musical Instruments, and the special collections held in the University Library—are primary resources for teaching and research. The Art Gallery and YCBA are open to all without cost, and the Peabody Museum is free one afternoon a week, with reduced rates for the many groups of visitors.

Yale University Art Gallery:

The Yale University Art Gallery is the oldest college art museum in the United States, having been founded in 1832 when the patriot-artist John Trumbull gave more than one hundred of his paintings to Yale College. Since then its collections have grown to more than 200,000 objects ranging in date from ancient times to the present. In addition to its world-renowned collections of American paintings and decorative arts, the gallery is noted for outstanding collections of Greek and Roman art, including the artifacts excavated at the ancient Roman city of Dura-Europos; the Jarves, Griggs, and Rabinowitz collections of early Italian paintings; the Société Anonyme Collection of early-twentieth century European and American art; Impressionist, modern, and contemporary works; Asian art; African art; art of the ancient Americas; and Indo-Pacific art. Ten to twelve special exhibitions, organized by the gallery staff, Yale faculty and graduate students, and occasional guest curators, are on view each year, in addition to several small teaching exhibitions. While focusing on its role as a center for scholarly research in the history of art and museum training for graduate and undergraduate students at Yale, the gallery also maintains an active schedule of public education programming.

The museum occupies three adjacent structures. Completed in 1953, the main building is across York Street from the School of Architecture. It was designed by Louis I. Kahn while he was a member of the architecture faculty. His first important public commission, and the first of four art museums he would design, the building has

been acclaimed for its significance to the history of contemporary American architecture. Although it was the first modern-style building on the Yale campus, the Louis Kahn building harmonizes with older structures, including Egerton Swartwout's Italian gothic Old Yale Art Gallery of 1928, to which it is directly connected. The gallery recently completed the final phase of a comprehensive expansion project that began with the restoration and renovation of the Kahn building, completed in 2006, and continued with the restoration of the Swartwout building and Street Hall (1866). The latest phase of construction united all three buildings into a cohesive whole and opened in December 2012.

Yale Center for British Art:

The Yale Center for British Art, designed by architect Louis I. Kahn, and a gift of the late Paul Mellon '29, houses the largest collection of British paintings, sculpture, prints, drawings, and rare books outside the United Kingdom. The collection presents a survey of English art, life, and thought from the sixteenth century through the twentieth. The particular strength of this collection lies in the holdings from the period between the birth of Hogarth (1697) and the death of Turner (1851). In addition to the normal functions of a public art museum and rare book library, the center provides classrooms for teaching, a reference library for specialized research, a complete photographic archive of British art, offices for visiting fellows, and other research facilities. The building was completed, posthumously, by the architectural firm of Pellecchia and Meyers according to Kahn's design. Marshall Meyers (MArch1957) was a student and then a collaborator of Mr. Kahn's. The YCBA is Kahn's final work and is located diagonally from the School of Architecture and across Chapel Street from Kahn's first important building, the Yale University Art Gallery.
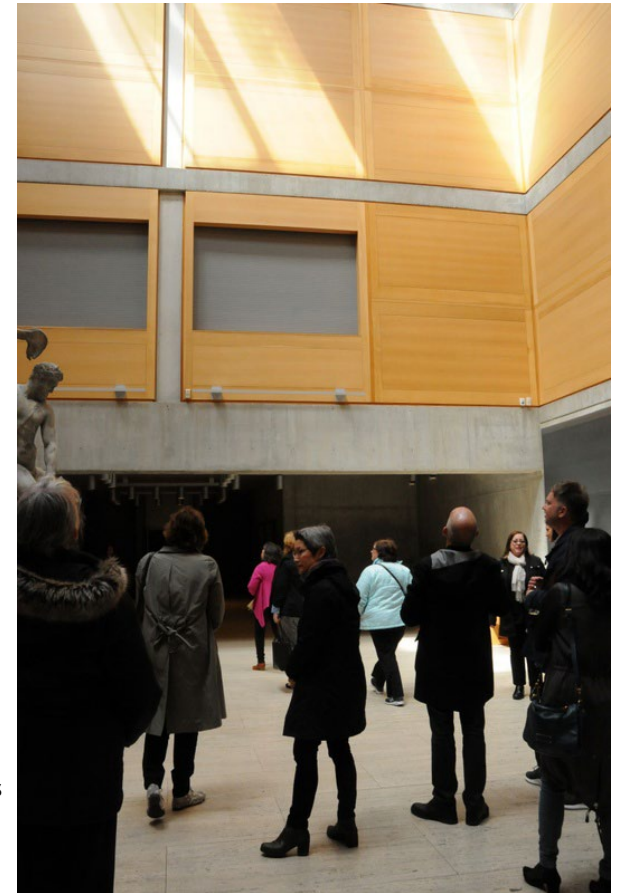
Material Light - Light Material
Yale Center for British Art
April 2017

5.8 Information Resources

Yale Peabody Museum of Natural History:

The collections of the Yale Peabody Museum of Natural History comprise more than twelve million specimens and artifacts in thirteen curatorial divisions: anthropology, archives, botany, cryo facility, entomology, historical scientific instruments, invertebrate and vertebrate paleontology, meteorites and planetary science, mineralogy, paleobotany, and invertebrate and vertebrate zoology. The mission of the Peabody Museum is to serve Yale University by advancing understanding of earth's history through geological, biological, and anthropological research, and by communicating the results of this research to the widest possible audience through publication, exhibition, and educational programs. Fundamental to this mission is stewardship of the Museum's rich collections, which provide a remarkable record of the history of the earth, its life, and its cultures. Conservation, augmentation and use of these collections become increasingly urgent as modern threats to the diversity of life and culture continue to intensify.

Collection of Musical Instruments:

One of the foremost institutions of its kind, the Collection acquires, preserves, and exhibits musical instruments from antiquity to the present, featuring restored examples in demonstration and live performance. It provides access to and disseminates information about its holdings to Yale students, faculty, and staff; to scholars, musicians, and instrument makers; and to the broader public.

An important resource for the music curricula of the University, the Collection serves as a laboratory for courses in the history of musical instruments and as a supplemental archive for courses taught in the arts and sciences. The Collection maintains regular public visiting hours and presents an annual series of concerts as well as lectures, demonstrations, gallery talks, and other special events.

Wurtele Study Center:

Located in the Collection Studies Center at Yale West Campus, in West Haven, Connecticut, the Wurtele Study Center is designed to inspire and accommodate object-based teaching and learning. It features several classrooms and spaces with large seminar tables that allow for the close study of collection material. The Wurtele Study Center is optimally positioned to foster collaboration; the Collection Studies Center is also home to the Gallery's conservation laboratory and the Leslie P. and George H. Hume American Furniture Study Center, as well as the Institute for the Preservation of Cultural Heritage and storage facilities for the Yale Peabody Museum of Natural History, the Yale Collection of Musical Instruments, and the Yale Center for British Art.

Yale Peabody Museum of Natural History
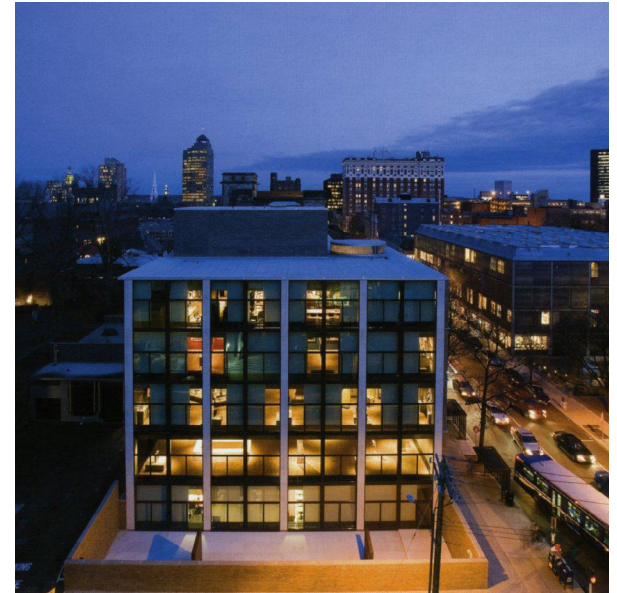
Yale University Art Gallery

5.8 Information Resources

Lectures

Throughout the year, nationally and internationally known architects, architectural scholars, and artists are invited to participate in the School's weekly lecture series, and to present their work as part of the School's ongoing series of conferences and symposia. As a group, these speakers bring a wide range of perspectives to bear on the problems of architectural practice, embodying the myriad ways architectural thinking can be applied in the world at large. All lectures and symposia at YSoA are free and open to the public.

Lectures offered during the 2020-2021 academic year included:

Thursday, August 27 - Dean Deborah Berke: Everyday 2020

Thursday, September 10 - Mindy Thompson Fullilove: The Social and Ecological Aspects of the Psychology of Place

Thursday, October 8 - Jennifer Newsom and Tom Carruthers

Wednesday, October 28 - Christopher Flavelle: Climate Adaptation: America's growing struggle to live with global warming

Thursday, October 29 - Kate Wagner: Embracing the Discourse: New Horizons in Architectural Criticism

Monday, November 2 - Tod Williams and Billie Tsien

Thursday, November 5 - Abby Hamlin: Creative Collaboration—A Strategy For Impactful Change

Monday, November 9 - Deborah Saunt

Thursday, November 12 - Walter Hood: Recent Work

Thursday, November 19 - Ronald Rael and Virginia San Fratello: Unbounded

Monday, November 30 - Luis Callejas and Charlotte Hansson

Monday, February 1 - Marlon Blackwell

Thursday, February 11 - Jing Liu

Thursday, February 18 - Chris T. Cornelius

Thursday, February 25 - Alberto Veiga

Thursday, March 25 - Fiona Raby

Thursday, April 1 - Olalekan Jeyifous

Thursday, April 22 - Sarah Lewis

Tuesday, April 13 - Adrienne Brown

Monday, April 12 - Justin Garrett Moore

Thursday, April 8 - Kate Orff

The oficial YSoA lecture series is only one of multiple parallel lecture and event series at the school. Others include the Yale Architecture Forum organized by PhD students, the MED Working Group on Anit-Racism organized by Master of Environmental Design Students, talks organized by Equality in Design, a student group, panels organized by the Career services program, Gallery Talks related to shows in the YSoA gallery and Launches, events organized around the release of school-affiliated publications.

The Emblem as Image and Storyteller Lecture
October 2017

DEMO Exhibition

5.8 Information Resources

Symposia

"Natures of Ornament," a one-day symposium on February 23, 2019, convened by Sunil Bald, examined the role of ornament in contemporary architecture discourse as well as the ornament theory and architectural work of Kent C. Bloomer, faculty member at Yale since 1966.

"Clouds, Bubbles, and Waves," a three-day J. Irwin Miller symposium on April 4—6, 2019, convened by Sunil Bald, explored Japan's spatial and aesthetic responses to natural disasters and other catastrophes.

"My Bauhaus: Transmedial Encounters," convened in 2019 by Eeva-Lisa Pelkonen and Trattie Davies, which brought together historians, artists, architects, and educators from around the world for a two-day celebration of the Bauhaus's recent centennial;

"Noncompliant Bodies: Social Equity and Public Space," which explored the relationship between architecture and the demands for social justice voiced by people who have been marginalized and oppressed on the basis of race, gender and disability, and

Beyond the Visible: Space, Place and Power in Mental Health," conceived and organized by YSoA students to make designers and architects aware of their capacity to improve access to and perceptions of mental health.

Retrofuturisms, conceived and organized by the MArch II '21 class as a means of exploring speculative design methodologies and alternative forms of engagement with architecture's past and future.

Exhibitions

Since its founding in 1979, the Exhibitions program at YSoA has evolved into a critical space for the exploration of architectural ideas and discourse in New Haven and beyond. Today, the Yale Architecture Gallery — situated at the very heart of Rudolph Hall — hosts four exhibitions per year, including the annual year-end show of student work. Recent shows include:

"Models, Media, and Methods: Frei Otto's Architectural Research," an exhibition of experimental work by celebrated German architect, Frei Otto. (Spring 2020)

"Two Sides of the Border: Redefining the Region," featuring the student work of thirteen studios from the U.S. and Mexico, examining regional issues across the two countries at a time when migration across the border is at the forefront of political discourse. (Spring 2018)

 "Japan: Archipelago of the House," featuring projects by fifty-eight architects, and re-contextualizing their work relative to modern Japan's historical and cultural lineage. (Spring 2019)

Additionally, since 2019, the School's "North Gallery" has hosted small exhibitions initiated, curated, and designed by students. Recent projects include:

"Making Space For Resistance: Past, Present and Future," commemorating the 50th anniversary of the occupation of Alcatraz Island by Native American activists in 1969

"In Memoriam," a collection of self-designed tombs for architects (Spring 2020) "Stepwells of Ahmedabad," a photo-documentary of Indian stepwells

Clouds, Bubbles, and Waves - Sou Fujimoto
Symposium
April 2019

5.8 Information Resources

Publications

In addition to Perspecta, a peer-reviewed academic journal published annually by the School of Architecture and distributed by MIT Press, YSoA is also home to Retrospecta, an annual journal of student work; Constructs, a bi-annual news magazine highlighting events and activities at the School of Architecture; and a number of books documenting the work of advanced studios. Recent additions to this series include The Diamonds of American Cities, an investigation of baseball parks and their urban ramifications, documenting the work of an advanced studio led by Janet Marie Smith, Alan Plattus, and Andrei Harwell; Mexican Social Housing: Promises Revisited, a compilation of projects developed in the advanced studio led by Tatiana Bilbao, in conjunction with INFONAVIT (the Mexican Institute of the National Fund for Worker's Housing); and Harlem: Mart 125, documenting student proposals for a new residential and cultural center on Harlem's 125th Street, developed as part of an advanced studio led by Everardo Jefferson, Sara Caples, and Jonathan Rose.

Perspecta 50 : Urban Divides
Launch Party
November 2017

In Memoriam
Exhibition
February 2020

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Appendix

Syllabi

Condition 6:

Statement on NAAB-Accredited Degrees

Access to NAAB Conditions and Procedures

Access to Career Development Information

Public Access to Accreditation Reports and Related Documents

Admissions and Advising

Student Financial Information

6.1 Statement on NAAB-Accredited Degrees

All institutions offering a NAAB-accredited degree program or any candidacy program must include the exact language found in the NAAB Conditions for Accreditation, 2020 Edition, Appendix 2, in catalogs and promotional media, including the program's website.

In the United States, most registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit professional degree programs in architecture offered by institutions with U.S. regional accreditation, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture. A program may be granted an eight-year term, an eight-year term with conditions, or a two-year term of continuing accreditation, or a three-year term of initial accreditation, depending on the extent of its conformance with established education standards.

Doctor of Architecture and Master of Architecture degree programs may require a non-accredited undergraduate degree in architecture for admission. However, the non-accredited degree is not, by itself, recognized as an accredited degree.

Yale University, School of Architecture offers the following NAAB-accredited degree programs:

M.Arch. (pre-professional degree + 114 credits)
M.Arch. (non-pre-professional degree + 114 credits)

Next accreditation visit: 2022

https://www.architecture.yale.edu/academics/programs/1-m-arch-i

https://www.architecture.yale.edu/academics

https://www.architecture.yale.edu/academics/joint-degree-program

https://www.architecture.yale.edu/naab-information

6.2 Access to NAAB Conditions & Procedures

The program must make the following documents available to all students, faculty, and the public, via the program's website:

https://www.architecture.yale.edu/naab-information

Conditions for Accreditation, 2020 Edition :

https://www.naab.org/wp-content/uploads/2020-NAAB-Conditions-for-Accreditation.pdf

Conditions for Accreditation, 2009 Edition :

https://www.naab.org/wp-content/uploads/2009-Procedures-for-Accreditation.pdf

Procedures for Accreditation, 2020 Edition:

https://www.naab.org/wp-content/uploads/2020-NAAB-Procedures-for-Accreditation.pdf

Procedures for Accreditation, 2012:

https://www.naab.org/wp-content/uploads/2012-NAAB-Procedures_Amended_Final-for-Publication-072413.pdf

6.3 Access to Career Development Information

The program must demonstrate that students and graduates have access to career development and placement services that help them develop, evaluate, and implement career, education, and employment plans.

The career services program organizes a series of workshops, panels, lectures, recruiting events and online resources to help prepare students for career opportunities after Yale.

https://www.architecture.yale.edu/alumni/career-development

6.4 Public Access to Accreditation Reports and Related Documents

To promote transparency in the process of accreditation in architecture education, the program must make the following documents available to all students, faculty, and the public, via the program's website:

a. All Interim Progress Reports and Program Annual Reports since last visit

   https://www.architecture.yale.edu/naab-information

b. All NAAB responses to any Plan to Correct/ NAAB responses to Program Annual Reports

   https://www.architecture.yale.edu/naab-information

c. Most recent NAAB decision letter

   https://www.architecture.yale.edu/naab-information

d. Architecture Program Report submitted for last visit

   https://www.architecture.yale.edu/naab-information

e. Final edition of most recent Visiting Team Report

   https://www.architecture.yale.edu/naab-information

f. Optional response to Visiting Team Report

   https://www.architecture.yale.edu/naab-information

g. Plan to Correct (if applicable)

   https://www.architecture.yale.edu/naab-information

h. NCARB ARE pass rates

   https://www.architecture.yale.edu/naab-information

i. Statements/policies on learning and teaching culture

   https://www.architecture.yale.edu/academics/bulletin/learning-and-teaching-policy

j. Statements/policies on DEI:

   https://www.architecture.yale.edu/about-the-school/diversity-equity-inclusion

6.5 Admissions and Advising

The program must publicly document all policies and procedures that govern the evaluation of applicants for admission to the accredited program. These procedures must include first-time, first-year students as well as transfers from within and outside the institution. This documentation must include the following:

a. Application Forms and Instructions:

   https://www.architecture.yale.edu/admissions

b. Admissions Requirements and Procedures:

   https://www.architecture.yale.edu/admissions/requirements

c. Forms and a description of the process for evaluating the content of a non-accredited degree:

   https://www.architecture.yale.edu/admissions/requirements

d. Requirements and forms for applying for financial aid and scholarships:

   https://www.architecture.yale.edu/admissions/financial-aid

e. Explanation of how student diversity goals affect admission procedures:

   https://www.architecture.yale.edu/admissions/requirements#mmi-626

6.6 Student Financial Information

The program must demonstrate that students have access to current resources and advice for making decisions about financial aid:

   https://www.architecture.yale.edu/admissions/financial-aid

   https://www.architecture.yale.edu/forms-resources#mmi-619

The program must demonstrate that students have access to an initial estimate for all tuition, fees, books, general supplies, and specialized materials that may be required during the full course of study for completing the NAAB-accredited degree program:

   https://www.architecture.yale.edu/admissions/tuition

APR Appendices:

Statement on COVID-19-Related Operations

Strategic Plan

Impact Report

NECHE Reaccreditation Letter

Faculty Curriculum Vitae

Statement on COVID-19-Related Operations

The School of Architecture's response to Covid-19 beginning in early 2020 and continuing through the present day was formulated and continually updated in consultation and with the approval of the University following State of Connecticut regulations and guidelines. This Architecture Program Report addresses a much longer period, so while the school's response to the pandemic is mentioned occasionally, it is more fully described here.

On campus activity and Use of the Rudolph Hall

In the spring of 2020, YSoA moved all of its courses, including design studios, online, shifting to a fully remote model of education. While this had no immediate impact on the content of the curriculum, students and faculty were forced to be both flexible and nimble, learning the basics of various remote technologies and software platforms in order to sustain the school's socially intensive, collaborative environment, even in conditions of social isolation.

During the 2020-2021 school year, YSoA, following the University's lead, moved to a hybrid model. Neither students nor faculty were required to be present in person for any course sessions or events, but approximately 90% of the student body returned to New Haven and had access to Rudolph Hall. The school collaborated with a local firm, Apicella+Bunton (where several members of the staff were also YSoA faculty and graduates) to study how to open the building while conforming to social distancing requirements, and a schedule was developed allowing students in the building during limited, alternating hours to limit capacity.

Maintaining Community

Maintaining the school's intimate community was a priority throughout this period. The dean held 14 town hall meetings in 2020, many of which were focused on smaller groups of students. In the spring and then again in the summer of 2020, the Dean held individual sessions with the MArch I classes of '21,'22, '23, as well as MArchII students, M.E.D., and PhD students to discuss the school's preparations amid Covid-19. Dean Berke also held open Zoom sessions available to any first year

student at the end of the fall 2020 term and into early January providing an opportunity for small group interaction with the dean.

In advance of the fall '20 semester, a new Open Access Platform was developed to enable the sharing of materials, events and resources. The presentations faculty typically give during course 'shopping week' were pre-recorded and made accessible online. A newsletter, The Weekly Sketch, documenting that week's news, events and opportunities was circulated, beginning in the Spring of 2021.

Meetings and Events

Course meetings as well as meetings of faculty committees, the executive committee, student groups meetings continued at generally the same frequency in a remote format. The university provided Zoom accounts to all faculty and reviews were held via zoom and other platforms including Miro, Mozilla Hubs, and Sketchfab. Most school events including the lecture series were cancelled in Spring 2020, but resumed at a regular schedule via Zoom throughout the 2020-2021 school year. Attendance was strong.

School travel and In-person Programs

The school's summer travel programs to Rome, Gothenburg, and Madrid were cancelled in both 2020 and 2021. In-person, local programs were adapted or continued to be offered. The Building Project (2016b) schedule had to be adjusted in 2020. Construction of the Building Project house was postponed, and a new course, (2239a) Building Project III, on technological building systems integration, based in case study analysis, was added. In place of the construction component of the Building Project, students and the administration worked together to form the Design Brigade in collaboration with Atelier Cho Thompson in New Haven and Yale's Center for Collaborative Arts and Media. In 2021, the Building Project was offered on a shifted schedule in July and August to allow students to participate, once again, in the construction of a house in New Haven.

The school of architecture's Regenerative Building

Lab's inaugural project, the design, fabrication, and construction of a new Coastal Research Station at Horse Island ran as scheduled. Fabrication took place at Yale's West Campus, and the building was erected over a 10-week period on Horse Island that summer.

Admissions

The admissions process was completed on schedule in both 2020 and 2021. Extended deadlines for deferrals were offered in 2021. The school's open Houses were held virtually and the faculty produced a series of videos introducing the curriculum and other aspects of the school including a virtual tour of Rudolph Hall.

Career Services

The 2020-2021 calendar of workshops, panels, lectures, recruiting events and online resources to help prepare students for career opportunities after Yale was adjusted to be done remotely. Additional programming was added to respond to the abrupt changes students were facing including the development of an Alumni/Student mentorship program. The annual career fair was held remotely.

YSoA Strategic Plan 2018

Yale School of Architecture: A Plan for the Future

February 2018

University Mission

Yale is committed to improving the world today and for future generations through outstanding research and scholarship, education, preservation, and practice. Yale educates aspiring leaders worldwide who serve all sectors of society.

Yale School of Architecture Mission

The mission of the Yale School of Architecture is to educate architects, scholars, teachers, and leaders who will shape the future through design.

Vision

A world in which architecture matters, and architecture in which the world matters.

Guiding Frameworks

I.

The work of the Yale School of Architecture ranges across the entire spectrum of architecture, from the broadest questions of the discipline to the particulars of project design, founded on pedagogy, research, and outreach.

II.
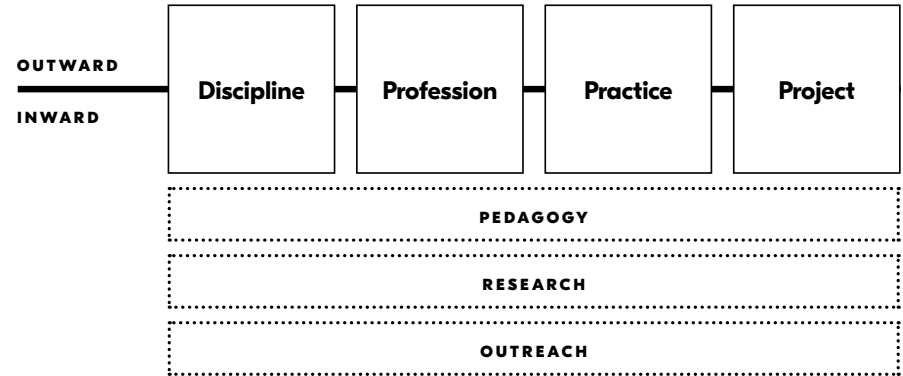
We **encourage** each student to undertake the essential **roles** that comprise the architect's identity.

2 Guiding Frameworks

YSoA Strategic Plan

Guiding Principles

We foster **creativity and innovation**, stretching our modes of study by drawing upon the forward-thinking, future-focused, scholarly ethos of the larger University in which we are situated.

We commit to a culture of **collaboration and inclusion** that welcomes many perspectives and backgrounds and integrates architecture with other disciplines.

We act on our **intellectual curiosity and spirit of inquiry** to explore, research, experiment, and invent solutions to real design challenges and opportunities.

We **engage with the world** beyond the academy to create an ethical, relevant architecture that supports a sustainable, resilient planet.

Key Strategies

We will achieve our mission by prioritizing three key strategies:

1 Revitalize the curriculum to promote excellent and relevant teaching and research.

2 Deepen the School's relationship with the University and the wider discipline.

3 Establish the resources, climate, and culture that welcome and support a more diverse pool of students and faculty.

These strategies will be augmented by focusing on six broad goal areas, each of which encompasses a range of School pursuits:

Goals

Pedagogy and Program
Curriculum, research, diversity, technology, coordination, lectures, exhibitions, publications
- Offer an integrated curriculum and programming that respond to the needs and conditions of designing and building in the 21st century.

Students
Funding, diversity, research, recruitment, experience, quality, admissions, success, employment
- Attract and support a diverse community of creative intellectuals who will be prepared to lead and influence the future of the discipline.

Faculty
Structure, recruitment, hiring, assessment, contracts, retention, development, research, promotion & tenure
- Attract, support, and develop a diverse body of leading architectural educators.

External Engagement
Positioning, leadership, influence, community involvement, service, alumni relations
- Be fully engaged with and lead in communities and issues beyond the school, in the field, the university, and the wider world.

Institutional Resources
Staffing, technology, facilities, administration, funding, donor cultivation and stewardship, funding sources, case statement/ reasons to give
- Provide the operational infrastructure and funding necessary to support the school's mission.

Culture
Climate, workload, diversity, engagement, leadership & collaboration, assessment, evaluations, discourse

YSoA Strategic Plan

Pedagogy and Program

Goal
Offer an integrated curriculum and programming that respond to the needs and conditions of building in the 21st century.

Objectives
Increase the number of applicants and yield rate.
Enhance the success and fulfillment of the School's graduates.
Enhance the School's influence in the world of architectural education and beyond.

Strategies

	Near-term	Three to five years
Redesign M Arch I Curriculum	Appoint core coordinator Implement new curriculum within existing	Implement new structure to increase research and cross-disciplinary opportunity
Reconceive M Arch II program	Appoint new director, identify participating faculty Rebrand Recruit applicants	Consider distinct tracks of study and research component
Reconceive MED program	Appoint new director to build on the program's legacy and interdisciplinary approach	Integrate with M Arch II research tracks
Reconceive PhD program	Identify new director Rebrand program	Ensconce parallel H/T and Tech research tracks
Expand choice and diversity within curriculum	Establish review process for syllabi, existing and proposed Formulate new menu of YSOA elective offerings	Diversify new YSOA requirements in concert with new structure
Expand choice and diversity beyond YSOA	Identify potential partners at Yale and beyond Increase cross-listed courses at least three-fold	Implement at least two new certificate/joint degree programs
Increase innovation opportunities	Appoint research/technology/ facilities committee Implement DM facility long-range plan	Implement faculty/student research units

Relevant actions
1 Establish review committee.
2 Define program goals and objectives.
3 Identify annex spaces and facilities to support research and curricular goals.
4 Offer support to develop new courses.
5 Increase integration of design and technology.
6 Increase outreach to diversify lecturers/critics.
7 Cultivate institutional relationships beyond YSOA.
8 Reimagine accreditation compliance.

Students

Goal
Attract and support a diverse community of creative intellectuals who will be prepared to lead and influence the future of the discipline.

Objectives
Improve yield in terms of numbers and diversity.
Reduce student debt.
Expand graduate career paths.

Strategies

	Near-term	Three to five years
Increase diversity	Establish targeted recruiting strategy Triple applicant pool of underrepresented minorities	Triple matriculation rate of underrepresented minorities
Enhance and diversify definition of student success	Formulate faculty advising infrastructure Reduce by half number of LP and F grades received after first year	Double number of graduates pursuing teaching or research careers
Reduce student debt to zero	Formulate strategy to involve more stakeholders in fundraising efforts Reduce student debt by 10 percent	Reduce student debt by 25 percent
Improve applicant yield	Formulate a strategy for expanded and targeted post-acceptance recruitment Increase percentage of applicants matriculating by 20 percent	Increase percentage of applicants matriculating by 50 percent

Relevant actions
1 Provide funding to support faculty activity (recruiting, reviews, lectures) at targeted undergraduate programs.
2 Increase faculty diversity.
3 Expose students to alternative practice models.
4 Broaden the curriculum.
5 Establish metrics of student success and implement ongoing tracking methods.
6 Initiate tracking system to follow and measure alumni achievement.
7 Increase range of revenue sources (professional education, grants, etc.).
8 Recruit in new locations through alumni network.

YSoA Strategic Plan

Faculty

Goal
Attract, support, and develop a diverse body of leading architectural educators.

Objectives
Increase diversity of visiting professors and endowed chairs.
Expand number of professors in practice and ladder appointments.
Expand subject areas.
Increase external acknowledgment of achievements of all faculty.

Strategies

	Near-term	Three to five years
Appoint more junior faculty	Map out goals in conjunction with curricular development Hire new junior history/theory faculty	Create two new multi-year contract design positions
Diversify high-visibility senior appointments	Map out goals in conjunction with curricular development Hire new PhD director	Create two endowed positions in conjunction with curricular development (technology, social justice, etc.)
Enhance faculty success	Solicit individual practice/research goal reports Increase faculty design awards	Increase scholarly publication rate
Establish ways of increasing diversity	Work with University to support YSOA diversity Secure funding for at least one yearly or ladder position	Double the number of underrepresented minorities at YSOA
Increase research funding	Establish modest seed grant program Implement faculty/student asst. research model for proposed projects	Create a second externally funded research lab
Improve faculty retention; decrease unwanted losses	Create promotion roadmap for non-ladder faculty Implement formal faculty mentoring	Eliminate losses involving lateral movement

Relevant actions
1 Create faculty development program.
2 Develop middle-tier, non-tenure faculty positions.
3 Recruit and cultivate notable lecture faculty for university-wide courses.
4 Establish metrics of faculty success and develop ongoing tracking method.
5 Encourage tenure and promotion committees to consider metrics of architecture faculty success.
6 Create structured, transparent process for course proposal.
7 Create endowed chairs in urban design, landscape, and history/theory.
8 Show the larger university that architecture is a bridge across STEM and arts.
9 Help faculty identify and procure research funding.
10 Align position and compensation with responsibility.
11 Establish two-year "resident" fellowship for young faculty.
12 Support travel for conferences/symposia.
13 Align faculty strength with task, hiring "the right person for the right job."
14 Provide opportunities for faculty to promote work.
15 Promote faculty for professional work at Yale.

External Engagement

Goal
Engage fully with and lead in communities and issues beyond the school, in the field, the university, and the wider world.

Objectives
Increase cross-campus collaboration.
Increase visibility and exposure for the School, faculty, alumni, and students.
Increase media mentions.

Strategies

	Near-term	Three to five years
Internal		
Build joint degree curricula at SOM and FES	Reestablish coordinating team Schedule alignment	Curriculum intention, integration; faculty expertise
Establish joint degree count targets	Define current status Set targets	Hit targets
Reconceive PhD program	Joint degree, HSAR courses only Reach four more departments	Reach 12 more departments
Increase cross-disciplinary projects	Create long list of projects Implement five projects	Implement five to 10 projects Increase funding
External		
Increase school visibility	Establish measure for constituents Increase by 100 percent	Increase by 300 percent
Create and deliver professional education	Design curriculum 40 graduates	120 graduates
Raise Yale's visibility on the lecture circuit	Collect and analyze current numbers Increase by 25 percent	Increase 100 percent
Increase YSOA faculty representation in Yale Facilities and Corporation projects	Define opportunities Two faculty members	Five faculty members
Increase alumni engagement in the School	Establish engagement model Increase by 25 percent	Increase by 50 percent

Relevant actions
1 Define the objectives of the joint degrees and augment, modify or eliminate the programs accordingly.
2 Become a professional education resource.
3 Establish collaborative teaching, research, and other initiatives outside the School.
4 Establish a measurable communications strategy to align outreach (exhibitions, publications, lectures, social media).
5 Demonstrate and integrate the School's expertise with design and facilities initiatives on campus.
6 Increase participation of YSoA faculty on outside juries.

YSoA Strategic Plan

Guiding Principles

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We will achieve our mission by prioritizing three key strategies:

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2 Deepen the School's relationship with the University and the wider discipline.

3 Establish the resources, climate, and culture that welcome and support a more diverse pool of students and faculty.

These strategies will be augmented by focusing on six broad goal areas, each of which encompasses a range of School pursuits:

Goals

Pedagogy and Program
Curriculum, research, diversity, technology, coordination, lectures, exhibitions, publications
● Offer an integrated curriculum and programming that respond to the needs and conditions of designing and building in the 21st century.

Students
Funding, diversity, research, recruitment, experience, quality, admissions, success, employment
● Attract and support a diverse community of creative intellectuals who will be prepared to lead and influence the future of the discipline.

Faculty
Structure, recruitment, hiring, assessment, contracts, retention, development, research, promotion & tenure
● Attract, support, and develop a diverse body of leading architectural educators.

External Engagement
Positioning, leadership, influence, community involvement, service, alumni relations
● Be fully engaged with and lead in communities and issues beyond the school, in the field, the university, and the wider world.

Institutional Resources
Staffing, technology, facilities, administration, funding, donor cultivation and stewardship, funding sources, case statement/ reasons to give
● Provide the operational infrastructure and funding necessary to support the school's mission.

Culture
Climate, workload, diversity, engagement, leadership & collaboration, assessment, evaluations, discourse

YSoA Strategic Plan

Institutional Resources

Goal
Provide the operational infrastructure and funding necessary to support the school's mission.

Objectives
Increase funding.
Optimize organizational structure.

Strategies

	Near-term	Three to five years
Improve space availability and allocation	Space assessment: studio, lab, support, teaching, other (study) Phase 1	Address Provost classroom use and assignment policy
Invest in technology	Technology pedagogy Phase 1	Obtain more space, funding, and dedicated faculty
Increase funds raised and donor pool, alumni and other	Formulate strategy to involve more stakeholders in fundraising efforts Reduce student debt by 10 percent	Reduce student debt by 25 percent
Expand financial aid	Establish baseline Reduce lost candidates by 25 percent	Reduce lost candidates by 75 percent
Redesign administration	Organizational assessment Hiring strategy Implement	Ongoing evaluation

Relevant actions
1. BUDGET Rebalance spending and resource requirements to align with strategic plan objectives.
2. SPACE Allocate space requirements in accordance with strategic plan.
3. FINANCIAL AID Provide sufficient financial aid to dramatically reduce finance-driven admission decisions.
4. FUNDRAISING Create and implement fundraising strategy to support financial aid, research and teaching.
5. OPERATIONS AND ADMINISTRATION Design and implement organization, including reporting structure, roles, and staffing, to support implementation of strategic plan.
6. TECHNOLOGY In alignment with faculty appointments, continuously improve technology to state of the art.

Culture

Goal
Model a culture that sets the standard for contemporary architectural education practice, and research.

Objectives
Maintain the School's tradition of the highest possible standards in architectural design and education.
Enhance the nurturing, supportive, and collaborative aspects of the School.
Enhance our ability to embrace and support diverse members of our community.

Strategies

	Near-term	Three to five years
Measure stakeholder engagement, evaluate climate and culture, and set goals for improvement	Assess needs and procure assessment instrument Design and run survey, set goals Achieve Action 1	Examine the integration of the faculty and establish means to improve cooperation and cohesion
Plan and implement faculty-driven projects	Determine projects Five projects	12 projects
Assess and refine student workload requirements	Run workload assessment, determine adjustments Make specific course adjustments	Workload policy
Require gender balance on every jury	Establish policy 75 percent of all juries	100 percent of all juries

Relevant actions:
1. Assess the current culture of the school's students, faculty, and staff, and establish target measures for improvement.
2. Improve the cohesion, cooperation, and integration of the faculty.
3. Rebalance the charrette and jury cultures to be more consistent with the curriculum's pedagogical objectives.
4. Integrate new, diverse members of the community into the culture of the school.
5. Balance equity (perceived and genuine) in faculty responsibilities and workload.

Yale School of Architecture: A Plan for the Future

June 2021

University Mission
Yale is committed to improving the world today and for future generations through outstanding research and scholarship, education, preservation, and practice. Yale educates aspiring leaders worldwide who serve all sectors of society.
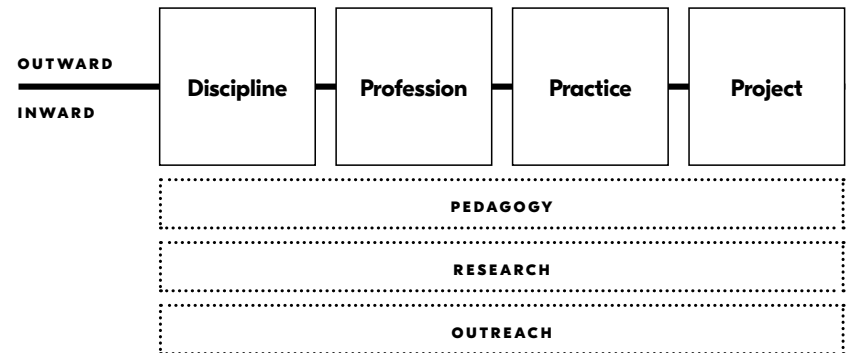
Yale School of Architecture Mission
The mission of the Yale School of Architecture is to educate architects, scholars, teachers, and leaders who will shape the future through design.
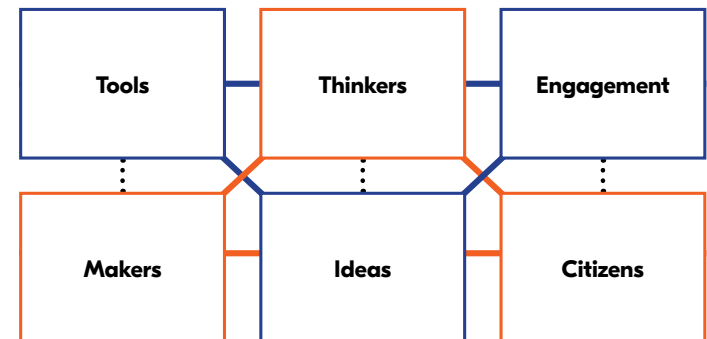
Guiding Frameworks

I.

The work of the Yale School of Architecture ranges across the entire spectrum of architecture, from the broadest questions of the discipline to the particulars of project design, founded on pedagogy, research, and outreach.

OUTWARD

INWARD

| Discipline | Profession | Practice | Project |

PEDAGOGY

RESEARCH

OUTREACH

II.

We **encourage** each student to undertake the essential **roles** that comprise the architect's identity.

| Tools | Thinkers | Engagement |
| Makers | Ideas | Citizens |

2 Guiding Frameworks

Values and Guiding Principles

We foster **creativity** and **innovation**, stretching our modes of study by drawing upon the scholarly ethos of the larger University in which we are situated.

We commit to a culture of **collaboration** and **inclusion** that actively seeks many perspectives and backgrounds and integrates architecture with other disciplines.

We act on our **intellectual curiosity** and **spirit of inquiry** to explore, research, and experiment and to solve real design challenges.

We engage with the world beyond the academy to create an **ethical**, **relevant** architecture that supports a **sustainable**, **resilient** planet for all.

Major Goals

Address issues of social justice and climate change in the built environment

Secure funding for all to graduate without tuition debt

Continue building a culture of belonging

Goals

Pedagogy and Program
Curriculum, research, diversity, technology, coordination, lectures, exhibitions, publications
- Offer an integrated curriculum and programming that respond to the needs and conditions of building in the 21st century.

Students
Funding, diversity, research, recruitment, experience, quality, admissions, success, employment
- Attract and support a diverse community of creative intellectuals who will be prepared to lead and influence the future of the discipline.

Faculty
Structure, recruitment, hiring, assessment, contracts, retention, development, research, promotion & tenure
- Attract, support, and develop a diverse body of leading architectural educators.

External Engagement
Positioning, leadership, influence, community involvement, service, alumni relations
- Engage fully with and lead in communities and issues beyond the school, in the field, the university, and the wider world.

Institutional Resources
Staffing, technology, facilities, administration, funding, donor cultivation and stewardship, funding sources, case statement/ reasons to give
- Provide the operational infrastructure and funding necessary to support the school's mission.

Culture
Climate, workload, diversity, engagement, leadership & collaboration, assessment, evaluations, discourse
- Model a culture that sets the standard for contemporary architectural education, practice, and research.

3 Values and Guiding Principles, and Major Goals

4 Goals

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Pedagogy and Program

Goal
Offer an integrated curriculum and programming that respond to the needs and conditions of building in the 21st century.

Objectives
- Enhance success and fulfillment of graduates
- Enhance influence in architectural education and beyond

Strategies
- Increase and expand student access to research infrastructure and innovation opportunities
- Strengthen PhD programs
- Define role of research in our programs
- Consider addition of masters-level urban studies program
- Build continuing education program

Students

Goal
Attract and support a diverse community of creative intellectuals who will be prepared to lead and influence the future of the discipline.

Objectives
- Increase number and yield of diverse applicants
- Expand graduate career paths

Strategies
- Strengthen faculty advising structure
- Strengthen connections between students and faculty
- Develop and implement diversity recruiting strategy
- Strengthen student career services
- Gather data on graduates' career paths, using 2012 survey as a baseline
- Encourage intermingling among programs
- Encourage and support creation of student subcommunities

5 Pedagogy and Program

6 Students

Faculty

Goal
Attract, support, and develop a diverse body of leading architectural educators.

Objectives
- Continue increasing number of Professors in the Practice and ladder appointments
- Continue increasing support for faculty research
- Increase external acknowledgment of achievements of all faculty
- Improve sense of faculty community

Strategies
- Create opportunities, incentives, and expectations for greater faculty visibility in and engagement with the School
- Identify additional sources of support for research and grant infrastructure
- Strengthen student participation in faculty research
- Create faculty "PR strategy" with opportunities for faculty exposure in mainstream and social media

External Engagement

Goal
Engage fully with and lead in communities and issues beyond the school, in the field, the university, and the wider world.

Objectives
- Continue increasing collaboration across campus and with other HE institutions
- Enhance engagement with the City of New Haven and its residents
- Increase engagement globally
- Increase alumni engagement
- Increase visibility and exposure for the School, faculty, alumni, and students

Strategies
- Create a strategy to strengthen the School's global presence and engagement
- Build a program to provide support for interdisciplinary collaborations
- Contribute to Yale's capacity for cross-campus collaborations
- Design and/or refine joint-degree programs and concentrations
- Leverage the work of research centers in the outside world
- Unify New Haven-based student and faculty projects under UDW, Building Project, and future centers
- Build resources to increase alumni engagement

7 Faculty

8 External Engagement

Institutional Resources

Goal
Provide the operational infrastructure and funding necessary to support the school's mission.

Objectives
- Eliminate student tuition debt
- Increase donor engagement and support for the School's priorities
- Increase physical space
- Optimize organizational structure, roles and responsibilities, expertise, and expectations

Strategies
- Use Yale campaign to leverage and promote YSoA funding needs and opportunities
- Involve faculty in donor cultivation and outreach
- Clarify staff and faculty responsibilities and committee structure, roles, and goals to encourage innovation and improved processes
- Spread responsibilities more broadly across staff and faculty
- Improve internal communications
- Involve students in institutional projects

Culture

Goal
Model a culture that sets the standard for contemporary architectural education, practice, and research.

Objectives
- Contribute to change in the culture of the profession and the discipline
- Contribute to the improvement of architecture and the built environment locally, nationally, and globally
- Enhance our ability to embrace, support, and learn from all members of our community

Strategies
- Build on results of school climate survey to address communication, community-building, collaboration, support, and engagement; conduct regular follow-up surveys
- Establish norms and expectations for all members of the School community and visitors
- Articulate, communicate, and carry out the School's role in advancing social justice in the built environment
- Make an enduring and genuine commitment to DEI+B efforts

9 Institutional Resources

10 Culture

Objectives

Pedagogy and Program

	Baseline	Year 1	Year 3
Enhance success and fulfillment of graduates	Survey recent alumni (include in alumni demographic survey)	Review curriculum and services based on survey results	Review changes based on review
		Develop funding strategies for curricular development in key areas	
Enhance influence in architectural education and beyond	Review curriculum to define how core values are reflected		
	# of published articles about YSoA pedagogy	+10%	+20%
	# of published articles by YSoA faculty	+10%	+20%
	# of Yale alumni teaching and leading elsewhere	Monitor and strategize	Monitor and strategize
	# of YSoA media mentions	+10%	+20%

Students

	Baseline	Year 1	Year 3
Increase number and yield of diverse applicants	Develop up-to-date metrics	Increase diversity metrics 20%	Increase diversity metrics 60%
	Institute recruitment committee/effort	Create relationships with six undergraduate schools	Create relationships with 15 undergraduate schools
Expand graduate career paths	Survey interests of students	Expand lecture series and career fair participants based on survey	Assess curricular offerings based on career paths of students

Faculty

	Baseline	Year 1	Year 3
Continue increasing number of Professors in the Practice and ladder appointments	1 new hire	2 additional hires — Revive dormant searches — Start history/theory search	3-4 additional hires
Continue increasing support for faculty research	Survey current faculty projects	Facilitate engagement w/ University resources — Develop plan and proposal: assess research at YSOA, resources for grants, and development opportunities — Part-time grant writing resource — Begin development effort	Established research fund and funding sources
Increase external acknowledgment of achievements of all faculty	Institute annual Faculty Progress Reports (FPR) to understand faculty achievement	Evaluate annual FPRs to understand faculty achievement — Develop communications plan	Review FPRs
Improve sense of faculty community	2020-21 Climate Survey	Form faculty task group to analyze Climate Survey and draft actionable items for change	Actionable items implemented

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External Engagement

	Baseline	Year 1	Year 3
Continue increasing collaboration across campus and with other HE institutions	Inventory, including CEA, Slavery, cross-listed classes, Building Lab, YPH, HBCU projects	Determine external engagement plan	Plan implemented
Enhance engagement with the City of New Haven and its residents	Inventory, including Building Project, Urban Design Workshop, UDW, Design Brigade	Determine external engagement plan	Plan implemented
Increase engagement globally	Both directions: speakers, visualization faculty, students Yale participation in international events	Determine external engagement plan	Plan implemented
Increase alumni engagement	# of alumni contacts # of active alumni # of engagement activities	Establish alumni engagement plan coordinated with capital campaign	Plan implemented
Increase visibility and exposure for the School, faculty, alumni, and students	Not measured	With Yale OPAC, establish exposure metrics and targets	Targets achieved

Institutional Resources

	Baseline	Year 1	Year 3
Eliminate student tuition debt	Analysis of $ debt per student Yearly total across cohort	25% reduction	Additional 25% reduction
Increase donor engagement and support for the School's priorities	ACES score 19 Campaign launch	ACES score 25	ACES score 30 On track for $100M total
Increase physical space	Current	Add 350 George St. Determine future needs	Plan in place
Optimize organizational structure, roles and responsibilities, expertise, and expectations	Current Climate survey	Create organizational development plan	Execute plan

Culture

	Baseline	Year 1	Year 3
Contribute to change in the culture of the profession and the discipline	See Pedagogy and Program		
Contribute to the improvement of architecture and the built environment locally, nationally, and globally	None	Establish criteria and plan	Plan implemented
Enhance our ability to embrace, support, and learn from all members of our community	Climate survey DEI+B inventory	Establish plan Coordinate with University-wide DEI+B efforts	Implement plan

13 Objectives

14 Objectives

Yale School of Architecture: 2020 Impact Report

Summary

Gifts from alumni and friends to the Yale School of Architecture are the largest source of funding, enabling financial aid packages, faculty salaries, guest speakers, visiting critics, building project internships, student travel, and more.

The generosity of alumni and friends helps the school advance major priorities. In our 2018 Strategic Plan, we set the following four guiding principles:

1   Foster creativity and innovation

2   Commit to a culture of collaboration and inclusion that supports many perspectives and backgrounds

3   Act on intellectual curiosity to explore, research, and invent solutions to real design challenges

4   Engage the world to create an ethical, relevant architecture that supports a sustainable planet

Donor support has fueled progress toward each of these goals. In the past year, YSoA applied philanthropic support to:

• Launch the Building LAB for advanced design-build and sustainable materials research

• Formalize joint teaching relationships with the schools of Management, Environment, and Law

• Create two new professorships, including the first professorship in landscape architecture

• Engage students to work with local nonprofits on pro-bono design projects that address COVID-19 problems

• Achieve gender parity among studio faculty and students

• Increase African American, Indigenous, and Latinx student populations

• Advance research by YSoA's Center for Ecosystems in Architecture to create locally sourced Eco-Living Modules voted #1 World Changing Idea by UN news
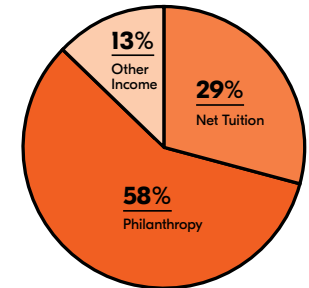
Yale School of Architecture Mission

The mission of the Yale School of Architecture is to educate architects, scholars, teachers, and leaders who will shape the future through design.

Vision

A world in which architecture matters, and architecture in which the world matters.

Alumni

3,410

Current Students

176 M.Arch I

39 M.Arch II

5 M.E.D.

YSoA Funding

13% Other Income

29% Net Tuition

58% Philanthropy

Yale Endowment

.7% Restricted for YSoA

2020 Impact Report

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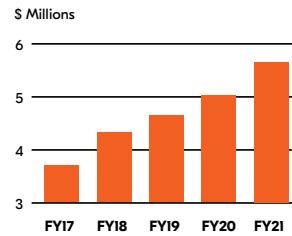# YSoA Impact Report

The Power of Financial Aid

To help our students reach their full potential, the School of Architecture provides need-based financial aid. Since 2015, the School has grown its annual financial aid budget from $3.6M to $5.6M, in response to focused outreach by Dean Deborah Berke and in thanks to significant gifts in response from alumni and friends. In 2019-2020, the School gave scholarship aid to 84% of its student body. Recent growth in financial aid has cut the average student's tuition debt in half.

Increased financial aid makes it possible for students like Araceli L. and Max W. to attend YSoA.

"My story is no different than other Mexican-American children. I was the first in my family to receive a high school diploma, the first to earn a Bachelor, a B.A in Architectural Design and a B.S in Construction Management.... I, like many others before me, had no funds for such an education.... I picked the Yale School of Architecture because I trusted that this school would train me as a designer. In my time at Yale, I have come to realize that although I may need financial support, I am a trained designer, one that thinks and speaks with assurance... it is Yale that has given me the confidence and support to realize this, through its wise critics and an explorative curriculum.... I am thankful for the opportunity to be a part of such a well-established school; I am thankful for the support financially and mentally." **Araceli L., M.Arch I '21**

"The support this school has offered me has made a tremendous difference in my life by enabling me to take full advantage of my time at the School of Architecture.... By way of background, I grew up in a small town in Vermont... and worked for over a decade as a professional dancer.... I have found that YSoA has unconditionally embraced me and my nontraditional background. Not only is my perspective as a dancer welcomed here in the study of architecture; it is, in many ways, seen as an asset.... It is truly exciting to watch oneself grow into a new field. I feel passionate about the pursuit of new knowledge and understanding, and YSoA has provided abundant opportunity in that regard." **Max W., M.Arch I '21**
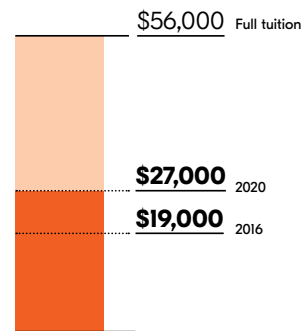
Annual Financial Aid Budget

$ Millions

FY17 FY18 FY19 FY20 FY21

Enrollment
220

84%
Receive financial aid

Average Annual Financial Aid Award

$56,000 Full tuition

$27,000 2020

$19,000 2016

Frequently Asked Questions

Why does YSoA need money when Yale has so much?

Just 0.7% of Yale's endowment is designated to support YSoA. This philanthropic support from the endowment covers ~55% of YSoA's budget. Tuition and new donations fill the gap, and we are committed to reducing the cost of attendance, which makes gifts particularly critical. Philanthropy has always been a key source of funding, and it is important that alumni and friends continue to support the program today, building upon the support of past generations and ensuring today's students have the tools to succeed.

Do smaller gifts make a difference?

Yes! Every donation makes an impact. Gifts of all sizes to the Annual Fund accumulate to make a large impact at YSoA. Together all the gifts toward financial aid lessen a current student's graduating debt burden. In 2019—2020, gifts of $250 and less totaled $56,000—the equivalent of one full-tuition scholarship.

How are gifts to YSoA used, and can I give to a specific program or project?

Gifts can be directed to support current priorities through the Annual Fund, to create new endowed funds, or to add to existing endowments. New endowed funds can be created with commitments of at least $100,000 and will support specific needs in perpetuity; contact Jill Westgard, Director of Development for more information (jill.westgard@yale.edu). Gifts of all sizes can be directed toward the following designations:
Annual Fund: Unrestricted supports the Dean's priorities, including financial aid
Annual Fund: Financial Aid goes directly into scholarship packages, reducing a current student's debt burden
Annual Fund: Diversity | Equity | Inclusion, funds student groups working to amplify new voices and build community engagement
Dean's Endowed Scholarship Fund provides stable financial aid funding for students in perpetuity

Where is YSoA headed, and what are the School's major goals?

To advance excellence in architecture, Dean Deborah Berke has set a transformative goal of raising $75 million in new endowment for scholarships, enough to meet all demonstrated tuition need and eliminate tuition-debt. Since 2016, alumni, parents, and friends have contributed $25 million toward this goal through gifts of all types and sizes which includes small gifts to the Annual Fund as well as Bequests, Charitable Gift Annuities, and newly Endowed Funds. **We aspire be the first graduate architecture program in America that guarantees enough financial aid for all students to graduate debt free.** Such a policy represents a new paradigm for the school and for the wider field of architecture.

www.yale.edu/giveArchitecture

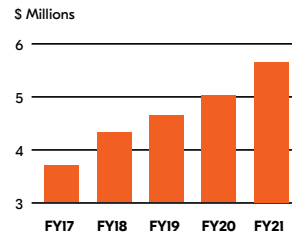# YSoA Impact Report

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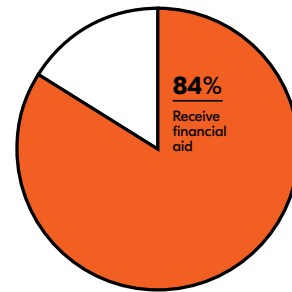
"My story is no different than other Mexican-American children. I was the first in my family to receive a high school diploma, the first to earn a Bachelor, a B.A in Architectural Design and a B.S in Construction Management.... I, like many others before me, had no funds for such an education.... I picked the Yale School of Architecture because I trusted that this school would train me as a designer. In my time at Yale, I have come to realize that although I may need financial support, I am a trained designer, one that thinks and speaks with assurance... it is Yale that has given me the confidence and support to realize this, through its wise critics and an explorative curriculum.... I am thankful for the opportunity to be a part of such a well-established school; I am thankful for the support financially and mentally." **Araceli L., M.Arch I '21**

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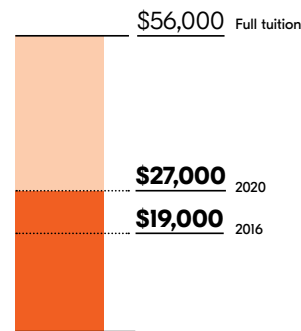
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Annual Financial Aid Budget

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Bar chart: FY17, FY18, FY19, FY20, FY21

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www.yale.edu/giveArchitecture

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March 26, 2020

Dr. Peter Salovey
President
Yale University
105 Wall Street, P.O. Box 208229
New Haven, CT 06520-8229

Dear President Salovey:

I am pleased to inform you that at its meeting on March 6, 2020, the New England Commission of Higher Education took the following action with respect to Yale University:

that Yale University be continued in accreditation;

that the University submit an interim (fifth-year) report for consideration in Fall 2024;

that, in addition to the information included in all interim reports, the University give emphasis to its success in:

1) updating and evaluating the effectiveness of its Capital Planning Framework;

2) evaluating the effectiveness of the reorganization of the decanal structure of its Faculty of Arts and Sciences;

3) assessing student learning outcomes and using the results to make improvements with emphasis on assuring that expected learning outcomes are consistent with Yale's aspiration to be the research university "most committed to teaching;"

4) achieving its goals for faculty diversity;

that the next comprehensive evaluation be scheduled for Fall 2029.

The Commission gives the following reasons for its action.

Dr. Peter Salovey
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Yale University is continued in accreditation because the Commission finds the institution to be substantially in compliance with the *Standards for Accreditation*.

Along with the visiting team, we commend Yale University (Yale) on an outstanding self-study that documents the University's steadfast commitment to teaching and learning within the context of a global research university and highlights the many ways in which the University is fulfilling its mission by "improving the world today and for future generations through outstanding research and scholarship, education, preservation, and practice." Yale's dedicated and active Board of Trustees is notable, as is its inspirational president who, since assuming his role in 2013, has led the University through a period of significant change, including: leadership and organizational transitions; the development of priorities for academic investment; deepening engagement between the University's trustees and its administration; the expansion of its undergraduate population; a return to financial equilibrium following the 2008-09 financial crisis; and significant growth of the University's physical campus. We further support the judgment of the team that Yale's world class faculty, well-qualified and competent staff, exemplary academic programs, outstanding students, and "extraordinary array" of support services and resources is foundational to its enviable retention rates (99%) and six-year graduation rates (97%). Evidence of the University's strong financial position is found in the increase of its endowment from $16.1 billion to $29.4 billion over the last decade, and the $85.0 million it has "reserved" for faculty development over the next five years. Finally, we share the institution's confidence that with its clear mission and strategic vision, its commitment to teaching and research, and its exceptionally vibrant academic culture, Yale is well positioned to continue achieving its mission well into the future.

Commission policy requires an interim (fifth-year) report of all institutions on a decennial evaluation cycle. Its purpose is to provide the Commission an opportunity to appraise the institution's current status in keeping with the Policy on Periodic Review. In addition to the information included in all interim reports the University is asked, in Fall 2024, to report on four matters related to our standards on *Institutional Resources; Planning and Evaluation; Organization and Governance; Educational Effectiveness;* and *Teaching, Learning, and Scholarship.*

The team noted in its report that Yale's Capital Planning Framework, last updated in 2009, is currently under review. We understand that Yale plans to expand its "footprint" in coming years; however, as a "campus with a city running through it, the University does not have vast tracks of land on which to build," and there are often "tax roll tensions" associated with purchasing existing buildings in New Haven and other areas in Connecticut and New Hampshire. We note that one option the University is considering is developing Yale-owned factory buildings north of the institution, which is desirable as there is a walkable trail between the proposed location and the main campus. To demonstrate that Yale "has sufficient and appropriate … physical resources necessary for the achievement of its purposes …" (7.21), and that it "has a demonstrable record of success in implementing the results of its planning" (2.5), we look forward, through the Fall 2024 interim report, to learning of the University's success in updating and evaluating the effectiveness of its Capital Planning Framework.

As documented in the self-study and confirmed by the visiting team, Yale has reorganized the decanal structure of its Faculty of Arts and Sciences (FAS) – an FAS dean now reports to the provost alongside the deans of other schools, and an FAS faculty senate has been established. We also understand that this reorganization is intended to provide the deans of all schools with more time for curriculum development and student interaction. We will appreciate receiving, in the Fall 2024 interim report, an update on the University's success in evaluating the effectiveness of this new structure as evidence that Yale's "organization and governance structure assure the integrity and quality of academic programming however and wherever offered" (3.14) [and that through] "its system of … internal governance, the institution ensures the appropriate

NECHE Reaccreditation Letter

Dr. Peter Salovey
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Page 3

consideration of relevant perspectives; decision-making aligned with expertise and responsibility; and timely action on institutional plans, policies, curricular change, and other key considerations" (3.17).

As noted positively above, Yale boasts an impressive record of student success and achievement, and we appreciate learning of the wide range of assessment strategies that are consistently implemented across the University. We also concur with the judgment of the team that, while there are clearly pockets of excellence, there are also opportunities to strengthen assessment and evaluation activities in some areas, and better coordination would support Yale's efforts to move to more data-informed planning and evaluation processes. We therefore ask that the interim report submitted for consideration in Fall 2024 include an update on the institution's continued "success in using the results of its evaluation activities to inform planning, changes in programs and services, and resource allocation" (2.8) with emphasis on assuring that expected learning outcomes are consistent with Yale's aspiration to be the research university "most committed to teaching." We are further guided here by our standards on *Planning and Evaluation* and *Educational Effectiveness*:

> The institution's principal evaluation focus is the quality, integrity, and effectiveness of its academic programs. Evaluation endeavors and systematic assessment are demonstrably effective in the improvement of academic offerings, student learning, and the student experience. Systematic feedback from students, former students, and other relevant constituencies is a demonstrable factor in institutional improvement (2.7).

> The results of assessment and quantitative measures of student success are a demonstrable factor in the institution's efforts to improve the learning opportunities and results for students (8.8).

As Yale candidly acknowledges in its self-study, improving faculty diversity is one of the University's "most vital current challenges and opportunities related to teaching, learning, and scholarship." We therefore note with favor that the provost's Office of Faculty Development and Diversity is actively working with liaisons in each of Yale's schools who contribute to faculty diversity efforts. The Fall 2024 interim report will afford the University an opportunity to update the Commission on its success in "address[ing] its own goals for the achievement of diversity among its faculty and academic staff" (6.5).

The scheduling of a comprehensive evaluation in Fall 2029 is consistent with Commission policy requiring each accredited institution to undergo a comprehensive evaluation at least once every ten years.

You will note that the Commission has specified no length or term of accreditation. Accreditation is a continuing relationship that is reconsidered when necessary. Thus, while the Commission has indicated the timing of the next comprehensive evaluation, the schedule should not be unduly emphasized because it is subject to change.

The Commission expressed appreciation for the self-study prepared by Yale University and for the report submitted by the visiting team. The Commission also welcomed the opportunity to meet with you, Kim Goff-Crews, Secretary and Vice President for University Life, and Leah Rosovsky, team representative, during its deliberations.

You are encouraged to share this letter with all of the institution's constituencies. It is Commission policy to inform the chairperson of the institution's governing board of action on its accreditation status. In a few days we will be sending a copy of this letter to Ms. Catherine Bond Hill. The institution is free to release information about the evaluation and the Commission's

Dr. Peter Salovey
March 26, 2020
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action to others, in accordance with the enclosed policy on Public Disclosure of Information about Affiliated Institutions.

The Commission hopes that the evaluation process has contributed to institutional improvement. It appreciates your cooperation with the effort to provide public assurance of the quality of higher education in New England.

If you have any questions about the Commission's action, please contact Barbara Brittingham, President of the Commission.

Sincerely,

David Quigley

DQ/jm

Enclosure

cc: Ms. Catherine Bond Hill
Visiting Team

Faculty Curriculum Vitae

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Emily Abruzzo

432 Nostrand Ave. #1, Brooklyn, NY 11216, USA
emily.abruzzo@yale.edu
(718) 522 2412

Courses Taught

	Yale School of Architecture, New Haven
	Critic
Fall 2020	2nd Year Graduate Comprehensive Studio: Next NXTHVN.
Spring 2020	Graduate Advanced Studio: "Kitchen Sink Realism," with Pier Vittorio Aureli.
Fall 2019	2nd Year Graduate Comprehensive Studio: Centers for Immigrant Resources."
Fall-Spring, 2019	Seminar: "Material Case Studies."
Spring 2019	Graduate Advanced Studio: "Wasteland", with Pier Vittorio Aureli.

Educational Credentials

	Princeton University, New Jersey
2003	Master of Architecture
	Graduate Certificate in Media and Modernity for Interdisciplinary Studies
	Tongji University, Shanghai
2002	China Exchange Studio
	University of California at Los Angeles, Los Angeles, CA
2002	FIPSE International Exchange
	Escola Tècnica Superior d'Arquitectura de Barcelona, Spain
2001	FIPSE International Exchange
	Columbia College, Columbia University, Bachelor of Arts
2000	Major in Architecture; Concentration in Mathematics

Teaching Experience

	Syracuse University School of Architecture
2019	Visiting Critic, Advanced Studio: "In Effect"
	Rhode Island School of Design
2016	Architecture Visiting Critic, Advanced Studio: "In Reverse"
	**Parsons School of Design	The New School**
Fall 2012, 2013	Part-Time Assistant Professor, Architecture, MFA ID and AAS ID Programs

Professional Experience

	Syracuse University School of Architecture
2019	Visiting Critic, Advanced Studio: "In Effect"
	Rhode Island School of Design
2016	Architecture Visiting Critic, Advanced Studio: "In Reverse"
	**Parsons School of Design	The New School**
	Part-Time Assistant Professor, Architecture, MFA ID and AAS ID Programs
Fall 2012, 2013	1st Year Graduate Design Studio

Licenses | Registration

	Registered Architect	State of New York
	Registered Architect	State of Texas
	Registered Architect	State of Conneticut
	National Council of Architectural Registration Boards (NCARB) Certification
	United States Green Building Council (USGBC) LEED AP

Selected Publications | Recent Research

2020	Madame Architect. Julia Gamolina. "Emily Abruzzo."
2019	"You are What You Build." Space for Restorative Justice. Yale School of Architecture and Impact Justice

Lectures / Symposia / Exhibitions

2019	REJECTED: Architectural Drawings and Their Stories," Banvard Gallery at The Ohio State University Knowlton School, Columbus, OH
2018	24×24×24 Summer Solstice," Storefront for Art and Architecture, New York, NY,

Professional Memberships

	Member, American Institute of Architects (AIA)
	Fellow, The Forum and Institute for Urban Design

Anthony Acciavatti

180 York Street, Room 323, New Haven CT 06511
anthony.acciavatti@yale.edu
(718) 522 2412

Courses Taught

Yale School of Architecture, New Haven
Critic

2020	Architecture & Urban 324: The City Before and After the Tubewell
2018-present	Architecture & Urban 362: Urban Lab: City Making in the Margins
2019, 2020	Urban & Landscape 4224: Out of Date: Expired Patents and Their Unrealized Histories
2019, 2020	Architecture 1022: Architectural Design Studio

Educational Credentials

Princeton University, New Jersey

2018	Ph.D., History of Science and Interdisciplinary Doctoral Program in the Humanities
2012	M.A. in History

American Institute of Indian Studies (AIIS), Lucknow, India

2011	Certificate, Intermediate Urdu

University of Wisconsin, Madison, WI

2009	Certificate, Intermediate Hindi

Harvard University, Cambridge, MA

2009	M.Arch II in Architecture

Allahabad University, Allahbad, Utar Pradesh, India

2005-2006	Fullbright Fellow in the Department of Geography

Rhode Island School of Design, Providence, RI

2004	B.F.A. in Architecture

Teaching Experience

Princeton University, New Jersey

2017-18	Lecturer and Mellon Fellow

Colombia University | Graduate School of Architecture, Planning, and Preservation

2013-2019	Adjunct Assistant Professor

Bezalel Academy of Art, Jerusalem, Israel

2015	Visiting Professor

Selected Publications | Recent Research

2015	Ganges Water Machine: Designing New India's Ancient River (San Francisco: Applied Research & Design Publishing)
2021	"The Ganges: A River Without Banks," River Culture, ed. Karl M. Wantzen (Paris: UNESCO)
2021	"Nation building at the National Institute of Design," Radical Pedagogies, ed. Beatriz Colomina, Ignacio G. Galán, Evangelos Kotsioris, Anna-Maria Meister (Cambridge: MIT Press)
-	Building a Republic of Villages (under review)

Lectures / Symposia / Exhibitions

2020	"Viruses and Villages: Post-Covid-19 Challenges in India," Princeton University, Princeton
2020	"Remaking and Knowing: Instruments and Bad Fluid Maps," PULSES Workshop at Rice University, Medical Humanities Program, Houston
2021	"Manaus: A New Contractual Agreement Between Forest and City," in "How Will We Live Together," curated by Hashim Sarkis, 17th La Biennale di Venezia, Venice (Italy)	Group Exhibition
2019	"Ganges Water Machine," Seoul Architecture Biennale, Seoul (South Korea)	Solo Exhibition
2019	"Ganges Water Machine," in "Broken Nature: Design Takes on Human Survival," curated by Paola Antonelli, XXII Triennale di Milano, Milan (Italy)	Group Exhibition

Professional Memberships

College Art Association
Society of Architectural Historians
History of Science Society
American Society for Environmental History
American Historical Association
Society for Social Studies of Science

Mohamed Aly Etman

7201 4th Avenue, Brooklyn, New York, USA
mohamed.alyetman@yale.edu
(518) 360 9880

Courses Taught

	Yale School of Architecture, New Haven
	Critic
2020	Advanced Building Envelope	Seminar, Fall
2019	Advanced Building Envelope	Seminar, Fall

Educational Credentials

	Rensselaer Polytechnic Institute (CASE/ SOM program), New York, USA
2018	Ph.D. in Building Sciences
2014	M. Arch. II Environmental Parametrics: Performance Design of the Built Ecology
	Cairo University, Department of Architecture, Cairo, Egypt
2013	M. Sc. in Environmental Design and Planning
2007	B. Sc. of Architectural Engineering

Teaching Experience

	Rensselaer Polytechnic Institute (CASE/ SOM) New York, USA
2014-18	Assistant Lecturer, Center for Architecture Science and Ecology
	The American University in Cairo, Cairo, Egypt
2013-2019	Assistant Lecturer, Department of Construction & Architectural Engineering, Cairo, Egypt AENG
	The Arab Academy for Science, Technology & Maritime Transport, Egypt
2012-2013	Lecturer, Department of Architectural Engineering & Environmental Design, Cairo, Egypt

Professional Experience

2018-	**Project Manager & Environmental Systems Architect:** Ecological Living Module, UN plaza, NYC, USA.
2011-2013	**Project Manager:** Solar decathlon "Slides team"
2011	**Project Manager & Architect:** Solar decathlon "Slides team"
2008-2010	**Architect**, Architectural Office Farid Raouf Farid

Selected Publications | Recent Research

2018-	**Yale University, Center for Ecosystems in Architecture, New Haven-New York, USA	Post-Doctoral Associate**, Center for Ecosystems in Architecture
2014-2018	**Rensselaer Polytechnic Institute (CASE/ SOM) New York, USA	Research Assistant,** Center for Architecture Science and Ecology
2018	**Ph.D. Thesis Dissertation:** SEVA Socio-Ecological Visual Analytics: A new visual analytics environment for interdisciplinary decision making linking Human Biometrics and Environmental Data.
2017	Dyson, A., Keena, N., Aly Etman, M., McCusker, J., Preusch, C., Pinheiro, P., . . . Lin, V. (2017). Data Journey (DJ): Data visualization framework.

Lectures / Symposia / Exhibitions

2018	**Presenter & Organizer:** Design of Ecological Model Home — Tiny house — for East Africa region" to be held in Nairobi, Kenya.
2018	**Lecturer & Organizer:** Environmental Analysis Workshop, The Bernard and Anne Spitzer School of Architecture, The City College of New York.
2011-2013	**Lecturer & Organizer |** Technical Workshops: Parametrics, Fabrication, Building performance simulation; Cairo, Egypt

Professional Memberships

2009-	**Co-pilot** Pharaohs' Rally, Spanish Baja, Africa Eco Race.
2011	**Applicant**, LEED 201: core concepts and strategies workshop.
2011	**Participant**, construction aware design, rapid-prototyping spatial reconstruction & performance workshop.
2010	**Coordinator,** pattern transformations (3D lab for parametric design & digital fabrication) workshop.

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Syllabi

Sunil Bald

55 Poplar Street, Brooklyn, NY 11201
sunil.bald@yale.edu

Courses Taught

	Yale School of Architecture, New Haven
2017-	*Associate Dean for Curriculum and Admissions*
	Professor of Architecture, Adjunct
2012-	Graduate Core Studio
	Undergraduate Studio
	Visualization II —Form and Representation
	XS- micro in Japanese Architecture and Urbanism

Educational Credentials

	Colombia University, New York, NY
1991	Master of Architecture
	University of California, Santa Cruz, CA
1986	Bachelorof Arts in Biology

Teaching Experience

	Cornell University, New York Campus | Visiting Professor
2013	Graduate Design Studio — Post- Professional Course (summer)
	Yale Universtiy School of Architecture | Critic
2007-2012	Graduate Core and Advanced Studios ; Visualization II - Form and Representation
	Yale Universtiy School of Architecture | Louis I Kahn Visiting Assistant Professor
2006	Graduate Advanced Studio; Seminar - Architecture and the Making and Unmaking of Nations
	Parsons School of Design, The New School | Adjunct Graduate-level Design Faculty
2000-06	Graduate Core Studio (Coordinator) , Undergraduate Core Studio
	University of Michigan | Visiting Assistant Professor
1999-2000	Graduate Advanced Studio
	Colombia University | Adjunct Assistant Professor
1997-2012	Introduction to Architecture Studio (1997-2001), Drawing, Representation, Visualization (2001-2004), Real Estate and Development Studio (summers 2009-2012)

Professional Experience

	Studio SUMO, New York, NY | Founding Partner
1997-	Residential Design, Institutional Design, Exhibition Design, Invited Competitions

Licenses | Registrations

2002-	**Registered Architect** | State of New York

Selected Publications | Recent Research

2017	**Paranoazinho: City-Making beyond Brasilia.** Sunil Bald and Rafael Birmann. Actar / Yale School of Architecture.
2010	**Negotiated Terrains: Jeanne Gang, Sunil Bald, and Marc Tsurumaki.** Ed. Nina Rappaport. New Haven: Yale Architectural Press.

Lectures / Symposia / Exhibitions

2018	**Studio SUMO — Japan Projects.** Location: University of Tennessee Gallery, Knoxville, TN; Sponsor: Rhode Island School of Design | Exhibition
2018	**Say it Loud: Distinguished Black Architects**; United Nations Visitor Center, New York, NY | Exhibition
2018	**Tea Cozy**; Omi International Arts Center, Hudson, NY | Exhibition
2017	**Practice and Pedagogy in the Floating World**, Cornell University, Ithaca, NY | Lecture
2016	**Big in Japan**, California State Polytechnic University, San Luis Obispo | Lecture

Professional Memberships

2015-	**Emerging Voices Awards Panel;** Architectural League of New York.
2013-2017	**Peer Design Review Board for Design of American Embassies and Consulates**; US State Department; Washington, DC.
2012-2917	**Board of Directors**; Millay Arts Colony; Rhinebeck and New York, NY.

Andrew Benner

180 York Street, New Haven CT 06511
andrew.benner@yale.edu

Courses Taught

	Yale School of Architecture, New Haven, CT
	Critic
Spring 2021	Spring Advanced Design Studio: "Manufacturing Wonderland"
Fall 2020	Fall Advanced Design Studio: "Troubled Waters"
Spring 2020	Spring Advanced Design Studio: "Cultural Dreaming: Alternative Futures for Urban Renewal Memories"
Fall 2019	Fall Advanced Design Studio: "Conjunto"

Educational Credentials

	Yale University, New Haven, CT
2003	Master of Architecture
	Rice University, Houston, TX
1995	Bachelor of Architecture
1993	Bachelor of Architecture, Art, and Art History

Teaching Experience

	Yale School of Architecture, New Haven, CT
2017-	Director of Exhibitions
2018-2019	Assistant Dean of Student Affairs

Professional Experience

	abab, New Haven, CT	Principal Architect
2010-	Feasibility analysis and schematic design; coordinated design development; construction documents
	Gray Organschi Architecture, New Haven, CT	Project Architect
2005-2010	Conducted construction administration; produced and coordinated construction documents
	Fernau & Hartman Architects, Berkeley, CA	Project Architect
2003-2005	Project architect for two residences; researched and coordinated the use of solar power and ground-source heat pump, researched sustainable materials, coordinated and produced construction documents
	Gray Organschi Architecture, New Haven, CT	Project Architect
2003-	Adaptive re-use of historic firehouse into a recording studio and live performance venue
	Anderson Architects, New York, NY
1999-2001	Managed projects, provided schematic design and layout, supervised bid and construction documents

Licenses | Registrations

2000-	**Registered Architect**	State of New York

Selected Publications | Recent Research

2015	**Social Infrastructure: New York**	Co-Editor, Yale University Press

Lectures / Symposia / Exhibitions

	T O G E T H E R	Exhibtion
2021	Year End Student Show
	Year End (of the World)	Exhibtion
2020	Year End Student Show
2020	**Models, Media, and Methods: Frei Otto's Architectural Research**	Exhibtion
2019-2020	**garden-pleasure**	Exhibtion
2019	**Still Facing Infinity: The Tectonic Sculptures of Erwin Hauer**	Exhibtion
	Horizon	Exhibtion
2019	Year End Student Show
2018-2019	**Japan, Archipelago of the House**	Exhibtion
2017-2018	**Two Sides of the Border**	Exhibtion
2018	**Adjacencies**	Exhibtion
	[NOW]	Exhibtion
2018	Year End Student Show
2018	**The Drawing Show**	Exhibtion

Phillip Bernstein

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phillip.bernstein@yale.edu

Courses Taught

	Yale School of Architecture, New Haven, CT
	Associate Dean , Professor Adjunct
2021	Exploring New Values in Design	Seminar, Spring
2020	Slavery, Its Legacies in the Built Environment	Seminar, Fall
2020	Exploring New Values in Design	Seminar, Spring
2019	Architectural Practice & Management	Seminar, Fall

Educational Credentials

	Yale School of Architecture, New Haven, CT
1983	Master of Architecture
	Yale College, New Haven CT
1979	Bachelor of Arts

Teaching Experience

	Yale School of Architecture, New Haven, CT
2009-	First Year Building Project Workshop
2000-2013	Issues in Contemporary Practice

Professional Experience

2016-	**Independent Technology and Strategy Consultant**
	Autodesk Inc.
2016-	Consulting Fellow
2004-2016	Vice President, Strategic Industry Relations
2000-2004	Vice President, Building Solutions Division
	Pelli Clarke Pelli Architects, New Haven CT
1988-2000	Project Manager, Associate, Associate Principal
	Kaplan/ McLaughlin/ Diaz Architects, San Francicso, CA
1983-1988	Project Architect, Associate, Studio Manager
	Duke University	Israel Excavation Project, Meiron
1980	Field Architect

Licenses | Registrations

1985-	**Registered Architect**	State of California
1985-	**Certificate**	National Council of Architectural Registration Boards
2002	**LEED Accredited Professional**	US Green Building Council

Selected Publications | Recent Research

2021	**Machine Design: Architectural Futures in the Era of Machine Intelligence**, London, RIBA Press
2018	**Architecture	Design	Data: Practice Competency in the Era of Computation.** Berlin, Germany, Birkhauser
2015	**Goat Rodeo: Practicing Built Environments.** D. Friedman, et al. Minneapolis, Fried Fish Publishing
2011	**BIM In Academia.** Deamer, P., Eds. New Haven, Yale School of Architecture
2009	**Building (In) The Future: Recasting Labor in Architecture**. Deamer, P., Eds. New York, Princeton Architectural Press

Lectures / Symposia / Exhibitions

2021	**"Commodity Services versus Outcome-based Delivery: Technologically Transfigured Business Strategies for Design.** Largest Architectural Firms in the Global Scenario / University of Florence.
2021	**"Thriving through Challenging Times."** AIA Houston.
2021	**"Building a Recession-Proof Practice."** Autodesk India.
2021	**"Innovation versus Integration: Can Technology Really Change the Business of Building?"** PSMJ Thrive.
2020	**"Design and Delivery in a Era of Machine Intelligence."** Construction IT Alliance of Ireland.
2020	**"Architecture Design Data: Book Talk."** AIA Washington DC. Washington, DC.
2019	**"Digital Disruption: Surviving Risks, Reaping Rewards."** Architectural Record Innovation Conference. New York, NY.

Miroslava Brooks

66 Summer St, Apt 1209, Stamford CT
miroslava@formany.net

Courses Taught

Yale School of Architecture, New Haven, CT
Critic

2020	Architectural Design I	Core Studio, Fall
2019	Architectural Design I	Core Studio, Fall
2019	Architectural Foundations	Summer
2018	Spring Advanced Design Studio: "Easy Office"

Educational Credentials

Yale School of Architecture, New Haven, CT
2012	Master of Architecture

Knowlton School of Architecture, Columbus, OH
2008	Bachelor of Science in Architecture
2002	**School of Applied Arts**, Košice, Slovakia

Teaching Experience

Stuart Weitzman School of Design, Philadelphia, PA | Lecturer
2021	Design Studio IV, MArch I Integrative Studio	Spring
2020	Visual Studies I, MArch I Visualization Course	Fall
2020	Visual Studies III, MArch I Visualization Course	Fall

Columbia University GSAPP, New York, NY | Roving Critic
2019	A4102 Architecture Studio II, MArch I core studio

Professional Experience

2018-	**FORMA Architects, PLLC, New York, NY |** Co-founder, Principal
	MoMA PS1 Young Architects Program; Yale Broadcasting Studio; Women Veteran Housing & Black Belt Academy; Windsor Residence; Miami House
2016-2018	**AMOA — A Movement Of Architecture, Stamford, CT, Miami, FL |** Co-founder
	Blue Clay Country Spa, Kurzeme, Latvia; Aspiring Hands Headquarters, Maumee, OH
2014-2016	**Eisenman Architects, New York, NY |** Lead Designer
	Project Manager, Associate, Associate Principal
2012-2014	**Plan B Architecture** + **Urbanism, New Haven, CT |** Lead Researcher & Designer
	City of 7 Billion, research project; Urban Sphere, 2013 Hong Kong-Shenzhen Biennale
2012-2013	**Pelli Clarke Pelli Architects, New Haven, CT |** Designer
	Zizhu International Education Center, Shanghai, China; Huawei Campus, Suzhou, China; Wanda Plaza, Beijing, China

Licenses | Registrations

Registered Architect | State of New York
Registered Architect | State of Conneticut
Certificate | National Council of Architectural Registration Boards

Selected Publications | Recent Research

2020	**"The Thoughtful and Delightful Work of FORMA" |** Invited interview in Design Wanted
2020	**"FORMA Infuses Student-run Radio Station with Bold Color Contrasts at Yale University" |** Designboom

Lectures / Symposia / Exhibitions

2021	**Preliminary Plans,** Academy of Arts, Architecture, and Design in Prague **|** Public lecture by FORMA
2021	**Preliminary Plans,** University of Pennsylvania Weitzman School of Design **|** Public lecture by FORMA
2020	**Architecture for Change |** Online archive and auction of architectural works in support of black women in architecture school	Co-established
2020	**Design Yard Sale |** Online auction — FORMA was invited to contribute a drawing sold in public auction
2020	**Live Talk Series |** Design Wanted — live-streamed FORMA interview with Fabio Colturri.
2019	**57 Pavilions,** University of Pennsylvania, School of Design	Book launch & panel discussion
2018	**Rome: Continuity and Change |** Yale School of Architecture, Drawing Exhibition, Co-Curated
2018	**Tempietto Exemplum |** Yale School of Architecture — FORMA is invited to exhibit an original drawing

Brennan Buck

1270 Fulton St. 3Fl, Brooklyn, NY 11216
brennan@freelandbuck.com

Courses Taught

	Yale School of Architecture, New Haven, CT
	Critic
2021	AI Aesthetics	Seminar, Spring
2020	Architectural Design I	Core Studio, Fall
2020	Rendered: Art, Architecture & Contemporary Image Culture	Seminar, Spring
2019	Architectural Design I	Core Studio, Fall

Educational Credentials

	University of California, Los Angeles, CA
2004	Master of Architecture
	Cornell University, Ithaca, NY
1997	Bachelor of Science in Landscape Architecture

Teaching Experience

	Yale School of Architecture, New Haven, CT
2008-	Full-time Critic
	Universität für Angewandte Kunst, Vienna
2004-2008	Assistant Professor

Professional Experience

	FreelandBuck, Los Angeles / New York
2007-	Partner
	Elbo Group, Vienna / New York
2007-2009	Partner
	Neil M. Denari Architects, Los Angeles, CA
2004	Designer
	Johnston Marklee & Associates, Los Angeles, CA
2002	Designer
	Walker Macy Landscape Architecture, Portland, Oregon
1999-2001	Designer

Selected Publications | Recent Research

2017	**'Next Progressives'**	Profile in Architect Magazine
2017	**'Grand Illusions'**	Washington Post feature on Parallax Gap
2017	**'FreelandBuck Digitally Fabricates Historic Ceilings at Smithsonian's Renwick Gallery'**	Interior Design Magazine
2017	**'Office Space'**, Azure
2016	**'Detroit Superdivision'**	Bracket 3: At Extremes
2015	Firm Profile in Cultured
2014	**A New Sculpturalism: Contemporary Architecture from Southern California**, MOCA Exhibition Catalog
2012	**"New Trends in Restaurant Design"**, Detail
2011	**'A Fetish for Fabrication'**, Architectural Record,

Lectures / Symposia / Exhibitions

2019	**Decoys & Depictions: Images of the Digital,** Des Lee Gallery, St. Louis	Exhibition
2019	**Architectural League Emerging Voices**	Lecture
2019	**Pratt Sessions**, Pratt Institute	Lecture
2019	**Syracuse University School of Architecture**	Lecture
2018	**Out of the Picture**, PS1 Young Architect's Program 2018, Museum of Modern Art, New York	Exhibition
2017	**Parallax Gap**, Renwick Gallery, Smithsonian American Art Museum, Washington, DC	Exhibition
2017	**Body, Object, Enclosure**, Design Exchange, Toronto, Canada	Exhibition
2016	**The Drawing Show**, A+D Museum, Los Angeles, CA	Exhibition
2016	**Surface Tension**, NYIT Gallery 61, NY, NY	Exhibition
2015	**Shelter: Rethinking How We Live in Los Angeles**, A + D Museum, Los Angeles, CA	Exhibition
2015	**Architecture's Complexity Complex**, ACSA 103rd Annual Meeting	Conferences
2014	**Possible Mediums**, Columbus , OH	Exhibition

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Syllabi

Marta Caldeira

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Courses Taught

	Yale School of Architecture, New Haven
	Instructor
Fall 2019	Advanced Design Studio, co-instructor with Luis Callejas and Charlotte Hansson
	Advanced Design Studio, co-instructor with Teddy Cruz and Fonna Forman
	Graduate Independent Study, "Incremental Housing Strategies in Latin America," advisor
	Graduate Independent Study, "NYCHA Public Housing: Past, Present, Future," advisor
Spring 2019-20	Architectural Theory: 1750-Present
2018-20	Senior Research Colloquium and Senior Project Coordination, Yale College
Fall 2018	Advanced Design Studio, co-instructor with Omar Gandhi

Educational Credentials

	Columbia University, New York
2018	Ph.D. in Architectural History and Theory
	Dissertation: *Architecture, History, and the City: Reconceptualizing Architectural Modernity Between Italy and Iberia, 1968-1980*
	Advisor: Reinhold Martin
2002	**Colombia University, New York**
	Master of Science in Advanced Architectural Design
Fall 2018	**Universidade Técnica de Lisboa, Portugal**
	Professional Diploma in Architecture (6 years)

Teaching Experience

	Yale School of Architecture, New Haven
2020 - present	Senior Lecturer in Architecture
2011 - 20	Lecturer and Critic in Architecture
2019 -	Director of Research, Yale Urban Design Workshop
	GSAPP - Colombia University, New York
2013	Preceptor in Architecture

Professional Experience

	Independent
2009	Via Ca d'Oro — Affordable Housing Design Competition for Mestre, Venice
	Co-Designer, with AZ Studio and Obra Architects - 3rd Prize
	Eisenman Architects, New York
2002-2006	*Project Architect*
	Arizona Cardinals Football Stadium, Phoenix (built)

Selected Publications | Recent Research

2021	**"The Question of Urban Description and the Critical Imagination,"** in Aldo Rossi: Contemporary Relevance
2020	**"Manuel Solà-Morales and the Laboratori d'Urbanisme: Escuela Técnica de Barcelona ETSAB, 1974,"** revised entry, in Radical Pedagogies (MIT Press)
2019-24	**Research - Architecture and Urbanism: Addressing the Social Space in the 21st Century** Research group member, FAU-USP São Paulo, KTH Stockholm, UT Delft, ETSAM Madrid

Lectures, Symposia, Exhibitions

2021	**Conference — Critic|all: Conference on Architectural Design and Criticism, 4th edition** Scientific committee member, FAU-USP São Paulo
2014	**Exhibition - Radical Pedagogies**, curated by Beatriz Colomina Case Study Contributor, section Monditalia, XIV Venice Biennale,

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Peter de Bretteville

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brennan@freelandbuck.com

Courses Taught

Yale School of Architecture, New Haven, CT
Critic

2021	Architectural Design II - Core Studio, Spring
2020	Architectural Design III - Core Studio, Fall ; Composition & Form	Seminar, Fall
2020	Architectural Design II - Core Studio, Spring
2019	Architectural Design III - Core Studio, Fall

Educational Credentials

Yale School of Architecture, New Haven, CT

1963	Bachelor of Architecture
1968	Masters of Architecture

Teaching Experience

California College of the Arts

1970-1973	Instructor

University of California, Los Angeles

1973-1976	Instructor

University of Southern California, Los Angeles, CA

1976-1990	Instructor

Professional Experience

current	**Peter de Bretteville Architect, Hamden, Connecticut	Principal**
	University long-term planning and building; civic centersm schools, residences
1982	**de Bretteville and Polyzoides**
	20-year plan for Downtown Los Angeles
	Master Plan for Scripps College
1974	**Independent**
	WORKS
1970	Founding Partner
	Giancarlo De Carlo, Milan, Italy
1968-1970	Designer

Selected Publications | Recent Research

1993	**The New City: 002 (The American City),** Princeton Architectural Press, University of Miami

Kyle Dugdale

180 York St., New Haven CT 06511
kyle.dugdale@yale.edu
(203) 812 9044

Courses Taught

	Yale School of Architecture, New Haven, CT
	Critic
2020	History of Architecture I: Antiquity to Baroque	Seminar, Fall
2020	Spring Advanced Design Studio: "Women's Museum for the Twenty-First Century"
2019	History of Architecture I: Antiquity to the Baroque	Seminar, Fall
2019	Architectural Foundations	Summer

Educational Credentials

	Yale School of Architecture, New Haven, CT
2015	Doctor of Philosophy
	Harvard Graduate School of Design, Cambridge, MA
2002	Master of Architecture
	The Prince of Wales's Institute of Architecture, London
1998	Foundation Course in Architecture and the Building Arts
	Corpus Christi College, Oxford
1997	Bachelor of Arts in Classics BA (Hons) Literae Humaniores

Teaching Experience

	Columbia Graduate School of Architecture, Planning and Preservation, New York, NY
2019	Babel	Adjunct Assistant Professor
	Yale School of Architecture, New Haven, CT
2009-2020	Advanced Design Studios, Seminars	Critic
	UMAIE Seminars International
2003	Ancient Rome: The City and Its Legacy	Instructor
	Harvard Graduate School of Design, Cambridge, MA
1999-2001	Drawing Critic, Online Course Content Developer, Teaching Assistant

Professional Experience

2006-2009	**Knight Architecture**, New Haven
2002-2006	**Hammond Beeby Rupert Ainge Architects**, Chicago,
2000	**Robert Adam Architects**, London

Licenses | Registrations

2013-	**Member,** Society of Architectural Historians
2007-	**Architect Member,** American Institute of Architects
2006-	**Registered Architect**	National Council of Architectural Registration Boards

Selected Publications | Recent Research

in-progress	**Architecture After God.**
in-progress	Translation of Uriel Birnbaum, **Der Kaiser und der Architekt: Ein Märchen in Fünfzig Bildern** [1924].
forthcoming	**Alexanderplatz Rising**, ed. with Kirk Henderson (New Haven: Yale School of Architecture).
2016	**Babel's Present** (Basel: Standpunkte, 2016).

Lectures, Symposia, Exhibitions

2020	**"Reconciling the Finite with the Infinite"** ; InterVarsity Northeast Faculty Summer Lecture Series, online
2020	**"The City and Its Gods: Seeking the Go(o)d(s) of the City"** and **"The City and Its Gods: Deus ex machina"** Public lecture series, Morningside Institute, New York City, NY
2019	**"Monumental Failure"**; Society of Architectural Historians 72nd Annual Conference, Providence, RI
2019	**"The Claims of Faith"**; Guest speaker, capstone seminar in theology and architecture, Judson University, Elgin, IL
2019	**"Origins/Ends: Building a Compassionate Environment";** Presenter and panel moderator, Faith in Design conference, Harvard Graduate School of Design, Cambridge, MA
2019	**"Multifaith Spaces and the Public Face of Religion"**; Elm Institute, New Haven, CT
2019	**"Biblical Architectures"**, Invited lecture, Harvard/Yale/MIT Architecture Christian Fellowships
2018	**"Architecture After God"** ; Notre Dame School of Architecture, South Bend, IN
2018	**"Pedagogy and Doctrine"**; Invited lecture, Harvard/Yale Christian Fellowships

Anna Dyson

180 York St., New Haven CT 06511
anna.dyson@yale.edu

Courses Taught

Yale School of Architecture, New Haven, CT
Critic

2020	Advanced Building Envelope	Seminar, Fall
2020	Environmental Design	Seminar, Fall
2019	Advanced Building Envelope	Seminar, Fall
2019	Environmental Design	Seminar, Fall

Educational Credentials

Université Laval, Quebec, Canada
1990	Baccalauréat, Fine Art/ Philosophy

Università di Siena, Siena, Italy
1990	Diploma, Architectural History

Yale School of Architecture, New Haven, CT
1996	Master of Architecture

Teaching Experience

School of Architecture, Rensselaer Polytechnic Institute (RPI), Troy, NY
1998 - 2004	Assistant Professor
2004 - 2010	Associate Professor
2011 - 2017	Professor

Center for Architecture Science and Ecology (CASE), New York, NY | with SOM LLP
2007 - 2017	Founding Director

Yale University, New Haven, CT
2018-	Hines Professor of Sustainable Architecture
2018-	Professor of Forestry & Environmental Studies
2020	Founding Director, Yale Center for Ecosystems in Architecture (Yale CEA)

Professional Experience

Environmental Protection Agency (EPA) | PI
2021-2022	Solar Enclosure for Water Reuse (SEWR)

United Nations Environment Science Division | PI
2019-2022	Socio-Ecological Visualization Analytics	World Environment Situation Room

National Science Foundation (NSF) | PI
2020-2022	NEWT: Nanosystems Engineering Research Center for Nanotechnology Enabled Water Treatment Systems

United Nations Environment Program | PI
2018-2019	Ecological Pavilion, UNEA-4 Nairobi, Kenya

Enel Foundation | PI
2019-2020	Transformative building systems for sustainable development

Bill and Melinda Gates Foundation Grant (OPP1131555) | PI
2016-2018	Healthy Birth, Growth and Development Knowledge Integration: Semantic and Data Analytics

New York State Energy Research and Development Authority (NYSERDA) | PI
2012-2018	Electroactive Dynamic Daylighting System

Selected Publications | Recent Research

United Nations Environmental Program (UNEP)
2018-	Yale CEA in partnership w/ UNEP to establish the Ecological Living Network (ELN) and the World Environment Situation Room (WESR) for novel Immersive Data Visualization and Analytics.
2021	**Indoor Environmental Parameters: Considering Measures of Microbial Ecology in the Characterization of Indoor Air Quality.** Mankiewicz, P., Ciardullo, C., Theodoridis, A., Hénaff, E., & Dyson, A. , ASHRAE Journal
2021	**Towards Energy-Positive Buildings Through a Quality-Matched Energy Flow Strategy.** Proceedings of SDEWES. SDEWES, Dobrovnik. Novelli, N. E., Shultz, J., Aly Etman, M., Phillips, K., Jensen, M. K., Vollen, J. O., & Dyson, A. H.

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Keller Easterling

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(646) 247 1593

Courses Taught

	Yale School of Architecture, New Haven, CT
	Critic
2021	Independent MED Research	Required Course, Spring
2020	Fall Advanced Design Studio: "No Normal"
2020	Globilization Space	Seminar, Spring
2019	Medium Design	Seminar, Fall

Educational Credentials

	Princeton University, Princeton, NJ
1981	Bachelor of Science, Cum Laude
1984	Masters of Architecture

Teaching Experience

	Yale School of Architecture, New Haven, CT
1998 -	Professor of Architecture, Tenured
	Columbia Graduate School of Architecture, Planning and Preservation, New York, NY
1993-1998	Assistant Professor of Architecture
	Pratt Institute, School of Design, New York, NY
1988-1993	Adjunct Professor
	Parsons School of Design, New York, NY
1991-1993	Graduate and Undergraduate Studio Critic, Coordinator/Critic Summer Program
	New Jersey Institute of Technology, Newark, New Jersey
1988	Instructor

Professional Experience

	Keller Easterling, Architect
1988-2008	Founder, Principal
	Robert A.M. Stern Architects
1985-88	Associate
	Local Development Corporation, Bronx
1981	Assistant Director

Licenses/ Registration

1989-	**Registered Architect**	State of New York

Selected Publications | Recent Research

forthcoming	**Medium Design: Knowing How to Work on the World** (Verso, 2021)
2018	**Medium Design**	e-book essay (Moscow: Strelka Press).
2017	**Histories of Things that Don't Happen and Shouldn't Always Work; World City Doubles**	Francisco Diaz, ed., ARQ DOCs (Santiago, Chile: Ediciones ARQ), collection and translation of essays.
2014	**Extrastatecraft: The power of infrastructure space** (London: Verso).
2014	**Subtraction** (Berlin: Sternberg Press).
2014	**Floor** (Venice: Marsilio Editori, reprint Taschen, 2018).
	Publication edited by Rem Koolhaas for the Elements exhibition for the 2014 Venice Architecture Biennale.
2012	**The Action is the Form: Victor Hugo's TED Talk** (Moscow: Strelka Press).
2005	**Enduring Innocence: Global Architecture and its Political Masquerades** (Cambridge: MIT Press).

Lectures, Symposia, Exhibitions

2019	**Seoul Biennale for Architecture and Urbanism**, September.	Exhibition
2019	**MANY**, Wrightwood 659, Chicago, February.	Exhibition
2018	**MANY**, US Pavilion, 2018 Venice Architecture Biennale, May.
2016	**You Won't Be Able To Do It**, Istanbul Design Biennale, October.
2016	**Gift City**, Test Site, Henry Art Gallery, Seattle, Washington.
2015	**Subtraction Games Lux**, Projection on Beinecke Library with Lisa Albaugh and Samantha Jaff, April 10, Beinecke Library, New Haven, Connecticut
2014	**Floor**, Venice Biennale with OMA/AMO, Central Pavilion Elements Exhibition

Peter Eisenman

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peter.eisenman@yale.edu

Courses Taught

Yale School of Architecture, New Haven, CT
Critic
2021	Postmodern Reader
2020-present	Formal Analysis II
2020-present	Renaissance and Modern II
2020	Advanced Design Studio: Thirdspace

Educational Credentials

Cornell University
Bachelor of Architecture
Columbia University
Masters of Architecture
University of Cambridge
PhD

Teaching Experience

Yale School of Architecture, New Haven, CT
Visiting Professor
Cooper Union
Irwin S. Chanin Distinguished Professor of Architecture

Professional Experience

Eisenman Architects
1980-present   Founder, Principal

Licenses/ Registration

Registered Architect | State of New York

Selected Publications | Recent Research

2020	**Lateness**
	Ed. by Sarah Whiting
2006	**The Formal Basis of Modern Architecture**
	Lars Muellar Publishers
2005	**Written into the Void**
	Selected Writings, Yale University Press

Mark Foster Gage

300 Mercer Street, 9N, New York City, New York, 10003,
gage@mfga.com

Courses Taught

	Yale School of Architecture, New Haven, CT
	Critic
2021	Disheveled Geometries: Ruins & Ruination	Seminar, Spring
2020	Architectural Design III	Core Studio, Fall
2020	Creativity, Innovation and The New	Seminar, Spring
2019	Fall Advanced Design Studio: "The Architecture of Thought"

Educational Credentials

	University of Notre Dame, Notre Dame, Indiana
1992-1997	Bachelor of Architecture, 5-year professional degree, second major in Art History
	Yale School of Architecture, New Haven, CT
2000-2001	Master of Architecture, post- professional degree

Teaching Experience

	Yale School of Architecture, New Haven, CT
2013-	Tenured Associate Professor
2010-2013	Associate Professor
2005-2009	Assistant Professor
2001-2004	Critic and Lecturer
	The Royal Danish Academy: Center for Information Technology
2007	Visiting Chair, "Think Tank on Computational Aesthetics," Fall 2007
	Columbia University: Graduate School of Architecture Planning and Preservation
2002-2004	Design Critic, Advanced Studio
	The Institute for the Study of Classical Architecture, New York City
2002	Studio Instructor

Professional Experience

	Mark Foster Gage Architects LLC, New York, New York
2012-	Founder, Principal
	Gage/ Clemenceau Architects LLC, New York, New York
2004-	Principal
	Robert A.M. Stern Architects, New York, New York
2001-2001	Design Freelance
1997-1999	Designer
	Takenaka Corporation / Takenaka Komuten, Osaka, Japan,
2000	Designer

Licenses/ Registration

2004-	**Registered Architect**	State of New York

Selected Publications | Recent Research

2020	**Thought Through Form: The Work of Mark Foster Gage** (new Mandarin-only monograph), Tongji University Press, 392 pages, Fall 2020.
2019	**Aesthetics Equals Politics: New Discourses Across Art, Architecture and Philosophy.** The MIT Press, 2019. 328 pages. (editor)
2018	**Mark Foster Gage: Projects and Provocations**. (monograph) Forward by Robert A.M. Stern, Afterword by Peter Eisenman. Rizzoli International Publications, 2018. 272 pages.
2018	**Designing Social Equality: Architecture, Aesthetics and the Perception of Democracy**. Routledge, 2018. 172 pages.
2015-2017	**Disheveled Geometries Research Series: Volumes V-VII**, Yale School of Architecture New Haven, CT, print and online distribution.

Lectures, Symposia, Exhibitions

2019	**"What is Radical Today: 40 Positions on Architecture"** Exhibition. The Royal Academy of Arts, London, England. Dates: September 6 — November 7, 2019.

Alexander Garvin

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alexander.garvin@yale.edu

Courses Taught

Yale School of Architecture, New Haven, CT
Professor
2016-present   Introduction to Planning and Development
2016   Intermediate Planning and Development

Educational Credentials

Yale University, New Haven, CT
1967   Master of Architecture
                Master of Urban Studies
Yale University, New Haven, CT
1962   Bachelor of Arts

Teaching Experience

Yale School of Architecture, New Haven, CT
Tenured Associate Professor

Professional Experience

Philip Johnson
Designer
John Burgee
Designer
New York City's Department of City Planning
Director of Housing and Community Development
Director of Comprehensive Planning

Licenses/ Registration

2004-   **Registered Architect** | State of New York

Selected Publications | Recent Research

The Heart of the City: Creating Vibrant Downtowns for a New Century
2019   Island Press
What Makes a City Great?
2016   Island Press
The Planning Game: Lessons from Great Cities
2013   W.W. Norton and Company
The American City: What Works, What Doesn't
1996   Quebecor/Kingsport Press

Andrei Harwell

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andrei.harwell@yale.edu
(203) 764-5696

Courses Taught

Yale School of Architecture, New Haven, CT
Critic

2021	Spring Advanced Design Studio: "Coastal New England: History, Threat, and Adaptation"
2020	Fall Advanced Design Studio: "The Innovative Urban Workplace"
2020	Spring Advanced Design Studio: "From Domesticity to Commons"
2019	Fall Advanced Design Studio: "Gothenburg Studio"

Educational Credentials

Carnegie Mellon University, Pittsburgh, Pennsylvania

1998	Bachelor of Architecture, Minor: Photography and Digital Imaging

Yale School of Architecture, New Haven, CT

2006	Master of Architecture, post- professional degree

Teaching Experience

Yale School of Architecture, New Haven, CT

2020-	Senior Critic in Architecture
2007-2020	Critic in Architecture

Microsol Resources, New York, NY

1999-2002	AutoCAD Architectural Desktop Instructor

Professional Experience

Yale Urban Design Workshop, New Haven, CT

2018-	Director
2006-2018	Program Administrator & Project Manager

Andrei Harwell, Architect, New Haven, CT

2003-	Principal

Takenaka Corporation, Osaka, Japan

2005	Yale Fellow, Summer Architectural Trainee

Hardy Holzman Pfeiffer Associates, LLP, New York, NY

1998-2004	Staff Architect, CAD Manager

Licenses/ Registration

2006-	**Registered Architect** | State of New York
2012-	**Registered Architect** | State of Conneticut
2010-	**NCARB** Certificate
2007-	**AIA: The American Institute of Architects**
2009-	**LEED AP**+, Building Design + Construction

Selected Publications | Recent Research

2020	**DesignCase Lindholmen.** Plattus, Alan, Andrei Harwell and Marta Caldeira. Fusion Point Gothenburg Booklet Series, Volume 08. Chalmers Institute of Technology
2019	**The Diamonds of American Cities**. Alan Plattus, Janet Marie Smith, and Andrei Harwell. Rappaport, Nina and Ron Ostezan, Editor. New Haven: Yale School of Architecture, 2019. Distributed by ActarD.
2018	**Icons of New China** (Exhibition Catalog). Haode Sun, Curator, Andrei Harwell, Editor. Yale-China Association.
2017	**The Mexican Dream: False Promises Revisited**. Tatiana Bilbao, Editor. New Haven: Yale School of Architecture, 2017. Distributed by ActarD
2016	**The Marine Etablissement: New Terrain for Central Amsterdam**. Isaac Kalisvaart, Alexander Garvin, Kevin Gray and Andrei Harwell. Rappaport, Nina and Owen Howlett, eds. New Haven: Yale School of Architecture, 2015. Distributed by ActarD

Lectures, Symposia, Exhibitions

2015	**Naugatuck River Map**
	Collaboration with photographer Marion Belanger, Exhibited at Artspace, New Haven. Published in CT (UN) Bound catalog, 2015

Adam Scott Hopfner

102 Audubon Street, New Haven, CT 06510
adam.hopfner@yale.edu
(203) 500-1669

Courses Taught

	Yale School of Architecture, New Haven, CT
	Critic
2021	Building Project III
2015-present	Building Project I: Research, Analysis, Design
2019	Building Project II: Construction
2016-present	Architectural Design I

Educational Credentials

	Yale School of Architecture
1999	Master of Architecture
	Harvard University
1996	Architectural Discovery Program
	Bowdoin College
1993	Bachelor of Arts in Philosophy and Classics

Teaching Experience

	Yale School of Architecture, New Haven
2007-present	Director, Jim Vlock Building Project
2002-present	Design Critic

Professional Experience

	Hopfner Studio
2007-present	*founding principal of design firm*
	Gray Organschi Architecture
1999-2007	*project architect*
	Starnes Builders
1994-1996	*carpenter*

Licenses | Registrations

present	**Registered Architect,** Connecticut

Lectures, Symposia, Exhibitions

2019	**Tulane School of Architecture**
	Presenter at design build conference
2018	**University of Texas Arlington**
	Lecturer at CAPRA lecture series
2018	**Ecole Nationale Superieure Architecture Lyon**
	Presenter at design build conference

Joyce Hsiang

180 York Street, New Haven, CT 06511
joyce.hsiang@yale.edu

Courses Taught

Yale School of Architecture, New Haven, CT
Assistant Professor
2015-present   Architectural Design 1
202-2021   Cartographies of Climate Change
2015-2021   Rome: Continuity and Change

Educational Credentials

Yale School of Architecture
2003   Master of Architecture
Yale College
1999   Bachelor of Arts in Architecture

Teaching Experience

Yale School of Architecture, New Haven
2018-present   Assistant Professor
2008-2018   Critic
2009   Lecturer

Professional Experience

Plan B Architecture and Urbanism, LLC
2008-present   *Partner and Co-Founder*
Office for Metropolitan Architecture
2006-2008   *Project Manager*
Pelli Clarke Pelli Architects
2004-2006   *Project Architect and Design Team Leader*

Licenses | Registrations
present   **Registered Architect,** Connecticut

Selected Publications | Recent Research
2020   **"Sites Unknown: An Atlas of Architecture and Urbanization in the Anthropocene"** in *ACSA/UIA 2020 RIO Congress Proceedings*
2020   **"Climate Refugees: Mapping the Socioeconomic, Gender and Spatial Dynamics of Climate Change"** in *ACSA/UIA 2020 RIO Congress Proceedings*
2020   **"City of 7 Billion: A Constructed World"** in *ACSA/UIA 2020 RIO Congress Proceedings*
2016   **"The City of Seven Billion"** in *New Geographies 08: Island*

Lectures, Symposia, Exhibitions
2019   **"How Will We Live Together"**
                 Venice Architecture Biennale 2020
2018   **"Are We Human"**
                 Invited Exhibitor, Princeton University School of Architecture Gallery
2018   **"City of 7 Billion"**
                 Solo Exhibition, University of Arkansas Fay Jones School of Architecture Gallery

Professional Memberships
2019-present   Curriculum Committee, Yale School of Architecture
2016-present   Awards Committee, Yale School of Architecture
2008-present   Design Committee, Yale School of Architecture
2008-present   Undergraduate Planning and Design Committees, Yale College
2008-present   50 Women at Yale 150 Coordinator and Committee Member, Yale University

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CVs

Syllabi

Mary McLeod

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mcml10@columbia.edu
(212) 854-3414

Courses Taught

	Yale School of Architecture, New Haven, CT
	Visiting Professor
2019	Politics of Space
	Columbia University
	Professor
2021	The Theoretical Turn in Architecture: 1960-2000
2021	Mediterranean Confrontations: Architecture, Colonialism and National Identity in North America

Educational Credentials

	Princeton University, Princeton NJ
	PhD
	Princeton University, Princeton NJ
	Master of Architecture
	Princeton University, Princeton NJ
	Bachelor of Science in Architecture

Teaching Experience

	Columbia University
present	Associate Professor
	Yale University
2019	Visiting Professor

Selected Publications | Recent Research

2003	*Charlotte Perriand: An Art of Living,* editor and contributor
	Architecture Reproduction, co-editor
1985	*Architecture, Criticism, Ideology,* co-edited with Joan Ockman, Princeton Architectural Press

Lectures, Symposia, Exhibitions

2021	**"How did Women Change Modern Architecture?"**
	Sovern Lecture on Design, New York School of Interior Design
2017	**"A Seat at the Table"**
	Lecture related to the Equality in Design exhibition A Seat at the Table
2018	**"Le Corbusier, the New Woman, and Domestic Reform"**
	Lecture for Het Nieuwe Instituut

Professional Memberships

Buell Foundation for Study of American Architecture
Society of Architectural Historians
Architectural League of New York
The Graham Foundation

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Syllabi

Kyoung Sun Moon

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kyoung.moon@yale.edu
(203) 747-1729

Courses Taught

	Yale School of Architecture, New Haven, CT
	Associate Professor
2020-2021	Structures I
2020-2021	Technology and Design of Tall Buildings
2020	Structures II
2020	Structuring Architecture: Form and Space

Educational Credentials

	Massachusetts Institute of Technology
2005	PhD
	University of Illinois at Urbana-Champaign
2000	Master of Science in Civil and Environmental Engineering
2000	Master of Architecture
	Seoul National University
1992	Bachelor of Science in Architecture

Teaching Experience

	Yale School of Architecture, New Haven
2014-present	Associate Professor
2008-2014	Assistant Professor
	University of Illinois at Urbana-Champaign
2005-2008	Assistant Professor

Professional Experience

	Skidmore, Owings and Merrill
2000-2001	*Designer*
	MAC Architects and Consultants
1995-1997	*Designer*
	Republic of Korea Navy Facilities Engineering
1992-1995	*Designer*

Licenses | Registrations

2010-present	**Registered Architect,** Connecticut
2009-present	**Registered Architect,** Illinois

Selected Publications | Recent Research

2018	*Cantilever Architecture,* Routledge, London and New York
2019	**"Conjoined Tower Structures for Mile-High Tall Buildings"** in *International Journal of Hi-Rise Buildings, Vol. 8*
2018	**"Advances in Structural Systems Towards Mile-High Towers"** in *International Journal of Hi-Rise Buildings Vol. 7*
2018	**"Advances in Structural Systems for Tall Buildings: Emerging Developments for Contemporary Urban Giants"** in *Buildings Special Issue: Sustainable Vertical Urbanism, Vol. 8*

Lectures, Symposia, Exhibitions

2019	**"Emerging Developments in Structural Systems for Tall Buildings"**
	Fourth International Conference on Civil Engineering and Materials Sciences
2018	**"Integrative Design Structures, Forms and Facades of Tall Buildings"**
	Department of Architectural Engineering
2018	**"Tall Buildings for Livable and Sustainable Cities"**
	The College of Architecture and Urban Planning at Tongji University

Professional Memberships

present	American Institute of Architects
present	Connecticut Chapter of the American Institute of Architects
present	American Society of Civil Engineers

Timothy Newton

180 York Street, New Haven, CT 06511
timothy.newton@yale.edu

Courses Taught

	Yale School of Architecture, New Haven, CT
	Critic
2021	Advanced Design Studio: Rural Art Studio
2020	Advanced Design Studio: What About Learning?
2019	Advanced Design Studio: Next Generation Tourism-Touching the Ground Lightly
2018	The Chair

Educational Credentials

	Yale University
1980	Master of Architecture, Post Professional
	University of British Columbia
1974	Bachelor of Architecture

Teaching Experience

	Yale School of Architecture, New Haven
2007-2021	Faculty of Architecture
2007-2021	Director of Fabrications Labs
2007-2021	Senior Critic

Professional Experience

	Superkul Inc. Architects
2004-present	*Principal*
	James Cheng Architects
2000-2003	*Designer*
	Patkau Architects
1996-2000	*Designer*

Selected Publications | Recent Research

2004	**"Millennial Time Machine"** *in The Architectural Review* by Brian Carter
2003	**"Adelaar Residence"** *in Elm Street* by Hadani Ditmars
2003	**"Millennial Time Machine"** *in Vancouver Magazine* by John McCrank
2000	**"Adelaar Residence"** *in Western Living* by Jeff Bateman

Joan Ockman

218 Church Road, Elkins Park, PA 19027
joan.ockman@yale.edu
(215) 635-3364

Courses Taught

Yale School of Architecture, New Haven, CT
Vincent Scully Visiting Professor of Architecture

2021	History, Historiography, Avant-Garde: Reading Manfredo Tafuri's Labyrinth
2021	Topics in the History of Architecture Education
2021	New York as Incubator of Twentieth-Century Urbanism: Four Urban Thinkers
2020	Approaches to Contemporary Architecture Theory

Educational Credentials

Cooper Union School of Architecture

1980	Bachelor of Architecture

Harvard University, Cambridge, MA

1974	Bachelor of Art

Teaching Experience

Yale School of Architecture, New Haven

2020-present	Vincent Scully Visiting Professor of Architectural History
2020-present	Director of Doctoral Studies

University of Pennsylvania

2016-present	Distinguished Senior Lecturer

Cooper Union

2013-present	Professor Adjunct

Professional Experience

Richard Meier and Partners

1980-1981	*Associate*

Knoll

1976-1980	*Renault Administrator*

Peter Eisenman Architects

1978	*Consultant and collaborator*

Selected Publications | Recent Research

2022	*Architecture since 1850* Coauthor with Robin Middleton and Mary McLeod forthcoming
2021	*Architecture Among Other Things: Essays by Joan Ockman, 1988-2018* Forthcoming
2014	*MAS: The Modern Architecture Sympsia, 1962-1966. A Critical Edition* Edited with Rosemarie Haag
2015	*New York Review of Books* by Martin Filler
2014	*Les Bulles de Bilbao: La Mutation des musées depuis Frank Gehry* with Luis Miguel Lus Arana

Lectures, Symposia, Exhibitions

2020	**"Imagining a Political Ecology of Architecture"**
	Keynote lecture at the University of Sydney
2019	**"Architectural History in the Research University"**
	Presentation at panel at Washington University, St. Louis
2019	**"Between Greenwich Village and Global Village"**
	Keynote lecture at the Architectural Humanities Research Association
2019	**"The Emergence of Team 10 out of the Twentieth Century"**
	Keynote lecture at the University of Porto

Professional Memberships

present	Doctoral committee member
2017-present	Scientific Committee, *City, Culture and Creative Practices*
2017-present	Scientific Committee, *HPA: Histories of Postwar Architecture*
2017	Editorial Board, AJAR
2016	Scientific Committee, international conference, KU Leuven, Brussels
2016	Editorial Board, AJAR
2016	Scientific Committee, Museum of Contemporary Art, Santiago

Eeva-Liisa Pelkonen

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eeva-liisa.pelkonen@yale.edu
(203) 432-2288

Courses Taught

	Yale School of Architecture, New Haven, CT
	Professor
2021	Textile Architectures (Doctoral Pro-seminar)
2020	Textile Architectures
2020	Style (undergraduate art history seminar co-taught with Nicola Suthor)
2020	Architectural Design 2
2019	American Gothic (undergraduate seminar)

Educational Credentials

	Columbia University, New York, NY
2003	PhD
	Dissertation title: "Empathetic Affinities: Alvar Aalto and His Milieus"
	Yale School of Architecture, New Haven, CT
1994	Master of Environmental Design
	Tampere Technical University, Tampere, Finland
1990	Master of Architecture

Teaching Experience

	Yale School of Architecture, New Haven
2020-present	Professor
2012-2020	Associate Professor (without term)
2009-2012	Associate Professor (with term)
2003-2008	Assistant Professor

Selected Publications | Recent Research

2021	"**Beyond Forest Dreaming**" in *Formafantasma: Gambio*
2009	*Alvar Aalto: Architecture, Modernity and Geopolitics* Yale Univeristy Press, peer reviewed
1996	*Achtung Architectur! Image and Phantasm in Contemporary Austrian Architecture* MIT Press, peer reviewed
1996	*Achtung Architectur! Bild und Phantasma in der Zeitgenossischen osterreichischen Architektur* Ritter Verlag, peer reviewed

Lectures, Symposia, Exhibitions

2020	**"Hats with Brains and Other Primitive Domains"**
	Austrian Cultural Institute
2020	**In conversation with David Adjaye**
	Judd Foundation
2020	**"Exhibit A"**
	Book talk at the Paul Rudolph Foundation
2019	**Invited panelist at St. Petersburg International Cultural Forum**
	St. Petersburg, Russia
2019	**"Exhibiting Architecture"**
	Exhibition Histories: New Perspectives symposium

Professional Memberships

1991-present	Registered architect in Finland
1991-2007	Member of the Association of Finnish Architects SAFA
1990-present	Member of the Finnish Critics Association SARV
1998-present	Member of the Society of Architectural Historians
2007-2008	Honorary Member, The Authors Club, London
2006-present	Member of the European Architecture Network

Alan Plattus

P.O. Box 208242, New Haven CT 06520
alan.plattus@yale.edu
(203) 432-2290

Courses Taught

Yale School of Architecture, New Haven, CT
Professor
2021	Introduction to Urban Design
2021	Advanced Design Studio: "Coastal New England: History, Threat, and Adaptation"
2021	Port Cities
2020	Introduction to Urban Design
2020	Architectural Design 4

Educational Credentials

Yale University, New Haven, CT
1998	Master of Architecture (privatum)

Princeton University, Princeton, NJ
1979	Master of Architecture

Yale University, New Haven, CT
1976	Bachelor of Art in History of Art, summa cum laude

Teaching Experience

Yale School of Architecture, New Haven
1998-present	Professor of Architecture and Urbanism
1992-present	Director, Yale Urban Design Workshop
1989-1999	Associate Dean
1987-1998	Associate Professor of Architecture Design and Theory

Professional Experience

Yale Urban Design Workshop and Center for Urban Design Research
1992-present	*Founder and Director*

Alan Chimacoff, Architect
1978-1981	*Designer*

Christopher Chadbourne, Architect
1977	*Designer*

Selected Publications | Recent Research

forthcoming	**"The Flatbed Facades of Venturi and Scott Brown"** in *After Las Vegas* by Stanislaus von Moos
forthcoming	**"Shared Difference: Citizenship and Civility in American Architecture and Urbanism"** Washington State University
2012	**"1910 New Haven Civic Improvement Commission Report and the American City"** in *Report of the New Haven Civic Improvement Commission*
2012	"**The Book)s) on the Drafting Room Table**" in *Architecture School: Three Centuries of Educating Architects in North America* by Joan Ockman and Rebecca Williamson

Lectures, Symposia, Exhibitions

2012	**"Alexander Jackson Davis: An American Architect"** Lecture at the Barnum Museum
2011	**"Three Kinds of Sustainable Urban Design"** Lecture at the University of Connecticut
2011	**"The CBD as Sustainable Urban Design"** Keynote Address at the World CBD Alliance Summit and Beijing CBD International Forum

Professional Memberships

2010-present	Yale-China, Trustee
2002-present	Eli Whitney Museum, Board of Directors
2001-2011	Connecticut Main Street Center, Board of Directors
2012-present	New Haven Green Restoration Committee
1999-present	Loan Advisory Committee, New Haven Livable Cities Initiative
1998-2002	Cities Program Committee, New Haven Festival of Arts and Ideas

Elihu Rubin

180 York Street, New Haven, CT 06511
elihu.rubin@yale.edu

Courses Taught

Yale School of Architecture, New Haven, CT
Associate Professor

2021	Introduction to Urban Studies
2021	American Architecture and Urban sim
2020	Urban Landscapes and Geographies of Justice
2020	Ghost Town: Abandonment, Memory, and the Postindustrial Landscape

Educational Credentials

University of California, Berkeley

2003	PhD

University of California, Berkeley

1999	Master of City Planning

Yale University
Bachelor of Science

Teaching Experience

Yale School of Architecture, New Haven

2020-present	Director of Undergraduate Studies
2020-present	Associate Professor (tenure)
2015-present	Associate Professor (term) of Architecture and American Studies

Selected Publications | Recent Research

2020	*Insuring the City: The Prudential Center and the Postwar Urban Landscape,* Yale University Press
	Ghost Town: The Urban History of an American Icon, Princeton University Press
2020	"**Skyscrapers and Tall Buildings**" in *Oxford Research Encyclopedia of American History Vol. 2* ed. Timothy J. Gilfoyle, Oxford University Press
2020	**"New Haven Building Archive: Database for the Collection, Study, and Communication of Local Built**
2016	**Heritage"** in *Eurographics Workshop on Graphics and Cultural Heritage* by R. Sablatnig and M. Wimmer

Lectures, Symposia, Exhibitions

2020	**"Islands of the Past"**
	Mapping Urban Renewal in New London

Professional Memberships

2015-present	Society of American City and Regional Planning HIstory
	Society of Architectural Historians
	Society of Industrial Archaeology
	Urban History Association
	Vernacular Architecture Forum

Joel Sanders

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joel.sanders@yale.edu
(212) 431-8751

Courses Taught

	Yale School of Architecture, New Haven, CT
	Professor
2018-2021	Exhibitionism: Politics of Display
2020	Design Research I: Cross-Disciplinary Perspectives
2020	Body Politics: Designing Equitable Public Space
2020	Design Research II: Challenging the Built Environment

Educational Credentials

	Columbia University, New York, NY
1981	Master of Architecture
	Columbia College, New York, NY
1978	Bachelor of Art in History of Art

Teaching Experience

	Yale School of Architecture, New Haven
2017-present	Director of Post-Professional Studies
2002-present	Adjunct Professor
	Parsons School of Design
1996-2001	Director of the MArch Program
	Princeton University
1986-1996	Assistant Professor

Professional Experience

	Joel Sanders Architect
1988-present	*Principal*

Selected Publications | Recent Research

2020	**"Where Do We Go From Here?"** in *99% Invisible* by Sandy Allen
2020	**"How Public Toilets Became a Peculiarly British Battleground"** in *VICE* by Luca Demetriou
2020	**"From the Front lines: What Will Be Forever Changed As a Result of COVID-19?"** in *NPR Florida* audio podcast
2020	**"In This Age of Self-Isolation, Architects See Their Homes From a Different Angle"** in *The Wall Street Journal* by Nancy Keates
2020	**"New York Architects on How COVID-19 Is Urging Us to Rethink Home Design"** in *DWELL* by Melissa Feldman

Lectures, Symposia, Exhibitions

2015	**"AIANY Interiors 2015 Residential Review"**
	Bedford Residence and 25 Columbus Circle
2014	**"The City and the World"**
	The Chicago Athenaeum Museum of Architecture Art Design and Urban Studies
2014	**"100 Architects of the Year 2014"**
	Korean Institute of Architects
2014	**"Moving Visual Sense: Movement, New Scenario"**
	Seoul National University Museum of Art

Professional Memberships

2020	Board of Directors, American Restroom Association
2020	MacArthur Fellows Program Nominator
2020-2021	Center for Collaborative Arts and Media Faculty Advisory Committee
2018	Visiting Committee, Chinese University of Hong Kong
2017-2018	Committee for Student and Employees with Disabilities
2015-2017	Events Committee, Design Trust for Public Space
2016-2017	Lectures+ Committee, Yale School of Architecture

M. Surry Schlabs

180 York St., New Haven CT 06511
michael.schlabs@yale.edu
(203) 887-4399

Courses Taught

	Yale School of Architecture, New Haven, CT
	Critic
2019	Advanced Design Studio: "Another Day in Vienna"	
2018-2020	Methods and Form in Architecture
2018	Advanced Design Studio: "Site Evidence"
2018-2020	Architectures of Urbanism: Thinking, Seeing, Writing the City

Educational Credentials

	Yale School of Architecture, New Haven, CT
2017	PhD Architecture
	Dissertation: "Waiting for Architecture: John Dewey and the Limits of Modern Art"
	Yale University, New Haven, CT
2014	Master of Philosophy in Architecture
	Yale School of Architecture, New Haven, CT
2003	Master of Architecture
	Yale University
1999	Bachelor of Arts in Architecture, Distinction in the Major

Teaching Experience

	Yale School of Architecture, New Haven
2017-present	Instructor of Record
2014-present	Studio Critic
	Wesleyan University
2020-present	Visiting Assistant Professor of Art
2019	Visiting Assistant Professor of Public Policy

Professional Experience

	Gray Organschi Architecture, New Haven
2006-2008	*Project Manager and Designer*
	Yale Urban Design Workshop, New Haven
2006	*Project Manager and Designer*
	studio 542, New Haven
2003-present	*Designer and Principal*

Selected Publications | Recent Research

2021	**"Almost Architecture: The Spatial Politics of Allan Kaprow's *Fluids*"** in *Architecture of the Political Realm Beyond the Assembly Room* by Thomas-Bernard Kenniff and Francois Dufaux
2018	**"A Common Occupation: On the Modern Aesthetics of Public Encounter"** presented at the Society of Architectural Historians' conference
2018	**"Aldo van Eyck and Constant's Blue-Purple Room,"** in *Exhibit A: Documentary Anthology of Architectural Exhibitions* by Eeva-Liisa Pelkonen

Lectures, Symposia, Exhibitions

2016	**"The Individual and the Common,"** *Paprika*, vol. 2, no. 9, by Wesley Hiatt
2016	**Learning/Thinking/Doing: Educating Architects in the 21'st Century** Symposium co-organizer and speaker
2015	**Publics and Their Problems** issue editor, special issue of *Paprika*, no. 9

APR Appendix:

Required Courses - Syllabi

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APR Appendix:

Advanced Studios and Electives - Syllabi

Syllabus: ARCH 1011a Core 1 Studio 2020

Faculty: Brennan Buck, Nikole Bouchard, Miroslava Brooks, Jaffer Kolb, Michael Szivos

Overview

The first studio in the core sequence focuses on how architecture is conceived, developed, and communicated. The studio will take a pointed, contemporary approach to these aspects of architectural production:

Space and Form

The Core studios expand consecutively in scale and breadth to encompass materiality, construction, program and site. The first in that sequence, this studio asks students to develop an understanding of, and position on, fundamental architectural methods. Space, form and representation will all be understood to have content — historical, cultural, and political — and will be studied in the same way that program and site will be later in the sequence. In future studios, students will develop their work following the analysis of a building site, the enumeration of a building program, and/or the constraints of construction. Core One studio, instead, will begin with the experiential, organizational, and social capacity of built form and volume. Site, program, and construction will all be considered after and defined in response to each student's initial approach to space and form. As each project develops, we will examine the implications of a given formal strategy and how it reveals a building's many effects on the world around it.

Mediation

The studio conceives architecture through its many media, as a form of mediation and communication within and beyond the discipline. While modern art was defined in relation to its medium during the 20th Century, architecture is characterized by the absence of a single medium. Alberti defined the architect as a professional who makes drawings and models rather than buildings, a definition both ennobling and exclusionary. Today we make drawings, models, images, videos, BIM models, virtual realities and other mediations, each of which holds distinct and emergent conventions and potentials. Contemporary visual culture is often seen as post-medium-specific, echoing across countless digital and analog formats; one objective of the studio is to consider the expanded set of formats or mediums in which we now work. Each project will be developed through a specific form of representation — one architectural medium. This medium will be used iteratively to engage with different aspects of the project. In this sense, the studio is procedurally prescriptive, but open in terms of possible project content. Students will be asked to consider the potential and limitations of two-dimensional images/perspectival projection (project 1) and plans/orthographic drawing (project 2). In each case, the act of creating architecture is posited as an act of mediation — an intervention in and remaking of our own disciplinary culture, and by extension, broader cultural phenomena as well.

Appropriation

The sequence of projects will allow students to rehearse the conception phase of an architectural project several times. Each project posits design as a form of engagement with the world around us rather than a process of introspection or isolated intuition. Each project will begin with sampling and appropriation, not a napkin sketch. Students will be asked to explore a particular culture and audience, bringing their knowledge from other fields and endeavors to bear on their work. We will ground these explorations in the discipline of architecture through precedent, however we will approach precedent as another material to be appropriated and manipulated rather than as canonical (part of a fixed and limited list of buildings that define architectural history and discourse). This studio assumes that precedent is malleable, dynamic and broad. Working at the intersection of disciplinary and extra-disciplinary content is intended to engage broad contexts and audiences while also imparting an understanding of architectural means and methods.

Course Objectives

1. Develop an understanding of, and a position on, fundamental architectural methods including space, form and representation.
2. Conceive of architecture through multiple media as a form of communication within and beyond the discipline.
3. Develop analog and digital representation and modeling skills.

Assessment Breakdown

Projects 1	20%
Project 2	20%
Project 3	50%
Participation	10%

Class Organization

Schedule & Coursework

Studio will meet every Monday and Thursday from 2:00 — 6:00 PM. Regular studio time will consist of individual and group pinups with your section critic. These may include both remote and in-person sessions depending on the preference of faculty, TFs and students -no one is required to be physically present for any session. Everyone, beginning with faculty, are expected to make every effort to generate a collective 'studio culture' of exchange, inclusion and fairness through remote and in-person formats. There will also be a periodic series of studio-wide pin-ups and presentations on relevant topics by each section critic. Over the course of the semester, there are a total of four studio-wide reviews that may extend beyond regular class time:

> Project 1A Review
> Thursday, September 17

> Project 1B Review
> Midterm Week: Monday/Tuesday, October 12/13

> Project 2 Interim Review
> Monday, November 16

> Project 2 Final Review
> Final Review Week: Monday/Tuesday, December 7/8

Drawing & Modeling Workshops & Sections

Required and optional workshops led by the TF's will support the development of analog and digital skills of representation and fabrication. These will be structured in relationship to each studio problem and focus on the work-flow of moving across various representation and fabrication tools to generate required drawings and models for each part of the project. These sessions will particularly focus on moving between 2 and 3-dimensional representation. Examples of drawings, models and materials will also be presented and discussed. Additional assistance and resources will also be made available.

Grading

Grading in the studio is based on a Pass/Low Pass/Fail system and is coordinated across all studio sections. At the conclusion of each review, the studio faculty will collectively evaluate each student's work to help identify areas of design or representation that could benefit from additional focus and development. The two projects will be weighted equally though development over the course of the semester may also be taken into account. Please refer to the Student Handbook for information about grades.

Evaluation

In addition to regular feedback during the course of pinups, all students will receive written feedback from their individual section critic at the end of the semester. Student work will be evaluated based on the following criteria:

> Ideation - each student is expected to demonstrate the ability to respond to the given studio brief with a clear idea that can be explored and developed over the course of the project

> Project Development - each student's work must demonstrate sufficient development in response to criticism and studio discussions, making adequate progress each week in meetings with the studio critic

> Representation - each student is expected to demonstrate an understanding of architectural drawing conventions and the ability to utilize various techniques of representation and production, including hand and digital drawing, physical model making, and image-making

> Presentation - each student's work should be presented clearly in pin-ups and reviews, and demonstrate successful completion of all required presentation documents and materials

Schedule

Week 1	August 31	PROJECT 1A: IMAGE-OBJECT. Studio Introduction
	September 3	Image Analysis "Drawing." Faculty Presentations: Szivos, Buck
Week 2	September 6	TF Workshop 1
	September 7	Desk Crits
	September 10	Image-Object
Week 3	September 14	Desk Crits
	September 17	PROJECT 1A REVIEW. PROJECT 1B: OBJECT-DRAWING
Week 4	September 20	TF Workshop 2
	September 21	Space of the Image-Object
	September 24	Initial Image-Volume. Faculty Presentation: Kolb
Week 5	September 28	Desk Crits
	October 1	Scenographic Plan
Week 6	October 5	Desk Crits
	October 8	Desk Crits
Week 7	October 12-13	PROJECT 1B REVIEW
	October 15	PROJECT 2: PLAN, UNPLANNED
Week 8	October 19	Appropriated Plan
	October 22	Desk Crits. Faculty Presentation: Brooks
Week 9	October 25	TF Workshop 3
	October 26	(Un)precedented Plan
	October 29	Desk Crits
Week 10	November 2	Desk Crits
	November 5	Desk Crits. Faculty Presentation: Bouchard
Week 11	November 9	Site Plan
	November 12	Desk Crits
Week 12	November 16	PROJECT 2 INTERIM REVIEW
	November 19	Desk Crits
Week 13	November 30	Desk Crits
	December 3	Desk Crits
Week 14	December 7-8	PROJECT 2 REVIEW

Bibliography

Beatriz Colomina, "Intimacy and Spectacle: The Interiors of Adolf Loos"in AA Files No. 20 (Autumn 1990
    (London: The Architectural Association) 5-15.
Kristin Thompson & David Bordwell, Film Art: An Introduction, "The Shot: Cinematography" (New York:
    McGraw-Hill Education, 2012) 216-243
Susan Sontag, "The Heroism of Vision", On Photography(New York: Farrar, Straus and Giroux, 1973) 85-
    114.
Edward Weston, "Seeing Photographically"in The Complete Photographer, 49 (1943)
Jesus Vassallo, "Seamless: Digital Collage and Dirty Realism in Architecture, Log39, Winter 2017, 45-65.
Susan Sontag, "Notes on Camp," Against Interpretation(Octagon Books, 1978) 275 -292.
Ernst Gombrich, "Mirror and Map: Theories of Pictorial Representation" in Philosophical Transactions of
    the Royal Society of London: Biological sciences, 1975.
Anna Hougaard, "The Animate Drawing" in Drawing Futures, eds, Laura Allen and Luke Caspar
    Pearson(London: UCL Press, 2016)244-247
Andrew Atwood, "Rendering Air", Nine Essays(Chicago: Graham Foundation, 2015) 40-49
Viktor Shklovsky, "Art as Device", Theory of Prose, translated by Benjamin Sher (Chicago: Dalkey Archive
    Press 1990 [1929]).
O.M. Ungers, Second Variations of Space after the Seven Lamps of Architecture of John Ruskin,
    (Stuttgart: Verlag Gert Hatje, 1985).
Irene Cheng,"Race and Architectural Geometry: Thomas Jefferson's Octagons"J19: The Journal of
    Nineteenth-Century Americanists, Volume 3, Number 1, Spring 2015.
RobertVenturi. "The Inside and the Outside." Complexity and Contradiction in Architecture. (New York:
    Museum of Modern Art, 2011)70-86.
Robin Evans "Figures, Doors, Passages", Translations from Drawing to Building (Cambridge, MA: MIT
    Press, 1997) 54-91.
Stan Allen, "From Object to Field", AD 127: Architecture after Geometry, vol.67 no.5/6 May/June 1997,
    24-31.
Jacques Lucan, Composition, Non-composition, (Lausanne: Routledge 2018)(On reserve at Haas Library).
    Jacques Guillerme and Helene Verin, "The Archaeology of Section"in Perspecta 25 (1989) 226 —257.
Mario Gooden, "(Black) Sexuality and Space: The Body and the Gaze" in Dark Space: Architecture
    Representation Black Identity(New York: Columbia University Press,2016).
Rosalind Krauss, "Grids," in October Vol 9, Summer1979, 50-64
Chantal Mouffe, "Agonistic Spaces" in Art and Research, V 1, No 2, 2007, 1-5.
Alison Smithson, "Mat Building: How to Recognize and Read it" in Architectural Design (London: John
    Wiley & Sons)Vol. 44, Iss. 9, (Jan 1, 1974)573.

Syllabus: ARCH 1012b Core 2 Studio 2021

Material Utopias

Faculty: Sunil Bald, Trattie Davies, Peter de Bretteville, Joeb Moore, Eeva-Liisa Pelkonen, Miriam Peterson

Overview

> We must come down to earth from the clouds where we live in vagueness and experience the most real thing there is: material.
> -Anni Albers

The second core studio explores the relationship between space and environment through the medium of material. Our project is to define and design a "material utopias" as a means to explore interactions between natural and artificial, existing and proposed, found and formed, intention and impact, looking for the highest collective outcome across the given spectrum. Both words which define the project, "material" and "utopia", are open for expansion, interpretation, and critique.

The ways in which humans have occupied, altered, and inhabited their given environments can be understood, at its core, as utopian thinking, as aspiration toward a state of being that exceeds the current condition. However, any change in a given condition initiates a stream of side effect and collateral consequence. The move toward utopia can be incremental or revolutionary, successful, or damaging.

Working directly to understand the change inherent in materials, through time, growth, decay, transformation, experience, evolution, or interpretation will allow for reflection on our reciprocal endeavors to engage - as individuals and collectives - with the environment, built or otherwise.

With or without us, all materials, dead or alive, interact to make environments which in turn change the next sequence of possible outcomes for those environments. Our occupation of the world incites an adjustment. This relationship with context is simultaneously constructed and transitional.

The process for the semester will be observation, experimentation, speculation, and invention. Using a variety of perspectives and analytic methods, we will build and un-build possibilities. Research based material experiments, working across scales in varied contexts, will reinforce the project development.

Beginning with the study of a specific piece of land, we will observe and communicate a position on revealed exchanges between site conditions and human desire. Site information will be unpacked to expose physical, cultural, social, and historical context.

Students will then be asked to study, question, and extract varied proposals for utopia, conceived in relation to materials, at multiple scales and types over an expansive period of time. Independent precedent research from varying perspectives, both as a specific design exercise and continuous feed, will enrich the individual development of ideas and attitudes, in which the interdependent nature of placemaking is explored.

Later in the semester, students will source and utilize material from their immediate environment to find and make space for themselves and others.

While the project is intended to provoke multiple interpretations and perspectives, all projects will be considered in terms of clear parameters, to be investigated over an extended period of time (100 years), considering current, past, and future circumstances.

These projects are to be specific responses, the result of rigorous investigations, which offer - through design - extraordinary speculations and proposed outcomes.

Course Objectives

1. Explore the relationship between space and environment through the medium of material.
2. Develop an understanding of site information to expose physical, cultural, social, and historical contexts.
3. Develop skills working with drawings, models, photography, and film.

Assessment Breakdown

Project 1	20%
Project 2	20%
Project 3	50%
Participation	10%

Through this exploration, we will appreciate the reality that the current world is neither fixed nor functional. Close observation of the material environment, in its varied permutations, expressions, and occupations, reminds us that the world is fluid, in flux, iterative and dynamic, prepared for re-design.

The studio will be supplemented by a series of organized talks, micro-symposia, lectures, and visits (virtual or otherwise). In coordination with the 4th semester urbanism studio, we will also be sponsoring a Tuesday Night Movie Night, during which movies will be shown exploring the range of human experience and impact on earth, at all scales, from micro to macro, ductwork to the apocalypse.

Class Organization

Methodology

The emphasis is on understanding, exploring, testing, and developing ideas through iterative representation, both model and drawing. In this semester, process is valued as integral and generative to the development of nuanced ideas. You are asked to see, test, and experiment by virtue of making. Drawings, models, photography, film, all modes of representation are the materials we use to communicate ideas. They can be rough, loose, precise, pointed, and anywhere in between. You will be asked to develop a broad and inclusive attitude about thinking though making, using the materials you produce to help propel and clarify experimental ideas.

Class Time

Studio meets every Monday and Thursday from 2:00-6:00 PM. Regular studio time consists of individual and group pin-ups with your section critic. These may include both remote and in-person sessions depending on the preference of the faculty, TF's, and students. Given the unique circumstances of the semester, nobody is required to be physically present for any section meeting, but students are expected to participate fully in each section meeting and remain engaged in a continuous, iterative exchange of ideas conceived, designed, represented, and built. Periodically there will be studio wide pin-ups/exchanges/ section visits, and presentations on relevant topics by section critics or invited guests.
Everyone, beginning with the faculty, is expected to make every effort to generate and support the collective studio culture of exchange, inclusion, and fairness through remote and in-person formats.

Lab Tutorials/Workshops

Lab tutorials & workshops will be conducted by the TF's to support the development of analog and digital skills of representation and fabrication. These will be structured in relation to the given studio exercises and developed, as required, in response to student needs.

Schedule

Week 1	February 1	All studio introduction. Material Utopias, issue Above/Below. Desk crits
	February 4	All studio conversation: "Above/Below: Seeing What's There." Mark Ashton, YSE & Elihu Rubin, YSoA. Desk crits
Week 2	February 8	Desk crits
	February 11	REVIEW, Above/Below, Issue Material Utopias
Week 3	February 15	Desk crits. All studio conversation: "Material Utopias." Abigail Dillen, Earth Justice & Peggy Deamer, YSoA, Moderator, Elisa Iturbe
	February 18	All studio conversation, Issue Material Utopias: Before/After, Joeb Moore & Eeva-Liisa Pelkonen, Precedent. Desk crits
Week 4	February 22	Triplets Studio, Section Discussion
	February 25	Triplets Studio, REVIEW. Material Utopias, Before/After
Week 5	March 1	Desk crits
	March 4	Desk crits
Week 6	March 11-12	REVIEW, Mid-term Week, Material Utopias, Thesis Presentation
Week 7	March 22	Desk crits
	March 25	Paired Studio Sections, Material Utopias: Project Development
Week 8	March 29	Desk crits. All studio conversation, Issue Material Utopias: In Between
	April 1	All studio conversation, "In Between: Above Ground Mining" Formafantasma, Local Work Studio, Thing Thing. Desk crits
Week 9	April 5	Desk crits
	April 8	Paired Studio, Section Meeting, Material Utopias: In Between
Week 10	April 12	REVIEW, Material Utopias: In Between
	April 15	Desk crits
Week 11	April 19	Desk crits
	April 22	Paired Studio, Material Utopias: Project Development
Week 12	April 26	Desk crits
	April 29	Desk crits
Week 13	May 3-4	REVIEW, Final Review Week, Material Utopias

Bibliography

Hannah Arendt, "Preface: The Gap Between Past and Future," Between Past and Future: Eight Exercises
in Political Thought," (New York: Penguin, 2006) pp. 3-17

Paul Klee, "Ways of Nature Study," Hans M. Wingler, The Bauhaus, M.I.T., 1969, pp 72-73, From
"Staatliches Bauhaus Weimar 1919-1923," Bauhaus Press, Weimar-Munich (1923), pp 24

Andrea Wulf, The Invention of Nature: Alexander Von Humboldt's New World, (New York: Alfred A.
Knopf, 2015)

Peter Wohlleben, The Hidden Life of Trees: What They Feel, How They Communicate: Discoveries From a
Secret World, (Vancouver, BC, Greystone Books 2016)

Diana Agrest, Architecture of Nature, Nature of Architecture

Hope Jahren, Lab Girl

Cesare Leonardi, The Architecture of Trees

Matthew J. Genge, Geological Field Sketches and Illustration: A Practical Guide

Dionne Lee, Challenger Deep, 2019, https://player.vimeo.com/video/340599957 (Links to an external
site.)

Robert Whitman, Local Report, 1972-ongoing, http://www.whitmanlocalreport.net/sub_project.htm

Gerhard Richter, Atlas, 1997

Edward Tufte, The Visual Display of Quantitative Information, (Cheshire, CT, Graphics Press 1983)

Edward Tufte, Envisioning Information, (Cheshire, CT, Graphics Press 1990

Gavin Pretor-Pinney, The Cloud Collector's Handbook, (London, Sceptre 2009)

Peter Fischli & David Weiss, Der Lauf Der Dinge, 1987

formafantasma, ORE STREAM, 2017-2019

"Garbology," https://naturebridge.org/garbology

Josef Albers, "Teaching Form through Practice," 1928, original & translation, https://albersfoundation.
org/teaching/josef-albers/texts/# (Links to an external site.)

Anni Albers, "Conversations with Artists"

Anni Albers, "Design as Visual Organization"

Syllabus: ARCH 1021a Core 3 Studio 2020

Next NXTHVN

Faculty: Emily Abruzzo, Stella Betts, Peter de Bretteville, Mark Gage, Bika Rebek

Overview

As part of the integrated design studio sequence, this studio, the third core studio in the Master of Architecture I, concentrates on a medium-scale public building, focusing on the integration of composition, site, program, mass, and form in relation to structure and methods of construction. Addressing these issues through the lens of program in the development of a single project during the course of the whole semester, interior spaces are studied in detail, and large-scale models and drawings, as well as perspectival views, are developed to explore design issues. Program, site, and subject are inextricably linked in this studio program.

Next NXTHVN

This studio is intended both as an introduction into the design of civic spaces as well as a larger look into who (and what) forms our local communities, and how architects may work to serve their neighbors. This year's studio will encompass the design of a facility for an educational, mentor-based, diversionary art program for New Haven youth. This program is meant specifically to assist students or groups of students who may have a higher probability of failing academically or dropping out of school as they face challenges such as housing or food insecurity, incarceration, teenage pregnancy, serious health issues, domestic violence, or transiency.

We will look at New Haven's NXTHVN,* "a new national arts model that empowers emerging artists and curators of color through education and access," as architectural precedent and model. Though serving professional artists and not specifically youth, NXTHVN encompasses many of the themes we will look at this semester including mentorship, exhibition and outreach,

entrepreneurship, and a focus on local community. Unlike NXTHVN's Deborah Berke Partners-designed building, which is an adaptive reuse of an existing building plus an addition, the building for this studio project will be ground-up and purpose-built. Each critic's studio will be working on a different site. There is no one assortment of services that is appropriate for all communities. As such, the program listed in this syllabus may be inflected for each project, as informed by specific research into potential users, service providers/partners, and context. At a minimum, the facility should support activities such as one-on-one mentor programs for individuals, support of promising artistic individuals with dedicated space to work, community workshops, exhibitions, flex-space for community groups with related programming, and day-long or multi-month workshops that can act as an alternative sentencing program through court-mandated diversion.**

Along the course of the semester, we will hear from and collaborate with NXTHVN, as well as artists and diversionary practitioners working in this space, who can offer insights into the program, discuss challenges posed, and answer questions about the specific spatial and environmental qualities that would best support this type of work.

*NXTHVN:
www.nxthvn.com
169 Henry St, New Haven, CT 06511

**For example, Young New Yorkers:
www.youngnewyorkers.org

Course Objectives

1. Develop techniques to integrate composition, site, program, mass, form, structure, and construction methods through the lens of the design of a medium-scale building.
2. Develop an understanding of civic space design, as well as the role of architects in the community.
3. Analyze architectural context through historic and contemporary precedents, the physical context of the site, it's surrounding cultural life, ecology, and history.
4. Study daylighting effects as they pertain to building position, massing, apertures, materials, surfaces and various associated technologies.
5. Gain experience working with a structural engineer and integrate structural concepts into architectural projects.
6. Fulfill requirements for sustainability through new ways of seeing and making things.
7. Address issues of accessibility at both an architectural and urban scale.

Assessment Breakdown

Conception	30%
Design Development	30%
Technical Resolution	30%
Participation	10%

Program

	QTY.	SIZE*	TOTALS*	NOTES
Individual Art Studios	10	600	6,000	
Larger Art Studios/ Classrooms	2	1,500	3,000	
Small Offices for Computer Work	6	300	300	e.x. for graphic design or architecture
Gallery	1	2,000	2,000	
Gathering and Event Space	1	2,500	2,500	Space for over 45 people; with A/V capacities. This space can be used for ancillary services/programs by local organizations as well
Small Performance Space	1	6,000	6,000	
Communal Kitchen	1	1,000	1,000	Adjacent to Gathering and Event Space and/or Gallery
Meeting Room	1	600	600	
Childcare Room	1	1,600	1,600	For childcare of students, mentors, or employees
Private Offices	4	300	1,200	
Fabrication Shop	1	3,000	3,000	
Restrooms	4	80	320	Universal Restrooms (ADA / unisex). Consider artist restrooms vs. public
Family Restrooms	2	100	200	With changing station
Storage Closets	4	25	100	Consider additional storage that serves studios
Slop sink/clean-up sink closests	10	25	250	
Mechanical/Janitorial Spaces	1	1,800	1,800	To be divided for shaft space, janitorial, Mechanical, Electrical, IT, etc.
SUBTOTAL			31,370	
Circulation/Efficiency Multiplier @ 35%			10,980	
GRAND TOTAL			42,350	*All numbers in square feet

Exterior

The exterior should be welcoming, with adjacent public green space and parking for several bicycles. Consider gardens, outdoor spaces, particularly for children to play. There is no mandatory general public parking component, but a loading dock must be included. Note adjacencies to bus stops, etc.

Class Organization

Strategic Analysis

The background information you are given for a project, or the additional information you later obtain, is not neutral and instead influences all subsequent design decisions. Accordingly you are asked to analyze the architectural context through historic and contemporary precedents, the physical context of the site, its surrounding cultural life, ecology, and history.

This integrated analysis of site and program should be performed in the most inclusive manner possible. Site must be defined as more than just the immediate local context, and program understood as more than a quantitative summation of institutional needs.

Your analysis should focus on situating the activities of the project (as cataloged in the brief) within the network of forces within which they operate. This necessarily entails examining the needs and ambitions of the facility in relation to the physical and cultural context that frames its activities. You will do this work in groups of roughly 12.

Each studio will select two-to-three students to be in each of the studio-wide "research groups" that will conduct research and analysis on one particular topic. The findings will be presented in brief 20 minute, unified presentations to the entire studio, projected digitally, and then compiled into organized PDFs for access by all students.

Each team is responsible for organizing into different roles to contribute to the collective work. Some students may use the library for research; others may search online; others are looking at GIS; drawing, etc.—but all students should be part of the overall discussion of the group. The point of this exercise is not for you to break up into smaller groups and draw things independently—it is a large group project and as such the group should conduct research and work together continuously to analyze it. You are creating a laboratory where expertise is used effectively and roles are not duplicated.

In this research, you are identifying relevant factors, establishing design criteria, and exposing architectural potential. Your work should be presented as a unified group presentation. Format is up to the group, although having a single, talented graphic designer for the presentation is encouraged in order to develop a professional and unified presentation of the information. The information will be compiled as a series of 11×17 PDFs for projection, and if desired, print, for use by all students throughout the semester.

The research groups and their supervising critics are as follows:

> Research Group 1: Emily Abruzzo
> New Haven Community: history, demographics, educational resources, activism, etc., with a focus on youth

> Research Group 2: Peter de Bretteville
> New Haven Natural & Built Environment: building types, maps, transportation, geographical and environmental constraints, etc.

This group will conduct research into the physical attributes, access, and environmental context of larger New Haven. This will include preparing background drawings and models that will be a shared resource by all studios. Research should extend to the climate, daylight, and weather that affect the site and building, as well as considerations particular to the urban context, pertinent building code and zoning information, and the architectural character of the area.

> Research Group 3: Bika Rebek
> Architectural Precedents: Art Studio Precedents, with a focus on multiple-studio facilities

> Research Group 4: Stella Betts
> Architectural Precedents: Educational Precedents, with a focus on art education

> Research Group 5: Mark Gage
> Architectural Precedents: Community Centers/Spaces (of all kinds)

Site Models

If desired, each studio will be responsible for producing a site model for use during pin-ups, midterm, and final reviews. The cost of materials for each site model, up to $200, may be reimbursed by the Coordinator.

Environmental Daylighting Workshop

As part of the environmental design sequence, a daylighting workshop, which includes a lecture by Martin Finio and the production of a large-scale daylighting model, is incorporated into the work of this studio. In this workshop students will select a space within their building and, by fabricating a 1/2"=1'-0" model of the interior, will study daylighting effects as they pertain to building position, massing, apertures, materials, surfaces and various associated technologies. Plan accordingly per the included schedule.

Structural Design Workshop

Furthering the integrated design concepts of this course, each studio will be paired with a Structural Engineer for a week-long workshop midway between the midterm and final reviews. For this workshop, students are required to make succinct PDF documents of their projects, which will be shared with the engineers before meeting. Students will then incorporate into their projects concepts discussed in meetings with the engineers.

Guest Lectures / Town Halls

At the dates and times noted on this syllabus and/or at additional times that may be announced throughout the course of the semester, guest faculty members or other visitors will give a short lecture on a topic related to the design project, and then take questions. These sessions are meant to increase students' understanding of specific aspects of the problem and should inform the work, and as such attendance is mandatory.

Environmental Design / Sustainability

In a time where conservation of natural assets, careful sourcing, and innovative re-use are fundamental considerations in the design process, sustainable practices underscore our work in this studio. We see this as a given tenet upon which all of our design work builds, and not an end in itself. Climate change, flooding, drought, deforestation and the other consequences of population growth and industrialization are issues central to the architectural profession. Those involved with design and construction must recognize the impact that their decisions will have on not only the possible acceleration of these consequences, but on the future relationship between the buildings and the populations they serve.

Civic and cultural institutions, because of their visibility and reach, are especially effective building projects to lead the way in developing new ways of seeing and making things, and it is in this context that the requirement for sustainability be fully addressed in the proposed building.

Building Accessibility

Students will be expected to address issues of accessibility at both an architectural and urban scale. This includes illustrating the ability to design sites, facilities, and systems to provide independent and integrated use by individuals with not only physical limitations (including mobility), but also sensory, and cognitive disabilities. Individual critics will conduct "accessibility checks" throughout the semester, culminating in a final confirmation of these requirements, in a review organized by individual critics.

Schedule

Week 1	September 1	Kickoff meeting. Introduction to Studio and Assignment 1 (Research & Analysis). Students meet with critics, divide into Assignment 1 groups.
	September 4	REVIEW OF ASSIGNMENT 1
Week 2	September 8	PRECEDENTS & STRATEGIC ANALYSIS. Desk crits
	September 11	Desk crits
	September 12/19	SITE VISITS
Week 3	September 15	SITING, DESIGN CONCEPTS. Desk crits
	September 18	Desk crits
Week 4	September 22	PRELIMINARY DESIGN. GUEST LECTURE. Desk crits
	September 25	Pin-up
	TBD	SITE VISITS
Week 5	September 29	PROGRAMMATIC FOCUS. Desk crits
	October 2	Desk crits
Week 6	October 6	DOCUMENTATION FOR BUILDING PROPOSAL. GUEST LECTURE. Desk crits
	October 9	Desk crits
Week 7	October 13-14	MID REVIEWS
Week 8	October 20	DAYLIGHTING. LECTURE by Martin Finio. Desk Crits
	October 23	Desk crits
	October 24	Daylighting Model Workshop with TFs
Week 9	October 27	DAYLIGHTING & ENVIRONMENTAL DESIGN FOCUS. DAYLIGHTING REVIEW
	October 30	Desk crits
Week 10	November 3	DESIGN DEVELOPMENT. GUEST LECTURE. Desk crits
	November 6	Desk crits
Week 11	November 10	STRUCTURAL FOCUS. WORKSHOP with Structural Engineers
	November 13	Desk crits
Week 12	November 17	DESIGN DOCUMENTATION. Desk crits
	November 20	Pin-up
Week 13	December 1	DESIGN DOCUMENTATION. Desk crits
	December 4	Desk crits
Week 14	December 9-10	FINAL REVIEW

Syllabus: ARCH 1022b Core 4 Studio 2021

City, Citizen: The Common Grounds of an Urban Education

Faculty: Aniket Shahane, Anthony Acciavatti, Peggy Deamer, Alicia Imperiale, Elisa Iturbe

Overview

> "If they are not meant for children they are not meant for citizens, and if they are not meant for citizens - ourselves - they are not meant for cities."
>> -Aldo van Eyck on the design of a Humanist City

> "You know, there was a little girl in California who was part of the second class to integrate her public schools, and she was bused to school every day. And that little girl was me."
>> -Kamala Harris schooling Joe Biden on desegregation; June, 2020 (a month before joining him as his vice-presidential running mate)

There are 1.1 million children in New York City's public schools.[1] Though, in many ways, these kids embody the raucous collection of cultures and values that makes a city vibrant, they are also the conduits through which some voices speak loud, while others stay muffled; a reflection of those that have and those that don't. Brooklyn's District 15, one of 32 public school districts in the five boroughs, is one such site of struggle. A 2018 study by NYC's Department of Education, and WXY, the architecture and urbanism office, found that District 15 is "among the most socio-economically and racially segregated"[2] in the entire city, partly because of the complex interrelationships among its diverse collection of neighborhoods. It is evidence that the success of a school system is inextricably linked to the design of other urban systems such as housing, transportation, commerce, health, culture and ecology. In other words, how kids learn is entangled with how grown-ups live, work, shop, travel, gather, and take care of each other.

For architects, meaningful participation in our cities involves not only designing buildings, but understanding and envisioning the communities in which these buildings reside. Doing so inevitably requires navigating the minefield of clashing values and voices that make up a city: politicians and lobbyists; corporations and mom-and-pops; doctors and lawyers; cab drivers and bartenders; parents, kids, and middle school teachers. As architects working in the city, we are perpetually forced to choose, through our work, between private wants and public needs, knowing full well that our decisions might miss both marks. Design, then, can be an opportunity to not only play out ideas, but also their consequences. Inciting imagination in ourselves and, especially in others, shows us for which individuals our work inspires wonder and with which communities it simply falls flat. It is in this context that we enter the 4th and last semester of the core sequence.

1. DOE Data at a Glance. NYC Department of Education. December 2, 2020. https://www.schools.nyc.gov/about-us/reports/doe-data-at-a-glance#:~:text=the%20school%20system.-,Students,students%20are%20English%20Language%20Learners
2. W X Y Studio. "D15: Diversity Plan," for the New York City Department of Education. PDF File. 2018. p.5.http://d15diversityplan.com/wp-content/uploads/2019/06/190620_D15DiversityPlan_FinalReport.pdf

Course Objectives

1. Develop an understanding of a broad array of forces - architectural, urban, social, economic, ecological, political - that shape our built environment.
2. Develop an understanding of the range of scales of the city and the interdependence of macro and micro scales.
3. To study cities through the study and design of time - the anticipation of possible futures.
4. Develop an understanding of the physical structure and support systems of the building as well as their impacts on the physical infrastructure and urban ecosystems of the city.
5. Define relevant user groups, understand the negotiations involved among them, and recognize the possibilities for influence between them.
6. Develop representation skills appropriate to the scale of the city and a critical viewpoint on when, how and if to draw, make, model, collage, diagram, film, and photograph.

Assessment Breakdown

Conception	30%
Design Development	30%
Technical Resolution	30%
Participation	10%

Site Background and Brief

As a 'site', District 15 is different than the typical territory architects might tackle. It is not a dotted line marking a plot of land inside of which to design and construct a building. District 15's lines have been drawn by the Department of Education as an attempt to organize and manage an idea of how we, as a public, should educate children. As a perimeter in the city, it necessarily overlaps and even conflicts with other edges, both administrative, such as those associated with everything from sanitation to voting districts, as well as the physical boundaries that define our urban environment: neighborhoods, blocks, buildings, streets, and parks. It is home to 10 very different neighborhoods that harbor vastly different characteristics — from the highly gentrified brownstone streets of Park Slope to the neglected housing projects of Red Hook; the historically Italian-American population of Carroll Gardens to the more recent Latino-Asian settlements in Sunset Park; vibrant commercial thoroughfares like 5th Avenue that traverses the entire district as well as the rapidly changing industrial landscape of Gowanus. The area is served by a number of public bus lines; the F, G, and R trains; as well as access to major highways like the BQE, Robert Moses's most prominent tag on the district. It skirts a wealth of important urban landmarks such as the Brooklyn Academy of Music, a performing arts venue, by Henry Herts and Hugh Tallant; Barclay's Center, a professional basketball stadium by ShoP Architects and Ellerbe Beckett; and Prospect Park by Frederick Law Olmsted and Calvert Vaux. Supplementing these internationally renowned cultural amenities is a grab bag of corporate franchises and local businesses that support residents with the everyday everything: laundromats, pharmacies, flower shops, tattoo parlors, car washes, grocery stores, daycares, shoe cobblers, coffee shops, nail salons, restaurants, movie theaters, and that most indispensable of all urban necessities, the corner bodega.

District 15, being located in Brooklyn, is also home to another peculiar collection — nearly 600,000 children. CCC, a leading child advocacy group in New York City, ranks Brooklyn as the borough with by far the most number of kids. And as part of the city's Equity and Excellence For All agenda, every one of these children has the right to a quality education4. In elementary school, each child in District 15 is, with some exceptions, guaranteed a seat from Pre-K through 5th grade that is within walking distance from their home. However, beginning with middle school (6th-8th grade), things get complicated as families are allowed to choose among the ten middle schools in the district. While students are still guaranteed a seat, there is no assurance that it will be within walking distance of home. This obligation to travel to school, along with a host of other complexities such as convoluted admissions procedures, has provoked inequities unseen elsewhere in the city, leading to fierce competition for the few reputed 'good' schools and lack of support for the 'bad' ones5. Despite the city's ambitions, in practice, it seems, the public education system in District 15 is not equitably excellent. Recognizing these problems, a combination of local parents, school leaders, and elected officials began advocating for change with the city who, in turn, hired WXY to lead a community-based process in order to workshop potential solutions. The District 15 report, a key reference for this studio, is the culmination of those efforts. Many of the initiatives outlined in this report were put into effect in the Fall of 2020, making District 15 a case study for new ideas in urban education.

While it remains to be seen how these recommendations might impact the quality of public education in District 15, this studio posits that now is a ripe opportunity to think about the spatial impact — both architectural and urban — these initiatives may, could, or should have on our collective idea of education. Conversely, it is also a chance for us, as architects, to test and project if a change in the conception of urban space, itself — what a city looks like and how it works — might implicitly support fairer education. As 2nd year YSoA graduate architecture students well-versed in architectural design, this is your task. What about our city — from buildings and streets to policies and mechanisms — needs to change? What stays the same? What gets demolished? And what is built anew? And, in the end, how do we design not just 'a city for all', but a 'just city for all'. This semester, your final Core studio, is an

opportunity for you to position yourself both as architect and as citizen. Important here is that, within the guidelines set by your individual critic, it is up to you to interpret site, define program, and engage the problem of public education through design.

Class Organization

Part I: Positions and Possibilities

Under the guidance of your section critics as well as outside experts like WXY (the lead consultancy for the District 15 plan) and our visiting critic Justin Moore (who has worked on District 15 with WXY and the city), you will begin with an analysis of the district in order to begin understanding the interrelationships between these ten schools and other urban infrastructure in the area including housing, commerce, transportation, public space, and key institutions in the area. The goal of the analysis will be for you to define the physical and social parameters of a specific site — a piece or an aspect of the District 15 community — for which you will make a design proposal.

On Monday, 02/22 we will have a studio-wide pin up in which each team will present how their research and analysis supports their ideas for potential sites and initial ideas for design proposals. With further development, the work will be presented for midterm reviews on Tuesday 03/09 and Wednesday 03/10.

Part II: Projects

Upon clarifying the particulars of your site within D15, you will make urban scale proposals for this area. These could range, for example, from new mixed-use development proposals for the vacant waterfront lots that are currently under speculation in Sunset Park; to an 'adaptive reuse' of the existing neighborhood fabric; to the demolition of old and construction of new typologies (housing and otherwise). The proposals can range in methodology, scale, and ambition, but must all have three things in common: 1) they must be grounded in a unique understanding of District 15's school system as it is today 2) they must make a physical / spatial impact at the scale of the community and 3)

they must demonstrate how a community can be redesigned in order to propose a new education system for the future.

Method

As each critic will take a different approach with their respective studio, this syllabus may be supplemented by your section critic with assignments, readings, and requirements that are tailored towards their specific approach. The goal of the class as a whole, however, will be the same: to produce intelligent and provocative projects that are critically and substantively positioned with regard to the urban issues present in the public education system of New York City at large and District 15, in particular.

Though each section will have a distinct take on the problem, there will be times throughout the semester when the class will convene as a group to share our individual approaches, research, methodologies, and progress. Additionally, lectures by experts in the field, reviews with outside jurors, and key studio-wide pin ups, will provide each section with several opportunities to get a sense of the diverse approaches being taken by the group as a whole.

Guest Speakers

Throughout the semester, we will be joined by guests who will be speaking about the relationship between the city and its public education system more broadly in New York City and beyond (Justin Moore, Marta Gutman) as well as specifically with respect to District 15 (Chris Rice, D15 community members). Each talk will be a slightly different format, approx. 20-30 minutes long on Zoom. The hope is not only for you to gain insight on issues of education and urbanism by academics and practitioners, but also for you to engage them with questions and comments that will help your own thinking on the issues we're tackling this semester. As such, prior to the talk, students will be assigned required readings and references with which to become familiar with the work of our guests as well as formulate questions and comments through which to initiate a student-led Q&A after each talk. The format for these will be coordinated in conjunction with our TFs. Tentative dates for speakers as well as associated readings are:

> M 02/01 2-3pm
> Chris Rice — Director of Planning at WXY; Lead Project Manager for District 15 Diversity Plan
> Required References: WXY's District 15 Diversity Plan
> Recommended Reference: Chana Joffe-Walt's 'Nice White Parents' podcast.

> M 02/08 2-3pm
> Justin Garrett Moore — Executive Director, NYC Public Design Commission; Adjunct Associate Professor at Columbia GSAAP; Lecturer at YSoA ARCH 1022B
> Required Reference: TBD
> Recommended Reference: TBD

> M 02/15 2-3pm
> Marta Gutman, Professor at City College of New York; Author of A City for Children: Women, Architecture, and the Charitable Landscapes of Oakland,
> Required References: "Race, Space, and Modern Architecture in Harlem" and "Physical Spaces of Childhood"

> M 03/22 2-3pm
> Discussion with D15 community members. Format TBD
> Required Reference: TBD
> Recommended Reference: TBD

Course Objectives

As the fourth and final semester of the M.Arch 1 Core sequence, this studio expands on the fundamental architectural skills introduced in the previous three semesters to examine the role of architecture and the architect at the scale of the city. Extending beyond the bounds of a building, this course will examine a variety of forces — architectural, urban, social, economic, ecological, political and others — that shape and order our built environment, emphasizing and cultivating a set of architectural themes and skills that include:

Problem Making / Problem Solving

While typically architecture studios give students a specific site and program to address, an urban investigation provides the opportunity to research, define, and propose sites and programs that make a spatial impact.

Construction / Demolition / Maintenance

If in earlier core studios, emphasis is on the importance of how buildings are made, a problem at the urban scale also requires thinking about how buildings and cities are maintained and razed.

Scale vs. Size

An understanding of the relative and the absolute takes on a new dimension at the scale of the city where macro can manage micro, small can impact big and the design strategies deployed vary in degrees of influence.

Time and Anticipation

While the notion of time is critical to architecture, it is often underused as a design tool in studios. To study cities, however, is to also study time and the design of time — to anticipate possible futures.

Structure and Systems

The role of an architect involves not only understanding the physical structure and support systems of the building, itself, but their impact on the physical infrastructure (buildings, blocks, neighborhoods) and urban ecosystems (water, power, sanitation, climate, ecology, etc) of the city at large.

Audience and Pitch

While a building has its own audience, a city's audience is much broader and more complex. It requires the ability for a designer to define relevant user groups, understand the negotiations involved among them, and recognize the possibility for various groups to influence and possibly be influenced.

Representation

Representation at the scale of the city requires not only drawing and making but critical thinking about when, how, and if to draw, make, model, collage, diagram, film, photograph.

Resources / Workshops

Class-wide resources including background information on the District 15 plan, access to the bibliography, and CAD files will reside on Canvas. Your section critic may supplement this with resources specific to your section.

Each section has been an assigned an Instructional Teaching Fellow (ITF) to assist students under the direction of their section critic. Additionally, there will be 1-2 workshops studio-wide workshops throughout the semester outside of class time. While these are optional, they are recommended. More information on the workshops will be available as dates are finalized.

Schedule

Week 1	February 1	PART I. Chris Rice talk. Desk crits
	February 4	Desk crits
Week 2	February 8	Justin Garrett Moore talk. Desk crits
	February 11	Desk crits
Week 3	February 15	Marta Gutman talk. Desk crits
	February 18	Desk crits
Week 4	February 22	Desk crits
	February 25	Desk crits
Week 5	March 1	Desk crits
	March 4	Desk crits
Week 6	March 9/10	MID REVIEWS
Week 7	March 22	PART II. Guest speaker tbd. Desk crits
	March 25	Desk crits
Week 8	March 29	JGM visit - section A. Desk Crits
	April 1	Desk crits
Week 9	April 5	JGM visit - section B. Desk Crits
	April 8	Desk crits
Week 10	April 12	JGM visit - section C. Desk Crits
	April 15	Desk crits
Week 11	April 19	JGM visit - section D. Desk Crits
	April 22	Desk crits
Week 12	April 26	JGM visit - section E. Desk Crits
	April 29	Desk crits
Week 13	May 4/5	FINAL REVIEWS

Selected Bibliography and Resources

Note: Your section critic may supplement the list below with additional readings and references.

Education / Urbanism Related:

Erickson, Ansley T. and Andrew Highsmith. "The Neighborhood Unit: Schools, Segregation, and the Shaping of the Modern Metropolitan Landscape" in Teachers College Record Volume 120. New York, NY: Teachers College, Columbia University. 2018

Gutman, Marta. "Intermediate School 201: Race Space, and Modern Architecture in Harlem," in Educating Harlem: A Century of Schooling and Resistance in a Black Community edited by Ansley T. Erickson and Ernest Morrell. 183-209. New York, NY: Columbia University Press, 2019.

Gutman, Marta. "The Physical Spaces of Childhood," in The Routledge History of Childhood in the Western World edited by Paula S. Fass. 249-266. New York, NY: Routledge, 2013.

Perry, Clarence Arthur. "The Neighborhood Unit: A Scheme of Arrangement for the Family-Life Community," in Neighborhood and Community Planning: Regional Survey. Vol. 7. 22-140. New York, NY: Russell Sage Foundation, 1929.

Illich, Ivan. Deschooling Society. New York, NY: Harper & Row, 1972.

Velikov, Kathy. "Tuning up the City: Cedric Price's Detroit Think Grid," in the Journal of Architectural Education,.Vol. 69. Ann Arbor, MI: University of Michigan, 2015.

Ward, Colin and Anthony Fyson. Streetwork: The Exploding School. London: Routledge & Kegan Paul, 1973.

NYC / District 15 Related:

W X Y Studio. "D15: Diversity Plan," for the New York City Department of Education. 2018.

NYC Housing and Economic Development. Where We Live: NYC Plan. The City of New York. 2020

Perelman, Deb. "In the Covid-19 Economy, You Can Have a Kid or a Job. You Can't Have Both." New York Times, July 2, 2020.

Shapiro, Eliza. "12,000 More White Children Return to N.Y.C. Schools Than Black Children." New York Times, December 8, 2020.

Joffe-Walt, Chana. "Introducing Nice White Parents." New York Times, July 23, 2020.

Joffe-Walt, Chana. "The Reading List Behind Nice White Parents." New York Times, July 30, 2020.

Shapiro, Eliza. "N.Y.C. Schools May Close Again, a Grim Sign of a Global Dilemma." New York Times, November 12, 2020.

Bellafante, Ginia. "Schools Beat Earlier Plagues With Outdoor Classes. We Should, Too." New York Times, July 17, 2020.

Buttigieg, Pete. "The Key to Happiness Might Be as Simple as a Library or a Park." New York Times, September 14, 2018.

Wall, Patrick. "New York City's Great Middle School Divide". The Atlantic, July 17, 2016.

"Guide: Enrolling Your Child". WNYC:New York Public Radio. January 10, 2021. https://www.wnyc.org/schoolbook/guides/enrollment/

Hannah-Jones, Nikole. "Choosing a School for my Daughter in a Segregated City. New York Times Magazine, June 9, 2016.

NYC Maps / Data

Community Facilities Explorer-https://capitalplanning.nyc/facilities
POPS Map - https://capitalplanning.nyc.gov/pops
NYC Street Map - https://streets.planning.nyc.gov/about
Community District Profiles - https://communityprofiles.planning.nyc.gov/
Metro Region Explorer - https://metroexplorer.planning.nyc.gov/welcome/intro#7.38/40.857/-73.528
Population Fact Finder — https://popfactfinder.planning.nyc.gov/#12.25/40.724/-73.9868
Zoning Application Portal Search (ZAP Search): https://zap.planning.nyc.gov/projects
ZOLA - https://zola.planning.nyc.gov/about#9.72/40.7125/-73.733
Waterfront Access Map - https://waterfrontaccess.planning.nyc.gov
NYC Children Status Maps - https://data.cccnewyork.org/
NYC School Finder - https://www.schooldigger.com/go/NY/search.aspx

Syllabus: ARCH 2011 Structures I 2020

Faculty: Kyoung Sun Moon

Overview

An introduction to the analysis and design of building structural systems and the impact of the evolution of these systems on architectural form. Lectures and homework assignments will cover structural classifications, fundamental principles of mechanics, computational methods, and the behavior and case studies of truss, cable, arch, beams, columns, and simple framework systems. Homework, discussion sections, quizzes, and examinations are required.

This course serves as an introduction to:

- Structural Systems — taxonomies based on geometry, material, and behavior; evolution in relation to technical innovation, architectural style and building type

- Preliminary Design of Structural Systems — the most elusive phase of structural design; most often embedded within the domain of architectural design

- Statics — the theory governing the equilibrium of forces acting on structural systems

- Structural Mechanics — the theory describing relationships between deformations of structural materials, members, and systems and the forces that act upon them

- Structural Design Development — the application of statics, structural mechanics, and "service criteria" to the sizing and detailing of building structural members

Course Objectives

1. Understand structural classification, fundamental principles of mechanics, computational methods, and basic structural systems.
2. Explore the application of structural knowledge to the architectural design process.

Assessment Breakdown

Homework Problems	40%
Discussion Section Work	10%
Class Contribution	5%
Quizzes and Exams	45%

Class Organization

Assignments & Evaluation

Each student's final grade will be based on:

- 40% - Homework Problems — will typically be assigned on a weekly basis and collected on Thursday of the following week. Completion of these assignments will build quantitative analytical skill that will be needed to successfully complete midterm and final exams. Completion on time will be awarded maximum 10 points, thereafter; 2 points will be deducted for each day late. Missing three or more HWs will result in failure of the course.

- 10% - Discussion Section Assignments

- 5% - Class Contribution

- 45% - Quizzes, Midterm and Final Exams.

Bibliography

Daniel L. Schodek, Structures - Prentice-Hall, Upper Saddle River, NJ.

Schedule

Week 1	August 31	Introduction
	September 3	Structural Taxonomy
Week 2	September 7	Structural Taxonomy
	September 10	Structural Taxonomy (Extended Class)
Week 3	September 14	Safety and Serviceability
	September 17	Tension (Extended Class)
Week 4	September 21	Tension
	September 24	Compression. Case Study Presentation
Week 5	September 28	Equilibrium of Rigid Bodies
	October 1	Trusses. Case Study Presentation
Week 6	October 5	Trusses
	October 8	Trusses. Case Study Presentation
Week 7	October 12	No Class
	October 15	Trusses
Week 8	October 19	Beams
	October 22	Midterm Exam
Week 9	October 26	Beams
	October 29	Beams (Extended Class)
Week 10	November 2	Beams
	November 5	Continuous Beams. Structural Development of Design Studio Project
Week 11	November 9	Continuous Beams
	November 12	Columns. Structural Development of Design Studio Project
Week 12	November 16	Cables
	November 19	Cables. Structural Development of Design Studio Project
Week 13	November 30	Arches
	December 3	Arches. Conclusion
Week 14	TBD	Final Exam

Syllabus: ARCH 2012 Structures II 2021

Faculty: Erleen Hatfeld

Overview

This course is a continuation of introductory analysis and design of building structural systems. The course introduces materials and design methods of steel, reinforced concrete and timber. Structural behavior, ductility concepts, movement, and failure modes are emphasized. Geometric properties of structural shapes, resistances to stresses, serviceability, column analysis, stability, seismic, wind load, and lateral force resisting systems are presented.

Homework involves calculations, descriptive analysis, and the building and testing of structural models. Discussion sections will explore the application of structural theory to the design of steel, concrete and timber systems through calculation problems, laboratory and computational exercises and design projects. Homework, design project(s), quizzes, mid-term exam and final examinations are required.

Class Organization

Assignments & Evaluation

Each student's final grade will be based on:

- 25% Homework Problems — will typically be assigned on a weekly basis and collected on Wednesday of the following week. Completion of these assignments will build quantitative analytical skill that will be needed to successfully midterm, and final exams. Completion on time will be awarded 10 points, thereafter; 2 points will be deducted for each day late.

- 10% Labs and Presentations

- 20% Quizzes (5% each - 4 total)

- 5% Class Contribution — Participation in class, in discussion section activities and assistance provided to other students in completing homework assignments, discussion section exercises, and projects is valued in 2021. Your videos must be on during Zoom classes.

- 40% Midterm and Final Exams (20%, each)

Problems of structural analysis and design are often methodologically complex and intellectually challenging. Consequently, there is much to be gained by working in groups on homework assignments — students are not only encouraged to do so but will be rewarded for clearly doing so. The liability of working in a group is obvious, be careful to take full advantage of active participation in these groups and avoid a passive dependency on them that will leave you vulnerable to the midterm and final exams.

Bibliography

Daniel L. Schodek, Structures - Prentice-Hall, Upper Saddle River, NJ.

Allen, E. and J. Iano, The Architect's Studio Companion: Technical Guidelines for Preliminary Design. 3rd Edition, New York: John Wiley & Sons.

Schueller, W., The Vertical Building Structure. 1990, New York: Van Nostrand Reinhold.

Schueller, W., Horizontal-Span Building Structures. New York: John Wiley & Sons.

Course Objectives

1. Understand structural analysis and design specific to steel, reinforced concrete, and timber.
2. Further expand research into structural behavior, ductility, movement, modes of failure, and stress resistance.

Assessment Breakdown

Homework Problems	25%
Labs and Presentations	10%
Class Contribution	5%
Exams	40%
Quizzes	20%

Schedule

Week 1	January 27	Introduction. Chapter 1
	January 29	Loads, Equilibrium, Stress. Chapter 2
Week 2	February 1	Loads and Vectors. Chapter 3
	February 3	Stress, Trusses, and Beams. Chapter 4. PS 1
	February 5	Beams and Columns. Chapter 6
Week 3	February 8	Columns, Arches, Cables. Chapter 7. PS 1 Due
	February 10	Quiz 1
	February 12	Review Quiz 1. Arches. Chapter 5
Week 4	February 15	Cables and Arches
	February 17	Steel 1. Chapter 15. PS 2
	February 19	Lab #1
Week 5	February 22	No Class
	February 24	Lab #1. Steel 2. PS 3
	February 26	Wood 1. Chapter 15. PS 2 Due
Week 6	March 1	TBD
	March 3	Wood 2. Appendix 14. PS 3 due. PS 4 (due 3/10)
	March 5	Quiz 2
Week 7	March 22	Midterm Exam
	March 24	Concrete 1. Chapter 15. PS 5
	March 26	Concrete 2. Appendix 12
Week 8	March 29	TBD
	March 31	Virtual Site Tour. Chapter 15. PS 5 due. PS 6
	April 2	Lateral Systems. Chapter 14
Week 9	April 5	TBD
	April 7	Walls/Masonry. PS 6 due. PS 7
	April 9	Quiz 3
Week 10	April 12	TBD
	April 14	Optimizing Structures. PS 7 due
	April 16	Lab 2
Week 11	April 19	Lab 2
	April 21	Sustainable Structures. PS 8

	April 23	Quiz 4
Week 12	April 26	TBD
	April 28	The Structural Engineer's Perspective. PS 8
	April 30	The Complete Building
Week 13	May 10	Final Exam

Syllabus: ARCH 2016b Building Project 2021

Faculty: Martha Foss, Adam Hopfner, Alex Kruhly, Beka Sturges

Overview

This semester marks the 54th consecutive year in which first-year Yale Master of Architecture students have embarked on a Building Project. It is a program born from student unrest in the fervor of the 60's to discard the notion of learning as passive reception of information and to demand an active engagement in addressing societal needs through the manifestation of design conceptualization through a physical construct.

The Building Project is compulsory simply because the learning experience is deemed foundational to the education of the architect at Yale. As architecture is an inherently collaborative endeavor, all 54 of you are divided into teams, re-formed into new teams, and teach and learn from one another. Once a scheme is selected, all of you will work to refine and develop the chosen design, and then engage in a summer of construction.

To begin the design process, the class engages with a real client: a progressive nonprofit organization that provides both immediate shelter and long term social services and housing services to those at risk of homelessness. A client with real needs is a partner, encouraging and challenging students; an inspiration, and at times a productive friction. The ultimate product of this collaboration is a two unit dwelling.

We work within our city of New Haven, a culturally and ethnically rich, yet economically impoverished citizenry of 130,000, where one fourth of the population lives below the poverty line. The need here is palpable. That need urges us to climb down the ivory tower and engage in the community, where an architecture of service liberates the mind from the trappings of solipsism. To that end, we ask that you become leaders in gathering insights from the population with whom we are working. We will learn of the vulnerabilities, and more importantly, the aspirations of those who have experienced homelessness.

Architecture is often thought of as the mediation of external and internal pressures; the internal program negotiates with the external site. In fact, we begin this very way, looking directly at PERSON and PLACE. BUT the very nature of realizing the design compels an expansion of the scope of those pressures. Now in play are physical realities such as gravity, wind, rain and snow. Soil bearing capacity and vapor migration are no longer theoretical. The tedious, dry practical is in fact consequential and detailing becomes profound.

Likewise, economics pressurize decisions, as the introduction of tight budgetary constraints force us to distill what is critical to the execution of design intent. As Ben Franklin reminds us that time is money, schedule becomes a tangible constraint, whereby we are saddled with developing not just the product, but the process through which the product is produced.

Shelter is of course biologically, psychologically, essential to the human condition; habitation is fundamental. A dwelling is intimate enough to allow you to engage in architecture at the scale of the body. A two unit dwelling provides a tension, a productive rub in the program by introducing multiple users. Logistically, it is achievable (barely) within the constraints of the summer. Technically, we hold that an understanding of thermal envelope is nascent to architectural ideation. Conceptually, this negotiation of inside and outside, this claiming of space and making of place, is elemental; it is familiar to all, and it is, or can be, poetic in its necessity.

Course Objectives

1. Experience architecture as an active engagement in addressing societal needs through a physical construct through analysis, conceptualization, testing, and synthesis.
2. Reconcile the conceptual requirements of dwelling with the real-world constraints of people, place, structure, envelope, schedule, and economics.

Assessment Breakdown

Contribution to Project A	10%
Contribution to Project B	20%
Contribution to Project C	30%
Contribution to Project D	30%
Contribution to Documentation	10%

The Task

WHO: Columbus House, a New Haven non-profit provider of emergency shelter, housing and social services

WHAT: A single building, consisting of two one bedroom units, at least one of which is accessible

WHERE: On a "flag lot" at 484 Dixwell Avenue in the Newhallville neighborhood of New Haven

WHEN: To be built by us between May 1 and August 30

WHY: Because there is need

HOW: With collaboration and will

Class Organization

A. ANALYZE (2.5 weeks) (2 teams of 27)

PLACE: We begin the course with a visit to the site on which we will build, in order to fundamentally root the project in the physical realm. We will look at the immediate physical conditions; the neighborhood context; and the urban transect from the hills of Prospect to the swamps of Beaver Pond. We will document the climatic conditions, the soils, the vegetation; the geology, the hydrology and the topography. We will examine the utilities infrastructure, the amenities and adjacencies. And we will evaluate the regulatory zoning requirements of setbacks, parking et al. We will also study the political, economic and cultural history of the area of Newhallville.

PERSON: If we try to understand habitation and homelessness through a temporal lens, we can begin to perceive dwelling as a place of refuge and prospect: refuge from vulnerabilities of the past; and prospect towards the aspiration of the future. How do we understand and document human needs to control, store, eat, cook, bathe, sleep, rest, belong and socialize as perceived by those who have experienced homelessness? We will seek to listen to the personal stories of individuals. We will attempt to contextualize the personal and the local plight of homelessness within the national crisis; and we will research the historical trends, causes and solutions.

B. CONCEPTUALIZE (3.5 weeks) (8 teams of 7)

The class will be re-configured into eight teams of seven, and work with two faculty members and one TF to generate a design proposal that synthesizes the "person" with the "place". The designs will seek to address the trauma of past experiences of homelessness through a choreography of the diurnal, seasonal, and annual ritual of habitation, in order to provide a place both of refuge and prospect. Beginning with an exercise about threshold, the teams will develop site transitions, building transitions and programmatic transitions to formulate enclosure strategies. Ultimately, architectural plans, sections and models will be produced at the scale of the site, the building and the body.

C. TEST (3 weeks) (6 teams of 9)

The class will again be re-organized in order to cultivate the selected scheme through iterative design processes. There will be seven teams: Coordination, Site, Structure, Systems, Envelope, Interiors, and Assembly. Each team will elaborate components of the design to a technically, materially, economically feasible resolution, but not in a vacuum. The constituent parts of the design will always need to integrate with other teams in order to manifest a coherent unified, pervasive whole. Physical mock-ups will be assembled in order to assess the design resolutions and fuse the disparate elements.

D. SYNTHESIZE (2 weeks) (6 teams of 9)

The last two weeks of the course will allow for the various teams to utilize lessons learned from the mock ups to refine a set of drawings that will be used by the class in order to construct the building on the site. A series of "shop drawings" will be generated for each of the phases of construction. Likewise, a permit set will be produced in order to submit to the City of New Haven for approval from various regulatory agencies, including building, zoning, engineering, utilities, and parking.

Schedule

Week 1	January 15	ANALYZE. Virtual Visit Building Site & Columbus House; Round Table Discussion
Week 2	January 19	Student proposals. Beckett reading due
	January 22	Desk crits
Week 3	January 26	Desk crits
	January 29	Review. ANALYSIS shared
Week 4	February 2	CONCEPTUALIZE team formation
	February 5	CONCEPTUALIZE team formation
Week 5	February 9	Desk crits
	February 12	Desk crits
Week 6	February 16	Desk crits
	February 19	Desk crits
Week 7	February 23	Review, CONCEPT chosen
	February 26	TEST team formation. Lecture: ground
Week 8	March 2	Desk crits. Lecture: ritual
	March 5	Desk crits. Lecture: envelope
Week 9	March 23	Large scale detailing. Lecture: structure
	March 26	Desk crits
Week 10	March 30	Review
	April 2	SYNTHESIZE
Week 11	April 6	Desk crits
	April 9	Desk crits
Week 12	April 13	Submission. Drawing set due

Required Readings

Beckett, Samuel, The End, Penguin Random House, 1946.
Lafer, Gordon, Land and Labor in the Post Industrial University Town: Re-making Social Geography,
    Political Geography 22, 89-117, 2003.

Resources

Allen, Edward & Iano, Joseph, Fundamentals of Building Construction: Materials & Methods 5th Edition,
    John Wiley & Sons, New Jersey, 2009.
Bachelard, Gaston, The Poetics of Space, Orion Press, New York, 1964.
Bloomer, Kent & Moore, Charles, Body, Memory, and Architecture, Yale University Press, New Haven,
    1977.
Deplazes, Andrea, ed., Constructing Architecture: Materials Processes Structures, A Handbook,
    Birkhauser, Basel, (2005), 2009.
Frampton, Kenneth, Studies in Tectonic Culture: The Poetics of Construction in 19th and 20th Century
    Architecture, MIT Press, Cambridge, MA, 1995.
Kieran, Steven, and Timberlake, James. Refabricating Architecture, New York, McGraw Hill, 2004.
Padgett, Deborah, et al. Housing First: Ending Homelessness, Transforming Systems, and Changing Lives.
    Oxford University Press, 2016.
Schittich, Chrisitian, ed., Building Simply, Birkhäuser Edition Detail, Basel/Munich, 2005.
Tilley, Alvin R with Henry Dreyfuss Associates, The Measure of Man and Woman: Human Factors in
    Design. New York: Wiley, 2001.
Watts, Andrew. Modern Construction Envelopes (Modern Construction Series), Ambra, Vienna, 2014.
Zoning Ordinance, City Of New Haven, Connecticut http://library.municode.com/index.
    aspx?clientId=19969
https://www.nytimes.com/interactive/2019/12/22/us/los-angeles-homeless-black-residents.html
https://endhomelessness.org/
https://www.nationalhomeless.org/
https://nhchc.org/
http://www.understandhomelessness.com/
https://censusreporter.org/profiles/14000US09009141500-census-tract-1415-new-haven-ct/

Syllabus: ARCH 2017 Building Project II 2021

Faculty: Adam Hopfner, Alex Kruhly

Overview

This course examines the materialization of a building, whereby students are required to physically participate in the construction of a structure that they have designed. By engaging in the act of making, students are exposed to the material, procedural, and technical demands that shape architecture. Construction documents generated during the Spring Building Project I course are now put to the test in the field.

Students engage in collaboration with each other, and with a client, as they reconcile budgetary, scheduling, and labor constraints, and negotiate myriad regulatory, political, and community agencies. The course seeks to demonstrate the multiplicity of forces that come to influence the execution of an architectural intention, all the while fostering an architecture of social responsibility, providing structures for an underserved and marginalized segment of the community.

Class Organization

The class will be divided into four teams, each working 15 hours a week on the construction site, as follows:

Team A	Monday: 7 am — 5 pm
	Tuesday: 7 am — noon
Team B	Tuesday: 1 pm — 5pm
	Wednesday: 7 am — 5 pm
Team C	Thursday: 7 am — 5 pm
	Friday: 7 am — noon
Team D	Friday: 1 pm — 5 pm
	Saturday: 7 am — 5 pm

Course Objectives

1. Continue lines of inquiry started in Building Project I through the further development and construction of the dwelling designed in the spring.

Assessment Breakdown

Contribution to Project Development	100%

Attendance, Participation and Grading

Attendance is mandatory. All students are expected to be attentive on site for the entirety of their work shifts. However, no student is expected or allowed to perform any task that makes them uneasy or uncomfortable. Safety is necessary in order to learn, and is always the primary concern on the jobsite. All absences require prior permission of the faculty. Two unexcused absences are grounds for failure. Grading is based on a Pass / Low Pass / Fail system and is coordinated amongst all Building Project Faculty.

July-August Internship

Students are encouraged to apply to the Summer internship, a paid position available to a dozen students for eight weeks in July and August to work to complete the house for occupation in the Fall.

Schedule

Week 1	Safety seminar, Excavation, footings formed and poured
Week 2	Foundation formed and poured
Week 3	First floor framing and sheathing, backfill
Week 4	Second floor framing and sheathing
Week 5	Roof framing and sheathing
Week 6	Windows, doors Installed
Week 7	Roof cladding, offsite millwork fabrication
Week 8	Wall Cladding, offsite stair and rail fabrication

Syllabus: ARCH 2021a Environmental Design 2021

Faculty: Anna Dyson, Naomi Keena

Overview

This lecture and workshop course will open up criteria and definitions of design and beauty that have both historically driven the development of the built environment from its inceptions, but have also emanated from outside of codified architectural cannons. We will examine the fundamental scientific principles underpinning the thermal, luminous and acoustic behavior of of environments and introduce students to the potential to sculpt and shape these behaviors through architectural design. We will 'diagnose' the history and development of existing technologies for creating and controlling interior environments. Most importantly, we will probe the ways in which architects can regain the agency that we had prior to the late modern era, to once again be protagonists in the design and development of architectural 'technique' and technologies.

The first half of the semester begins with some history and theory on how we arrived at the present condition. We will intersperse this theory with an overview of the Laws of Thermodynamics and the principles of Life Cycle systems thinking, during which the course will investigate the application of these principles in the determination of building systems behaviors. We will then explore the relevant material properties and design variables, including climate, for controlling that behavior. We will continue with an introduction to the laws of physics for optics, with an examination of the application of these principles in the creation of visual environmental conditions of a building.

We will give an introduction into the most prevalent material properties and design variables for sculpting and shaping these environmental conditions in detail, and students will work with studio faculty to explore daylighting design in greater detail through the studio projects. Following the daylighting exercise we will examine the fluid dynamic properties of air flow in order to evaluate the passive and active potentials of the studio projects to move with natural energetic rhythms.

In order to prepare for the design and integration of active architectural systems, we will conduct a comprehensive review of the basic principles of energy generation and energy use will be provided, and in workshop formats, students will be exposed to the underlying complexities and scales of developing solutions that address a wide range of local and global concerns regarding sustainability. The basic characteristics of Heating, Ventilation, and Air Conditioning (HVAC) systems and electric lighting systems will be discussed and students will also be introduced to several potential revolutionary future approaches within emerging technological paradigms that will have increasing influence on architectural design in the 21st century.

The time commitment of the students will include attendance at a lecture per week and participation in weekly workshops and computational labs. Individual assignments will be coordinated in daylighting, thermal, acoustical and air flow analysis with the studio projects.

A final poster assignment will be scheduled during exam week in December.

Course Objectives

1. Establish an understanding of fundamental building science principles, including thermal, light, and acoustic behaviors within the built environment.
2. Examine the historical and theoretical context behind the development and use of the building science principles commonly used today.
3. Explore methods of environmental analysis and design through a series of assignments and tutorials along with a final project to be developed in conjunction with the design studio.

Assessment Breakdown

Quizzes	20%
Assignments	20%
Midterm Exam	20%
Class Participation	15%
Final Poster	25%

The development of materials and environmental control systems over the course of the industrial era yielded unprecedented opportunities for the creation of "artificial weather" in building interiors. As we have come to spend over 90% of our time inside these environments, scientists have shown how they are literally shaping our biology, from the structure of our brains to our gut microbiome that affects everything from our moods to our genetics and cognitive outcomes. The symbiotic relationship that we have with our environments will be a major topic that we explore, at the very moment in history when we have a fundamental societal imperative to completely rethink the relationship that the built 'interior' environments have with the rest of the non-human living world. The built environment currently contributes more than any other sector to climate change effects, non-renewable material consumption and toxicity. Yet, astonishingly, it has actually decreased in both productivity and environmental performance. Time and again, we read serious peer reviewed studies from the Department of energy and others showing that so many of the incentives, such as LEED and other programs are not contributing to an appreciable reduction of deleterious environmental effects from the building sector, and that fossil fuel consumption, among other metrics continues to increase.

Furthermore, throughout the twentieth century, substantial advances in the fundamental theories underlying heat transfer and fluid mechanics have revolutionized many fields and industries, but have had little impact on building environmental systems, most of which are still predicated on a pre-modern understanding of energy phenomena. Furthermore, the twentieth century building, with its low inertia pre- manufactured components and synthetic finishes, coupled with a dramatic increase in point thermal loads due to lighting and electronic equipment, no longer can be adequately served by environmental technologies developed for nineteenth century buildings. Evidence of this mismatching is demonstrated through the rapidly escalating problems in indoor air quality, as attempts to minimize energy use in buildings to reduce the global environmental impact have resulted in a degraded human environment. What is and should be the architect's role in determining how a building mitigates with multiple scales of environmental phenomena?

As architects, we have a profound impact on the occupants' sensory experiences, and consequently their feelings of connectedness and long term health and well-being outcomes. Nevertheless, environmental controls design, through light, sound, thermal systems, has been considered part of the realm of engineers, interior designers, and in the case of acoustic design it has been even more specialized, and has routinely been practiced by consultant/physicists. We will explore the possibilities of using simulation tools, and we will also look at the latest developments in the technologies as well as the new models for understanding human vision and sound, so we can begin to bring these fields into our own design approaches.

Rather than looking at solutions, this course focuses on problem definitions. What are the fundamental behaviors and laws, and how can we casually develop our own approaches based on an understanding of the relevant properties and variables? How do we sort through the ever-expanding array of policies, performance data, system types and strategies to cogently determine the appropriate response? The underlying premise of this course is that a student well versed in the knowledge of building "science" and of basic physical laws and principles will have the necessary background and foundation to develop his/her own architectural strategies, rather than depending upon an arbitrary set of best practices that may not be applicable to the problem at hand.

Class Organization

The goal of Environmental Design is to build an overview understanding of the fundamentals of building physics so that the principals can be creatively applied in design studio towards the innovation of next generation building systems. The coursework will include basic theory and its application to built projects. The four main topics covered under this course are heat, light, human comfort and material resources. Students conceive basic fundamentals in order to synthesize and apply them on building systems concepts at various scales within studio. The application of fundamentals and class assignments is co-coordinated with the design studio to initiate an interdisciplinary learning environment and assess understanding. Through this course, the student is expected to reflect upon and demonstrate their knowledge and experience of the material within their studio designs.

In addition, several studio exercises in analytical 'modeling' of environmental performance parameters will run parallel to the required readings topics, so that a practical testing of the fundamental principals will provide feedback from within the studio projects. It is expected that students will critically assimilate and apply the principles and theories from the readings and lectures in their design thinking. If the principal goal of the studio projects is the critical synthesis and application of theory and technique in the design process, then the readings and exercises within this course will provide experimental parameters for testing the hypotheses for environmental performance contained within the studio projects in several key environmental areas including thermal, human comfort, lighting and material life cycle analysis.

This course has three major components: formal lectures, coordinated studio workshops, and studio project daylighting and air flow analyses.

- principles
- generalization of principles through simplified problems
- derivation of strategies by applying first principles to controlled (single variable) environments application of strategies to specific problems
- analysis of empirical (multi-variate) environments (case studies)
- As should be evident, no one aspect of the course can be comprehensive as a subject, rather the entire complement is intended to be representative of a comprehensive method.

Grading:

The course grade will be determined as follows:

20% - Quizzes
20% - Assignments
20% - Midterm Exam
15% - Class participation
25% - Studio Project Exercise - Final Poster Assignment

All students are expected to demonstrate a high degree of proficiency in their work. In addition to specific course requirements, students successfully completing this course must be able to do the following:

1. Demonstrate your understanding of the intent of each assignment or quiz as architectural design or analysis inquiry, using techniques from the course that lead to intermediate and cumulative design development results.
2. Develop the use of design alternatives, when applicable, in order to arrive at a design solution, as a critical skill of flexible design thinking especially in schematic and design development of a building system solution.
3. Communicate your knowledge within quizzes and exercises with design intent and solutions in a clear written, graphic, and verbal manner.
4. Complete your design and analysis investigation demonstrating proficiency in technical, environmental, and socio-cultural issues discussed.
5. Attendance: Missing more than two class meetings during the semester will result in failure. The class meetings include lectures, workshops, and computational labs.

Schedule

Week 1	**Course Introduction**

August 31   **Introduce first drawing assignment —**
- site visits — choose 1 site and study building from:
- Kroon Hall,
- Ezra Stiles College
- Rudolph Hall
- bioclimatic investigations — global geometries, context and site placement, orientation, solar, water, air flow, incorporation of non-human living systems

Reading Assignment:
Lechner, Heating, Lighting and Cooling, Ch 5 Climate and Ch. 10 Passive Cooling

Lecture I: MULTISCALAR PRINCIPLES I

Fundamental Multiscalar Concepts in the interaction between Energy, Materials, Air Flow, Water and Materials

With this introduction, we will delve into some fundamental concepts regarding the accumulated historical methods that we have deployed to shape material and energy flows in our built environment. In particular, we will focus on the transition from 'throughput material economies' to concepts for 'circular material economies across scales.

September 4   **Lecture II: MULTISCALAR PRINCIPLES II**

Air Flow Dynamics — Multi-scalar Determinants of Air Quality and Shaping From Global to Local

In the context of a global pandemic that has highlighted the complex relationship between human health and our current methods for shaping air flow through buildings and cities, we will focus with this lecture and discussion section on the social and biophysical components that determine the quality of our air streams, how we have historically shaped those streams through architecture and urbanism, and we will ultimately take a look at some emerging methods for radically reimagining the design of air flow through building envelopes and urban districts.

Week 2	**Workshop/Lab #2**

September 14   **Quiz:** Physics of Energy I (based on Lechner Ch 3. Basic principles Section 3.1 - 3.11)

Workshop: Physics of Energy - Considering and analyzing the energy flows in your chosen study building with a focus on building envelope (show heat transfer)

Reading Assignment:
Stahel, W. R. (2016). The circular economy. Nature, 531 (7595), 435-438; Odum, H. T. (2002). Material circulation, energy hierarchy, and building construction. Construction ecology: nature as the basis for green buildings, (Read Ch 2, pages 37-46).

September 18 **Lecture IV: CIRCULAR DESIGN**

Material Lifecycles and Socio-Ecological Analysis

One primary theme of this lecture is broadening the space and time upon which we consider architectural design, thereby understanding both the work of the techno-sphere in constructing our urban environments and that of the geo- biosphere in sustaining such development. It will introduce ecosystems design thinking (influenced by ecological methodologies) and a taking life cycle approach towards reversing the effects of climate change in the design of our urban environments. Through the lens of ecosystem design thinking, it will focus on a building, not in abstraction fixed solely in the operational phase, but rather as a circular system which undergoes multiple journeys of energy and material transformation in its initial construction and future dismantle.

Week 3 **Workshop/Lab #3**

September 21 **Quiz:** Physics of Energy II (based on Lechner Ch 3. Basic principles Section 3.12 - 3.24)

Workshop: Energy system diagrams and material considerations of design project and site

Computation Lab: Introduction to Ladybug for importing and analyzing standard weather data and generating environmental visualizations (e.g. sunpath, windrose) . [Assignment due Sept 28]

Reading Assignment: Lechner, Heating, Lighting and Cooling, Ch. 6 Solar Geometry and Ch. 7 Passive Solar

September 25 **Lecture V: SUN**

Solar Geometries I

This lecture will focus on how dynamic solar trajectories interface with atmospheric weather conditions alongside building and material morphologies to have the greatest impact on environmental performance of both individual buildings and urban districts.

Guest Presentation: Kroon Hall, Hopkins Partnership/Centerbrook
Yale School of Environment

Week 4 **Workshop/Lab #4**

September 28 **Quiz:** Passive Solar

Workshop: Solar Geometries and Daylighting - considering daylighting studies of your chosen study building

Computation Lab: Simulating passive solar and shading systems on studio site and studio project design [Assignment due Oct 5]

Reading Assignment: Lechner, Heating, Lighting and Cooling, Ch. 13 Daylighting

October 2   **Lecture VI: SUN II**

Solar Geometries II and Daylighting

This lecture will focus on the shaping of solar energy towards daylighting conditions and active energy collection parameters.

Guest Presentation: Ezra Stiles College

Week 5   **Workshop/Lab #5 Quiz: Solar and Wind**

October 5   **Workshop:** Air flow dynamics and passive cooling - developing air flow studies of your chosen study building

Computation Lab: Revision of Sunpath and Windrose diagrams with Ladybug

Reading Assignment: Lechner, Heating, Lighting and Cooling, Ch 4 Thermal Comfort

October 9   **Lecture VII: Air Flow II**

This lecture will focus on the relationship between active and passive techniques for controlling air flow and delivering health air streams to occupants.

Guest Presentation: Rudolph Hall, Paul Rudolph

Week 6   **Workshop/Lab #6**

October 12   **Quiz:** Thermal Comfort and Psychrometrics

Workshop: Revision of topics prior to Mid Term Exam

October 16   **Lecture VIII: Psychrometrics/Thermal Comfort**

With this lecture and discussion, we will investigate the 'condition of mind that expresses satisfaction with the thermal environment'. According to our existing regulatory bodies such as ASHRAE and ANSI, this is still considered and assessed as a subjective evaluation. We will review the emerging evidence for the major physiological and psychological impacts of thermal comfort.

Week 7   **MIDTERM EXAM**

October 19

October 23   **Lecture IX: Legacy of Modernity and Contemporary Practice**

With this overview lecture, we will question the prevailing historical narratives of Modernity and Modernism with respect to environmental aspirations and design criteria.

Guest Presentation: Beinecke Rare Book Library, Gordon Bundshaft, Skidmore Owings and Merrill

Week 8	**Workshop/Lab** #7
October 26	**Workshop:** Review of topics covered in Mid-term. Introduction to final poster assignment and the concept of Ecosystem of Systems towards synthetic drawings.
	Workshop will involve online 'Desk Crits' to discuss concepts for the Final Poster Assignment
October 30	**Lecture X: LIFE**
	Living Systems I
	With this lecture and discussion, we will challenge conventions within the Built Environment Process which has accumulated thousands of years of entrenched practices that seek to purposely exclude life processes from urban and architectural construction. We will consider "Built Ecologies" as an intentional oxymoron from the standpoint of current architectural practice, as we investigate emerging philosophical models that diverge from the historically anthropocentric Built Environment Process (BEP), in order to foreground the requirements of interdependent living ecosystems in our design criteria and analytical models.
Week 9	**Workshop/Lab** #8
November 1	**Workshop:** Air Flow Dynamics - create air flow analysis drawings in plan and section of your studio project
	Workshop will involve online 'Desk Crits' for Review of Final Poster Assignment
November 6	**Lecture: LIFE**
	Living Systems II
	With this lecture and discussion section, we will delve further into the intersection between enormously constrained built systems and endlessly dynamic living systems, towards developing design criteria in parallel.
	Guest Presentation: PSAC II, SOM
Week 10	**Workshop/Lab** #9:
November 9	**Workshop:** Living Systems Workshop
November 13	**Lecture: INTERFACE**
	Dynamic Building Envelopes: Transitioning from Barriers to Transformations
	In this lecture and discussion section we will question the conventional approach to building envelopes as barriers and review a range of emerging technologies that seek to transform and conflate the dynamic between energy and information flows.
	Ecological Living Modules / Socio-Ecological Visual Analytics

Week 11	**Workshop/Lab #10:**
November 16	**Workshop:** - Ecosystems of Systems with focus on Poster Assignment - Living systems and indoor air quality analysis / How to simulate shading effects of plants on a building Workshop will involve online 'Desk Crits' for Review of Final Poster Assignment - how are you showing Ecosystems of Systems in your poster design
November 20	**Lecture: WATER** An introduction to historic and contemporary water management in buildings will lead into a discussion of water's treatment within architecture and building systems. We will review how principles of vapor and moisture transport have influenced the design of building enclosures as barrier systems, the relationship between humidity and air-conditioning, and the dominance of centralized water supply and wastewater management shaping human engagement with water.
Week 12	**Online 'Desk Crits' for review of Final Poster Assignment**
November 30	
December 4	**Lecture: WATER II** Integrated Hydronic Systems Following on from the introduction to water in buildings, this presentation will delve deeper into integrated ecosystemic approaches to the shaping of water flows in buildings. Precedents of emerging research and novel applications will be evaluated according to heterogenous design criteria which places goals for system performance and efficiency on equal footing with human health, social value and aesthetic adoption.
Week 13	**Final Poster due Dec 16 submission via Canvas**
December 16	

Syllabus: ARCH 2022 Systems Integration 2021

Faculty: Martin Finio

Overview

Advancing the design of a building beyond the schematic organizations typically achieved in a second-year design studio requires an understanding and synthesis of many technical systems. The nature and character of these technologies emerges from an architect's particular design strategy, analysis, experience and insight, and should play a powerful role in defining and transforming the evolution of a design. The focus of this course will be to explore the methods used to incorporate and coordinate the systems that ultimately transform ideas into built form. The development of structural form and detail, the articulation of construction and construction methods, the compliance with life safety measures and the control of sound, light, and air will all be approached systematically and technically, as intrinsic components of the design process.

This technical rigor does not mean that a design should necessarily express a technological image (although this may be an intention). Technology is not necessarily an end in itself. Architectural intent, and the ability to articulate it, should ultimately determine technological choices.

Architects rely heavily on the expertise of those trained in such fields as structural, mechanical, or electrical engineering to propose plausible systems of structure, climate, and infrastructure. But ultimately it is the architect who must coordinate, adjust, modify, advance or abandon propositions in the interest of resolving the architectural problem into an efficient, well performing,and intelligible whole. It falls on the architect to communicate this synthesis in the form of documents that represent a thorough and comprehensive understanding of every surface, system, and their interrelatedness.

Course Objectives

1. Explore the inherent relationships between architectural design and related fields within the building industry through the development of a project, implementing principles of structure, environmental controls, building envelope, building code, and accessibility.
2. Establish experience with developing construction drawings, working on project teams, and software-based working methods.

Assessment Breakdown

Collaboration	15%
Design development	30%
Technical resolution	30%
Participation	15%

Class Organization

Systems Integration will meet on Fridays. The first part of the day (11:30-1:00) will be devoted to a technical lecture series and/or Revit workshops. Attendance to all lectures and workshops is a requirement for passing this course.

The second part of the day (2:00-5:00) will take the form of a group meeting with your instructors, where student teams are matched with a team of faculty "consultants," composed of an architect, a structural engineer, and a mechanical engineer. You will meet with this assigned team on a weekly basis to review progress and to plot the course of your work. These critics will also give assignments intended to provide a structure within which to pace the development of your project. Fridays afternoons will also include mandatory Revit workshops/troubleshooting sessions with your TFs and the Revit coordinator.

Working in teams, students will identify and integrate the appropriate technologies required to implement an architectural scheme developed by one of your classmates in the previous semester's design studio. Students will then propose and develop, as fully as possible, appropriate systems related to structure, enclosure, climate and light. The investigation and development of each will be based on these systems' technological roles within the building as a whole, and on their suitability relative to larger issues of architectural intent. These advances should ultimately serve to both reinforce and to re-inform the formal origins of each work.

Building technology is continually evolving, and many (but not all) materials and methods that were once widely accepted are now anachronistic. By the same token, future possibilities in technology are not yet available, so your design cannot presume that a technology will be invented in order to support a presently untenable solution. This is not to say that reviving lost crafts or that technical inventions are not valid in certain instances - only that neither is part of the pedagogical method of this course. Innovation within existing technical means, however, is strongly encouraged.

Building Structure

Each proposal's structural system will be presumed to be a skeleton frame of either reinforced concrete, steel, or timber. Shear walls, wind trusses, diagonal bracing, moment frames or a combination thereof can provide wind resistance. Presumed loads are as follows:

Gravity Loads:
Typical Floor Live Load: 125 psf
Roof Snow Load: 30 psf
Wind Load: 30 psf

Environmental Control Systems

It is presumed for this course that all heating and cooling will be augmented on site with gas and/or electric input. These media are available as the basis for the development of your environmental control system. They can be used to temper the air that is distributed through the building via fans and ductwork, or as part of a radiant or other environmental system.

An important aspect of the project's development will be the integration of the mechanical design and distribution system with the building's structure and envelope.

Each project is to be mechanically heated and cooled. Any number of supplemental technologies may augment this system, but cannot be considered as the prime means of conditioning the building. Only systems appropriate for the weather conditions of your site will be considered.

Building Envelope

The building envelope may develop as a curtain wall, rain screen, bearing wall, frame and infill system, etc. Materials may include, but are not limited to aluminum, steel, pre-cast concrete, concrete or brick masonry units, stone, stainless steel, wood and glass.

The exterior wall, as the mediator between the external and internal environments, should be designed with great consideration given to issues of energy conservation. Active and passive solar control devices, specialty glass products, double-facades, or integrated technologies such as photo-voltaics, etc. may be considered to meet the requirements of an energy efficient envelope. Concepts in which the facade operates interactively with environmental systems are encouraged.

Code Requirements

Your building is to conform with requirements of the 2018 International Building Code (IBC) unless modified herein.

Students are responsible for determining the following:
Occupancy Classification
Construction Type
Sprinkler status (non, partially, fully)

Partitions enclosing all vertical shafts, exit stairways, elevator shafts and elevator machine rooms shall maintain a fire rating of 2 hrs when connecting 4 stories or more; 1 hour when connecting 3 stories or less.

Exit access corridors (corridors within the building allowing access to fire stairs) shall be enclosed with partitions having a fire rating of one hour, unless these exit access corridors are fully sprinklered, which allows a 0 fire rating, provided these corridors have smoke walls (this allows for glass walls). The minimum width of an exit corridor shall be 44 in.

One fire stair may discharge into a lobby at the Ground Floor Level: the other fire stair must discharge directly to the exterior or into a 2 hour rated horizontal egress passageway leading directly to the exterior. If a required means of egress discharges into a lobby, the lobby must be able to be separated from the rest of the building, creating a rated passage to the exterior. This can be accomplished by any of several methods, such as fire shutters (as in the British Museum), fire doors with magnetic hold opens, fire-rated accordion doors, water curtains, etc. At least one fire stair must discharge on the roof.

Maximum travel distance to an exit is 200 feet. 250 feet in a sprinklered building. Dead end corridors in excess of 20 ft. are not permitted. 50 ft. in a sprinklered building.

Exterior walls do not have to be fire rated, except where necessary to maintain fire separation between floors and at vertical shaft locations

Exterior walls must maintain a fire rating of 1 hour at spandrel locations in order to prevent fire spread from floor to floor. There are different ways to satisfy this requirement. Most codes prescribe a minimum three-foot high spandrel at the floor line with a 1-hour fire rating to prevent inter-story fire spread. An alternative to this would be a 1-hour fire rated projection from the floor slab three feet beyond the face of the curtain wall. In addition, there are certain approved sprinkler systems that can provide the equivalent to a 1-hour rated spandrel.

Vertical shaft elements such as stairs may incorporate glazing if located at an exterior wall. This glazing should be separated in plan from other unprotected exterior walls.

All glass located within 18 inches of the floor (in section) shall be of safety glazing to withstand the load of potential human impact. Safety glazing may be laminated glass, tempered glass or wire glass. In lieu of the above, a 1 1/2" wide (in cross section) horizontal member located between 24" and 36" above the floor may be used to protect the glass.

All skylight and sloped glazing (more than 15 degrees from the vertical) shall be insulating assemblies with an inner lite (the interior side glass) that satisfies the requirements for safety glazing. All safety-glazing products other than laminated glass must incorporate a screen below the glass to protect occupants from falling glass.

Accessibility

All buildings must demonstrate full accessibility. This means that the building, its site, and its systems provide independent and integrated use by individuals with physical (including mobility), sensory, and cognitive disabilities.

Presentation Requirements

All projects will be modeled in Revit. Mid-term and Final plans will be produced using Revit. All other drawings, as far as is practicable should come from Revit, but you may also use any other software or technology available to you in order to demonstrate the detail and assembly of your building's systems. Your Revit model will be an essential tool for the course, so commit to developing its full representational potential.

Mid-term Review Drawing Requirements

1. Egress Plans
2. Architectural Floor Plans
3. Structural Framing Plans + sections
4. Mechanical zoning and distribution + equip. location
5. Animation or series demonstrating sequence of construction of structural frame
6. Live REVIT model demonstrating integration of mech. and struct. systems

Final drawing requirements

In addition to documents from Mid-term:

1. Full Exterior Wall Section with Partial Plan+Partial Elevation
2. Reflected Ceiling Plans Showing Mechanical Distribution
3. Animation illustrating each building system as required in its entirety, and the building's sequence of construction
4. 3D illustration of envelope/slab edge assemble

Revit Model

The Revit model and all of its embedded intelligence has evolved into an important tool for - and product of - this class. Because it is "constructed" in a way similar to a physical building, it is the one document in which the synthesis of all building systems and components can be fully tested and rendered. Emphasis should be placed on this model from early on in the semester. We have provided help and resources for your successful use of this software in the form of a BIM coordinator, Pierce Reynoldson, and six dedicated TF's with extensive Revit and construction knowledge who will meet with you regularly to help establish good working methods within the software, and to troubleshoot issues as they arise.

Assignments

You will be given assignments that will consist of design and detail tasks to be completed for the next class. The assignment is meant to provide a structure within which to pace the development of your project. This is not a course that can be completed successfully by last minute charrette. There are too many incremental and interrelated steps that must be taken with enough time to incorporate feedback from critics. All students on each team are expected to contribute to work done both during and outside of class. This does not mean that everyone must perform the same tasks, but that work is divided up and performed equitably.

Schedule

Week 1	January 10	Weekend Revit Workshops w/Pierce Reynoldson, Julie Zink and TFs
	January 11/12	Lecture 1 (MF) Introduction to course structure, requirements, assignments. Review projects - Hand out Assignment 1 (Egress/reformatting)
Week 2	January 24	Lecture 2 (Anibal Bellomio) Egress and Building Codes. Meeting — Review Assignment 1(Egress/reformatting)
Week 3	January 31	Lecture 3 (Erleen Hatfield) Structures in Construction. Meeting — Final Review Assignment 1. Hand out Assignment 2 (Structural Frame) *Revit workshop in between meetings
Week 4	February 7	Meeting - Review Assignment 2
Week 5	February 14	Lecture 4 (Adam Trojanowski) HVAC in Construction. Meeting — Final review Assignment 2. Hand out Assignment 3 (Environmental Systems) *Revit workshop in between meetings
Week 6	February 21	Meeting - Review Assignment 3. Clarify Mid-term Requirements
Week 7	February 28	TBD
Week 8	March 6	MID REVIEW
Week 9	March 27	Lecture 5 (speaker TBD) Envelopes in Construction). Meeting— Hand out Assignment 4 (Envelope)
Week 10	April 3	Field Trip (TBD)
Week 11	April 10	Revit Workshop (TBD). Meeting — Review Assignment 4
Week 12	April 17	Revit Workshop (TBD). Meeting — General Review
Week 13	April 24	Revit Workshop (TBD). Meeting — General Review
Week 14	May 1	Meeting — General Review
Week 15	May 8	FINAL REVIEW

Resources

Code

IBC 2018
Ching, Francis, Building Codes Illustrated, Wiley, 2010

Structure / Enclosure

Watts, Andrew, Modern Construction Handbook, Springer Wien New York, Second Edition, 2010
Murray, Scott, Contemporary Curtain Wall Architecture, Princeton Architectural Press, 2009
Allen, Edward and Iano, Joseph Fundamentals of Building Construction: Materials and Methods, Wiley,
    5th Ed.
Allen and Iano, The Architect's Studio Companion, Wiley, 4th Ed.
Packard, R. ed., Architectural Graphic Standards, Wiley
Edward Allen, Architectural Detailing: Function, Constructability, Aesthetics, Wiley, 2006.
"Details" series from Birkhauser

Climate Control

N. Lechner, Heating, Cooling, Lighting: Design Methods for Architects, John Wiley and Sons, 3rd Ed.
    2008.
Stein and Reynolds, Mechanical and Electrical Equipment for Buildings, Wiley, 11th Edition

Lighting

G.Z. Brown, Sun, Wind and Light: Architectural Design Strategies, John Wiley and Sons, Second Ed. 2001.
W.M.C. Lam, Perception and Lighting as Formgivers for Architecture, McGraw Hill, 1977

Integration

Bachman, Leonard, Integrated Buildings, The Systems Basis of Architecture, John Wiley and Sons, 2003

Sustainable References

http://www.usgbc.org
R. Hyde, P. Woods, Climate Responsive Design: A Study of Buildings in Moderate and Hot Humid
    Climates,
E & F N Spon, 2000
Meisel, Ari, LEED Materials: A Resource Guide to Green Building, 2010, Princeton Architectural Press

Software

REVIT, Rhino, AutoCAD, Adobe Illustrator, Others as required

Syllabus: ARCH 2031a Architectural Practice and Mgmt. 2020

Faculty: Phil Bernstein, John Apicella

Overview

The process by which an architectural design becomes a building requires the designer to control many variables beyond those purely aesthetic. While the practice of architecture was formally established in the United States in the late nineteenth century, the role and responsibilities of architects in the twenty-first century are rapidly evolving under the influence of broad building industry changes in sustainability, digital technology, globalization and integrated project delivery. Understanding architectural practice as the mechanism that realizes design-- and project management as the leadership and control of the means that make projects happen-- is as central to the successful design of a building as its form and character. Effective practitioners master both design and practice issues to assure their designs reach fruition in the varied contexts of profession, practice and the individual project. This course creates an understanding of the structure and efficacy of architectural practice; the business context in which architects design and realize buildings; and key elements of architectural project management and execution while engaging in a critique of current versus future practice models and approaches. It is designed to familiarize you with basic principles of practice and identify issues that you will face in your future career.

This course fulfills the professional practice requirement for an accredited professional degree precedent to sitting for the Architectural Registration Exam (ARE) and is required for M.Arch I candidates in their last year.

This course will familiarize you with basic principles of traditional architectural practice and the related discipline of project management in the context of the current, rapidly evolving building industry. It is designed to provide an understanding of the fundamentals of practice in combination with those of organizing and running architectural projects. Simultaneously, course material will highlight changes in the roles and responsibilities of the players in the AEC process, and anticipate how those changes may affect practice during your career. Lectures will describe the profession, options for modern practice, concepts and techniques for determining scope of services, writing Owner/Architect and consultant contracts, negotiating fees, assessing and minimizing risk, and planning schedules. The final project will provide an opportunity to integrate these skills by producing and presenting a proposal for a small commission as a member of a small office.

Course Objectives

1. Understand principles of traditional architectural practice and project management in the context of a rapidly evolving building industry.
2. Understand and apply legal, ethical, business, and technical principles of architectural practice.
3. Analyze and evaluate current versus future practice models and approaches.
4. Understand and evaluate the agency of architects in the building industry, supply chain, and project delivery context.
5. Apply practice-based skills by creating an integrated proposal for a commission.

Assessment Breakdown

Reading Discourse/Class Discussion	35%
Research Assignment	25%
Testing/Experimentation	15%
Site-Specific Installation	25%

Class Organization

Structure:

There will typically be one class meeting each week, a lecture about the primary practice or management topic. Other course meetings will be scheduled as required. Please examine the course schedule carefully as there are several "off schedule" class meetings to accommodate studio travel, jury weeks and other activities. Class sessions meet each Tuesday from 2:30 pm to 4:20 pm in the Exhibition Gallery. Note that there will be several class sessions that occur outside of class time.

During the fall term of the 2020-2021 academic year, the School will be operating under COVID-19 pandemic conditions. In order to maintain occupancy and social distancing requirements, class will meet weekly in the 2nd floor Exhibition Gallery. Only 18 students may attend in person during each class period, and so the course will be taught simultaneously in person and via Zoom. The class will be divided into teams (see Item 4 below) and three teams will be in person in the Gallery each week; there will be a rotating schedule available before the first day of class. All other participants will be remote for each class. Class sessions will be recorded for the four students who are in remote locations who will be taking the class both remotely and asynchronously.

The last class session will be the presentation of the final project during Exam Week, December 14 through 18 at a time not yet assigned. Please be sure to be available during this week, remembering that final presentations will be given online as classes will be remote by then.

Course Outline:

The schedule and table on the following pages is your complete guide to the semester, showing lecture dates, topics, description, assignments and required reading and other important dates during the semester.

Teams:

The class has been randomly divided into small "firms" (teams) each of which will work together during the semester. See attached Student List for team assignments and make special note of your individual team member number (TM#) which will be used to assign facilitator and scribe responsibilities for all group sessions. Facilitator and Scribe assignments are shown on the Course Outline.

Assignments:

Assignments for relevant topics are given at the end of each session and will be comprised of a combination of classroom and outside work, some in teams and others individually. All assignments will be posted on the Canvas website. Each assignment is designed to explore a relevant practice issue. Creating deliverable products in a timely fashion is a basic principle of competent professional practice, and you will be expected to execute the assignments on time. Thirteen assignments (including the final project, a group exercise) will be given during the course of the semester. Assignments must be posted digitally to Canvas no later than 5:00 pm on the date that they are due. Assignments that are posted late will result in significant deductions:

    0 - 1 day late   = minus 20%
    1 - 2 days late   = minus 40%
    3 - 7 days late   = minus 60%
    8 - 14 days late   = minus 80%
    15+ days late   = minus 100%**

**In order to receive a passing grade, you must complete and turn in all thirteen assignments (irrespective of grade), and accomplish a cumulative grade of at least 70 points. A cumulative score for the term of 75 points or below will result in a final course grade of Low Pass. Midterm warnings will be issued if average is close to 70% or below based on assignment grades through midterm point.

This policy is meant to provide strong encouragement to keep up with the weekly assignments, as this is how you will best benefit from the flow and structure of the course. All assignments will be submitted and graded using the Canvas course website - please visit the course site and review your attendance and assignment grades regularly.

Teaching Fellows/Assistants:

The course will be supported by lecturer John Apicella and four Teaching Fellows (Melinda Agron ARCH '19, ARCH '16, Dov Feinmesser ARCH '16, Brittany Olivari ARCH '17, and Cristian Oncescu ARCH '14) and a Teaching Assistant (TBD). John, (a founding partner of Apicella Bunton Architects here in New Haven), Brittany (a designer working at Gray Organschi Architecture), Christian (a designer at Pelli Clarke Pelli), and Dov and Melinda (an architect and designer, respectively at Newman Architects) will be additional professional resources for you, attend class, answer questions about course materials and content, and be primarily responsible for grading assignments during the term. They will also participate in the evaluations of the final project. Our Teaching Assistant will support course logistics, be available to answer questions about content and approach, and help orchestrate the term. Please make sure you meet them.

Reading:

Readings for the semester will be distributed by the Canvas website. There are required readings for each class that are indicated by a bold gray box plus other reference reading should you desire more information. The reading list has been put on reserve at the Haas Library under our course number (2031a) and can be referenced from the Canvas website.

Attendance:

Weekly lectures as indicated on the schedule are the fundamental mechanism for transmission of the material, and as such attendance at each lecture is required in order to pass the course. Readings, lectures and assignments are designed to work in concert, and each is critical and therefore required. Only one unexcused absence from a lecture will be permitted; you may only miss a second lecture by permission from the instructor. As this class only meets weekly, the attendance policy is different than the rest of the School, only one unexcused absence is allowed, so please plan your time (and set charrette alarm clocks accordingly).

Attendance will be taken during the first 5 minutes of class (whether you are physically present or attending via zoom) and posted on Canvas. If you are late you will be marked absent.

Schedule

Week 1	Before 9/1	Assignment: Establish demographics of class - online survey
	September 1	**PROFESSION - Introduction: History and Roles**
		Lecture - Introduction, history of practice, role of the architect in society, professional context.
		Assignment: ANALYZE your reasons for becoming an architect and CREATE future scenario (10 years) - short essay
Week 2	September 8	**Legal and Ethical Contexts**
		Vignette/Workshop Groups - Practice context: legal issues and ethical obligations of the architect
		Assignment: DESCRIBE relevant ethical constraints and ANALYZE typical situations - online quiz
Week 3	September 15	**Health, Safety and Welfare and the Architect's Responsibilities**
		Lecture - The evolution, structure and nature of building codes and the architect's relationship to their use and implementation
	September 16	**Special Session: AXP/ARE and Licensure (with NCARB Panel)**
		NCARB Presentation - AXP, the ARE and licensure in Connecticut
		Assignment: Prior to class watch online lecture to prepare for Lecture 04/Firm Organizationa and Client Constituencies - online video
Week 4	Before 9/22	**PRACTICE - Firm Organization and Client Constituencies**
		Online Modules - Client markets and practice approaches; practice structure, organization and purpose.
	September 22	**Client - Architect Roundtable (with Guest Panel)**
		A panel discussion of local practitioners who will describe firm origins, operations and strategy.
		Assignment: Demonstrate an understanding of firm structure and market by comparing and contrasting two firms - short essay
Week 5	September 29	**Starting a Firm (with Firm Entrepeneur Guests)**
		Discussion - Opportunities and challenges of starting a new firm.
		Assignment: Create a strategy and approach for a firm for team - group problem set

Week 6	October 6	**Firm Financial Management (Brian Kenet, guest)**
		Group Workshop - Business of practice: financial structure, approach, constraints, principles.
		Assignment: Understand implications of changing influences of firm financial operations - problem set
	Evening 10/6	**Equitable Practice (Nancy Alexander and Renee Cheng, guests)**
		Lecture/Group Workshop - Equity issues in the architecture profession and the need for greater understanding of ways to improve the field
Week 7	October 20	**PROJECT - Scope of Services**
		Group Workshop - Project organization, management structure; tasks and services approach, definitions of basic and additional services.
		Assignment: Define the basic scope of service for a project by defining its characteristics and your role as the architect - problem set
Week 8	October 27	**Project Delivery**
		Lecture - Review of basic project delivery approaches and the evolution of delivery models and the architect's role
		Assignment: Unpack the key characteristics of a project and select a delivery model, defend the choice - problem set
Week 9	November 3	**Contracts and Risk Management (Leslie King, guest)**
		Lecture - Role of contracts in project management strategy; understanding and managing professional risk.
		Assignment: Identify the key risk factors in projects and basic strategies for managing that risk - problem set
	Evening 11/3	**Design Process Design and Scheduling**
		Group Workshop - Evaluating, structuring and designing the project schedule and managing time and decision-making of the project team.
		Assignment: Demonstrate a basic understanding of project timing, decisions and sequencing - problem set

Week 10	November 10	**Compensation, Fees and Value Propositions**

Group Workshop - How architects are paid: principles of compensation, fee strategy, analysis and typologies, financial implications of value

Assignment: Define, analyze, propose and defend a fee - problem set

Week 11	November 17	**The Architect's Role in Construction**

Group Workshop - Roles, responsibilities and risks of the architect during construction; relationship to the builder.

Assignment: Practice response strategies for various challenges faced by architects during construction - problem set

Week 12	December 1	**Future of Practice**

Lecture - Speculations on the evolving role of architects, challenges facing the profession and its role in building and design.

Assignment: FINAL - group problem set

Week 13	December 14	**Future of Practice**

FINAL PROJECT DUE

Reading List

Week 1

Schon. The Reflective Practitioner. "The Crisis of Confidence in Professional Knowledge" pp. 3-20.
Cuff. Architecture: The Story of Practice. pp 22 - 45.
Wickersham. Harvard Design Magazine 32: Spring/Summer 2010. "Learning From Burnham: The Origins of Modern Architectural Practice" pp 18-27.
Ockman. Architecture School: Three Centuries of Educating Architects in North America. Introduction pp. 10-32.
Johnston. Assembling the Architect: The History and Theory of Professional Practice. Chapter 1: "Seeing Double: Histories of Architectural Practice" pp. 7-34.
Woods. From Craft to Profession: The Practice of Architecture in the Nineteenth Century. Chapter 1, pp. 9 - 26; Chapter 4 "Forms and Settings of Practice" pp 82 -137.

Week 2

Pressman. Professional Practice 101. pp. 46 - 58 (ethics).
Wasserman. Ethics and the Practice of Architecture. pp 31 - 48.
Wickersham. From Disinterested Expert to Marketplace Competitor: How Anti-Monopoly Law
    Transformed the Ethics and Economics of American Architecture in the 1970s. pp. 138-158. http://
    dx.doi.org/10.1080/13264826.2015.1129349
AIA. The Architect's Handbook of Professional Practice 15th Ed. "1.1: The AIA Code of Ethics and
    Professional Conduct." pp. 2-12; "1.2: Ethics and Architectural Practice." pp. 13-17; "1.3: Design
    Beyond Ethics." pp. 18-26; "13.1-2: Building Codes, Planning." pp. 857-880.
NCARB. ARE Guidelines. https://www.ncarb.org/sites/defa ult/files/ARE-5-Guidelines.pdf
AIA. The Architect's Handbook of Professional Practice 15th Ed. "3.2: Intern Development." pp. 68-82;
    "3.1: Regulation of Professional Practice." pp. 52-67.
NCARB. Licensing Requirements Tool. https://www.ncarb.org/get-licensed/licensing-requirements-
    tool.
Desk Crits: THe Insider's Guide to the ARE 5.0.
NCARB. AXP Guidelines. (see Canvas for link).

Week 4

AIA. The Architect's Handbook of Professional Practice 15th Ed. "5.2: Entrepreneurial Practice: Starting
    An Architecture Firm." pp. 185-202; "6.2; Developing Marketing Strategy." pp. 342-355.
Johnston and Bernstein. Assembling the Architect: The History and Theory of Professional Practice.
    Chapter 4: "Architects and Builders;" "Scale." pp. 180-185.

Week 6

Pressman. Professional Practice 101. pp. 168 - 180 (financial mgmt).
AIA. The Architect's Handbook of Professional Practice 15th Ed. "7.2: Financial Management
    Overview." pp. 409-418.
Cramer. How Firms Succeed - A Field Guide To Design Management. "The Philosophy of Profit" pp.
    152-154.

Week 7

AIA. The AIA Guides to Equitable Practice.

Week 8

Yale FC&R. Capital Projects Handbook. pp. 2-23.
AIA. The Architect's Handbook of Professional Practice 15th Ed. "15.1: Defining Project Services." pp.
    952-960.
Atkins. Managing Project Risk: Best Practices for Architects and Related Professionals. "Why
    Documents Can't Be Used..." pp. 130-138.

Week 9

AIA. The Architect's Handbook of Professional Practice 15th Ed. "9: Project Delivery." pp. 508-583.
Bernstein. Architecture Design Data: Practice Competency in the Era of Computation. Chapter 4.4
    "New Values in the Systems of Delivery." pp. 170-179.

Week 10

Gayton. Legal Aspects of Engineering, Eighth Edition. "Development of Law." pp 21-30; "Introduction to Contracts." pp. 73 - 79.
AIA. The Architect's Handbook of Professional Practice 15th Ed. "5.1: Architects and the Law." pp. 168-184; "16.1: Risk Management Strategies." pp. 989-1006; "17: Agreements and the AIA Documents Program." pp. 1041-1111.

Week 12

Cramer. How Firms Succeed - A Field Guide To Design Management. "Redesigning Design Fees." pp. 170-172.
AIA. The Architect's Handbook of Professional Practice 15th Ed. "15.2: Services and Compensation." pp. 961-974.
Atkins. Managing Project Risk: Best Practices for Architects and Atkins Related Professionals. "Fundamentals." pp. 1-17; "Lemons to Lemonade." pp. 242-249.

Week 13

AIA. The Architect's Handbook of Professional Practice 15th Ed. "10.8: Bidding and Negotiation." pp. 701-712; "10.9: Construction Phase Services." pp. 713-729; "10.10: Project Completion and Post-Construction." pp. 729-739.
Johnston. Assembling the Architect: The History and Theory of Professional Practice. Chapter 4: "Architects and Builders." pp. 145-180.
Atkins. Managing Project Risk: Best Practices for Architects and Related Professionals. "Zen and the Art of CA." pp. 88-98; "Site Visits..." and "Payment..." pp. 166-188.

Week 14

Bernstein. Thinking Versus Making: Remediating Design Practice in the Age of Digital Representation.
Johnston. Assembling the Architect: The History and Theory of Professional Practice. "Architectural Practice, Artificial Intelligence." pp. 208-218.
Deamer. The Architect as Worker. "Three Strategies for New Value Propositions." pp. 209-218.
Bernstein. Redefining Responsible Control in Architectural Licensure Under Integrated Project Delivery and Building Information Modeling.

Bibliography

American Institute of Architects. The Architect's Handbook of Professional Practice: 15th Edition. Fifteenth edition. ed. Hoboken, New Jersey: Wiley, 2014.

Atkins, James B., and Grant A. Simpson. Managing Project Risk : Best Practices for Architects and Related Professionals. Hoboken, N.J.: Wiley, 2008.

Bernstein, Phillip. Architecture, Design, Data : Practice Competency in the Era of Computation. Basel: Birkhauser, 2018.

Bernstein, Phillip G. "Scaling Practice: The Increasing Footprint of Architecture in the Digital Age." Perspecta 40 40 - Monster (2007).

———. "Thinking Versus Making: Remediating Design Practice in the Age of Digital Representation." In Manufacturing Material Effects : Rethinking Design and Making in Architecture, edited by Branko Kolarevic and Kevin R. Klinger. New York: Routledge, 2008.

Cheng, Renee et al. "The Aia Guides to Equitable Practice." American Institute of Architects, 2020.

Cramer, James P., Scott Simpson, and Richard Swett. How Firms Succeed : A Field Guide to Design Management. 2nd ed. Atlanta Östberg,: Greenway Consulting ;, 2004.

Crits, Desk. Desk Crits: The Insider's Guide to the Are 5.0. Brooklyn, NY: Desk Crits, 2019.

Cuff, Dana. Architecture : The Story of Practice. Cambridge, Mass.: MIT Press, 1991.

Deamer, Peggy. The Architect as Worker : Immaterial Labor, the Creative Class, and the Politics of Design.

Gayton, Cynthia M. Legal Aspects of Engineering. 8th ed. Dubuque, IA: Kendall/Hunt Pub. Co., 2008.

Johnston, George Barnett. Assembling the Architect : The History and Theory of Professional Practice. London: Bloomsbury Visual Arts, 2020.

Pressman, Andy, and Books24×7 Inc. Professional Practice 101 Business Strategies and Case

Studies in Architecture, Second Edition. Hoboken: Wiley,, 2006. Text. https://yalelibrary.skillport.com/skillportfe/main.action?assetid=17153.

Schön, Donald A. The Reflective Practitioner : How Professionals Think in Action. New York: Basic Books, 1983.

Wasserman, Barry L., Patrick Sullivan, and Gregory Palermo. Ethics and the Practice of Architecture. New York ; Chichester: Wiley, 2000.

Wickersham, Jay. "From Disinterested Expert to Marketplace Competitor: How Anti-Monopoly Law Transformed the Ethics and Economics of American Architecture in the 1970s." Architectural Theory Review 20, no. 2 (2015/05/04 2015): 138-58.

———. "Learning from Burnham: The Origins of Modern Architectural Practice." Harvard Design Magazine, Spring/Summer 2010 2010, 10.

Woods, Mary N. From Craft to Profession : The Practice of Architecture in Nineteenth-Century America. Berkeley, CA: University of California Press, 1999.

Syllabus: ARCH 3011a Modern Architecture 2020

Faculty: Craig Buckley

Overview

What does it mean for architecture to be modern? How have architects given shape to this idea in their buildings and writings? How has architecture radically transformed over the last 250 years and how might these changes help us understand where it is headed in the future? This course surveys central buildings, projects, and discourses that have marked architectural culture over the last two-and-a-half centuries. Lectures highlight important buildings, architects, and unbuilt projects in their socio-historical contexts. Discussions sections introduce students to material from Yale's collections, visual and spatial analysis, and the close-reading of texts.

Key themes will include: the invention of new building types, architecture's changing relationship to politics, the impact of new technologies on construction, the explosion of cities, the dialogue of architecture with works of modern art and new forms of audio-visual media. A key aim of the course is to identify and question architectural culture's participation in the construction of shifting definitions of class, race, and gender from the Enlightenment to the present.

This lecture course follows the careers of key architects and examines the rise of new building types undreamed of before 1750. It traces the work of various movements, explores the impact of capitalism, socialism, and Fascism on the built environment. The impact of two World Wars and the cultural responses to these catastrophes will be examined, as well as the flourishing of suburbs, the role of the welfare state, and changing discourses around technology, post-modernism, and ecology. Modern architecture was anything but an ideologically and stylistically unified phenomenon, rather it developed by virtue of ceaseless negotiations between architects and publics, between political regimes and

styles, between technologies and buildings, and between drawings and places.

The goal is to enable students to develop their own critical interpretations of works of modern architecture and to pose challenging questions about the past, present, and future of our built environment.

Course Objectives

1. Explore the evolution of architectural buildings, projects and discourses from 1750 to the present day and their impacts on architecture, culture, and society.
2. Explore architecture's changing relationship to building typology, politics, technology, urbanity, culture, and media.
3. Develop critical interpretations of works of modern architecture and pose challenging questions about the past, present and future of our built environment.

Assessment Breakdown

Participation	15%
Writing Assignments (3)	60%
Final Project	25%

Class Organization

Grading Breakdown

Participation: 15%

> Weekly Responses via Canvas

Writing Assignment no. 1: 20%

> Comparative visual and spatial analysis of a Neoclassical or a Gothic Revival Building in New Haven and one located in another city. (1500 Words)
> **NOTE: Students not in residence this semester may choose buildings outside New Haven. Please speak with your TF.
> DUE: FRIDAY Sept 25th, by 11:59 pm

Writing Assignment no. 2: 20%

> Analysis of a text by an architect, urbanist, or designer. During the course of the semester, we will read letters, manifesto, lectures, essays, and treatises written by architects. This assignment asks you to distill and interpret the key arguments from one of the writings and articulate your own position on the text.
> DUE: FRIDAY Oct. 23, by 11:59 pm

Writing Assignment no. 3 : 20%

> Typological analysis of post-WWII modern building in New Haven, with references to other examples studied in the course. Students will develop an comparative analysis of a building in New Haven with other typologically similar buildings from other times and places. Subjects for analysis include museums, graveyards, student housing, public housing, private dwellings, and laboratories, among others.
> (1800 words)
> **NOTE: Students not in residence this semester may choose buildings outside New Haven. Please speak with your TF.
> DUE: FRIDAY Nov. 20th, by 11:59pm

Final Project: Annotated Time Diagram of Modern Architecture: 25%

> Countless historians and architects have tried to capture the developments and changes of modern architecture in the form of a timeline drawing. The final exercise asks students to propose a theme or idea that has germinated in the course, and to develop a diagrammatic representation of this theme across the timespan covered in the course. The goal is to synthesize a reflection and a response to the course, and to interrogate the power of the line as a framework for conceptualizing continuity and change in history.

Readings

Course textbooks:

> Ulrich Conrads, Programmes and Manifestos of Twentieth-Century Architecture, MIT Press, 1970.
>
> Alan Colquhoun, Modern Architecture, Oxford University Press, 2002.
>
> All course textbooks will also be available on Reserve at Haas Library. All other class readings will be available in FILES on the canvas website.

For further reading:

> Extensive secondary sources on the history of Modern Architecture can be found on the canvas site. Please see HSAR 312 Further reading.docx under files on the canvas page.
>
> Several collectively edited bibliographies devoted to questions of race, gender, space and architecture are available online. Updated regularly, they provide an excellent resource for students seeking to immerse themselves in current work on the topic and to which students can contribute. The syllabus for this course benefited from the sources they collected.

See:

> Race/Space Reading List: https://bit.ly/spaceraceplace
>
> Race, Space, and Architecture: Open Access Curriculum http://racespacearchitecture.org/index.html
>
> Yale School of Architecture, (Easterling, Gormley, Papallardo, et.al.): https://docs.google.com/spreadsheet/d/1RPnBrHcXelL3×vQ9H5OzuZadRyTwDLOo2MlomU8jZWI/edit?us p=sharing

Schedule and Bibliography

Week 1a: August 31
Introduction: The Enlightenment and the Beginnings of Modern Architecture

Legacy of the enlightenment and its critiques as a foundation for modern architectural thinking. Reason vs. Feeling; Architecture as a tool for social reform and governance; Neo-classicism as reform.

> Bergdoll, "Neoclassicism...," from European Architecture 1750-1890, pp. 9-16.
> Nell Irwin Painter, "The White Beauty Ideal as Science," The History of White People, (New York: WW Norton, 2011), pp. 59-71.
> Abbé Laugier, An Essay on Architecture (1753), Chapter 1.

Week 1b: September 2
Neoclassicism and the Picturesque: Perrault, Soufflot, and Jefferson

Codification of a neo-classical language. Birth of modern architectural education. Dissemination of architectural ideas around the globe; The Church of St. Genevieve, Paris; Jefferson's designs for Monticello and the University of Virginia.

> Thomas Jefferson, Letter to James Madison, Paris, Sept. 20th, 1785 (access online at: https://founders.archives.gov/documents/Madison/01-08-02-0191
> Bergdoll, European Architecture 1750-1890, 23-32.
> Mabel O. Wilson, "Notes on the Virginia Capitol: Nation, Race, and Slavery in Jefferson's America," in Irene Cheng, Charles L. Davis, and Mabel O. Wilson, eds. Race and Modern Architecture, (Pittsburgh: University of Pittsburgh Press, 2020), pp. 23-42.

Week 2a: Sept. 7
Revolutionary Architecture: Visionary or Utilitarian?

Idea of visionary and utopian architecture; "Paper architecture," Etienne-Louis Boullée, Giovanni Battista Piranesi, Claude-Nicolas Ledoux; Aesthetic categories: sublime and the beautiful; Jeremy Bentham's Panopticon

> Etienne-Louis Boullée, An Essay on Art [c1794], transl. in Boullée and Visionary Architecture (London, 1976) (selection)
> Bergdoll, European Architecture 1750-1890, pp. 16-23, and 84-101.

Week 2b: Sept 9
Romantic Nationalism 1: Classicism Otherwise

Typology and design training under Jean-Nicholas-Louis Durand at the Ecole Polytechnique; architecture in relationship to emergent cultural nationalisms; architecture as a means for the elevation of culture; Schinkel's Altes museum and Soane's bank of England as models.

> Karl Friedrich Schinkel, "Literary Fragments, c. 1805" and "Notes for a Textbook on Architecture," in Harry Francis Mallgrave, ed. Architectural Theory Vol. 1: Vitruvius to 1870, (Oxford: Blackwell, 2006), pp. 401-403, and 412-415.
> Kurt Forster, "Schinkel's Panoramic Planning of Central Berlin," Modulus 16 (1983), pp. 62-77.
> Bergdoll, European Architecture 1750-1890, pp. 189-195

Week 3a: Sept 14
Romantic Nationalism 2: Gothic Revivals

Re-appraisal of medieval buildings through the lens of structure and the lens of feeling; Gothic architecture and national identity, Viollet-le-Duc and structural rationalism in France, Pugin and the Gothic revival in Great Britain and the British Empire; The Houses of Parliament, London.

> Viollet-Le-Duc, "Style" (excerpt) from the Dictionnaire raisonnée de l'architecture Francaise, trans. in The Foundations of Architecture, (New York: Braziller, 1990), 232- 248.
> Charles L. Davis II, "Viollet-le-Duc and the Body: The Metaphorical Integrations of Race and Style in Structural Rationalism," Architectural Research Quarterly 14, no. 4 (2010), 341— 48
> Bergdoll, European Architecture 1750-1890, 139-149; 224-232.

Week 3b: Sept 16
Industrialization, World's Fairs, and the Arts and Crafts: London, 1851

Constructive and cultural Legacy of the Great Exhibition of 1851; Criticisms of John Ruskin, William Morris, and the ideological underpinnings of the Arts and Crafts Reform Movements; urban explosion and the formation of Garden City planning.

> John Ruskin, "The Opening of the Crystal Palace," (1856)
> Barry Bergdoll, 207-224.
> Tom Peters, "Crystal Palace," in Building the Nineteenth Century, pp. 226-239

Week 4a: Sept 21
The Search for New Urban Forms: Barcelona

Art Nouveau as a transnational phenomenon; the pursuit of organic forms complicates traditions of structural rationalism; Victor Horta and Hector Guimard in Brussels and Paris; Antoni Gaudi in Barcelona.

> Ildefons Cerdà, Selections, General Theory of Urbanization, (1867), 49-52; 631-636.
> Alan Colquhoun, "Art Nouveau," Modern Architecture, 13-33.
> Bergdoll, pp. 261-267

Week 4b: Sept 23
The Skyscraper and the 1893 Fair: Chicago

The Chicago Fire; the Search for the typical tall office building; Louis Sullivan and Dankmar Adler; the 1893 World's Columbian Exposition, Sophia Hayden and the Women's Building.

> Louis Sullivan, "The Tall Office Building Artistically Considered," reprinted in Leland Roth, America Builds, 340-346.
> Colquhoun, 35-49
> Merwood-Salisbury, "Louis Sullivan's Democratic Architecture and the Labor Movement," in Chicago 1890: The Skyscraper And The Modern City, (Chicago: University of Chicago press, 2009), pp. 38-54.

Week 5a: Sept 28
Modernizing the House: Catharine Beecher and Frank Lloyd Wright

Catharine Beecher and feminist domestic reform movement; Frank Lloyd Wright emerges from the office of Louis Sullivan; concept of the Prairie Home, the "Gospel" of Organic architecture.

> Dolores Hayden, "Feminism in Model Households," in Grand Domestic Revolution, (Cambridge, Mass.: MIT Press, 1981), pp. 54-63.
> Frank Lloyd Wright, "The Art and Craft of the Machine" reprinted in Roth, America Builds, (New York: Harper & Row, 1983), 364-376.
> Colquhoun, Modern Architecture, 49-55.

Week 5b: Sept 30
Ornament and Crime: Vienna

Urban planning and the creation of Ringstrasse; Otto Wagner's Modern Architecture and metropolitan projects in Vienna; Adolf Loos as architect and polemicist; the Secession movement, Olbrich, and Hoffmann

> Otto Wagner, Excerpt from "Style," Modern Architecture [1895] (Santa Monica: Getty Center, 1989), 77-78.
> Adolf Loos, "Ornament and Crime," Conrads, 19-24.
> Colquhoun, Modern Architecture, 73-86.
> Jimena Cañales and Andrew Herscher, "Criminal Skins: Tattoos and Modern Architecture in the work of Adolf Loos," Architectural History 48 (2015): 235-256.

Week 6a: Oct. 5
The Great War and its Architectural Reverberations

F.T. Marinetti and formation of Futurism; the outbreak of WWI; Antonio Sant'Elia and the Città Nuova; The urban visions of Bruno Taut; the formation of the Arbeitsrat für Kunst; Paul Scheerbart and the Glass Chain; Frühlicht magazine; Erich Mendelssohn.

> Antonio Sant'Elia, "Manifesto of Futurist Architecture," Conrads, 34-8.
> Arbeitsrat für Kunst (Work Council for Art), "Under the Wing of a Great Architecture," Conrads, 44-45.
> Bruno Taut, "A Programme for Architecture," Conrads, 41-43.
> Colquhoun, Modern Architecture, pp. 87-107.

Esther Da Costa Meyer, "Drawn into the future: urban visions by Mario Chiattone and Antonio Sant'Elia," Italian Futurism 1909-1944 : Reconstructing the Universe, ed. Vivien Greene, (New York: Guggenheim Museum, 2014), pp.141-144.

Week 6b: Oct 7
Craft vs. Industry: The German Werkbund and the Bauhaus

Nationalism and trade competition; Peter Behrens in Berlin, the architect's collaboration with industry; individuality in design vs. standardized types; the Werkbund exhibition of 1914; the foundation and architecture of the Bauhaus.

Hermann Muthesius, "Aims of the Werkbund," Conrads, 26-27
Hermann Muthesius/Henry van der Velde, "Werkbund Theses and Antitheses," Conrads, 28-31.
Walter Gropius, "Bauhaus-Manifesto" (1919) from Conrads
Colquhoun, Modern Architecture, 57-72

Week 7a: Oct. 12
Architecture and Revolution: Constructivism in the Soviet Union and Western Europe

The Soviet Revolution; Suprematism vs. Constructivism; the example of Tatlin; the establishment and teaching at the Vkhutemas; Konstantin Melnikov and 1925 Soviet Pavilion; the formation of the OSA; Moisei Ginsburg and the Narkomfim Collective Housing; Municipal socialism in Frankfurt; Grete Schütte-Lihotzky and the Frankfurt Kitchen; the emergence of Socialist Realism

Alexei Gan, "Constructivism," [1922] trans. in Harrison and Woods, eds., Art in Theory, 343-344.
Alexander Rodchenko and Varvara Stepanova, "Program of the First Working Group of Constructivists" [1922], trans. in Harrison and Woods, eds., Art in Theory, 341-343.
Grete Schütte-Lihotzky, "Why I Became an Architect," West 86th: A Journal of Decorative Arts, Design History, and Material Culture, 18:1 (Spring-Summer 2011), 86-96.
Jean-Louis Cohen, Chap. 13 "Architecture and Revolution in Russia," in The Future of Architecture since 1889: A Worldwide History, (London: Phaidon, 2017).
Colquhoun, 120-135

Week 7b: Oct 14
Machines for Living: Le Corbusier and Charlotte Perriand

Le Corbusier as editor and architect; Cubist Painting and Purism's "Rappel à l'ordre" in Paris; the Domino frame, the Maison Citrohan; the City for 3 million; the Pavilion de l'Esprit Nouveau, Eileen Gray's E.1027; Villa Savoye, Poissy.

Le Corbusier, "A Contemporary City," in The City of Tomorrow and Its Planning, (1929), 163-180.
Le Corbusier and Pierre Jeanneret, "Five Points Toward a New Architecture" (1926), Conrads, 99-101.
Charlotte Perriand, A Life of Creation (1998) (excerpt), 23-29.
Colquhoun, 137-158.

Week 8a: Oct. 19
Quest for Universal Space: Ludwig Mies van der Rohe and Lilly Reich

Less is more; neo-classicism and technology; Glass architecture; idea of universal space. G- magazine;

The émigré architect: European ideals meet American pragmatism.

> Ludwig Mies van der Rohe, "Working Theses," (1923), in Mertins and Jennings, 103.
> Ludwig Mies van der Rohe, "Industrialized Building," (1924), in Mertins and Jennings, 120-123
> Ludwig Mies van der Rohe, "On Form in Architecture" (1927), Conrads, 102
> Colquhoun, 159-182.

Week 8b: Oct 21
Nordic Organicism: Alvar and Aino Aalto

Modern Movement seen from the Scandinavian periphery; organicism and architecture; craft vs. industry; hygienic modernism and sanatoria; geopolitics of Northern Europe.

> Alvar Aalto, "Rationalism and Man" (1935) and "Trout and Stream" (1949) from Alvar Aalto in His Own Words.
> Colquhoun, 193-207.
> Eeva-Liisa Pelkonen, "Transitions: Alvar Aalto's Approach to Organicism," in The Organic Approach to Architecture, (Chichester [England] : Wiley-Academy, 2003).

Week 9a: Oct 26
Architecture, the Rise of Fascism, and the Catastrophe of WWII

Italian Rationalism and the case of Giuseppe Terragni's Casa del Fascio; Italian Colonial Architecture in Ethiopia and Eritrea, Mobilization of architects during the war; Albert Speer's Theory of Ruin Value and the Third Reich, National Socialism and the architecture of the camp

> Colquhoun, Modern Architecture, 183-185
> Dawn Ades, (ed). Art and Power: Europe under the Dictators (London: Thames and Hudson, 1995). 120-129.
> Jeffrey Schnapp, "The People's Glass House," South Central Review, Vol. 25, No. 3 (Fall, 2008), pp. 45-56

Week 9b: Oct 28
From Destruction to Reconstruction: Architectures of the European Welfare State

Post-WWII housing shortage and new typologies of the Welfare State; Le Corbusier's Unité d'habitation, Marseilles; Aldo van Eyck's playgrounds for Amsterdam; Contrasting urban plans in East and West Berlin during the 1950s; the formation of Team Ten out of CIAM; Alison and Peter Smithson in London;

> Cohen, The Future of Architecture since 1889, 286-309.
> J. Bakema Aldo van Eyck, B. Van Ginkel, Hovens Greve, A+P Smithson, J. Voelcker, "Doorn Statement" and "Team 10," (1954).
> Tom Avermaete, excerpt from Another Modern: The Postwar Architecture of Candilis Josic Woods, (Rotterdam: NAI, 2005).

Week 10a: Nov. 2
The American Office Tower and the New Monumentality

The Rise of Skidmore, Owings, and Merrill, Mies van der Rohe and the Seagram Tower; Quest for new monumentality; Louis Kahn and architecture's relationship to history; Rome revisited; the Yale Art Gallery,

The Salk Center.

> Sert, Legér and Giedion, "Nine Points on Monumentality" (1943) from Ockman
> Louis Kahn, "Monumentality" from Paul Zucker, New Architecture and the City Planning (1944), reprinted in Ockman, 48-54.
> Adrienne Brown, "Erecting the Skyscraper, Erasing Race," in Irene Cheng, Charles L. Davis, and Mabel O. Wilson, eds. Race and Modern Architecture, (Pittsburgh: University of Pittsburgh Press, 2020), pp. 203-217.
> Colquhoun, 212-217

Week 10b: Nov. 4
Suburban Modern: From Levittown to the Case StudyHouses

The Emergence of Levittown; Postwar planning and racial discrimination; the Harvard Five; Los Angeles and the Case Study House program

> Colquhoun, Modern Architecture, 231-254.
> Charles Eames, John Entenza, and Herbert Matter, "What is a House?" Arts and Architecture, (July 1944).
> Dianne Harris, "Chap. 4, Private Worlds: The Spatial Contours of Exclusion and Privilege," in Little White Houses: How the Postwar Home Constructed Race in America, (Minneapolis: University of Minnesota Press, 2012).

Week 11a: Nov. 9
Modern Architecture in Brazil

The tension between the regional and the international; Le Corbusier (interpretation and reinvention); the work of Lucio Costa and Oscar Niemeyer; the innovations of Lina Bo Bardi, Eduardo Affonso Reidy, and Villanova Artigas

> Lina Bo Bardi, "Theory and Philosophy of Architecture," Stones Against Diamonds (London: AA Books, 2012).
> Oscar Niemeyer, "Form and Function in Architecture," in Joan Ockman, ed. Architecture Culture 1943-1968, 309-313.
> Ruth Verde Zein, "Brazil," in Latin American Architecture in Construction 1955-1980, (New York: Museum of Modern Art, 2014).

Week 11b: Nov. 11
Morocco and the Architecture of Post-Colonial Independence

Architecture of newly independent Morocco, Atbat Afrique, Nid d'Abeille and Semiramis Housing Schemes, Casablanca 1956; Chandigarh and the "New Brutalism" in the Punjab, New infrastructure for the nation by Jean-Francois Zevaco and Elie Azagury.

> Colquhoun, Modern Architecture, 217-230.
> Tom Avermaete, Serhat Karakayali, Marion Von Osten, Colonial Modern : Aesthetics of the Past, Rebellions for the Future, (London: Black Dog, 2010), (excerpt).

Week 12a: Nov 16
Postwar Japan: Technological Utopias

Kenzo Tange; The Metabolist Movement; Arata Isozaki, Buckminster Fuller; Constant's New Babylon; Cedric Price and Joan Littlewood's Fun Palace, Archigram; Nakagin Capsule tower, Osaka 70

>   Fumihiko Maki and Masato Ohtaka, "Toward Group Form" (1960), Ockman 321-324.
>   Arata Isosaki, "City Demolition Industry Inc." (1962) in Project Japan: Metabolism Speaks, 52-54.
>   Yuriko Furuhata, "Architecture as Atmospheric Media: Tange Lab and Cybernetics," in Marc Steinberg
>   and Alexander Zahlten, eds. Media Theory in Japan, (Duke University Press, 2017).
>   Colquhoun, 223-229.

Week 12b: Nov 18
Post-modernism and Critical Regionalism

Relationship to popular culture and pop art; architects rethink the historical city; architecture and memory; ordinary and everyday.

>   Robert Venturi, Excerpt from Complexity and Contradiction in Architecture, (New York: Museum of
>   Modern Art, 1966), pp. 16-19.
>   Denise Scott Brown, "Learning from Pop" from Casabella 359-360 (December 1971).
>   Kenneth Frampton, "Towards a Critical Regionalism: Six Points for an Architecture of Resistance," The
>   Anti-Aesthetic, ed. Hal Foster, (Seattle: Bay Press, 1983), 16-30.

Week 13a: Nov 30
High-Tech and Deconstructivism

Piano and Rogers, Centre Pompidou, Paris; Frank Gehry in Los Angeles; Rem Koolhaas and the Office for Metropolitan Architecture; Zaha Hadid

>   Alan Colquhoun, "Plateau Beaubourg, in Essays in Architectural Criticism, (Cambridge, Mass.: MIT
>   Press, 1985), pp. 110-119.
>   Mark Wigley, "Deconstructivist Architecture," in Deconstructivist Architecture, (New York: Museum of
>   Modern Art, 1988), pp. 10-20.
>   "Rem Koolhaas/Office for Metropolitan Architecture" and "Zaha Hadid," in Deconstructivist
>   Architecture, pp. 48-55 and pp. 70-81. (Mostly illustrations).

Week 13B Dec 2
Surfaces and Atmospheres

Questions of environment, surface, and memory in the work of SANAA (Ryue Nishizawa and Kazuo Sejima) and David Adjaye Associates.

>   Ryue Nishizawa, "Architecture of Environment," and Kazuo Sejima, "Trial and Errors," in SANAA
>   (Nishizawa and Sejima) (2011-2018) (Tokyo: GA Architect, 2018), 8-15.
>   Charles Henry Rowell, "Designing a Nation's Museum: Interview with David Adjaye,"
>   Callaloo, Vol. 38, Iss. 4, (2015): 762-770.

Syllabus: ARCH 3012 Architectural Theory 2021

Faculty: Marta Caldeira

Overview

The lecture course examines moments of significant change in modern architectural theory through a series of case studies organized thematically from mid-eighteenth century to the present. From the classical treatise to the manifesto, from the cours and the encyclopedia to the critical review, the course explores the different forms that architectural theory assumed both as an internal dialogue that consolidates the disciplinary body and as a response to key social, political, philosophical and technological developments. In a circular movement between the study of selected texts, their disciplinary and historical contexts, and their influence in time, the course investigates how architectural theory continuously negotiated its own history with external references in order to propose new foundations, models, strategies and concepts to the discipline, thereby redefining architecture and repositioning its practice vis-à-vis the historical, material and intellectual contexts during the modern period.

Course Objectives

1. Develop an understanding of how architectural theory and discourse has evolved and the forms it has taken since the mid 18th century.
2. Explore the role that architectural theory has taken in redefining architecture and repositioning its practice vis-a-vis the historial, material and intellectual contexts during the modern period.

Assessment Breakdown

Participation/ Reading Responses	15%
Presentations (2)	40%
Research Paper	45%

Class Organization

1. Attendance at all lectures and sections is mandatory; in accordance with SoA policy, more than two unexcused absences constitutes failure of the class. Participation in discussion sections is required.
2. Each student is responsible for 2 class presentations throughout the semester of the assigned texts each week.
3. Students will post on the class server one question or comment on the weekly readings by 9pm Sunday before the Tuesday lecture. The weekly responses are mandatory; ten responses are required in order to pass the course.
4. A paper proposal of 1 page is due by Tuesday, March 23, 2021.
5. A 12 page final research paper on the topic approved by the Instructor and/or the Teaching Fellow is due by Wednesday, May 12, 2021. All papers are to be submitted on Canvas AND as a PDF to the respective Section Teacher.
6. Readers will be available on the Canvas platform on the Class Server; additional reading may be made available on Canvas every week. Many of the books in the reader are also on Open Reserve in the A&A library.

Schedule and Bibliography

Week 1: January 26
Modernity in Architecture: Reason and Nature in the Enlightenment

Introduction. Architectural theory and history: theoretical thinking, its history and historical context. Classical order before the Enlightenment: Vitruvianism and the classical treatise. The 'rational' foundation of architecture and the authority of Nature. Models of origins: the primitive man and the primitive hut, archaeology and colonization. Laugier's Essay sur l'architecture. Modernity and architectural epistemology.

Marc-Antoine Laugier, An Essay on Architecture [1753], trans. W. and A. Herrmann, (Los Angeles, CA: Hennessey & Ingalls, 1977), 1-33.
Jean-Jacques Rousseau, from The Social Contract [1762] and from Discourse on the Origin of Inequality [1755], in The Social Contract and Discourses (New York: Dutton & co., 1950), 3-22, 176-199.

Achille Mbembe, from Critique of Black Reason (Durham and London: Duke University Press, 2017), 10-37.
Dipesh Chakrabarty, "Introduction: The Idea of Provincializing Europe," in Provincializing Europe: Postcolonial Thought and Historical Difference (Princeton, NJ: Princeton University Press, 2000), 3-23.

Giovanni Battista Piranesi, "Thoughts on Architecture (1765)," Oppositions 26 (Spring 1984), 4-25.
Johann Joachim Winckelmann, Reflections on the imitation of Greek works in painting and sculpture, (1755) (La Salle: Open Court, 1987), 3-43.
Immanuel Kant, "An Answer to the Question: What is Enlightenment?" [1784], in What is Enlightenment? Eighteenth Century Answers and Twentieth Century Questions, ed. James Schmidt (Berkeley: University of California Press, 1997), 58-64.
Barry Bergdoll, European Architecture 1750-1890 (New York: Oxford University Press, 2000), 9-32.
Anthony Vidler, "Rebuilding the Primitive Hut: The Return to Origins from Lafitau to Laugier" and "The Aesthetics of History: Winckelmann and the Greek Ideal", in The Writing of the Walls (Princeton, NJ: Princeton Architectural Press, 1987), 7-21, 125-37.
Rudolf Wittkower, "Piranesi's 'Parere su l'architettura,'" Warburg and Courtauld Institutes Journal 2 (July 1938- April 1939): 147-58.
C.A. Bayly "Passages from the Old Regime to Modernity," in The Birth of the Modern World 1780-1914 (Malden, MA: Blackwell, 2004), 49-83.

Week 2: February 2
Classification: Theories of Type and Character

Systems of classification in French Enlightenment: L'Encyclopedie. Theories of character and type: Le Camus de Mezieres and Quatremere de Quincy. Boullée's Essai sur l'Art. Architecture parlante.

Le Camus de Mézieres, The Genius of Architecture, or, The Analogy of that Art with our Sensations [1780], Harry F.Mallgrave ed. (Santa Monica, CA: The Getty Center, 1992), 67-92.
Quatremere de Quincy, "Character", in Methodical Encyclopedia [1788], ed. Harry Francis Mallgrave (Malden, MA: Blackwell, 2006), 206-9; and "Type", in Oppositions, no. 8 (Spring 1977): 147-150.
Etienne-Louis Boullée, "Essay on Art" [1794], in Boullée & Visionary Architecture, ed. Helen Rosenau (London: Academy Editions; New York: Harmony Books, 1976), 81-94.

Irene Cheng, "Structural Racialism in Modern Architectural Theory," in Race and Modern Architecture: A Critical History form the Enlightenment to the Present, ed.s Irene Cheng, Charles L. Davis II, and Mabel O. Wilson (Pittsburgh, Pa: University of Pittsburgh Press, 2020), 134-152.
Fabiola Lopez-Duran, Eugenics in the Garden: Transatlantic Architecture and the Crafting of Modernity (Austin: University of Texas Press, 2018).

Antoine-Chrysostome Quatremère de Quincy, "Character," 9H, no. 7 (1985): 25-39 (for a more extended version of Quatremère's encyclopedia entry on character).
Claude-Nicolas Ledoux, "Prospectus of Architecture considered in relation to art, mores and legislation" (1804), in L'Architecture de C.N. Ledoux (Princeton: Princeton Architectural Press, 1983), xi-xvii, 230-242 (section on City of Chaux).
Jean-Nicolas Louis Durand, Precis of the Lectures on Architecture with Graphic Portion of the Lectures on Architecture (1809), intro. Antoine Picon (Los Angeles: Getty Research Institute, 2000), 73-88, 119-127.
Anthony Vidler, "The Theatre of Production: Claude Nicolas Ledoux and the Architecture of Social Reform," AA Files 1, no. 1 (Autumn 1981): 54-63.
Anthony Vidler, "The Idea of Type: The Transformation of the Academic Ideal, 1750-1830," Oppositions, no. 8 (Spring 1977): 95-115; or rev. ed. "From the Hut to the Temple: Quatremère de Quincy and the Idea of Type," in The Writing of the Walls (Princeton, NJ: Princeton Architectural Press, 1987), 147-64.
Eric J. Hobsbawm, The Age of Revolution, 1789-1848 (Cleveland: World Pub. Co, 1982), "Chapter 1: The World in the 1780s" and "Chapter 3: The French Revolution."
Vittoria de Palma, "Architecture, Environment, and Emotion: Quatremère de Quincy and the Concept of Character," AA Files 47 (2002): 45-56.
Lorraine Daston and Peter Galison, Objectivity (Brooklyn: Zone Books, 2007).
Georges Teyssot, "Figuring the Invisible," A Topology of Everyday Constellations (Cambridge, MA: MIT Press, 2013), 31-82.

Week 3: February 9
Theories of Sensation: the Sublime, the Beautiful and the Picturesque

Sensation, cognition and British empiricism: Locke's Essay on Human Understanding. Aesthetic theory on the beautiful and the sublime: Burke's Enquiry. The English garden and the pastoral as unifying worldview. Picturesque as third category: Price vs. Payne Knight. John Soane.

Edmund Burke, A Philosophical Enquiry Into the Origin of our Ideas of the Sublime and Beautiful, edited and Introduction by J.T. Boulton (London: Routledge and Kegan, 1958), Introduction on Taste 11-26, Part Two 57- 87.
Uvedale Price, An Essay on the Picturesque, as Compared with the Sublime and the Beautiful; and, on the Use of Studying Pictures, for the Purpose of Improving Real Landscape (London: printed for J. Robson, 1794). Full text online: http://www.archive.org/details/essaysonpictures01priciala

W.J.T. Mitchell, "Introduction" and "Imperial Landscape," Landscape and Power (Chicago: University of Chicago Press, 2002).
Addison Godel, "From "Terrestrial Paradise" to Dreary Waste"": Race and the Chinese Garden in European Eyes," in Race and Modern Architecture: A Critical History form the Enlightenment to the Present, ed.s Irene Cheng, Charles L. Davis II, and Mabel O. Wilson (Pittsburgh, Pa: University of Pittsburgh Press, 2020), 79-95.

John Locke, Essay on Human Understanding [1671] (Indiannapolis: Hackett, 1996), 33-46, 69-78, 85-104.

David Hume, "Of the Standard of Taste," Of the Standard of Taste and Other Essays (Indianapolis & New York: The Bobbs-Merrill Company, 1965).

Richard Payne Knight, excerpt from The Landscape, a Didactic Poem [1795], in Art in Theory 1648-1815: An Anthology of Changing Ideas, ed. Charles Harrison et al. (Malden, MA: Blackwell Publishers, 2000), 868-76.

Anthony Vidler, "Notes on the Sublime: From Neoclassicism to Postmodernism", in Canon—The Princeton Journal (New York: Princeton Architectural Press, 1988), 165-91.

Nikolaus Pevsner, "The Picturesque in Architecture," Royal Institute of British Architects Journal, vol. 55 (Dec. 1947), pp. 55-61.

Peter Collins, "The Influence of the Picturesque," Changing Ideals in Modern Architecture 1750-1950 (Montréal: McGill University Press, 1965), 42-58.

John Dixon Hunt, "Ut Pictura Poesis, Ut Pictura Hortus, and the Picturesque," Gardens and the Picturesque: Studies in the History of Landscape Architecture (Cambridge: The MIT Press, 1992).

Robin Middleton, "Soane's Spaces and the Matter of Fragmentation," John Soane, Architect: Master of Space and Light, ed. Margaret Richardson and Mary Anne Stevens (London: Royal Academy of Arts, 1999), 26-37.

Barry Bergdoll, "Experimental Architecture: Landscape Gardens and Reform Institutions," European Architecture 1750-1890 (Oxford: Oxford University Press, 2000), 73-85.

W.J.T. Mitchell, ed., Landscape and Power (Chicago: University of Chicago Press, 2002). See in particular the essays "System, Order, and Abstraction: The Politics of English Landscape Drawing around 1795" by Ann Bermingham and "Turner and the Representation of England" by Elisabeth Helsinger.

Week 4: February 16
Historicism and Materialism: Tectonics and Style

Philosophy of history in 18th century Prussia: Herder. Architecture style and national identity: Goethe's appreciation of the Gothic. Prussian Enlightenment in architecture: Friedrich Gilly. Karl Friedrich Schinkel. 19th century philosophy of history: Hegel. New industrial materials and the battle of styles: Botticher's Hellenism vs. Hubsch's rundbogenstijl. Tectonics. Ethnographic history of style in architecture: Semper's Four Elements.

Johanne Wolfgang von Goethe, "On German Architecture" (1772), Architectural Review, XCVII (1945): 45-59.

Heinrich Hübsch, "In What Style Should we Build?" [1829], In What Style Should We Build? The German Debate on Architectural Style (Santa Monica, CA: Getty Center for the History of Art and the Humanities, 1992), 64-101.

Gottfried Semper, from "The Four Elements of Architecture" [1851] in The Four Elements of Architecture and Other Writings, translated by Harry Francis Mallgrave and Wolfgang Hermann, (Cambridge, UK, 1989): 101-129.

Rám Ráz, Essay on the Architecture of the Hindus (London: The Royal Asiatic Society of Great Britain and Ireland, 1834).

Madhuri Desai, "Interpreting an Architectural Past: Ram Raz and the Treatise in South Asia," JSAH, Vol. 71, No. 4 (December 2012): 462-487.

Immanuel Kant, "An Answer to the Question: What is Enlightenment?" [1784], What is Enlightenment?: Eighteenth Century Answers and Twentieth Century Questions, James Schmidt, ed. (Berkeley: University of California Press, 1996), 58-64.

Friedrich Gilly, "Some Thoughts on the Necessity of Endeavoring to Unify the Various Departments of Architecture in Both Theory and Practice", Friedrich Gilly: Essays on Architecture 1796-1799, intro.

Fritz Neumeyer (Santa Monica, CA: Getty Center for the History of Art and the Humanities, 1994), 165-173.

Karl Bötticher, "The Principles of the Hellenic and Germanic Ways of Building" [1846], In What Style Should We Build? The German Debate on Architectural Style (Santa Monica, CA: Getty Center for the History of Art and the Humanities, 1992), 147-167.

G.W.F. Hegel, Aesthetics: Lectures on the Fine Arts, ed. T. Knox, 2 vols, (Oxford: Oxford University Press, 1975), vol. II, 630-638, 660-667, 684-688.

Gottfried Semper, Style, intro. Harry Francis Mallgrave (Los Angeles: Getty Research Institute, 2004).

Philippe Lacoue-Labarthe & Jean-Luc Nancy, "Overture: The System-Subject," in Literary Absolute: The Theory of Literature in German Romanticism (Albany: State University of New York, 1988), 27-38.

Nikolaus Pevsner, "Goethe and Schlegel," Some Architectural Writers of the Nineteenth Century (Oxford: Clarendon Press, 1972), 9-15.

Alan Colquhoun, "Three Kinds of Historicism," Modernity and the Classical Tradition, Cambridge, Mass., 1989, 3- 19.

Kurt Forster, "Schinkel's Panoramic Planning of Central Berlin," Modulus (Univ. of Va., 1983): 16.

Kurt W. Forster, "Only Things that Stir the Imagination': Schinkel as a Scenographer," Karl Friedrich Schinkel, Karl Friedrich Schinkel, 1781-1841: The Drama of Architecture (Tubingen: Wasmuth; Chicago: Art Institute of Chicago, 1994), 18-35.

Barry Bergdoll, "Karl Friedrich Schinkel," in Macmillan Encyclopedia of Architects (New York: Free Press; London: Collier Macmillan, 1982), 679-94.

Barry Bergdoll, Karl Friedrich Schinkel: An Architecture for Prussia (New York: Rizzoli, 1994).

Barry Bergdoll, "Archaeology vs. History: Heinrich Hübsch's Critique of Neoclassicism and the Beginnings of Historicism in German Architectural Theory," Oxford Art Journal 5 (1983) 2, 3-12.

Barry Bergdoll, European Architecture 1750-1890 (New York: Oxford University Press, 2000), "Chapter 5: Nationalism and Stylistic Debates in Architecture," 138-170.

Kenneth Frampton, Studies in Tectonic Culture: the Poetics of Construction in Nineteenth and Twentieth Century Architecture, ed. John Cava (Cambridge, MA: MIT Press, 1995).

"A conversation with Kenneth Frampton" [interview], Kenneth Frampton, Hal Foster and Stanley Allen, in October, no. 106 (Fall 2003): 35-58.

Week 5: February 23
Utopian Socialism

Bentham's utilitarianism and the panopticon. 19th century utopian villages for ideal communities: Owen's Parallelogram, Saint-simonian city of industrial progress, Fourier's Phalanstère and Godin's Familistère. The critique of Marx and Engels. Ebenezer Howard and the garden city.

Charles Fourier, "Selections Describing the Phalanstery," in The Utopia Reader, ed. by Gregory Claeys and Lyman Tower Sargent (New York: New York University Press, 1999), 192-99.

Jeremy Bentham, "Panopticon, or the Inspection House" (1787), excerpt in Liane Lefaivre and Alexander Tzonis, The Emergence of Modern Architecture: A documentary history from 1000 to 1810 (London/New York: Routledge, 2004), 444-54.

Karl Marx and Friedrich Engels, "The Communist Manifesto," in The Marx-Engels Reader, ed. Robert C. Tucker (New York: Norton, 1972), 335-62.

Dolores Hayden, "Socialism in Modern Villages," The Grand Domestic Revolution: A History of Feminist Designs for American Homes, Neighborhoods and Cities (Cambridge, MA: MIT Press, 1981), 32-53.

Osama W. Abi-Mershed, Apostles of Modernity: Saint Simonians and the Civilizing Mission in Algeria (Stanford, CA: Stanford University Press, 2010).

Robert Owen, "Essay Two," New View of Society [1817] (London: Longman, Hurst, Rees, Orme and Brown, 1818), 25-60.

Jean-Baptiste André Godin, Social Solutions [1871] (New York: John W. Lovell Company, 1886).

Ebenezer Howard, Garden Cities of To-morrow [1902] (London: Faber & Faber, 1945).

Friedrich Engels, "Socialism: Utopian and Scientific," in The Marx-Engels Reader, ed. Robert C. Tucker (New York: Norton, 1972), 605-39.

Walter Benjamin, "Paris: Capital of the 19th Century," Reflections (New York: Schocken Books, 1978) or New Left Review (March-April 1968), 77-88.

Robin Evans, "Bentham's Panopticon: An Incident in the Social History of Architecture," Architectural Association Quarterly, 3 (Spring 1971): 21-37.

Leonardo Benevolo, The Origins of Modern Town Planning (Cambridge, MA: MIT Press, 1967), 39-85.

Anthony Vidler, "The Scenes of the Street: Transformations in Ideal and Reality, 1759-1871", On Streets, ed. Stanford Anderson (New York: The Institute for Architecture and Urban Studies/The MIT Press, 1978), 28-111; reprinted in Vidler, The Scenes of the Street and Other Essays (New York: The Monacelli Press, 2011), 16-127.

Michel Foucault, Discipline and Punish: The Birth of the Prison (New York: Vintage Books, 1979), 195-228.

C.A. Bayly, The Birth of the Modern World, 1780-1914 (Malden, MA: Blackwell, 2004), "Chapter 8: The Theory and Practice of Liberalism, Rationalism, Socialism and Science," 284-324.

Richard Wittman, "Space, Networks, and the Saint-Simonians," Grey Room 40 (Summer 2010): 24-49.

Week 6: March 2
Theories of Standardization: Rationalism and Functionalism

Simmel, Benjamin, and the metropolis: industrialization, massification, and estrangement. Industry, mass production and design: Rathenau, Muthesius and the German Werkbund. Rationalization of production process: taylorism. Le Corbusier's Towards an Architecture and The City of To-morrow. Gropius, the Bauhaus and the new architecture. The CIAM: setting standards for the modern city.

Georg Simmel, "The Stranger" (1908), and "The Metropolis and Mental Life" (1903), in The Sociology of Georg Simmel, trans. and ed. Kurt H. Wolff (New York: Free Press, 1950), 402-408, 409-424.

Ulrich Conrads, editor. Programs and Manifestoes on 20th Century Architecture (Cambridge, MA: MIT Press, 1964), 28-31, 117-120. 1914 "Werkbund theses and antitheses" — Muthesius/Van de Velde; 1928 "Building" — Hannes Meyer

Margarete Schutte-Lihotzky, "Passages from Why I Became an Architect," West 86th: A Journal of Decorative Arts, Design History, and Material Culture (February 2011).

Mary McLeod, "Domestic Reform and European Modern Architecture: Charlotte Perriand, Grete Lihotzky, and Elizabeth Denby," Modern Women: Women Artists at the Museum of Modern Art (New York: Museum of Modern Art, 2010), 175-191.

Mabel Wilson, "Dancing in the Dark: The Construction of Race in Le Corbusier's Radiant City," in Places through the Body, ed. Heidi J. Nast and Steve Pile (London: Routledge, 1998), 133-152.

Le Corbusier, "Eyes that Do Not See III: Automobiles" and "Architecture or Revolution", in Towards an Architecture [1923] (Santa Monica, CA: Getty Research Institute for the History of Art and the Humanities, 2007), 177-191, 291-307.

Hermann Muthesius, Style-Architecture and Building-Art: Transformations of Architecture in the Nineteenth Century and its Present Condition [1908] (Santa-Monica, CA: Getty Center for the History of Art and the Humanities, 1994).

Walter Gropius, "The New Architecture and the Bauhaus", "Standardization" and "Rationalization", in The New Architecture and the Bauhaus (Cambridge, MA: MIT Press, 1965), 19-44.

Frederick Winslow Taylor, The Principles of Scientific Management [1911] (New York: Dover, 1998).

Adolf Behne, "No Longer Shaped Space but Designed Reality", in The Modern Functional Building (1923) (Santa Monica, CA: Getty Research Institute for the History of Art and the Humanities, 1996), 119-47.

Henry-Russell Hitchcock and Philip Johnson, The International Style: Architecture since 1922 (New York: W. W. Norton, 1932).

Nikolaus Pevsner, Pioneers of the Modern Movement: From William Morris to Walter Gropius (London: Faber & Faber, 1936); republished as Pioneers of Modern Design: From William Morris to Walter Gropius (New Haven and London: Yale University Press, 2005).

Sigfried Giedion, "The New Space Conception: Space-Time" and "The International Congresses for Modern Architecture (CIAM) and the Formation of Contemporary Architecture" Space, Time and Architecture: the Growth of a New Tradition (Cambridge: Harvard University Press, 1967), 430-443, 696-706.

Siegfried Kracauer, "The Mass Ornament" [1927], in The Mass Ornament: Weimar Essays, trans. Thomas Y. Levin (Cambridge: Harvard University Press, 1995), 74-86.

Walter Benjamin, "Paris, Capital of the Nineteenth Century" (1935), in Walter Benjamin: Selected Writings, Volume 3 1935-1938, ed. H. Eiland and M. Jennings (Cambridge, MA: Harvard University Press, 2002), 32-49.

Max Horkheimer and Theodor W. Adorno, "The Concept of Enlightenment," "The Culture Industry: Enlightenment as Mass Deception," and conclusion, Dialectic of Enlightenment, trans. John Cumming (New York: Continuum, 1988).

Dolores Hayden, "What Would a Non-Sexist City Be Like? Speculations on Housing, Urban Design, and Human Work," Signs, Vol. 5, No. 3, Supplement, Women and the American City (Spring, 1980): S170-S187.

Mary McLeod, ""Architecture or Revolution": Taylorism, Technocracy, and Social Change", Art Journal, Vol. 43, No. 2 (Summer, 1983): 132-147.

Mark Jarzombek, "The Kunstgewerbe,' the 'Werkbund,' and the Aesthetics of Culture in the Wilhelmine Period,"
Journal of the Society of Architectural Historians 53, no. 1 (March 1994): 7-19.

Tilmann Buddensieg, Industriekultur: Peter Behrens and the AEG, 1907-1914 (Cambridge, Mass: MIT Press, 1984).

Stanford Anderson, Peter Behrens and a New Architecture for the Twentieth Century (Cambridge, Mass: MIT Press, 2000).

Frederic Schwartz, The Werkbund: Design Theory and Mass Culture Before the First World War (New Haven: Yale University Press, 1996).

Gillian Naylor, The Bauhaus Reassessed Sources and Design Theory (London: Herbert Press, 1985).
Reyner Banham, Theory and Design in the First Machine Age [1960] (Cambridge, MA: MIT Press, 1980).

Manfredo Tafuri, "The Dialectic of the Avant-Garde," Architecture and Utopia, Design and Capitalist Development
(Cambridge MA: MIT Press, 1999), 78-103.

Anthony Vidler, "Agoraphobia: Psychopathologies of Urban Space" and "The Architecture of Estrangement: Simmel, Kracauer, Benjamin," Warped Space (Cambridge, MA: MIT Press, 2001), 25-46, 65-79.

Week 7: March 23
Theories of Meaning: Phenomenology, Existentialism and Structuralism

Team 10 and the critique of modern architecture: 'man', community and monumentality. Heidegger's phenomenology. Norberg-Schulz's 'genius loci'. Sartre and the ontology of being in the world. The new and the existing in the empirical anti-aesthetic of the Independent Group. Structure and a-history in Levi-Strauss. Aldo Van Eyck and the Dogon: community relationships and structure in architecture.

> Alison and Peter Smithson, "The 'As Found' and the 'Found'," The Independent Group (Cambridge, MA: MIT Press, 1991) 201-202.
> Martin Heidegger, "Building Dwelling Thinking," (1944), Basic Writings, ed. David Krell (San Francisco: Harper SanFrancisco, 1977), 343-363.
> Christian Norberg-Schulz, Genius Loci: Towards a Phenomenology of Architecture (New York: Rizzoli, 1979).

> Charles L. Davis II, "Blackness in Practice: Toward an Architectural Phenomenology of Blackness," in Log 42 (Winter/Spring 2018): 43-54.

> Alison Smithson, ed., Team 10 Primer (Cambridge, MA: MIT Press, 1968).
> Jean-Paul Sartre, Being and Nothingness [1943], trans. Hazel E. Barnes (New York: Washington Square Press, 1992).
> Claude Levi-Strauss, Tristes Tropiques [1955], trans. John and Doreen Weightman (New York: Penguin Books, 1992).
> Gaston Bachelard, The Poetics of Space [1958] (Boston: Beacon Press, 1994).
> Christian Norberg-Schulz, Intentions in Architecture (Oslo: Universitetsforlaget; London: Allen & Unwin, 1963). Christian Norberg-Schulz, Existence, Space and Architecture (New York & Washington: Praeger, 1971).
> Karsten Harries, "Space, Time, and Dwelling", in The Ethical Function of Architecture (Cambridge, MA, and London: MIT Press, 1997), 136-268.
> Kenneth Frampton, "Team 10, Plus 20: The Vicissitudes of Ideology", in Labour, Work and Architecture (London, New York: Phaidon, 2002), 136-149.
> Jorge Otero-Pailos, Architecture's Historical Turn: Phenomenology and the Rise of the Postmodern (University of Minnesota Press, 2010).

Week 8: March 30
Radical Criticism

The postwar critique of modern urban living: consumer society and everyday life. Situationist International: derive and psycho-geography, homo ludens and the construction of situations. Constant's New Babylon. Lefebvre's Right to the City. Spatial Urbanism and Utopie. Superarchitettura: Superstudio and Archizoom.

> Guy Debord, "Report on the Construction of Situations and on the International Situationist Tendency's Conditions of Organization and Action" (1957) and "Theory of the Derive" (1958), in Situationist International Anthology, ed. Ken Knabb (Berkeley: Bureau of Public Secrets, 1981), 17-25 and 50-54.
> Henri Lefebvre, "The Right to the City" (1967), in Architecture Culture 1943-68, trans. Christian Hubert, ed. Joan Ockman (New York: Columbia Books on Architecture / Rizzoli, 1993), 427-436.
> Superstudio, "Twelve Cautionary Tales for Christmas: Premonitions of the Mystical Rebirth of Urbanism", in Architectural Design, vol. 42 (December 1971): 737-742.

Constant Niewenhuys, "The Principle of Disorientation", in Situationists: Art, Politics, Urbanism, ed. Libero Andreotti, Xavier Costa (Barcelona: MAC/Actar, 1996), 86-87.

Henri Lefebvre, Critique of Everyday Life, trans. John Moore (London and New York: Verso, 1991). Guy Debord, The Society of the Spectacle [1967] (New York: Zone Books, 1995).

Archizoom Associati. "No-Stop City" (1971), in Dall'onda pop alla superficie neutra: Archizoom Associati 1966- 1974, ed. R. Gargiani (Milan: Electa, 2007), 215.

Reyner Banham, Megastructure: Urban Futures of the Recent Past (London: Thames & Hudson, 1976). Simon Sadler, The Situationist City (Cambridge, MA: MIT Press, 1998).

Tom McDonough, "The Beautiful Language of My Century": Reinventing the Language of Contestation in Postwar France, 1945-1968 (Cambridge, MA: October Books/The MIT Press, 2007).

Tom McDonough, ed., The Situationists and the City (London, New York: Verso, 2009).

Tom McDonough, ed., Guy Debord and the Situationist International: Texts and Documents (Cambridge, MA: October Books/The MIT Press, 2002).

Lukasz Stanek, Henri Lefebvre on Space: Architecture, Urban Research, and the Production of Theory (Minneapolis: University of Minnesota Press, 2011).

Larry Busbea, Topologies: The Urban Utopia in France, 1960-1970 (Cambridge, MA: MIT Press, 2007).

Craig Buckley and Jean-Louis Violeau, ed., Utopie: Texts and Projects, 1967-1978 (Los Angeles: Semiotext(e), 2011).

Peter Lang and William Menking, Superstudio: Life Without Objects (Milan, Italy: Skira, 2003).

Week 9: April 6
Postmodern Historicities: Tradition, Regionalism, Globalization

Postmodern returns to history: critiques of formal abstraction and functionalism in architecture. Robert Venturi's Complexity and Contradiction: tradition in architectural history. Argan, Rossi and typology: history vs. collective memory in urban form. Strada Novissima and the "end of prohibition." The critique of critical regionalism: post-colonialism and globalization.

Robert Venturi, Complexity and Contradiction in Architecture (New York: Museum of Modern Art, 1966), 18-103.

Aldo Rossi, "The Structure of Urban Artifacts" and "Introduction to the Portuguese Edition," The Architecture of the City [1966], trans. Diane Ghirardo and Joan Ockman (New York and Massachusetts: Oppositions Books, IAUS/MIT, 1982), 28-61, 169-177.

Kenneth Frampton, "Towards a Critical Regionalism: Six Points for an Architecture of Resistance," The Anti- Aesthetic: Essays on Postmodern Culture (Bay Press, 1983), 16-30.

Arjun Appadurai, "Disjuncture and Difference in the Global Cultural Economy," Modernity at Large: Cultural Dimensions of Globalization (Minneapolis: University of Minnesota Press, 1996), 27-47.

Maurice Halbwachs, "Space and the Collective Memory", The Collective Memory (New York: Harper & Row Colophon Books, 1980), 128-57.

Giulio Carlo Argan, "On the Typology of Architecture," Architectural Design (Dec. 1963): 564-5. Also in Kate Nesbitt, ed., Theorizing a New Agenda for Architecture. An Anthology of Architectural Theory 1965-1995 (New York: Princeton Architectural Press, 1996), 240-247.

Alan Colquhoun, "Typology and Design Method," in Baird and Jencks, "Meaning in Architecture," arena Architectural Association Journal vol. 83 (June 1967):11-14. In Collected Essays, pp. 45-51.

Massimo Scolari, "New Architecture and the Avant Garde" (1973) in K. Michael Hays, ed., Architecture Theory since 1968 (New York: Columbia and MIT, 1998), 124-145.

Anthony Vidler, "The Third Typology," Oppositions 7 (Winter 1976): 1-4, and "La Troisième Typologie; The Third Typology," in Rational Architecture, ed., L. Krier, M. Culot (Brussels, 1977): 23-32.

Denise Scott Brown, "Learning from Pop" and "Pop Off: Reply to Kenneth Frampton," Casabella 359-360 (December 1971): 15, 41-45.

Kenneth Frampton, "America 1960-1970: Notes on Urban Images and Theories," Casabella 359-360 (December 1971): 31-33.

Alan Colquhoun, "The concept of regionalism," in G.B. Nalbantoglu and W. Chong Tai, eds., Postcolonial space(s). (New York: Princeton Architectural Press, 1997), 13-24.

Alexander Tzonis and Liane Lefaivre, "Why Critical Regionalism Today?" in Nesbit, ed., Theorizing a New Agenda for Architecture (Princeton: Princeton Architectural Press, 1996), 483-491.

Charles Jencks, "Post-Modern Architecture", The Language of Post-Modern Architecture (London: Academy Editions, 1977), 81-132.

Paolo Portoghesi, "End of Prohibition" and "Hopes and Fears", Postmodern (New York: Rizzoli, 1983), 14-49. Robert A.M. Stern, "The Doubles of Post-Modernism," Harvard Architectural Review (Spring 1980), 75-87.

Jürgen Habermas, "Modernity: An Incomplete Project" (1980), The Anti-Aesthetic: Essays on Postmodern Culture, ed. Hal Foster (New York: The New Press, 1998), 3-15.

Frederick Jameson, "Postmodernism and Consumer Society," The Anti-Aesthetic: essays on Post-modern Culture (Seattle: Bay Press, 1983), 111-125.

Andreas Huyssen, "Mapping the Postmodern," New German Critique, 33 (Autumn 1984), 5-52. Hal Foster, "(Post)Modern Polemics," New German Critique, 33 (Autumn, 1984), 67-78.

Mary McLeod, "Architecture and Politics in the Reagan Era: From Post-Modernism to Deconstruction," Assemblage 8 (February 1989), 22-59.

Alan Colquhoun, "Three Types of Historicism," Modernity and the Classical Tradition (MIT Press 1989), 3-20. Michael Hardt and Antonio Negri, Empire (Cambridge: Harvard University Press, 2000).

Week 10: April 13
Technologism: Computation, Cybernetics, and Parametricism

The focus on information and computation in architecture. Christopher Alexander: from diagrams to patterns. Cybernetics and system theory in design. Gordon Pask and Cedric Price: feedback loops in the Fun Palace. Nicolas Schöffer's Ville Cybernétique. Greg Lynn's mathematical space of architecture. Deleuze's theory and the digital turn in architecture. Patrik Schumacher and the autopoiesis of parametricism.

Greg Lynn, "Animate Form," Animate Form (New York: Princeton Architecture Press, 1999), 9-41.

Mario Carpo, "Ten Years of Folding," introductory essay to the reprint of Greg Lynn, ed., Folding in Architecture (London: Wiley Academy, 2004), 14-19.

Patrik Schumacher, "Parametric Semiology: the Design of Information Rich Environments," in Pablo Lorenzo- Eiroa and Aaron Sprecher, ed.s, Architecture In Formation: On the Nature of Information in Digital Architecture (New York: Routledge, 2013), 53-59.

John May, "Everything is Already an Image," in Log 40 (2017): 9-26.

Serge Chermayeff and Christopher Alexander, Community and Privacy: Toward a New Architecture of Humanism (New York: Doubleday & Company, Inc., 1963).

Christopher Alexander, Notes on the Synthesis of Form (Cambridge, MA: Harvard University Press, 1964).

Christopher Alexander, A Pattern Language: Towns, Buildings, Construction (New York: Oxford University Press, 1977).

Luigi Moretti, Exhibition of Parametric Architecture and of Mathematical and Operational Research in Town Planning, catalog of the 12th Milan Triennial Exhibition (Milan: La Triennale di Milano, 1960).

Luigi Moretti, "Form as Structure," in Baird and Jencks, Arena, Meaning in Architecture Issue (June 1967): 22-24.

Cybernetic Serendipity, Introduction by Jasia Reichardt; Gordon Pask, Colloquy of Mobiles; Photographs of the Installation at the ICA. Cybernetic Serendipity Archive: cyberneticserendipity. net

Nicolas Schöffer, La Ville Cybernétique (Paris: Édition Tchou, 1969).

Mary Louise Lobsinger, "Cybernetic Theory and the Architecture of Performance: Cedric Price's Fun Palace," in Goldhagen and Legault, eds., Anxious Modernisms: Experimentalism in Postwar Architectural Culture (Montreal and Cambridge, Mass: Canadian Center for Architecture and MIT Press, 2000), 119-139.

Gilles Deleuze, The Fold. Leibniz and the Baroque [1989] (Minneapolis: University of Minnesota Press, 1993). Greg Lynn, Folding in Architecture: Architectural Design Profile 102 (London: Academy Editions, 1993).

Greg Lynn, "Blobs" (1993), "Arch. & Curvilinearity" (1993), Folds, Bodies and Blobs: Collective Essays (Princeton: Princeton University Press, 1998), 09-134, 157-168.

Stan Allen, "Diagrams Matter" Any 23 (1998): 16-19.

Mario Carpo, "Post-Hype Digital Architecture: From Irrational Exuberance to Irrational Despondency," Grey Room 14 (Winter 2004), 102-115.

Mario Carpo, "Digital Darwinism: Mass Collaboration, Form-Finding, and the Dissolution of Authorship," Log 26 (Fall 2012).

Georges Teyssot, "Toward a Cyborg Architecture," A Topology of Everyday Constellations (Cambridge, MA: MIT Press, 2013), 183-217.

Matthew Poole and Manuel Shvartzberg, ed.s, The Politics of Parametricism: Digital Technologies in Architecture (London and New York: Bloomsbury Academics, 2015).

Patrik Schumacher, ed., Parametricism 2.0: Rethinking Architecture's Agenda for the 21st Century, AD (London: Academy Press, 2016).

Andrew Goodhouse, ed., When Is the Digital in Architecture? (Montreal and Berlin: Canadian Centre for Architecture and Sternberg Press, 2017).

Phillip G. Bernstein, Architecture Design Data: Practice Competency in the Era of Computation (Basel: Birkhauser, 2018).

John May, Signal. Image. Architecture. (New York: Columbia Books on Architecture and the City, 2019).

Week 11: April 20
Postcolonialism and Decoloniality

Edward Said's Orientalism and the stylistic appropriation of nonwestern culture in architecture. The Subaltern Studies collective. Indigenous architecture and the representation of subaltern "Otherness." Postcolonial questions of race and the disenfranchisement of minorities in planning and design. Walter Mignolo's On Decoloniality and the Latin territories. Decolonizing architectural knowledge and practices.

Irene Cheng, Charles L. Davis II and Mabel Wilson, eds., "Introduction," Race in Modern Architecture (Pittsburgh, PA: University of Pittsburg Press, 2020), 3-20.

Mario Gooden, Dark Space: Architecture, Representation, Black Identity (New York: Columbia Books on Architecture and the City, 2014).

Edward W. Said, Orientalism (New York: Vintage Books, 1979).

Gwendolyn Wright, The Politics of Design in French Colonial Urbanism (Chicago, IL: University of Chicago Press, 1991).

Nezar Alsayyad, ed., Forms of Dominance: On the Architecture and Urbanism of the Colonial Enterprise (Aldershot: Avebury, 1992).

Mark Crinson, Empire Building: Orientalism and Victorian Architecture (London, New York: Routledge, 1996). Achille Mbembe, On the Postcolony (Berkeley, Ca: University of California Press, 2001).

Richard Rothstein, The Color of Law: A Forgotten History of How Our Government Segregated
America (Koln: Taschen, 2011).
Mabel Wilson, Negro Building: African Americans in the World of Fairs and Museums (Berkeley:
University of California Press, 2012).
Dianne Harris, Little White Houses: How the Postwar Home Constructed Race in America (New York:
University of Minnesota Press, 2013).
Samia Henni, Architecture of Counterrevolution: the French Army in Northern Algeria (Zurich: GTA
Verlag, 2017).
Walter D. Mignolo, The Darker Side of Western Modernity: Global Futures, Decolonial Options
(Durham: Duke University Press Books, 2011).
Walter D. Mignolo, On Decoloniality: Concepts, Analytics, Praxis (Durham: Duke University Press
Books, 2018).
Boaventura Sousa Santos, The End of the Cognitive Empire: The Coming of Age of Epistemologies of
the South (Durham: Duke University Press Books, 2018).

Week 12: April 27
Theories of Environment: Reason and Nature Revisited

Theories of the environment in architecture. Buckminster Fuller, Ian McHarg, John McHale and the
ecological movements in the 1960s and 70s. Theories of environment and design: Gyorgy Kepes
and Tomas Maldonado. The Whole Earth Catalog. From "three ecologies" to "architecture in the
anthropocene." Bruno Latour's Politics of Nature.

Reinhold Martin, "Environment, c. 1971," Grey Room 14 (Winter 2004): 78-101.
Andreas Malm and Alf Hornborg, "The Geology of Mankind? A Critique of the Anthropocene
Narrative," The Anthropocene Review, Vol. 1 (2014): 62-69.
Dipesh Chakrabarty, "The Politics of Climate Change Is More Than the Politics of Capitalism,"
Theory, Culture & Society, Vol. 34 (2017): 25-37.
Bruno Latour, Politics of Nature. How to Bring the Sciences into Democracy (Cambridge, MA.:
Harvard University Press, 2004), pp. 1-32.

Dipesh Chakrabarty, "The Climate of History: Four Theses," Critical Inquiry 35 (Winter 2009): 197-122.

John McHale, The Future of the Future (New York: George Braziller, 1968). Stewart Brand, ed., Whole
Earth Catalog magazine (1968-1972).
Buckminster Fuller, Operating Manual for Spaceship Earth (Carbondale: Southern Illinois University
Press, 1969).
Ian McHarg, Design with Nature (New York: Natural History Press, 1969).
Tomas Maldonado, Design, Nature, and Revolution: Toward a Critical Ecology (New York: Harper &
Row, 1972). Gyorgy Kepes, Arts of the Environment (New York: Braziller, 1972).
Gregory Bateson, "Form, Substance and Difference," Steps to an Ecology of Mind (New York:
Ballantine Books, 1973), 448-468.
Neil Smith, "The Ideology of Nature" and "The Production of Nature," Uneven Development: Nature,
Capital, and the Production of Space (Athens: University of Georgia Press, 1984), 10-48 and 49-
91.
Felix Guattari, The Three Ecologies, trans. Ian Pindar and Paul Sutton (New Brunswick, NJ: Athlone,
2000).
Zygmunt Bauman, "To Each Waste its Dumping Site, or the Waste of Globalization," Wasted Lives:
Modernity and its Outcasts (Cambridge, UK: Polity, 2004), 63-93.
Ulrich Beck, "Risk Society's 'Cosmopolitan Moment'," New Geographies, n.1 (2009): 24-35.
Peder Anker, From Bauhaus to Ecohouse. A History of Ecological Design (Baton Rouge: Louisiana

State University Press, 2010).

Timothy Mitchell, Carbon Democracy: Political Power in the Age of Oil (London, New York: Verso, 2013).

Ettienne Turpin, ed., Architecture in the Anthropocene: Encounters Among Design, Deep Time, Science and Philosophy (Ann Harbor: Michigan Publishing, 2014).

Donna Haraway, Staying with the Trouble: Making Kin in the Chthulucene (New York: Duke University Press Books, 2016).

Andreas Malm, Fossil Capital: the Rise of Steam-Power and the Roots of Global Warming (New York: Verso, 2016), Chapter 3, "The Long Life of the Flow: Industrial Energy Before Coal," 37-57.

Reinhold Martin, "Risk: Excerpts from the Environmental Division of Labor," James Graham et al., ed.s, Climates: Architecture and the Planetary Imaginary (New York: Lars Muller and Columbia Books on Architecture and the City, 2016).

Syllabus: ARCH 4011 Introduction to Urban Design 2020

Faculty: Alan Plattus, Andrei Harwell

Overview

This course provides an introduction to the theory and practice of urban design within the context of the broader fields of urbanism and urban history. That is to say that the design of the built environment will be considered in relation to patterns and practices of urban life and culture, and as a response to historical transformations of the political, economic and technological forces that have shaped cities since their origins. The course will attempt to negotiate between the broader landscape suggested by these forces and the specifics of particular cities at critical moments in their development and the projects which represent the efforts of those cities and their designers to come to terms with the dynamics of urban change. Thus the lectures will include monographic treatments of specific cities and exemplary urban design projects, as well as the general issues and principles of city design suggested by those case studies, including consideration of their implications for contemporary practice. The weekly classes will provide opportunities for the introduction of supplementary examples from the wider field of international urbanism, as well as introducing techniques of urban representation and analysis relevant to the assignments and to student work in studios. Classes will also provide time for discussion of readings and lectures and issues of current interest.

Student work in the course, in addition to responsibility for the weekly reading assignments, will include a series of assignments, focused on one city, that are designed to build up a critical analysis and understanding of that city and its public life and spaces. Students will form working groups to undertake research, discussion and analysis on their chosen city, and in that context, develop both collective and individual work. The final assignment will be an illustrated 20-25-page paper that develops a critique of a recent urban design project in their city based on the readings and themes introduced in the course.

Course Objectives

1. Introduce the theory and practice of urban design withing the context of urbanism and urban history.
2. Explore design of the built environment as it relates to urban life, culture, historical change, politics, economics, and technology.
3. Develop a familiarity with methods of urban representation and analysis.
4. Develop the ability to critique specific urban design projects based on readings and themes introduced in the course.

Assessment Breakdown

Assignments	15%
Participation	15%
Research Project	70%

Schedule

Week 1	September 4	Introduction

Lecture: Buildings, Cities, Landscapes:
The Field of Urban Design and its Representation (9/4)

Reading: Aldo Rossi, The Architecture of the City, Cambridge, 1982, pp. 29-41.
Peter Bosselman, Representation of Places: Reality and Realism in City Design, Berkeley, 1998, Part I, pp. 1-99.

Week 2	September 11	Urban Space and Form in the Pre-Industrial City

Lecture: The Classical City and Its Monuments:
Civic Space, Public Infrastructure, and the Urban Empire (9/11)

Reading: Aristotle, The Politics, Book VII.
Vitruvius, The Ten Books on Architecture, Book V.
Paul Zucker, Town and Square: From the Agora to the Village Green, Cambridge, 1959, pp. 19-62.
Harvard Project on the City, "How to Build a City: Roman Operating System," in Mutations, Barcelona, 2001, pp. 10-23.

Week 3	September 18	Lecture: The Renaissance City and the Perspective Field: From Medieval Enclave to Modern Urban Space (9/18)

Reading: Alberti, On the Art of Building in Ten Books, Book VIII.
Heng Chye Kang, Cities of Aristocrats and Bureaucrats: The Development of Medieval Chinese Citiscapes, Honolulu, 1999, pp.
D.P. Waley and Trevor Dean, Italian City Republics, Abingdon, 2010, Chapter 5-6, pp. 105-69.
Richard Sennett, Flesh and Stone: The Body and the City in Western Civilization, New York, 1994, Chapter 7, pp. 212-251.
Dora Crouch, Spanish City Planning in North America, Cambridge, 1982, pp. 6-19.

Week 4	September 20	Lecture: The Enlightenment City and the Urban Stage: Power, Performance and Public Life (9/25)

Reading: Marc-Antoine Laugier, An Essay on Architecture, Los Angeles, 1977, Chapters V-VI, pp. 121-145.
Richard Sennett, The Fall of Public Man: On the Social Psychology of Capitalism, New York, 1974, Chapters 1, pp. 3-27.
Michael Dennis, Court & Garden: From the French Hotel to the City of Modern Architecture, Cambridge, MA, 1986, Chapter 4, pp. 79-123.
John Summerson, Georgian London, Chapter 13, pp. 177-90.
Edmund Bacon, The Design of Cities, New York, 1967, pp.170-215.

| Week 5 | October 2 | Advanced Studio Travel Weel (no lecture or class) |
| Week 6 | October 9 | Critique and Planning in the Industrial City |

Lecture: The Industrial City and Its Critics:
Mapping Urban Pathologies (10/9)

Reading: Friedrich Engels, The Condition of the Working Class in England, U.S.S.R., 1973, pp. 63-113.
Raymond Williams, Culture and Society, New York, 1958, Chapter VII, pp. 130-158.
Peter Hall, Cities of Tomorrow, Oxford, 1988, Chapter 2, pp. 13-46.
Francoise Choay, The Modern City: Planning in the 19th Century, New York, 1969, pp 7-36, 97-110.

| Week 7 | October 16 | Lecture: The Modern Capital City and the Invention of Urbanism: |

Planning Urban Growth (10/16 — alternative time for undergradiuates)

Reading: Walter Benjamin, "Paris, Capital of the Nineteenth Century," in The Arcades Project, Cambridge, MA, 1999, pp. 3-13.
Camillo Sitte, City Planning According to Artistic Principles (1889), New York, 1965, Chapters XI-XII, pp. 113-159.
Carl Schorske, Fin-de-Siecle Vienna: Politics and Culture, New York, 1980, Chapter II, pp. 24-115.
Donald J. Olsen, The City as a Work of Art: London, Paris, Vienna, New Haven, 1986, pp. 7-85.
Gwendolyn Wright, The Politics of Design in French Colonial Urbanism, Chapter 3, pp. 85-160.

| Week 8 | October 23 | Lecture: The Capitalist City and Progressive Urbanism: |

Reforming Urban Life (10/23 — alternative time for M.Arch. students)

Reading: Frederick Law Olmsted, "Public Parks and the Enlargement of Towns," in Civilizing American Cities: A Selection of Frederick Law Olmsted's Writings on City Landscape, S.B. Sutton, ed., Cambridge, MA, 1971, pp. 52-99.
Peter Hall, Cities of Tomorrow, Oxford, 1988, Chapters 4-6, pp. 86-202.
Werner Hegemann and Elbert Peets, The American Vitruvius: An Architect's Handbook of Civic Art (1922), New York, 1985, Chapter VII, pp. 285-293.

Week 9   October 30   Lecture The Avant-garde City and Modernist Urbanism: Reinventing Urban Form (10/30)

Reading: Georg Simmel, "The Metropolis and Mental Life," in Philip Kasinitz Metropolis: Center and Symbol of Our Times, London, 1994, pp. 30-45.
Le Corbusier, The Radiant City (1933), New York, 1967, pp. 89-173.
Le Corbusier, The Athens Charter (1941), New York, 1973, pp. 43-105.
Alison Smithson, ed., The Team 10 Primer, Cambridge, MA, 1968, pp. 48-73.
Manfredo Tafuri, Architecture and Utopia: Design and Capitalist Development, Chapter 6, pp. 125-49.
Constant, "A Different City for a Different Life," in Guy Debord and the Situationist International, Cambridge, MA, pp. 109-112.

Week 10   November 6   Spectacle and Sustainability in the Post-Industrial City

Lecture: The Urban Turn:
Architectural Theory and the Critique of Modernist Urbanism (11/6)

Reading: Jane Jacobs, The Life and Death of Great American Cities, Chap. 9, pp. 178-186.
Kevin Lynch, The Image of the City, Cambridge, 1960, Chaps. III-IV, pp. 46-117.
Francoise Choay, "Urbanism & Semiology," in Charles Jencks and George Baird, eds., Meaning in Architecture, New York, 1969, pp. 26-37.
Colin Rowe and Fred Koetter, Collage City, Cambridge, MA, 1978, Chapter 3, pp. 50-85.
Anthony Vidler, "The Third Typology," in Rational Architecture, Brussels, 1978, pp. 28-32.

Week 11   November 13   Lecture: The Uses of the Past:
Preservation, Spectacle and the New Urbanism (11/13)

Reading: Vincent Scully, "The Architecture of Community," in The New Urbanism, Peter Katz, ed., New York, 1994, pp. 221-230.
Leon Krier, Architecture: Choice or Fate, Chapter IV, pp. 84-119.
Christine Boyer, The City of Collective Memory, Cambridge, MA, 1994, pp. 421-476.

Week 12   November 20   Lecture: The Bilbao Effect:
                                                   City of Enclaves and Icons (11/20)
Reading: Charles Moore, "You Have to Pay for the Public Life," in You Have to Pay for the Public Life: Selected Essays of Charles W. Moore, Kevin Keim, ed., Cambridge, MA, 2001, pp. 111-141.
Reyner Banham, Megastructures: Urban Futures of the Recent Past, London, 1976, Chapter 3, pp. 33-69.
Rem Koolhaas, Delirious New York: A Retroactive Manifesto for Manhattanism, New York, 1978, pp. 67-133.
Mike Davis, City of Quartz: Excavating the Future in Los Angeles, New York, 1990, Chapter 4, pp. 221-263.
            Margaret Crawford, "The World in a Shopping Mall," in Variations on a Theme Park: The New American City and the End of Public Space, Michael Sorkin, ed., New York, 1992, pp. 3-30.

Week 13   Devember 4   Lecture: The Sustainable City and Region in a Global Field: Small Interventions in Large Systems (12/4)

Reading: Rem Koolhaas, "Whatever Happened to Urbanism?" in S,M,L,XL, New York 1995, pp. 958-971.
Edward J. Soja, Postmodern Geographies: The Reassertion of Space in Critical Social Theory, Chapter 9, pp. 222-248.
The Endless City, Ricky Burdett and Deyan Sudjic, eds. London, 2008, pp. 102-133.
Mike Davis, Planet of Slums, London, 2009, Chapter 5, pp. 94-120.
Charles Waldheim, "Landscape as Urbanism," in The Landscape Urbanism Reader, Charles Waldheim, ed., New York, 2006, pp.
Peter Calthorpe and William Fulton, The Regional City, Washington, DC, 2001, Part I, pp. 15-41.
John Kaliski, "The Present City and the Practice of City Design," in Everyday Urbanism, John Chase, Margaret Crawford and John Kaliski, eds., New York, 1999, pp. 88-109.
Timothy Beatley, Green Urbanism: Learning from European Cities, Washington D.C., 2000, Chapters 1-2, pp. 3-75.
Jaime Lerner, Urban Acupuncture, Washington, 2014, pp. 21-45.

Syllabus: ARCH 1019c Visualization and Computation 2021

Petite Planets: An Ecology of Digital Modernity

Faculty: Daniele Profeta

Overview

"The expanded vision produced by these instruments [telescopes and microscopes] made it clear that the universe was not made to the measure of man, introduced the possibility of a plurality of worlds, and resulted in a radical reformulation of the sense of the human place in the cosmos."
     -Vittoria Di Palma, "Zoom- Google Earth and Global Intimacy" (London: Routledge, 2009)

"[Planet-making] narratives are experimental spaces where political, ethical and aesthetic topographies, developed in a dialectical relationship between culture and Earth's nature, are overlaid."
     Chris Pak, "Terraforming: Ecopolitical Transformations and Environmentalism in Science Fiction" (Liverpool: University Press, 2016)

"But on your tiny planet, my little prince, all you need to do is move your chair a few steps. You can see the day end and the twilight falling whenever you like..."
     Antoine de Saint-Exupéry, "The Little Prince" (New York: Harcourt, Brace & World, 1943)

While zooming-in and zooming-out in a multi-perspectival digital bubble seems to have become the ubiquitous mode of self- orientation, it is important to recognize that such environment, far from being a purely descriptive, passive representation of an 'external reality', performs as a cognitive agent of cultural organization. A strange loop is in place here: our world- views afford the development of specific modes of representation, of engagement with the world, and in turn they begin to have an impact in that same world, becoming an active element in the way we understand it. Put more simply, it is the technologies through which we see and experience the world that define the way we construct it.

In this class we will leverage immersive modes of representation, what we will define as a series of 'Planetary Images', to reflect on our engagement with the built environment. Since the late eighteenth century, from a newly acquired elevated point of view with mountaineering and air-balloon flights, panoramic views have shaped the way in which we engage with the world around us as well as produced experimental means of representing landscape. If Bourrit's early illustrations of Mont Buet aimed to accurately depict a 360-degree view of the landscape as a way to acquire scientific mastery of the surrounding territory, today #tinyplanets pop-up on our social media feeds as trending images of a digitally inhabited landscape.

This course engages with these modes of representation as active agents shaping the way in which we can understand (and design) the world around us: a series of Petite Planets to continue asking questions about the cities and landscapes that we want to construct.

Learning Objectives and Organization

The main objective of this course is to introduce the students to contemporary image making technologies. Through a critical understanding of the histories of these modes of representation, of the social and political contexts from which they were developed, the students will begin to recognize their impact on our contemporary culture. The class is organized around a series of Workshops that will introduce the students to relevant texture mapping, 360 rendering and animation techniques. These will be paired with Lectures that will allow the students to acquire a critical position towards the material encountered.

Course Objectives

1. Learn the fundamentals of various software and explore the ways in which those skills can be applied to one's workflow and design thinking.

Assessment Breakdown

Participation	10%
Weekly Assignments/ Project Development	40%
Final Project	50%

Students will be required to complete the assigned readings and to actively participate in class discussions. A series of exercises will be assigned throughout the course which will require each student to produce images and short videos engaging with the topic at hand. The final presentation will consist of an installation of petite planets images as well as videos.

After taking this class students will be able to:

- Digitally construct hyper-real materials through material Scanning;
- Visualize complex three-dimensional environments and communicate projective visions for the sites both visually and in written form;
- Create narrative-based animations of a digital Environment;
- Construct Immersive Imagery and control its usage to build engaging narratives.
- Synthesize critical views of the topics analyzed throughout the semester and digital skills to construct immersive narrative-based images and animations.

Required Software

The course will use Autodesk Maya 2020 or newer, Substance Alchemist (educational license available), Adobe After Effects, Adobe Illustrator, Adobe Photoshop.

Bibliography

There will be a series of assigned readings throughout the course. Students are required to complete them and actively engage in discussions during the classes. Readings will be made available prior to each session as .PDFs. The following list represents a general overview of the topics that will be touched in lectures, exercises and discussions.

Latour, Bruno, "Down to Earth: Politics in the New Climate Regime" (Cambridge: Polity Press, 2018)
Steyerl, Hito, "Duty Free Art: Art in the Age of Planetary Civil War" (New York: Verso, 2017)
Di Palma, Vittoria, "Zoom- Google Earth and Global Intimacy" (London: Routledge, 2009)

Pak, Chris, "Terraforming: Ecopolitical Transformations & Environmentalism in SF" (Liverpool University Press, 2016)
Rieder, John, "Colonialism and the emergence of Science Fiction" (Wesleyan University Press, 2008)
Lavander III, Isiah, "Black and Brown Planets: The politics of Race in Science Fiction" (University Press of Mississippi, 2014)

Schedule

Week 1 Intro - Digital Materiality. Arnold & Substance Alchemist

Week 2 On Ground-less-ness. Texture Mapping / Base Modeling.
Due: min. (x3) Material Planets
.png - 1500 × 1500px

Week 3 World Building - Fiction as Method. Digital Terrains.
Due: min (x2) Articulated Planets .png - 1500 × 1500px

Week 4 Race and Science Fiction. Tiny Planets.
Due: min (x3) Planet Images
.png - 1500 × 1500px

Week 5 Realism and CGI. Animation in Maya.
Due: (x1) 360° Tiny Planets
.png - 1500 × 1500px

Week 6 Final Review.
Due: (x1) 20 seconds Planet(s) animation
.mp4 - 1280 × 1280px

Grid Space: Scripting & Algorithmic Design

Faculty: Dorian Booth

Overview

While recent trends in architecture have focused on constructions seemingly absent of or ambiguously related to grids or regulating frameworks (what could be termed the aformal, informal, or formless), these organizational strategies have significant historical importance and continue to play a central role in defining formal relationships. While one approach seeks to collapse structure, the other sees it as both essential and generative. As a result, renewed discussion questioning the relative importance of the grid within the disciplines of art and architecture has emerged. One could understand the development of this discourse through the lens of two primary functions of the grid:

Grid as Drawing Device: Techniques of both parallel and perspective projection rely on the underlying logic of the grid to translate three-dimensional space onto a two-dimensional plane. While parallel projection applies a grid comprised of horizontal, vertical, and oblique lines to describe spatial relationships, perspective projection (as seen in the 15th and 16th century treatises of Alberti, Dürer, or DaVinci) overlays lines converging to a central point or points onto a static, two-dimensional grid. The addition of these converging lines establishes a distinct viewpoint from which the space of the drawing is meant to be understood, thus presupposing a specific viewing subject and subjectivity. As a result the perspective grid, then, acts as an armature within which a real, material, and often anthropocentric view of space can be depicted. For Rosalind Krauss, this distinction is an important step in understanding the conceptual difference in the way the grid functions relative to parallel versus perspective projection and perhaps serves as a key to understanding the resurgence of orthographic drawing in contemporary architectural representation. With orthographic drawing comes a graphic flatness and an abstraction of the "real" three-dimensional space

it meant to represent, providing opportunities for re-reading and misreading the drawing as the singular, subject-dependent point of view is negated.

Grid as Organizational Device: Fundamental to understanding the centrality of the grid in art and architecture is its function as a tool for organizing and orchestrating spatial relationships. Within this the grid acts as an ideal, more a conceptual framework to play form against than a physical structure. It is in this role that Krauss claims the grid predominated and in many ways defined art produced during the 20th century. What it allowed for was the ability to focus on pure relationships between abstract elements, freed from the constraints of the natural, real, or material. John Hejduk's nine-square grid problem relies on the grid in precisely this way, acting as a framework within which spatial figures emerge as aggregations of columns or walls (conceived of as abstract or immaterial) form corner, center, or edge conditions. Such compositional strategies continued to proliferate through the advent of digital design technologies, the geometric control of the grid embedded within the coordinate-based systems of modeling software. That being said, novel spatial strategies have begun to emerge as a reaction to and skepticism of the control and precision enabled by the computer.

On the one hand the grid has remained, revisited as a historical and organizational structure or projective device (Bureau Spectacular's organized artifacts unified through an underlying grid or Elena Manferdini's building portraits studying the Miesian curtain wall). The popularity of projects like Supra Order and Cryptic.K, aggregators of the grid-adjacent, seems to suggest the interest is here to stay. Yet on the other the rigidity, rational, and geometric logic of the grid has been eschewed, replaced with a material logic of stacks, droops, wiggles, or piles. It is matter that determines spatial or structural relationships, distinctly non-compositional, non-hierarchical, and absent of a gridded logic. Far from a binary condition, these seemingly contradictory approaches to the grid have the potential to yield far more potent results when deployed simultaneously. Current trends in contemporary art may support just that sentiment, with artists

such as Avery Singer, Tauba Auerbach, Jacolby Satterwhite, and Sascha Braunig leveraging digital tools to explore the relationship between the real and abstract, the material and the immaterial. When viewed through an architectural lens, the work of these artists could provide new methodologies for deploying the grid as a generative device in design.

Methods

Beginning with the presumption that these formal or informal organizational systems may not be mutually exclusive, we will attempt to understand areas of overlap between them and how digital tools and computational techniques may facilitate their study. The grid will serve as a conceptual and formal datum for such studies. Lectures and readings will provide exposure to the historical and contemporary discourse surrounding the grid, from which students will be asked to develop a thesis on its relative importance as a drawing or organizational device within the discipline of architecture. Students will primarily use Grasshopper, along with the Grasshopper-based physics engine Kangaroo, in order to assist their explorations. Weekly tutorials in Grasshopper will focus not only on the basics of the software, but also its ability to computationally construct and control drawings, organize spatial relationships, and simulate physical or material phenomena. Two set drawing exercises, meant to provide familiarity with the software and the subject matter, will provide the basis through which students will develop a thesis for the third and final drawing exercise.

Bibliography

Arnheim, Rudolf. "Space." Art and Visual Perception, University of California Press, 1974.

Elderfield, John. "Grids." Artforum 10, 1972, pp. 52-59. Krauss, Rosalind. "Grids." October, 1979, pp. 50—64.

Aureli, Pier Vittorio. "More about More about Less and Less: Notes Towards a History of Non-Figurative Architecture." Log, vol. 16, 2009, pp. 7—18.

Bair, Kelly, et al. Possible Mediums. Actar Publishers, 2018.

Ricciardi, Garrett, and Julian Rose. "Formlessfinder Statement." Formlessfinder, 2014, www.formlessfinder.com/statement.

Deitch, Jeffrey. "Introduction." Unrealism: New Figurative Painting, by Jeffrey Deitch, Rizzoli Electa, 2019, pp. 9—13.

Schedule

Week 1	Introduction. Tutorials: Grids, Lattices, and Organizational Systems. Drawing Exercise 1 Assigned
Week 2	Tutorial: Drawing with Grasshopper pt. 1 Drawing Exercise 1 Review Drawing Exercise 2 Assigned
Week 3	Tutorial: Drawing with Grasshopper pt. 2. Group Crits
Week 4	Tutorial: Physics Simulation with Grasshopper. Drawing Exercise 2 Review. Final Drawing Proposal Due
Week 5	Group Crits
Week 6	Final Review

Memory Palace

Faculty: Beom Jun Kim

Overview

> Ex nihilo nihil fit (Nothing comes from nothing)

This concept attributed to the pre-Socratic philosopher Parmenides of Elea is the basis for his metaphysics that posits that there is and can only be one thing, being. Parmenides remains a redoubtable figure in when it comes to ontology from Plato, who was never able to reconcile his theory of Forms to Parmenides' monism, to Martin Heidegger whose ontological system borrows heavily from Parmenides' notion of aletheia most often translated as truth but further redefined by Heidegger as an unconcealing or revealing.

Parmenides left us with fragments of two hexameter poems, one describing "the way of truth" (aletheia) that reveals the world as an unchanging unity or one, and the other describing "the way of appearances" (doxa) which is how we receive phenomena as human subjects but ultimately representing an unreality.

Students will take on either "the way of truth" or "the way of seeming" in virtual reality questioning notions of authenticity, subjectivity, perception, and ontology within a world of their creation by developing a virtual space within a lattice we will call the Memory Palace.

Each space within the lattice can be conceived of as a 10m x 10m space. This space can be imagined as an interior room, exterior environment, an abstract space beyond categorization, or a 3-dimensional visual experience. Each must include interactions or offer a unique experience for each user that questions what it means to occupy and navigate virtual space within the ontological framework of being in virtual reality.

Objectives

This course will introduce concepts necessary to build an immersive virtual environment using Unreal Engine 4. But rather than thinking about virtual reality as mimetic of the physical world, you will be challenged to think about how virtual realities are already present in our day-to-day existence with current spatial computing technology now able to bring these other aspects of reality to the fore. In other words, how might VR as a technology reveal or engage with the virtual that is already around us? Can virtual reality offer a means to reveal the truth (aletheia) about our own sense of reality or perhaps you can take on a critical approach and question how we perceive what we think is reality (doxa).

Students will use 3D modeling software to build and develop assets for Unreal Engine, which will be used to design interactions with your virtual environments through HTC Vive head mounted displays (HMD) and motion sensors or using 3rd Person Avatars. This experience may be a personal introspective exploration of space, be infused with gaming logic and graphical language, or take on the form of a non-linear narrative. While VR may initially seem like a visual medium, true immersion will require the engagement of all senses of perception, psychology, and memory.

Bibliography

Parmenides, Truth: Fragment 1-8
Parmenides, Seeming: Fragment 9-18
Aristotle, On Dreams
Aristotle, On Memory
Jean Baudrillard, America: Astral America (the desert)
Aristotle, Sense & Sensibilia
Bible, Book of Genesis, Chapter 1
Walter Benjamin, The Work of Art in the Age of Its Reproducibility
Jean Baudrillard, The System of Objects (Structures of Atmosphere p30-44)

Schedule

Week 1   Introduction: UE4 workflow & interface, vocab, asset creation, Datasmith. Virtual Ontology

Week 2   Blueprints I: Introduction to Blueprints, Materialize (desert), Packaging. Virtual Subjectivity

Week 3   World Building: Landscapes, Materials, Navigation w/Portals. Simulacrum

Week 4   Blueprints II: Procedural Asset Generation, Interactivity w/ Render Targets. Being-in-the-virtual-World

Week 5   Atmosphere: Advanced Materials & Post-Processing Volumes. Simulacrum

Week 6   Final Review

The Expanded Site: Digital Mapping for Urban Design and Architecture

Faculty: Andrei Harwell

Overview

This course will briefly introduce architecture students to the history, theory and practice of mapping and to data visualization using Geographic Information Systems, and will explore the potentials of map-making in support of data-driven, critically engaged spatial research and architectural practice.

With the explosion of "big" data sources, the ubiquity and declining cost of data capture devices and techniques, and ever-increasing computing power, our ability to investigate and visualize spatial patterns in the environment is unprecedented. Relative to our ability as designers to understand and address major urban issues of our time, including the impacts of climate change and structural inequality in our built environment, GIS offers a way of layering and evaluating the relationships between physical, environmental, cultural, economic and social conditions in 2D, 3D, and through time in 4D, incorporating historical trajectories and modeling speculative urban futures. As architects and urban designers, geospatial data can allow us to construct a far more complex and nuanced multi-scalar and multi-temporal context for our work, expanding the notion of "site" far beyond the boundaries of a parcel or set of parcels.

Course Structure

Each class will begin with a discussion of critical themes in the history, theory and contemporary practice of cartography, in particular as they relate to the ongoing evolution of city-making and architecture, through readings, case studies, and guest presentations. From the social progressivism of Charles Booth's 19th century poverty maps of London, to the radical community activism of William Bunge's 1969 Detroit Geographic Expedition, to the now iconic online NOAA Sea Level Rise Viewer (see

image, right) we will discuss and interrogate the ideologies present in the methodologies, graphic techniques, conventions and representational hierarchies used to visualize patterns and communicate narratives.

Within this conceptual context, we will introduce basic technical concepts in digital mapmaking, ranging from types of projections to layers, to sources and types of data. A series of hands-on tutorials and exercises taught weekly by expert GIS operators will introduce the use of specific ESRI applications including ArcGIS Pro and ArcGis Urban.

Over the duration of the course, in small groups, students will develop a cumulative GIS mapping project which will examine a specific area of New Haven, developing a set of research questions, preparing a geographic database, and creating a set of visualizations to support an action-oriented argument about that place. During each class meeting, groups will meet with the instructor and GIS consultants to workshop their project and get technical assistance. GIS consultants will be available outside of class time as well, by appointment.

Work in this course will contribute to a new cumulative School of Architecture GIS database, which will become a resource for future urban research on New Haven.

By the end of this course, students be able to:
- Understand basic principles, practices, and terminology of traditional and GIS based mapping, and the construction of 2D, 3D and 4D cartographic visualizations using GIS
- Critically engage with and evaluate the content and graphic techniques present in map-images
- Use GIS workflows and applications to process and manipulate available physical, cultural, social, economic and spatial data, and capture or create new data
- Produce action-oriented spatial visualizations

Bibliography

Akerman, James R. Decolonizing the Map: Cartography from Colony to Nation. Chicago and London: University of Chicago Press, 2017.

Harley, J.B. and David Woodward. The History of Cartography. Chicago: The University of Chicago Press, 1987.

Harley, J.B. and Paul Laxton. The New Nature of Maps: Essays in the History of Cartography. Baltimore and London: The John Hopkins University Press, 2001.

Kurgan, Laura. Close up at a distance: Mapping, Technology, and Politics. Brooklyn: Zone Books, 2013.

Latour, Bruno. "Entering a risky territory: space in the age of digital navigation." in Environment and Planning D: Society and Space. Vol. 28, 2010, 581-599.

Pinder, D. "Subverting cartography: the situationists and maps of the city," in Environment and Planning A, Vol. 28, 1996, 405-427.

Plumber, Brad and Nadja Popovich. "How Decades of Racist Housing Policy Left Neighborhoods Sweltering." New York Times, Aug. 24, 2020.

Rankin, William. After The Map: Cartography, Navigation, and the Transformation of Territory in the Twentieth Century. Chicago: University of Chicago Press, 2016.

Schedule

Week 1   Introduction to Geospatial Concepts

Week 2   Physical Mapping / 3d

Week 3   Social, Economic and Cultural Data / 4d

Week 4   Change Through Time / 4d

Week 5   Visualization and Narration

Week 6   Final presentation of projects

Intro to Revit

Faculty: Dov Feinmesser, Julie Zink

Overview

An ever-growing number of AEC firms are looking to Building Information Modeling (BIM) as the central source of communication and design management for their building projects. BIM is the process of integrating design with data to produce a complex and detailed digital representation of the built project. Revit is the primary BIM software currently in use in North America and knowledge of its capabilities and limitations is increasingly key to integrating into professional practice.

This course will focus on the BIM platform Revit. The goal of this course is for students to develop a basic understanding and skill level with Revit. Unlike most design software, in Revit, the digital model is the drawings; the drawings the data; the data the model. Moreover, Revit's design hinges around the ability of multiple designers to work concurrently on the same digital model. Thus, the challenge with Revit is both in understanding the interrelationships of these aspects of the model and the management of work flows to maintain the model integrity and collaborate effectively.

Structure

There will be one session meeting each week for each section. Each session is 3 hours long, consisting of a tutorial followed by a short break and then group help sessions and meetings. Other course meetings will be scheduled as required. Please examine the course schedule carefully and inform your instructor of any conflicts.

This course will consist of one, continuous and developing assignment. The assignment will consist of weekly progress submissions and a final submission at the conclusion of the course. The assignment will be given during the first session each week and will consist of a combination of classroom and outside work. The assignment and supporting documents will be posted on the course Canvas website. The assignment is designed to explore all relevant skills covered in the class.

Creating deliverable products in a timely fashion is a basic principle of competent professional practice, and you will be expected to execute the weekly portion of the assignment on time. At the end of each session, the next phase of the assignment will be discussed. Your updated Revit files must be submitted digitally to the course Canvas website no later than 5:00 pm on the date indicated on the assignment.

Weekly progress submissions will be tracked and graded each week. The final submission will be submitted at the conclusion of the course.

Schedule

Week 1   Introduction to Revit and BIM, Setting up your Revit file

Week 2   Creating Geometry Part I. Submit progress model

Week 3   Creating Geometry Part II

Week 4   Schedules, Visibility & Project Settings, Using & Creating Families. Submit progress model and family

Week 5   Creating a Drawing Set

Week 6   Design Options, Presenting with Revit, File Mgmt., Work-sharing. Submit final model and drawing set

Syllabus: ARCH 1101 Adv. Studio 2019

New Tools

Faculty: Francis Kere and Martin Finio

Overview

Our studio will aim to challenge the very design strategies and architectural tropes that you have become familiar with during your previous two years at Yale. We hope to expand your understanding of who architecture can be for by highlighting the myopic vision most contemporary design has in regards to user, location, material and process. The idea is to dismantle any notion of "norm" in architecture and thus open up space for the development of new paths of design thinking and a "new" kind of architecture.

The studio will consider the informal settlement of Burkina Faso--a country in the Sahel region of Africa--as places of inquiry and inspiration. You will learn to approach a space which is unfamiliar to most contemporary architectural practices, and to understand that space--and its building practices--as having inherent design ingenuity.

In order to understand and experience the building materials and community structures available within the neighborhoods and towns of Burkina Faso, the studio will visit various settlements in Ouagadougou, the capitol city, as well as the outlying villages within the country. Based on our experiences here, you will be challenged to develop architectural concepts that respond to substandard living conditions, socio-spatial exclusion and overall lack of infrastructure.

In an era of extreme urbanization and rapid growth, informal settlements and slums are a global phenomenon. On the African continent alone, over half of the urban population live in slums, and by 2050, Africa's urban dwellers are projected to have increased from 400 million to 1.2 billion. Despite the development of such densely populated areas being the (future) home to a large portion of humanity, they are often left out of a contemporary architectural discourse. This results in students of architecture spending little to no part of their education understanding this phenomenon as one of the largest urban design challenges existing today. It is in such spaces that "architecture without architects" takes place and "habitats made by people" are created. These places are often adapted over time to meet a community's needs in an incremental way; one that relies heavily on the participation of the very community to which these structures belong.

Travel week is designed for you to come face-to-face with the theoretical research you will have conducted prior. This is not only to bolster your preliminary findings but also to help identify any assumptions you may need to revise. In addition, the trip is designed for you to get your hands dirty through taking part in participative building approaches.

Upon returning from the trip, you will create a "mental map" of what you have seen as the departure point for developing an architectural response. You will be asked to respond to the settlement patterns you witnessed firsthand, and to design an individual piece of the puzzle; a building or buildings.

Some of the programs we are considering:

Housing
Healthcare Center
School
Community Center
Market
Sanitation Center
Energy Plant

During this process you will be asked to construct a 1:1 scale mock-up, using whatever cheap and/or available materials are handy--to stress the idea of resourcefulness and invention in everything you do.

Course Objectives

1. Challenge "conventional" architectural design and building practices through the study of informal settlements in Ghana, utilizing travel week to bolster initial research or identify and revise assumptions.
2. Create an architectural response in the form of a building or buildings responding to research and observed settlement patterns and practices.

Assessment Breakdown

Conception	30%
Design Development	30%
Technical Resolution	30%
Participation	10%

Schedule

Week 1	August 29	Lottery and initial introduction to the studio
	August 30	Introduce research topics
Week 2	September 02	No class
	September 05	Studio
Week 3	September 09	Studio talk by Eddie Mandhry, Yale Director for Africa
	September 12	Pin-up design exercise
Week 4	September 16	Studio/talk by Peter Godwin, journalist
	September 19	Studio/research
Week 5	September 23	Research pin-ups
	September 26	Research pin-ups
Week 6	September 27	Leave for Burkina Faso
	October 06	Return to New Haven
Week 7	October 07	Studio
	October 10	Studio
Week 8	October 14	Studio
	October 17	Studio
Week 9	October 21	Studio
	October 24	Mid Term Reviews
Week 10	October 28	Studio
	October 31	Studio
Week 11	November 4	Studio
	November 7	Studio
Week 12	November 11	Studio
	November 14	Pin-ups
Week 13	November 18	Studio
	November 21	Pin-ups
Week 14		Fall Recess
Week 15	December 02	Studio
	December 05	Studio
Week 16	December 11/12	Final Review

Bibliography

Primary Texts

Francis Kéré, Radically Simple, Hatje Cantz, 2016
Bambus, ed. FKG, ISBN 978-84-9936-209-0
Bâtir en terre, ed. BELIN, ISBN 978-2-7011-5204-2
Building with earth, ed. BIRKHÄUSER, ISBN 978-3-7643-8992-5 So lebt der Mensch, ed. GEO, ISBN 3-570- 19063-3
Sustainable design, ed. BIRKHÄUSER, ISBN 978-3-7643-9938-2 - Moderators of change, ed. HATJE CANTZ, ISBN 978-3-7757-3186-7
Modern architecture in Africa, ed. SUN, Antony Folkers
The Eyes of the Skin. Architecture and the Senses, Juhani Pallasmaa- John Wiley: New York, 2005
Experiencing Architecture, Steen E. Rasmussen, The MIT Press,1964
African Modernism, Edited by Manuel Herz with Ingrid Schröder, Hans Focketyn and Julia Jamrozik - photo by Iwan Baan and Alexia Webster, Park Books, Zurich 2015, ISBN 978-3-906027-74-6
Adjaye Africa Architecture, Thames&Hudson
Hassan Fathy, Earth & Utopia, Salma Samar Damuluji & Viola Bertini, Laurence King

Website References

www.crisisgroup.org
www.ithicaweb.org/maps/sahel
whc.unesco.org/en/interactive-map

Filmography

1 En attendant le bonheur, A. Sissako, Mauritania, 2002
2 TGV, Moussa Touré, Sénégal, 1997
3 Ken Bugul, Personne n'en veut, Silvia Voser, Sénégal, 2015
4 Timbuktu, Abderrahmane Sissako, Mali, 2014
5 Je chanterai pour toi, Jacques Sarasin, Mali, 2002
6 Yeelen, Souleymane Cissé, Mali, 1987
7 Yaaba, Idrissa Ouedraogo, Burkina Faso, 1989
8 Ouaga Saga, Dani Kouyaté, Burkina Faso, 2005
9 Delwende, S. Pierre Yameogo, Burkina Faso, 2005
10 Au loin des villages, Olivier Zuchuat, Tchad, 2009
11 Daratt - Dry Season, Mahamat-Saleh Haroun, Tchad , 2006
12 Teza, Haile Gerima , Ethiopia, 2008
13 Lamb, Yared Zeleke, Ethiopie, 2015

Syllabus: ARCH 1102 Adv. Studio 2019

Cross-Border Commons: A Geography of Interdependence

Faculty: Teddy Cruz, Fonna Forman, and Marta Caldeira

Overview

From the global border to the border neighborhood.

Our research-based practice has forwarded the Tijuana-San Diego border region as a global laboratory for engaging the central challenges of urbanization today: deepening social and economic inequality, dramatic migratory shifts, urban informality, climate change, the thickening of border walls and the decline of public thinking. And now that Tijuana-San Diego has become the main site of arrival for people seeking asylum from Central American violence and poverty, and a lighting rod for American nativism and hatred, geopolitics has once more turned intensely local. We want to provoke the studio to localize the global, moving from a critical distance-the abstraction of globalization (the 'out there,' somewhere in the world) into the specificity of the political inscribed in the physical territory, a critical proximity(the 'here and now,' of our immediate social-political context).

We will layer these realities into the contextual scaffold for our work across geographic scales, from the global border to the border neighborhood:

GLOBAL:

THE POLITICAL EQUATOR: links the most contested geographies of conflict across the world between the 30-38 degrees north parallel. When this political equator is visualized alongside the climatic equator, the convergence of environmental and social injustice across the world becomes evident, as communities most affected by political marginalization likewise often bear the brunt of the accelerating impact of climate change. The collision of geo-

political borders, environmental crisis, political marginalization, and human displacement is the great crisis of our age, demanding collective action.

REGIONAL:

MEXUS: investigates the ruptures and collisions between natural and political systems along the entire trajectory of the US-Mexico continental border,and imagines a new cross-border zone of interdependence --a thick, bio-regional set of social-ecologies framed by the existing structure of shared binational watersheds systems. This project, recently exhibited at the Venice Architecture Biennale, will provoke thought about the border beyond the jurisdictional line of the nation state.

LOCAL (the site of our Studio Project):

CROSS-BORDERCOMMONS: As one descends in scale from MEXUS, we arrive at a specific zone of cross-border conflict between San Diego, California and Tijuana, Mexico. The Laureles Canyon is an informal settlement on the periphery of Tijuana, and home to 85,000 people. It is an important finger of the bi national watershed system that crosses the border line, and culminates in a precious natural estuary in San Diego—the Tijuana River Estuary. The canyon sites high above the estuary; and the construction of new Homeland Security border-wall drains has accelerated the flow of wastewater, trash and sediment from the slum into the estuary. As a radical gesture of bioregional protection, we are presently advancing the Cross-Border Commons to link the Mexican slum with the estuary in the US, into a continuous political, social and ecological zone. The Cross-Border Commons operates as a transnational land conservancy, that bundles leftover slivers of land in the canyon slum (that have not yet been squatted) into an archipelago of protection, and links them with the estuary on the US side. The project is led by a cross-sector coalition that we have assembled, including universities intergovernmental grassroots organizations on both sides of the border.

Course Objectives

1. Explore issues related to the US-Mexico border in order to utilize understanding of conflict as a generative tool for design, and conflict itself as context for intervention.
2. Develop hybrid infrastructural / landscape / architectural interventions as part of a proposed Cross-Border Commons, working to design in both the built and social context.

Assessment Breakdown

Conception	30%
Design Development	30%
Technical Resolution	30%
Participation	10%

Cross-Border Commons:
A Geography of Interdependence

Studio brief: Cross-Border Commons: A Geography of Interdependence

Our studio intervenes at this site of local conflict, recognizing that the environmental ravages of border wall secularization are not only problem of Mexico, but a problem shared by the US as well. In our present geopolitical moment, how can the two border cities of San Diego and Tijuan tackle this condition collaboratively, in order to protect their shared water and environmental resources? Students will engage this urgent challenge of designing bi national environmental cooperation and strategies of co-existence at the border, at a time of unprecedented polarization and division. Studio projects will be sited in Tijuana, inside the informal settlement of Laureles canyon. We focus on the spatial and programmatic design of several slivers of land that we have secured, that comprise the Tijuana side of the proposed Cross-Border Commons. Students will design hybrid infrastructural / landscape / architectural interventions for these sites, as well as the collaborative programmatic activity that can transform these sites into inclusive public spaces and civic / pedagogic nodes. In other words, we will ask students to design physical systems in tandem with social protocols: the programs and economies, the cross-sector collaborations and forms of governance and management that will make those spaces sustainable.

Method: Border conflict as a creative tool

Our method involves the visualization of conflict as a site of intervention. We will develop Conflict Diagrams as "scaffolds for spatial and political action", generative tool that exposes the vectors of power and contingencies inscribed in the territory (institutions, laws, norms, practices) and through them, the propositions and opportunities for meaningful transformation. To model what we mean by designing space and protocols simultaneously, we will introduce students to our UCSD Community Stations initiative, a network of field stations located in marginalized neighborhoods on both sides of the border, where research, teaching and advocacy are conducted collaboratively between university researchers

/ designers and community-based nonprofit partners. We have four of these stations, one of which is located in the slum where we will be working. The Community Stations demonstrate a fundamental commitment of our practice: reimagining public space as a space of knowledge, that increases a community's capacity for political and environmental action. Ultimately we want to demonstrate that architects can be designers of social, economic and political process.

The Trip:

We will travel to San Diego-Tijuana to visit the sites engaged in our studio brief: the city of Tijuana, the informal settlement of Laureles Canyon, the Tijuana National Estuarine Research Reserve, and our UCSD Community Station sites, located on both sides of the border. The field-trip will include presentations by regional stakeholders.

Trip date:

Monday September 30 - Friday October 4.

Arrive in San Diego no later than Monday morning, September 30.

Depart San Diego no earlier than Friday evening, October 4.

Schedule

Week 1	August 29	Lottery, Introduction
	August 30	Discussion of Deliverables
Week 2	September 02	5ws and Diagrams of cross-border conflicts and flows
	September 05	5ws and Diagrams of cross-border conflicts and flows
Week 3	September 12	Pin-Ups
	September 13	Team meetings w/ Teaching Fellows
Week 4	September 16	Conflict Diagram development
	September 19	Conflict Diagram development
Week 5	September 23	Conflict Diagram development
	September 26	Skype - Team check ins with Teaching Fellows
Week 6	September 27	Travel - Tijuana and San Diego
	September 30	Pin-Up: Deliverable 1 (conflict diagram and process work)
Week 7	October 07	Sliver Development
	October 10	Sliver Development
Week 8	October 14	Pin-Up: (Sliver Development)
	October 17	Team meetings with Teaching Fellows
Week 9	October 21	Sliver and protocol development
	October 24	Skype - Team check-ins with Teaching Fellows
Week 10	October 28	No Class
	October 31	No Class
Week 11	November 4	Pin-Up: Deliverable 2 (Physical Intervention and Protocol)
	November 7	Team meetings with Teaching Fellows
Week 12	November 11	Preparation for Final
	November 14	Preparation for Final
Week 13	November 18	Pin-UP: Deliverable 3 (Group-Cross-Border-System)
	November 21	Team meetings with Teaching Fellows
Week 14		Fall Break
Week 15	December 02	Skype - Team check-ins with Teaching Fellows
Week 16	December 11/12	Final Review

Syllabus: ARCH 1103a Adv. Studio 2019

Vienna: Another Day in the City

Faculty: Surry Schlabs, David Gissen

Overview

Our studio will contribute to studies sponsored by Vienna's Academy of Fine Arts and the City's municipal government to reduce the experience of physically debilitating solar heat within Vienna's urban core. The increasing sunshine and heat in Vienna due to a changing climate has inspired a series of landscape proposals to increase vegetation and shade-tree-lined areas in the City. We will examine how architecture, in dialog with urban environmental history, can complement and contribute to this effort to redesign the geography of brightness, darkness, heat, and coolth in Vienna. This architectural, environmental historical method acknowledges how urban reformers and architects once railed against the shadowy streets and courts and dim and dank interiors of this and other cities. Modernist architects attempted to eliminate these subnatural conditions by "solarizing" urban spaces — increasing a populace's exposure to sunlight with terraced, pyramidical, and crystalline architectural forms. Today, a lack of sunlight is not the issue it once was for people in Vienna. In fact, we will explore how a future Viennese architecture might "gain darkness" but as a positive vision of a late-modern and healthful city. While the architectural production of shade will inevitably be part of our explorations, we will explore other concepts where darkness takes on a more aestheticized and media-like character. These include Alois Riegl's concept of raumdunkel (constructed spatial darkness) to more contemporary concepts, such as "artificial darkness" (a quality beyond shade or night). Our semester-long work will involve a formal exercise exploring precedents, readings in new materialism, architecture, and urban theory, travel and meetings in Vienna, and a final design of a prototypical city block and interior space in the City with varying programs.

Course Objectives

1. Explore the experience of darkness in a historical context through a series of case studies, eventually confronting the concepts they present through models and drawings.
2. After utilizing travel week to link preliminary research with the architectural and environmental histories of Vienna, develop a prototypical city block, using the drawing of darkness as both generative design tool and a critical strategy for heat mitigation in the modern city.

Assessment Breakdown

Conception	30%
Design Development	30%
Technical Resolution	30%
Participation	10%

Historical Background and Rationale

Most of the core architectural typologies that constitute the architecture of inner Vienna date from a period of urban expansion between the late 1700s and the early 1900s. Variations of two story Biedermeier buildings and four to five story courtyard and tenement type apartment houses spread to the outer districts in the 19th century. Many of these historical typologies were reexamined within the massive housing and infrastructural works built by the socialist government during the "Red Vienna" period (1918-34) that redefined the City's outer districts. The bulk of this latter building in Vienna revisited the architecture of the city through the mantra of "sun, light and air." The City's commitment to building these qualities into housing, public spaces, amenities, and services continued after World War II with investments in "solar access". It extends from the massive and verdant Alt-Erlaa housing estate (Harry Glück, 1968) to future plans to revive the building and financing models of the Red Vienna years. Today, the municipality owns over forty-percent of the buildings in the City and the largest share of its rental housing market, making it Europe's biggest landlord.

As residents of Vienna experience significantly greater spring and summer heat and much milder winters, the disconnect between the City's historic architectural fabric and its changed climate becomes increasingly pronounced. Ironically, the latter places an increased burden on individuals to manage urban heat in a city famed for its capacity to provide a monumental architectural framework that supports its residents. Such problems are actually exacerbated due to the city's historic ability to provide housing and public services for populations typically vulnerable to heatwaves. In particular, it is one of the few capital cities in Europe with a historically large disabled and elderly population — comprising over thirty percent of the total urban population. This latter aspect of Vienna's history dates to World War I, when the city absorbed tens of thousands of disabled veterans, and even housed them in little-known, experimental projects by Adolf Loos, among others.

Class Organization

In our studio, we will envision another, as yet unrealized, monumental architectural framework for Vienna and that responds to the City's populace and changing environment. As a complement to an architecture embracing "sun" and "light", we will explore a monumental architecture engaged with a more overcast and crepuscular character. Our ultimate aim is to concoct a contemporary architecture that eclipses the primacy of "solarized" space as an unquestioned aesthetic and experiential virtue of a modernized urban environment. We will explore this historically, formally, and dialectically — avoiding a purely technological or ecological-driven approach in the studio.

To embrace an architecture that negates sun and light today will likely seem counter-modern particularly at large scales and in public contexts. We will struggle with a longer architectural history that often positions the absence of sunlight and darkness as a counter-enlightenment aesthetic — a quality found in architectural romanticisms of the late 18th and early 19th century, discussions of urban otherness and race from the late 19th to today, vernacular critiques of illumination and brightness, and dystopian projections of futuristic out-of-control urbanization. By contrast, we want to arrive at another idea of a modernized environment, but one that complements the solar visions of modernity.

To develop our concepts, design grammar and architecture projects, we will follow a structured design methodology that first looks at the problem independent of Vienna, and then in the context of Vienna more specifically.

Project 1

Our first goal is to understand both the radiant aesthetics and the marginalization of the experience of darkness that dominates most architectural visions of modernized cities. We will explore this through a materialist and historic architecture study that analyzes and models a series of representative urban projects from about 1910 to 1985. Such work includes the Tour-ville and Redent (Le Corbusier), Porte-Maillol pyramid (Henri Sauvage), Third Stage Set-Back Building (Hugh Ferris), Stadtkrone (Bruno Taut), Chrysler Building spire (William Van Alen), the city tower (Anna Tyng), Omega Residential Bridge (Paolo Soleri), urban dome (Buckminster Fuller), solar envelope (Ralph Knowles) and glazed pyramid (I.M. Pei).

Project 2

Following our initial study (one week), we will collectively develop a range of drawings and models that confront these case-study projects' aesthetics and forms -- evident in the often pyramidal, crystalline, spherical, glazed and glowing character. In developing these counter-projects, we will discuss and debate a range of literature and concepts -- from the early 20th century concept of "Raumdunkel" (coined by the Viennese art historian Alois Riegl as "spatialized darkness") to more recent notions such as Noam Ellicot's "artificial darkness." We will also consider another set of precedents that complement the aesthetics of solarity. The resulting, historically informed, model experiments will create a type of library of formal strategies that will inform our future work.

Project 3

Following the above research and formal explorations (three weeks total), we will prepare for and travel to Vienna during travel week. There, we will visit a large series of works and archives. We will visit potential project sites in the City and hear from local experts on Viennese architecture history and the city's changing climate. We will become familiar with the city's important monuments but also more minor features of its distinct fabric — from the city's numerous "pawlatschen" (hung outdoor passages) to its underground network of "kelleren" (vaulted brick basements from the Baroque era). Our ultimate goal here is to connect our earlier, general research with some specific qualities of this city and its history.

Project 4

Our final project for the remaining 8 weeks will be the design of a prototypical city block based on our research and studies of the city. Participants in the studio will choose from a limited range of sites found in the city — from areas of dense housing to more open plazas. Following a general strategy at the urban scale (four weeks), we will return to smaller-scale projects where participants further develop a portion of their block at a more architectural and interior scale.

The entirety of the above work — the modeling of historic precedents, the inversions of their characteristics, the block plans, and architectural studies will form the material for our final review. Our mid-review will provide an opportunity to check-in on our progress in the above work.

Project 5: Drawing Darkness

We have examined architecture "gaining darkness" primarily as an issue of confronting environmental, urban, and architectural histories and the development of architectural and urban form. Now we want to think about the problem of gaining darkness from a purely representational point of view. In other words, how can our representational strategies — literally the way we develop our designs through drawing — engage the studio themes? Often, when we draw the form of a building or its section, we utilize black lines on a white piece of paper. Such images not only represent a building and its spaces, but also evoke a particular kind of environment and with a set of assumptions. If we have any sense of the surrounding context in these drawings, then one imagines that such drawings generally portray a building during the day, versus the night; the sky is clear versus foggy, the ground is dry, etc. Of course, some drawings convey no environmental information at all and appear in a more purely representational space.

Within the parameter of your axonometrics, sections, and plans, what other representational ideas and strategies can you bring into the way you draw your project? How can it reinforce your ideas and enable you to develop the project? How might you represent the characteristics of light in ways other than drawing shadows? How might color play a role? And how can you represent notions of time, of past and future moments, of unregistered histories and unrealized potentials?

In 1992's The Architectural Uncanny [on reserve in Haas Library], Anthony Vidler explores a number of themes concerning the decidedly "unhomely" character of architecture and architectural thought in the modern era. Among these are a variety of tropes characterized by a distinct ambivalence vis-a-vis the conditions of modernity: the haunted house, the burial/ruin, homesickness/ nostalgia, bodily dismemberment, and of course darkness. Viewed in (one or more of) these terms, you might begin to understand your projects/ interventions as deposits, or accretions, of history -- as both physically ingrained in the material conditions of your site, and residing, more ephemerally, in the dynamic processes of human experience, generously understood.

For Monday, begin a series of new representations of your project that develop its formal and conceptual characteristics along these lines. Your selection of which aspects of your project to emphasize - and how these are represented - should stake out a position on what your project is, as a proposed architectural scheme, and what you think it means now. It should also, perhaps more importantly, suggest or project an idea of what it may become. These may be extrapolations of axonometric, section and plan drawings already completed for the midterm, or be totally new.

Syllabus: ARCH 1107a Adv. Studio 2019

A Next Generation Resort in Gili Meno, Indonesia

Faculty: John Spence, Patrick Bellew, Henry Squire, Timothy Newton

Overview

Next Generation Tourism - Touching the Ground Lightly

> "Nature is the source of all true knowledge. She has her own logic, her own laws, she has no effect without cause nor invention without necessity."
>   -Leonardo Da Vinci

> "Every decision you make, you should think seven generations ahead."
>   -Toshiko Mori

As the world comes to recognize that the notion of climate change is morphing into a full-fledged climate disaster, it increasingly falls to us as architects and designers to find ways to mitigate and minimize the impacts of the developments and buildings that we design. Every question and decision that we make, including perhaps whether to build at all, can be studied through the lens of environmental impact as we seek to go beyond merely sustainable as an ambition to a proposition of community and endeavor that is "sustaining" and restorative not just less bad.

Our Studio will take us to the remote island of Gili Meno, one of the Gili Island Group located off the coast of Lombok in Indonesia. Here we will develop proposals for a new type of beach-based resort, built around the principals of sustainable development, designed to minimize environmental impact in construction and operation and to be restorative to the ecosystem and the local community.

The studio will focus on the impact of global tourism on these fragile environments and will work to develop propositions for a particular site on this tropical island. The ambition however is that your proposals could have a more universal application in other similarly threatened environments through thoughtful and provocative design. Your designs should propose new ways of thinking about this future resort typology to make resilient and renewing places that both protect the natural environment and ensure that it can survive for the enjoyment of future generations.

Sustainability is without scale but it is fundamentally a comparative term — one can make decisions that may be perceived as more or less sustainable against different objective criteria (carbon emissions, water use, material properties, toxicity etc.) but achieving an absolute state of being "sustainable" is not likely. So our language and exploration needs to target more positive absolute conditions throughout.

Introduction

The studio will focus on tourism and the growing concern at its impact on some of the most fragile ecosystems on the planet and how architecture might play its part in mitigating the impact.

Accepting that, at the moment, there is little we can do to stem the tide of global travel and man's desire to visit remote parts of the world, how do we design sensitive, sustaining destinations that meet the needs of the modern traveler whilst also responding to the need to protect the natural environment and deal with the impending changes in climate.

Course Objectives

1. Study the island environment (natural and built) through the lens of climatic issues such as rising sea levels, extreme weather patterns, and geological disasters. Investigate bio-mimicry in design as a method of existing in harsh environments.
2. Develop a commercially viable tourist resort that is as self-sustaining as possible, as to work with and not against the surrounding land, topography, climate, geological elements, and culture.

Assessment Breakdown

Conception	30%
Design Development	30%
Technical Resolution	30%
Participation	10%

Should we just say "NO, we should not build here"? Well, maybe, and this is something we will debate. But as architects and designers we are frequently retained to take on projects where our first reaction might well be "better to do nothing". The question then is how to take on the project and make the most of it by challenging ourselves and our client to make the most of the opportunity for the long term. Locating this project in the most precarious of places, requiring significant offshore resources to build and operate, while being exposed to the extreme threats from seismic activity and climate change, should help us to uncover what it really means to be "resource efficient" while planning for the long term.

The studio will study particular climatic issues including rising sea levels, increases in extreme weather patterns and geological actions like earthquakes, volcano eruptions and the associated tsunamis,. We will then seek to propose design solutions to combat the effect that these natural and (potentially!) man made phenomenal have on buildings in areas that are affected.

We will encourage investigations into Bio-mimicry in design where we can develop ways of existing in increasingly harsh environments by learning from the natural world. For example, how the Camel's Nostril has informed ways of controlling temperature and water conservation in harsh climates. Or the way termites have developed ways to cool their vast nests using thermal mass, convection and evaporative cooling.

We will also be investigating ways of the development being as self-sustaining as possible, by generating power or growing food or materials (bamboo for example) to be used on site. Can the development give back more than it takes?

We will also encourage the exploration of indigenous architectural forms, structures and materials and traditional building techniques which could be adapted with modern materials from sustainable sources to make a design that refers culturally to its area and specific site location. The islands of Indonesia have a strong vernacular tradition that is rooted in an understanding of the environmental performance as well as the strong community influence, evident for example in the Balinese long-houses and the Sasak houses common on Lombok with their suspended floors and steep grass roofs. The goal is for the land, site, topography, climate, geological and cultural influences to grow the project not the other way round. It will also need to be a beautiful and well considered piece of architecture that sits well in its surroundings.

The project will need to be grounded in some form of commercial reality and an outline appraisal and cost plan along with an area schedule will need to be developed for commercial appraisal. We will also be asking you to tailor your own program based around the program below.

You will be asked to choose between two types of tourist:

1. The up-market 5-star traveler, getting away from it all with access to quiet and seclusion with associated wellness, sports and fine dining facilities
2. The mobile young/millennial/chic hippy market, also getting away from it all but seeking a more active, social and communal experience with emphasis on beach, challenging sports and a lively nightlife

The final outcome will be a resort for the future that responds to the unique topography, geology and biology of the site. It will provide a world class resort for the particular user you have identified, will have in-built resilience, be a model of sustainable design and be a beautiful timeless piece of architecture that gives a unique holiday experience.

The Site - Gili Meno - The Gili Islands

> "Look deep into nature and you will understand everything better."
> -Albert Einstein

Why the Gili Islands?

Gili Meno is the middle of the three Islands that make up the Gili Islands off the northwest coast of Lombok in Indonesia. Before permanent human settlement, thought to have started in the 1970's, the islands were pristine mangrove habitats with a rich abundance of marine life on the coral reefs. They may have been used temporarily as stop-off points for local fishermen on their way to and from Lombok.

During the Second World War Japanese forces occupied the Islands and used them as lookout posts and prisoner of war camps, but life was harsh due to lack of power and fresh water.

Since the first permanent settlements in the 1970's the islands have seen a growing rise in the tourism with travelers attracted to the remote islands, clear waters and reefs for snorkeling and diving. As tourism developed, more buildings were built and hotels and resorts were constructed.

As in so many other parts of the world, the rise in the number of tourists to the small islands have started to have damaging effects on the marine ecosystem, the land and the purity and beauty of the place. The very reason that people came to the islands is being eroded and serious thought needs to be given to how resorts of the future can preserve the natural beauty of the Islands and how man and nature can live more in harmony.

Today there are a number of resorts on the islands attracting people from all over the word. Motorized forms of transport are not allowed on the islands so people get about by bicycle, foot or on horse drawn carriages.

Earthquake

Just after 7.30pm on the 11th August 2018 two serious earthquakes on the island of Lombok shook the Gili Islands. The stronger second quake, measured 6.9 in magnitude and destroyed many of the buildings and most of the infrastructure leaving over 320 people dead, 1,000 injured and 270,000 homeless.

Thankfully there was no tsunami or it could all have been much worse.

The guests at the Karma Reef on Gili Meno were unhurt but the experience and the fear overnight with limited elevation above the ocean and no communications or power was something they will never forget.

This horrifying natural disaster gave us pause for thought as we discussed the location and context for this studio. Where better for us to go to study at the limits of sustainability than the most fragile of low lying islands, with limited resources, threats from man-made and natural disasters all around and an ever increasing demand from the outside to be one of the most idyllic and 'natural' holidays in the world.

In many ways the problems and issues that face the Gili Islands, and every other low-lying inhabited island, right now are a foretaste of the problems that bigger 'islands', including the USA and the UK, are destined to face in the years ahead. Everyone on the planet is effectively surrounded by water to a greater or lesser extent and enormous numbers of people will be seriously impacted by the climate emergency. (See Buckminster Fuller Dymaxion Map over leaf, which is a fl at earth map with very little distortion of any land mass and sees the world as a single island in a single ocean)

Rising sea levels and climate change will fundamentally alter the way that we need to think and act as designers. Access to resources, designing with the climate and natural systems, investment in the circular economy, resilience and efficiency are just some of the issues that we need to confront — all are to a large extent scalable and our attitudes certainly need to be.

The Site - Karma Resort - Gili Meno

The studio will work to develop propositions for the sustainable redevelopment of the Karma Reef resort on Gili Meno. Each student will develop their own proposals and will play a part in the development of their brief, working closely with John. There are a range of types of guests that visit this type of resort, but the students will need to work with one of two alternative demographics and build their designs around either:

1.   The up-market 5-star traveler, getting away from it all with access to quiet and seclusion with associated wellness, sports and fi ne dining facilities
2.   The mobile young/millennial/chic hippy market, also getting away from it all but seeking a more active, social and communal experience with emphasis on beach, challenging sports and a lively nightlife

Within these broad demographics the students will have the fl exibility to select a specific type of traveler, market or theme, turning the dial up or down on different areas of the program in discussion with John and bringing in additional facilities and a building if appropriate for their chosen traveler.

Initial group work will be limited to shared research into issues of culture, resources, transport infrastructure, environment and climate and how they will impact all the projects. There will also be a shared site model that the studio members will be required to build together.

The ambition is that the proposals could have a more universal application in other similarly threatened environments through thoughtful and provocative design. Your designs should propose new ways of thinking about this future resort typology to make resilient and renewing places that both protect the natural environment and ensure that it can survive for the enjoyment of future generations.

The 4 Ha (approx) "L"-shaped development site on the East coast of Gili Meno includes Lots 1 and 2 marked in red on the aerial view below. It has approximately 180m of beach frontage and a hinterland extending 320m inland to join the access road. The site will also include an extension into the ocean of up to 200m across the width of the beach.

To the South there is a further area of 1.2Ha is community, or 'village' land and cannot be developed for resort use. However, the students will be encouraged to think about and come forward with proposals for potential investment on this tract of land to enhance community engagement and use, potentially, but not necessarily, related to the sustainable development of the adjoining resort site. This could be community-based agriculture, permaculture, sustainable manufacture or another appropriate activity that they would like to suggest and develop conceptually for the betterment of the community and population of the island. Ideally the use would be associated with, and derive income from, the adjoining touristic activities.

The Environmental Brief

"We are living on this planet as if we had another one to go to."
       -Terry Swearingen

Sustainability

Should we even be traveling to the Gili Islands for leisure reasons? Should numbers be limited? The Islands of Fenando de Noronha off the North East coast of Brazil limit the number of tourists that can travel there each week to protect the Islands and the eco-systems. How can we reconcile the desire to travel and see the world with the impact that travel is having on the environment?

If we accept that we can deal with the carbon-offsetting and other issues generated by travel itself, what are we traveling to and can design limit the affect we have on its ecosystems?

Enshrined in the development of a response to the architectural program, namely the design of a resort for a specific user group, is the broader question of how this might be achieved without costing the earth. People need help to develop a more sustainable lifestyle and thus this resort must be designed in such a way as to make it easier for visitors to reduce their ecological footprint and carbon emissions.

In the background, the infrastructure at all scales also needs to be re-cast in ways that make the activities of every tourist at worst carbon neutral — at best, sustaining and renewing. Typically, these islands are supplied with diesel fuel via tankers to run generators to make electricity. This is not sustainable so what are the alternatives?

In this particular context, 'infrastructure' has to include transport, energy, water, materials, food supply, and waste management. Resources, and their effective deployment, thus become a key part of the puzzle. In order to better understand the opportunities that this effective deployment will bring, the early part of the studio work will involve the mapping and appreciating of these resources, with a focus on the best ways, environmentally and architecturally, that they can

be leveraged. How will the resort give back more than it takes?

In this studio we are asking students to think about circular economy and the growth of bio-mimicry. What can we learn from nature that can influence a new way of designing that is more resilient and less focused on energy and fossil fuel consumption to survive.

We will look to nature and building physics to find ways of naturally cooling the buildings and spaces with the minimum of mechanical intervention? We must recognize that practically this type of development requires energy and power to function. How can we generate the necessary power in a sustainable way to minimize the overall impact of the operations, deal with the peaks and troughs of demand and provide reliable supplies that also provide autonomy and resilience in the event of natural or man-made disaster? Can we harvest rainwater to provide secure water supplies throughout the year and process waste outflows to minimize external impacts.

Enshrined within the project brief is to look in detail at ways that through design we can minimize the impact that the resort has on the environment during its construction and in operation for years to come.

Project Program/Schedule of Accommodation

In the first few weeks you will carry out some research to inform your project:

1. Formulate your own brief for the hotel in discussions with John and the tutors and based on the typologies suggested above.
2. You must identify one additional building/space (not listed below) on the site to compliment your chosen group. eg a star gazing platform
3. You must also have a strong sustainability agenda to support your project proposal, both in the design of the resort and its facilities and in the development of proposals for the adjoining Village land site to the resort that will benefit the wider community on the island.

Accommodation - Schedule of approximate areas. Apart from total developable area all areas can be changed

Total Site area (Excluding optional land)	46,000 m2
Total developable area of 25% of site area	11,500 m2
Allow 15% of 11,500 for circulation	1,725 m2
Allowance for back of house accommodation	1,500 m2
Total area for front of house and rooms	8,275 m2
Rooms (size TBD - approx.)	4,500 m2
Front of house areas	2,500 m2
Environmental support buildings	1,275 m2

Program Notes:

Room types and sizes will vary depending on which demographic of traveler you chose. You will debate this with John in the early stage.

Common areas will also vary depending traveler demographic, but consider:
Restaurant(s), resort bar, beach bar (over water?), Gym, wellness suite - spa/yoga/ pilates, games room, dive center, library, entrance lobby, bike parking, doc surgery

Back of house areas to consider:
Servicing area, office, luggage rooms, laundry, kitchen, food storage, other storage, doc surgery, gardener's hut, maintenance area.

Resilience:

The requirement for resilience against natural disasters suggests that one or more of the larger spaces will need to provide refuge for guests in the event of a tsunami (for example) or earthquake — these provisions will need to be specifically identified and designed with suitable elevation, construction and resilience to ensure passive and active survivability for guests and staff.

Supporting sustainable infrastructure:
Energy Centre, water center, waste recycling center to be developed.

Sustainability/community measures to consider on the additional land marked blue:
Food production farm, community center (perhaps educational/manufacturing) solar farm, algae farm, wind farm, tidal energy, recycling center

Schedule

Week 1	August 29 - September 2	• Virtual site visit • Select traveler type. Workshops to develop program: room types, numbers and sizes. • Common amenities: F&B, leisure, health Front of House - Reception etc. Back of House - kitchen, laundry etc. Sustainability. Energy/water/waste systems. Community. • Site Data gathering and topographical mapping. Decide on group model scale and size and other drawing data. • Work at desks to develop brief and program. • Present final brief and program to JS/PB/TN/HS. • Principles of master planning workshop with HS/PB.
Week 2	September 2-7	• Site analysis. Personal brief development. Sketches of preliminary organization of site and ideas. • Build 1:500 (or scale to be agreed) context model of Gili Meno site area. Develop 3D CAD model of site area and Gili Meno.
Week 3	September 9-14	• Masterplan Development: We are suggesting you develop 3 options for you masterplan which you will present at the trip. You might want to include a 'totally out there' option as one of your 3. Final masterplan will be selected on trip and developed from then. • Things to think about: Organisation/interraction of spaces Landscaping, Sustainable measures, Community interraction. • Coloured block models to lay into 1:500 communal model. • Prepare for individual workshops with PB/HS on 16-17 Sept. • Develop an outline business plan for the resort. • During this time Weeks 3-5 we would like you to divide into pairs to research the following elements for presentation in Bali: Country, landscape, geology; Nature - flora and fauna and reefs; Culture - Indonesian music, society etc.; History; Arts and Crafts; Transport and Infrastructure; Climate, tidal and solar data; Water resource data; Energy and power supply issues; Natural disaster data • Understanding the Vernacular: Architecture; Environment; Materials: Timber, Bamboo, Thatching, Stone, Recycled, Others
Week 4	September 16-22	• Individual tutorials/workshops with HS/PB. • Present: Masterplan; Eco plan; Topographical sections; Site CAD 3D axo view; Concept Diagrams; Resilience ideas from natural disaster Sustainability measures and proposals • Renewable energy systems and opportunities. Waste water processing techniques. Benchmarking for energy and water use in other resorts • Data on consumption in hotels of your chosen demographics: energy, water, food, drink

Week 5	September 23-29	•	Develop a typical room for your traveler group. (consider 3 types of room). Develop ideas for front of house areas and how they might look. Develop an outline business plan for your resort. Develop sustainable measures
		•	What are other eco-resorts doing? See list on last page for resorts to research
		•	Inspiration images for Architecture, materials, design, technology and sustainability.
Week 6	September 29 - October 7	•	Trip to Bali/Gili Meno. Itinerary to be distributed at later stage but will include a visit to the site on Gili Meno, a study day at the Green School and tours of other resorts on Bali.
		•	Present research above. Test proposals and masterplans developed in the preceding 5 weeks. Present business plans for discussion
Weeks 7-8	October 7-20	•	Working towards mid-terms. Pick One Masterplan - if not already done
		•	Review your proposal following the site visit and begin final masterplan draw-up for mid term review.
		•	Begin detailed work on individual buildings.
		•	Develop the following for mid-term: Clear presentation of your concept and organization; Cultural references, and other background to your ideas; Plans, sections and elevations of buildings Inspiration images; Facade ideas; Initial 3D views, can be CGI or drawings; Landscape plan; Environmental concepts; Environmental diagrams; Community engagement ideas; Resilience from natural disaster
		•	Compile all photos and information collected on the study trip and the previous 5 weeks of research into a single presentation or series of boards that will introduce the studio and site to rest of faculty.
Week 9	October 21-27	•	Midterms. We will hope the unit will show how it has worked together to gather data and research the site and then how there are individual responses.
Week 10	October 28 - November 3	•	Develop proposal in line with comments from Mid-term reviews
Week 11	November 4-10	•	Commence individual models at chosen scale of whole scheme or specific parts.
		•	Facade study models at 1:20 or 3d CAD drawings to demonstrate facade ideas
Week 12	November 11-17	•	Final designs to be completed. Final environmental, sustainable and resilience measures to be completed. Business plan to be finalized.
Week 13	November 18-24	•	Begin preparing presentations for the final jury reviews.
		•	Complete the group presentation of all the research for the final jury

| Week 14 | December 2-8 | • | Final presentation of all work: Research; Concept diagrams; Organizational layouts; Masterplans; Plans; Sections; Elevations; Facade studies; Materials; Models; 3D views as CGI or drawings; Business plan; Environmental proposals; Resilience proposals; Sustainability measures |
| Week 15 | December 9-13 | • | Final Review |

Bali trip Carbon - Offset

The carbon footprint associated with the trip to this remote location will be offset by the course instructors through the purchase of carbon offsets. We recognize that offsetting in this way does not represent a solution to the global emissions problem but we intend nonetheless to mitigate the impact of the studio trip as much as we can.

Recommended Listening

Karma Groove
Scary Monsters — David Bowie
Paradise Valley — John Mayer
LCD Soundsystem - American Dream
Arcade Fire - Everything Now
War on Drugs - Lost in the Dream
Mount Everest : The Base Camp Mix - Paul Oakenfold
Live at Nammos beach Bali - Jon Sa Trinxa

Bibliography

Essential Online Research into the Following Resorts

Karma Resorts, Soneva Fushi, Gili Lankanafushi, Six Senses, Aman Resorts, Como Resorts, Alila Resorts.

Recommended Reading

"Hawaiian Modern — the architecture of Vladimir Ossipoff" Sakamoto and Britton Yale University Press
      ISBN 9780300214161
"Bali Houses" - Gianni Francione ; Periplus Editions ISBN 9780794600136
"Putting Tourism to Rights - A challenge to human rights abuses in the tourism industry" - Pub: Tourism
      Concern ISBN 0 9528567 2 7 Oct 2009
The Eyes of the Skin — Architecture and the Senses; Juhani Pallasmaa, Pub Wiley.
      ISBN-10: 0470015780
Factor 4 — doubling wealth, halving resource use — Lovins and Von Weisacker, Pub Earthscan ISBN-10:
      1853834068
An Inconvenient Truth — Al Gore, Pub Rodale ISBN 1-59486-567-1
Climate Design: Solutions for Buildings that Can Do More with Less Technology —Hausladen, de
      Saldanha, Liedl + Sager ISBN 10: 3-7643-7244-3
Sun, Wind & Light: Architectural Design Strategies, Brown, G.Z. and DeKay, Mark (2001)
      Pub John Wiley &Sons, New York.
Heating, Cooling, Lighting; Design Methods for Architects; LECHNER, Norbert (2001), Pub Wiley
      ISBN-10: 0471241431
The Technology of Ecological Building: Basic Principles and Measures, Examples and Ideas, Daniels,
      Klaus (1995) Birhäuswer Verlag, Berlin.
Introduction to Architectural Science: The Basis of Sustainable Design, Szokolay, Steven V. (2004),
      Architectural Press, Oxford.
 "The Ethical Travel Guide" 2nd Edn. Tourism Concern, Pub Earthscan ISBN 978-1-84407-758-8
         Into the Cool — Energy, Thermodynamics and Life — Schneider and Sagan
         "A brief History of Indonesia — Sultans, spices and tsunamis" by Tim Hannigan. Tuttle Publishing 2015
         ISBN 978-0-8048-4476-5
"A brief History of Bali — Piracy, slavery, opium and guns" by William A Hanna. Tuttle Publishing 2015
      ISBN 978-0-8048-4731-5
"Paradise by Design" by Bill Bensley. Periplus Publishing 2008 ISBN 978-0-7946-0493-6
      "Being Ecological" by Timothy Morton. Pelican Books 2018 ISBN 978-0-242-27423-1
      "Eating the sun. The everyday miracle of how plants power the planet" by Oliver Morton. 4th Estate
      2009. ISBN 978-0-00-717180-4
"Drawdown — the most comprehensive plan ever proposed to reverse global warming" Ed Paul Hawkin.
      Penguin Books 2017. ISBN 978-0-141-98843-6
"101 Rules of thumb for Sustainable Buildings and Cities" by Huw Heywood. RIBA Publishing (UK) 2015.
      ISBN 978-1-85946-574-5

Syllabus: ARCH 1107a Adv. Studio 2018

The LifeCycle Studio

Faculty: Lisa Gray, Alan Organschi

Overview

The LifeCycle Studio explores advanced approaches to the design of sustainable buildings in the urban housing sector by posing the simple but provocative question: how will we live, design, and build for a future constrained by diminishing resources and increasing anthropogenic environmental disturbance? Guided by circular economic principles and armed with tools that include the analysis and visualization of the building lifecycle, its material and energy flows, and its potential ecological impacts, students will conduct research and develop designs for new modes and configurations of urban dwelling that incorporate materials and energy supply systems drawn from renewable sources and industrial and consumer waste streams. By considering both upstream ecological benefits and downstream improvements in public health, students will engage some of the most deeply entrenched problems of contemporary global society: housing and social equity for a rapidly expanding and urbanizing global population, the over-consumption of planetary resources, and the role of building production and operation in driving climate change. Ultimately, the studio will examine—through its own collective design work and an accompanying research program—the ways in which circular economic principles can promote a new design culture, one that leverages abundant and underutilized environmental resources as it seeks to address pressing global environmental crises.

Class Organization

The LifeCycle Studio will be conducted contemporaneously and in collaboration with an advanced Master level studio at Department of Architecture at Aalto University in Otaniemi, Finland. The theme of housing in, for, and by the circular economy will form the foundation of the Yale/Aalto studio. Both studios will work on the same architectural project—a program of new, high-density housing with a mix of supportive uses for Jätkäsaari, an urban development zone in a former industrial district on Helsinki's western waterfront. Students from both schools will share research, analytical methods, and design approaches. Yale students may choose to enter into direct design collaborations with their Finnish counterparts through a series of meetings in Helsinki during the YSOA travel week and subsequently through on-line meeting and information exchange platforms. Students from Aalto University will in turn travel to New Haven for collective final presentations during the YSOA final review week in December.

The specific building program and site that will be the focus of the work of the semester derives from an official competition and public challenge for housing reform in Helsinki to be published officially on September 3rd. Entry submissions will be due in the first week of December. Individual students and/or student teams may choose to enter officially, although it is not a requirement of the studio.

The research component of the studio will be supported by a series of interdisciplinary lectures and seminars in environmental science, silvaculture, industrial ecology, environmental policy, emergent architectural practices, and circular economic manufacturing from Yale and Aalto University faculty, Finnish and US government representatives, and industry experts. In addition, student design work will be supported by quantitative analyses conducted in collaboration with graduate students at the Yale School of Forestry and Environmental Studies' Center for Industrial Ecology and Global Institute for Sustainable Forestry.

Course Objectives

1. Design new modes and configurations of urban dwellings that incorporate sustainable material and energy flows using a variety of analysis and visualization tools and circular economic principles.
2. Collaborate with students at Aalto University in order to share research, analytical methods, and new design approaches.

Assessment Breakdown

Conception	30%
Design Development	30%
Technical Resolution	30%
Participation	10%

Syllabus: ARCH 1111 Adv. Studio 2020

Urban Eco-Communities: City as a Laboratory for Sustainability

Faculty: Anupama Kundoo, Sarosh Anklesaria

Overview

Auroville, a 'city-in-the-making' in South India was founded in 1968 as a model city for the future where all aspects of city life could be radically rethought as an integral experiment. This project falls under the Indian Ministry of Human Resource and is supported by UNESCO.

The studio will investigate urban co-housing prototypes in a high-density context, with a focus on redefinition of private and shared spaces in the context of community living. The context of Auroville is radical in its relationship to land as a non-ownable resource belonging to the 'commons'. Alongside new ideas of mobility, circular economy and green infrastructure, non-ownership of land allows the development of collective living models that are not restricted by plot definitions but by land use definitions. The site lies within a compact residential area designed to house 8000 inhabitants and their related services.

Human settlements need to reorganize themselves in the interest of reducing resource consumption while enhancing the human potential to propel human society forward. Taking note of the growing imbalances in current urbanisation, the studio will use integral thinking thereby addressing environmental, social and economic impacts of development. Given the growing population on the given available land in India, it is urgent that new models be found for compact cities with a greater sense of community. The need of the hour is to design self-reliant urban communities where people can live together in a relatively small area and yet find the diversity and all the useful services that can be accessed by foot. Built environments would be primarily be built out of local materials and local skills improving thereby local economy, while reducing the environmental impact. It can be imagined that such settlements would manage water and waste water integrally and efficiently where water thus saved can be directed to growing food within the urban areas; that renewable sources of energy can reduce reliance on fossil fuels and perhaps the urban areas can be generators of energy; that air quality would improve through keeping motorized vehicles at bay, while achieving silent and healthy environments where residents feel nurtured, happier, healthier and more peaceful.

Excursion

A five-day trip to Copenhagen will include visits to Cohousing projects from 50 years ago during the inception, to contemporary examples such as 8 House, Mountain, VM Houses, Tietgen Dormitory, Christiania or Bellavista housing estate, designed by Arne Jacobsen, 1934. Copenhagen is considered to be among the world's liveable cities and one where collective governance and new mobility, as also innovative economic strategies have taken roots.

Course Objectives

1. Rethink the labeling of private and shared spaces in community living through the exploration of urban co-housing prototypes within high-density contexts.
2. Develop new models for cohabitation in the South India city of Auroville in response to the environmental, social, and economic impacts of development.

Assessment Breakdown

Conception	30%
Design Development	30%
Technical Resolution	30%
Participation	10%

Background

Auroville's Chief Architect, Roger Anger (1923-2008) was one of the most prolific French architects of the 50s and 60s. Sculptural plasticity and individualized timeless modernity identify his unique architectural language. This is amply demonstrated by the more than 100 housing projects designed by his office in Paris alone. His three 28 storey housing towers in Grenoble, the highest residential buildings in Europe at the time, and recipient of the Belgian Premier Prix International d'Architecture in 1967 remain today as an icon of the city and a spectacular example of his work. In 1965, Roger Anger was appointed the Chief Architect of Auroville, a laboratory city, calling for visionary planning, the site where in the last decades the essence of his work as an architect, painter and sculptor was concentrated.

The architecture of his early housing projects in Paris demonstrates a reaction against what he called the 'dictatorship of the curtain wall' and an overemphasis on functionalism and standardization that marked the architecture of that time. Questioning the over-simplification of modernist principles, his office devised strategies to counter the monotony and loss of human scale in the built environment.

Class Organization

Outline of Exercises: (assuming all Exercises will be done in groups of 2)

Ex1: Research Phase:
      Progressive precedents of housing & Co-living
      The Sharing Economy: Ownership & Finance
      Site Research: History of Auroville and other
      Visionary Precedents Cultural Specificities:
      Climate/ Materiality/ Construct
      Studio Process: Film documentation

Ex2: Project Manifesto + Narrative + Concept at 250/ 100 scales

Ex3: Design Development + Drawings + Models at 50 scale

Deskcrits

All students will have a desk-crit or pin-up on their work at least once a week. Please have 'new' work to discuss at each meeting.

Documentation

In addition to a Studio Folio (see Evaluation), all students are responsible for submitting a complete record of the term's work in digital form. High-resolution digital photos of models, drawing, videos, and layout files, and final pdfs are required (exact date and format to be announced).

Make a habit of regularly photographing and saving high-res files of your work throughout the term (color: 300 dpi at 8×10 print-size -- in non-lossy format if possible; 600 dpi for b/w). Original .dwg, .3dm, and layout files should also be saved along with embedded contents and plot or print PDFs. Purchase of an external hard drive to save backup copies is strongly recommended. Finally, consider photographic documentation at various stages as a mode of representation that requires as much creative effort as the project itself. The three most critical elements are: lighting, depth of field, image editing — and focus.

Evaluation

A high-resolution Studio Folio, and a complete digital record of the semester's work, due at the end of the semester are required for a final grade in the studio. The Studio Folio should contain all relevant work from the semester, edited and composed to elaborate the intents, investigatory processes, and final design proposal. Format: 8.5"x 11", portrait. The digital submission should include all original .dwg, .3dm files as well as image, layout, video and PDF print files for projects during the semester, including research, Field Study, and collaborative assignments.

The following factors will be considered in project evaluations:

Inquiry

Active use of drawing and modeling to pose questions, explore relationships, and test resulting discoveries; rigor, thoroughness, depth and breadth of investigation; focus and relevance to assignment; imagination and insight of responses; clarity and relevance of conceptual (thesis) exploration of projects.

Process

Self-initiative in developing drawing and material studies, in searching out resources, and in pursuing alternative possibilities for a given hypothesis; curiosity, imagination, perseverance; contribution to group discussions and reviews.

Progress

Evidence of new work at studio meetings; weekly progress through drawing, modeling, research.

Construction

Creativity, thoughtfulness, appropriateness, and resolution of design work.

Craft

Care, quality and completeness of drawings, constructions, and research presentations; imagination, originality, and effectiveness of representational means.

Relevant NAAB Student Performance Criteria

A.1. Professional communication skills
A.2. Design thinking skills
A.3. Investigative skills
A.4. Ordering systems
A.5. Use of precedents
A.6. History and global culture
A.7. Cultural diversity and social equity

Schedule

Week 1	January 9	Studio Lottery + Studio Introduction
	January 10	Research Ex1 + Project Manifesto. Introductions Ex2. Lecture on Roger Anger
Week 2	January 13	Presentation Auroville Urban Plan
	January 16	Introduce template for research dossier. Desk Crits. One concept diagram/drawing of project manifesto
	January 17	Desk Crits. One concept diagram/drawing of project manifesto
Week 3	January 20	No class
	January 23	Ex1 & 2 In Progress Pinup: Research Booklets + Manifesto + Design Concept
Week 4	January 27	Desk crits
	January 30	Desk crits
Week 5	February 3	Review: Ex1 & 2: Research + Project Manifesto + Concept. Field trip Prep
	February 6	Desk Crits + Prep for Copenhagen. Lecture: Building Knowledge Building Community by Anupama Kundoo
Week 6	February 8 - 14	Travel week. Itinerary TBA
Week 7	February 17	Desk crits
	February 20	Pinup: Copenhagen Lessons + Project Manifesto Revised + Concept (re)development
Week 8	February 24	Desk crits
	February 27	Ex2 & 3: Review: Drawings + Models at 1:50
Week 9	March 2	Desk crits
	March 5	Midreviews
	March 6	Midreviews
Week 10	March 23	Desk crits
	March 26	Review
Week 11	March 30	Ex3: Design Development - week 1
	April 2	Desk crits
	April 3	Desk crits
Week 12	April 6	Ex3: Design Development - week 2: Pre-final Review
	April 9	Desk crits
Week 13	April 13	Ex3: Design Development - week 3

	April 16	Desk crits
Week 14	April 20	Project Refinement: Drawings + Models
	April 23	Desk crits
Week 15	April 27	Project Refinement: Drawings + Models
	April 30	Desk crits
Week 16	May 1	Final Reviews
Week 17	May 7	Studio materials shipped to Louisiana
Week 18	May 14	Exhibition opening in Louisiana

Syllabus: ARCH 1113 Adv. Studio 2020

MAM: Women's Museum for the Twenty-First Century

Faculty: Cazu Zegers, Kyle Dugdale

Overview

ko•yaa•nis•qatsi (from the Hopi language), n.

1. crazy life.
2. life in turmoil.
3. life out of balance.
4. life disintegrating.
5. a state of life that calls for another way of living.

In the 1982 experimental documentary Koyaanisqatsi: Life Out of Balance (the first part of the Quatsi trilogy), Godfrey Reggio calls attention to what is happening today in the relationship between human beings, nature and technology.[1]

This studio confronts the challenge of a new paradigm that is emerging with the rise of a new culture: a culture that I like to describe as the "Americanity" or the "Pacificians" or "Pacifiers." This word-game suggests that America and the Pacific offer clues to an answer. We Americans need to reconnect with our origins, to go back to the land and understand it as sacred. The human species belongs to the earth: we cannot develop life separated from her, as we are part of the land in a face-to-face process.[2] This means that the territory where we are born shapes our being.

We face the urgency of reconnecting in order to open a new narrative over the territory, which will in turn allow us to build healthy cities, rebalancing life in a post-technological world.

This change of paradigm is necessarily accompanied by the rebalancing of feminine and indigenous communities into the cultural process. The way in which we approach this will be through a concrete project: the MAM Women's Museum for the Twenty-First Century, based in Santiago, capital of Chile.

As a consequence of the process of suppressing the attributes of the feminine in the last 3000 years with the heyday of patriarchy, and the ensuing process of industrialization and technology of the last 200 years, the human being's link to the naturally sacred has been lost, with a consequent loss of the wisdom and beauty that gives an intimate understanding of nature and its regenerating cycles of life.

Humanity has expanded its access to knowledge, extended its life expectancy, established its cities, and diversified its technologies; but it has also moved away from a sacred, ceremonial and ritual communion with itself, its peers, the community of its ecosystem, and the stars.

The Women's Museum is therefore more than a collection of objects. It seeks to remember, recreate and activate the sacred spaces of archetypal woman, for the exercise of the word, wisdom, power and rituality that are linked to the force of the feminine in the universe. Its intent is to acknowledge the force of equilibrium and balance that is critical to the great challenges that humanity must face at the dawn of the 21st century.[3]

These issues are part of architecture's challenge in offering a right and meaningful response to the problem. More than a technique for the production of objects, architecture becomes a technique for the construction of relationships in space.

1. In 2000 the film was deemed "culturally, historically, or aesthetically significant" by the Library of Congress, and selected for preservation in the National Film Registry.
2. Ricardo Rozzi, Chilean ecologist, philosopher, and father of biocultural ethics.
3. Aleka Vial de Grenade, extract from proposal.

Course Objectives

1. Reconnect with the origins of the Americas through the design of a museum meant to explore, recreate, and activate the objects, practices, and ideals of feminine and indigenous communities.
2. Through the development of this museum, contemplate and begin to form a new narrative for the territory which can be applied to present and future healthy cities in the post-technological world.

Assessment Breakdown

Conception	30%
Design Development	30%
Technical Resolution	30%
Participation	10%

Class Organization

Site

The territory is to America as monuments are to Europe.

As the Chilean anti-poet Nicanor Parra has said, "We believe we are a country and the truth is that we are just landscape." This speaks to the condition of this country: because of its long and narrow shape, compressed between the Andes and the Pacific, the richness of the country is its natural beauty, given by climatic variation from the driest desert in the north to the unexplored glaciers in the south. For the fifth consecutive year, Chile has been named South America's Best Adventure Travel Destination by the World Travel Awards. From the northern to the southern end of the country, from sea to mountain range, Chile has a natural strength and diversity that makes it unique on the planet. Deserts, volcanoes, glaciers, lakes, mountain ranges, ancient forests and ice fields invite to unforgettable adrenaline-filled experiences.

Santiago is a modern city located in the center of Chile, between the Andes range and the coastal range—a unique territorial settlement, with Cerro El Plomo at a height of 5430 m. This tight relationship between the Andes and the city gives Santiago a unique territorial relationship with its environment. This condition will inform the design of the museum, located at one of the city's several Island Hills.

Travel and Andes Workshop

The studio will travel to Santiago de Chile during travel week, to visit the project site and collect information for the final design.

We will also live the experience of the Andes Workshop, in order to understand the place where the project will be settled and live the territorial experience at the far end of the American continent, so as to be able to recognize, from here, our own territory. The Workshop will allow us to live a transdisciplinary experience and to understand how technology develops from common sense and local process. We will attend several classes: "Cuerpo y Espacio" (Body and Space) with the Chilean choreographer Francisca Sazié, "Campo Grabado" (Engraved Field) with the artist and designer Teresa Montero, "Materia" (Material) with the sculptor Vicente Gajardo, "Narrativa" (Narrative) with the journalist and museum curator Aleka Vial, "Registro" (Script) with Ces Serra, a site visit with the naturalist Sergio Elórtegui, and a class on architecture with GrupoTalca (Rodrigo Sheward, Martín del Solar) and Cazú Zegers. At the end of the workshop we will perform a piece at the site in order to mark the opening ceremony for these new possibilities. The work will be recorded with audiovisual media and will form part of the final project.

Syllabus: ARCH 1115 Adv. Studio 2020

Kitchen Sink Realism

Faculty: Pier Vittorio Aureli, Emily Abruzzo

Overview

Introduction

As a specific mode of dwelling, the house originates—at least in part—with a desire for stability. For this reason, we can argue that the invention of the house as an architectural apparatus is motivated not only by the need for protection from a hostile territory but also by a desire to settle and to give life a ritual form. The emergence of the home as a stable structure provided security, but it also enhanced a sense of possession, which gradually expanded from the house to its surrounding environment. It is for this reason that we could trace back to the home the rise of the idea of property, a concept which, up until the present day, remains the most important spatial and political datum of our society. While today there is much discussion on issues such as climate change and the housing crisis, seldom these issues are understood as structural consequences of a society based on property relationships. With the rise of capitalism the tyrannical relationships at work in the home were expanded to the totality of urban life and thus property has become the main template for both human and non-human forms of life.

This year's studio challenges students to be bold in rethinking what urban life could be if we conceive it beyond the idea of property. Focusing on the relationship between the home and the settlement, students will be encouraged to imagine what it would mean to experiment with the possibility of commoning. Going beyond the problematic trope of the 'sharing economy,' practices of commoning demand direct commitment from the dwellers in taking care of their environment and their peers. Commoning is a practice that emerges out of the effort of a community to pool its resources and share them equitably. Although much has been written about the emancipatory potential of commoning at

a political level, this practice presents another crucial aspect: namely, the need for 'commoners' not only to share but also to govern common resources in a way that ensures their reproduction or renewal. Because resources are not owned but are a common wealth that should survive into the future, commoning implies an idea of stewardship and care that is foreign to the reality of private property and that often becomes too abstract when it comes to state-based systems. The commoners are directly called to take care of the commons—for themselves, for their peers, and for future generations. They can use resources for their well-being, but must make sure those resources will be maintained and replenished, thus establishing a relationship between land and man that is conceptually very different from the modern attitude of property.

The main question of the studio is, therefore, what kind of architecture could both enable and represent practices of commoning. If subdivisions, villas, detached homes, apartments, parks, roads, and the separation between public and private sphere have successfully embodied the spatial logic of property, what kind of programs, typologies, archetypes, and spatial arrangements can inspire and enable principles of commoning? As a preliminary framework for action, we propose the concept of the 'dispersed home': an idea of domesticity and a way of settling that has gradually emerged from projects developed by your colleagues in the previous iterations of this studio. The concept of the 'dispersed home' addresses the gradual redistribution of domestic spaces such as kitchens, gardens, and living rooms in patterns that break the mold of the traditional household. It is important to remark that the dispersed home is not a 'collective house,' but a step-by-step devolution of the household property towards the possibility of commoning.

Course Objectives

1. Rethink the concept of urban life by moving beyond the conventional attitudes of one's life being determined by property.
2. Imagine a type of architecture that could both enable and represent practices of commoning.

Assessment Breakdown

Conception	30%
Design Development	30%
Technical Resolution	30%
Participation	10%

Important references for the idea of the dispersed home are nineteenth and twentieth-century material feminism, Russian disurbanims, Aboriginal architecture in Australia, 1980's work from OMA and Kazuyo Sejima. The logic that informs the dispersed home is the possibility of socializing domestic labor as a way to catalyze wider forms of commoning that includes both reproduction but also production in general. In order to avoid the conventional—and often empty—rhetoric of sharing and collectivity, we will approach commoning in the spirit of 'kitchen-sink realism,' which means that we will confront everyday life in all its political and economic implications. We should constantly keep in mind that commoning is not easy: it requires a lot of commitment and organization and also a long-term vision in order to be properly supported.

Ager Tusculanus

Following the previous two studios, we will continue to work on the Roman Agro, the region that surrounds the city of Rome. The form of the Agro is defined towards the west by the Tyrrhenian coastline, and towards the east by an arch of volcanic mountains that embrace the flat area of the Agro in the manner of a theatre. Despite its clearly discernible topographic form, which has defined the landscape of Rome for millennia, the Agro is a vast suburban area where growth over the last century has been propelled mostly by appropriation and building speculation.

In both ancient and early modern times, the Agro was dominated by powerful estate owners who built impressive villas both to exercise and represent their power over the land, staging it through the use of architecture and landscape design. This situation was particularly evident in the case of the eastern Agro which stretches beyond the Grande Raccordo Anulare until the Alban Hills. Until the 19th century, this area was known as the Ager Tuscolanus as it hinged on the Via Tuscolana, an ancient consular road connecting Rome to Tusculum, a very important hilltop town that predated Rome. Ager Tusculanus is today one of the most populous and problematic suburbs of Rome, and its present condition casts a very long shadow back on the 'colonial' history of the Urbe itself.

The rise of Rome as capital of Italy caused massive waves of immigration to the city in the 20th century, pushing Roman land owners to transform some of their landholdings into subdivisions in order to sell plots of land to the new settlers. This phenomenon gave root to the urbanization of the so-called 'Zones O:' a bureaucratic term that identifies illegal settlements that were legalized a posteriori. It was precisely the practice of ex-post regularization that encouraged landowners and settlers to build without formal permits; such settlements are referred to as toponimi (literally 'place-names'): illegal settlements awaiting official recognition—and an official name—from the municipality. Yet once these settlements are legalized, the municipality struggles to provide them with necessary infrastructure such as roads, sewage, and public facilities. Due to their sprawling logic, both 'Zone O' and toponimi settlements are very hard to reconcile within the regulatory framework of the city's masterplan. Today, the Roman Agro, especially in its eastern portions corresponding to the Ager Tusculanus, can be considered an archipelago of settlements deprived of any form of infrastructure and social welfare. These settlements are the bare embodiment of the logic of private property as the only 'right' left to people, after the state and the city refuse to guarantee any other form of social protection or welfare.

Commoning

The studio's approach to commoning will find its basis in Massimo De Angelis's theoretical work. Going against mainstream discourses on the commons, De Angelis argues that commons are not simply resources we share, but rather, should be conceived as the interaction between three factors: the pooling of resources understood as a non-commodified means of fulfilling people's needs, the commoners who share these resources and who define for themselves the rules according to which they are accessed and used, and finally the verb 'to common': the social process that creates and reproduces the commons. As De Angelis noted, the concept of commoning as a process was reevaluated by the historian Peter Linebaugh in his study of the thirteenth-century Magna Carta Libertatum, a charter of rights written by the Archbishop of Canterbury and presented to King John of England in 1215. According to Linebaugh, this charter of bills presents the basic principles of commoning, explaining how the English commoners took their lives into their own hands. "The Commoners — explains De Angelis — were able to maintain and develop certain customs in common—collecting wood in the forest, or setting up villages on the king's land—which, in turn, forced the king to recognize these as rights. The important thing here is to stress that these rights were not 'granted' by the sovereign, but that already-existing common customs were rather acknowledged as de facto rights." Following this definition of commons we can argue that commoning is cooperation based on customary rights rather than state law. Yet commoning is not autarky, or being off-grid from society. Unlike their medieval predecessors, contemporary commoners have to negotiate their practices within both state and market conditions.

After carefully studying the political economy of commoning, each student or group of students will select a specific settlement within the Ager Tusculanus and propose a strategy of gradual transformation based on the principle of the 'dispersed home' and processes of commoning. This gradual transformation will involve both the house and the settlement, spaces for production, and spaces for reproduction. It is important to emphasize that this project does not seek 'improvement' per se, but, rather, to allow future inhabitants to live in these settlements in a way that is radically different from the way they are lived today. This means that we should avoid the usual tropes of urban renewal that have become the purpose of much urban design produced today.

The transformation of toponimi from speculative subdivisions to commoning communities will entail adaptations, demolitions, additions, and subtractions— from small scale to large, from the scale of the settlement to the architecture of the house or the allotment. In short, each project will offer possible reinvention of the settlement form from the present regime of land use to a situation in which land will be used in common and ownership will be limited to the minimum indispensable. A crucial issue that the studio will confront is the agency of urban and architectural form in enabling processes of commoning. As noted earlier, exactly like capital, the common is not a 'thing,' but a system of relationships and set of values. Yet, in order to function, these relationships are often enabled, if not solicited by, the physical spaces in which they take place.

The question posed by the studio is: What kind of urban figure can embody the possibility of commoning not as an episodic gesture, but as a stable form of settling? In other words, we will explore spatial principles of settling that can challenge the urban subdivision of private and public space; we will also experiment with forms of land tenure in which confrontation and negotiation among communities are not subsumed within a totalizing urban framework, but acknowledged as principles of coexistence. The studio will travel to Rome, where it will engage in extensive field-work on site, studying both city and countryside in their most salient historical episodes by extensively walking and driving through the Roman landscape. We will also meet local inhabitants and colleagues who are and have been working on the same territory, and will share with us their insights and observations.

Bibliography

(Abbreviated)

Pier Vittorio Aureli, Maria Shehérazade Giudici, "Islands: The Settlement from Property to Care" in Log 47 Fall, 2019.

Pier Vittorio Aureli, Leonard Ma, Mariapaola Michelotto, Martino Tattara, Tuomas Toinoven, 'Promised Land: Housing from Commodification to Cooperation' in E-flux Architecture, Fall 2019.

Massimo De Angelis, De Angelis, Massimo. Omnia Sunt Communia: Principles for the Transition to Postcapitalism. London: Zed Books, 2017.

An Arcitektur, "On the Commons: A Public Interview with Massimo De Angelis and Stavros Stavrides", https://www.e-flux.com/journal/17/67351/on-the-commons-a-public-interview-with-massimo-de-angelis-and-stavros-stavrides/

James Defilippis, Unmaking Goliath: Community Control in the Face of Global Capital (New York: Routledge, 2004).

David Graeber, David Wengrow, 'How to Change the Course of Human History (At least the Part that Has Already happened)' in Eurozine, 2nd March, 2018, https://www.eurozine.com/change-course-human-history/

Dolores Hayden's "Free Lovers, Individual Sovereings, and Integral Cooperators", chapter 5 of The Grand Domestic Revolution: A History of Feminist Designs for American Homes, Neighborhoods, and Cities (Cambridge, MA: The MIT Press, 1991)

Karl Marx, Marx, Karl. "Part Eight: So-Called Primitive Accumulation". In Karl Marx, Capital Volume 1, 873-942. London: Penguin, 873-942.

Maria Mies, Patriarchy and Accumulation on a World Scale. Women and the International Division of Labour (London: Zed books, 2014).

Syllabus: ARCH 1116 Adv. Studio 2020

From Domesticity to Commons

Faculty: Tatiana Bilbao, Andrei Harwell

Overview

We live in a moment of increasing pressure on cities as urbanization drives large populations into more and more densely populated areas. More than 70 percent of the world's population lives in urban areas.[1] Contemporary life is in a state of constant evolution as cities try and accommodate these new populations, and as sharing economies disperse ownership of resources such as cars, access to nature and technology. Contemporary life is blurring the line between what happens in a home and in the public sphere. This studio will study the concept of the commons as a tool to apply to new housing typologies. The commons can be defined as a shared resource that is sustained, supported and improved on by participants that contribute to its maintenance. Applied to housing, it creates the arena for collective living dependent on success through social contracts and the flexibility to evolve with shifting needs. We will study the viability of collective housing through a series of precedents. Examples such as the modernist development of a shared kitchen in multifamily housing in Sweden in the 1950s draws together both architectural innovation and the sociological phenomenon of releasing women from domestic duties empowering them to join the workforce.

The studio will challenge students to designing places made for change and adaptation as a tool to increase the longevity of a project. Mexico holds a unique position in the global context of housing, as housing is a constitutional right, yet there exists a housing crisis. In an attempt to alleviate the demand for housing, 2.5 million homes were built in 6 years beginning in 2000. Building this impressive number of homes led to the sacrifice of livability — creating expansive neighborhoods of monotonous identical box houses, devoid of character and type, weaving a repetitious fabric that ruptures the capacity of community building through sameness and invisibility of the individual.

Using the research on commons, this studio will propose new ways of living. Proposals will expand the dictionary of housing typologies to integrate the unique and particular needs of people, a critical reality to engage with. Reimagining domestic spaces as productive areas of life can be used to empower social and economic minorities such as women, the disenfranchised or the elderly. Frequently urban and architectural plans ignore these people groups, or attempt enforce conformity. This studio will engage with other fields of study to encourage diverse thinking and support architecture proposals. Shared, collective and flexible housing has the capacity to make spaces in cities for alternate needs of different people. It questions the traditional family unit and opens up social engagement and redefinitions of households, such as those composed of working youths, single parent families, multigenerational households etc.

"The living space of new generations is declining. Each person living in the private rented sector now has on average eight square meters less space than they did in 1996".[2]

This studio will ask, How can collective spaces enhance living conditions and allow for more area for individuality. Redistributing space has the potential to relieve the demand on private spaces. Examples such as work-live housing, communal kitchens and community gardens add a dimension of productivity. Increasing the housing stock is not enough, we need to redefine the metrics by which we measure the livability with a home.

1. Wendell Cox, "World Urban Areas: 1,064 Largest Cities: 2018 Update", March 11, 2018.
http://www.newgeography.com/content/005933-world-urban-areas-1064-largest-cities-2018-update
2. Michael Savage, "Millennial housing crisis engulfs Britian", Aoril 28, 2018.
https://www.theguardian.com/society/2018/apr/28/proportion-home-owners-halves-millennials

Course Objectives

1. Create new housing typologies for urban areas through the exploration of the commons as a shared resource that both supports and is sustained by a collective.
2. Utilize the commons' inherent flexibility and ability to change and adapt as a means to develop projects with increased longevity that will continually adjust to and grow with their communities.

Assessment Breakdown

Conception	30%
Design Development	30%
Technical Resolution	30%
Participation	10%

Class Organization

Site

Students will select a site to locate their projects in the neighborhood of Santa Maria de la Ribera in the center of Mexico City. Designated a Barrio Mágico, or enchanted neighborhood, in 2011, Santa Maria represents a microcosm of development in the capital of Mexico. Originally developed with Beaux Arts mansions for wealthy families in the late 19th and early 20th century, the neighborhood has undergone many transformations reflecting urban, social and ecological shifts in the nation.

Method

Students will study the trajectory of rhetoric surround the commons, beginning with the seminal Tragedy of the Commons by Garret Hardin text which promoted a neo-liberal and capitalist agenda while becoming the touchstone for dismantling sustainable collective activity in regards to resource sharing. Since its publication in 1968, the commons have been debated, and even proven to be viable through extensive economic and sociological studies. In addition, students will study global examples of collective living, unpacking their urban and interpersonal impact.

Travel to Mexico City will provide the foundation for site specific study in Santa Maria de la Ribera. The trip will acclimatize students to urban and smaller scale living conditions in the context of Mexico. The trip will include visiting sites of seminal architecture, housing projects and a work shop in the office of Tatiana Bilbao ESTUDIO.

Students will create a housing proposal for 10-20 'family' units using their research on the commons and needs identified in contextual analysis.

Schedule

Week 1	January 9	Studio lottery, studio meeting in the afternoon
	January 10	Studio meeting
Week 2	January 13	Group meeting, discussion of model. Harwell
	January 16	Online meeting. Bilbao/Harwell
Week 3	January 20	No class, MLK holiday
	January 23	No class
Week 4	January 27	Desk crits. Bilbao/Harwell
	January 28	Desk crits continued. Bilbao/Harwell
	January 30	Pin up of commons premises. Bilbao/Harwell
Week 5	February 3	Desk crits. Harwell
	February 6	Desk crits, final prep for trip. Harwell
Week 6	February 8 - 15	Field trip to CDMX, pin up of design concept. Bilbao/Harwell/others
Week 7	February 17	No class
	February 20	Desk crits. Harwell
Week 8	February 24	Desk crits, prep for midterm. Bilbao/Harwell
	February 25	Desk crits, prep for midterm. Bilbao/Harwell
	February 27	Desk crits. Harwell
Week 9	March 2	Desk crits. Bilbao/Harwell
	March 5	Midterm reviews. Bilbao/Harwell/others
Week 10	March 23	Desk crits. Harwell
	March 26	Desk crits. Harwell
Week 11	March 30	Desk crits. Harwell
	April 2	Pin up. Bilbao/Harwell
Week 12	April 6	Desk crits. Harwell
	April 9	Desk crits. Harwell
Week 13	April 13	Desk crits. Harwell
	April 16	Desk crits. Bilbao/Harwell
Week 14	April 20	Desk crits. Harwell
	April 23	Dress rehearsal for final review. Bilbao/Harwell
Week 15	April 27	Desk crits, prep for final review. BIlbao/Harwell
	April 30	Final review. BIlbao/Harwell/others

Bibliography

Chiara Briganti, Kathy Mezei (Eds.), The Domestic Space Reader, University of Toronto Press, 2012.

Serge Chermayeff, Christopher Alexander, Community and Privacy, Toward a New Architecture of Humanism, Doubleday, New York, 1963.

Urs Peter Flueckiger, How Much House? Thoreau, Le Corbusier and the Sustainable Cabin, Birkhauser, Basel, 2016.

Dolores Hayden, The Grand Domestic Revolution: A History of feminist Designs for American Homes, neighborhoods, and Cities, The MIT Press, Cambridge, Massachusetts, London, England, 1981.

Niklas Maak, Living Complex: From Zombie City to the New Communal, Hirmer Publishers, 2015.

Charlotte Perkins Gilman, The Home, Its Work and Its Influence. McClure, Phillips and Co., New York, 1903.

Lynn F. Pearson. The Architectural & Social History of Cooperative Living, MacMillan Press, London, 1988.

Jack Self, Shumi Bose (Eds.), Real Estates, Life Without Debts, Bedford Press, 2015.

Georges Teyssot, A Topology of Everyday Constellations, The MIT Press, Cambridge, Massachusetts, London, England, 2013.

Home Economics, Five new models for domestic life, British Pavilion, Venice Architecture Biennale, 2016.

Changing the Art of Inhabitation, Mies´ pieces, Eames' dreams, The Smithsons, Artemis London Ltd, London, 1994

Syllabus: ARCH 1119 Adv. Studio 2020

Ladeira da Misericórdia — Salvador de Bahia, Brazil

Faculty: Norma Barbacci, Sunil Bald

Overview

The Studio explores the relationship between cultural heritage and the richness of contemporary urban life through imagining the restoration and future possibilities for the Ladeira da Misericórdia, a steep street that connects the upper and lower areas of the Historic Center of Salvador da Bahia, Brazil. The site includes Baroque fabric, open areas, and deteriorated works of architect Lina Bo Bardi, who spent many years working in Salvador. Students will propose new architectural interventions that engage the city's rich socio-cultural context. We will travel to Brazil, making a brief stop in Sao Paulo to visit some of Bardi's seminal works, and then to Salvador to get to know the site, the city, and region, and to meet with academic and governmental agencies presently working on the site's rehabilitation.

Background

The Ladeira da Misericórdia is a steep street that historically connected the upper and lower areas of the Historic Center of Salvador de Bahia, a UNESCO World Heritage site, which suffered progressive physical and social deterioration throughout the 20th century. Between 1986-90, the Municipality of Salvador commissioned Italian architect Lina Bo Bardi, who had been the first Director of the Museum of Modern Art of Bahia (1958-64), to develop a social housing and commercial development pilot project for the rehabilitation of the ladeira (hill) that included several historic houses in ruins. Bo, in collaboration with Brazilian architect João Filgueiras Lima, known as Lelé, restored three of the houses for residential use without displacement of the existing occupants, designed an outdoor bar within a stabilized ruin and introduced a new concrete structure that spiraled around an existing mango tree which became the Coaty Restaurant. Due to lack of political support, the social experiment that Lina and Lelé tried in the ladeira failed, the site became abandoned and the pilot project was not replicated as originally intended. The current government of Bahia decided to redevelop this area of the city as part of the Participatory Redevelopment Plan for the City of Salvador (2010), developed through public consultation involving the local community. The Plan envisions the social and physical rehabilitation of the Ladeira da Misericordia as an important historic and cultural landmark for the city of Salvador. This initiative could offer an opportunity to reactivate the historic site in a way that somehow realizes Lina Bo Bardi and Lelé's unfulfilled vision.

Studio

The Studio will be examining the restoration and future possibilities for the Ladeira da Misericórdia in Salvador de Bahia and will provide an opportunity to explore the relationship between cultural heritage and the richness of contemporary urban life.

One important challenge will be to explore and understand the complexity of the superimposition of historical layers accumulated at the site and propose a new architectural intervention that not only addresses a specific program proposed for the site but also the socio-cultural context of the community of Salvador de Bahia. Solutions should balance surgical scale architectural interventions within the physical boundaries of the site with their impact on the larger context of the upper and lower city of Salvador, in particular the Historic Center (Centro Antigo). The concepts of historic preservation, conservation, sustainability, authenticity and integrity will be explored as well as the cultural legacy of Lina Bo Bardi in Salvador de Bahia.

Course Objectives

1. Renew and restore a historical urban area through present-day architectural intervention.
2. Explore the relationships between cultural heritage, urban life, and future urban and cultural possibilities, including both the challenges and opportunities that these relationships present in the context of restoration and intervention.

Assessment Breakdown

Conception	30%
Design Development	30%
Technical Resolution	30%
Participation	10%

Travel

During travel week, the studio will go to both Sao Paulo and Salvador de Bahia. In Salvador, we will visit the Ladeira da Misericórdia and the specific area of study which includes the Restaurante Coaty and several historic houses rehabilitated in the 1980s by Lina Bo Bardi. The visits will also include examples of Bo's work in Brazil, such as the Museu de Arte da Sao Paulo (MASP), the Museu de Arte Moderno da Bahia in the Unhão complex (MAM), Casa do Benín, Casa do Olodum and Teatro Gregório de Mattos in Salvador, as well as other sites that would help the students understand the cultural heritage, material and immaterial, of Bahia. If time permits, we will organize a short visit to the town of Cachoeira in the Recôncavo of Bahia, a region whose architecture and nature influenced the work of Lina Bo in Salvador.

While in Salvador, students will present their initial work to a panel that includes local authorities, professionals working on the project, as well as prominent figures from the cultural and architectural communities.

Preservation

Preservation goes beyond the conservation of the object or historic fabric to focus on the holistic recycling of the site including introducing a sustainable new use if its original function became obsolete. In that sense the proposed program as well as the physical intervention should fully address social needs, the environment, and the economic realities of the community where the site is located.

Preservation and especially its adaptive reuse aspect, is a supremely creative activity that requires a more profound level of site analysis than a new construction project. Successful preservation interventions demand a measure of humility from the part of the architect (which may be hard in some cases) but no less creativity and technical expertise than a ground up architectural intervention.

Furthermore, by recycling or providing a new life for obsolete structures, we automatically engage in environmental conservation and sustainability. The energy embodied in the already built object continues paying off dividends instead of using more energy and non-renewable resources in the process of removal and disposal.

Class Organization

The 2010 Plano de Reabilitação Participativo do Centro Antigo de Salvador (Participatory Rehabilitation Plan for the Old Centre of Salvador) developed by the Bahia State Government, aims to address the economic, social, environmental and urbanistic issues that were inadequately addressed in previous rehabilitation programs. The Plan seeks to reverse the process of housing depletion and degradation of Salvador's historic center, change the urbanization model based on the continuous expansion of urban boundaries, and follows the guidelines of the Ministry of Culture regarding the preservation of cultural heritage and understanding of the strategic role of culture for development.

As a studio, we will develop an architectural program and design intervention for the adaptive reuse of a group of historic structures located in the Ladeira da Misericordia which address the general objectives outlined in the Rehabilitation Plan as well as the more specific goals of improving the slope between the Upper and Lower Cities as an open public space offering views of the bay and encouraging residential and institutional uses within the historic center of Salvador.

Students will develop individual proposals for "Ladeira da Misericórdia Creative Industries and Artists Residence Complex" that will explore the contemporary potential of Lina Bo Bardi's belief that art can give agency to the multicultural population of the historic center of Salvador. The 15,000sf project will have to engage the site's historic houses, Bardi's interventions, and the sectionally-challenging slope of the site each focused on a different cultural expression representative of the Brazilian Northeast.

Part I: Concept and Method Exercise (ends January 16)

A short design exercise to develop initial conceptual and methodological design approaches using the technique of Kintsugi as an analogue of working with site and historic fragments.

Part II: Research and Initial Site/Project Strategies (ends February 10)

Supplemented by a series of lectures and readings about Methods and Concepts of Preservation, the city and culture of Salvador, and Lina Bo Bardi, students will develop initial proposals for working with the existing site. Students will also refine individual building programs based on research into their chosen cultural frameworks for their projects. This will be presented to a design and municipal panel in Salvador for feedback.

Part III: Midterm Presentation (ends March 5 or 6)

Each student must present a clear architectural strategy integrating site, program, and building strategies. In addition to design work, student will prepare and present a preservation report that includes their existing site documentation and proposal for rehabilitation and renewal.

Part IV: Final Proposal (April 30 or May 1)

Students will be responsible for their own projects that integrate site, tectonic, new construction, preservation, and program.

Schedule

Week 1	January 9	Studio Introduction. Kintsugi problem introduced
Week 2	January 13	Lecture by Carla Zollinger (Intro to Salvador de Bahia and Lina Bo Bardi). Desk Crits Kintsugi project
		Reading Assignment: -LIMA, Zeuler R. M. de A. "Lina Bo Bardi." 2019 (Chapter: "Theory and Action" pp. 73-82, Chapter: "Eyes Wide Open" pp.83-90, Chapter: "This is not a Tourist City" pp. 185-201, Chapter: "A Wonderful Tangle" pp. 202-212).
	January 16	Lecture by Norma (Preservation intro, theory, definitions). Neighborhood walk (observation of building pathologies). Desk Crits Kintsugi project
		Reading Assignment: -STUBBS, John. "Time Honored: A Global View of Architectural Conservation." 2009. (Chapter 2: " What is Architectural Conservation". Stubbs (Time Honored, Ch 2). -GLENDINING, Miles. "The Conservation Movement — A History of Architectural Preservation." 2013. (Chapter 4: "The life-force of age — Restoration and Anti-Scrape, 1850-90").

	January 17	Presentation Kintsugi project. Site and Preservation analysis / strategy / planning introduced
Week 3	January 23	Lecture by Norma (International charters, Preservation in the USA, Preservation Practice). Pin up Site and Preservation analysis / strategy / planning
		Reading Assignment: FITCH, James M. "Historic Preservation: Curatorial Management of the Built World." 1982. (Chapter 2: "The Heritage as Cultural Resource", Chapter 8: "Extended and Adaptive Use").
Week 4	January 27	Pin up Site and Preservation analysis / strategy / planning
	January 30	Lecture by Norma (Preservation Practice & additions exercise). Reading Discussion. Desk Crits Site and Preservation analysis / strategy / planning
		Reading Assignment: -BYARD, Paul S. "The Architecture of Additions — Design and Regulations." 1998. (Chapter 1: "The Evolution of Expression in Combined Works: Lessons from the Masters").
Week 5	February 3	Desk Crits Site and Preservation analysis / strategy / planning
	February 6	YSoA Presentation Site and Preservation analysis / strategy / planning
Week 6	February 8 - 16	Travel Week
Week 7	February 17	No class
		Reading Assignment: STUBBS, John. "Architectural Conservation in Europe and the Americas." 2011. (Chapter 34: "Brazil").
	February 20	Lecture by Sunil (Baroque & Modernism). Trip post-mortem, review of existing conditions survey, preservation criteria. Mid-term assignment.
Week 8	February 24	Desk crits
	February 27	Lecture by Glenn Boornazian (Architectural Conservation). Pin up consolidated existing conditions survey. Desk Crits
Week 9	March 4	Midreviews
Weeks 10 - 14	March 23 - April 23	TBD
Week 15	April 27	No Class
	April 30	Final Review

Syllabus: ARCH 1221a Architectural Foundations 2020

Faculty: Nikole Bouchard, Miroslava Brooks

Overview

For architects, the ability to critically observe, understand, transform, and communicate complex spatial and visual ideas is essential. Most architects today operate across multiple media, using various tools, techniques, software, and devices. They work with texts, sketches, drawings, photographs, collages, physical models, GIFs, videos, simulations and buildings—all of which are considered invaluable methods of the creative design process. There is no longer a clear distinction between them and no single tool or medium takes precedence when it comes to architectural ideation, production, and representation. As many have pointed out in the past, architects do not make buildings. Architects make representations—images, drawings, models, simulations—which then lead to buildings through various processes of translation.

Architectural Foundations introduces incoming students with limited architectural background to the fundamentals of architectural language and rep- resentation, providing them with several opportunities to discover and develop their own unique design process. Students are introduced to techniques and conventions used to describe the space and substance of designed objects, buildings and environments. Weekly Explorations encourage students to practice the techniques of observing, conceptualizing, constructing and communicating their design ideas. The skills explored require a constant back-and-forth translation between 2-dimensional and 3-dimensional architectural artifacts, incorporating sketching, architectural diagramming, ortho- graphic drawing, constructed axonometrics, perspective projections, digital and physical modeling, photography, image-making, animation and video. Extensive examples from various creatives who span a variety of backgrounds, time periods, and geographic locations will be presented weekly to provide a point of reference and inspiration.

Exercises include sketching objects and spaces in one's immediate environment; constructing precise measured drawings; translating 2-Dimensional compositions into 3-Dimensional forms; drawing from observation, memory, and imagination; physically and digitally modeling objects, forms, and spaces; and studying art, architecture and design precedents from the past and present. Throughout the course, students work with analog and digital methods to create images, drawings, and models. Supplemental workshops introduce students to a variety of digital software and fabrication tech- niques. Please note, this course includes some digital tutorials; however, this is not a software class. Students have access to excellent online tutorials to make use of and learn from on their own time.

Course Objectives

- Obtain skills in understanding composition, form, space, and structure.
- Develop knowledge and understanding of the use of various design conventions and methods of making.
- Gain the ability to depict space and form through a broad variety of representational techniques (drawing projections, modelling, rendering, etc).
- Work fluidly between analog and digital methods and between multiple types of media.
- Develop proficiency to comprehend, analyze, synthesize and transform complex given conditions.
- Learn to work iteratively by testing design ideas through multiple sketches, diagrams, drawings, models, images, and videos.
- Develop a heightened sense of close and critical observation of the surrounding context and environment.

Course Objectives

1. Obtain skills in understanding composition, form, space, and structure.
2. Develop knowledge and understanding of the use of various design conventions and methods of making.
3. Gain the ability to depict space and form through a broad variety of representational techniques (drawing projections, modelling, rendering, etc).
4. Work fluidly between analog and digital methods and between multiple types of media.
5. Develop proficiency to comprehend, analyze, synthesize and transform complex given conditions.
6. Learn to work iteratively by testing design ideas through multiple sketches, diagrams, drawings, models, images, and videos.
7. Develop a heightened sense of close and critical observation of the surrounding context and environment.
8. Build an understanding of the relationship between design ideas and their most effective forms of exploration and communication.
9. Develop the ability to create coherent graphic and verbal presentations of design work, effectively communicating ideas and work to a larger audience.

Assessment Breakdown

Intellectual Clarity	20%
Independent Inquiry	20%
Technique	20%
Participation	20%
Completion	20%

- Build an understanding of the relationship between design ideas and their most effective forms of exploration and communication.
- Develop the ability to create coherent graphic and verbal presentations of design work, effectively communicating ideas and work to a larger audience.

PLAYthings

The sub-theme for the class is PLAY. This does not mean the class will be frivolous, quite the contrary. We will approach play with the seriousness it deserves, allowing it to expand our capacity for creativity, innovation, and invention. Each Exploration will encourage students to develop their own design methodology to explore and test new and meaningful design strategies. Play encourages curiosity and learning through trial and error, rather than a narrowly defined set of working methodologies. Play asks us to take risks, to test possibilities, and ultimately to develop imaginative strategies of comprehending and designing the world around us.

Architecture is continually confronted with a myriad of rules related to clients, budget, site, program, codes, schedule, structure, etc. How can play influence rules, such that the latter operate as part of a speculative enterprise that manifest new forms of expression? Rather than limiting what we can do, how might rules be rewritten or recast to generate new possibilities for architectural production?

With this in mind, Architectural Foundations— A.K.A. PLAYthings— will focus on the role PLAY can have in architectural ideation, development, design, and production. Throughout the semester students will explore a variety of methods used by designers who have embraced the spirit of whimsy and know how to seriously play! As Charles and Ray Eames once said:

> "Toys are not really as innocent as they look. Toys are preludes to serious ideas."

Class Organization

Course Schedule & Format

PLAYthings will meet once a week on Wednesday afternoons from 4:00-5:50PM in the 4th Floor Pit of Rudolph Hall unless otherwise noted. This class time will be dedicated to presenting and discussing the work in addition to reviewing the upcoming weekly Exploration and materials related to it. Discussions about the work produced will take place in varying group sizes, depending on the week.

Wednesday Class

> Weekly presentations will touch upon the history, theory, approaches, and applications of design techniques that are specific to the Exploration at hand. Students are encouraged to do further research on the topics, artists, architects, and projects that are presented in class. These presentations will cover a range of content that students should use as inspiration when working on all of their Explorations, including other seminars and studios.

Weekend Workshop

> This course intends to guide students in developing a productive design process; it is not a course that teaches software via step-by-step tutorials! However, it is recognized that students will require introductory proficiency with various software to complete some Explorations. These questions will be addressed during the weekly Workshops with the TFs. The Workshops provide an opportunity to work on the Explorations and discuss the students' ideas among their peers and the TFs. It is expected that students independently expand their software skills via self-guided, online tutorials at LinkedIn Learning, and the like.

Participation & Work Submission

Participation in class discussions, pin-ups and presentations is mandatory. It's imperative that each student engages not only in their own project discussion, but in the provocations and discussions of their peers' work as well.

Weekly Explorations are due in-person at the start of each class by 4PM. Late work will unacceptable, with the exception of extenuating circumstances.

Instagram is an accessible and easy platform to document, share and receive feedback on your work. It also allows you to browse and comment on the work of your classmates. For these reasons, we ask that you post 1-10 images per week of your PLAYthings Explorations with the hashtags #YSoA, #YSoA_ARCH1221a, #PLAYthings and #IMadeThat. These images can show process work and/or final products. Pay attention to the types of images you're carefully crafting and curating and be sure to provide productive and thoughtful feedback on your classmates' posts.

Evaluation

Intellectual Clarity

Students must be able to clearly articulate their design ambitions, intellectual underpinnings and all design work in discussions, crits, pin-ups and presentations.

Independent Inquiry

Students are expected to demonstrate an awareness of the greater context, evidence of a wider reading of the issues at hand and an understanding of the course material(s), background texts and other relevant information.

Technique

All work must be executed with care, precision and intent. Quality and craft of the production will factor into performance evaluations.

Attendance

Attendance for the entirety of the scheduled course time is mandatory, and includes prompt (no excuses) and active participation in class, discussions, pin-ups and reviews.

Completion

Timely completion of Explorations and consistent development of concise concepts over the course of the semester will be required to maintain the rigorous pace of the course. All deadlines are non-flexible and materials must be completed by the specified date and time.

Schedule

Week 1   EXPLORATION 01: OBJECT ANALYSIS

September 2   Close and critical reading of an Object as described through the careful measurement and construction of orthographic drawings: Plans, Sections + Elevations.

Skill Sets: Construction Lines, Line Weights, Line Types, Rhinoceros, Illustrator
Readings:
Working by Stan Allen
The Language of Architecture by Andrea Simitch + Val Warke Pgs. 008-036 / Representation + Analysis

Week 2   EXPLORATION 02 EXQUISITE CORPSE

September 9   Imaginative 2D transformation of orthographic drawings going from the mundane to the magnificent.

Skill Sets: Construction Lines, Line Weights, Line Types, Rhinoceros, Illustrator
Readings:
The Language of Architecture by Andrea Simitch + Val Warke Pgs. 164-196 / Datum, Order, Grid + Geometry Pgs. 144-156 / Defamiliarization + Transformation

Week 3   EXPLORATION 03a PLAYspace (Digital Model)

September 16   Using a 2D composition to construct 3D digital space with an emphasis on "PLAY" using a series of operative terms like pile, peel, slice, striate, sheer, superimpose, rotate, etc.

Skill Sets: Rhinoceros, Laser Cutting, 3D Printing, Model Materials + Methods
Readings:
The Language of Architecture by Andrea Simitch + Val Warke Pgs. 018-026 / Concept Pgs. 100-108 / Space

Week 4   EXPLORATION 03b PLAYspace (Physical Model)

September 23   Using a 3D digital model to construct a 3D physical model using a combination of digital fabrication techniques, model materials and analog methods.

Skill Sets: Rhinoceros, Laser Cutting, 3D Printing, Model Materials + Methods
Readings:
The Language of Architecture by Andrea Simitch + Val Warke Pgs. 088-100 / Materials

Week 5	EXPLORATION 04 PLAYset
September 30	Development of 3D space and further understanding of part-to-whole relationships explored via axonometric projection and consideration of movement in space.

Skill Sets: Axonometric Projection, Line Weights + Types, Rhinoceros, Illustrator
Readings:
Axonometrie by Jean Aubert Architectural Representation ... by A.Perez-Gomez + L.Pelletier Pgs. 307-329

Week 6	EXPLORATION 05 LIGHTS, CAMERA, ACTION!
October 7	Using the camera to explore and discover the spaces and experiences that have been constructed as a result of the creative process thus far in Explorations 01-04.

Skill Sets: Digital Photography, Lightroom, Photoshop, After Effects
Readings:
The Language of Architecture by Andrea Simitch + Val Warke Pgs. 108-132 / Scale, Light + Movement

Week 7	STUDIO MIDTERM WEEK: REVISE + REFINE
October 14	Use this time to revise work based on feedback that has been provided thus far in the semester.

Week 8	EXPLORATION 06 PLAYstuff
October 21	Development of a Catalog of Possibilities to demonstrate all of the ways to PLAY around, in, on and under the PLAY Space that has been created.

Skill Sets: Diagramming, Line Weights / Types / Colors, Typography, Illustrator
Readings:
Per Diem: Graphics in Time by Sonnenzimmer
Data Flow: Visualizing Information in Graphic Design by R. Klanten, N. Bourquin, S. Ehmann & F. van Heerden

Week 9	EXPLORATION 07 PLAYmates
October 28	Development of a "PLAYer": a persona who uses the PLAYstuff. This character development considers narrative, color, image, space, atmosphere and experience.

Skill Sets: Rhinoceros, Illustrator, Photoshop, Lightroom, After Effects
Films:
Gregory Crewdson Brief Encounters by Ben Shapiro
The Darjeeling Limited by Wes Anderson
The Science of Sleep by Michel Gondry

Week 10   EXPLORATION 08 PLAYtimes

November 4   Mapping of the PLAYer and their PLAYpals as they play in the PLAY Space over a
                    period of time. Carefully consider the movement of bodies in space and time.

                    Skill Sets: Line Weights + Types, Combining Lines + Images, Rhinoceros, Illustrator
                    Readings:
                    The Agency of Mapping by James Corner
                    Eidetic Operations by James Corner
                    SOAK: Mumbai in an Estuary by Anuradha Mathur and Dilip da Cunha

Week 11   EXPLORATION 09 PLAYscapes

November 11   Imagining the PLAYer and the PLAYpals occupying the PLAY Space from various
                    viewpoints and during different times of the diurnal cycle.

                    Skill Sets: Rhinoceros, VRay, Lumion 3D, Cinema 4D, Photoshop, After Effects
                    Readings:
                    The Language of Architecture by Andrea Simitch + Val Warke Pgs. 036-048 /
                        Program Pgs. 132-142 / Dialogue + Tropes

Week 12   EXPLORATION 10 PLAYbooks

November 18   Creating a carefully curated and crafted publication of the comprehensive body of
                    work that has been produced throughout the entire semester.

                    Skill Sets: Illustrator, Photoshop, InDesign, Printing Options, Binding Techniques
                    Readings:
                    The Vignelli Canon by Massimo Vignelli Didactics by Sonnenzimmer

Week 13   EXPLORATION 10 PLAYbooks W.I.P.

December 2   Feedback on PLAYbooks W.I.P. will be provided remotely.

                    Skill Sets: Illustrator, Photoshop, InDesign, Printing Options, Binding Techniques
                    Readings:
                    The Vignelli Canon by Massimo Vignelli Didactics by Sonnenzimmer

Week 14   FINAL REVIEW   PLAYthings

December 16

Week 15   DOCUMENTATION + ARCHIVING OF WORK

December 21

Reference

The following recommended reading list provides references for the various topics that we will cover this semester. This list is not exhaustive. Students are expected to independently research (and share!) additional and/or alternative approaches to the creative design process throughout the course.

PRIMARY SOURCES

The Language of Architecture: 26 Principles Every Architect Should Know (2014) By Andrea Simitch & Val
    Warke

PDFs of each weekly reading from this book will be uploaded to Canvas in advance of the Exploration.

SECONDARY SOURCES

Architectural Representation and the Perspective Hinge (2000) By Alberto Perez-Gomez and Louise
    Pelletier
Projective Cast (2000) By Robin Evans
The Vignelli Canon (2010) By Massimo Vignelli

PLAY

Huizinga, Johan. Homo Ludens. London: Routledge & Kegan Paul, 1949. Print.
Caillois, Roger. Man, Play and Games. Champaign, IL: University of Illinois Press, 2001. Print

DIAGRAMS

Allen, Stan. Points+Lines: Diagrams and Projects for the City. New York: Princeton Architectural Press,
    1999. Print.
Bounford, Trevor & Alastair Campbell. Digital Diagrams: How to Design and Present Statistical
    Information Effectively. New York: Princeton Architectural Press, 2000. Print.
Eisenman, Peter. Diagram Diaries. New York, NY: Universe Pub., 1999.
Lynch, Kevin. The Image of the City. Cambridge: MIT Press, 1960. Print.
Tufte, Edward R. The Cognitive Style of PowerPoint. Connecticut: Graphics Press, 2003. Print.

PLANS, SECTIONS & ELEVATIONS

Atelier Bow-Wow. Graphic Anatomy .Japan: Toto, 2007.
Ching, Francis D. K., & Steven P. Juroszek. Design Drawing. New York: Van Nostrand Reinhold, 1998. Print.
Davis, David A. & Theodore D. Walker. Plan Graphics. Hoboken: Wiley, 1999. Print.
O'Brien Jr., William. Room for Artifacts: The Architecture of WOJR. Zürich: Park Books, 2016. Print.
Ramsey, Charles George, Harold Reeve Sleeper, and John Ray Hoke. Architectural Graphic Standards.
    New York: John Wiley & Sons, 2000. Print.

AXONOMETRICS

Aubert, Jean. Axonometrie Theorie Art et Pratique, 1997. Print.
Ching, Francis D. K. Architectural Graphics. New York: Van Nostrand Reinhold, 1975. Print.
Frampton, Kenneth. Studies in Tectonic Culture: The Poetics of Construction in Nineteenth and Twentieth
    Century Architecture. Cambridge: MIT Press, 2001. Print.
Scolari, Massimo. Oblique Drawing: A History of Anti-Perspective. Cambridge: MIT Press, 2012. Print.

PERSPECTIVES

Edwards, Brian. Understanding Architecture Through Drawing. London: E&F Spon, 1994. Print.
Brommer, Gerald F. Collage Techniques: A Guide for Artists and Illustrators. New York: Watson-Guptill, 1994. Print.

INVENTORY & ANALYSIS

McLellan, Todd. Things Come Apart: A Teardown Manual for Modern Living. London: Thames & Hudson, 2013. Print.
Theo Baart, Tracy Metz, Tjerk Ruimschotel. Atlas of Change: Rearranging the Netherlands. Rotterdam: NAi Publishers/IOP, 2000. Print.

MAPS & AERIALS

Allen, Stan. "Mapping the Un-mappable: On Notation." Practice: Architecture, Technique Representation. London: Routledge, 2009. Print.
Corner, James. Taking Measures Across the American Landscape. New Haven: Yale University Press, 1996. Print.
Mathur, Anuradha & Dilip Da Cunha. Mississippi Floods: Designing a Shifting Landscape. New Haven: Yale University Press, 2001. Print.
Tufte, Edward R. Visual Explanations: Images and Quantities, Evidence and Narrative. Connecticut: Graphic Press, 1997. Print.
Van der Zwart, C. Steenbergen J. Atlas Of The New Dutch Water Defence Line (Rotterdam: 010 Publishers, 2010).

DATA & INFOGRAPHICS

Fonts In Use. Web. < http://fontsinuse.com/ >.
Klanten, Robert, N. Bourquin and S. Ehmann (Eds.) . Data Flow: Visualizing Information in Graphic Design (Berlin: Gestalten, 2009).
Modley, Rudolf. Handbook of Pictorial Symbols (London: Dover Publications, 1976).
Tufte, Edward. Envisioning Information (Cheshire: Graphics Press, 1990).
Visual Complexity. Web. < http://www.visualcomplexity.com/ >.

COLOR

Albers, Joseph, Interaction Of Color. New Haven: Yale University Press, 2013

MEDIUM IN ARCHITECTURE

Balliet, Kristy, et al., editors. Possible Mediums. Actar, 2018.

Syllabus: ARCH 1223a Formal Analysis 2020

Faculty: Peter Eisenman

Overview

Recently, it has been speculated that we are reaching the end of the hegemony of Western humanism. This speculation includes the demise of the Neo-liberal capitalist democracy. Among its most problematic questions is the continued existence of the discipline of architecture as it has been known since the mid 15th century. This questioning goes to the basis of the dialectical strategies that have dominated Western architecture since that time. In order to understand this problem it is perhaps necessary to go back to the beginnings of architecture in the Western cosmology and trace its development to the dawn of another cosmology, the Enlightenment in the mid-18th century.

In order to do this, this course proposes a weekly reading, lecture, and drawing review of the major architectural ideas and their proponents from Brunelleschi to Piranesi. These figures and their ideas can be seen as central to the humanist project. Through careful study and analysis of the evolution of that work, the several transformations from humanism, to the Enlightenment, to the modern project, to the age of the digital today can be better understood.

Class Organization

Method

The goal of this class is to learn to see and read as an architect, through a weekly series of texts and comparative analyses, which move from the theocentric late-medieval, to humanism and the anthropocentric of the early renaissance, to the beginning of the enlightenment of the late 18th century. This survey is not intended historically but as an introduction to the seeing and reading of architecture through time. An architect must learn to see beyond the facts of perception and must see, different from the average user. This implies being able to see, as a form of close reading, that which is not present - the unseen.

To do so, we will look at architects that have animated discourse — spanning from Brunelleschi to Piranesi - providing an example of disciplinary change over time.

Each week there will be an illustrated lecture and a drawing review. The purpose of the drawing each week will be to see if you can conceptualize in drawing what has been presented in your reading and the lecture. Seeing, therefore, becomes a way of thinking, and drawing as a way of reading. Thus, each week there will be three aspects to your work: assigned reading, assigned drawing, and attendance at the lecture and drawing review.

The class will be divided into three sections, each of which will meet on Tuesday nights with an assigned TF for drawing instruction and reading discussion. Weekly paragraphs (no more than 300 words) must be submitted to assigned TFs Monday evening before individual meetings on Tuesday. The paragraph should outline an idea for the drawing or put forth a critique of the readings/lecture that may in turn inform the drawing. All drawings must be turned in to your section Teaching Fellows (TFs) by 9:00 PM on Thursday night before the corresponding Friday lecture. Late drawings will not be accepted; see Policy on Late Drawings and Absences. The "pencils down" rule has been instituted in order to better coordinate assignment deadlines between the design studio, the history/theory sequence, and the visualization curriculum.

The schedule for Friday class is as follows: The lectures will take place from 8:00 AM to 9:00 AM online and drawing reviews will take place from 9:00 AM to 10:30 PM online.

Review of Work

In an attempt to ameliorate past complaints, the TFs will determine, after collection of the work, which two or three drawings from their sections will be critiqued during the drawing review. While every attempt will be made to review each students' work at least twice in the semester, only work which raises subjects related to the problematics of the course will be discussed.

Course Objectives

1. Learn to read and see as an architect through the analysis of historical architecture.
2. Learn to draw as a way of conceptualizing topics presented in lectures and readings. Utilize drawing as a way of reading.

Assessment Breakdown

Drawing Development	40%
Portfolio Submission	50%
Participation	10%

Schedule

Week 1   Dialectics as a Critical Pedagogical Model

September 4   Introductory Lecture: no drawing assignment

Required readings:
Rowe, Colin. "The Mathematics of the Ideal Villa," in The Mathematics of the Ideal Villa and Other Essays. New York: MIT Press, 1976, p. 2-27.
Wölfflin, Heinrich. "Part Two: The Causes of the Change in Style" in Renaissance and Baroque, p. 71- 88.

Week 2   Brunelleschi—Humanist Origins

September 11   Topic: San Lorenzo and Santo Spirito — Florence, Italy

Required readings:
Argan, Giulio Carlo. "The Architecture of Brunelleschi and the Origins of Perspective Theory in the Fifteenth Century." Journal of the Warburg and Courtauld Institute 8, London: 1945, p. 96-121.
Aureli, Pier Vittorio. "Do You Remember Counterrevolultion?: The Politics of Filippo Brunelleschi's Syntactic Architecture." AA Files, No. 71 (2015), pp. 147-165.

Drawing #1:
Draw 'what cannot be seen' — the critical difference between Brunelleschi's Church of San Lorenzo and Santo Spirito in Florence.

*Drawing #1 is to be drawn by hand. All drawings throughout the semester should be done in ink on 11" x 17" Mylar sheets. They should be saved, along with the paragraphs, in a bound portfolio for evaluation at the end of the semester and a digital copy should be saved on Yale Box.

Week 3   Alberti—The Definition of Space as the Production of What is Not Seen

September 18   Topic: Tempio Malatestiano — Rimini, Italy

Required readings:
Borsi, Franco. Leon Battista Alberti: The Complete Works. New York: Rizzoli, 1989, Chapter 7.
Tafuri, Manfredo. "Discordant Harmony from Alberti to Zuccari," Architectural Design 5/6, 1979, p.36-44.
Wittkower, Rudolf. "Alberti's approach to antiquity in architecture," Journal of the Warburg and Courtauld Institutes Vol. 4, No. 1/2 (Oct., 1940 - Jan., 1941), pp. 1-18

Drawing #2:
Draw the critical relationships between the inner and outer facades of Tempio Malatestiano.

Week 4	Bramante -- The Definition of the Organism
September 25	Topics: Prevedari etching — Rome, Cortile of Sta. Maria della Pace — Rome, Plans for St. Peter's — Rome
	Required reading: Bruschi, Arnaldo. Bramante. London: Thames + Hudson, 1977, Chapters 3,5,9.
	Drawing #3: Analyze the difference between the corners at Bramante's Santa Maria della Pace in Rome and Laurana's Palazzo Ducale in Urbino as they define the space of the cortile.
Week 5	Raffaello— The Rational Extension of Bramante
October 2	Topics: Vatican Stanze — Rome, Palazzo Caprini — Rome, Palazzo Branconio dell Aquila Villa Madama — Rome
	Required reading: Shearman, John. "Raphael as Architect." Journal of the Royal Society of Arts, Vol. 116, No. 5141, April 1969, pp 388 — 409. Talvecchia, Bette. Raphael. London: Phaidon, 2007. Elet, Yvonne. Architectural Invention in Renaissance Rome. Cambridge: Cambridge University Press. 2017, pp 63 — 84.
	Drawing #4 Make an analytic drawing of the space seen in Raphael's painting of the Expulsion of Heliodorus
Week 6	Michelangelo— The Subjective Extension of Bramante
October 9	Topics: San Giovanni dei Fiorentini Laurentian Library
	Required reading: Wittkower, Rudolf. " Michelangelo's Biblioteca Laurenziana."The Art Bulletin, Vol. 16, No. 2 Jun., 1934. pp. 123 --218
	Drawing #5: Analize Michelangelo,s ricetto of the Laurentian Library
Week 7	Serlio—A First Critique of Homogeneous Space
October 16	Topic: The inventions of Sebastiano Serlio
	Required readings: Friedlaender, Walter. Mannerism and Anit-Mannerism in Italian Painting. New York: Columbia University Press, 1990 edition, p. 3-43. Serlio, Sebastiano. Sebastiano Serlio on Architecture, Book VI. New Haven: Yale University Press. 1996
	Drawing #6: Analyze one of Serlio's palazzo inventions.

Week 8   Palladio — The Continuity from Raphael

October 23   Topic: San Giorgio Maggiore and Il Redentore — Venice, Italy

Required readings:
Aureli, Pier Vittorio. "The Geopolitics of the Ideal Villa," in The Possibility of an Absolute Architecture. Cambridge: MIT Press, 2011, p. 47-84.
Wittkower, Rudolf. "5. Palladio and the Problem of Harmonic Proportions." Principles of Palladio's Architecture II, p. 68-106.

Drawing #7:
Compare the compositional elements of the plan and facades of Il Redentore and San Giorgio Maggiore.

Week 9   Vignola — The Continuity from Michelangelo

October 30   Topic: Villa Giulia — Rome, Italy

Required readings:
Coolidge, John. The Villa Giulia: A Study of Central Italian Architecture in the Mid-Sixteenth Century. The Art Bulletin, Vol. 25, No. 3 (Sep., 1943), pp. 176-225.

Drawing #8:
Analyze the Villa Giulia in Rome.

Week 10   Borromini—Surface As Space

November 6   Topic: Sant' Ivo and San Carlo alle Quattro Fontane — Rome, Italy

Required readings:
Wölfflin, Heinrich. Renaissance and Baroque, p. 44-70.

Drawing #9:
Analyze the difference in the underlying geometries of Sant' Ivo and San Carlo.

Week 11   Bernini and Rainaldi—Baroque Heterogeneity

November 13   Topic: Sta. Maria in Montesanto (Bernini) and Sta. Maria dei Miracoli (Rainaldi) — Piazza del Popolo, Rome

Required readings:
Wittkower, Rudolf. Carlo Rainaldi and the Roman Architecture of the Full Baroque, p. 242-313.

Drawing #10:
Draw the critical differences between the two churches at the Piazza del Popolo in Rome.

Week 12   Nolli and Piranesi—Figural Space as Ground

November 20   Topics: Nolli: Map of Rome — Rome, Italy 1748 / Piranesi: Campo Marzio — Rome, Italy 1762

Required readings:
Aureli, Pier Vittorio. "Instauratio Urbis," in The Possibility of an Absolute Architecture. Cambridge: MIT Press, 2011, p. 85-140.
Tafuri, Manfredo. "The Wicked Architect: G.B. Piranesi, Heterotopia, and the Voyage," In The Sphere and the Labyrinth. Cambridge: MIT Press, 1990, p. 25-54.

Drawing #11:
Analyze the critical differences between Nolli's Map of Rome and Piranesi's Campo Marzio.

A one-page précis of the final project is due at the beginning of the class.

Week 13   TBA

December 4

Week 14   Drawing Portfolio Due

TBD

Syllabus: ARCH 1233a Composition 2020

Faculty: Peter de Bretteville

Overview

This seminar addresses issues of architectural composition and form as the translation of ideas into three dimensions in four exercises each of three weeks duration: Project 1, Building Assemblies, Partis and Form; Project 2, Section and Form; Project 3, Structure and Form; Project 4, Elevation. Leaving aside demands of program and site in order to concentrate on formal relationships at multiple scales, these exercises are intended to develop strategies by which ideas, words, briefs, written descriptions or requirements, can be translated into 3 dimensions. Each subject is introduced by a lecture on organizational paradigms in works of architecture from various periods and cultures. The medium is sketches as well as 3D models both physical and digital. Multiple iterations emerging from the first week's sketches and finalized in the following week are the basis for the generation of multiple, radically differing strategies each with their own unique possibilities and consequences. The required final report, containing drawings, model photos and narrative, is intended to be a manual of organizational strategies and principles for your continuing use. It is to be a focused edited summary of the projects with the students' commentary.

Class Organization

A detailed handout will be the guide for each Project. For Pinups examples selected from the introduction are to be analyzed although the emphasis is on original proposals. You are to define and develop strategies to be presented in two and three dimensional sketches. For the Reviews you are to present only original concepts with the addition of a physical models. Some preliminary concepts for each project are given with the listing that follows.

Course Objectives

1. Translate ideas into three dimensions through projections addressing building assemblies, partis, and form; section and form; structure and form; and elevation.
2. Complete projects independent of program and site to focus on formal relationships at multiple scales in order to develop strategies for the translation of ideas into form.

Assessment Breakdown

Final Submission	20%
4 Projects	20% each

Project 1: Building Assemblies, Partis and Form, scale 1"=16'

1. Organization/Elements
2. Exterior/Interior
3. Expressed/Discovered
4. Form/Program
5. Movement(circulation)/Place(room)
6. Repetitive/Idiosyncratic

Terms of characterization and manipulation

1. Geometric/Irregular/Topographic
2. Urban/Rural
3. Inward/Outward
4. Subtractive/Additive
5. Asymmetry/Symmetry/Adjusted Symmetry

Project 2: Sections, scale 1/8"

1. Solid/void/solid
2. Layered
3. Inside-out/Outside-In
4. Center Void
5. Shaped
6. Assembled
7. Stepped
8. Void/solid/void
9. Extrusion

Project 3: Structure and Form

1. Short span/long span
2. Simple Grid/Complex Grid
3. Regular/Random
4. Exo/Endo Skeletal

Project 4: Building Elevations, scale 1"=8'

1. Wall/Depth
2. Measure/Proportion
3. Frame/Surface
4. Influence/Reference/Meaning
5. Context: Culture/Climate

Schedule

Week 1	August 28	Seminar Introduction
Week 2	September 1	Project 1 Introduction
Week 3	September 8	Project 1 Pinup
Week 4	September 15	Project 1 Review
Week 5	September 22	Project 2 Introduction
Week 6	September 29	Project 2 Pinup
Week 7	October 6	Project 2 Review
Week 8	October 13	Midterm review week, meetings by request
Week 9	October 20	Project 3 Introduction
Week 10	October 27	Project 3 Pinup
Week 11	November 3	Project 3 Review
Week 12	November 10	Project 4 Introduction
Week 13	November 17	Project 4 Pinup
Week 14	December 1	Project 4 Review
Week 15	December 17	Final Review Discussion of Seminar
		Final report to be uploaded to class folder

Bibliography

A History of Building Types. Pevsner. Princeton University Press, 1976.
Recueil Et Parallele.... J. N. L. Durand. Ecole Politechnique, Paris, 1800; Princeton Architectural Press, 1982.
Oeuvre Complete 1910-1929. Le Corbusier. Les Editions d'Architecture, Zurich 1964 (Originally 1935).
Elements of Architecture. Leon Krier. Architectural Design (AD), London 1983.
Perspecta 7. pp 8-28. Louis Kahn. Yale 1961.
Architecture of the City. Aldo Rossi. MIT Press, 1984.
Composition and Non- Composition. Jacques Lecan. Routledge, EPFL Press, USA and Canada 2012.*

From the above and other sources some short reading assignments related to each project will be assigned.

* In architecture, composition refers to the conception of a building according to principles of regularity and hierarchy, or according to the principles of obtaining equilibrium. However, it is not until the beginning of the nineteenth century that the notion of composition becomes truly associated with architectural conception, notably under the influence of Jean-Nicolas-Louis Durand and his statement on the Marche à suivre dans la composition d'un project quelconque [Procedure to be followed in the composition of any project]. The concept quickly erodes during the twentieth century, with the adoption of neutral architectural devices, the use of aggregative processes, and the adoption of "objective" operations, all of which can be understood as an attempt to move beyond compositional principles.

In Composition, Non-Composition, Jacques Lucan invites his readers to consider this novel historical perspective of architectural theory. The author describes the interaction of ideas that often clash with one another, with some that fade away as others emerge, thus offering invaluable keys to understanding contemporary architecture. Although this book is primarily addressed to students of architecture, it will also appeal to architects, historians of architecture, as well as to the interested public.

Syllabus: ARCH 1289 Space-Time-Form 2020

Faculty: Eeva-Liisa Pelkonen

Overview

> Life today is very bewildering. We have no picture of it which is all-inclusive, such as former times may have had. We have to make a choice between concepts of great diversity. And as a common ground is wanting, we are baffled by them. We must find our way back to simplicity of conception in order to find ourselves. For only by simplicity can we experience meaning, and only by experiencing meaning can we become qualified for independent comprehension.
>   - Anni Albers, "Working with Material (1938)

"Space, Time, Form" is centered around formal, material, and spatial ideas and techniques, which have governed how modern art and architecture have been conceived, discussed, and ultimately experienced during the past century. The course is organized around a series of readings and experiments based on the Preliminary Course, offered at the legendary German art school Bauhaus, which was founded in 1919 and was closed by the Nazis in 1933. Special attention given to the idea that art and architecture can expand and transform human experience of the so-called real world -- even counter its dominant economic and political forces -- through design. The class tests the relevance of this proposition in the light of contemporary challenges; Life is certainly a bit bewildering today.

The seminar is organized in three segments: "seeing," "interacting," and "immersion," which represent three ways of knowing the world around us. The experiments in the first section focus on the way we register and responds to visual phenomena using lines and forms as a tool; The second segment explores the two-way "interaction" with three elusive media: color, material, and light. The third, and final segment sensitizes students to experience of being embedded in the multi-sensory environment within the complex and ever-changing space-time continuum.

Each class session is organized around a single concept, technique or media and require both a visual/material exercise and close reading of a related text. Design is conceived as an iterative process that involves all human faculties — perception, thinking, imagination, emotion, and instinct -- is highlighted. Particular attention is paid to working through questions within and across different mediums and cognitive registers as a means to realize how art and architecture mediates and manipulates our experience of physical and optical phenomena. The ultimate goal the seminar aims at "ripening sense, feeling, and thought" (Laszlo Moholy-Nagy) through observation and registering of physical and visual phenomena.

We will conduct virtual trips to the Josef and Anni Albers Foundation in Bethany, CT, the Yale Art Gallery, the Beinecke Rare Books Library, and hopefully a in-person session at the Haas Special Collections, as well as host special study session with an expert from the Museum of Modern Art.

The course will serve as a fulfillment of the visualization elective credit. Enrollment limited to 12.

Course Objectives

1. Using a series of readings and exercises based on the Bauhaus Preliminary Course, explore the ways in which art and architecture can alter human experience through design.
2. Sharpen the observational skills of "seeing," "interacting," and "immersion."

Assessment Breakdown

Project 1	30%
Project 2	30%
Project 3	30%
Participation	10%

Schedule

Week 1	September 2	Introduction

Read: Walter Gropius, "Program for Staatliche Bauhaus" (1919)
In-class: Introduction to "Seeing"
Take Home Experiment: Movement to Form

Week 2	September 9	Seeing I: Form (Johannes Itten)

Review: Movement to Form
Read: Johannes Itten, "Expressive Form" from Design and Form. The Basic Course at Bauhaus (1925)
In-class: Itten/Before/After
Take Home Experiment: Lines

Week 3	September 16	Seeing II: Lines (Paul Klee)

Review: Lines
Read: Paul Klee, "Lines" from Pedagogical Sketchbook (1925)
In-Class: Klee: Before/After
Take Home Experiment: Imprint

Week 4	September 23	Seeing III: Inner And Outer Seeing (Wassily Kandinsky)

Review: Imprint
Read: Wassily Kandinsky: "Introduction" and "Line" from Point and Line to Plane (1926)
In-Class: Shoe with Turner Brooks
Take Home Experiment: Edit

Week 5	September 30	Review: Seeing

Review: Edit
In-Class: Introduction to "Interaction"
Take Home Experiment: Fold/Fasten

Week 6	October 7	Interaction I: Learning By Doing (Josef Albers)

Review: Review of Fold/Fasten
Read: Josef Albers, "Creative Education" (1928) from Hans M. Wingler, Bauhaus. Weimar, Dessau, Berlin, Chicago (Cambridge: MIT Press, 1969), 142-143.
In-Class: Albers: Before/After
Take Home Experiment: Typography

Week 7	October 14	Interaction II: Informatics (Lazlo Moholy-Nagy)

Review: Typography
Read: Laszlo Moholy-Nagy, "Modern Typology. Aims, Practice, Criticism," from Wingler, 80-81.
In-Class Lab: Virtual Beinecke Visit
Take Home Experiment: Color

Week 8	October 21	Interaction III: Color (Josef Albers)

Review: Color
Read: Josef Albers, Interaction with Color (New Haven: Yale University Press, 1963)
In-Class: Haas Library Visit with Mar Conzalez-Palacios
Take Home Experiment: Wearable Quote

Week 9	October 28	Interaction IV: Materials (Anni Albers)

Review: Wearable Quote
Read: Anni Albers, "Work with Materials," Black Mountain College Bulletin 5 (1938)
In-Class: Weaving with Karis Medina from Josef and Anni Foundation
Take Home Experiment: Curate

Week 10	November 4	Review: Interaction

Review: Curate
In-house: Introduction to Space-Time
Take Home Experiment: Excavated Environment

Week 11	November 11	Space-Time I: Vision In Motion (Laszlo Moholy-Nagy)

Review: Excavated Environment
Read: Laszlo Moholy-Nagy, Painting, Photography, Film (extract, German original 1925)
In-Class: Visit to MoMA with Sarah Meister (MoMA)
Take Home Experiment: Notation

Week 12	November 18	Space Time II: Movement (Oscar Schlemmer)

Review: Spatial Notation
Read: Oskar Schlemmer, "The Mathematics of Dance" (1926) from Wingler, 118-119.
In-Class: Dance
Take Home Experiment: Sensuation

Week 13	December 2	Space-Time III: Sensuation (Gertrud Grunow)
		note: this class will take place online via zoom
		Review: Sensuation
		Read: Gertrud Grunow: "The Creation of Living form through Color, Form, and Sound" (1923), 69-71.
		In-Class: Sound Form with Satchel Henneman
		Take Home Experiment: Perform
Week 14	TBD	Final Review

Bibliography

Primary Texts

Herbert Beyer, Walter Gropius, Ise Gropius, Staatliches Bauhaus, Weimar 1919-1923 (New York: Museum of Modern Art, 1938)
Bruno Adler ed., Utopia. Documente der Wirklichkeit (1921) at Beinecke
Herbert Bayer, Walter Gropius, Ise Gropius, eds., Bauhaus 1919-1928 (New York: Museum of Modern Art, 1938)
The Bauhaus, Hans M. Wingler, ed. (Cambridge: MIT Press, 1993)
Paul Klee, Pedagogical Sketchbook (German original 1925)
Oskar Schlemmer and Laszlo Moholy-Nagy, The Theatre of the Bauhaus (German original 1925)
Oskar Schlemmer Man. Teaching notes from the Bauhaus, Kuchling, Wingler, Seligman, eds. (1961)
Anni Albers, On Weaving (Middletown: Wesleyan University Press, 1965)
Josef Albers, Search Versus Re-Search (Harford: Trinity College Press, 1969)
Josef Albers, Interaction of Color (New Haven: Yale University Press, 1963)
Laszlo Moholy-Nagy, Painting-Photography-Film (German original 1925)
Laszlo Moholy-Nagy, Von Material zu Architektur (Munich, 1929)
Laszlo Moholy-Nagy, Vision in Motion (Chicago: Paul Theobald, 1947)
Johannes Itten, Design and Form. The Basic Course at Bauhaus (German original 1925)
Walter Gropius, The New Architecture and the Bauhaus (London: Faber and Faber, 1935)
Wassily Kandinsky, From Point and Line to Plane (German original 1926)
Walter Gropius and Laszlo Moholy-Nagy, Staatliches Bauhaus in Weimar 1919- 1923 (1923).
Siegfried Ebeling, Space as Membrane (German original, 1926)

Interpretation and Criticism

Rainer K. Wick, Teaching at the Bauhaus (Stuttgart: Hatje Cantz Publishers, 2000)
Leah Dickerman, ed., Bauhaus, Workshops of Modernity (New York: Museum of Modern Art, 2010)
Frederick A. Horowitz and Brenda Danilowitz, eds. Josef Albers: To Open Eyes, (London: Phaidon, 2006)
Vincent Katz, ed. Black Mountain College. Experiment in Art, (Madrid: Museo Nacional Centro de Arte Reina Sofia, 2002)
Ingrid Radewaldt and Ulrike Müller, Bauhaus Women: Art, Handicraft, Design (London: Thames and Hudson, 2009)
Zeynep Çelik Alexander, Kineasthetic Knowing. Aesthetics, Epistemology, Modern Design (Chicago: Chicago University Press, 2017)
Kathleen James Chakraborty, Bauhaus Culture from Weimer to the Cold War (Minneapolis: Minnesota University Press, 2006)
Sarah Hermanson Meister, One and One Is Four: The Bauhaus Photocollages of Josef Albers (New York: Museum of Modern Art, 2016)

Syllabus: ARCH 2018 Building Envelopes 2021

Faculty: Anna Dyson, Mohamed Aly Etman

Overview

Within the context of the built ecology, the building envelope represents the greatest singular potential energetic gain or loss - as much as 50% in the building sector - and thus offers the greatest initial opportunity to address the fundamental material relationship that we set up between human and non-human living systems through architecture and urbanism. While extended ecological systems take advantage of local energy flows to diversify and thrive, historical building techniques have tended towards sequestering and mitigating these same potential resources, resulting in the development of an array of largely independent, exclusionary and isolated devices and building systems for environmental controls that function largely irrespective of the dynamic bioclimatic resources available at the building envelope.

However, the societal goal of improving the architectural environment, while reducing the overall carbon footprint, has placed increased attention on biocompatible energy and material usage for carbon neutrality and health and well-being. We propose to experiment with adaptive building strategies that re-conceptualize the building systems matrix as a distributed energy transfer medium to capture, transform, store, and re- distribute bioclimatic energy resources, similar to how biotic systems metabolize energy and manage thermodynamics as part of a local ecology. A paradigm shift in rethinking the way energy flows though the building system matrix would require a critical inquiry that investigates the entire building systems matrix as an ecosystem.

An ecosystems approach views bioclimatic flows (e.g., vegetation, light, humidity, temperature, etc., or anything with an energy gradient and thus potential) as significant resources that are encouraged to flow through the building systems matrix. To effectively engage these bioclimatic flows with the constant and fluctuating nature of occupant desires, future building systems will be required to be both adaptive and capable of controlling the multiple energetic resources at a variety of scales across the building systems matrix.

In this course, we study the bioclimatic energy flows (e.g., light, humidity, thermal) through built ecologies--the matrix of coupled built and natural systems, both designed and emergent. These systems are studied across physical, social, technological, and psychological dimensions. To explore the implications of emerging technologies and strategies such as dynamic fenestration, phytoremediation of airborne contaminants, or facade-integrated energy transformation, multiple criteria are investigated concurrently.

Course Objectives

1. Advance into focused areas of specific material systems within the Built Environment and analyze how they shape energy flows.
2. Further an understanding and consideration of the role of current building practices in the degradation of the environment.
3. Develop an ecological design research project in a chosen subject area to be refined as a component of the design studio project.

Assessment Breakdown

Research Project   100%
(Poster and Paper)

Disciplinary Context - The building envelope

Prior to the industrial era, with its inherent connection to the protection and defense of the collective, the making of architecture and urbanism constituted the principal arena for technological innovation across cultures. As it concretized the organizing effects of social relationships, the built environment infused the collective body politic with its energetic and symbolic identity. However, the advent of manufacturing incited the center of technological innovation to steadily shift toward the instrumental creation and fulfillment of increasingly specialized niches of consumption, whose relationship to place and notions of permanence quickly evaporated. With a spiraling exclusivity of the ownership and means of production in late capitalist culture, these pockets became increasingly divested of connection to socially negotiated goals for material culture.

Throughout the latter twentieth century, despite the early modern creative explosion induced by mass production and new materials, architects consistently failed to fully implicate themselves in the development and culture of material innovation in manufacturing, save for a few stellar exceptions. Whether or not it was an inevitable rift, this growing lack of engagement on the part of architects with the corporate engines of technological innovation exacerbated their marginalization from social and political agency within the ascendant 'economy of production', which continued to diverge from the phenomenon of the one-off. However, there is currently enormous opportunity for massive shifts to occur as a result of the synergistic possibilities suggested by the convergence of advances in Information technology and (bio) materials, with the increasingly undeniable ecological imperative. The inevitable disengagement of the economy of architecture within a 'throughput' material economy could recede with the emergence of a 'cyclical' material economy, as the 'negotiating' scale of the built environment starts to become instrumental in the reassessment of material value. Numerous theories and analysis methods exist which aim to promote awareness of the impact of different design options through a biophysically based ecological accounting method in the early stages of design-development. Socio-ecological analysis methods, which aim to consider both the energy, material, and information flows of a system, such as a built ecology, and to understand both the work of the techno-sphere in constructing our urban environments and that of the geo-biosphere in sustaining such development. Such analysis in the early stages of architectural design, may thereby allow queries regarding material and energy flows to be addressed in conjunction with design choices at the initial design stage. A socio-ecological analysis approach can lead to an understanding of the value and impact of speculative buildings towards sustainable design development.

Within the contemporary context of the architectural profession, there has been mounting concern surrounding the discipline's decreasing capacity to effectively influence many of the critical factors informing the design of our built environments. The increasingly generic and materially impoverished culture of building throughout the rising global cities provides ample evidence that within the context of phenomenal scientific breakthroughs in many fields, the environmental performance of buildings has previously ranked extremely low in the socially constructed hierarchy of priorities for technological innovation. However, politically infused value structures are also clearly shifting across every field as a result of the ecological imperative. Within Architecture, although societal pressures placed on the organizational means of production must be acknowledged, it is rather surprising that theoretical discourse (in this country) has often avoided focusing on the pressing ecological issues that could, ironically, place architectural concerns at the center of an inclusive and compelling social and technological agenda. It is hard to deny the massive role that current building practices assume in contributing to the increasing degradation of the environment. Yet unlike industrial concerns, the architectural profession has little stake in protecting the norms.

Foremost among the many casualties of the increasing economic disenfranchisement of conventional architectural practice has been a general 'reductivism' in the engagement of programmatic inquiry with respect to technological innovation. As the context for deeper innovation shrinks, ecological design research has been foremost among the issues to be marginalized, both by the architectural profession, but also surprisingly in the academic sphere, where it has been ubiquitously relegated to the 'technical' and/or elective courses. Meanwhile, powerful architectural agendas have often effectively obscured their relevancy for a wider audience due to a steadfast conceptual exclusivity. Even in cultural contexts that have been more receptive to ecological criteria informing the design process in practice, a further dissipation of synthesis has occurred as 'theoretical' practices have been disengaged from 'performance' oriented practices, the latter having largely shunned a culturally theoretical discussion of their work.

This course is conceived as an opportunity for synthesis: to engage the development of ecologically sensitive built systems from a variety of vantage points that aim to cross-pollinate some of these disparate theoretical 'branches' within design practice. The goal is to not only broaden awareness of the political and economic forces at play in the development of current building systems in our culture, but to attempt to harness some of the industrial research and development forces already in place to effect a different, more coherent and consequential role for architects in their innovation. Plainly, a central goal is to generate excitement around the means by which architectural design practice becomes intrinsically experimental through its 'actual' medium, which is material systems that shape energy flows.

Class Organization

This course is geared towards graduate students in Architecture who already have an advanced background in bioclimatic analysis and design and who wish to pursue an area of design research in conjunction with their studio projects. The core content of the course is a hybrid lecture/seminar format that will focus on an overview of emerging critical theory and technology in the areas of environmental and energy systems. The deliverable will be a design research project, with a 'conference poster' and a ten page essay with references. The goal of the research project is support the design studio project and considers an aspect of the studio project that gets pushed in a highly developed and experimental direction towards new methods of metabolizing energy, water, air or living systems through the building envelope. It can either run parallel to the studio or be integrated into the design project, depending on the goals of the students and their discussions with the studio critic. It exceptional cases, it may be appropriate to use another design project as the case study for the research.

Based on their declared area of interest, each student will be paired with a PhD student or Post Doctoral Associate, who is an expert in the chosen field of inquiry. They will meet with their research partner on a bi-weekly basis. Through the research, we will reconsider fundamentally novel ways of redirecting energy and water flows, towards the fulfillment of various social mandates to transform the relationship between the built environment and extended ecosystems.

Schedule

Week 1	**Course Introduction**
August 31	**Introduce first drawing assignment —**

- site visits — choose 1 site and study building from:
- Kroon Hall,
- Ezra Stiles College
- Rudolph Hall
- bioclimatic investigations — global geometries, context and site placement, orientation, solar, water, air flow, incorporation of non-human living systems

Reading Assignment:
Fire and Memory: On Architecture and Energy. Fernández-Galliano, Luis, MIT Press, 2000 (Construction and Combustion - Entropy, order, probability, information. pp 1-57)

Lecture I: MULTISCALAR PRINCIPLES I

Fundamental Multiscalar Concepts in the interaction between Energy, Materials, Air Flow, Water and Materials

With this introduction, we will delve into some fundamental concepts regarding the accumulated historical methods that we have deployed to shape material and energy flows in our built environment. In particular, we will focus on the transition from 'throughput material economies' to concepts for 'circular material economies across scales.

September 4   **Lecture II: MULTISCALAR PRINCIPLES II**

Air Flow Dynamics — Multi-scalar Determinants of Air Quality and Shaping From Global to Local

In the context of a global pandemic that has highlighted the complex relationship between human health and our current methods for shaping air flow through buildings and cities, we will focus with this lecture and discussion section on the social and biophysical components that determine the quality of our air streams, how we have historically shaped those streams through architecture and urbanism, and we will ultimately take a look at some emerging methods for radically reimagining the design of air flow through building envelopes and urban districts.

Week 2   **Research Meetings — Sign up through Canvas**

September 7   **Reading Assignment:**
Ibid. Morphological Persistence: Lazy Forms and Obstinate Time — The consistence of form / Homeostasis and hysteresis pp 62-94

September 11   **Lecture III: ENERGY**

Physics of Energy I

This lecture and discussion section will examine the core first principals of energy physics can be leveraged in the design process to significantly impact the environmental performance of built elements.

BIOCLIMATE AND MATERIAL CULTURE

Vernacular Climate Types - Introduction and Details, Climate Classifications, Behaviors and Bioclimatic Design

This lecture and discussion section will probe the relationship between bioclimatic conditions around the globe and the diversity of architectural form and culture that emerges from the transformation of ambient energy flows through vastly divergent material techniques and methods.

Week 2   **Research Meetings — Sign up through Canvas**

September 14   **Reading Assignment:**
Stahel, W. R. (2016). The circular economy. Nature, 531 (7595), 435-438; Odum, H. T. (2002). Material circulation, energy hierarchy, and building construction. Construction ecology: nature as the basis for green buildings, (Read Ch 2, pages 37-46).

September 18   **Lecture IV: CIRCULAR DESIGN**

Material Lifecycles and Socio-Ecological Analysis

One primary theme of this lecture is broadening the space and time upon which we consider architectural design, thereby understanding both the work of the techno-sphere in constructing our urban environments and that of the geo- biosphere in sustaining such development. It will introduce ecosystems design thinking (influenced by ecological methodologies) and a taking life cycle approach towards reversing the effects of climate change in the design of our urban environments. Through the lens of ecosystem design thinking, it will focus on a building, not in abstraction fixed solely in the operational phase, but rather as a circular system which undergoes multiple journeys of energy and material transformation in its initial construction and future dismantle.

Week 3   **Research Meetings — Sign up through Canvas**

September 21   **Reading Assignment:**
Ibid. Paradigms of Life and Thermodynamic Architectures / Heliotechnology, Bioclimatism, Rehabilitation: Between Energy and Entropy - Environment and Form / between tabula rasa and the memory of place. pp -173

September 25 **Lecture V: SUN**

Solar Geometries I

This lecture will focus on how dynamic solar trajectories interface with atmospheric weather conditions alongside building and material morphologies to have the greatest impact on environmental performance of both individual buildings and urban districts.

Guest Presentation: Kroon Hall, Hopkins Partnership/Centerbrook
Yale School of Environment

Week 4   **Research Meetings — Sign up through Canvas**

September 28 **Reading Assignment:**
ibid. Energy as the Currency of Nature: A Genealogy / From Social Energetics to the Construction of an Ecological Economy —
The Cultural Crossroads / excess and entropy pp 180-257

October 2   **Lecture VI: SUN II**

Solar Geometries II and Daylighting

This lecture will focus on the shaping of solar energy towards daylighting conditions and active energy collection parameters.

Guest Presentation: Ezra Stiles College

Week 5   **Research Meetings — Sign up through Canvas**

October 5   **Reading Assignment:**
The Politics of Nature. Bruno Latour, Harvard University Press, 2004. 'Why Political Ecology has to let go of Nature' & 'How to bring the collective together', pages 1-90

October 9   **Lecture VII: Air Flow II**

This lecture will focus on the relationship between active and passive techniques for controlling air flow and delivering health air streams to occupants.

Guest Presentation: Rudolph Hall, Paul Rudolph

Week 6   **Research Meetings — Sign up through Canvas**

October 12

October 16   **Lecture VIII: Psychrometrics/Thermal Comfort**

With this lecture and discussion, we will investigate the 'condition of mind that expresses satisfaction with the thermal environment'. According to our existing regulatory bodies such as ASHRAE and ANSI, this is still considered and assessed as a subjective evaluation. We will review the emerging evidence for the major physiological and psychological impacts of thermal comfort.

Week 7	**MID TERM RESEARCH PLAN SUBMISION**
October 19	Each student will submit a Five Page Summary of their research plan that they have been developing with their specialist mentor
October 23	**Lecture IX: Legacy of Modernity and Contemporary Practice**

With this overview lecture, we will question the prevailing historical narratives of Modernity and Modernism with respect to environmental aspirations and design criteria.

Guest Presentation: Beinecke Rare Book Library, Gordon Bundshaft, Skidmore Owings and Merrill

Week 8	**Research Meetings — Sign up through Canvas**
October 26	
October 30	**Lecture X: LIFE**

Living Systems I

With this lecture and discussion, we will challenge conventions within the Built Environment Process which has accumulated thousands of years of entrenched practices that seek to purposely exclude life processes from urban and architectural construction. We will consider "Built Ecologies" as an intentional oxymoron from the standpoint of current architectural practice, as we investigate emerging philosophical models that diverge from the historically anthropocentric Built Environment Process (BEP), in order to foreground the requirements of interdependent living ecosystems in our design criteria and analytical models.

Week 9	**Research Meetings — Sign up through Canvas**
November 1	
November 6	**Lecture: LIFE**

Living Systems II

With this lecture and discussion section, we will delve further into the intersection between enormously constrained built systems and endlessly dynamic living systems, towards developing design criteria in parallel.

Guest Presentation: PSAC II, SOM

Week 10	**Research Meetings — Sign up through Canvas**
November 9	

November 13   **Lecture: INTERFACE**

Dynamic Building Envelopes: Transitioning from Barriers to Transformations

In this lecture and discussion section we will question the conventional approach to building envelopes as barriers and review a range of emerging technologies that seek to transform and conflate the dynamic between energy and information flows.

Ecological Living Modules / Socio-Ecological Visual Analytics

Week 11   **Research Meetings — Sign up through Canvas**

November 16

November 20   **Lecture: WATER**

An introduction to historic and contemporary water management in buildings will lead into a discussion of water's treatment within architecture and building systems. We will review how principles of vapor and moisture transport have influenced the design of building enclosures as barrier systems, the relationship between humidity and air-conditioning, and the dominance of centralized water supply and wastewater management shaping human engagement with water.

Week 12   **Online 'Review' of Research Poster Assignment**

November 30

December 4   **Lecture: WATER II**

Integrated Hydronic Systems

Following on from the introduction to water in buildings, this presentation will delve deeper into integrated ecosystemic approaches to the shaping of water flows in buildings. Precedents of emerging research and novel applications will be evaluated according to heterogenous design criteria which places goals for system performance and efficiency on equal footing with human health, social value and aesthetic adoption.

Week 13   **Final Poster and accompanying Ten Page Research Paper with references due Dec 16 submission via Canvas**

December 16

Syllabus: ARCH 2222 The Mechanical Eye 2020

Faculty: Dana Karwas

Overview

This course explores how machines see our environment, with emphasis on the role of human subjectivity. With their ability to see at resolutions, scales, and spectrums outside of the human eye, mechanical eyes can open new ways of inscribing information into our material world and also reveal our own biases and habits. We will examine the human relationship to mechanized perception in art and architecture as well as the current digital world.

In "Las Meninas," a painting by Diego Velázquez from 1656, the uncertain relationship between the viewer and the painting raises questions about reality, direct observation, and an automatic, defined perception. It also invites questions into the artist's motives and world.

Today, mechanical eyes, such as satellites, rovers, and autonomous sensing devices, give us unprecedented access to non-human and superhuman views into known and unknown environments. But the technology of automatic observation alienates the human observer and fools them into thinking that this is an unemotional, inhuman point of view due to its existence in a numeric or technological domain. The observer is looking at seemingly trustworthy data that has been "flattened" or distilled from the real world. But this face-value acceptance should be rejected; interpreters of this device data should interrogate the motives, biases, or perspectives informing the "artist" in this case (that is, the developer/programmer/engineer who created the devices), in the same way that Velázquez invites the observer to interrogate his painting and the conventions of portraiture. Despite the displacement outside of direct human observation, mechanical eyes present in remote sensing, LiDAR scanning, photogrammetry, trail-cams, metagenomic sequencing, and hyperspectral imaging have become fundamental to spatial analysis — but as these become

standard practice, observers should also be trained in cracking open the data to understand the human perspective that originally informed it.

The course is inspired by the ethnographic work of Janet Vertesi and her book, Seeing Like a Rover, and the process by which scientific collaborators around the world work together to create images of Mars. Vertesi refers to different modes of seeing the environment through collective perception as "seeing as." In her account, of scientists working on the mars rover there were times when the imaging instruments on the rover were used to create "art" images of a kind, without scientific purpose.

In this course, students will investigate the impact of the mechanical eye on cultural and aesthetic inquiry into a specific site. Using methods in experimental technik, a hands-on project development method developed specifically for this course, students will complete weekly mechanical eye studies with their site across a range of mediums and disciplines. The studies will be based on themes of inversion, mirroring, portraiture, memory, calibration, embodiment, and foregrounding to "unflatten" data into structure and form. Students will also be expected to write about the human/machine relationship. The final project will question the human perspective behind the machine and challenge the students notion of technology; the project will help serve as a lesson, fable, or experience for interpreting the seemingly plein air landscape of machine data while at the same time allowing students to expand their technical knowledge and intuition; supporting a type of thinking for technical competencies that have become increasingly more demanding in the fields of art and architecture.

Course Objectives

1. Examine the relationships between human and machine and between space and autonomous sensing through a series of weekly studies designed to "unflatten" data into structure and form.
2. Develop a final project questioning the human role and perspective behind machines and technology, while simultaneously working to expand technical knowledge in the realm of art and architecture.

Assessment Breakdown

Project Development Actions	40%
Class Contribution	20%
Final Project Presentation	40%

Class Organization

The course is connected to CCAM, the Center for Collaborative Arts and Media at Yale. Students will engage (remotely) with the center as an art and technology laboratory for experimental technik and have access to the CCAM Satellite Lab for remote computing.

Students are expected to attend the weekly Zoom sessions, be active in discussion, and complete the weekly readings and case study experiments. A collection of readings will illuminate the material discussed in class. Students will present and discuss their case study progress each week and are expected to incorporate the concepts from the readings and lecture into their weekly studies.

> Note: This course requires students to step outside of their technological comfort zone and into the wilderness of the technological unknown. The project is designed to unfold over time and in many cases you will not know what your next step is going to be, until you complete the current step-- taking on the true nature of experimentation.

Grades and Evaluation

40% Project Development Actions - these will typically be assigned on a weekly basis and will be due the following week. Students will receive credit based on level of completion. Readings will be included as part of the studies.

20% Class contribution - participation in class discussion and overall class contribution

40% Final Project Presentation and Booklet

Final Project Deliverables

1. High Resolution Images of your final project.
2. A PDF booklet explaining the details of your entire process. The booklet will include narrative, images, and diagrams.
3. A video showing the final project in relationship to time and movement.
4. Final presentation of your work to be given on Zoom.

Schedule

Week 1	September 2	**Seeing As, What do you see?**

Janet Vertesi, Seeing like a Rover: How Robots, Teams, and Images Craft Knowledge of Mars.

Week 2	September 9	**Objectivity and Image Gravity**

Lorraine Daston and Peter Galison, Objectivity (section) Bruno Latour, Visualization and Cognition
The Perspectival Eye

Week 3	September 16	**Shifting POV's**

Roland Barthes, Camera Lucida
Claire Bishop. Black Box, White Cube, Gray Zone: Dance Exhibitions and Audience Attention. TDR: The Drama Review, vol. 62 no. 2, 2018, p. 22-42.

Week 4	September 23	**Technical Knowledge Experimental Technik**

Discussion of Project site possibilities. Discussion of Readings

Read/Watch/Listen:
Vilem Flusser, Into the Universe of Technical Images (Minneapolis: University of Minnesota Press, 2010, orig. 1985). Available electronically through ORBIS. (Selected Chapters)
Kevin Kelly - What Technology Wants
Rem Koolhaus, The Technology of the Fantastic

Week 5	September 30	**Spatial Morphologies, Isovists, and Optical Departures**

First Project Case Studies

Read/Watch/Listen:
Sarah Oppenheimer GSD-Rouse Visiting Artist Lecture: Sarah Oppenheimer, "FE_20180201"
Alasdair Turner, Analysing the visual dynamics of spatial morphology (Environment and Planning B: Planning and Design 2003, volume 30, pages 657 - 676).

Tutorial:
"Capture" with Rishab Jain
Techniks: Photogrammetry, Isovist site analysis, Capture, Inversion, Re-Orietnation

Week 6	October 17	**Inscription, Translation, Immersion, Dimension**

Tutorial: "Immersion" with Rishab Jain
Technik: Maya, Unity

Read/Watch/Listen:
David J. Chalmers, The Virtual and the Real, Disputatio, 9 (46), 2017, pp. 309-352.

Week 7	October 14	**The Body in Space, Embodiment**

Read/Watch/Listen:
Donna J. Haraway, Simians, Cyborgs, and Women: The Reinvention of Nature (excerpt)

Technik: Motion Capture - human reference data, body movement data test

Week 8	October 21	**Invisible Fields, Simulation**

Technik: Live Data Analysis and Representation
Tutorial: "Invisible Fields" with Rishab Jain
Technik: Apply invisible fields to your scene Read/Watch/Listen

Week 9	October 28	**Cinema as a Framework for Design, with guest Artist Gabriel Winer**

Week 10	November 4	**Embodiment, Motion Capture, Movement, Proprioception**

Read/Watch/Listen:
Jean-Louise Schefer, The Enigmatic Body (excerpt)

Tutorial: "Motion Capture" with Rishab Jain
Technik: Identify human movement patterns in the scene. Become part of the virtual world.

Week 11	November 11	**Activation/ Intra-action Data Assemblages and Portraits**

Read/Watch/Listen:
Karen Barad, Meeting the Universe Halfway (excerpt)

Week 12	November 18	**Optical Arrival and Re-emergence, Remapping Back Into Physical Space**

Tutorial: "Embodiment and Assemblages" with Rishab Jain

Weeks 13, 14	December 2, 9	FINAL PRESENTATIONS

Syllabus: ARCH 2226 Design Computation 2021

Faculty: Mike Szivos

Overview

This course explores computation through the history and culture of drawing in the discipline of architecture. On one hand the goal is for students to learn on a technical level, while on the other the course is framed to remove the aesthetic tropes of design computation as an alibi for complexity and/or precision.

The main platforms we will be using are Processing and Grasshopper for Rhino along with cameras, sensors, and other devices as new instruments of measure and/or drawing tools. The course will start with a brief intro to Processing and Grasshopper and end with student driven projects. These projects will act as proof of concepts that explore how the digital and physical worlds can interact and comingle in unexpected ways.

Computation is simply the act of executing a mathematical equation. Regarding computation, computers are great at two things 1. Executing complex calculations almost instantaneously and 2. Executing those calculations many times over without error. These are also two things people are inherently bad at. While computers are great at being discrete, we (and the physical world) are great at introducing idiosyncratic and unpredictable conditions into discrete processes. Rather than try to overcome these shortcomings and differences, this course leverages them to provide a critical introduction to computation.

Drawing can be considered the analog to computation in the discipline of architecture. In Alberti's treatise, De pictura outlines the first mathematical solution to the problem of drawing a tiled floor in perspective. A century later engineers and architects began pioneering the techniques of descriptive geometry which outlined the various methods of constructing precise planar projections of three-dimensional objects and spaces.

These methods continue to be used today, although more often than not, the planar medium of vellum or paper has been replaced with a digital screen. In this case the software we use employs these methods of construction in real-time. While the changes on screen give the impression of changes we are making in a three-dimensional environment, they are in fact constructed drawings.

Whether we construct a drawing by hand, or it is done in the background by software, what we represent or see is the interpolation of points and their connections (as edges) in three-dimensional space. Through an understanding and discrete control of this interpolation we can introduce new mechanisms to control or input the construction of drawings. Opportunities emerge to replace a pencil or mouse with a brick, sound, wind, insects, the human body, etc. Rather than think of a drawing as a deterministic representation where fidelity or a visual analog. is the goal, drawing can be thought of as an open-ended process (similar to Sol LeWitt's Wall Drawings) where the outcomes are endless.

Measure is an integral part of drawing, typically representing linear distance. A range of instruments are used depending on the complexity of the object or space. The precision of measure is determined by the various subdivisions of units Using transdisciplinary instruments of measure to construct a drawing might have a direct corollary to these units, for instance the RGB value of an image can be directly translated into the X,Y,Z coordinate system. But other measures, such as speed, temperature, or touch would require more creative translations to implement them in the various methods of descriptive geometry or constructing a drawing. Or a depth camera might be used an instrument of measure to record the geometry of a sheet blowing the wind as a surface to construct a non-planar section through a virtual sphere.

Course Objectives

1. Utilize humans' and computers' respective strengths and weaknesses together to introduce stimuli and unpredictability into discrete processes.
2. Reframe drawing as an open-ended process in which the possibilities for a final product are infinite, as opposed to a deterministic method of representation.

Assessment Breakdown

Project 1	45%
Project 2	45%
Participation	10%

Class Organization

Methods & Techniques

The class will focus on a quick introduction to Processing through a series of quick assignments for the first third of the semester. Through Processing students will be exposed to basic programming and how data can be passed between software and various inputs. The final project will be a research-based prototype or proof of concept that utilizes some form of tangible interaction to drive a digital process or vice versa. Students can work individually or in pairs to develop the assignments.

Assignments

This course will be a research based technical seminar. Students will be exposed to the use of scripting and coding within various workflows to customize interactions and outcomes. Students can work in pairs or as individuals for each of these assignments. The deliverables will be broken up into two assignments:

1. Generative Sketch/Drawing

   A processing sketch that takes one or more types of input and retranslates that input through a particular system of measure, projection in an X,Y coordinates, programmed behavior, etc.

   Deliverables:
   A screen capture video of the sketch running and a set of drawings showing the range of the outcomes.

2. Final Project

   A student driven proof of concept that explores links between physical and digital spaces through creative systems of measure, sensing, and "drawing."

   Deliverables:
   A. Project proposal 3/24: PDF of sketches, references, etc.
   B. Final proof of concept 6/12: PDF and video of the final project as well as the development and tests.

Schedule

Week 1	February 3	Introduction
Week 2	February 10	Intro to Processing and mouse tracking
		Assignment 1: Generative Drawing
Week 3	February 17	Processing sound input and GUI controls
Week 4	February 24	Processing and camera sampling
Week 5	March 3	Processing data to Rhino using OSC
Week 6	March 10	Studio Midterm Week (Optional Class)
Week 7	March 17	3D Processing
Week 8	March 24	Project proposal and drawing presentations
Week 9	March 31	3D Processing + Grasshopper
Week 10	April 7	Arduino Introduction
Week 11	April 14	Arduino, Processing, and Grasshopper
Week 12	April 21	Work Session
Week 13	April 28	Work Session
Week 14	May 12	Final Presentations

Course Objectives

1. Through a research project and the design and future construction of a research station, utilize ideas of circular economic, material, and energy flows in order to understand the consequences in the architectural design process of employing unconventional material flows, including post-consumer waste and renewable materials.
2. Extend design thinking and technical detailing into the future, thinking about the building's end of life, possible demolition, reuse, or material disbursement of its constituent assemblies.

Assessment Breakdown

Contribution to Project Development   100%

Syllabus: ARCH 2229 Regenerative Building 2021

Faculty: Alan Organschi

Overview

The Regenerative Building seminar explores design and building techniques that seek to reduce environmental impacts across the building lifecycle and promote metabolic, non-mechanistic approaches to the production of the built environment. By engaging renewable material supply chains and energy systems that minimize the destruction and instead promote the eco-systemic health of source landscapes, by tapping industrial waste streams as sources of raw material, by detailing building assemblies for durability, reparability and, ultimately, ease of disassembly, regenerative techniques in building attempt to avoid the conventions of our current linear, extractive systems of resource consumption and the extensive, often unseen and unacknowledged ecological impacts created by the building sector. A sequence of short lectures, focused readings, and associated research questions challenge students from the disciplines of design and environmental management to posit and test means to mitigate the significant ecological and climatic impacts of those building sector activities. Semester projects in writing, visualization, or material and assembly experimentation, sponsor an interdisciplinary process of fact-finding and approach-crafting in the following topics:

- the ecological vulnerabilities of the building site and its immediate environs;
- the potential utility of ecosystem services of both the site and the region;
- the feasibility of engaging regional consumer and industrial waste-streams for material reuse (as well as manufactured post-consumer products) in order to supplant the consumption of materials and products drawn from non-renewable sources;
- the mitigation of carbon emissions and the management of carbon storages through potential synergies in regional silviculture and the implementation of timber- and other bio-based structural assemblies;
- regional climatic forces as well as the immediate environmental and physical conditions of the site and construction methods, building assemblies, and energy systems that respond to and optimize those conditions.
- techniques of building design for disassembly and material reuse in order to meet "end-of-waste" criteria and transform buildings from waste generators into material banks at the end of their lifecycles.

Background

The term regenerative building posits an approach to the conception, design, and technical specification of the built environment and its process of construction, one that seeks radical reductions in the consumption of raw material and non-renewable energy and the generation of waste throughout the building lifecycle. The seminar considers and tests the means by which we might reshape design practice to ameliorate the current degradation of global environmental health.

At a moment in geologic history in which building sector activity, through its dependence on linear and finite processes of resource extraction and waste generation, has contributed to the disturbance of nearly every geo-biological, -chemical, and -physical system on the planet, the analytical frameworks, tools, and techniques of architectural design seem worthy of re-evaluation and re-invention. Past paradigms of "sustainable design," that focused primarily on energy-efficiency but that continued to rely on materially and technologically intensive industrial processes throughout the production, operation and, ultimately, disposal of buildings, have produced only marginal reductions in overall environmental impact. As global populations continue to grow, increasing demands on planetary resources, and the rates of greenhouse gas emission and solid waste generation rise correspondingly, how will

architects reformulate their practice in order to mitigate —rather than simply adapt to—our unfolding environmental crisis?

Drawing on theories and systems of circular economic material and energy flows as well as their own process of research, analysis, and visualization, students will explore the architectural ramifications of tapping unconventional material flows, drawing on post-consumer and industrial waste streams, and utilizing biologically renewable material supply chains as a means to reconstitute the building lifecycle. As a complement to this retrospective consideration of the origins of building matter, design investigations will also challenge seminar students to predict and plan for a building's material and energy future. Technical systems and details designed to anticipate the end of a building's life; to futureproof it from demolition and landfill; to promote the reuse, reconfiguration, or the dismantling and ultimate redistribution of its constituent assemblies as new raw material for product manufacturing: all are strategies that seek to amortize the environmental debt accrued in the original process of extraction and production of a building, effectively extending the useful life of its component parts. These strategies seek to engender an "end-of-waste" status for future building. Rather than simply reducing a building's environmental footprint, students will instead consider the building handprint: the capacity of their building to actually improve the existing state of the site and environment, to mitigate impacts-whether remote and unseen or immediate and visible, and to reinforce the capacity of the earth's systems to rebalance themselves. By considering both upstream ecological benefits and downstream improvements in building quality and public health, students will engage some of the most deeply entrenched problems of contemporary global society: the inequitable distribution of resources for a rapidly expanding and urbanizing global population, the over-consumption of planetary resources, and the role of building production and operation in driving climate change.

Objectives

The ultimate objective of the semester's curriculum of research, analysis, and design experimentation is to expose the challenges of transforming the construction sector through the building design process to leverage the enormous demand for material and energy the process anticipates and inevitably generates as a means to address what has become an existential question: how do we build in a world of increasing resource scarcity and geosystemic imbalance?

Research conducted in last year's Regenerative Building Seminar laid the conceptual and organizational groundwork for the design and construction of a building: the Horse Island Coastal Research Station for Yale's Peabody Museum. This year the seminar will focus on the philosophical and curricular formation of an institution: YSoA's newly inaugurated Building LAB. Working within the conceptual framework of regenerative design and building practice, the consultation of the seminar's faculty and guest lecturers, students will conduct as individuals or in teams a semester-long research project resulting in a submission of that project to any of the following:

- an academic journal for publication
- a conference for presentation (and potential subsequent publication)
- a public exhibition

With the aid of the faculty and seminar guests, students will be responsible for identifying potential venues and the feasibility of working within required submission formats and associated timeframes and deadline.

Bibliography

The following readings and reference texts offer a conceptual framework for the analysis, research, and design experimentation to be undertaken by the seminar. Supplemental readings will be made available throughout over the course of the semester. Excerpted readings will be posted to the seminar 2229b Yale Canvas Resources folder.

On Material and Making

Ingold, Tim, "Ch 2: The Materials of Life" in Making: Anthropology, Archaeology, Art, and Architecture (New York: Routledge, 2013) pp. 17 — 31.
Latour, Bruno, "Can We Get Our Materialism Back, Please?" in Isis: A Journal of the History of Science Society, v. 98. no. 1, March 2007.

On the Anthropocene

Bonneuil, Christophe and Fressoz, Jean-Baptiste, "ch. 1, Welcome to the
Anthropocene" in The Shock of the Anthropocene: The Earth, History and Us (New York, Verso, 2016)
Boulding, Kenneth E., "The Economics of the Coming Spaceship Earth" in Environmental Quality in a Growing Economy, H. Jarrett (ed.) (Baltimore, MD: Johns Hopkins University Press, 1966) pp. 3 — 14.
Kuittinen, Matti, Architecture for the Anthropocene: How to Build for a Future? (Unpublished)
Zalasiewicz, Jan, et. al. "Scale and Diversity of the Physical Technosphere: A Geological Perspective" in The Anthropocene Review, v. 4, Issue 1, pp. 9 — 22.

On the Circular Economy and Design

den Hollander, Marcel C., Bakker, Conny A., and Hultink, Erik Jan, "Product Design in a Circular Economy Development of a Typology of Key Concepts and Terms," in The Journal of Industrial Ecology, v.21, Issue 3, pages 517-525.
Lendager, Anders and Vind, Ditte Lysgaard A Changemaker's Guide to the Future (Copenhagen: Narayana Press, 2018)
McDonough, William and Braungart, Michael, Ch. 2: "Why Being 'Less Bad' Is No Good" and Ch. 4: Waste Equals Food" in Cradle to Cradle: Remaking the Way We Make Things (New York: North Point Press, 2002)
Strasser, Susan, "Toward a History of Trashmaking" in Waste and Want: A Social History of Trash (New York: Holt, 1999) pp. 3 — 19.
https://media.sitra.fi/2017/02/28142644/Selvityksia121.pdf, SITRA: Leading the Cycle: Finnish Road Map to a Circular Economy 2016- 2025, Sitra studies 121
https://www.sitra.fi/en/topics/a-circular-economy/
https://www.ellenmacarthurfoundation.org/circular-economy/concept
https://www.bamb2020.eu/
http://www.c2c-centre.com/

On the Building Lifecycle

Brand, Stewart, How Buildings Learn; What Happens After They're Built (New York: Viking, 1994.
Moe, Kiel, Empire State Building (New York: Actar, 2017) pp. 16 — 41. Simonen, Kathrina, Life Cycle Assessment (New York: Routledge, 2014)
Srinivasan, Ravi and Moe, Kiel, The Hierarchy of Energy in Architecture, (New York: Routledge, 2015)
Sturlaugson, Brent, "What You Don't See" in Places Journal (https://doi.org/10.22269/180918) (September 2018)

On Material Resources and Lifecycles

Allwood, Julian M., and Cullen, Jonathan M., Sustainable Materials Without the Hot Air: Making Buildings, Vehicles and Products Efficiently and With Less New Material (Cambridge, UK: UIT Cambridge, 2015)
Dangel, Ulrich, Turning Point in Timber Construction: A New Economy (Basel: Birkäuser, 2017)
Hawken, Paul, Lovens, Amory B., and Lovins, Hunter L. "Ch. 9: Nature's Filaments" in Natural Capitalism (Washington, DC: Earthscan, 2010) pp. 170 — 189.
Oliver, Chadwick Dearing and Oliver, Fatima Arf, "ch. 28: Forests" in Global Resources and the Environment, (Cambridge: Cambridge University Press, 2018) pp. 445 — 478.
Organschi, Alan, "Timber City: Architectural Speculations in a Black Market" in Timber in the City (New York: Oro Editions, 2015) pp. 13 — 25.

On Carbon Management

Churkina, et. al. "Buildings as a Global Carbon Sink" in Nature Sustainability (https://doi,.org/10.1038/s41893-019-0462-4, January 2020.)
Organschi, Alan, "The Carbon Transect" in Wood Urbanism: From the Molecular to the Territorial, Kiel Moe, Jane Hutton, Daniel Ibañez, eds. (Barcelona, Actar, 2019)
www.decarbonizedesign.com

On the Building Assemblies

Allen, Edward & Iano, Joseph, Fundamentals of Building Construction: Materials & Methods 5th Edition (New Jersey: John Wiley & Sons, 2009)

Detail: Review of Architecture

Deplazes, Andrea, ed., Constructing Architecture: Materials Processes Structures, A Handbook, Birkhauser (Basel: Birkhauser, (2005), 2009)
McArleton, Ace & Racusin Jacob Deva, The Natural Building Companion: A Comprehensive Guide to Integrative Design and Construction (White River Junction: Chelsea Green, 2012.)

Syllabus: ARCH 2230b Exploring New Value for Design Practice 2021

Faculty: Phil Bernstein, Brittany Olivari

Overview

Architects work hard and contribute widely to the built environment. Is this contribution acknowledged and appreciated? Why don't architects make better salaries? Or, how do we make design a more profitable practice?

Design practice has traditionally positioned building as a commodity in the delivery supply chain, valued by clients like other products and services purchased at lowest first cost. Intense market competition, sole focus on differentiation by design quality, and lack of innovation in project delivery and business models have resulted in a profession that is grossly underpaid and marginally profitable, despite the fact the building sector in its entirety operates in large capital pools where significant value is created.

Innovation in practice is largely deployed in the service of traditional design objectives rather than value generation opportunities. The profession must explore new techniques for correlating the real value of an architect's services to clients and thereby break the downward pressure on design compensation.

This course will reimagine and re-design the value proposition of architecture practice, explore strategies used by better compensated adjacent professions and markets, and investigate methods and models by which architects can deliver-- and be paid for-- the value they bring to the building industry. Using the platform of business plans—where value generation is defined through specific business parameters—we will compare and contrast value generation strategies. Students will form firms and propose new practice paradigms as a final project.

The course is designed achieve the following outcomes:

1. Understand the relationship of the architect to the economic systems of building.
2. Understand the role of the architect in various models of building delivery.
3. Define value creation challenges inherent in the current architect's role and speculate on future options.
4. Understand and be able to deploy essential principles of strategic and business planning in defining value propositions and how they are instantiated, including financial analysis and business planning.
5. Understand and be able to manipulate operating models of practice and the relationship of those models to money, risk and value.
6. Create a viable business plan for an alternative value practice.

The course is designed for students with either substantial office experience or nearing graduation who want to understand more specifically how architects practice might change in the future. The course is open to M.Arch students with either three or more years of office experience or those who successfully completed 2031a/Architectural Practice. The course is open to all M.Arch II students, but please note that an appropriate background in professional practice will be necessary in order to understand and execute the class requirements. Others may be admitted by permission of the instructors.

Course Objectives

1. Understand and evaluate how the architect fits into the building industry from economic, practical, and value-generating perspectives.
2. Evaluate and critique the opportunities and risks of current practice, with particular focus on business outcomes.
3. Understand business principles of practice and the architecture value chain, and apply that understanding to evaluate alternative models of delivery and practice.
4. Develop, evaluate, and select new alternative forms of value generation by architects and translate value propositions into business models.

Assessment Breakdown

Assignments	45%
Preliminary Project Submission	5%
Final Project Submission	50%

Class Organization

Class Design / Structure

Class will meet twice weekly: Tuesday lectures from 4:00 —5:00 PM and Wednesday section/ guest discussions from 4:00 — 5:30 in the Second Floor Gallery classroom, when possible, otherwise remotely. Selected sessions may be extended by 30 minutes. Most Tuesday lectures will be accompanied the following day by an interactive discussion with a guest who will join the class for a relevant discussion about the weekly topic. Topics will cover one or more of three course components:

1. Context: what is the environment in which architects currently work, and what are the structural challenges? Why are new value propositions necessary?
2. Tools: what are the technical characteristics of business planning and generation? What is a business plan, a strategy, a firm financial model, a compensation method?
3. Strategies: what approaches do other innovative value generators uses? How do new ventures start? What is happening in other parts of the building industry supply chain and with other professions and what strategies are instructive to architects?

Requirements

Requirements include participation in weekly lectures and section meetings, preparation of eight various assignments given during the term and a final project in which teams of students will propose next-generation firm designs. Grades will be awarded based on total points accumulated on these assignments on the following scale:

100 — 76	PASS
75 — 70	LOW PASS
69 or below	FAIL

Semester assignments comprise 45% of this grade, and the final project 55% (5% for the preliminary submission and 50% for the final submission). Final projects will be presented in jury format during Final Exam period.

As participation is a critical component of the success of this class, only one unexcused absence from a lecture and one unexcused absence from a discussion meeting will be permitted per student during the semester in order to pass this course.

Schedule

| Week 1 | February 2 | **Introduction - Value Challenge** |
| | February 3 | **Mapping Value Challenges** |

Assignment: Provocation Response - Describe the fundamental value challenges to design practice and speculate on future opportunities for new forms of practice

| Week 2 | February 9 | **Supply Chain Dynamics and Economics** |

Guest: Alan Organschi / Gray Organschi Architecture

| | February 10 | **Value Generation in the Supply Chain** |

Assignment: Fee Opportunities - Diagram and evaluate the fee structure of a typical project and identify key variables and opportunities.

| Week 3 | February 16 | **Firm Operating Models** |
| | February 17 | **Managing firm financial dynamics** |

Guest: Brian Kenet - Anchin

Assignment: Firm Financial Model Spreadsheet - Describe the key characteristics of a firm business model and demonstrate an understanding of its performance.

| Week 4 | February 23 | **Strategy and Business Models** |
| | February 24 | **Running a Smart Practice Principles** |

Guest: Ken Boroson - Boroson Architects + Jose Hernandez

Assignment: Practice Business Plan - Using the Business Model Canvas, reverse engineer a business plan for a firm you worked for previously.

| Week 5 | March 2 | **Innovation as a Technique** |

Guest: Laura Weiss - Design Diplomacy

Assignment: Prepare for the ideation workshop

| | March 3 | **Ideation Workshop - Team Formation** |

Guests: Laura Weiss / Nancy Alexander

Assignment: Form teams and preliminary proposals

| Week 6 | March 23 | **Risk and Value** |

	March 24	**Risk Opportunities**
		Guest: Leslie King - Murtha Colina Attourneys
		Assignment: Risk Opportunity Analysis - Describe the risks of practice and evaluate what could be mitigated or assumed to increase value.
	March 27	**Workshop - Strat Plan/Biz Models**
		Guest: Nancy Alexander - LUMENANCE Consulting
		Assignment: Team/Concept Options - Prepare for the workshop
Week 7	March 30	**Start-ups** + **AEC Innovation**
		Guest: Jesse Devitte, Borealis Ventures
	March 31	**Exemplary AEC Start-Ups**
		Guest: Havard Hauleland, CEO - Spacemaker
		Assignment: Start-Up Business Plan - Create a preliminary list of possible new value scenarios to be refined for the final project and begin a Business Model Canvas with your team
Week 8	April 6	**Architect as Builder**
	April 7	**Architect-led Design Build**
		Guests: Adam Hopfner - HOPFNER and Noah Bilken, DBP
		Assignment: Strategy for Architects as Builder - Reflect on the relationship between construction and design and speculate on the most interesting possibilities.
	April 7	**Film Production or Gaming**
Week 9	April 13	**Architect as Developer**
	April 14	**Small practice development**
		Guest: Rob Zirkle / BRICK
		Assignment: Development Value Options - Consider strategies for the architect's relationship to development by running a SWOT analysis.
Week 10	April 20	**Performance-Based Practice - Principles**
	April 21	**PRELIMINARY REVIEW**
Week 11	April 28	**Research as a Value Proposition**
		Guest: Renee Cheng, University of Washington

	April 28	**Performance-Based Practice**
		Guests: Violet / Sidewalk Labs
	April 29	**Integrated Delivery Models**
		Guest: Markku Allison, Chandos Construction
		Assignment: Outcome-Based Value Generation - Continue to develop final projects as teams
Week 12	Week of May 10	**Pecha Kucha Business Pitches**
		Assignment: New Value Model Proposition - New Practice Paradigm (Final Project)

Bibliography

American Institute of Architects. (2014). The architect's handbook of professional practice. Hoboken, New Jersey, Wiley.

Bernstein, P. G. (2014). Money, Value, Architects, Building. MONEY - Perspecta 47 - The Yale Architectural Journal. J. B. Andrachuck, Christos; Forman, Avi; Hooks, Marcus Addison: 14-20.

Bernstein, P. G. (2015). Chapter 13. Three strategies for new value propositions of design practice. The Architect as Worker. Immaterial Labor, the Creative Class, and the Politics of Design. P. Deamer, Bloomsbury Academic.

Bernstein, P.G. (2018). Architecture Design Data: Practice Competency in the Era of Computation. Basel, Switzerland, Birkhauser.

Bernstein, P.G. (2019) "Why the Field of Architecture Needs a New Business Model." Architectural Record. https://www.architecturalrecord.com/articles/13462-why-the-field-of- architecture-needs-a-new-business-model

Carpo, M. (2011). The alphabet and the algorithm. Cambridge, Mass., MIT Press.

Cuff, D. (1991). Architecture : the story of practice. Cambridge, Mass., MIT Press.

Davenport, T. H. and J. Kirby (2016). Only humans need apply : winners and losers in the age of smart machines. New York, Harper Business.

Graaf, R. d. (2017). Four walls and a roof : the complex nature of a simple profession.

Gutman, R. (1988). Architectural practice : a critical view. New York, N.Y., Princeton Architectural Press.

King, R. (2000). Brunelleschi's dome : how a Renaissance genius reinvented architecture. New York, Walker & Co.

Marble, S. (2012). Digital workflows in architecture : designing design -- designing assembly -- designing industry. Basel, Birkhäuser.

Osterwalder, A, and Pigneur, Y (2010). Business Model Generation. Hoboken, NJ, John Wiley and Sons.

Scharphie, M. (2015). Emerging Modes of Architectural Practice, Northeastern University School of Architecture. At http://www.northeastern.edu/camd/architecture/portfolio/emerging-modes-architecture-practice/#sthash.p3wDalee.dpuf

Susskind, R. E. and D. Susskind (2015). The future of the professions : how technology will transform the work of human experts. Oxford, United Kingdom, Oxford University Press.

Woods, M. N. (1999). From Craft to Profession : the practice of architecture in nineteenth- century America. Berkeley, CA, University of California Press.

Syllabus: ARCH 2234a Material Case Studies 2019

Faculty: Emily Abruzzo

Overview

In this course, which culminates in a design-build spatial proposal, students will build their intuition for material use in both the execution and generation of design. Part lecture, part research lab, and part field work, this intensive research seminar will expose students to a broad overview of the role of materials in the formation and execution of a spatial concept, as well as provide a venue for intensive work with specific materials.

Investigation into the relationship between a material's substance and its performance metrics and qualities will develop understanding of the inherent tectonic qualities of materials from the structural to the decorative, and possible applications for each. Materials to be studied will include wood / grasses, masonry, concrete, stone, glass, metals, textiles, plastics, and "smart" materials; in each category the role of processes such as lamination, packing, annealing, plating, etc. and the making of composites will be explored.

The course will be structured along lines of research, experimentation (testing; often to failure), and design, augmented with weekly readings. Students will be responsible for researching given materials' physical properties and capacities, the processes required to translate from a raw to a usable state, and exemplary environments that deploy the materials. They will then test physical samples of the material in order to develop an intuition as to its potential; finally, students will develop a spatial proposal using the material. Final proposals, which students will fabricate at least in part, will be sited within the School of Architecture Building.

Throughout the course, research and discussions will focus on developing a reasonable sensibility about the way in which material decisions effect the environment, human health, and the performance of spaces, objects, and buildings.

Physical material samples will be used throughout; guest speakers (experts working with specific materials) will augment the course material over the semester.

In addition to looking at materials typically used in the production of built space, we will ask, how can the investigation of materials not traditionally used in architecture further the profession?

Course Objectives

1. Examine the role of materials in the formation and construction of spatial concepts through the design and installation of a project.
2. Experiment with and research specific materials for the installation over the course of the semester in order to understand their specific qualities, weaknesses, potentials, and compatibility with various methods and processes. Understand the steps required to take these materials from their raw states to finished forms.

Assessment Breakdown

Reading Discourse/Class Discussion	35%
Research Assignment	25%
Testing/Experimentation	15%
Site-Specific Installation	25%

Class Organization

The course is structured around three assignments, described in detail below. In addition, there will be readings relating to each week's coursework as well as to the overall goals of the course. The readings will be posted as PDFs on Canvas, and in addition to the three assignments, students are asked to contribute to written discourse in response to the readings, via Canvas, no later than 6pm the day before the class meets.

We will build specific knowledge about and informed intuition for materials through three lines of investigation:

1. Research

In the first half of the semester, students will conduct individual research into a variety of material categories, noted below, and will present this research to the class on the dates noted in the schedule on the following pages. Class discussion will be supplemented by physical samples brought in by the Instructor as well as the students. Material Categories to be studied include: wood, grasses, stone, masonry units, plaster, ceramics, concrete, metals, glass, plastics, textiles / fibers, and smart composites.

Research should be specific and rigorous. No one presentation will be able to cover the entire body of knowledge around any one of these material categories, so each student will have to find an appropriate structure for communicating, at a minimum: what a specific material's raw state is, how the material goes from a raw state to a consumable; what forms of consumables are made and how are they used differently; how the material is disposed (life cycle assessment), how the material relates to human health. Each presentation should include at least three divergent examples of the material's use in the built environment.

2. Testing

Each student should obtain physical materials that stem from their research. Over the course of three weeks, they will test and experiment openly with those materials, and they should present conclusions and artifacts from that experimentation.

Testing can be related to effect, strength, bending, temperature, etc., and should be iterative, building on the knowledge of one experiment to inform the next. Research should be conducted using the scientific method: hypotheses should be developed and tested using rigorous means that produce measurable results.

3. Site-Specific Proposal

Working in groups of about three, students will find a speciifc site within the School of Architecture for the design and temporary fabrication of a site-specific installation. For the final review, guest critics and students will walk between the sites as a group.

Each site will have its own specific rules for engagement (e.g. avoiding attaching to walls, avoiding being in the way of foot traffic, not leainvg a mark, etc.), and its own characteristics in regards to light, temperature, humidity, material specificity, use, etc. Installations should use one material primarily, and should relate specifically to their siting. The material used need not be one studied earlier in the semester; the instructor will work through the proposals with each team via desk crits leading up to the installation.

While each site will be available to be documented throughout the semester, the final installation may exist in that space only for the day of the review; as such, fabrication might have to occur, at least partially, off-site. Logistics are just as important as concept and detailing in this final assignment.

A stipend will be available to each group to defer material costs for this project.

Schedule

Week 1	September 5	Introductory discussion: performance, aesthetics, effect, process, human health. Research and experimentation: specific knowledge vs. intuitive guidance. Tools for research / Life Cycle Analysis. Tools for experimentation and measurement. Applied knowledge
Week 2	September 12	Class does not meet (a makeup will be scheduled)
Week 3	September 19	Research Presentations: Wood, Grasses, Natural Fibers
Week 4	September 26	Research Presentations: Stone, Masonry Units
Week 5	October 3	Research Presentations: Plaster, Ceramics
Week 6	October 10	Research Presentations: Concrete, Metals
Week 7	October 17	Research Presentations: Glass, Plastics, Textiles
Week 8	October 24	Testing / Experimentation Desk Crits
Week 9	October 31	Testing / Experimentation Initial Presentations
Week 10	November 7	Testing / Experimentation Pin-Up
Week 11	November 14	Final Projects Site Visits / Initial Presentations
Week 12	November 21	Final Project Desk Crits
Week 13	December 5	Final Project Desk Crits
Week 14	December 16-18	FINAL PRESENTATIONS

Bibliography

Balmond, Cecil. "Survival Patterns. Models, 306090 11. Emily Abruzzo, Eric Ellingsen and Jonathan Solomon, ed. New York: 306090 Books, 2007. p. 26-32.

Batchelor, David. "Chromophobia." Intimus. Mark Taylor and Julieanna Preston, ed. West Sussex, England: Wiley-Academy, 2006. P.31-36

Baudrillard, Jean. "Structures of Atmosphere." Intimus. Mark Taylor and Julieanna Preston, ed. West Sussex, England: Wiley-Academy, 2006. p.37-42.

dePaula, Matthew. "Aluminum Inferior To Steel? Not on the 2014 Ford F-150." Forbes, May 31, 2014.

Gordon, J.E. "The Materials of the Future." The New Science of Strong Materials, or Why You Don't Fall Through the Floor. Princeton: Princeton University Press, 1968.

Iwamoto, Lisa. Digital Fabrications: Architectural and Material Techniques. New York: Princeton Architectural Press, 2009.

Kapor, Anish. Anish Kapor: Past, Present, Future. Nicholas Baume, ed. Cambridge: MIT Press, 2008.

Kolarevic, Branko and Kevin Klinger, ed. Manufacturing Material Effects: Rethinking Design and Making in Architecture. New York: Routledge, 2008.

Kwinter, Sanford. "Architecture and the Technologies of Life." Far From Equilbrium: Essays on Technology and Design Culture. Cynthia Davidson, ed. Barcelona: Actar, 2008. p.128-133.

Albert Lutz. "To Paradise Through Stone." Herzog and DeMeuron: Natural History. Phillip Ursprung, ed. Zurich: Lars Muller, 2006.

Massumi, Brian. A User's Guide to Capitalism and Schizophrenia: Deviations from Deleuze and Guattari. Cambridge: MIT Press, 1992. p.10-12.

McDonough, William and Michael Braungart. Cradle to Cradle: Remaking the Way we Make Things. New York: North Point Press, 2002.

Mori, Toshiko. Immaterial Ultramaterial. New York: Harvard University & George Braziller, 2002.

Murrow, Lauren. "Man vs. Tights." New York Magazine, October 10, 2011.

Rohan, Timothy. "Rendering the Surface." Grey Room, No. 1, Autumn, 2000. Branden Joseph, Reinhold Martin, Felicity Scott, ed. Cambridge: MIT Press. pp. 84-107.

Scheurer, Fabien. "Size Matters." Dimension, 306090 12. Emily Abruzzo and Jonathan Solomon, ed. New York: 306090 Books, 2008. p. 59-65.

Schrijver, Lara and Sean Redlitz. "Star Trek: Designing the Future; An Interview with Michael Okuda." OASE Architecture Journal 66: Space In Cyberfiction. p.110-125.

Weschler, Lawrence. Tara Donovan. New York: The Monacelli Press, 2008.

Zago, Andrew. "Real What?" Log 5. Cynthia Davidson, ed. New York: Anyone Corporation, 2005. p. 100-104.

Resources

Life Cycle Assessment

Life Cycle Assessment is a technique to assess each and every impact associated with all the stages of a process from cradle-to-grave (i.e., from raw materials through materials processing, manufacture, distribution, use, repair and maintenance, and disposal or recycling). LCA's can help avoid a narrow outlook on environmental, social and economic concerns. This is achieved by (1) Compiling an inventory of relevant energy and material inputs and environmental releases; (2) Evaluating the potential impacts associated with identified inputs and releases; (3) Interpreting the results to help you make a more informed decision.

Reference

Healthy Materials Lab	healthymaterialslab.org
Healthy building Network	http://www.healthybuilding.net/
Eco-Building Supply	http://ecobuildingsupply.net/
Cornell Center for Materials Research	http://www.ccmr.cornell.edu/
Perkins & Will Transparency List	http://transparency.perkinswill.com/
Pharos: Material chemical makeup database	www.pharosproject.net
Green Spec:Database	www.greenspec.buildinggreen.com
Material ConneXion	www.materialconnexion.com
Materials Council	www.materialscouncil.com

Material Safety Data Sheets (MSDS)

Syllabus: ARCH 2242a Fighting Slavery in the Built Environment 2020

Faculty: Phil Bernstein, Luis C. deBaca

Overview

This seminar will operationalize recent statutory and regulatory changes in the United States, the United Kingdom, and Australia that extend enforcement of laws against forced and child labor into company's supply chains. Drawing on law, design, construction business, and sustainability practices, we will seek to for the first time incorporate an anti-slavery ethos into the architectural design process. Multidisciplinary teams of students from across Yale's professional and graduate schools will "slavery-proof" a particular input or process in projects that are the subject of current design studio development.

We will explore issues around LAW (policy, regulatory, standards that could constrain or eliminate slavery); SUPPLY CHAIN MANAGEMENT (structural, operational and financial aspects of supply and demand that can be leveraged for control); DESIGN DECISIONS: (how design strategy and approach can direct/redirect/refocus demand for non-slavery-produced products) and PROCUREMENT AND CONSTRUCTION EXECUTION (how a design is translated from intention through procurement of material and labor that is instantiated into a finished building). Examing these questions in concert will yield insight into the relationships between policy, law, enforcement and design/construction practice necessary to eliminate forced labor from the built environment.

The seminar has several LEARNING OBJECTIVES. Students will contextualize slavery and forced labor in the modern and historical practice, and understand slavery's relationship to the building materials supply chain. Students will define the levels of influence possible to reform the supply chain (such as information, policy, funding, enforcement, design standards, material protocols and specifications, and purchasing). Students will analyze design projects for potential slavery-produced material flows and thereby will develop new tools for fighting slavery in the supply chain.

This seminar is an opportunity to build useful and practical skills embraced by architects, lawyers, businesses, and environmental activists. It will introduce students to the basics in legal argument and analysis of an applied human rights concept, identifying and using industrial and logistics processes that effectuate a workers' rights ethos, and the incorporation of ethical sourcing and social sustainability into the design process. It will draw connections between labor policy, design strategy, and construction processes. It is our hope that the class will advance the practice of their various professions not only with practical tools and move us toward an aesthetics of freedom.

A note on terminology. This seminar will explore materials and conditions on construction sites in relation to the persistence of slavery and involuntary servitude -- terms set forth in the 13th Amendment to the US Constitution. In the last twenty years, the term "human trafficking" or "trafficking in persons" have become dominant, with a recent resurgence of "slavery" or "modern slavery," especially in the Commonwealth Countries. For this seminar the many ways of naming compelled service will be used as being roughly synonymous; throughout the course we expect to discuss different terms (and the tensions and structures that they reflect), definitional trade-offs, and assessments of such issues as race, gender, citizenship, rule of law, worker's rights, victims' rights, colonialism, globalization, and federalism.

Course Objectives

1. Explore and develop an understanding of issues related to law, supply-chain management, design decisions, and procurement and construction execution within the built environment to yield the insights necessary to remove forced labor from the industry.
2. Understand the history of forced labor in the creation of the built environment, and the role of memorialization in the creation of public space and policy.
3. Develop and apply legal and architectural strategies to research and discover possible forced-labor-yielding material flows in various architectural projects, and develop new tools for fighting slavery within the material supply chain.

Assessment Breakdown

Readings and Participation	30%
Class Project	70%

Class Organization

This will be a hands-on seminar, complementing studio practice in the School of Architecture. The course participants will optimally be from the Schools of Architecture, Management, and the Environment, as well as the Law School, plus one undergraduate, for a total of 12-14 students. The class will be organized into multidisciplinary teams by assignment.

The 13 weekly sessions (2 hours apiece) will unfold in a roughly hourglass manner, with the first part of the class devoted to problem definition. By week 6, teams will choose a topic, and sessions 7-13 will involve additional materials and project refinement building to a final examination session in which the teams will present their final projects.

The class as a whole will examine a particular project —New Haven's COMMON GROUND HIGH SCHOOL, designed by Yale School of Architecture's senior lecturer Alan Organschi and constructed by Newfield Construction, Inc., as a way to collectively understand the design/build process, regulatory and contractual pressure points, and the interplay between social sustainability (such as anti-slavery) and environmental sustainability (carbon capture, energy efficiency, green-ness in general). Working closely with the team at FRDM, whose technology tool allows companies to model supply chain dynamics and assess their forced labor risk within their own procurement data, the teams will assess a product or process for how it might be "cleaned" of modern slavery. This is the first time a class like this has ever been taught, so identifying limitations will be as important as achieving breakthroughs (and possibly more likely).

Course Requirements

Readings and Class Participation (30%)

As this class is applied, it is important that each student regularly attend the course and is prepared to participate every day. Rather than legal texts, the readings are largely journal articles, reports, industry publications, transcripts, press accounts, images, video, and documents, as well as some caselaw and legislation. You will need to carefully consider the context that shaped each reading and understand the social, legal, and regulatory regimes in which they occurred.

Each week you will be required to submit a question created to prompt class discussion or a short paragraph of analysis. These will be due at midnight the night before our class meets and will serve as a foundation for our class discussions.

Each of you will be assigned a class for which you will be the lead discussant, launching the topic and working with me to bring out the themes for the class session.

Class Project: (70%)

Each team will formulate a project by mid-terms, honing in on a product or process in the design/build process and analyzing how it can be "slavery proofed."

Your active participation in every class meeting is the most important component of the course. We expect you to read the assigned works, submit discussion questions, and arrive in class with questions, comments, and opinions about what you read and what you think. Everybody needs to participate in the conversation. Students are required to attend every class meeting, with the exception of illness or personal emergency. Please contact us as soon as possible if you will need to miss class.

Schedule and Bibliography

Materials For Use Throughout the Course:

> U.S. Constitution, Amdt. XIII
> 18 U.S.C., Chapter 77 "Peonage, Slavery, and Trafficking in Persons"
> Executive Order 13126, Prohibition of Acquisition of Products Produced by Forced or Indentured Child Labor (June 12, 1999)
> Executive Order 13627, Strengthening Protections Against Trafficking In Persons In Federal Contracts (September 25, 2012)
> Federal Acquisition Regulation, subpart 22.17 Combating Trafficking in Persons, and associated clause at FAR 52.222-50, Combating Trafficking in Persons
> Trade Facilitation and Trade Enforcement Act, P.L. 114-125 (February 24, 2016) United Kingdom Modern Slavery Act of 2015
> Australia Modern Slavery Act of 2019
> The Architect's Handbook of Professional Practice, 15th Edition

Week 1: August 26
Introduction To The Course. What Is Slavery?

This class will serve as an introduction to the courses, defining terms, concepts, and organizing questions.

Assignment: prior to class, take the survey at the website slaveryfootprint.org. Please come to class prepared to discuss your results and your views regarding the survey.

Modern Slavery, introduced:

> In Class Film: National Underground Railroad Freedom Center, "Journey to Freedom" (2012)

The class project, introduced:

> We will take a virtual tour of the site that we will be using for the project: Gray/Organschi's Common Ground High School, 358 Springside Ave, New Haven, CT. For the project, teams will identify a unique component of Common Ground that likely has a slavery component, whether historical or contemporary, and propose how to confront that.

Readings:

> Henry Weincek, "The Dark Side of Thomas Jefferson," Smithsonian Magazine (October 2012) available online at https://www.smithsonianmag.com/history/the-dark-side-of- thomas-jefferson-35976004/
> John Bowe, "Nobodies," THE NEW YORKER, APRIL 21, 2003 available online at https://www. newyorker.com/magazine/2003/04/21/nobodies
> Deloitte, "The Freedom Ecosystem", available online at https://www2.deloitte.com/us/en/insights/ topics/social-impact/freedom-ecosystem-stop- modern-slavery.html

Week 2: September 2
What is Architecture?

This week we will explore the concept of architecture as not just design instructions and aesthetics, but as a transmitter of values and how building reifies the policies, standards and biases of a society. We will look at architects and slavery, including architecture and construction in support of the antebellum chattel slavery system and architects as commemorators (monuments, projects, etc) and unpack the idea of the built environment as a moral location. If every project can be read as a manifestation of larger context, existing assumptions about the built environment and the legal, business, and social realities around projects, must be interrogated around then-existing and ongoing legacies of slavery.

Readings:

Rebekah Yousaf, Examining Slavery's Architectural Finishes: The Importance of Interdisciplinary Investigations of Humble Spaces (2018), available online at https://repository.upenn.edu/hp_theses/655
John Michael Vlach, BACK OF THE BIG HOUSE: THE ARCHITECTURE OF PLANTATION SLAVERY (Chapel Hill, 1993)
Who Builds Your Architecture?: A Critical Field Guide (February 25, 2017), available online at http://whobuilds.org/who-builds-your-architecture-a-critical-field-guide/

Guest: Alan Ricks, MASS re the National Memorial for Peace & Justice, or Rodney Leon re The Ark of Return and the African Burial Ground National Monument (or perhaps them both, in dialogue)

Week 3: September 9
How Do Buildings Get Built?

Design and construction are traditionally defined as the creation of intent (by a designer) translated into physical form in construction (execution). In the bridge between these strategies lie a series of inter-related decisions that are ultimately manifest physically by the operationalization of construction, combining logics, labor, and materials. That process occurs in a hierarchy of decisions, contractual arrangements, procurement strategies, market contexts, and the global supply chain for materials. Decisions made early in a design process may have far-reaching implications for slavery: a concrete frame building might include aggregate processed by children in India.

A fundamental principle of American construction, memorialized by standard form contracts extensively used in the construction industry, is that the architect is not responsible for the "means and methods" of construction, in theory creating a clean break between intent and execution. But the dividing line is, in actuality, not nearly so clean, as the architect provides the contractor, through the contract for construction with the owner, detailed instructions and specifications describing the final building. Into this ambiguous breach is thrown questions of the responsibility for provenance of materials and the proper treatment of the labor force.

Not all such decisions are explicit, nor controlled by the primary players of designer and contractor. A builder might contract for a building component (like the exterior enclosure) and then assemble a hierarchy of sub-contracts and bills of materials, often never knowing the ultimate provenance of the materials that arrive on a job site. This class will examine the overall supply chain dynamics of design-to-construction, and define inflection points where decisions that insatiate slavery may occur. What are the responsibilities of the players, and how do their processes and obligations change to eliminate slavery from the building supply chain? Does the architect have such responsibilities?

Readings:

> Bernstein, Phillip G., "Project Delivery Methods" The Architect's Handbook of Professional Practice, 15th Edition (American Institute of Architects, Wiley, 2014)
> Atkins, James and Simpson, Grant "Drawing The Line: Why the Architect's Drawings Can't Be Used for Construction" in Managing Project Risk: Best Practices for Architects and Related Professionals (Wiley, 2008)
> Construction Users Roundtable "Collaboration, Integrated Information, and the Project Lifecycle in Building Design, Construction and Operation" (Internal Whitepaper, 1202), August 2004
> Filler, Martin, "The Insolence of Architecture" The New York Review of Books (https://www.nybooks.com/articles/2014/06/05/insolence-architecture/) and accompanying letter of apology.

Week 4: September 16
What is Sustainability?

There are many regulatory expressions of sustainability, whether environmental or social. In the built environment, as in most parts of the economy, the environmental aspect of sustainability has received the lion's share of attention. The Green Building Council's LEED regime is now very much incorporated into architects, builders, and construction lawyers. Worthy efforts are sometimes given a boost by local or national regulations/incentives, such as [need e.g. of green building incentives] or the U.S. Government's requirements for federal contractors. So too, we see investor decision making through Environmental, Sustainability, and Governance (ESG) analysis, and global governance through the Sustainable Development Goals (SDGs). Increased attention to the "circular economy" may be a means by which to assess social, as well as environmental, impacts.

The US Green Building Council is largely responsible for the first mover, wholesale change in green attitudes across the disaggregated building supply chain. What lessons might be learned from their strategy with regard to eliminating slave labor in building?

How do such goals trickle down to projects? What does that mean for a professional? A client? A firm? A regulator? What lessons can we draw from other attempts to interrogate supply chain, community awareness, and creation of technical standards?

Readings:

> Gabriel Benachio et al, "Circular economy in the construction industry: A systematic literature review" 260 J. Cleaner Production (July, 2020).
> Alliance 8.7, "Ending child labour, forced labour and human trafficking in global supply chains," ILO, OECD, IOM, UNICEF (Geneva, 2019).

Week 5: September 23
How is a Freedom Ethos Being Actualized?

It is not sufficient to recoil from slavery and other forms of exploitation in the built environment, or to virtue signal with public announcements. The professions and industries involved need practical ways to approach the issue in their daily work. Throughout the course, we will work with one of the few tools to have been developed to date: FRDM — which you may recognize as an outgrowth of the consumer advocacy Slavery Footprint tool that you used in Class One. FRDM allows an understanding of one's supply chain, so that one can impact it. In the modern age, the new adage might be "you can't fix what you can't model." Where are the levers of change in the building supply chain?

In Class Video Presentation: Masterminds of Construction (5 minutes)

Readings:

> Business Human Rights Resource Centre, "Modern Slavery in Company Operations and Supply Chains: Mandatory Transparency, Mandatory Due Diligence, and Public Procurement Due Diligence" (2017).
> Chartered Institute of Building, Modern Slavery: The Dark Side of Construction (London, 2015).
> Leslie P. King & Luis C.deBaca, "An Ancient Problem, a New Awareness: Slavery in Construction Materials Supply Chains," 21 Under Construction 4 (March 2020)(magazine of American Bar Association Construction Law Section).
> Relevant provisions of UK Modern Slavery Act and Australian Modern Slavery Act

Guest: Justin Dillon, FRDM

Week 6: September 30
Supply Chain Activism, and End-User Liability, Generally

Modern activists are using not just the symbolic aspect of the 13th Amendment but are replicating and updating means of engagement that would have been familiar to pre-Civil War abolitionists in the US and the UK in order to move the issue closer to consumers and to hold end-users accountable. Enforcement is giving teeth to what might otherwise be an empty exercise in virtue-signalling.

Readings:

> J.L. Holcomb, "Blood-Stained Sugar: Gender, Commerce and the British Slave-Trade Debates" 35 Slavery and Abolition 611 (2014)
> Barry Estabrooke, "Grown in Florida: Oranges and Modern Slavery," The Atlantic (March 2, 2010)
> Government of the United Kingdom, "Slavery and human trafficking in supply chains: guidance for businesses" (2018) available online at https://www.gov.uk/government/publications/transparency-in-supply-chains-a-practical- guide
> United States Customs & Border Protection, "Forced Labor", available online at https://www.cbp.gov/trade/programs-administration/forced-labor
> Anasuya Syam and Meg Roggensack, "Importing Freedom: Using the U.S. Tariff Act to Combat Forced Labor in Supply Chains," The Human Trafficking Legal Center (2020)

Guest: Rod Khattabi, Grace Farms Foundation

Week 7: October 7
A Cautionary Tale: The Trouble with Auditing

Corporate Social Responsibility (CSR) and Multi-stakeholder Initiatives (MSIs) are a common response to business and human rights issues. At what point does cross-sectoral collaboration become a captive private regulatory scheme, especially in commodity or manufacturing supply chains that are non-transparent, corrupt, and rent-seeking?

Readings:

> Genevieve LaBaron, Global Business of Forced Labor (study of certification schemes and their shortcomings) http://globalbusinessofforcedlabour.ac.uk/report/
> Verite, "Help Wanted" report on global recruitment issues https://www.verite.org/help- wanted/

Gillian White, "All Your Clothes are Made with Exploited Labor", The Atlantic Monthly, June 3, 2015. Available online at https://www.theatlantic.com/business/archive/2015/06/patagonia-labor-clothing-factory- exploitation/394658/

Guest: Amelia Evans, MSI Integrity

Due: Project proposals

Week 8: October 21
Building, Construction, Projects Mega and Smaller

Large construction companies have been on the leading edge of both criticism and response for slavery/trafficking on their jobsites, often in the Arab Gulf countries. As a result, different industry groups, often in association with the non-profit sector, have been formed to address the issue. In light of Week Six's questioning of the non-threatening nature of multi-stakeholder initiatives, we will engage some of these working groups.

Readings:

The Building Responsibly Principles and Guidance Notes, available online at https://www.building-responsibly.org/resources
Chartered Institute of Building, Building A Fairer System: tackling modern slavery in construction supply chains (London, 2016).

Guests: Tawny Critten, Jacobs; Mabel O. Wilson, architect and professor, Columbia University, GSAPP

Week 9: October 28
Multi-Stakeholder Initiatives, Revisited

The Building Responsibly project from Week Eight, and the Stronger Together project are two multi-stakeholder initiatives in the building industry. The Forestry Stewardship Council is the dominant MSI in timber. This week, we will examine their responses in greater detail, along with the activities of the dominant MSI in a non-construction sector, the cocoa industry, which has been addressing the issue (due to scandals) for longer than most other market sectors.

Readings:

Review the materials available on the Stronger Together and Forest Stewardship Council websites. What are the dominant models of engagement set forth by the initiatives?

https://www.stronger2gether.org/construction/
Brendan Montague, Forestry sector 'failing' to combat forced labour (13th November 2019), available online at https://theecologist.org/2019/nov/13/forestry-sector-failing- combat-forced-labour
Thais Lazzeri, Investigation reveals slave labor conditions in Brazil's timber industry (March 13, 2017), available online at https://news.mongabay.com/2017/03/investigation- reveals-slave-labor-conditions-in-brazils-timber-industry

Guest: Aiden McQuade, former Executive Director, Anti-Slavery International

Week 10: November 4
Worker-Led Social Responsibility (WSR)

An emerging best practice in the anti-slavery field that stands in counterpoint to Multi-Stakeholder Initiatives, is the practice of Worker-led Social Responsibility (WSR). This approach, which harnesses the power of the workers to lead as standard-setters and auditors, is starting to move out of the location and industry of its initial development.

Readings:

> Katrina Van den Heuvel, "Modern Slavery." The Nation (March 28, 2010) available online at https://www.thenation.com/article/modern-slavery
> Fair Food Program, Annual Report 2017 (April 2018), available online at http://www.fairfoodstandards.org/reports/
> "Understanding Remediation" briefing paper, ISEAL

Guest: Judge Laura Safer Rodriguez, Fair Food Program

Week 11: November 11
Labor Rights at Work - Unions and Litigation

Responses to forced labor are not just coming from governments, businesses, and local worker organizations. Formal labor unions can play an important role in advocating for workers' rights policies and protecting workers on the job, but have at times had trouble confronting forced labor because the exploitable communities might not be member of the union and might be seen as foreign and therefore a threat to local workers. Another pressure point — civil litigation — is increasingly filling the gap in legal responses to forced labor, as law enforcement resources flow to sex trafficking.

Readings:

> Michele Ford, "Trade Unions, Forced Labour and Human Trafficking," 5 Anti-Trafficking Review 11 (2015)
> Alexandra F. Levy, "Federal Human Trafficking Civil Litigation: 15 Years of the Private Right of Action," The Human Trafficking Legal Center (December 2018)

Guest: Neha Misra, Solidarity Center, AFL-CIO

Week 12: November 18
Transparency, and Human Rights Due Diligence

Modern Slavery laws in the United Kingdom and Australia build on the California Supply Chain Transparency Act and are for the moment driving business engagement more than U.S. enforcement efforts. All are predicated on having firms disclose what they are doing to confront slavery/trafficking in their supply chains and business activities, but have been criticized for focusing more on the problem of reporting than on the underlying human rights violations themselves. An alternative approach, the Human Rights Due Diligence law, is being seen by many as a model with more potential, as abused workers will be able to seek remedy for their exploitation, which is seen as the company's failure to meet their duty to avoid forced labor. Such laws will increasingly be applicable to U.S. firms with an international presence.

In class presentations: Interim Progress Reviews

Readings:

> Leon Olsen and Chloe Sullivan, "Moving beyond Modern Slavery Statements: Performing Human Rights Due Diligence." 69 Governance Directions 597 (2017).
> Government of Australia, "Implementing the Modern Slavery Act 2018: The Australian Government's Annual Report 1 January—31 December 2019", available online at https://www.business-humanrights.org/en/australia-govt-releases-its-first-annual-report-on- implementing-the-modern-slavery-act-2018

Guest: Alison Keihl Friedman, International Corporate Accountability Roundtable

Week 13: December 2
Prison Labor, Prison Buildings

As addressed earlier in the class, inputs such as gypsum, potash, and other imported materials may have been made using prison labor. But as this course has suggested, the problem of slavery in the built environment cannot be limited to an overseas supply chain, building materials, or even the jobsites where workers are abused. Much of America was built by, or built with materials produced by, enslaved people under the legal system of chattel slavery. After Emancipation, systems of peonage and prison labor were used to exploit loopholes in the 13th Amendment, in order to "re-enslave" Black people in the American South. Convict labor even in states that did not have Jim Crow laws has been a common element of American penology, and often a flashpoint for controversy. Architects and builders are increasingly called upon to confront the uses to which their work will be put, including in detention settings.

Readings:

> Sydney Wilmot, Use of Convict Labor for Highway Construction in the North, Proceedings of the Academy of Political Science in the City of New York, Vol. 4, No. 2 (Jan.,1914), pp. 6-68.
> Robert T. Chase, "We Are Not Slaves: Rethinking the Rise of Carceral States through the Lens of the Prisoners' Rights Movement," 102 J.AM.HISTORY 73 (June 2015), available online at https://academic.oup.com/jah/article/102/1/73/686880
> Josh Halladay, The Thirteenth Amendment, Prison Labor Wages, and Interrupting the Intergenerational Cycle of Subjugation, 42 Seattle U. L. Rev. 937 (2019).
> Jacobs, Karrie, Should Architects Design Prisons?, ARCHITECT, December 3, 2012 online at https://www.architectmagazine.com/article/should-architects-design- prisons_o

Guest: Raphael Sperry, Architects/Designers/Planners for Social Responsibility

Exam Week: December 14-18 (to be scheduled)
Final Review and Presentation of Projects

Syllabus: ARCH 3211 Abstraction and Architecture 2020

Faculty: Pier Vittorio Aureli

Overview

> Abstraction passes for 'absence' — as distinct from the concrete 'presence' of objects, of things. Nothing could be more false. For Abstraction's modus operandi is devastation, destruction (even if such destruction may sometimes herald creation). Signs have something lethal about them — not by virtue of 'latent' or so-called unconscious forces, but on the contrary, by virtue of the forced introduction of abstraction into nature.
>
> -Henri Lefebvre, The Production of Space, 1974

In his essay "Abstraction and Culture" the American painter Peter Halley lamented the persistent belief that abstraction is a stylistic device or invention, born out of the artist's formal concerns. For Halley, abstraction unfortunately continues to be seen as a free play of form that is completely self-referential vis-à-vis social and political issues. "In thinking about this most rarefied of visual languages," Halley writes, "it seems we intellectually retreat into the cloister of high culture; we deny that abstraction is a reflection of larger historical and cultural forces. We deny that the phenomenon of abstraction only gains meaning to the extent to which it does reflect larger forces and is embedded with their history". This understanding of abstraction as a retreat from the world is dominant within the discipline of architecture, where it is associated with modernist formal simplicity and the reduction of architecture to platonic object. The term "abstraction" evokes an aesthetic of formal restraint, reduction to essentials. The course aims to overcome the stylistic interpretation of abstraction and introduce students to a more complex and nuanced reading of this fundamental condition in the history of human civilization.

"To abstract" comes from the Latin verb trahere, which means to draw an essential part out from a whole. Abstraction is a process through which man seeks to reach generic frameworks rather than specific solutions. With the rise of early states and complex societies, abstraction became the condition sine qua non of government. Large quantities of people, goods, and agricultural produce could effectively be governed only by reducing them to abstract signs to be computed. Yet this process of abstracting reality into signs impacted reality itself, as the abstractions of calculus and economic rationality ordered and formalized physical space.

An important example of how abstraction became concrete within urban form is the rise of geometry as a method to measure the land. Herodotus narrates the origin of geometry in ancient Egypt, with the professional practice of the "stretcher of the rope." This practice, in which rope was used to make the measurements necessary for building temples and granaries, found a significant application in parceling out the soil when it reemerged after the yearly Nile floods. It is within this context that the fundamental problems of geometry were defined, such as the trisection of angles and the magnification and diminution of volumes, including the doubling of cubes. Even the use of meticulous calendars or even astronomy is stripped of its religious aura when we understand how it was instrumental in empowering the prerogatives of the ruling class of state functionaries and priests. The abstractness of calculus became a ubiquitous social force with the rise of private property and the possibility of exchanging products for money. While in antiquity this social force was limited to the exchange of commodities as objects, with the rise of modernity the abstraction of exchange and the equivalence of value begin to include human labor. With modernity, human labor was no longer slave labor devoid of wage, but became sold and purchased as a commodity among "free" citizens. Here, labor is no longer based on direct material interchange; it depends on capital. It is at this point that labor becomes what Marx defined

Course Objectives

1. Develop an understanding of how abstraction as a concept originated, and has both shaped and been shaped by cultural, political, and economic forces throughout history.
2. Explore the role of abstraction within the lens of architecture and how it has changed over time.

Assessment Breakdown

Participation	20%
Research Project	80%

as abstract labor. It is precisely the rise of abstract labor as a fundamental datum of modern political economy that gave rise of the abstract space of the factory as a generic built framework and the industrialization of building techniques that proliferated into any aspect of the built environment—from housing to infrastructure, to landscape design.

Within an urban space increasingly governed by financial capital and its algorithms, abstraction is everywhere hypostatized into the material and immaterial spaces of our daily existence. Piet Mondrian's utopian vision of a world ruled by the aesthetics of abstraction is now finally realized. The course will trace the history of abstraction in architecture from the advent of sedentary societies to today by focusing on pivotal moments: the rise of calculus, geometry and architectural drawing, the building of large- scale structures such as Egyptian Pyramids and European Cathedrals, the planning of monasteries and the engineering of infrastructure, the building of houses, glasshouses, factories and data centers.

Schedule and Bibliography

General Readings

Henry Lefebvre. "From Absolute Space to Abstract Space". In The Production of Space, translated by
    Donald-Nicholson Smith, 229-291. London: Blackwell, 1991.
Alfred Sohn-Rethel, "Social Synthesis and Production". In Intellectual and Manual Labour, 83-135. London:
    Macmillan Press, 1978.
Meyer Schapiro, "The Nature of Abstract Art". In Modern Art 19th and 20th Century: Selected Papers, 185-
    211. New York: George Braziller, 1978.

Week 1, January 10th
What is Abstraction?
A Very Short History of an Idea

This lecture focuses on the rise of the idea of abstraction between 17th and 20th century. We will briefly analyze how abstraction emerged in the arts, in aesthetic theory and in philosophy. Special emphasis will be given to the theories of John Locke, Karl Marx and Piet Mondrian.

    John Locke, An Essay Concerning Human Understanding (London: Hackett Publishing, 1996).
    Karl Marx, Grundrisse. Foundation of the Critique of Political Economy (London: Penguin Classics,
        1993), only the introduction.
    Piet Mondrian, New Design. Neoplasticism Nieuwe Beelding (Basel: Lars Muller Publisher).

Week 2, January 23rd
From Points to Surfaces
Domestication and the rise of Early States in the Near East.

One of abstraction's point of origin is located in the process of the human species' domestication. The emphasis will be on the organization of the house floor plan through which sedentary dwellers organize their own daily rituals and habits.
This session will follow the management of surplus production, the building of intricate and monumental architecture, and the division and measuring of land. It will focus on the emergence of agriculture, complex societies, and mathematics and geometry as tools of governance and social organization.

    Robert J. Wenke, Patterns in Prehistory. Humankind's First Three Million Years (New York, Oxford:
        Oxford University Press, 1999), 268-437.

Morris Kline. Mathematical Thought from Ancient to Modern Times, volume 1. New York: Oxford University Press, 1990.
Peter J. Wilson. The Domestication of the Human Species. New Haven and London: Yale University Press, 1988.
James C. Scott. Against the Grain: A Deep History of the Earliest States. New Haven: Yale University Press, 2017.
Mario Liverani. Uruk, The First City. Sheffield: Equinox Publishing, 2006.
Tim Ingold. The Appropriation of Nature: Essays on Human Ecology and Social Relations. Iowa City: University of Iowa Press, 1987.
Lewis Mumford. Technics and Human Development: The Myth of the Machine, volume 1. New York: Mariner Books, 1971.

Week 3, Friday 24th
The Pyramid and the Temple
Geometry, Design and Labor Organization in Ancient Building Sites.

This session focuses on the rise of abstraction brought by the division of labor necessary at the building site of monumental architecture in Ancient Egypt and Ancient Greece.
Special attention will be given to the relationship between the exactitude of Templar architecture and the invention of coinage and its social consequences in Ancient Greece.

Barry J. Kemp. Ancient Egypt: Anatomy of a Civilization. London: Routledge, 2005.
Zahi Hawass. The Pyramids of Ancient Egypt. Pittsburgh: Carnegie Museum of Natural Art, 1990.
Craig B. Smith. How the Great Pyramid was Built. Washington: Smithsonian Institution Press, 2004.
J. J. Coulton. Ancient Greek Architects at Work: Problems of Structure and Design. Ithaca: Cornell University Press, 1982.
Richard Seaford. Money and the Early Greek Mind: Homer, Philosophy, Tragedy. Cambridge: Cambridge University Press, 2004.
Geometria e Architettura. Edited by Riccardo Magliari. Rome: Gangemi Editore. 2010.

Week 4, February 6th
Patriarchy and Abstraction
Geometry, Survey and Land Property in Ancient Rome

This session will focus on the art of survey the land and how this practice is linked to the 'concrete abstraction' of private property. The main thesis put forward here is that in Ancient Rome the abstraction of property was rooted in the patriarchal organization of society whose core was the supreme legal power of the pater familas.

O. W. A. Dilke. The Roman Land Surveyor: An Introduction to the Agrimensores. New York: Barnes and Nobles, 1971.
Various Authors. Misurare la Terra: Centuriazione e Coloni nel Mondo Romano. Modena: Franco Cosimo Panini, 1985.
David Gilman Romano. "The Orientation of Towns and Centuriation". In A Companion to the Archeology of the Roman Republic, ed. Jane DeRose Evans, 251-267. Hoboken, NJ: Wiley-Blackwell, 2013.
Yan Thomas, "La valeur des choses: Le droit romain hors la religion". In Annales: Histoire, Sciences Sociales 57, no. 6 (December 2002): 1431—1462.

Week 5, February 7th
Abstraction and Sameness in Medieval Times

This session focuses on the 'promise of sameness' in architecture and urban space brought by the mercantilist ethos of medieval society. Special attention will be devoted to the labor organization in the building of monasteries and cathedrals.

Emanuele Lugli. The Making of Measure and the Promise of Sameness. Chicago: University of Chicago Press, 2019.
David Friedman. Florentine New Towns: Urban Design in the Late Middle Ages. Cambridge: MIT Press, 1989.
Walter Horn, Ernest Born. Plan of St. Gall: Study of the Architecture and Economy of, and Life in, a Paradigmatic Carolingian Monastery. Los Angeles: University of California Press, 1980.
Wolfgang Braunfels. Monasteries of Western Europe. The Architecture of the Orders, 67-110. London: Thames and Hudson, 1972.
Jean Gimpel. The Cathedrals Builders, translated by Teresa Waugh. London: Pimlico, 1983.
Robert A. Scott. The Gothic Enterprise: A Guide to Understand the Gothic Cathedral. Los Angeles: University of California Press, 2011.

Week 6, February 27th
Abstraction and Disegno
From the Architecture of the Orders to Descriptive Geometry

This session focuses on the split between architect and master-mason and how the use of disegno contributed to the rise of the architect as the main responsible of architectural design.

Michael Baxandall. Painting and Experience in Fifteenth Century. Oxford: Oxford University Press, 1988.
Pier Vittorio Aureli. "Do You Remember Counterrevolution?: The Politics of Filippo Brunelleschi's Syntactic Architecture". In AA Files n. 71 (2015).
Amir Djalali, "Prehistories of Common Spaces: Conflict and Abstraction in Renaissance Architecture". In The City as a Project, edited by Pier Vittorio Aureli, 102-135. Berlin: Ruby Press, 2014.
Marvin Trachtenberg. Building in Time: From Giotto to Alberti and Modern Oblivion. New Haven, London: Yale University Press, 2010.
Mario Carpo. The Alphabet and the Algorithm. Cambridge, MA: The MIT Press, 2011.

Week 7, February 28th
Architecture Without Quality
From Sebastiano Serlio's Temperate Classicism to the English Terraced House.

This session looks at the increasing standardization of housing design and how both the rise of the bourgeoisie and financial considerations put forward a kind of 'mediocre' language of architecture that became paramount in the architecture of housing.

Mario Carpo, "The Architectural Principles of Temperate Classicism: Merchant Dwellings in Sebastiano Serlio's Sixth Book". In RES: Anthropology and Aesthetics 22 (Autumn 1992).
Manfredo Tafuri, "Venetian Epilogue. Jacopo Sansovino from inventio to Consuetudo". In Interpreting the Renaissance, 219-258. New Haven, London: Yale University Press, 2006.
Maria Shéhérazade Giudici. "Government and the Emergence of Architecture d'accompagnement, 1584-1765". In The City as a Project, edited by Pier Vittorio Aureli, 140-169. Berlin: Ruby Press, 2014.
Stefan Muthesius. The English Terraced House. New Haven, London: Yale University Press, 1982.

Week 8, March 26th
'Free' Plan
Commodity Exchange, Abstract Labor and the Rise of Industrial Architecture

This session considers the spread of abstraction as a 'social force' by considering the relationship between what in modern Political Economy is called 'abstract labor' and the rise of industrial architecture between the 19th and 20th century.

Karl Marx, "Introduction". In Grundrisse: Foundations of the Critique of Political Economy, 81-114. London: Penguin, 1973.
Betsy Hunter Bradley. The Works: The Industrial Architecture of the United States. Oxford: Oxford University Press, 1988.
David F. Noble America by Design. Science, Technology, and the Rise of Corporate Capitalism. New York: Alfred A. Knopf, 1977.
Grant Hildebrand, Designing for Industry. The Architecture of Albert Kahn. Cambridge, MA. : The Mit Press, 1980.
Thorsten Bürklin, Jürgen Reichardt, Albert Kahn's Industrial Architecture. Form Follows Performance. Basel: Birkhauser, 2019.
Francesco Marullo, "Architecture and Revolution. The Typical Plan as Index of the Generic". In The City as a Project, edited by Pier Vittorio Aureli. Berlin: Ruby Press, 2014.

Week 9, March 27th
Territory and Abstraction
Tracing the Urban Grid from Colonialism to Urbanization

This session will look at the spread of the grid as urban system from antiquity to modern times. The main thesis is that rectangular subdivision of land is related to colonial appropriation and imposition of law as a precondition for 'primitive accumulation'.

Pier Vittorio Aureli, "Appropriation, Subdivision, Abstraction: A Political History of the Urban Grid". In Log 44 (Fall 2018): 139-167.
Adrian Randolph, "The Bastides of Southwest France". In The Art Bulletin 77, no. 2 (June 1995): 290—307.
Nicholas Blomley, "Law, Property, and the Geography of Violence: The Frontier, the Survey, and the Grid". In Annals of the Association of American Geographers 93, no. 1 (March 2003): 121.
John W. Reps. Town Planning in Frontier America. Princeton: Princeton University Press, 1969.
Ross Exo Adams, Circulation and Urbanization. Los Angeles, London: Sage, 2019.

Week 10, April 9th
Architectural form and Economy
The legacy of Jean-Louis-Nicolas Durand's Precis

This lecture focuses on the teaching of Durand as paradigmatic of an architecture driven by the concrete abstraction of economy.

Antoine Picon, French Architects and Engineers in the Age of Enlightenment. Cambridge: Cambridge University Press, 2010.
Jean-Nicolas-Louis Durand. Précis of the Lectures on Architecture: With Graphic Portion of the Lectures on Architecture. Los Angeles: Getty Research Institute, 2000.
Werner Szambien. Jean-Nicolas-Louis Durand, 1760-1834: De l'imitation à la norme. Paris: Picard, 1984.

Week 11, April 10th
Metropolis and Abstraction
From Ludwig Hilberseimer's Metropolis Architecture to Archizoom's No Stop City, to Rem Koolhaas's Generic City.

This lecture focuses on 20th century 'modern' architecture through the lens of abstraction. While many architects try to save architecture from the reifying forces of the metropolis by insisting on the importance of craft and style, few architects accepted the generic character of modern life and attempted to render it through their speculative projects.

Georg Simmel, "The Metropolis and Mental Life". In The Sociology of Georg Simmel. New York: Free Press, 1974.
Ludwig Hilberseimer. Metropolisarchitecture. New York: Columbia Books on Architecture and the City, 2014.
Pier Vittorio Aureli. "Architecture For Barbarians. Ludwig Hilberseimer and the Rise of the Generic City". In AA Files 63 (2011): 3-18.
Mario Tronti, "Society and the Factory". In Workers and Capital. London: Verso. 2019.
Roberto Gargiani. Inside No Stop City. Parkings résidentiels et système climatique universel, Paris: Edition B2, 2017.
Pier Vittorio Aureli. "More Money, Less Work: Archizoom". In EP Vol. 1 / The Italian Avant Garde 1968-1976, edited by Alex Coles and Catherine Rossi, 146-164. Berlin: Sternberg Press, 2013.
Paolo Virno. The Grammar of the Multitude. For an Analysis of Contemporary Forms of Life. Los Angeles: Semiotext(e), 2004.
Maurizio Lazzarato. "Immaterial Labor". In Radical Thought in Italy: A Potential Politics, edited by Paolo Virno and Michael Hardt, 133—150. Minneapolis: Minnesota University Press, 1996.
Pier Vittorio Aureli. "OMA and the Politics of the Grands Projects". In OMA The First Decade - OASE 94 (2015): 44-53.

Week 12, April 23rd
The Return of the Factory
From Cedric Price to Data Centers

This session will look at the spread of abstraction through the ubiquity of algorithmic governance, tracing a genealogy that goes from the cybernetic architecture imagined by Cedric Price to the development of data centers and the architecture of fulfillment.

Pier Vittorio Aureli "Labor and Architecture: Revisiting Cedric Price's Potteries Thinkbelt". In Log 23 (Fall 2011): 97-118.
Clare Lyster. "Territories of Equivalence: Objects of the Logistical Apparatus". In Footprint 23, Vol. 12 (2018): 25-36.
Jesse LeCavalier. Walmart and the Architecture of Fulfillment. Minneapolis: University of Minnesota Press, 2016.
George Haynes. Data Center infrastructure and Organization. New York: Americana Press, 2016.

Week 13, April 24th
Conclusions and Discussion

Syllabus: ARCH 3229 Sustainability: A Critical View from the Urban History of Amazonia 2020

Faculty: Ana María Durán Calisto

Overview

Amazonia is experiencing rapid urban growth. Its urban frontier is one of the fastest growing in the world: 80% of it is self-built (informal) in nature. Under export oriented and neo-extractivist policies, dependency of Latin American economies on raw materials and agro-products is unlikely to revert in the up-coming decades. Nevertheless, scarce research efforts have focused on the urban phenomenon in Amazonia. How could forest cities be designed and constructed, if at all? Can the forest be harvested sustainably and sustain its cities, many of which currently depend on imports? Could urbanization be allied with productive forest resurgence in the region? Could urban research focused on Amazonia inform environmental approaches to city making elsewhere? Can environmental history and archaeology influence the way in which we approach Amazonian settlements today? What can we learn from local communities? Could their ancestral knowledge be adapted to today´s needs and illuminate the design of an environmentally responsible urbanism? Any attempt to respond to these questions will have to address issues of urban sustainability in general, and urbanization in the tropics in particular. By studying the history, current condition and causes for urbanization in the Amazon, this seminar will critically probe into current approaches to urban sustainability keeping in mind that many of the "green solutions" being advanced by the global north demand further extraction of natural resources in the global south. We will analyze the complex intertwining between the global market and the myriad local conditions of this mythical territory, as well as the critical role both are called to play with regard to climate change.

Course Objectives

1. Develop an understanding of alternative approaches to city making (urban ecology), urban agriculture, forest remediation, and forest resurgence, through an understanding of Amazonian territorial practices.
2. Provide an overview of the genesis and evolution of Amazonian forest cities since pre-Columbian until current times.
3. Explore the physical, economic, and cultural relationships and dependencies between the "Global North" and "Global South" with respect to the Amazon River basin.
4. Explore the relationships between sourcing of raw materials and urban metabolism/construction.

Assessment Breakdown

Oral Proposal/Bibliography	15%
Midterm Paper Draft	20%
Final Paper	25%
Final Presentation	15%
Attendance/Participation	25%

Central Ideas and Learning Goals

- Become acquainted with alternative approaches to agriculture, remediation, and forest resurgence.
- Become acquainted with the role played by indigenous communities and their practices in the actual design and ecological construction of the forest.
- Understand the complexity and asymmetry of "Global North" - "Global South" relationships within the context of the Amazon River basin. We will engage theories that attempt to explain the underlying mechanisms of these relationships: Dependency Theory (Center — Periphery), Central Place Theory, Development Pole, Export-based regional planning, Import Substitution, Political Economy, Neoliberalism, Post-Colonialism, and so forth. We will do so questioning binaries such as north-south, dependence-independence, center-periphery, developed-underdeveloped, left-right. None of these binaries provide satisfactory frameworks to discuss Amazonia today.
- Appreciate and understand the (climatic, medicinal, cultural, biotic, etc.) value of tropical rain forests (as living forests).
- Incorporate existing cities into the Amazonian imaginary
- Trace relationships between our eating habits and our transportation methods with the future of tropical rain forests
- Critically rethink technology: panacea or problem? Which/Whose technology?
- Critically rethink the concept of colonization and deconstruct the shapes it takes in the contemporary world
- Embrace complexity and transdisciplinarity

Theoretical Frameworks

Urban Amazonia has received meager research attention from the design fields, even though, since the 1970s, it displays the fastest growing urban frontier in South America, and one of the fastest growing in the world. Brazilian geographer Bertha Becker was the first social scientist to note the demographic explosion in the region, and the first one to call for a revision of urban categories. Amazonia was an "urban forest" she stated. Several geographers, notably Browder and Godfrey in the 1980s, followed the pathway opened by Becker and continued to document and update her first forays into what they referred to as "rainforest cities." Currently, multi-disciplinary and collaborative teams, among whose members we could cite Brondizio and Padoch, undertake incursions, both through satellite and on the ground, of a complex web of informal settlements that comprise 80% of Amazonian urbanization. Architects and urban designers have probably neglected this vast territory precisely because it is perceived as non-urban, as a contested ground between extractive enterprises, agri-businesses (particularly soy bean and palm oil mono-cultures) and ranching. Even though these are indeed the main economic forces driving the advance of frontiers into Amazonia (variously referred to as "resource frontiers," "economic frontiers," "poverty frontiers," "urban frontiers," "corporatists frontiers," "populist frontiers," and so forth), informal urbanization, particularly along the high-ways of developmentalism promoted as arteries for colonization and escape valves for other poverty-striken regions in South America, has become the main expression of such frontiers. Student acquaintance with theoretical urban models will be complemented by studies related to "informal" urbanization and its causes. This focus will not neglect a critical analysis of formal -state or market driven- projects within the Amazon river basin, particularly company towns. In order to critically analyze urbanization in the Amazon from a historical perspective we will study the emergence of urban forms from pre-Colonial times until the Modern era.

Required Texts

Hecht, S. B., & Cockburn, A. (2010). The fate of the forest: developers, destroyers, and defenders of the Amazon. University of Chicago Press.
Hecht, S. B. (2013). The Scramble for the Amazon and the" Lost Paradise" of Euclides da Cunha. University of Chicago Press.
Mann, C. C. (2005). 1491: New revelations of the Americas before Columbus. Alfred a Knopf Incorporated.
Mann, C. C. (2011). 1493: Uncovering the new world Columbus created. Vintage.

Films

Aguirre: Der Zorn Gottes (Aguirre: The Wrath of God), Werner Herzog, 1972 (1´35´´) — Yale Library On-Line, https://video.alexanderstreet.com/watch/aguirre-the-wrath-of-god
Fitzcarraldo, Werner Herzog, 1982. (2´38´´) — Yale Library On-line, https://video.alexanderstreet.com/watch/fitzcarraldo
Crude, Joe Berlinger, 2009 (1´45´´) — Yale Library On-line, https://fod.infobase.com/p_ViewVideo.aspx?xtid=65962
When Two Worlds Collide, Heidi Brandenburg and Matthew Orzel, 2016 (1´ 43´´) — Netflix, https://www.netflix.com/watch/80097475?source=35
Lost City of Z (Kuhikugu), James Gray, 2016 (2´21´´) — Available on Amazon Prime and in Yale Film Study Center, https://www.amazon.com/Lost-City-Z-Charlie-Hunnam/dp/B06XY8L2DB.
Avatar, James Cameron, 2009 (2´42´´) — Available on Amazon Prime, https://www.amazon.com/gp/video/detail/B003EVWDR0/ref=atv_dl_rdr
Embrace of the Serpent, Ciro Guerra, 2016 (2´5´´) — Available on Amazon Prime and Yale Film Study Center, https://www.amazon.com/gp/video/detail/B01E9ACOQE/ref=atv_dl_rdr
Serra Pelada, Heitor Dhalia, 2013 (2´) — Netflix, https://www.netflix.com/Title/80114112

First Contact: Lost Tribe of the Amazon, Angus McQueen, 2016 (48") — Available in Netflix

Trash, Christian Duurvoort and Stephen Daldry, 2014 (1´54´´) — Amazon

The Salt of the Earth, Juliano Ribeiro Salgado and Wim Wenders, 2014 (1´50´´) — Yale Library On-line, https://video.alexanderstreet.com/watch/the-salt-of-the-earth.

The Secret of El Dorado, BBC, 2002, https://www.youtube.com/watch?v=0Os-ujelkgw

The Killing of Chico Mendes, Adrian Cowell, 1990 (50´´), http://docuseek2.com/cart/product/663

The Biggest Little Farm, Molly and John Chester, 2018 (1' 30").

Visual Arts

- Juan Downey
- Alfredo Jaar
- Sebastião Salgado
- Fabiano Kueva
- Tuca Vieira

Class Organization

The seminar will meet for 110 minutes per week, and will be structured as a combination of lecture and discussion session. Throughout the semester, students are expected to prepare for class by reading assigned texts and watching assigned films. Please do come prepared for each session: discussions will be lively and engaging if we do our work in advance. Each student will research an Amazonian city, settlement or system of settlements (and their infrastructural supports) throughout the semester; and will be expected to analyze urban performance from the point of view of (energetic, land, water, economic, cultural, resource) sustainability. A structural analysis of each Amazonian city will also allow students to describe the relationship established by the culture who designed it and its environment. Theoretical works on the ontology of nature among diverse cultures will be useful in this regard. Students will have the opportunity to present the results of their research at the end of the semester. Students are expected to incorporate knowledge derived from the lectures, papers, films, and visual arts into their urban analysis. They are also expected to address the environmental history of selected cities/urban systems; and their socio-political and cultural context. The use of maps, (satellite/aerial) images, diagrams, photographs, and drawings is highly encouraged.

Evaluation/Assessment

15% -   Oral proposal/annotated bibliography (Due on week 3)
20% -   Mid-term paper Draft (app. 3,000 words, due on week 11)
25% -   Final Paper (Due on week 16, May 6 at midnight)
15% -   Final Presentation (Due on weeks 15 and 16)
25% -   Attendance and Participation

Note: Sources must be cited. You are free to use any citation style as long as it is consistent throughout the paper. Please number the pages. Assignments are due by midnight (11:59 pm) on the due date.

Schedule and Bibliography

Week 1 (January 15)
Ideas about Nature and Cities — Part I

We can infer the ontology of nature in the way in which a society builds its environment. Examining the relationship established between "culture" (should we use "ontology") and "nature" (should we use "surroundings"/ "environment") will be central to this course. The issue of ontology is not to be underestimated, for the way in which we define the essence or being of what we name reveals how we relate to that which we define depending on how we define it. Different cultures approach concepts in very different ways. Languages remain an important doorway into ontology and, as anthropologist Philippe Descola would say, the "ecology of others." Linguistic structures, nevertheless, pose limitations when it comes to transmitting the way in which Amazonian cultures establish spiritual relationships with other beings and the forest, as Eduardo Kohn argues in "How Forests Think: Toward an Anthropology beyond the Human." Nature means very different things for different cultures. In most Amazonian languages, a word for "nature" does not even exist as we know it. In this first phase of the course, we will delve into the genesis and evolution of the concept of Nature in Western thought, and will contrast this ontological history with a radically different one: the "Amazonian" (in spite of the heterogeneity of cultures in the basin, animism remains a common thread). A very brief historical overview of ideas about nature will be complemented by a reflection on how they influence the construction of human-nature relationships, and particularly, city-nature relationships. Nature, in this course, will be understood not just as a biophysical entity, but as a social construct. Epistemology and the history of ideas are important to architects and urbanists because cities are simultaneously constructed natures and subject to natural forces and laws.

> Coates, P. (1998). Nature Chapters 1, 2
> Grove, R. (1990). The Origins of Environmentalism. Nature 345: 11.
> McHarg, I. L., & Mumford, L. (1969). Design with nature. New York: American Museum of Natural History. Introduction.
> White, L. (1967). Historical Roots of our Ecologic Crisis. Science 155: 1203-07.
> Kohn, E. (2013). How forests think: Toward an anthropology beyond the human. University of California Press. Introduction.
> Speth, J. G. (2008). The Bridge at the end of the World. Intro and Part 1, Chapters 1, 2.

Assignment: Bring three images to class: one which symbolizes "nature," another one which symbolizes "city," and a third one which symbolizes "rural" or "agriculture."

Watch: Avatar

Week 2 (January 22)
Ideas about Nature and Cities — Part II

Colonialism and the rise of the modern view of nature. Nature, cities, and the scientific revolution. Descartes, Bacon, and nature as machine.

> Coates (1998). Nature Chapters 3, 4, 5.
> Harvey, D. (1974). Population Resources and the Ideology of Science. Economic Geography 50 (3): 256-277.
> Spence, M. D. (1999). Dispossessing the wilderness: Indian removal and the making of the national parks. New York: Oxford University Press. Intro, Chapters 1-2.
> Masco, J. (2004): Mutant Ecologies. Cultural Anthropology 19 (4): 517—550.

Merchant, C. (1980). The Death of Nature: Women, ecology and the scientific revolution. San Francisco: Harper & Row.
Pepper, D. (1984). Roots of Modern Environmentalism. Chapter 2, 3.

Week 3 (January 29)
Ideas about Nature and Cities — Part III
Due: Oral proposal (5 min. per student) and annotated bibliography

Invited lecturer: Susannah Sayler or Edward Morris, who are visually documenting/interpreting the effects of climate change in diverse ecologies, including Amazonia. https://www.sayler-morris.com/ Exact date to be determined

The rise and evolution of environmentalism. The environment in our everyday life, architectural design, urban design, and popular culture.

Balogh, B. (2002). Scientific forestry and the roots of the modern American state — Gifford Pinchot's path to progressive reform. Environmental History (2): 198-225.
Coates (1998). Nature Chapters 6, 7 & 9.
Davis, M. (2001). Late Victorian holocausts: El Niño famines and the making of the third world. London: Verso. Chapters 5, 6.
Light, J. (2009). The Nature of Cities. Chapter 1.
Rees, W. (2002). An Ecological Economics Perspective on Sustainability and Prospects for Ending Poverty. Population and Environment 24 (1): 16-46.

Watch:
De Grey, A. (2014). BBC interview: https://www.youtube.com/watch?v=BsR7L5nnmFY
Drexler, E. (2013). TED talk: https://www.youtube.com/watch?v=6S3Dn8Oqu1M
Kurzweil, R. (2013). CTT interview: https://www.youtube.com/watch?v=DCbpapq_vRI

Week 4 (February 5)
Political Economy, Political Ecology, Extraction, and the Rise of China
Cities: Serra do Navio, Lago Agrio, Pucallpa.

Invited lecturer: Susannah Sayler or Edward Morris, who are visually documenting/interpreting the effects of climate change in diverse ecologies, including Amazonia. https://www.sayler-morris.com/ Exact date to be determined

This week we will plunge into the particular issues posed by urban growth in Amazonia, where the majority of the population lives in cities. Urbanization in tropical America has taken place, since the Conquest, through a series of historical interventions that have attempted to transplant urban and agricultural models developed for temperate areas to the tropics. Periods of intense urbanization have corresponded to extraction booms or state-driven occupation (whether colonial or national), or both. Currently, the rise of China and its demand for raw materials and agricultural products, particularly soy beans, is driving a new wave of boom economies and the often-unstable urbanisms that accompany them. It will be important to place this discussion in the context of climate change, for deforestation in the tropics can release carbon dioxide in quantities that compete with the vehicular park of the global north. Issues of social and environmental justice will also be central to this discussion: how are the globalization of the economy, and the commodification of nature and culture, related to environmental and social justice?

Ceballos et al. (2015). Accelerated modern human—induced species losses: Entering the sixth mass

extinction. Science Advances, 1 (5).
How China Plans to Feed 1.4 Billion Growing Appetites
https://www.nationalgeographic.com/magazine/2018/02/feeding-china-growing-appetite-
food-industry-agriculture/?beta=true?utm_source=NatGeocom&utm_medium=Email&utm_
content=wildscience_20180212&utm_campaign=Content&utm_rd=693974883
Burchardt, H. J., & Dietz, K. (2014). (Neo-)extractivism—a new challenge for development theory from
Latin America. Third World Quarterly, 35 (3), 468-486.
Hecht, S. & Oliveira, G. (2016). Sacred groves, sacrifice zones and soy production: globalization,
intensification and neo-nature in South America.
Putzel, L., Padoch, C., & Pinedo-Vasquez, M. (2008). The Chinese timber trade and the logging of
Peruvian Amazonia. Conservation Biology, 22 (6), 1659-1661.
IPCC 5th Assessment (Executive Summary). Available on-line.
Speth, J. G. (2008). The Bridge at the end of the World. Chapters 3, 5, 6.

Watch:
Yasuní ITT, a Post Oil Initiative, infographic film by Santiago del Hierro, https://www.youtube.com/
watch?v=2wupxTj7534
Crude, by Joe Berlinger, https://www.youtube.com/watch?v=fB9jQryg6aQ

Week 5 (February 12) — STUDIO TRAVEL WEEK
Favelization of the Amazon River basin
Cities: Rolim de Moura, Carajás, Parauapebas, Marabá, Shushufindi, Coca.

Approximately seventy percent of contemporary urbanization in the Amazon is "informal" in nature;
therefore, our class lecture and discussion will focus on developing the concepts of "formal" and
"informal," as well as "peri-urban." We will try to understand the forces behind current socio-spatial
configurations in South America in general and the Amazon in particular, taking into account that
dichotomies such as "rural" and "urban;" "natural" and "artificial;" "formal" and "informal;" "forest" and
"field" segregate phenomena that are intricately intertwined and interrelated. The notion of "remittance
urbanisms" and an understanding of migration flows at a global scale will be central to this discussion.

Davis, M. (2006). Planet of slums. New Perspectives Quarterly, 23(2), 6-11. Chapter 1: The Urban
Climacteric and Chapter 2: The Prevalence of Slums
Godfrey, B. J., & Browder, J. O. (1996). Disarticulated urbanization in the Brazilian Amazon.
Geographical Review, 86(3), 441-445.
Kimerling, J. (1991). Amazon Crude. Natural Resource Defense. Introduction.
Kimerling, J. (2015). Habitat as human rights: Indigenous Huaorani in the Amazon Rainforest, oil, and
Ome Yasuni. Vt. L. Rev., 40, 445.
Padoch, C., Brondizio, E., Costa, S., Pinedo-Vasquez, M., Sears, R. R., & Siqueira, A. (2008). Urban
forest and rural cities: multi-sited households, consumption patterns, and forest resources in
Amazonia. Ecology and Society, 13(2).
Pinedo-Vásquez, M., & Padoch, C. (2009). Urban and rural and in-between: Multi-sited households,
mobility and resource management in the Amazon floodplain. Mobility and migration in
indigenous Amazonia: Contemporary ethnoecological perspectives, 11, 86-96.
Doherty, B and Doyle, T. (2006). Beyond Borders: Transnational Politics, social movements and
modern environmentalism. Environmental Politics 15(5): 697-712.

Watch:
When Two Worlds Collide, by Heidi Brandenburg and Matthew Orzel.
Trash, by Christian Duurvoort and Stephen Daldry

Week 6 (February 19)
The Archaeology of Amazonian Urbanism — Lessons from the Deep Past
Cities: Arawak settlements, Kuhikugu, Huaorani settlements, Yanomamo settlements, Llanos de Mojos, other settlements documented by archaeology or ethnography.

This seminar must take into account the magnitude and character of pre-colonial settlements in the Amazon, a field of study that is being understood with greater clarity by archeology, as satellite imagery and remote sensing (Lidar, spectral footprints) unveil the extent to which the Amazon basin was intervened by human cultures before the arrival of the Europeans. A survey of pre-Hispanic settlements and agricultural/resource management practices (terra preta do indio, agroforestry, elevated fields, fish weirs, etc.) is critical to any future projection of the Amazon, for ancestral technologies were developed within the logic of the forest as a productive habitat, and may provide models capable of merging development with sustainability.

Hecht, S. B., & Cockburn, A. (2010). The fate of the forest: developers, destroyers, and defenders of the Amazon. University of Chicago Press. Chapter 3: The Heritage of Fire.
Kern, D. C., D'aquino, G., Rodrigues, T. E., Frazao, F. J. L., Sombroek, W., Myers, T. P., & Neves, E. G. (2003). Distribution of Amazonian dark earths in the Brazilian Amazon. In Amazonian Dark Earths (pp. 51-75). Springer, Dordrecht.
Levis, C., Costa, F. R., Bongers, F., Peña-Claros, M., Clement, C. R., Junqueira, A. B., ... & Castilho, C. V. (2017). Persistent effects of pre-Columbian plant domestication on Amazonian forest composition. Science, 355(6328), 925-931.
Mann, C. C. (2005). 1491: New revelations of the Americas before Columbus. Alfred a Knopf Incorporated. Preface, Chapter 1: A view From Above, Chapter 9: Amazonia, and Chapter 10: The Artificial Wilderness.

Watch:
The Secret of El Dorado by BBC.
The Lost City of Z by James Gray.

Week 7 (February 26)
Colonialism of Extraction and Catholic Missions
Cities: Iquitos: The Floating City, Bora Bora settlements, Belém do Pará, Manaus, Jesuit reductions, Llanos de Mojos.

Different European groups colonized the Americas in different ways. We will focus on analyzing two models that were central to Western occupation of Latin America: the Portuguese forts, ports, border towns and aviamentos; as well as the Laws of Indies and the encomiendas/obrajes laid out by the Spanish crown to appropriate land, labor and resources, as well as manage extraction nodes in the territories it controlled. We will marginally look at colonization models laid out by the French, the Dutch, and the English, since they occupied lands in North Eastern South America and the Caribbean. In this seminal process of Western colonization lies the root of the dual spatiality that characterizes cities and hinterlands in the region to this day.

Mann, C. C. (2011). 1493: Uncovering the new world Columbus created. Vintage. Prologue; Chapter 1: Two Monuments; Chapter 4: Shiploads of Money; Chapter 5: Lovesick Grass, Foreign Tubers, and Jade Rice.
Smith, R. C. (1955). Colonial Towns of Spanish and Portuguese America. Journal of the Society of Architectural Historians, 14(4), 3-12.

Watch: Aguirre — The Wrath of God by Werner Herzog.

Week 8 (March 4) - MID-TERM WEEK
African imprints: Quilombos, Mocambos, Palenques and the Urbanisms of Freedom
Cities/Settlements: Palmares, list of Amazonian quilombos will be provided.

The contribution of African models to the reshaping of the Americas cannot be underestimated, least of all in Amazonia, whose forests provided a space for freedom where run-away slaves who escaped from their bonds in coastal cities intermingled with native Amazonians in a unique process of miscegenation, which is expressed as novel spatiality in the quilombos and mocambos of the jungle.

Hecht, S. B. (2013). The Scramble for the Amazon and the" Lost Paradise" of Euclides da Cunha. University of Chicago Press. Chapter 4: A Quilombo called Canudos.
Hecht, S., & Mann, C. C. (2012). Where slaves ruled. National Geographic, 221④, 123-139. https://www.nationalgeographic.com/magazine/2012/04/maroon-people/
Mann, C. C. (2011). 1493: Uncovering the new world Columbus created. Vintage. Chapter 9: Forest of Fugitives, Chapter 8: Crazy Soup.
Llosa, M. V. (2008). The War of the End of the World. Macmillan.
Da Cunha, E. (2010). Rebellion in the Backlands. University of Chicago Press.

Week 9 (March 25) - Paper Draft is due
The Rubber Boom Regional System
Cities/infrastructures: Belem do Pará, Manaos, Iquitos, Santarém, Porto Velho, the Madeira-Mamoré railway

The rubber boom decanted in the most solid urban network of Amazonia since pre-Colonial times, and it was marked by a human catastrophe in the regional hinterlands. Small pox and other diseases introduced by the Europeans had decimated pre-colonial populations in the region. The rubber boom truncated their recovery by exploiting indigenous labor.
Even though the urbanisms structured around the highway networks of Modernity have established new constellations where small and intermediate cities play a central role, the rubber regional network of primate cities (Iquitos, Manaus, Santarém, Belém do Pará, Porto Velho), intermediate entrepôts, and extraction trails with collection points still composes the primary structure of the riverine urban system, and the relationship between rubber boom cities and their regional hinterlands is still active. For two weeks, we will analyze how the rubber extraction network came into being and the shape it took at multiple scales.

Hecht, S. B., & Cockburn, A. (2010). The fate of the forest: developers, destroyers, and defenders of the Amazon. University of Chicago Press. Chapter 5: Magnates in the Amazon: Between Boom and War.
Hecht, S. B. (2013). The Scramble for the Amazon and the" Lost Paradise" of Euclides da Cunha. University of Chicago Press. Chapter 19: Maps, Texts, and History
Mann, C. C. (2011). 1493: Uncovering the new world Columbus created. Vintage. Chapter 7: Black Gold
Casement, R. (1997). The Amazon Journal of Roger Casement. Anaconda Editions.
Llosa, M. V. (2012). The Dream of the Celt: A Novel. Farrar, Straus and Giroux.

Watch: Fitzcarraldo by Werner Herzog.

Week 10 (April 1)
The Rubber Boom Regional System

After endemic Hevea Brasiliensis (latex) was bio-pirated towards Asia, and plantations prospered devoid of natural pests across the Pacific, the rubber boom urban system collapsed. The glory of rubber barons like Arana and Fitzcarraldo faded under the patina that covers boom towns during ghastly phases of unintentional de-growth. A second rubber boom, much weaker than the first, was to revisit the Amazon during the II World War, when the tensions between Japan and the US, led the latter to reestablish latex trade for its war industry with Brazil. Fordlandia resulted from these efforts. This week we will study the city in detail and analyze the causes for its downfall.

> Bowman, I. (1913). Geographical Aspects of the New Madeira-Mamore Railroad. Bulletin of the American Geographical Society, 45④, 275-281.
> Eimer, T. R. (2020). What if the subaltern speaks? Traditional knowledge policies in Brazil and India. Third World Quarterly, 41①, 96-112.
> Grandin, G. (2009). Fordlandia: the rise and fall of Henry Ford's forgotten jungle city. Macmillan. Chapters 1, 10, 12, 13 & 17.
> Neeleman, G., Neeleman, R., & Davis, W. (2013). Tracks in the Amazon: The day-to-day life of the workers on the Madeira-Mamoré Railroad. University of Utah Press. Introduction, Chapter 1: George Earl Church, Chapter 2: White Gold, and Chapter 3: Porto Velho
> Vargas Llosa, M. (1973, 1978). Captain Pantoja and the Special Services. Harper & Row, Publishers, Inc.

Watch: Embrace of the Serpent by Ciro Guerra

Suggested Artist: Humboldt's Diary, Fabiano Kueva

Week 11 (April 8)
A History of Scientific Narratives, the Modern City and Developmentalism in Amazonia
Cities and infrastructures: The Trans-Amazonian highway and its urban network; the Ecuadorean oil axis; the Pucallpa constellation; other highway networks; border towns; Cargill's infrastructure in Amazonia.

Invited lecturer: Judith Kimerling, environmental and human rights lawyer, professor of law at CUNY, author of Amazon Crude and other pivotal writings on Ecuadorian environmental history and justice.

This week we will study Brazilian desarrollismo and modernism, as well as its geopolitical pursuit of integration and colonization of Amazonia under the leadership of a Cold War military dictatorship which supported rational planning. We will briefly discuss the Brazilian seeds of this brand of regional development as they were planted in Pombal´s era, within the framework of positivism. We will also analyze its contemporary inheritor: IIRSA-COSIPLAN, a continental integration project developed by the IDB, a prime example of "financial planning." The latter extends the modern Brazilian impulse to integrate and nationalize its interior to the totality of the South American continent. It is a project of infrastructural integration whose main aim is to link ports in the Pacific to agri-business (particularly the soy complex), mining and fossil fuel distribution nodes. The necessity to trace and build bi-oceanic corridors grew as China became the main commercial partner of Brazil and most other nations in South America. We will become acquainted with Brazilian modes of planning and their precedents by discussing the Garden City, Modernism, Urbanismo Rural, Company Towns, and conceptualization of infrastructures as mono-functional, neutral and conducive to development.

> Hecht, S. B., & Cockburn, A. (2010). The fate of the forest: developers, destroyers, and defenders of the Amazon. University of Chicago Press. Chapter 6: The General´s Blueprint and Chapter 7: The Furies Unleashed.
> Browder, J. O., & Godfrey, B. J. (1997). Rainforest cities: Urbanization, development, and globalization of the Brazilian Amazon. Columbia University Press. Chapter 3: Geopolitics, Regional

Development, and Urbanization: Historical Dynamics of Amazon Frontier Expansion.
Correa, F. (2016). Beyond the City: Resource Extraction Urbanism in South America. University of Texas Press. Introduction and chapter on Vila Piloto.
Rego, R. L. (2017). Shaping an urban Amazonia:'a planner's nightmare'. Planning Perspectives, 32②, 249-270.

Watch: The Salt of the Earth by Juliano Ribeiro Salgado and Wim Wenders.

Suggested Artist: Sebastião Salgado

Week 12 (April 15)
Contemporary Paradigms of Design, the Future and Indigenous Knowledge

Cities throughout the world aspire to become more sustainable. How are they achieving such a lofty goal; through which specific strategies? Which are the theories behind "urban sustainability?" Can cities be designed to be more sustainable in the midst of a general disregard for what is happening in the hinterlands? What is a blue-green infrastructure and which are the governance systems and legal frameworks that make its design and implementation feasible? What can we learn from ethnography and archaeology in the specific case of urban Amazonia and its future projection?

Llosa, Mario Vargas. The Storyteller: A Novel. Macmillan, 2001.

Watch:
The Biggest Little Farm, documentary by Molly and John Chester.
First Contact: Lost Tribe of the Amazon

Suggested Artists: Juan Downey and Alfredo Jaar

Week 13 (April 22) — Final Presentations

Indigenous Communes and Reservas Extrativistas

After having studied colonial, republican, modernist, and informal models of urbanization in Amazonia, we will focus on the notion of hybrid models and the value of the commune. Both indigenous communes, highly adapted to contemporary times, and Brazilian Reservas Extrativistas, provide alternate, working settlement modes in Amazonia. Do they hold keys to its future sustainability? We will wrap up the week and the seminar with the question: How would you design architecture or the city in Amazonia? Does your response to this question alter in any way the response you would provide for the general question: How would you design architecture and the city?

Durán Calisto, A.M. (2019, Feb. 5). For the Persistence of the Indigenous Commune in Amazonia. E-flux Architecture / Overgrowth. Retrieved from https://www.eflux.com/architecture/overgrowth/221618/for-the-persistence-of-the-indigenouscommune-in-amazonia/

Watch: The Killing of Chico Mendes by Adrian Cowell.

Week 16 — FINAL REVIEWS / Week 17 (May 6)
Final Paper due on May 6 at midnight / Final Presentations

Syllabus: ARCH 3232 Politics of Space 2019

Faculty: Mary McLeod

Overview

This seminar explores the relation between space, power, and politics in the urban environment from the Enlightenment period to the present. In contrast to some Marxist approaches that see architecture primarily as an ideological reflection of dominant economic forces, this seminar investigates how power is actually produced and embodied in the physical environment. In other words, space and architecture are seen as active participants in the structuring of our daily lives and relations, not merely as passive reflections of political and economic institutions. Two theorists will be critical to this exploration: the philosopher and sociologist Henri Lefebvre and the philosopher/historian Michel Foucault. Lefebvre's work, which draws heavily on both Marxism (especially Marx's early writings on alienation) and existentialism, introduced the notion of daily life as a critical political construct. Lefebvre saw the city and architecture as integrally contributing to power relations, and viewed the urban festival as an important strategy in overcoming the monotony of what he called "the bureaucratic society of controlled consumption." Foucault, on the other hand, rejects Lefebvre's humanism and emphasis on subjectivity in his analysis of the relation between space, power, and social institutions. Both theorists, however, share a skepticism towards Enlightenment rationality, and both attempt to counter the traditional Marxist/Hegelian emphasis on historical time by placing a new importance on space. The writings of more recent theorists (such as Marshall Berman, Michel de Certeau, Teresa Caldeira, Mike Davis, Guy Debord, Andreas Huyssen, Rem Koolhaas, Elizabeth Wilson, and Douglas Spencer) will also be examined with regard to issues concerning the politics of space.

Course Objectives

1. Develop a general understanding of the general theories and schools of thought with respect to space, power, and politics within the urban environment.
2. Utilize this understanding to analyze various case studies of urban spaces throughout history.

Assessment Breakdown

Participation/Presentations	15%
Short Essays (2)	50%
Long Essay	35%

Class Organization

The first three sessions of the class will be devoted to a general theoretical introduction. The following ten classes will examine specific aspects of the urban environment—institutions, public/private dichotomies, urban monuments, events—to consider the relation between space and power in actual situations. These case studies will be roughly chronological, moving from those institutions that gained identity in the eighteenth century—prisons, asylums, clinics—to contemporary situations of spectacle and consumption. The final class will be devoted to contemporary debates about urban development.

Course Requirements

The class will be organized somewhat like a reading/study group. All assigned readings are to be completed before class. In addition, each student will be asked to lead the discussion of approximately three or four readings in the course of the term (these can be very short, 5-10 minute, presentations). The written requirements include two short essays approximately 3 typed pages, on themes raised by the readings, as well as one longer essay/paper, approximately 5-8 typed pages. This essay can either be an extended book review (critical rather than descriptive comparative reviews are generally easier in this regard) or else a research essay exploring a theme, space, or institution suggested by the readings. A version of this paper is to be given to the instructor ideally before a related class presentation. A final version of this paper incorporating revisions is due at the end of the semester.

Seminar Topics

1. Space/Power: Introduction
2. The Politics of Everyday Life: Lefebvre
3. The Production of Space
4. The Clinic/the Asylum/the Enlightenment City of Control
5. Prisons
6. The Public and Private Spheres: "The Fall of Public Man"
7. Monument and Memory
8. Spectacle and Its Critique: Debord and the Situationists, Cedric Price
9. Massculture, Women, and the City of Everyday Life
10. Fortress Cities: Los Angeles and Sao Paulo
11. Spectacle and Entertainment: Las Vegas and Times Square
12. Case Study: Rem Koolhaas's Urbanism: Delirium, Sobriety, Cynicism
13. Architecture and Neo-Liberalism: Hudson Yards and Other Case Studies

Syllabus: ARCH 3239 Launch: Architecture/Entrepreneurialism 2018

Faculty: Keller Easterling

Overview

Launch studies the designer as activist, agent and entrepreneur. The seminar argues that entrepreneurial practices can renovate architectural practice, but it also argues that prevailing models of the entrepreneur need to be renovated to consider spatial variables and urban strategies.

The aesthetic practices of the architect are often entirely different from that of the entrepreneur. While the architect frequently wishes to make a singular, autonomous, object as expression of self or client, the entrepreneur wants to introduce into culture multiple objects and aesthetic regimes. This kind of agency measures its progress by how environments are reconditioned with active forms and population effects. The architecture profession is under-rehearsed in these artistic practices.

But this kind of architectural agency might also renovate some stubborn cultural clichés related to entrepreneurialism in general. Within the architecture profession, one default assumption is that an alternative role for the architect is that of a developer. But in a broader culture, there are other defaults related to startup culture. "Entrepreneur" is associated with products or intellectual properties. Digital devices are also treated as a primary medium of innovation. But there are many urban strategies, spatial variables and other innovations to space that not only restructure architectural practice but also introduce another sort of spatial invention in culture. Even at a moment of digital ubiquity, the seminar will consider space itself as an underexploited medium of information and innovation with special aesthetic and political capacities.

As crucial as designing a good idea is designing the advent of that idea—the introduction of the idea into culture. The Launch seminar has been organized differently over the years. Sometimes it has moved slowly toward individual projects, but that sequence allows for little time to rehearse ways in which the idea might gain traction in culture. Last year the entire group worked on one project in order to be able to rehearse its presentation to many audiences, get press attention and go to the next level of support. This year, groups of 3 or 4 will work within 4 general areas that resist the usual clichés of entrepreneurialism. The four areas are Land Use, Health, Energy/Environment, and Mobility, but a project may incorporate more than one category. Each group has the option of working independently or contributing a new idea to an existing project. This way project can take advantage of and learn from existing launching networks and incubators. This year the seminar is teaming up with Origami Innovations https://origamiinnovations.com/, and a Yale consortium working on issues of mobility. But if possible additional groups may be engaged to team up with individual projects.

Class Organization

To apply to the seminar, please write a note about: an idea you are working on or a desire to work within one of the options above.

Soon after the first meeting, projects will share their bibliography for inclusion in the article compendiums.

Grading Criteria

Class reading presentation	20%
Class participation	20%
Final Presentation	30%
Final Paper (OpEd)	30%

Course Objectives

1. Study the designer in atypical roles that move beyond the bounds of standard architectural practice, and speculate on how architectural practice could adapt to take advantage of these new roles.
2. Understanding space as a medium of information and innovation, reconcile the seemingly incompatible roles of the architect and the entrepreneur.

Assessment Breakdown

Attendance/Participation	15%
Group Assignments	20%
Midterm Research Proposal	25%
Final Paper/Vlog Post	40%

Schedule and Bibliography

Week 1 (January 18)
Introduction: IIRS

> "Lifetime earnings of architects [are not only] below those of lawyers and physicians [but also] below those of university teachers and engineers involved in construction."
> —Robert Gutman, Architectural Practice: A Critical View, 78.

> "Making money is art and working is art and good business is the best art."—Andy Warhol
> "I consider it unlikely that architecture and planning will match the contribution HushPuppies have made to society today, let alone approach that of the transistor or loop, until a total reappraisal of its particular expertise is self-imposed, or inflicted from outside."
> —Cedric Price

> "What, in the end, makes advertising so superior to criticism? Not what the moving red neon says—but the fiery pool reflecting it in the asphalt."
> —Walter Benjamin

This term a longer introductory lecture covers material usually covered in the introduction and first three weeks of class. The first part of the lecture explores the distinction between entrepreneurialism and the self-construction of career. Beyond the pursuit of signature styles, celebrity, and client mimicry, are the roles of inventor, producer, and activist.

Keller Easterling, "Launch" Perspecta 47 (Cambridge: MIT Press, 2013).
Keller Easterling, IIRS, e-flux, April 2015. http://www.e-flux.com/journal/64/60837/iirs/
Beatriz Colomina "Publicity," in Privacy and Publicity (Cambridge: MIT Press, 1994), 140-195.
Mary N. Woods, From Craft to Profession: The Practice of Architecture in Nineteenth-Century America (University of California Press, 1999), 167-180.
Reyner Banham, "1960—Stocktaking," and "Design by Choice" reprinted in A Critic Writes, University of California Press: Los Angeles, 1996, 67-78.
Andrew Saint, The Image of the Architect (New Haven: Yale University Press, 1983), 72-95.
Jencks, Charles and Silver, Nathan, "Consumer Democracy," in Adhocism: The Case for   Improvisation (New York: Doubleday, 1972), 55-87.

Week 2 (January 25)
Working Session: Land Use

Article Compendium:

Clarence Stein, Toward New Towns for America (Cambridge: MIT Press, 1973), 18-73.
Keller Easterling, Organization Space: Landscape, Highways and Houses in America (Cambridge: MIT Press, 2001), 36-74.
Keller Easterling, IIRS, e-flux, April 2015. http://www.e-flux.com/journal/64/60837/iirs/
Jesse Keenan, "Rising Seas, Distressed Communities, and 'Climate Gentrification," http://www.gsd.harvard.edu/2017/08/rising-seas-distressed-communities-and-climate-gentrification-jesse-m-keenan-talks-miami-in-vice-scientific-american/
Erika Bolstad, "High Ground is Becoming Hot Property as Sea Level Rises," Scientific American, May 1, 2017. https://www.scientificamerican.com/article/high-ground-is-becoming-hot-property-as-sea-level-rises/
Keller Easterling, "Interplay," Wet Matters, Harvard Design Magazine, No. 39 F/W 2014, 136-7.

Keller Easterling, IIRS, e-flux, April 2015. http://www.e-flux.com/journal/64/60837/iirs/
https://www.nytimes.com/2017/07/23/nyregion/farmers-long-island-lawns.html
https://lawnislandfarms.com/

Recommended:

Reyner Banham, "1960—Stocktaking," and "Design by Choice" reprinted in A Critic Writes,
    University of California Press: Los Angeles, 1996, 67-78.
Rem Koolhaas et. al. "Atlanta," (John Portman) in S,M,L,LX (New York: Monacelli Press, 1995), 833-859.
Housing for the Millions: John Habraken and the SAR 1960-2000 (Rotterdam: NAi Publishers, 2000), 87-
    142.
Thomas J. Schlereth, "Burnham's Plan and Moody's Manual: City Planning as Progressive Reform" in
    Donald A. Krueckeberg, The American Planner: Biographies and Recollections (New York: Methuen,
    1983), 75-100.
Reyner Banham, Klarheit, Ehrlichkeit, Einfachkeit...and Wit too!" in Blueprints for Modern Living: History
    and Legacy of the Case Study Houses (Cambridge: MIT Press, 1989), 182-195.

Week 3 (February 1)
Working Session: Health
Guest: Matthew Erlendson

Article Compendium:

Deane Alan Simpson, Young-Old: Urban Utopias of an Aging Society (Lars Muller, 2015). Entire book.
Matthias Hollwich and Bruce Mau Design, New Aging: Live Smarter Now to Live Better Forever (Penguin,
    2016).
Michael Bauer, "Health, Transportation, and the Community-Built Environment," in Alan Berger, Joel
    Kotkin with Celina Balderas Guzman, eds., Infinite Suburbia (Princeton Architectural Press, 2017),
    280-289.
Bridget Catlin, "Health Advantages in Suburbs," in Alan Berger, Joel Kotkin with Celina Balderas
    Guzman, eds., Infinite Suburbia (Princeton Architectural Press, 2017), 290-289.
"Trump Succeeds Where Health is Failing," Economist, November 21, 2016. https://www.economist.com/
    blogs/graphicdetail/2016/11/daily-chart-13; and "Communities Most Affected by Opiod Epidemic
    Also Voted for Trump," December 17, 2016. https://www.npr.org/2016/12/17/505965420/study-
    communities-most-affected-by-opioid-epidemic-also-voted-for-trump
Sally McGrane, "Commuters Pedal to World on Their Very Own Superhighway," New York Times, July 17,
    2012.

Week 4 (February 8)
Working Session: Mobility and Migration

Article Compendium:

Raj Chetty, Nathanial Hendren, Patrick Kline, Emmanual Saez, "Where is the Land of Opportunity? The
    Geography of Intergenerational Mobility in the United States. http://www.equality-of-opportunity.
    org/assets/documents/mobility_geo.pdf
"In Climbing Income Ladder, Location Matters," NYT, July 22, 2013, http://www.nytimes.
    com/2013/07/22/business/in-climbing-income-ladder-location-matters.html?pagewanted=all
Indexing related to location: http://htaindex.org/about/
http://www.locationaffordability.info/
Suzanne Hall, City, Street and Citizen (London: Routledge, 2012).

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Appendix

Syllabi

Agier, Michel, Managing the Undesirables: Refugee Camp and Humanitarian Government (UK Cambridge: Polity Press, 2011).
Reece Jones, Refugees and the Right to Move (London: Verso, 2016).
Keller Easterling, "The One, the Binary, the One-to-One, and the Many in After Belonging: Objects, Spaces, and Territories of the Ways We Stay in Transit, Lars Muller, 2016; http://oslotriennale.no/en/tors

Week 5 (February 15)
Travel Week

Week 6 (Febrary 22)
Working Session: Energy/Environment

Article Compendium:

Matthew Huber, Lifeblood: Oil, Freedom and the Forces of Capital (University of Minnesota, 2014).
Mazen Labban, Space, Oil and Capital (New York: Routledge, 2008).
http://www.rmi.org/Transportation (all reports)
Hawken, Paul, Amory B. Lovins, and Hunter Lovins. Natural Capitalism: Creating the Next Industrial Revolution. Boston: Little, Brown and Co., 1999, 22-47.
Easterling, "Switch," e-flux, http://www.e-flux.com/architecture/positions/151186/switch/
Katie Fehrenbacher , Future Cities Could Run On Shared Fleets of Electric Self-Driving Cars (Fortune, 11 October 2016) http://fortune.com/2016/10/11/shared-electric-self-driving- cars/?iid=leftrail
Myriam Alexander-Kearns, Miranda Peterson, and Alison Cassady The Impact of Vehicle Automation on Carbon Emissions (Center for American Progress, 18 November 2016) https://www.americanprogress.org/issues/green/reports/2016/11/18/292588/the-impact-

Week 7 (March 1)
Presentation Design Proposals

Week 8 (March 8)
Midterm. Project Tutorials

Week 9 (March 29)
Project Specific Readings

Week 10 (April 5)
Presentations

Week 11 (April 12)
Presentations

Week 12 (April 19)
Presentations

Week 13 (April 26)
Presentations

Reference

General

Michelle Addington and Daniel Schodek, Smart Materials and Technologies: for the architecture and design professions (New York: Elsevier, 2005).

Hugh Aldersey-Williams, et. Al. Design and the Elastic Mind (New York: MoMA, 2007).

Ivan Amato, Stuff: The Materials the World Is Made Of. New York, NY: Basic Books, 1997.

Ball, Philip. Made to Measure: New Materials for the 21st Century. Princeton, NJ: Princeton University Press, 1999.

Reyner Banham, A Critic Writes (University of California Press: Los Angeles, 1996), 109-119.

Reyner Banham, "The Great Gizmo" Design 12, 1965. reprinted in A Critic Writes, (University of California Press: Los Angeles, 1996), 109-119.

Abhijit V. Banerjee, Making Aid Work, Boston Review Book. Cambridge, Mass.: MIT Press, 2007. (Book on reserve)

Abhijit V. Banerjee and Esther Duflo, Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty (New York: Public Affairs Books, 2011).

Design for the Other 90% (Smithsonian/Cooper Hewitt, 2007).

Janine M. Benyus, Biomimicry (First Quill Editions, 1998).

Bernard Cache, "Territorial Image" in Earth Moves: The furnishing of Territories (Cambridge: MIT Press, 1995), 6-19.

Dana Cuff, Architecture: The Story of Practice (Cambridge: MIT Press, 1981).

Keller Easterling, Call it Home. Laserdisc.

Dubai | Dusseldorf: Exhibition Book Ed. Kunstverein für die Rheinlande und Westfalen

Eames Report http://www.jstor.org/discover/10.2307/1511408?uid=3739832&uid=2&uid=4&uid=3739256&sid=21103338544883

Fuller, R. Buckminster, Jerome Agel, and Quentin Fiore. I Seem to Be a Verb. New York: Bantam Books, 1970. (entire book on reserve)

Buckminster Fuller, The artifacts of R. Buckminster Fuller: a comprehensive collection of his designs and drawings, New York: Garland, 1985.

John Elkington and Pamela Hartigan, The Power of Unreasonable People: How Social Entrepreneurs Create Markets that Change the World (Boston: Harvard Business Press, 2008), 29-82.

Alexander T. Galloway, Protocol: How Control Exists after Decentralization (Cambridge: MIT Press, 2004), 146-172.

Ghosn, Rania, ed., New Geographies, 2: Landscapes of Energy, Harvard Graduate School of Design, 59-66 and 83-96.

Seth Godin, Unleashing the Idea Virus. New York: Do You Zoom, 2001.

Adam Greenfield, Everyware: The Dawning of Ubiquitous Computing (Berkeley: New Riders, 2006).

Robert Gutman, Architectural Practice: A Critical View (New York: PAP, 1988).

Paul Hawken, Amory B. Lovins, and Hunter Lovins. Natural Capitalism : Creating the Next Industrial Revolution. Boston: Little, Brown and Co., 1999.

Mark Hatch, The Maker Movement Manifesto: Rules for Innovation in the New World of Crafters, Hackers and Tinkerers (New York: McGraw Hill Education, 2013).

Dolores Hayden, "Model Houses for the Millions" also in Blueprints, 196-211.

Hawken, Paul, Amory B. Lovins, and Hunter Lovins. Natural Capitalism: Creating the Next Industrial Revolution. Boston: Little, Brown and Co., 1999, 22-47.

Ingels, Bjarke, and BIG Bjarke Ingels Group. Yes Is More : An Archicomic on Architectural Evolution. Köln: Evergreen, 2009.

Jencks, Charles and Silver, Nathan, "Consumer Democracy," in Adhocism: The Case for Improvisation (New York: Doubleday, 1972), 55-87.

Stephen Kieran and James Timberlake, Refabricating Architecture: How Manufacturing Methodologies are Poised to Transform Building Construction (New York: McGraw-Hill, 2004). (entire book)

Pat Kirkham, Charles and Ray Eames: Designers of the Twentieth Century (Cambridge, Mass: MIT Press, 1995)

Anna Klingmann, Brandscapes (Cambridge: MIT Press, 2007).

Papanek, Victor J. Design for the Real World; Human Ecology and Social Change. 1st American ed. New York: Pantheon Books, 1972, 215-247. (Book on reserve)

Pekka Korvenmaa, "Aalto and Finnish Industry" in Peter Reed ed., Alvar Aalto: Between Humanism and Materialism (New York: The Museum of Modern Art, New York, 2002), 70-94.

Spiro Kostof, The Architect (New York: Oxford University Press, 1977).

Latour, Bruno, and Vincent Antonin Lépinay. The Science of Passionate Interests : An Introduction to Gabriel Tarde's Economic Anthropology, Paradigm. Chicago: Prickly Paradigm Press : Distributed by the University of Chicago Press, 2009.

Andres Lepik, Small Scale Big Change: New Architectures of Social Engagement (MoMA, 2010).

Levitt, Steven D., and Stephen J. Dubner. Freakonomics : A Rogue Economist Explores the Hidden Side of Everything. New York, NY: William Morrow, 2006, 3-19.

Lupton, Ellen, and Cooper-Hewitt Museum. Inside Design Now : National Design Triennial. New York, N.Y.: Princeton Architectural Press, 2003, 185-6, 248-9. 144-5. (Book on reserve)

Benton MacKaye, "The New Exploration: Charting the Industrial Wilderness."

Roger L. Martin, "The Opposable Mind: How Successful Leaders Win Through Integrative Thinking" (Cambridge: Harvard Business School Press, 2007).

Bruce Mau, Institute without Boundaries, Massive Change (London: Phaidon Press, 2004), 15-19. (entire book on reserve) ttp://massivechange.com

McCarty, Cara, and Cooper-Hewitt Museum. Why Design Now? : National Design Triennial. New York: Cooper-Hewitt, National Design Museum, Smithsonian Institution, 2010.

Charles Mackay, Extraordinary Popular Delusions and the Madness of Crowds. Boston: L. C. Page & company, 1932, "Tulipomania."

MoMA, Home Delivery: Fabricating the Modern Dwelling (New York: MoMA, 2008).

John Neuhart, Eames design: the work of the office of Charles and Ray Eames (New York, HN Abrams, 1989).

Guy Nordenson, et. al. On the Water: Palisade Bay (The Museum of Modern Art, New York; 1 edition, April 30, 2010).

Solution 9: The Great Pyramid by Ingo Niermann & Jens Thiel

David Nye, "Energy Narratives," in Narratives and Spaces: Technology and the construction of American Culture (New York: Columbia University Press, 1997), 74-91.

Martin Pawley, Garbage Housing (New York: Wiley and Sons, 1975.

Petit, Emmanuel, ed. Philip Johnson: The Constancy of Change. New Haven: Yale University Press, 2009. (Book on reserve)

Perspecta 37 Famous. Entire journal on reserve.

Positioning Practice: The U.S. Pavilion for La Biennale di Venezia 11th International Architecture Exhibition: http://positioningpractice.us/

Jacques Rancière, The Politics of Aesthetics (London: Continuum, 2004), 7-45.

Rosen, Emanuel. The Anatomy of Buzz : How to Create Word-of-Mouth Marketing. 1st ed. New York: Doubleday/Currency, 2000.

Andrew Saint, The Image of the Architect (New Haven: Yale University Press, 1983).

Saskia Sassen, Expulsions: Brutality and Complexity in the Global Economy (Belknap Press, 2014).

William Saunders Ed. Reflections on Architectural Practices in the Nineties (New York: PAP, 1996).

Goran Schildt, Alvar Aalto: The Mature Years (New York: Rizzoli, 1991).

Felicity D. Scott, Architecture or Techno-utopia (MIT Press, 2007) 150-183.

Smithson, Alison and Peter. Without Rhetoric: An Architectural Aesthetic 1955-1972. Cambridge, Massachusetts: MIT Press, 1973.

Sterling, Bruce. Shaping Things. Cambridge, Mass.: MIT Press, 2005.
John Summerson, Georgian London (London: Pleiades Books, 1945), 160-173.
Carl Sussman, Planning the Fourth Migration: The Neglected Vision of the Regional Planning Association of America (Cambridge: MIT Press, 1976).
Solution 168-185: America by Tirdad Zolghadr
Gabriel Tarde and Elsie Worthington Clews Parsons. The Laws of Imitation. New York: H. Holt and Company, 1903. (Book on reserve)
Konrad Wachsmann, The Turning Point of Building: Structure and Design, New York: Reinhold Pub Co., 1961. (Book on reserve)

Articles

"The Patient Capitalist," The Economist, May 21, 2009.
Dell, Kristina. "The Promise and Pitfalls of Bioplastic." Time magazine, May 3, 2010.
Keller Easterling, "The Action is the Form: Victor Hugo's TED Talk," and/or Extrastatecraft: the Power of Infrastructure Space (Verso, 2014).
Evgeny Morozov, "Making it: Pick up a spot welder and join the revolution," The New Yorker, January 13, 2014.
Peter Collins, "The Future of Cars" Special Report, The Economist, April 19, 2013.
NY Times, "A Slow Ride Toward the Future of Public Transportation." November 4, 2016
Elisabeth Rosethal, Portugal Gives Itself a Clean-Energy Makeover, New York Times, August 9, 2010: Todd Woody, Recycling Land for Green Energy Ideas, The New York Times, August 11, 2010, B1; Bloombox

Links

https://a-d-o.com/
OSArc http://www.domusweb.it/en/op-ed/open-source-architecture-osarc-/
Kevin Kelly, Cool Tools, Self-published, December 2013.
http://kk.org/cooltools/about
http://www.pbs.org/wgbh/nova/tech/making-stuff.html
http://superflux.in/blog/nid-and-the-eames-report
http://observatory.designobserver.com/entry.html?entry=7277]
http://www.wikihouse.cc/
http://www.materialconnexion.com/
http://www.fastcodesign.com/1662168/introducing-ideos-new-column-patterns-affecting-business-and-design-today
http://www.fastcodesign.com/1662169/ideos-axioms-for-starting-disruptive-new-businesses
http://www.ted.com/ [Ambasz/Hoberman/TED Designers/]
http://www.inhabitat.com/
http://www.colbertnation.com/the-colbert-report-videos/226996/may-07-2009/mitchell-joachim
http://makezine.com/
http://senseable.mit.edu/
http://cityform.mit.edu/projects/urban-network-analysis.html
http://www.achimmenges.net/?cat=286
http://www.howtomakeanything.com/
Whole Earth Catalog,
http://www.wholeearth.com/index.php?gclid=CJDI_J6zrJUCFQrPGgodF0lykQ
http://massdesigngroup.org/team/michael-murphy/
http://www.ted.com/talks/lang/eng/esther_duflo_social_experiments_to_fight_poverty.html
http://extreme.stanford.edu/
http://www.superflux.in/blog/newnormal-revisited

http://www.superflux.in/blog/newnormal
http://www.ted.com/talks/lang/eng/esther_duflo_social_experiments_to_fight_poverty.html; and
    Ian Parker, Profiles, "The Poverty Lab," The New Yorker, May 17, 2010, p. 79

Additional Material Science Resources

azom.com
mrs.org
nisenet.org
www2.dupont.com/Kevlar/en_US
earthlife.net/chelicerata/silk.html
web.mit.edu/newsoffice/2009/virus-battery-0402.html
bpf.co.uk/plastipedia/plastics_history/default.aspx
philipball.co.uk/m02_01.php
biomimicryinstitute.org/home-page-content/home-page-content/
biomimicking-sharks.html

Social Entrepreneurs

The Center for Land Use Interpretation (CLUI), http://www.clui.org
The Center for Urban Pedagogy (CUP). http://anothercupdevelopment.org
Estudio Teddy Cruz (ETC), http://www.politicalequator.org
Design Corps, http://www.designcorps.org
Detroit Collaborative Design Center, http://architecture.udmercy.edu/dcdc.htm
Gans Studio, http://www.gans-studio.net
The Heidelberg Project, http://www.heidelberg.org
International Center for Urban Ecology (ICUE), http://www.shrinkingcities.com
Jonathan Kirschenfeld Associates, http://www.kirscharch.com
Project Row Houses, http://ww.projectrowhouses.org
Rebar, http://www.rebargroup.org
Rural Studio, heet://cadc.auburn.edu/soa/rural%2Dstudio/
Spatial Information Design Lab/Laura Kurgan, heep://www.spatialinformationdesignlab.org
Studio 804,http://www.studio804.com/
Smith and Others

Syllabus: ARCH 3240 Spatial Concepts of Japan 2020

Faculty: Yoko Kawai

Overview

The seminar explores the origins and developments of Japanese spatial concepts and surveys how they help form the contemporary architecture, ways of life, and cities of the country. The class is unique in offering non-Western perspectives of space and their contemporary application. It also aims to understand Japanese concepts not only as ethnic culture, but as potential contributing principals to respond to the universal issues we currently face, especially that of our mental and physical well-being.

Many Japanese spatial concepts, such as MA, are about time-space distances and ephemeral relationship between objects, people, space, and experiences. They are also sensuous/emotional from the first-person perspectives, rather than logical/intellectual from the third-person perspectives. The unique combination of these characteristics allows us to see and design the space in which the human body and mind are not objects but something that live with the space, inevitably connecting human-beings, architecture, landscape, and city.

Each class is designed around a few Japanese words that signify certain spatial concepts. Every week, a lecture is given on the words with its design features, background, historical examples, and contemporary application. This is accompanied by the discussion lead by assigned group of students.

Contemporary works studied include those by Maki, Isozaki, Ando, Ito, SANAA, and Fujimoto. The urbanism of Tokyo and Kyoto are discussed. Students also carry on independent researches on a topic of their choice as related to the theme of this course. This year, the class also starts building a novel bibliography on Japanese space and human body/mind.

Lectures are given asynchronously in early semester, and may be synchronously later. The discussions are synchronous by combining in-person and Zoom interactions.

Texts

I recommend you to purchase the following two text books, although all the required readings are available on the Course Reserve section on Canvas.

> Nishi, Kazuo; Hozumi, Kazuo; Horton, H. Mack. What is Japanese Architecture?: A Survey of Traditional Japanese Architecture. Kodansha International, 1996
> Isozaki, Arata, Japan-ness in Architecture, MIT Press, July 2006

Class Organization

Attendance and Participating Discussions

When a lecture is asynchronous, your attendance is confirmed by responding to quick quizzes. Participation to synchronous discussions either in-person or Zoom is desirable, and I will do my best to grade both approaches fairly. If either way of participation is difficult for a student, please talk to me.

Four study groups (about three student each) are formed at the beginning of semester both for group assignments and for supporting each other's learning.

Course Objectives

1. Become familiar with the Japanese concepts behind the generation of space, along with the cultural influences that have shaped those concepts, and the universal issues to which these concepts can be applied.
2. Explore the design of space through the lens of ephemeral, temporal, and emotional relationships. Expand on this exploration through a series of case studies and a research project.

Assessment Breakdown

Attendance/Participation	15%
Group Assignments	20%
Midterm Research Proposal	25%
Final Paper/Vlog Post	40%

Leading Discussions (Group Assignment)

The seminar involves intensive discussions of assigned readings. Each group is assigned to lead one discussion session. Before leading the discussion, the assigned group post a list of discussion questions on Canvas Discussion by 5 PM on Monday of the assigned week. Students are encouraged to respond/post their comments that will be counted as a part of their individual discussion participation. Also, all participating students are asked to familiarize themselves with the training resource by Poorve Center about leading a discussion online.

Bibliography Building (Group Assignment)

The class will build and share a novel bibliography on Japanese space and the human body/mind. At Class 6 (10/7), following the introduction by the research librarian, each group builds an annotated bibliography under the sub-theme or medium and share it on the Class Blog on Canvas. The process and the shared outcome are also useful for your individual term project described below. (The groups for this assignment may be different from study groups.)

Term project

A participating student also carries his/her own research project. A topic is up to your interests as long as it relates to Japanese space (or its concepts) and the human body/mind. It could be about particular architect's projects analyzed through your sensuous experience. It could be about one spatial concept's different human-space applications throughout the history of Japan. It could be about a series of mental/physical experience in a particular city in Japan. You could also look into works in Western countries when they were influenced by Japanese concept of space.

Your project is carried out in four stages and its products must be submitted in the form of a research paper:

1. Research proposal (due 9/25(Friday) followed by individual interviews with the instructor on 9/29(Tues), 9/30(Wed), &10/6(Tues)) — One-page statement plus preliminary bibliography. Explain the topic, its objective, its significance, and your approach to it. Upon the interview with the instructor, students might be asked to review and resubmit the proposals.
2. Mid-term blog post (due 10/26 (Mon) and its oral presentation for discussion (10/28 and 11/4) —You must present some findings/stories while they could still be hypotheses. Supporting materials of the findings are summarized, analyzed, and compared. Research issues and your schemes toward them must be described to be discussed in the class. Medium used in the blog post (texts, images, slides, or movies) are up to each student.
3. Final "pecha-kucha" presentation vlog post (due 11/30) to be discussed in the last class (12/2) — PechaKucha presentation focusing on the development after the previous one with more concrete findings.
4. Final Paper (due 12/18) — 15-20 pages in double space excluding images and bibliography.

15% -   Attendance and discussion participation
20% -   Leading discussion on assigned readings & Bibliography building (Group assignments)
25% -   Term project — research proposal and mid-term blog post
40% -   Term project — final presentation vlog post & final paper

Schedule and Bibliography

Week 1 (September 2)
Introduction. Wa & Ma

Explanation of Syllabus and Readings

Japan-ness & Japonism, Western perception, Universality, Complexity of Ma Land, People, Concept of time, Non Duality

> Nishida, Kitaro. "The Forms of Culture of the Classical Periods of East and West Seen from a Metaphysical Perspective" (pp.21-36), Sourcebook for Modern Japanese Philosophy: Selected Documents, Ed. David A. Dilworth, Valdo H. Vigliemo, and Augustin Jacinto Zavala, Westport: Greenwood Press.

Week 2 (September 9)
Himorogi & Yami

Shinto religion, Concept of how the land was formed (Koji-ki), Concept of sun and moon, Nature worship, Idea of sacred space, Idea of darkness (e.g. Ise Shrine, Nigatsu-do at Todai-ji Temple, Noh stage [Noh "Izutsu"], Maki, Ando, Isozaki, Kuma, Tajima, Taniguchi)

Book Discussion: On Japan-ness

> What is Japanese Architecture? Introduction p.7-11
> Japan-ness in Architecture.Ch.6. Ma and Rubble, pp.81-100
> Excerpts (: pp.1-5, pp.12-15, pp.18-27) from Introduction (pp.1-90) in Davis, Bret (ed.) Oxford Handbook of Japanese Philosophy
> Futagawa, The Roots of Japanese Architecture. pp.7-19, Forward by Noguchi
> What is Japanese Architecture?.p.12-13 Worship, p.40-42 Shinto Shrines, Common Shrine style, p.48 Neighborhood Shrine, p.16-17 the Great Eighth-century Temples, p.120-23 Staging the Noh Drama, the Structure of Noh Stage
> Wadsworth Atheneum Museum of Art, Exhibition brochure "Mika Tajima Matrix x 177 After Life" for the exhibition held between June 1 to September 3, 2017

Week 3 (September 16)
Hashi

Variation of edge conditions, Relationship between adjacent spaces including body (e.g. Izumo-taisha Shrine, Itsukushima Shrine, Ando, SANAA, Taniguchi, Isozaki)

Book Discussion (by Group 1): Sacredness and Time

> Japan-ness in Architecture. Ch.8, pp117-132
> Nitschke. Shinto to Ando. "Time is Money — Space is Money" pp.33-47 The Roots of Japanese Architecture. pp.21-36 Wood, Stone, Earth
> Katagiri. Each Moment is the Universe, Ch.1 the Naked Nature of Time (pp.3-5), Ch.12 Time, Space, and Being (pp. 72-75), Ch.13 the Pivot of Nothingness (pp. 76-79)
> What is Japanese Architecture? p.16-17, p.64-65 Shinden Style, p.18-19 Architecture of Pure Land Sect
> Japan-ness in Architecture. Ch.9-10, pp133-158

Week 4 (September 23)
Uturoi, Hare-to-Ke, & Hakanai

Space with many faces on different seasons and occasions, Design elements which make the variation possible, changing body and life (e.g Shinden-zukuri, Tale of Genji, Sakutei-ki (Book of Japanese Garden), Itoh, SANNA, Isozaki, ZO)

Book Discussion (by Group 2): Ambiguity and Transitoriness

Japan-ness in Architecture. Ch. 25, Katsura and Its Space of Ambiguity, pp.247-267, Ch.26. Architectonic Polysemy, pp.269-290,
Futagawa. The Roots of Japanese Architecture. pp.69-79 Ch.3 Dynamic Space
Maki. Nurturing Dreams. Linkage in Collective Form, pp.57-66
The MET, Exhibition Brochure, "Rei Kawakubo / Comme des Garsons Art of the In-Between", for exhibition in summer 2017
What is Japanese Architecture? p.65-66 Daily life in a Shinden Manshion
Takei & Kean (trans.) Sakuteiki. p.17-38 Southern Court, Visions in the Sakuteiki
Futagawa. The Roots of Japanese Architecture. Ch.7 Of Tea Bamboo, pp.127-142, and More Pillars, pp.81-96,
Haga, Koshiro. 1995. "The wabi aesthetic through the ages." In Japanese aesthetics and culture: A reader., ed. Nancy G. Hume, 245-278. Albany, NY: State University of New York.

(September 25)
RESEARCH PROPOSAL DUE

Mandatory interviews on the proposals on September 29 (Tues), September 30 (Wed), or October 6 (Tues).

Week 5 (September 30)
Ho-jo, Wabi, Michiyuki

Minimalism of So-an type teahouse and Shoin-zukuri style as its origin, Idea of following the nature in landscape design, Elaboration of teahouse and residence, Idea of creating the nature in landscape design (e.g. Ginkaku-ji temple, Fushin-an, Hojo-ki, En-nan, Ito, Isozaki, Hara, Kuma, Ando, Atelier Bow-Wow, Taniguchi)

Book Discussion (by Group 3): Body & Space

Yuasa, Yasuo. The Body: Toward and Eastern Mind-Body Theory. Pp.56-72
Nishida, Kitaro. "Basho" pp.49-52 (with notes pp. 188-190) in Place and Dialectic
Ohno, Hata, & Kondo. "Experiencing Japanese Gardens: Sensory Information and Behavior" pp.163-182
McCarthy, Erin. "Beyond the binary: Watsuji Tetsuro and Luce Irigaray on Body, Self, and Ethics" in Japanese and Continental Philosophy. pp.212- 228
What is Japanese Architecture? p.74-77 Shoin Style, p.78-9 Katsura, p.80- 81 Sukiya Décor, p.105-117 Tea Ceremony, Tea House, Soan Teahouse, p.118-9 Tea Garden
Okakura, Kakuzo, "The Tea-room" in The Book of Tea, 1926

Week 6 (October 7)

Collaborative bibliography building session with the research librarian at East Asia Library. Details TBD. The annotated bibliography is due on Friday, October 19th. This is a Zoom session. Please access to it with PC/laptop that has the capacity to join Zoom AND to search online via VPN (if you are not on campus). Let me know ahead of time if you have an issue.

(October 19)
COLLABORATIVE BIBLIOGRAPHY DUE

Week 7 (October 21)
Oku, Okuyuki, & Mura - Tokyo (Mura)

Forms of settlement, Creating the distance and depth (e.g. Maki's Collective form, Zo's and Hara's ideas on settlement, Atelier Bow-Wow on Tokyo, Reconstruction projects for Tohoku)

Book Discussion(Group 4): Tokyo- Whose urbanism?

> Bognar. "Group Form to Lightness" pp.120-133 in Fumihiko Maki: buildings and projects
> Robertson. "Mirror of Modernity" Ch.8 It Takes a Village, pp.110-129
> Coaldrake. "Japanese Capitals" Ch.4 Metaphor of Metropolis, pp.129-149
> Excerpts pp.23-38 from Ch.1 (pp.12-38) in Thiel, Philip.1997. People, Path, and Purposes
> What is Japanese Architecture? p.68-69 Commoners Dwellings, p.82-87 Minka, Provincial Towns

Week 8 (October 28)
Midterm presentations with Discussion 1

Week 9 (November 4)
Midterm presentations with Discussion 2

Week 10 (November 11)
RESPONSE PAPER DUE. Movement and Space for Tea Ceremony

This is a special Zoom session with Omotesenke style tea ceremony instructor Keiko Kitazawa. A short lecture will be followed by a tea ceremony demonstration in a tea room and then Q&A.

Book Discussion (in the form of response paper): Nature and Architecture

> Japan-ness in Architecture. Ch.4 Nature and Artifice pp.47-58
> Futagawa. The Roots of Japanese Architecture. pp.58-68 Ch.2 Setting Limits to Infinity, p.97-108, Ch. 4 The Garden as a Miniature Universe, pp.143-152, Ch.5 Linking Nature and Architecture, Ch. 8 Barrowing Space (list continued.)
> Watsiji. A Climate: A Philosophical Study, Tokyo: Ministry of Education Japan, 1961. Preface (p. v-vii), Ch.1 (pp.1-17)

Week 11 (November 18)
Michi, Machi-Kyoto, Kei & Fudo

Totality of landscape, Suburban and rural Japan, Preservation, Development, Digital cities (e.g. Fukuoka Nexus, Kori Newtown, Kumamoto Artpolis)

Ancient capital, Medieval concept of City and City Life Idea of neighborhood, Commoners' dwellings (e.g. Kyo-machi-ya, Rakuchu Rakugai Zu, Hara, Maki, Takamatsu, Isozaki, Ando)

Book Discussion : Japan-ness in City and Landscape

Higuchi. The Visual and Spatial Structure of Landscapes. Ch12. The Zofu- Tokusui Type. pp.146-162, Ch16. Conclusion. pp.190-193
Dougill, John. Ch.11 City of Japanness. pp.197-226 in Kyoto: a Cultural History
Excerpts (pp.108-116) from Marinucci, Lorenzo. "Japanese Atmosphere of Sky, Wind and Breathing" pp.93-118 in Griferro & Tedeschini (eds.) Atmosphere and Aesthetics
What is Japanese Architecture? p.56-59, 62-63 Heijo, Heian Capitals
"Reviving Machiya" Pp.56-75 in Machiya In Kyoto by Kyoto Center for Community Collaboration
Tung. "Reversing the Culture of Destruction" pp.368-385, in Preserving the World Great Cities
Yamasaki, Ch.12 Kyoto and Preservation of Urban Landscape pp.347-366 in Japanese Capitals in Historical Perspective
Grifello. "Is There Such a Thing as an "Atmospheric Turn"? Instead of an Introduction" Ch2. p.11-62, in Griferro & Tedeschini (eds.) Atmosphere and Aesthetics

Week 12 (December 2)
Final research presentation & Discussion

Week 13 (December 16)
FINAL PAPER DUE

Reference

More extensive bibliography is also available on Canvas.

Berque, Augustin and Ross Schwaltz. 1997. Japan: Nature, Artifice and Japanese Culture, Pilkington Press
Bognar, Botond 2008. Beyond the Bubble: the New Japanese Architecture, London, New York: Phaidon Press
Davis, Bret W. (ed) 2019. The Oxford Handbook of Japanese Philosophy. New York: Oxford University Press
Dilworth, David A., Viglielmo, Valdo H. and Agustin Jacinto Zavala. (eds) 1998. Sourcebook for Modern Japanese Philosophy: Selected Documents. Westport, Conn. : Greenwood Press
Fieve, Nicholas, and Paul Waley. 2003. Japanese Capitals in Historical Perspective: Place, Power, and Memory in Kyoto, Edo, and Tokyo. London, New York: Routledge Curzin
Futagawa, Yukio. 1963. The Roots of Japanese Architecture: a Photographic Quest, with text by Teiji Itoh and a foreward by Isamu Noguchi. New York: Harper & Row,
Griffero, Tonio. & Tedeschi, Marco. (eds) 2019. Atmosphere and Aesthetic. Springer International Publishing
Higuchi, Tadahiko. 1983. The Visual and Spatial Structure of Landscapes. Cambridge: MIT Press
Inoue, Mitsuo.1985. Space in Japanese Architecture. Wetherhill
Isozaki, Arata. 2007. The Contemporary Teahouse: Japan's Top Architects Redefine a Tradition, Tokyo, New York: Kodansha International,
Jinnai, Hidenobu. 1995. Tokyo, a Spatial Anthropology. Berkeley: University of California Press, Kaijima, Momoyo, Junzo Kurota, and Yoshiharu Tsukamoto. 2001. Made in Tokyo, Tokyo:
Kajima Shuppan
Katagiri, Dainin. 2007. Each Moment is the Universe: Zen and the Way of Being Time. Boston: Shambhala Publications.

Keane, Mark P. 1996. Japanese Garden Design, Rutland & Tokyo, Charles E. Tuttle, Kira, Moriko, and
    Terada Mariko, Japan. Towards Totalscape: Contemporary Japanese
Architecture, Urban Planning, and Landscape, NAI Publishers
Kyoto Center for Community Collaboration (ed). 2008. Machiya Revival in Kyoto, Kyoto: Mitumura Suiko
    Shoin
Koolhaas, Rem. And Obrist, Hans U. 2011. Project Japan: Metabolism Talks. Taschen
Maki, Fumihiko. 2008. Nurturing Dreams - Collected Essays on Architecture and the City. MIT Press.
Mori Art Museum. 2019. Future and the Arts: AI, Robotics, Cities, Life- How Humanity will Live Tomorrow.
    Exhibition catalogue. Tokyo: Bijutsu Shuppan-sha
Nitschke, Gunter. 1993. From Shinto to Ando: Studies in Architectural Anthropology in Japan, Academy
    Editions: London
Ueda, Atsushi, The Inner Harmony of the Japanese House
Varley, Paul H. 2000. Japanese Culture: A Short History: Fourth Edition, University of Hawaii Press
Vlastos, Stephen. Mirror of Modernity: Invented Traditions of Modern Japan. University of Berkeley Press,
    Berkeley
Watsuji, Tetsuro. 1961. A Climate: A Philosophical Study. Tokyo: Printing Bureau, Japanese Government.

DVDs on Reserve

Metabolism, the city of the future : [dreams and visions of reconstruction in postwar and present-day
    japan]2011 . Tokyo: Mori Museum.
Noh Izutsu: the wooden water well. 2000. New York: Insight Media
Ise Jingu: uketsugareru kokoro to katachi : shikinen sengū gannen no kiroku. 2006. Tokyo: NHK Enterprize
Kotonoha no niwa. Shinkai Makoto, 2013. CoMix Wave Films

Syllabus: ARCH 3264 XS: Micro in Japanese Architecture & Urbanism 2018

Faculty: Sunil Bald

Overview

This seminar will focus on trends in Japanese architecture and design culture that embrace the diminutive. In S,M,L,XL, Koohlaas not only classified his own work, but developed a treatise where the scale of the architect's concerns ramped up. This accompanied architecture's increasing role as a global commodity, one that led to an increase in scale and a decrease in specificity. Before this phenomenon, 1980's Japan experienced huge economic growth and looked to the west (as China and the Middle East did in the 2000's) and western architects for legitimization and an architecture of scale and internationalism. However, in recent years, there has been a reaction to both the architecture of the bubble economy and globalization, and Japan has embraced the diminutive as a rich terrain of design invention. This small grain of Japanese architecture and urbanism has existed for centuries.

This seminar will focus on the XS that Koolhaas omitted. We will look at objects and systems of increasing scale, all of which operate through the micro rather than the macro. Topics include the contemporary Japanese house, micro-urbanism, return to nature movements, and concepts of both the cute and monstrous. These are explored through a series of lenses that engage tradition, pragmatism, commercialism, sustainability, gender, and nationalism.

Class Organization

The course will be run primarily as a discussion seminar, with both readings and student-run presentations that relate the readings to works of architecture and design. Readings will include both fiction and theory and will be the basis from which to discuss architecture. Classes will begin with an initial presentation by a student on an architect and how his/her work relates to the theme of that class. This will be followed by a general discussion of the readings that draw in the architects shown, as well as others, to make connections between text and building. The final four class sessions will be 30-minute presentations by students of original research that engages issues from the class.

Requirements

- Students, working in pairs, will be responsible for one 10-15 minute presentation on two works by a specific architect and his/her relation to the theme of the day..
- Prior to each class, students will be required to do the required readings and submit a paragraph synopsis of each reading, and at least one discussion question for each reading. The must be emailed to me by midnight the Sunday before class.
- A 15-page research paper of a topic of the student's choosing. This will be presented in class during the last four class sessions. A one page abstract with bibliography must be submitted electronically by February 9th. Paper texts are due by midnight April 3rd.
- Active participation in class discussion.

Course Objectives

1. Examine the micro-scale architecture that has become increasingly common in Japan through the lenses of tradition, pragmatism, commercialism, sustainability, gender, and nationalism.

Assessment Breakdown

Participation/Presentation	15%
Reading Responses	35%
Research Paper	50%

Schedule and Bibliography

Week 1: January 17
Introduction

Week 2: January 24
Japanese-ness

Readings:
A. Isozaki, 'Ruins' (28-33), 'The Metaphor of the Cube' (64-68), 'Ma — Space/Time in Japan' (156-161) 'On
　　　Utsu, the Void' (162) 'Corporeal — Real and Hyper' (163-169) from K. Oshima, Arata Isozaki.
Selections from R. Barthes, Empire of Signs, pp. 3-63.

HOUSE STUDY: JUNZO YOSHIMURA / KUMA / ITO

Week 3: February 7
Kawai

Readings:
S. Ngai, Our Aesthetic Categories, pp.53-110.
A. Cheok, "Kawaii, Cute Interactive Media,"

HOUSE STUDY: TORAFU / SEJIMA

Week 4: February 19
Toy/Manga/Anime (7pm)

Readings:
Selections from A. Allison et. Al, Millenial Monsters: Japanese Toys and the Global Imagination
Selections from M. Ito, Fandom Unbound: Otaku Culture in a Connected World

HOUSE STUDY: TAKAMATSU / SHINOHARA

Week 5: Februrary 21
Bento (Presentation by Miwako Tezuka)

Readings:
K. Ekuan, The Art of the Japanese Lunchbox, pp. 1-73

HOUSE STUDY: W. KISHI / FUJIMOTO / S. BAN

Week 6: February 28
The Capsule

Readings:
K. Kurokawa, 'From Metabolism to Symbiosis' in From Metabolism to Symbiosis, (6-29)
K. Kurokawa, 'Capsule Declaration' in Metabolism in Architecture.
R. Banham, 'A Home is not a House' in Art in America, no. 2 April 1965.
L. De Cauter, 'The Capsule and the Network, in The Capsular Civilization.

HOUSE STUDY: KUROKAWA / KIKUTAKE

Week 7: March 28
The House

Readings:
Kamo no Chomei, 'An Account of My Hut,' in D. Keene, An Anthology of Japanese Literature
Oshima, 'La morfosi della casa minima: Morphoses of the Minimal Dwelling,' in Lotus 142.
Murakami, 'TV People,' in Monkey Brain Sushi: new tastes in Japanese literature.

HOUSE STUDY: BOW WOW / NISHIZAWA

Weeks 8-11: April 4-25
Student Presentations

Syllabus: ARCH 3272 Exhibitionism: The Politics of Display 2021

Faculty: Joel Sanders

Overview

Since the establishment of the Western art museum in the 16th century, museum architecture, considered in relationship with the art it displays, has perpetuated white supremacy, heteronormativity and ableism. BLM and COVID-19 have increased the pressure for institutions to reckon with this problematic history. Over the past decade, art museums have been demonstrating their commitment to DI &E (Diversity, Inclusion & Equity) through human resources, programming and curatorial practices. However, they are just beginning to explore the spatial needs of non- normative visitors who fall outside of the cultural mainstream.

This seminar, taught in partnership with Yale Public Health, the Queens Museum and Queens Community House, explores the role that the designed environment can play in addressing this challenge. It builds on design research currently being conducted by MIXdesign through a grant from the Institute for Museum and Library Services. Treating the Queens Museum as a Case Study, the course invites designers, public health experts, museum stakeholders and end-users to collaborate in an Inclusive Design process dedicated to inventing innovative strategies for transforming museums into welcoming multi-sensory facilities that foster belonging and well-being for all visitors, no matter their age, gender, race, religion or abilities.

In the process of rethinking museums through the lens of "non-compliant bodies," we will consider the spatial implications of three inter-related issues that contemporary museums like the Queens Museum have and continue to face as they rethink their missions for the 21st century:

- The way new technologies are blurring the boundaries between artistic disciplines and mediums including art, performance, film, architecture and landscape.
- The way new technologies are transforming multi-sensory experience, and as a consequence, the way differently embodied humans interact with each other and the world around them.
- The impact of climate change and sustainable practices on art and architecture.

We will situate these contemporary challenges in a socio-political context by mapping the intertwined histories of art and museum architecture from the 16th century to today. The history of Western art and the history of the Western art museum are typically treated as separate narratives. However, the visitor's encounter with art cannot be understood without taking into account the exhibition space in which art is viewed. We will explore how the spatial and material development of the museum working in conjunction with the art it is designed to display both mirrors and perpetuates changing attitudes about human embodied identities, nature and technology as seen through the perspectives of artists, architects, critics, and collectors.

Looking back will allow us to imagine alternative futures for the 21st century museum. Working with feedback obtained through participatory design workshops with Queens Museum stakeholders and visitors, students working in teams will generate innovative proposals for making museums interactive environments that promote multi-sensory experience among an inter-generational group of people of different races, genders, and abilities.

Course Objectives

1. Study the history of Western art museums throughout history beginning with the 16th century through today within the context of socio-political influences.
2. Rethink how exhibitions could be reframed in a way that could accommodate visitors of differing races, genders, and abilities as opposed to only the normative visitor that has been catered to historically.
3. Work with the Queen's Museum to put this thinking into practice, creating proposals that would promote multi-sensory experience that could be enjoyed by a variety of visitors.

Assessment Breakdown

Participation	20%
Research Project	80%

Class Organization

Format

Seminar sessions will be conducted in three alternating formats.

- Cultural/Political Context:

  Some classes will explore intersections between past and present through thematic talks and class discussions based on reading responses that examines how a historical issue that artists and architects confronted in the past is relevant to the challenges artists, architects and museums face today.

- Participatory Design:

  Other sessions, led by faculty from Yale Public Health and Queens Community House, will include workshops with curators and administrators from the Queen Museum as well as an intersectional sampling of local community visitors. The objective is to acquaint students with participatory design techniques-- surveys, interviews, workshops— designed to yield meaningful feedback drawn from the lived experience of end-uses that can inform the design process.

- Cohort Design/Research Projects:

  Other classes will be devoted to Cohort Crits: Sanders will meet Individually with student teams to discuss the evolution of their design research projects. It is a two-part process. In the research and analysis phase, students will conduct in-depth spatial analysis and end-user-engagement that will allow them to identify spatial challenges faced by differently embodied visitors. During the design phase, teams will create proposals for improving the Queen Museum visitor experience. Proposals can take a variety of forms including drafting guidelines and policies, curating and installing exhibitions, designing display prototypes (pedestals, benches, interactive labels), retrofitting interior and exterior spaces and developing community oriented programming and events.

  Deliverables: Multi-media presentations that integrate text, photographs, video, drawings and models (virtual or actual) that will allow teams to express their design research proposals.

Credit

This course satisfies one of two YSOA Study Areas: History / Theory and Design and Visualization.

Schedule and Bibliography

Week 1: February 1
Introduction

Week 2: February 8
Participatory Design 1: ILMS Project Overview with MIXdesign/Queens Stakeholders

During this class, students will meet representatives from MIXdesign and the Queens museum who will provide an overview of the Queen Museum Inclusive Design Study, a two-year project funded by the IMLS. Representatives of the museum staff including the Director, staff and curators will describe how the project objectives further the museums mission and DEI initiatives. Seb Choe, co-director of MIXdesign, will lead a 'fly through' tour of the Queens Museum and describe the IMLS project's history since its inception in 2019 and the outcome of the work completed to date.

    https://www.mixdesign.online/queens-museum
    https://www.qchnyc.org/

Week 3: February 15
Humanist Spectatorship: White Supremacy, Sexism and Ableism

This class critiques the Western museum's longstanding investment in "constructing" the ideal Humanist spectator, a default white male viewer capable of encountering works of art through disembodied vision. We begin by tracing the emergence of this ideal in the 15th century, as exemplified by the first art galleries built in European private palaces, exploring how architecture working hand-in-hand with two recent inventions— portable framed pictures and perspective—allowed aristocratic viewers to optically commune with illusionistic images. Then we look at this issue through the lens of contemporary artists and theorists who create works that contests and subvert the way the formal conventions of Western art, when seen in conjunction with museum and gallery design, naturalize and perpetuate problematic conceptions about race, gender and ability.

    Pollack, Griselda. "Modernity and the Spaces of Femininity." in The Visual Culture Reader. Ed.
        Nicholas Mizoeff. New York: Routledge, 1998.
    Jay, Martin. "Scopic Regimes of Modernity." In Vision and Visuality. Ed. Hal Foster. Seattle: Bay Press,
        1988. pp.1-11
    Tyburczy, Jennifer. "All Museums are Sex Museums" in Sex Museums: The Politics of Performance of
        Display. Chicago: University of Chicago Press, 2016. pp.1-22.

Week 4: February 22
Civic Spectatorship: Legacy of the 19th Century Public Museum

This class considers the Queens Museum's community-oriented mission through the legacy of the 19th century civic museum, a building typology designed to educate and uplift the masses. Sanders will give a talk describing how the first European and American public museums, conceived as destinations for the general public, presented curators and designers with an unprecedented set of design challenges including narrative flow, security, and crowd control that they still grapple with today. Then Queens Museum Archives and Collections Manager, Lynn Maliszewski will give a talk tracing the history of the Queens Museum and Corona Park from its original incarnation as a part of the 1939 New York World's Fair until today. We will discuss the affinities and differences between the challenges faced by civic

museums then and now, considering the added imperative for museums like Queens to reach their demographically diverse community.

> Bennett, Tony. "The Exhibitionary Complex," in Thinking about Exhibitions, Ed. Reesa Greenberg, Bruce Feguson, Sandy Nairne. New York: Routledge, 1996.
> Fuss, Diana and Joel Sanders. "An Aesthetic Headache: Notes from the Museum Bench." Interiors. Eds. Johanna Burton, Lynne Cooke, and Josiah McElheny.

Week 5: March 1
Participatory Design 2: End-user Focus Group

During this class session students will attend a focus group led by members of Yale Public Health and Queens Community House that convenes an intersectional sample of local Queens museum visitors who will identify the spatial challenges they experience using the museum as well as share some initial recommendations for how they might be addressed.

> Theodore Zamenopoulos and Katerina Alexiou, Co-Design as Collaborative Research in Facer, K and Dunleavy, K (eds.) Connected Communities Foundation Series. Bristol: University of Bristol/ AHRC Connected Communities Program, 2018.
> Queens Museum Survey developed by Abigail Ginader and MIXDesign

Week 6: March 22
Cohort Crit 1: Analysis

Student teams present an depth analysis of "activity zones" at the Queens Museum using Body Maps--analytical drawings and diagrams— that describe the embodied spatial experience of specific end-users as they conduct particular museum activities. Do your observations reinforce or differ from the challenges identified by stakeholders and end-users? Each presentation concludes by initial speculations about potential interventions Cohorts might pursue.

Week 7: March 29
Modernist Viewers: Formalism, Abstraction and the White Cube

An analysis of MoMA's original 1939 building in relationship to its most recent renovation projects designed by Yoshio Tanaguchi in 2004 and DS+R in 2019 exemplifies a trend that also shaped the Queen's Museum 2013 renovation/expansion designed by Grimshaw: global museum initiatives to create more welcoming and accessible environments by hiring starchitects to upgrade buildings with architectural elements--transparent facades, spectacular atriums and white cube galleries—all deemed essential for a state-of-the-art contemporary museum. We will evaluate the challenges and contradictions posed by this approach which is often at odds with post-
911 security, pandemic health measures and art conservation requirements that require museums to be climate controlled, secure environments that can safely monitor the traffic of human bodies that threaten to touch, damage and even steal vulnerable works of art. Is the architectural paradigm of the White Cube still suited to the mission of contemporary museums, including the Queens Museum?

> O'Doherty, Brian. "I. Notes on the Gallery Space," in Inside the White Cube: The Ideology of the Gallery Space, expanded edition. Berkeley: University of California Press, 1999.
> Greenberg, Clement. "Towards a Newer Laocoön," in Collected Essays and Criticism, vol. 1, ed. John O'Brian. Chicago: University of Chicago Press, 1988. pp.23—37.

Week 8: April 5
Cohort Crit 2: Refinement of analysis and speculative intervention

Week 9: April 12
Engaging the body From Object to Body: Minimalism + Performance

This class explores the critique of the White Cube launched by artists, critics and architects during the 1960's and 70's that characterized the post-war museum as an elite bastion of privilege complicit with consumer capitalism. We will examine works by artists belonging to two overlapping movements—Minimalism and Performance--who embraced cross-disciplinary practices and conceived of spectatorship as a full-bodied experience that enfolds in space and time. We will also look at the work of exceptional architects like Fredric Kiesler, Frank Lloyd Wright, and Louis Kahn who rejected the White Cube and designed unorthodox spaces that make viewers aware of their embodied relationship to time and space.

> Krauss, Rosalind. "Sculpture in the Expanded Field," in The Originality of the Avant- garde and Other Modernist Myths. Cambridge: the MIT Press, 1986. pp.276-290.
> Fried, Michael. "Art and Objecthood," in Minimal Art: A Critical Anthology, ed. Gregory Battcock (New York: Dutton, 1968), p.7.

Week 10: April 19
Reinventing the 21st Century Museum: Reconciling DEI and Operational Challenges
Guests: Buffy Easton, Connie Butler; MoMA reinstallation or Cohort Crit

The final class invites three leading museum professionals to discuss how progressive institutions are pursuing DEI initiatives made more urgent by BLM and COVID-19. How can museum professionals respond to the increasing pressure to make their institutions more inclusive while at the same time dealing with 21st century operational challenges including massive budget cuts, pandemic health concerns, post-911 security, and heightened conservation and environmental standards?

> Umolu, Yesomi. "On the Limits of Care and Knowledge: 15 Points Museums Must Understand to Dismantle Structural Injustice" ArtNet.com, June 25, 2020.

Week 11: April 26
Cohort Crit 3: Intervention development

Week 12: May 10 (Non-studio Final Exam Period)
Final Review Date TBD

Reference

Humanist Spectatorship: White Supremacy, Sexism and Ableism

Butler, Cornelia H., and Lisa Gabrielle Mark. WACK!: Art and the Feminist Revolution. Los Angeles: Museum of Contemporary Art, 2007.

Cooks, Bridget R. Exhibiting Blackness: African American and the Art Museum. Amherst: University of Massachusetts Press, 2011. Introduction pp.1-16 and recommended Chapter 1 pp.17-51.

D'Souza, Aruna. "'Float the Boat!': Finding a Place for Feminism in the Museum" in Modern Women, Women Artists at the Museum of Modern Art ed. Cornelia Butler and Alexandra Schwartz, New York: Museum of Modern Art, 2010. pp.57-69.

Gooden, Mario. "The Problem With African-American Museums," in Dark Space: Architecture, Representation, Black Identity. New York: Columbia Books on Architecture and the City, 2016. pp.98-119

Mercer, Kobena. "Reading Racial Fetishism: Photographs of Robert Mapplethorpe," in Welcome to the Jungle: New Positions in Black Cultural Studies, New York: Routledge, 1994, pp.171-219.

Meyer, Richard. Outlaw Representation. New York: Oxford University Press, 2002.

Molesworth, Helen. "'How to Install Art as a Feminist" in Modern Women, Women Artists at the Museum of Modern Art ed. Cornelia Butler and Alexandra Schwartz, New York: Museum of Modern Art, 2010. pp.498-513.

Mulvey, Laura. "Visual Pleasure and Narrative Cinema," in Visual and Other Pleasures. Bloomington: Indiana University Press, 1989..

Lord, Catherine, and Richard Meyer. Art & Queer Culture. Phaidon Press Limited, 2013.

Nochlin, Linda. "Why Have There Been No Great Women Artists?" in Gornick, Vivian; Moran, Barbara. Woman in Sexist Society: Studies in Power and Powerlessness. New York: Basic Books, 1971.

Ott, Katherine. "Collective Bodies: What Museums do for Disability Studies" in Re- Presenting Disability: Activism and Agency in the Museum," ed. Richard Sandell, Jocelyn Dodd and Rosemarie Garland-Thomson. New York: Routledge, 2010.

Pollock, Griselda. Encounters in the Virtual Feminist Museum, London: Routledge, 2007.

Siebers, Tobin. Disability Aesthetics, in Disability, Space, Architecture: A Reader. ed. Jos Boys. New York: Routledge, 2015

Wilson, Fred, and Howard Halle. "Mining the Museum" Grand Street, No. 44. 1993. pp. 151-172.

Civic Spectatorship: Legacy of the 19th Century Public Museum

Foucault, Michel. "The Eye of Power." In Power/Knowledge: Selected Interviews and Other Writings, 1972-77. Ed. Colin Gordon. New York: Pantheon Books, 1980.

Klonk, Charlotte. "Introduction," in Spaces of Experience: Art Gallery Interiors from 1800 to 2000. New Haven: Yale University Press, 2009.

Modernist Viewers: Formalism, Abstraction and the White Cube

Klonk, Charlotte. "The White Cube and Beyond: Niklas Maak, Charlotte Klonk and Thomas Demand on Museum Display," Tate Etc, no. 21 (Spring 2011).

Crary, Jonathan. "Modernity and the Problem of Attention" in Suspensions of Perception: Attention, Spectacle, and Modern Culture. Cambridge, Mass.: The MIT Press, 1999.

Engaging the body From Object to Body: Minimalism + Performance

Foster, Hal. "Minimalist Museums," in The Art-Architecture Complex. New York: Verso, 2011. pp.104-129.
Krauss, Rosalind E. The Optical Unconscious. Cambridge: The MIT Press, 1993.
Lee, Pamela. "Bridget Riley's Eye/Body Problem," in Chronophobia: On Time in the Art of the 1960s. Cambridge: The MIT Press, 2004.
McShine, Kynaston. Museum as Muse: Artists Reflect. New York: Museum of Modern Art, 1999.
Phillips, Stephen. "Toward a Research Practice: Frederick Kiesler's Design- Correlation Laboratory," Grey Room, no. 38 (Winter 2010), p.91.
Brooks Pfeiffer, Bruce. Frank Lloyd Wright: The Guggenheim Correspondence, Fresno: The Press at California State University, 1986.
Goodman, Cynthia. "The Art of Revolutionary Display Techniques," in Frederick Kiesler, ed. Lisa Phillips. New York: Norton, and Whitney Museum of American Art, New York, 1989. pp.57—83.
Veikos, Cathrine. "To Enter the Work." Journal of Architectural Education 59.4 (2006): pp.71—80. Web.

Reinventing the 21st Century Museum: Reconciling DEI and Operational Challenges

Death to the Museums https://deathtomuseums.com
D' Souza, Aruna. Whitewalling: Art, Race & Protest in 3 Acts, Badlands Unlimited, 2018
Reilly, Maura. Curatorial Activism: Towards an Ethics of Curating, Thames & Hudson, 2018

Syllabus: ARCH 3300 The Idea of an Avant-garde in Architecture 2020

Faculty: Joan Ockman

Overview/Class Organization

No historian of architecture has written more intensely about the contradictions of architecture in late-modern society or reflected more deeply on the tasks of architectural historiography than Manfredo Tafuri (1935—1994). For both architectural practitioners and critical intellectuals, the Italian historian's refusal to place "hopes in design" within an advanced capitalist society produced an impasse in the 1970s and '80s. This ultimately led to calls to oublier Tafuri—to move beyond his pessimistic and lacerating critique.

This seminar undertakes a close reading of one of Tafuri's richest and most complex books, The Sphere and the Labyrinth: Avant-Gardes and Architecture from Piranesi to the 1970s. Published in Italian in 1980 and translated into English in 1987, the book appeared at the midpoint of Tafuri's career and at a pivotal moment in relation to the emergence of postmodernism. It is the first sustained effort to define and historicize the idea of the avant-garde specifically in relation to architecture. Unconventionally, Tafuri begins his account in the 18th century with the "wicked" architectural inventions of Piranesi. He then jumps 175 years forward to the film theory of Soviet director Sergei Eisenstein, whose concept of montage was inspired by Piranesi's Carceri.

The book's central section traverses a range of architectural and urban developments in Europe and the United States during the first part of the twentieth century. Among the topics he addresses are modernist experiments in the theater, the network of exchanges among avant-garde protagonists, the reconceptualization of urbanism in the Soviet Union after the Bolshevik revolution, the American skyscraper city, and the politics of social housing in Weimar Germany. The book concludes with two powerful—and mordant—chapters on the neo-avant-gardes of the 1960s and '70s.

The class works its way through The Sphere and the Labyrinth chapter by chapter, beginning with Tafuri's formidable methodological introduction, "The Historical 'Project.'" Discussions of each chapter are supplemented by readings of primary documents and related material. Our concern is equally with history and historiography: with specific material and ideological contexts, and with the ways they are written into architectural literature. Our central aim is to explore the role and function of avant-gardes in the history of architecture. Is the concept of avant-gardism still relevant today? Or should it be relegated to the dustbin of twentieth-century history?

The seminar is open to Ph.D. students and others with a strong background in architectural history. Non-Ph.D.'s may be admitted by permission of the instructor.

Requirements

- One in-class presentation
- Weekly reading reports
- A 20-page term paper

Course Objectives

1. Explore the history of avant-gardism as a concept in architecture (mainly in the 20th century), and examine its relevance to the architecture of today.

Assessment Breakdown

In-Class Presentation	15%
Weekly Reading Reports	15%
Research Paper	70%

Schedule and Bibliography

Notes: The primary text for the course is The Sphere and the Labyrinth, trans. Pellegrino D'Acierno and Robert Connally (MIT Press, 1987). It is out of print, but it is strongly suggested that you obtain a used copy to be marked up and brought to class. Alternatively, please print out a full copy from the file uploaded to Canvas or find a loan copy for the semester. All other readings will available on Canvas.

Week 0

For the first class, please do a preliminary reading of the introduction to The Sphere and the Labyrinth: "The Historical 'Project,'" pp. 1—21, online at https://monoskop.org/images/a/a0/Tafuri_Manfredo_ The_Sphere_and_the_Labyrinth.pdf.

Week 1 (January 10) - THEORIES, HISTORIES
Introductory. History and historiography

> Manfredo Tafuri, "The Historical 'Project,'" from The Sphere and the Labyrinth (hereafter S+L)

Week 2 (January 24)
History and historiography continued

> Manfredo Tafuri, "The Historical 'Project,'" S+L
> Michel Foucault, "Nietzsche, Genealogy, History," from Language, Counter-Memory, Practice (1971)
> Viktor Shklovsky, "Knight's Move" (1923)
> Sigmund Freud, from "Analysis Terminable and Interminable" (1937)
> Hayden White, "The Question of Narrative in Contemporary Historical Theory," History and Theory (1984)

Week 3 (January 31)
Theories of the avant-garde. Situating Tafuri

> Renato Poggioli, "The Concept of the Avant-Garde," from The Theory of the Avant-Garde (1962)
> Peter Bürger, "The Negation of the Autonomy of Art by the Avant-Garde," from Theory of the Avant-Garde (1974)
> Giorgio Ciucci, "The Formative Years," from The Historical Project of Manfredo Tafuri, Casabella 619—20 (1995)
> Luisa Passerini, interview with Manfredo Tafuri (1992), from ANY 25/26 (2000)
> Paul Wood, "Modernism and the Idea of the Avant-Garde," from A Companion to Art Theory (2003)
> Alain Badiou, "Avant-Gardes," from The Century (2000)
> Titia Rixt Hoekstra, "Towards a New Architectural History," from Building versus Bildung: Manfredo Tafuri and the Construction of a Historical Discipline (2005)

Week 4 (February 7) - PROTO-AVANT-GARDE
The discovery of transgression

> Manfredo Tafuri, "'The Wicked Architect': G. B. Piranesi, Heterotopia, and the Voyage," S+L
> Manfredo Tafuri, excerpt on Piranesi from "Reason's Adventures: Naturalism and the City in the Century of the Enlightenment," from Architecture and Utopia (1973)
> Giovanni Battista Piranesi, "Opinions on Architecture: A Dialogue" (1765)
> Rudolf Wittkower, "Piranesi's 'Parere su L'Architettura'" (1938)

Week 5 (February 14)
The technique of shock

> Manfredo Tafuri, "The Historicity of the Avant-Garde: Piranesi and Eisenstein," S+L
> Sergei Eisenstein, "Piranesi, or the Fluidity of Forms" (1946—47), S+L
> Sergei Eisenstein, "Montage and Architecture" (c. 1937—40)
> Yve-Alain Bois, "Sergei M. Eisenstein: Montage and Architecture," Assemblage 10 (1989)
> Oksana Bulgakowa, "Eisenstein's Glass House and His Spherical Book" (1996)

Week 6 (February 21) - AVANT-GARDE
The metropolis in microcosm: the avant-garde theater

> Manfredo Tafuri, "The Stage as 'Virtual City': From Fuchs to the Totaltheater," S+L
> Bruno Taut, "The Galoshes of Fortune" (1920), S+L
> Georg Simmel, "The Metropolis and Mental Life" (1903)
> Clark M. Rogers, "Appia's Theory of Acting: Eurhythmics for the Stage"; Enrico Prampolini, "Futurist
>   Scenography (Manifesto)"; László Moholy-Nagy, "Theater, Circus, Variety"; and Nikolai A.
>   Gorchakov, "Meyerhold's Theatre," from E. T. Kirby, ed., Total Theatre: A Critical Anthology (1969)

Week 7 (February 28)
The metropolis as crucible of cosmopolitan culture: transnational exchanges, polemics, manifestos

> Manfredo Tafuri, "U.S.S.R.—Berlin, 1922: From Populism to 'Constructivist International,'" S+L
> Roland Nachtigäller and Hubertus Gassner, "3 × 1 = 1: Vesc' Objet Gegenstand," from Il'ja Erenburg
>   and El Lisickij, Vesc' Objet Gegenstand: Berlin 1922 (1994 [facsimile])

Week 8 (March 6)
The metropolis of socialism: the Soviet city from the Revolution to the First Five-Year Plan

> Manfredo Tafuri, "Toward the 'Socialist City': U.S.S.R., 1917—28," S+L
> Selections from Anatole Kopp, ed., Town and Revolution: Soviet Architecture and City Planning
>   1917—1935 (1970)
> Boris Groys, "The Russian Avant-Garde: The Leap over Progress" and "Afterword," from The Total Art
>   of Stalinism: Avant-Garde, Aesthetic Dictatorship, and Beyond (1988/2011)

Week 9 (March 27)
The metropolis of capitalism: the American city and skyscraper from World War I into the Depression

> Manfredo Tafuri, "The New Babylon: The 'Yellow Giants' and the Myth of Americanism," S+L
> Raymond Hood, "A City under a Single Roof" (1929), S+L
> Manfredo Tafuri, "The Disenchanted Mountain: The Skyscraper and the City" (excerpt), from Giorgio
>   Ciucci, Francesco Dal Co, Mario Manieri-Elia, and Manfredo Tafuri, The American City: From the
>   Civil War to the New Deal (1973)
> Rem Koolhaas, "How Perfect Can Perfection Be: The Creation of Rockefeller Center," from Delirious
>   New York (1978)

Week 10 (April 3)
The metropolis of social democracy: the German city and social housing in the Weimar Republic

    Manfredo Tafuri, "Sozialpolitik and the City in Weimar Germany," S+L
    Martin Wagner, "The Socialization of Building Activity" (1919), S+L
    Barbara Miller Lane, "The New Architecture in the Service of Society," from Architecture and Politics
        in Germany, 1918—1945 (1968)
    Pier Vittorio Aureli, "In Hilberseimer's Footsteps," from Ludwig Hilberseimer (ed. Richard Anderson),
        Metropolisarchitecture and Selected Essays (2012)

Week 11 (April 10) - NEO-AVANT-GARDE
The autonomy of form

    Manfredo Tafuri, "'L'Architecture dans le Boudoir,'" S+L
    Peter Eisenman, "Real and English: The Destruction of the Box. I," Oppositions 4 (1974)
    Walter Benjamin, "The Author as Producer" (1934)
    Georges Bataille, "The 'Old Mole' and the Prefix Sur in the Words Surhomme [Superman] and
        Surrealist" (1929/1968)

Week 12 (April 17)
Postmodernism

    Manfredo Tafuri, "The Ashes of Jefferson," S+L
    Manfredo Tafuri, "Venice 1985: The Architecture Biennale" and "'Gay Errancy': Hypermoderns
        "(Postmoderns)," from History of Italian Architecture, 1944—1985 (1986)
    Manfredo Tafuri, "'European Graffiti': Five x Five = Twenty-five," Oppositions 5 (1976)
    Roland Barthes, excerpts from The Pleasure of the Text (1973)

Week 13 (April 24) - POST-AVANT-GARDE?
History and historiography redux. Conclusions. Term paper previews

    Manfredo Tafuri, Preface to Interpreting the Renaissance (1992)

Week 14 (May 1)
Term papers due

Syllabus: ARCH 4213a The City & Carbon Modernity 2019

Faculty: Elisa Iturbe

Overview

"Even if we have never been modern, we still have a modernist mess on our hands."
—Kim Fortun

"The modern age is already obsolete. Measured by its claim to shape the future, it is a thing of the past. The modern age is already fossilized at heart, built on discards and relics. It has no real future. We are living in a fossil economy."
—Hermann Scheer

Humanity has moved through three energy paradigms, each of which has produced different built environments and social organizations. At each transition—from nomadic to agricultural and from agricultural to industrial—the productive capacity of human society was transformed, restructuring the existing social order and engendering a corresponding spatial and architectural paradigm. In this light, this course will study our current energy paradigm—carbon-intensive fossil fuels—as a driver of urban and architectural form. Rather than studying the technical aspects of energy, however, the course will focus on the social and spatial organizations that arise and are dependent on dense and abundant energy. Of particular interest will be the way in which society reorganized itself around the availability of abundant energy as fossil fuels established a new horizon of possibility for production. Factories and global markets emerged, reorganizing labor and economies, and giving rise to a society that was dependent on coal. As fuel technologies evolved towards oil and natural gas, these relationships continued to evolve, leading to a global network of capitalist production and intensive energy consumption. Carbon energy, then, led to changes in the realms of the social, economic, political, spatial, and ecological, forming a legible condition one might call carbon modernity. As such, the energy transition needed to mitigate our current climate crisis is not simply a technological problem, but also one of social organization, politics, and economics.

Within this context, the course will focus on the spatial expressions of carbon modernity, for as mechanized production led to demographic displacement, the reorganization of labor, and urban density, new urban and architectural typologies emerged: warehouses, factories, worker housing, etc., and with further technological advancement, office towers, skyscrapers, department stores, airports, strip malls, suburbs. We will identify these social and spatial organizations that are specific to carbon modernity as carbon form.

Despite increasing awareness of environmental issues, architects continually build and replicate carbon form. Notwithstanding increased energy efficiency or reduced emissions, the built environment as we know it will be fundamentally unable to overcome the current energy paradigm or to address the climate crisis as long as its core is constituted by carbon form. So just as the Modern Movement proposed a new organization for the city based on the realities of industry, this moment demands new organizations that can respond to an urban system that the climate crisis has shown to be obsolete. Unlike in Modernism however, the energy transition to which we must respond has not yet occurred. And yet, architecture must still declare the death of carbon modernity and seek the means to overcome its material and cultural legacy. In this light, the course will interrogate the foundations of contemporary human organization in order to lay new foundations for the oncoming transitions in energy and social form.

Course Subject

In the first half of the semester, students will study twentieth century theories of the city in order to uncover the theoretical roots of carbon form in the works of Le Corbusier, Hilberseimer, Koolhaas and others. The goal will be to study the

Course Objectives

1. Identify and study the relationship between architecture and climate change, beyond the carbon footprint of the built environment.
2. Reframe decarbonization as a theoretical problem, recognizing that current modes of architectural production are lacking in their ability to confront climate change.
3. Study examples of carbon form in order to better understand the relationship between our dominant energy paradigm and urban form.

Assessment Breakdown

Participation	20%
Reading Responses	20%
Drawings (4)	60%

relationship between carbon modernity and the evolution of architectural discourse about the city, identifying and extracting the presence of carbon form within our historical inheritance—both built and theoretical.

The second half of the course will then speculate on how urban form and carbon form might be decoupled. As such, we will examine the relationship between the energy grid and the urban grid, i.e. between energy and urban form. If carbon form arises from the dynamics of a centralized energy grid, then it is possible that the decentralized energy grid made possible by renewable energy technology will make possible new and emergent urban form. Readings will focus on the dynamics of decentralized energy and accompanying social and spatial forms.

Course Objectives

The goal of the course is to identify the deep connection between architecture and climate change, beyond the carbon footprint of the built environment. The goal of identifying both carbon modernity and carbon form is to treat decarbonization as a theoretical problem, while recognizing that current modes of architectural production are insufficient to address the problem of climate. Yet even so, due to the profound correlation between energy and urban form, it will be argued in this course, that architecture has an important role to play in this uncertain phase of human and geological history.

Class Organization

Course Structure

Week 01-03:
    Introduction to Carbon Form and Carbon Modernity (Lectures and discussions)
Week 04-08:
    Identifying carbon form (Assignment 01 and 02)
Week 09-13:
    Strategies for overcoming carbon form (Lectures, discussions, Assignment 03)

Assignments

Assignments will be readings, reading responses, as well as drawings—both analytic and speculative. Reading responses will be due on Tuesdays, the evening before class, at 8 pm. A minimum of 500 words. Readings will be discussed in class, participation is required. On weeks in which drawings are being presented, one reading will still be assigned (with a reading response due) for those who are not presenting that week.

Drawing assignments are as follows:

01: Identifying Carbon Form: Modern
    Students are to select an urban proposal from the Modern era that they identify as a carbon form. They should present to the class its salient formal and social ideas, identify its underlying energy paradigm, and argue for why it can be considered a carbon form. Work will be presented in class, over the course of two class sessions.

02: Identifying Carbon Form: Post Modern and Late Capital
    Students are to select an urban proposal from the postmodern or late capitalist era that they identify as a carbon form. Like Assignment 01, they should present to the class its salient formal and social ideas, identify its underlying energy paradigm, and argue for why it can be considered a carbon form. Students should also note the differences between these projects and those of the modern era, both in terms of form and social structure.

03: Toward the Decentralized Grid
    Select and ideal city. Identify its dominant source of energy, its dominant carbon forms, and redraw according to the logic of decentralized energy.

Final Discussion
    The final meeting of the course will be a review of all assignments completed during the course. This session will consist of a discussion and evaluation of our findings. Specific focus on any shared or consistent characteristics between analyses and projects.

Schedule and Bibliography

Week 1: September 4
Course Introduction: Overcoming Carbon Form

Week 2: September 11
Fossil Capitalism and the Birth of Carbon Modernity

In class: Lecture + discussion
Due: Reading response

  Andreas Malm, Fossil Capital, Ch 1, pp 1-19
  Timothy Mitchell, "Carbon Democracy," special emphasis on pp 400-409, 415-423
  Selections from Fueling Culture: 101 Words for Energy and Environment. "Architecture," Daniel Barber.
   "Crisis," Jason Moore. "Energopolitics," Dominic Boyer
  Ludwig Hilberseimer, "The Metropolis," Metropolis-Architecture, pp 84-90

Week 3: September 18
Phases of Carbon Modernity: Industrial

In class: Lecture + discussion
Due: Reading response
  *In addition to a response to the readings, please identify an example of carbon form and briefly (~100 words) explain why it should be considered a carbon form. Does not have to be architectural, but could be infrastructural, urban, or cultural.

  Andreas Malm, Fossil Capital, Ch 2, pp 29-36
  Le Corbusier, The City of Tomorrow and its Planning, xxi-xxiv, 5-12
  Ludwig Hilberseimer, The New City, 45-74

—GLOBAL CLIMATE STRIKE — **September 20**

Week 4: September 25
Assignment 01: Carbon Form & Modernism

In class: Presentations of Assignment 01
  *class will be one hour longer to accommodate for missed class on travel week
Due: Half the class will present their work for assignment 01

The other half will submit reading responses to one of the following texts:
  Reyner Banham, Guide to Modern Architecture, pp 5-33
  Le Corbusier, The Radiant City, pp 28-70, 187-197, 240-261

—GLOBAL CLIMATE STRIKE — **September 27**

Week 5: October 9
Phases of Carbon Modernity: Post-industrial & Late Capital

In class: Presentations of Assignment 01 + Intro to Post-industrial & Late Capital
Due: Remaining presentations of Assignment 01 Reading response

    Pier Vittorio Aureli, "Architecture for Barbarians: L. Hilberseimer and the Rise of the Generic City"
    Francisco Marullo, "The Typical Plan as Index of the Generic," The City as a Project
    Douglas Spencer, Architecture & Neoliberalism, 11-18, 39-72

Week 6: October 16
Assignment 02: Carbon Form: Postmodernism & Late Capital

In class: Presentations of Assignment 02
    *class will be one hour longer to accommodate for missed class on travel week
Due: Half the class will present their work for assignment 02

The other half will submit reading responses to the following text:
    Tahl Kaminer, "An Introduction to Newark: The Continuous Crisis of the Obsolete City,"
    Urban Asymmetries: Studies and Projects on Neoliberal Urbanization, pp 192-207.

Week 7: October 30
Assignment 02: Carbon Form: Postmodernism & Late Capital

In class: Presentations of Assignment 02
Due: Half the class will present their work for assignment 02

The other half will submit reading responses to the following text:
    Reinhold Martin, "Real Estate Agency," Art of Inequality. pp 92-104

Week 8: November 6
Overcoming Carbon: Solarity & the Decentralized Grid

In class: Lecture + discussion
Due: Reading response
    In addition to a reading response, please submit a short text indicating which project you have
    selected for Assignment 3, including documentation of that project (plans and drawings) as well as
    a preliminary explanation of your approach.

    Hermann Scheer, The Solar Economy, pp 25-38, 62-75
    Kiel Moe, "Energy Hierarchies and Architecture: The Convergence of Matter and Energy,"
    Convergence: An Architectural Agenda for Energy, pp 20-79.
    Selections from Fueling Culture: 101 Words for Energy and Environment. "Grids," Cymene Howe. "Off-
        grid," Michael Truscello "Solar," Amanda Boetzkes. "Energy," Vivian Soni (potential energy vs.
        accumulation)

Week 9: November 13
Overcoming Carbon: Alternative Urban Forms

In class: Lecture + discussion
Due: Reading response

    Pier Vittorio Aureli, "Appropriation, Subdivision, Abstraction: A Political History of the Urban Grid"
        Log 44, pp 139-167.
    Ana Jeinic, "Neoliberalism and the Crisis of the Project...In Architecture and Beyond," Is There an
        (Anti-)Neoliberal Architecture?
    Massimo de Angelis, "Plan C&D: Commons and Democracy,"

—LOG 47: Overcoming Carbon Form, LAUNCH —
NYC: Center for Architecture : 6-9 pm November 19

Week 10: November 20
Overcoming Carbon: Presentation of Assignment 03

Week 11: December 04
Presentations of Assignment 03

Week 12: TBD
Final Discussion / Pin-up

Syllabus: ARCH 4216b Globalization Space: Infrastructure Space and Extrastatecraft 2021

Faculty: Keller Easterling

Overview

For reasons rarely questioned, credit cards, all sized .76mm, slip through the slots in cash machines anywhere in the world. Shipping containers stack, lock and calibrate the global transportation and production of goods. Microwaves bounce between billions of cell phones. Nearly identical buildings and urban arrangements proliferate globally. All of these ubiquitous and seemingly innocuous features of our world are evidence of global infrastructure—a spatial operating system and a de facto medium of polity. This realm of extrastatecraft is not a post- national world but a world where the nation has a robust set of stealthy partners and proxies operating outside of and in addition to the state. And while often driven by profound irrationalities, some of the most radical changes to the globalizing world are being written in the language of this matrix space.

With a curiosity about how the world is wired and why it looks the way it does, heavily illustrated lectures use specific sites and episodes to tell stories about networks of trade, transportation, resources, communication, labor, tourism, energy, commerce and finance from the late 19th century to the present. Focused on the special political powers of large spatial/technical systems, the stories encounter among other things: free zones and automated ports around the world, the evolution of rail from late 19th century to present, satellite urbanism in South Asia, broadband and mobile telephony in East Africa, the development of the internet, networks of labor and migration through an agripole in Southern Spain, islands and offshore financial centers, spatial products of commerce and tourism, a cruise ship to the DPRK,

and the standards and management platforms of ISO.

As socio-technical networks, infrastructures are composed of both technologies and the cultural stories (e.g. nation-building, militarization, liberalism or universal rationalization.) The course develops a split screen to see both stories and organizational agency or chemistry—the difference between what organizations are saying and what they are doing. This discrepancy opens on to an expanded political repertoire—ways to design or manipulate both the wiring of the world as well as the spin that accompanies change.

Infrastructure space offers an adventure in thinking for a number of disciplines: social sciences, arts, economics, business history, science and technology studies, history of science, organization studies, informatics, media and communication studies, architecture and urbanism. In dialogue with these disciplines, the course foregrounds spatial variables and spatial practices as underexploited instruments of innovation that might have more authority in global governance and decision making.

Cultural ephemera is screened as a prelude to each lecture. Weekly readings offer evidence, discursive commentary and critique of some fabled globalization texts. Extrastatecraft: the Power of Infrastructure Space is a companion text throughout. Recommended readings extend the discussion for graduate students. Students will present readings in section meetings, and they will form cross-disciplinary groups to compose a question that will be discussed in a midterm review lecture. Each group will also prepare an abstract, a Pecha Kucha presentation, and a final paper/project.

Course Objectives

1. Explore systems of global infrastructure (trade, transportation, energy, communication, etc.) and the economic and political influences that have formed them.
2. Examine the resulting spatial variables and practices that come from these infrastructural systems, including the ways in which some of these spatial practices may be being underutilized as tools.

Assessment Breakdown

Attendance/Participation	30%
Project Proposal	10%
Pecha Kucha	20%
Final Project	40%

Class Organization

Structure

Week One

The first lecture introduces the major questions and suppositions of the course along with an overview of each week. The second lecture visits one quintessential fixture of extrastatecraft—the free trade zone and its automated landscape of container transshipment. Collapsing ancient and contemporary trade practices, the zone is a supernode of many infrastructural networks encountered throughout the term, a spatial technology for creating repeatable "cities," and a self-perpetuating agent of extrastate territory around the world.

Week Two

Two lectures examine global networks of rail, electricity and telegraphy from the late 19th century to the advent of high speed rail. Multinational enterprises established over a hundred years ago—the heavy industries for cabling, rolling stock and extraction—prompted the development of global finance and international organizations, and they continue to have influence in their contemporary incarnations. The lectures start an ongoing discussions about the military, liberal and universal stories that attach to infrastructure networks, sometimes becoming an ideological vortex that drives their composition.

Week Three

Two lectures look at the development of communication networks from the perspective of non-aligned countries. The first lecture traces the history of satellite communications with a story about IT campuses and "knowledge villages" in South Asia and the Middle East. The second lecture considers the history of submarine cable in East Africa—one of the last places on earth to receive fiber optic broadband and one of the places poised to experience the most explosive telecommunications growth.

Week Four

Monday of this week is the first day off. Wednesday's stand-alone lecture will discuss some of the theoretical underpinnings of interdisciplinary design thinking regarding global infrastructure space.

Week Five

The first lecture looks at hydrology and hydroelectricity in the US through the New Deal-era work of an innovative landscape thinker, Benton MacKaye. The second lecture surveys the historical development of oil networks in the Middle East, Central Asia, Africa and South America.

Week Six

At a moment when over 70 million people in the world are displaced, more than at any other time in history, two lectures examine the infrastructures of global labor and migration. The first lecture visits El Ejido in southern Spain where high-tech agricultural infrastructures are a nexus of labor migrations and racial tensions. The second lecture looks more broadly at global migrations related to conflict and environment.

Week Seven

Two lectures focus on repeatable spatial products that, designed to be apolitical, often land in the crosshairs of political conflict. The first lecture looks at the unlikely appearance of cruise ship tourism in the DPRK. The second lecture considers spatial products of global retail and entertainment and their evangelical conquest of territory.

Week Eight

> The Wednesday of this week is the third day off. Monday's lecture looks at standard making, management culture, and international organizations with particular attention to ISO and consultancies like McKinsey.

Week Nine

> The first lecture looks at a history of the internet. The second lecture is an interactive lecture responding to project proposals from each team.

Week Ten

> The first lecture looks the phenomenon of urban expansion in light of inequality and climate change. The second lecture looks at the financial/market forces that create both megaslums and petrodollar palaces—a network of offshore activities that sometimes aligns with islands once considered to be the "confetti of empire."

Week Eleven

> The first lecture rehearses some infrastructural design approaches and financial instruments for putting the development into reverse in sensitive or threatened landscapes around the world. A second lecture continues the discussion about design that was started in the second lecture of week four by considering the design of mutualism that transfers urban values from a financial to a spatial ledger.

Week Twelve

> The first lecture looks at highways and airways as they embody the new/old ambitions of nations and global coalitions. Reaching back to some of the initial lectures of the course, the second lecture tracks the construction industry as both an infrastructure builder and an infrastructure in its own right—one that has instigated vast networks of materials, labor, power as well as atmospheric chemicals and biological agents

Week Thirteen

> A two-part lecture examines activist networks and techniques for exploiting the special aesthetics and political capacities of infrastructure space.

Week Fourteen

> Class Pecha Kucha

Grading

30%	Attendance/participation in section discussions
10%	Project Proposal
20%	Pecha Kucha
40%	Final Project

Schedule and Bibliography

Week One: Trade Networks 2/1, 2/3
Trade Networks

Talk: Introduction: Course Overview
Talk: Free Zone

Armand Mattelart, Networking the World 1794-2000 (London: University of Minnesota Press, 2000), 1-22.
Keller Easterling, "Zone," in Extrastatecraft: the Power of Infrastructure Space (Verso, 2014).
Manuel Castells, The Rise of the Network Society (London: Blackwell, 1996), 151-172, 190-200.
Michael Hardt and Antonio Negri, Empire (Cambridge: Harvard University Press, 200), 42-66.
Keller Easterling, Enduring Innocence; Global Architecture and its Political Masquerades (Cambridge: MIT Press, 2005), 99-122.
Armand Mattelart, Mapping World Communication: War, Progress, Culture (London: University of Minnesota Press, 1994), Chronology 247-258 and 31-52.
Emily Erikson, Between Monopoly and Free Trade: The British East India Company 1600-1756 (Princeton University Press, 2014).
Scott Lash, and John Urry, The End of Organized Capitalism (Madison: University of Wisconsin Press, 1987), 1-16.
Marc Levinson, The Box: How the Shipping Container made the World Smaller and the Economy Bigger (Princeton: Princeton University Press, 2006), "The System," 54-75.
Rosalind Williams, "Cultural Origins and Environmental Impacts of Large Technical Systems," Science in Context 6, 2(1993), 377-403.

Week Two: 2/8, 2/10
Heavy Industries: Rail/Electrical/MNE Networks

Talk: Early Rail to High-speed Rail
Talk: Electricity, Telegraphy and International MNE networks

Alfred D. Chandler, Jr. The Visible Hand: The Managerial Revolution in American Business (Cambridge: The Belknap Press of Harvard University Press, 1977), 81-109. Yale online resource.
Stephen Krasner, Sovereignty: Organized Hypocrisy (Princeton: Princeton University Press, 1999), 3-25 (and http://globetrotter.berkeley.edu/people3/Krasner/krasner-con3.html; or Krasner, "Sovereignty," Foreign Policy, Jan/Feb 2001, 20-29.
Manu Karuka, Empire's Tracks: Indigenous Nations, Chinese Workers, and the Transcontinental Railroad (University of California Press, 2019), Preface and chapter 3.
Armand Mattelart, Mapping World Communication: War, Progress, Culture (London: University of Minnesota Press, 1994), 3-30.
Wolfgang Schivelbusch. The Railway Journey: The Industrialization of Time and Space in the Nineteenth Century (University of California Press).
Huang Annian, The Silent Spike: Chinese Laborers and the Construction of North American Railroads (China Intercontinental Press, 2006).
Brian Roach "A Primer on Multinational Corporations" in Leviathans: Multinational Corporation and the New Global History (Cambridge: Cambridge University Press, 2005) 1944.
Keith Neilson and T. G. Otte, "Railpolitik," in Neilson and Otte, Railways and International Politics: Paths of Empire, 1848-1945 (London: Routledge, 2006), 1-20.
Global Inc.: An Atlas of the Multinational Corporation (NY: New Press, 2003). Film: The Corporation

Week Three: 2/15, 2/17
Communication Networks I: Satellite, Fiber

Talk: Satellite Urbanism: South Asia and the Middle East
Talk: Broadband Submarine Cable: East Africa

Arjun Appadurai, Modernity at Large: Cultural Dimensions of Globalization (Minneapolis: University of Minnesota Press, 1996), 27-47.
Stephen Graham, and Simon Marvin, Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition (London: Routledge, 2001), 329-377.
"Broadband," in Extrastatecraft: the Power of Infrastructure Space, (London: Verso, 2014).
Keller Easterling, Enduring Innocence: Global Architecture and its Political Masquerades (Cambridge: MIT Press, 2005), 135-155.
Arvind Rajagopal, Politics after Television: Hindu Nationalism and the Reshaping of the Public in India. Cambridge: Cambridge University Press, 2001.
Nicole Starosielski, The Undersea Network: Sign, Storage, Transmission (Duke University Press, 2015). http://www.surfacing.in/?image=reunion-coast
Lisa Parks, "Water, Energy, Access: Materializing the Internet in Rural Zambia" in Lisa Parks and Nicole Starosielski. eds., Signal Traffic: Critical Studies of Media Infrastructures (Urbana-Champaign: University of Illinois Press, 2015).

Week Four: 2/22 (first break day), 2/24
Active Form

Talk: Medium Design

Bruno Latour, Reassembling the Social: An Introduction to Actor-Network Theory (Oxford: Oxford University Press 2005), 1-17, 43-52.
"Disposition," in Extrastatecraft: The Power of Infrastructure Space (Verso, 2014). Keller Easterling, Medium Design, Verso, 2021, Preface and introduction
James C. Scott, Seeing Like a State, How Certain Schemes to Improve the Human Condition Have Failed (New Haven: Yale University Press, 1998), 309-341.
J.J. Gibson, "The Theory of Affordances" from The Ecological Approach to Visual Perception (Lawrence Erlbaum Associates, London: 1986), 127-143.
Shannon Mattern, Code and Clay, Data and Dirt: Five Thousand Years of Urban Media (University of Minnesota Press, 2015).
Karen Barad, Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning, (Durham and London: Duke University Press, 2007).
Jane Bennett, Vibrant Matter: A Political Ecology of Things (Durham, NC: Duke University Press, 2010).
John Durham Peters, The Marvelous Clouds: Toward a Philosophy of Elemental Media (University of Chicago, 2015), In Media Res and Understanding Media.
Gilbert Ryle, The Concept of Mind (Chicago: University of Chicago Press, 1949), "Knowing How and Knowing That," 25-61.
Michael Polanyi, The Tacit Dimension (Chicago: University of Chicago Press, 2009, reprint from 1966), 1-25.

Week Five: 3/1, 3/3
Oil and Water

Talk: Hydrology: US/India/China/Turkey
Talk: Oil: Middle East, Central Asia, Africa and South America

Keller Easterling, Organization Space: Landscapes Highways and Houses in America (Cambridge: MIT Press, 1999), 12-67.

Timothy Mitchell, Carbon Democracy: Political Power in the Age of Oil (Verso, 2011), Chapter 5 Fuel Economy.

Karl Polanyi, The Great Transformation: The Political and Economic Origins of Our Time (Boston: Beacon Press, 1944, 1957, 2001), 141-157.

Michael Klare, The Race for What's Left: The Global Scramble for the World's Last Resources (Metropolitan Books, 2012), Introduction and "Driven by Depletion."

Matthew Huber, Lifeblood: Oil, Freedom and the Forces of Capital (Minnesota, 2014).

Mazen Labban, Space, Oil and Capital (New York: Routledge, 2008).

Keller Easterling, "Extrastatecraft" in Perspecta 39, Fall, 2007.

Zeynep S. Akinci, Pelin Tan, "Waterdams as Dispossession: Ecology, Security, Colonization" in James Graham, ed., Climate: Architecture and the Planetary Imaginary (New York: Columbia books on Architecture and the City/Lars Muller, 2016).

Arundhati Roy, The Cost of Living (Modern Library, 1990). 1-90. Yale Internet Resource

Week Six: 3/8, 3/10 (YSOA GRAD Midterm week)
Migration Networks

Group formation begins
Talk: Labor Migration: El Ejido, Spain and Transnational Labor
Talk: Conflict migration: Fighter/Refugee

Georgio Agamben, "The Camp as Nomos of the Modern" in Homo Sacer: Sovereign Power and Bare Life (Stanford: Stanford University Press, 1998),166-180.

Aihwa Ong, "A Biocartography: Maids, Neoslavery and NGOs)" Liberalism as Exception (Durham, Duke University Press, 2006), 195-217.

Johan Galtung, "Violence, Peace and Peace Research," Journal of Peace Research, vol. 6, no. 2, 1969, 167-191.

Keller Easterling, "The One, the Binary, the One-to-One, and the Many," in Marina Otero, et. al.,eds., After Belonging: 2016 Oslo Triennale, 2016.

Etienne Balibar, We, the People of Europe: Reflections on Transnational Citizenship (Princeton: Princeton University Press, 2003), 51-77.

Zygmunt Bauman, "Tourists and Vagabonds" in Globalization: The Human Consequences (New York: Columbia University Press, 1998), 77-102.

Lisa Law, "Defying Disappearance: Cosmopolitan Public Spaces in Hong Kong," Urban Studies, Vol. 39, No. 9, 2002.

Jacques Ranciére, "Democracy Corrected," On the Shores of Politics (New York: Verso, 1995), 93-107.

Deborah Cowen, The Deadly Life of Logistics: Mapping Violence in Global Trade (Minneapolis, University of Minnesota Press, 2014).

Week Seven: 3/15, 3/17
Spatial Products Tourism/Franchise

Group formation continues
Project Tutorials begin
Talk: DPRK and I Love Cruise
Talk: Franchise

Jacques Rancière, The Politics of Aesthetics (London: Continuum, 2004), 12-45, with particular attention to 12-19.

Pierre Bourdieu, "Symbolic Capital," The Logic of Practice (Stanford: Stanford University Press, 1980), 112-121.

Dean MacCannell, The Tourist (Berkeley: University of California Press, 1976), 1-16, 91-107.

Brian Larkin, "The Politics and Poetics of Infrastructure," Annual Review of Anthropology, 42, 2013, 335.

Keller Easterling, Enduring Innocence; Global Architecture and its Political Masquerades (Cambridge: MIT Press, 2005), 15-34.

Guy Debord,The Society of the Spectacle (New York: Zone Books), "Separation Perfected," and "The Commodity as Spectacle,"11-34.

Marc Augé, " New Worlds" An Anthropology for Contemporaneous Worlds (Stanford: Stanford University Press, 1999), 89-126.

Week Eight: 3/22, 3/24 (third break day)
Management Networks

Project Tutorials continue
Project Proposals due
Talk: ISO Management Standards

Meyer, Drori and Hwang, Globalization and Organization: World Society and Organizational Change (Oxford: Oxford University Press, 2006), 25-49.

G. Gereffi, R. Garcia-Johnson, and E. Sasser, "The NGO-Industrial Complex," Foreign Policy, no.125 (2001).

Keller Easterling, "Quality," in Extrastatecraft: The Power of Infrastructure Space (Verso, 2014).

Susan Leigh Star and Martha Lampland, Standards and Their Stories: How Quantifying, Classifying and Formalizing Pratices Shape Everyday Life (Ithaca: Cornell University Press, 2009).

David Nye, "Energy Narratives," in Narratives and Spaces: Technology and the   construction of American Culture (New York: Columbia University Press, 1997), 74-91.

Nils Brunsson, Bengt Jacobsson, eds., A World of Standards (Oxford: Oxford University Press, 2000), 1-17, 71-84

Week Nine: 3/29, 3/31
Communication Networks II: Internet/Review

Talk: Internet
Talk: Project proposals

Gregory Clancey and Merritt Roe Smith, eds., Major Problems in the History of American Technology (Houghton Mifflin, 1998). Military-Industrial-University Complex: 1945-1990 427-438, 444-445; Bruce Sterling, "From Arpanet to Internet," 516-18.

Simone Brown, Dark Matters: on the Surveillance of Blackness (Duke University Press, 2015), Introduction.

Ruha Benjamin, Race After Technology: Abolitionist Tools for the New Jim Code (Polity Press, 2019), Introduction.

Benjamin Bratton, The Stack: On Software and Sovereignty (Cambridge: MIT Press, 2015), Introduction, 3-17. Or http://www.e-flux.com/journal/the-black-stack/

Yochai Benkler, The Wealth of Networks: How Social Production Transforms Markets and Freedom (New Haven: Yale University Press, 2006), 1-28.

John Arquilla and David Ronfeldt, Networks and Netwars: The Future of Terror, Crime and Militancy (Rand, 2001), ix-25 (also http://globetrotter.berkeley.edu/people3/Arquilla/arquilla-con0.html

Gilles Deleuze and Felix Guattari. "Treatise on Nomadology-The War Machine," A Thousand
Plateaus, 351-424. Internet resource

Week Ten: 4/5, 4/7
Urbanization and Financial Networks

Talk: Urban Expansion
Talk: Offshore

Atlas of Urban Expansion: https://ebookcentral.proquest.com/lib/yale-ebooks/detail.
action?docID=3327984
Mike Davis, "Haussmann in the Tropics," Planet of Slums, 95-120.
Joseph Stiglitz, Globalization and its Discontents (New York: Norton, 2003), 3-22.
John Christensen, "Dirty Money: Inside the Secret World of Offshore Banking," in Steven Hiatt, ed.
A Game as Old as Empire: The Secret World of Economic Hit Men and the Web of Global
Corruption (San Francisco: Berrett-Koehler Publishers, Inc., 2007), 41-68.
Nicholas, Shaxson, Treasure Islands: Uncovering the Damage of Offshore Banking and Tax Havens
(Palgrave McMillan, 2012).
Ronen Palan, The Offshore World: Sovereign Markets, Virtual Places and Nomad Millionaires
(Cornell University Press, 2003).
Manthia Diawara, "Toward a Regional Imaginary in Africa," The Cultures of Globalization (Durham:
Duke University Press, 1998), 103-124.
Zygmunt Bauman, "To Each Waste its Dumping Site," in Wasted Lives: Modernity and its Outcasts
(Cambridge: Polity, 2004), 63-93.

Week Eleven: 4/12 4/14
Subtraction

Project Tutorials Continue
Talk: Subtraction: the Development Machine in Reverse
Talk: Medium Design

Rob Nixon, Slow Violence and the Environmentalism of the Poor (Cambridge: Harvard University
Press, 2013), 1-44.
Katherine Franke, Repair: Redeeming the Promise of Abolition (Haymarket Books, 2019), Chapter 4.
Keller Easterling, Subtraction (Sternberg Press, 2014).
J.K. Gibson-Graham, Take Back the Economy: An Ethical Guide for Transforming Our Communities
(University of Minnesota Press, 2013), Chapter 1, Reframing the Economy, Reframing Ourselves.
Mariame Kaba and Shira Hassan, Fumbling Towards Repair: A Workbook for Community
Accountability and Facilitators (Project NIA; Workbook edition, 2019).
Arturo Escobar, Designs for the Pluriverse: Radical Interdependence, Autonomy, and the Making of
Worlds (Duke University Press, 2018).
Ashish Kothari, Ariel Salleh, Federico Demaria, Alberto, Acosta, and Arturo Escobar, Pluriverse: A
Post-Development Dictionary (Tulika Books, 2019).
Dean Spade, Mutual Aid: Building Solidarity in this Crisis (and the Next) (Verso, 2020).
The Little REDD Book. http://www.amazonconservation.org/pdf/redd_the_little_redd_book_
dec_08.pdf
Abhijit V. Banerjee and Esther Duflo, Poor Economics: A Radical Rethinking of the Way to Fight
Global Poverty (New York: Public Affairs Books, 2011), Foreword.

Week Twelve: 4/19, 4/21
Airport/Highway/Construction/Pandemic Networks

Talk: Highways
Talk: Airports/Construction Networks/Belt and Road Initiative

Keller Easterling, Organization Space: Landscapes Highways and Houses in America Cambridge: MIT Press, 1999), 74-122.
Mimi Sheller, Mobility Justice: The Politics of Movement in an Age of Extremes (Verso, 2018), Conclusion: Mobility Commons.
Keller Easterling, "Switch," https://www.e-flux.com/architecture/positions/151186/switch/https://www.e-flux.com/architecture/new-silk-roads/
Mahnaz Ispahani, Roads and Rivals: The Political Uses of Access in the Borderlands of Asia (B. Tauris & Co Ltd, 1989), 1-14.
Bruno Latour, Aramis or the Love of Technology (Cambridge: Harvard University Press,1999), 1- 50. Location: Yale Internet Resource
Marc Linder, Projecting Capitalism: A History of the Internationalization of the Construction Industry (London: Greenwood Press, 1994), 134-150.
Geoffrey Jones, "Multinationals from 1930s to 1980s" in Leviathans, 81-103.
Michael Mann, "The Autonomous Power of the State: Its Origins, Mechanisms and Results," European Journal of Sociology, Vol. 25, No. 02, 1984.
Tom Miller, China's Asian Dream: Empire Building Alone the New Silk Road (London, Zed Books, 2017), Introduction.

Week Thirteen: 4/26, 4/28
Activist Networks

Talk: Activism I
Talk: Activism II

James C. Scott, Domination and the Arts of Resistance: Hidden Transcripts (New Haven; Yale University Press, 1990), 136-152.
Margaret E. Keck and Kathrin Sikkink, Activists Beyond Borders: Advocacy Networks in International Politics (Ithaca: Cornell University Press, 1998), 1-35.
Michel de Certeau, The Practice of Everyday Life. (Berkeley: University of California Press, 1984), "Making Do: Uses and Tactics" 29-44.
Michael Ignatieff, "Human Rights, Sovereignty and Intervention," in ed. Nicholas Owen, Human Rights Human Wrongs (Oxford: Oxford University Press, 2002), 49-88.
Simon Critchley, Infinitely Demanding: Ethics of Commitment, Politics of Resistance (Verso: 2007), 38-68.
Alain Badiou, Ethics: An Essay on the Understanding of Evil (London: Verso, 2001), 18-29.
Seyla Benhabib, The Rights of Others: Aliens, Residents and Citizens (Cambridge University Press, 2004).
Neva Goodwin, "The Social Impact of Multinational Corporations" in Alfred D. Chandler, Jr. and Bruce Mazlish eds. Leviathans: Multinational Corporation and the New Global History (Cambridge: Cambridge University Press, 2005) 135-166.
Retort, Afflicted Powers, Introduction (London: Verso, 2005) 1-15.

Week Fourteen 5/3, 5/5
Project Pecha Kucha

Reference

For an extended dossier on issues of inequality, race and indigeneity: https://docs.google.com/spreadsheets/d/1RPnBrHcXeIL3×vQ9H5OzuZadRyTwDLOo2MlomU8jZ WI/edit?usp=sharing

Peter Adey, Air: Nature and Culture (London: Reaktion Books, 2014).

Shamina Ahmed and David M. Potter, NGOS in International Politics (Bloomfield, Connecticut: Kumarian Press, 2006).

Fouad Ajami, "The Summoning," in O'Meara, Mehlinger and Krain, Globalization and the Challenges of a New Century (Bloomington: Indiana University Press, 2000), 63-70.

Robert G. Angevine, The Railroad and the State: War, Politics and Technology in Nineteenth Century America (Stanford: Stanford University Press, 2004).

Kwame Anthony Appiah, Cosmopolitanism: Ethics in a World of Strangers (New York; Norton and Company, 2006).

John Arquilla and David Ronfeldt, The Emergence of Noopolitik: Toward an American Information Strategy, Santa Monica, RAND, 1999), 28-53. (Online Resource)

Reyner Banham, Los Angeles: the architecture of four ecologies (London, Allen Lane, 1971).

Gregory Bateson, Steps to an Ecology of Mind. New York: Ballantine Books, 1973. "Form, Substance and Difference" p. 448-468

Gregory Bateson, Mind and Nature: A Necessary Unity. New York: Dutton, 1979. "Criteria of Mental Process 1-4," 89-109.

Ulrich Beck, Individualization (London: Sage, 1999).

Seyla Benhabib, The Rights of Others: Aliens, Residents and Citizens (Cambridge: Cambridge University Press, 2004).

Stewart Brand, The Media Lab: Inventing the Future at M.I.T. (New York: Viking Penguin, 1987).

Neil Brenner and Christian Schmid, "Elements for a New Epistemology of the Urban," in Suzanne Hall and Ricky Burdett, eds, The Sage Handbook of the 21st Century City (Sage, 2018), 47-68.

Buckley, Craig, Rüdiger Campe, and Francesco Casetti, eds. Screen Genealogies: From Optical Device to Environmental Medium. Amsterdam: Amsterdam University Press, 2019, Introduction.

Manuel Castells, The Informational City: Information Technology, Economic Restructuring, and the Urban-Regional Process (London: Blackwell, 1989).

Manuel Castells, The Rise of the Network Society (London: Blackwell, 1996), 151-195.

Manuel Castells and Peter Hall, Technopoles of the World: The making of 21st Century Industrial Complexes (London: Routledge, 1994).

Arthur C. Clarke, "Extra-terrestrial Relays"1945. http://www.lsi.usp.br/~rbianchi/clarke/ACC.ETRelays.html

Deborah Danowski and Eduardo Viveiros Castro, The Ends of the World (Polity Press, 2017).

Mike Davis, "Metropolitan Disorders," New Left Review, 41, September/October 2006, 46-67.

Regis Debray, Media Manifestos: On the Technological Transformations of Cultural Forms (New York: Verso, 1996).

Manuel Delanda, War in the Age of Intelligence Machines (New York: Swerve, 1991).

Nicholas de Monchaux, Local Code: 3659 Proposals about Data, Design and the Nature of Cities (Princeton: Princeton Architectural Press, 2016), New York Study.

Hernando de Soto, The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else (Basic Books, 2000).

Rigas Doganis, The Airline Business in the 21st Century (Routledge: 2001). Location: YIR

Peter F. Drucker, The Concept of the Corporation (New Brunswick: Transaction Publications, 2008) Originally John Day Company 1946.

Keller Easterling, "Interchange," Perspecta, Yale University, 1999.

Barry Eichengreen, Globalizing Capital: A History of the International Monetary Fund (Princeton: Princeton University Press, 2008).

Wilfried FeldenKirchen, Siemens: 1918-1945 (Columbus: Ohio State University, 1995), 11-138.

Vilem Flusser, The Shape of Things: A Philosophy of Design (Reaktion Books, 1999), The Non- Thing One, The Non-Thing Two.

Vilem Flusser, Toward a Philosophy of Photography, trans. Anthony Mathews (London: Reaktion Books, 2000). (pdf online)

Robert Fogel, Railroads and American Economics (Baltimore: Johns Hopkins, 1964).

Peter Galison, Einstein's Clocks, Poincare's Maps (New York: WW Norten, 2003).

Alexander Galloway, Protocol: How Control Exists After Decentralization (Cambridge: MIT Leonardo, 2003), 147-172.

Ruth Wilson Gilmore Makes the Case for Abolition, Intercepted, June 10, 2020. https://theintercept.com/2020/06/10/ruth-wilson-gilmore-makes-the-case-for-abolition/

Donna Haraway, Staying with the Trouble: Making Kin in the Chthulucene (Duke University, 2016), Introduction.

Steve J. Heims, The Cybernetics Group (Cambridge, Mass: MIT Press,1991).

César Hidalgo, Why Information Grows: The Evolution of Order, from Atoms to Economies (New York: Basic Books, 2015).

Christopher P. Hood, Shinkansen: from bullet train to symbol of modern Japan (London: Routledge, 2006), 155-161, 196-210.

James E. Katz, Handbook of Mobile Communication Studies (Cambridge: MIT Press, 2008).

Friedrich Kittler, Gramophone, Film, Typewriter (Stanford University Press, 1999).

Friedrich Kittler, Discourse Networks, 1800/1900 (Stanford University Press, 1992).

Michael Klare, Blood and Oil: The Dangers and Consequences of America's Growing Dependency on Imported Petroleum (New York: Henry Holt, 2005).

Naomi Klein, Fences and Windows: Dispatches from the Front Lines of the Globalization Debate (New York: Picador, 2002), 44-84.

Stephen Kobrin, "Multinational Corporations, The Protest Movement, and the Future of Global Governance" in Alfred D. Chandler, Jr. and Bruce Mazlish eds. Leviathans: Multinational Corporation and the New Global History (Cambridge: Cambridge University Press, 2005) 219-235.

Rem Koolhaas, "The Generic City," S,M, L, XL (New York: Monacelli, 1995). 1238-1264

Jacques Leslie, Deep Water: The Epic Struggle Over Dams, Displaced People, and the Environment (New York: Farrar, Straus, Giroux, 2005). 66-78.

Henri Lefebvre, The Production of Space (Blackwell, 1974).

Marc Linder, Projecting Capitalism: A History of the Internationalization of the Construction Industry (Greenwood Press, 1994).

John Makansi, Lights Out: The Electricity Crisis, the Global Economy, and What It Means To You (New York: Wiley, 2007).

Armand Mattelart, The Invention of Communication (London: University of Minnesota Press, 1996).

Bruce Mazlish, The Railroad and the Space Program (Boston: Technology Press, 1965).

Marchall McLuhan and Quentin Fiore, The Medium is the Massage (Penguin, 1967).

Marshall McLuhan, Understanding Media (MIT Press Edition, 1998), 7-32.

John McPhee, The Control of Nature (New York: Farrar, Straus, Giroux, 1990 reprint).

John W. Meyer and W. Richard Scott, Organizational Environments: Ritual and Rationality (London: Sage, 1983).

Meyer, Drori and Hwang, Globalization and Organization: World Society and Organizational Change (Oxford: Oxford University Press, 2006).

William Mitchell, ME++: The Cyborg Self and the Networked City (Cambridge: MIT Press, 2003).

Steven Morrison, Clifford Winston, The Evolution of the Airline Industry (Brookings Institute, 1999).

Margaret Morse, "An Ontology of Everyday Distraction: The Freeway, the Mall, and Television" in Virtualities : Television, Media Art, and Cyberculture, Indiana Univ. Press, 1998. 99-124.

Lewis Mumford, Technics and Civilization (New York: Harcourt Brace and Company, 1934).

Eli M. Noam, ed., Telecommunications in Africa (New York: Oxford University Press, 1999).

Kenichi Ohmae, "The Rise of the Region State" Globalization and the Challenges of a New Century, Bloomington: Indiana University Press, 2000, 93-100.

George P. Oslin, The Story of Telecommunications (Macon, GA: Mercer University Press, 1992), 167-186, 387-411.

T. G. Otte, Railways and International Politics: Paths of Empire, 1848-1945 (Routledge, 2006).

David Page and William Crawley, Satellites over South Asia: Broadcasting Culture and the Public Interest (New Delhi: Sage Publications, 2001).

Lisa Parks and Shanti Kumar, eds., Planet TV: A Global Television Reader (New York: NYU Press, 2003). "The Rise of Global Media" Edward S. Herman and Robert McChesney, 21-39.

Anthony Perl, New Departures: Rethinking Rail Passenger Policy in the Twenty-First Century (Lexington: The University Press of Kentucky, 2002), 15-41. (rec. 1-75).

Stephen Pitti The Devil in Silicon Valley: Race, Mexican Americans, and Northern California (2003).

Neil Postman, Technology: The Surrender of Culture to Technology (Vintage, 1993).

Paul Roberts, The End of Oil: On the Edge of a Perilous New World (New York: Houghton Mifflin, 2004), 91-115. (also see http://the-end-of-oil.com/_wsn/page3.html).

Jacques Rancière, "The Art of the Possible: Fulvia Carnevale and John Kelsey in Conversation with Jacques Rancière," Artforum International 45, no. 7 (2007), 256—60.

Avital Ronell, The Telephone Book: Technology, Schizophrenia and Electric Speech (Lincoln: University of Nebraska Press, 1991).

Ananya Roy and Aihwa Ong, eds., Worlding Cities: Asian Experiments and the Art of Being Global (Blackwell, 2011).

Ned Rossiter, Software, Infrastructure, Labor: A Media Theory of Logistical Nightmares (Routledge, 2016).

Peter Sloterdijk, Critique of Cynical Reason (Minneapolis, University of Minnesota Press, 1987).

Smith, Philip (2005). Why War? The Cultural Logic of Iraq, the Gulf War and Suez. Chicago: Chicago University Press.

Charles Tilly, Regimes and Repertoires (Chicago: University of Chicago Press, 2006).

Tunnard, Christopher and Pushkarev, Boris, Man Made America: Chaos or control, New Haven: Yale University Press, 1963.

Langdon Winner, The Whale and the Reactor (Chicago: University of Chicago, 1986).

Richard Whittington and Michael Mayer, The European Corporation: Strategy, Structure, and Social Science (London: Oxford, 2002).

Annalee Saxenian, The New Argonauts: Regional Advantage in a Global Economy (Harvard, 2007), Introduction.

Wolfgang Schivelbusch. Disenchanted Night: The Industrialization of Light in the 19th Century (University of California Press, 1995 reprint), 79-114.

Isabelle Stengers, Another Science is Possible: A Manifesto for Slow Science (Polity Press: 2013, English translation, 2018) Chapter 6: "Cosmopolitics: Civilising Modern Practices."

Dorceta E, Taylor, Toxic Communities: Environmental Racism, Industrial Pollution, and Residential Mobility (New York University Press, 2014). Chapter 10 and Conclusion.

http://www.theyrule.net

Syllabus: ARCH 4219 Urban Research and Representation 2019

Faculty: Elihu Rubin

Overview

Arch 4219 is a theory and methods class in urban research, with a focus on archives, field work, photography, and filmmaking. The seminar sets out to strengthen the designer's tool kit of social and historical methods; to bring storytelling to site research. To this end, we engage in an interdisciplinary manner with work in urban sociology, cultural geography, architectural history, critical theory, and the politics of representation.

Each student will develop a semester-long research project, accumulating materials that will contribute to a final video/multimedia project for a public audience. We build research partnerships with local and Yale institutions, including Sterling Memorial Library, the Yale University Art Gallery, the Center for Collaborative Arts and Media (CCAM), the New Haven Museum, and the New Haven Public Library. The scale and location of the building, site, or landscape that is the subject of investigation is determined by the student in consultation with the instructor.

There are four benchmark assignments en route to the final project: 1) Research Question; 2) Site Description and Documentation; 3) Interview and Sound Study; 4) Montage.

Seminar meetings are structured as group conversations and students are expected to keep up with readings and be prepared to discuss them. Students produce a short written or visual response each week and select one reading for more thorough consideration. Workshops are scheduled during class time with the exception of two video production workshops at the CCAM.

Course Objectives

1. Through a semester-long research project, utilize interdisciplinary methods of site research spanning multiple disciplines in order to introduce an element of storytelling to site research, heightening one's use and sense of historical and social elements within the urban environment.

Assessment Breakdown

Participation	15%
Research Question	10%
Site Description/ Documentation	10%
Interview/Sound Study	10%
Montage	10%
Research Project	45%

Schedule

Week 1	September 4	Itineraries Through the Urban...
		Introduction to the course, its central themes, the syllabus, and assignments.
Week 2	September 11	Stranger's Path: Reading the Urban Text

J.B. Jackson. 1957. "The Stranger's Path."
Paul Groth. 1997. "Frameworks for Cultural Landscape Studies," Understanding Ordinary Landscapes.
Gabrielle Brainard. 2001. "Party Walls: Understanding Urban Change Through a Block of New Haven Row Houses, 1870-1979."
Rebecca Solnit. 2007. "Detroit and the Post-American Landscape," Harpers.

| Week 3 | September 18 | Field Work: Interpretive Walk |

Robert Ezra Park. 1915. "The City: Suggestions for the Investigation of Human Behavior in the Urban Environment."
David Harvey. "The Urban Process under Capitalism: A Framework for Analysis," The Urbanization of Capital.
Allan Jacobs. 1981. Looking at Cities.

Week 3	September 20	Video Production Workshop I, CCAM
		11 am — 2 pm
Week 4	September 25	Material Culture and the Post-Industrial Landscape

Shannon Lee Dawdy, "Clockpunk Anthropology and the Ruins of Modernity," Current Anthropology, Vol. 51, No. 6 (December 2010): 761-793.
Greg Grandin. 2013. "Empire's Ruins: Detroit to the Amazon," in Imperial Debris: On Ruins and Ruination, ed. Ann Laura Stoler.
Tim Strangleman. " 'Smokestack Nostalgia,' 'Ruin Porn' or Working-Class Obituary: The Role and Meaning of Deindustrial Representation," International Labor and Working-Class History, No. 84, Fall 2013.
LaToya Ruby Frazier. 2014. The Notion of Family
Kate Brown. 2015. "Returning Home to Rustalgia," Dispatches from Dystopia: Histories of Places Not Yet Forgotten.

Due: Research Question

Week 5	October 2	Workshop: Manuscripts and Archives, Sterling Memorial Library

Douglas Rae. 2004. City: Urbanism and its End.
Mandi Isaacs Jackson. 2008. Model City Blues: Urban Space and Organized Resistance in New Haven.
Brian Goldstein, "Planning's End? Urban Renewal in New Haven, the Yale School of Art and Architecture, and the Fall of the New Deal Spatial Order," Journal of Urban History 2011, 37③.

Week 6	October 9	Observing and Testing: Urban Space and Social Life

Edgar Allan Poe. 1840. "The Man of the Crowd."
Georg Simmel. 1905. "The Metropolis and Mental Life."
Robert Sommer. 1969. Personal Space: The Behavioral Basis of Design (selections)
Stanley Milgram. 1977. The Individual in a Social World. (Chaps. 1 - 4, pp. 24 — 53)
William H. Whyte. 1980. The Social Life of Small Urban Spaces
Jan Gehl and Birgitte Svarre. 2013. How To Study Public Life

Week 6	October 4	Video Production Workshop II, CCAM
Week 7	October 16	The Visual Rhetoric of Urban Planning

Case Study: Bunker Hill, Los Angeles
Kent McKenzie, "Bunker Hill 1956" (1956)
Housing Authority, City of Los Angeles, "And Ten Thousand Moore" (1951)
Geoff Dyer. 2005. The Ongoing Moment (selections)
Howard S. Becker. 2007. "Visual Sociology, Documentary Photography, and Photojournalism," Telling About Society
Elihu Rubin. 2011. "(Re)Presenting the Street: Video and Visual Culture in Planning," in Multimedia Planning and Policy: Beyond the Flatlands, eds. Leonie Sandercock and Giovanni Attili.

Week 8	October 23	Workshop: Yale University Art Gallery

Alan Trachtenberg. 1990. "Four: Camera Work / Social Work," Reading American Photographs
JoAnn Wypijewski, 1994. "Buffalo's Lower West Side," from Triptychs: Buffalo's Lower West Side Revisited.
Jon Chase. 1987. The Fight for Newton Corner.

Due: Site Description and Documentation

Week 9	October 30	Mobility Politics and the Right to the City

Guy Debord. 1958. "Theory of the Dérive"
Thomas F. McDonough. 1994. "Situationist Space," October.
Ash Amin and Nigel Thrift. 2002. "The Legibi lity of the Everyday City,"
Cities:
Reimagining the Urban.
Ocean Howell. 2005. "The Creative Class and the Gentrifying City:
Skateboarding in
Philadelphia's Love Park," Journal of Architectural Education.
Samuel Stein. 2019. Capital City: Gentrification and the Real Estate State
(selections)
David Harvey. 2013. Rebel Cities: From the Right to the City to the
Urban Revolution

Due: Interview and Sound Study

Week 10	November 6	Workshop: New Haven Museum: Archives and Montage

Michael Lesy. 1973. Wisconsin Death Trip.
Agnes Varda. 2000. Les Glaneurs et La Glaneuse (The Gleaners and I)

Week 11	November 13	The Cinematic City

"Where is the cinema? It is all around you outside, all over the city,
that marvelous, continuous performance of films and scenarios." Jean
Baudrillard, 1988: 56
Siegfried Kracauer. 1960. Theory of Film. (selections)
David B. Clarke. 1997. "Previewing the Cinematic City," The Cinematic
City.
Anke Gleber. 1998. "Women on the Screens and Streets of Modernity:
In Search of the Female Flaneur," The Art of Taking a Walk: Flanerie,
Literature, and Film in Weimar Culture.
Walter Benjamin, "The Flaneur," Charles Baudelaire: A Lybric Poet in
the Era of High Capitalism.
Screening: City Symphonies Showdown
Walter Ruttman. 1929. "Berlin, Symphony of a City." (72 minutes)
Dziga Vertov. 1929. "Man with a Movie Camera." (68 minutes)

Due: Montage

Week 12	November 20	Urban Theory and Scale

Neil Brenner. 2019. New Urban Spaces: Urban Theory and the Scale
Question

Week 13	December 4	Debrief and Problem Solving
Exam Week	Date TBA	Screening and Public Review

Syllabus: ARCH 4242 Intro to Planning and Development 2020

Faculty: Alexander Garvin

Overview

This course demonstrates the ways in which financial and political feasibility determine the design of buildings and the character of the built environment. Students propose projects and then adjust them to the conflicting interests of financial institutions, real estate developers, civic organizations, community groups, public offcials, and the widest variety of participants in the planning process. Subjects covered include housing, commercial development, zoning, historic preservation, parks and public open space, suburban subdivisions, and comprehensive plans.

Course Requirements

1. REGULAR ATTENDANCE: Wednesday classes. The material covered in classes is not duplicated in the reading. If you miss any of them you miss a major part of the course, which will be covered in the final examination and may fail the course.

2. GAMES: Games require preparation and consultation with Alex Garvin and TA. Every student is required to participate in all games during class and will be graded on that participation. In professional life failure to submit on time will result in losing the job. Similarly, failure to submit assignments when due or to be prepared to participate in class will result in an automatic failure.

3. 1-PAGE WRITING ASSIGNMENTS: You are required to submit a 1-page comment on the zoning lecture (on Oct. 14) and parks lecture (on Nov. 4). All submissions are due on the date listed. No work will be accepted after those dates. Those assignments will receive grades.

4. READING: The success of both games and lectures is dependent on familiarity with the reading prior to class. Paperbacks on the reading list are marked with an asterisk(*). All readings are on reserve at the ART & ARCHITECTURE LIBRARY. Since so much of the reading consists of A. Garvin's books, THE AMERICAN CITY: WHAT WORKS, WHAT DOESN'T (3nd edition), assignments include optional "alternative reading" by other authors covering similar material. They are intended to give a different perspective from that of A. Garvin. The "resources on reserve" are intended to provide background for the games.

5. FINAL EXAM: (on games, lectures, and readings. Date to be arranged to fit studio jury schedule)

Course Objectives

1. Explore the ways in which political and economic forces can impact the design of buildings and the shaping of urban environments through a number of mock scenarios (games) addressing housing, commercial development, zoning, historic preservation, parks and public open space, suburban subdivisions, and comprehensive plans.

Assessment Breakdown

Writing Assignments	10%
Games	60%
Final Exam	30%

Schedule

Week 1	September 2	Introduction
Week 2	September 9	Housing I: Ingredients of Success
	TBD	Pro-forma workshop
Week 3	September 16	Housing II: Financing Development
	TBD	How to make a winning bid and presentation
Week 4	September 23	Housing III: Community Development
	September 24	Adjusting pro-forma
	September 24-26	Critique of initial bid
	September 25	Final bid submission
Week 5	September 30	Housing IV: New Haven Game
Week 6	October 7	Commercial I: Retailing
Week 7	October 14	Regulation I: Zoning
	October 16	Written Response (100 words)
Week 8	October 28	Regulation II: Historic Preservation
	November 3	Teams meet with Garvin
Week 9	November 4	Parks, Recreation, and Open Space
	November 6	Great Public Parks Essay
	November 7-8	Informal Negotiations
Week 10	November 11	Commercial Development II: Downtown
	November 13	Proposal to Planning Commission
Week 11	November 18	Zoning Game
Week 12	December 2	Conclusion: The Art of Getting Things Done
Week 13	TBD	Final exam

Bibliography

Alexander Garvin: THE AMERICAN CITY: WHAT WORKS, WHAT DOESN'T (3rd edition), McGraw-Hill. 2013.

Additional Reading

Week 2

1. John Macsai, et. al.: HOUSING, John Wiley & Sons, New York, 1982
2. Adrienne Schmitz: MULTIFAMILY HOUSING DEVELOPMENT HANDBOOK, The Urban Land Institute, Washington DC, 2000
3. ULI-The Urban Land Institute: RESIDENTIAL DEVELOPMENT HANDBOOK (Third edition), ULI-The Urban Land Institute, Washington DC, 2004
4. Jingmin Zhou: URBAN HOUSING FORMS, Architectural Press, New York, 2005
5. Wolfgang Forster: HOUSING IN THE 20TH AND 21ST CENTURIES, Prestel, New York, 2008
6. Loft Publications: HIGHRISES — SOCIAL LIVING, Loft Publications, Barcelona, 2007
7. Eric Firley and Caroline Stahl: THE URBAN HOUSING HANDBOOK, Wiley, 2009
8. Maria Alessandra Segantini: CONTEMPORARY HOUSING, Skira, Milan, 2008
9. Market data website: www.trulia.com

Week 3

1. "Affordable Housing" pp. 291-328 in Miles, Haney, & Berens: REAL ESTATE DEVELOPMENT - PRINCIPLES AND PROCESS (3rd edition) , The Urban Land Institute, Washington DC, 2000
2. Richard Peiser with Anne Frej: "Introduction," in PROFESSIONAL REAL ESTATE DEVELOPMENT, The Urban Land Institute, Washington DC, 2003, pp. 3-25
3. Roger Starr: HOUSING AND THE MONEY MARKET, Basic Books, New York, 1975
4. Ira W. Nachem: THE COMPLETE GUIDE TO FINANCING REAL ESTATE DEVELOPMENTS, McGraw-Hill, New York, 2007
5. Peter Linneman: REAL ESTATE FINANCE: RISKS AND OPPORTUNITIES (2nd edition), www.linnemanassociates.com, Philadelphia, 2004
6. Brian O'Looney: INCREMENTS OF NEIGHBORHOOD: A COMPENDIUM OF BUILT TYPES FOR WALKABLE & VIBRANT COMMUNITIES, Oro Editions, San Francisco, 2020
7. Brueggeman and Stone: REAL ESTATE FINANCE (seventh edition), Richard D. Irwin, Homewood Illinois, 1981
8. J. Paul Mitchell (editor): FEDERAL HOUSING POLICY & PROGRAMS, PAST AND PRESENT,, Center for Urban Policy Research, Rutgers, New Brunswick, N.J., 1985
9. Lloyd W. Bookout, Jr.: RESIDENTIAL DEVELOPMENT HANDBOOK, Urban Land Institute, Washington DC, 1990
10. Miles, Haney, & Berens: REAL ESTATE DEVELOPMENT - PRINCIPLES AND PROCESS (2nd edition), The Urban Land Institute, Washington DC, 1995 (especially pp. 1-103)

Weeks 4 and 6

1. Jane Jacobs: DEATH & LIFE OF GREAT AMERICAN CITIES*, Random House, N.Y., 1961. Introduction - pp. 3-18 and (b) Slumming and Unslumming — pp. 270 - 290
2. Lewis Mumford: THE URBAN PROSPECT*, Harcourt, Brace & World, NY, 1968. (Mama Jacobs) Home Remedies for Urban Cancer — pp. 182 - 207

3. Herbert J. Gans : "The Failure of Urban Renewal" pp. 537-557 in URBAN RENEWAL: THE RECORD & THE CONTROVERSY*, MIT Press, 1967, James Q. Wilson
4. Renée Glover: "The Atlanta Blueprint: Transforming Public Housing Citywide" pp. 145-168 in FROM DESPAIR TO HOPE - Hope VI and the New Promise of Public housing in America's Cities*, The Brookings Institution Press, Washington DC, 2009, Henry Cisneros and Lora Engdahl (editors)

Week 5

1. Sapna Maheshwari: ", and Face Being Set Adrift Malls Continue to Lose Their Anchor Stores," New York Times, July 5,2020. p. 5.
2. Richard B. Peiser (with Dean Schwanke): "Retail Development" pp. 300-355 in PROFESSIONAL REAL ESTATE DEVELOPMENT, Dearborn Financial Publishing, Inc. & Urban Land Institute, Washington D.C., 2003.
3. Anita Kramer (editor): RETAIL DEVELOPMENT (4th edition), Urban Land Institute, Washington D.C., 2008
4. M. Jeffrey Hardwick: MALL MAKER: VICTOR GRUEN, ARCHITECT OF THE AMERICAN DREAM, University of Pennsylvania Press, Philadelphia, 2004.
5. Urban Land Institute: DOLLARS & CENTS OF SHOPPING CENTERS* , Urban Land Institute, 1987
6. International Council of Shopping Centers: THE SCORE, ICSC's HANDBOOK ON SHOPPING CENTER OPERATIONS, REVENUES & EXPENSES*, New York, 1995
7. Beyard, Braun, McLaughlin, Philips & Rubin DEVELOPING URBAN ENTERTAINMENT CENTERS*, Urban Land Institute, Washington DC., 1998
8. Michael Beyard + W. Paul O'Mara: SHOPPING CENTER DEVELOPMENT HANDBOOK (3rd edition), Urban Land Institute, Washington DC. 1999
9. Dean Schwanke et al.: MIXED USE DEVELOPMENT HANDBOOK, (2nd edition) Urban Land Institute, Washington DC., 2003

Week 7

1. Seymour Toll: ZONED AMERICAN , Grossman, 1969
2. John Delafons: LAND USE CONTROLS IN THE UNITED STATES, MIT Press, 1969
3. Terry Jill Lassar: CARROTS & STICKS: NEW ZONING DOWNTOWN* , Urban Land Institute, 1989
4. Meltz, Merrian, and Frank: THE TAKINGS ISSUE, Island Press, Washington DC, 1999
5. Donald L. Elliott: A BETTER WAY TO ZONE, Island Press, Washington DC, 2008
6. NYC Planning Commission: ZONING HANDBOOK,
7. NYC Planning Commission: ZONING RESOLUTION

Week 8

1. James Marston Fitch: HISTORIC PRESERVATION*, University Press of Virginia, 1990
2. Joseph B. Rose: "Landmarks Preservation in New York," pp. 132-145 in THE PUBLIC INTEREST, No. 74, Winter 1984
3. Robert Stipe & Antoinette Lee (editors): THE AMERICAN MOSAIC*, The Preservation Press, National Trust for Historic Preservation, Washington DC, 1987
4. Robert E. Stipe (editor): A RICHER HERITAGE: HISTORIC PRESERVATION IN THE 21ST CENTURY*, University of North Carolina Press, Chapel Hill, 2003

Week 9

1. Charles Beveridge + Paul Rocheleau: FREDERICK LAW OLMSTED, Rizzoli international, N.Y., 1995
2. Adam Gopnik: "Olmsted's Trip," THE NEW YORKER, March 31, 1997, pp. 96-104
3. Jane Jacobs: DEATH & LIFE OF GREAT AMERICAN CITIES*, Random House, 1961, "The Uses of Neighborhood Parks" Ch. 5, pp. 89-111
4. George Chadwick: THE PARK & THE TOWN, Praeger, 1966, "The American Parks Movement," pp. 163-220
5. David Barth: PARKS AND RECREATION SYSTEM PLANNING*, Island Press, Washington DC, 2020
6. Alexander Garvin: PUBLIC PARKS: The Key to Livable Cities, W. W. Norton, New York, 2010
7. Alexander Garvin: PARKS, RECREATION AND OPEN SPACE: A 21st Century Agenda *, A.P.A.., Chicago, 2002
8. Alexander Garvin & Gayle Berens: URBAN PARKS & OPEN SPACE*, Urban Land Institute, Washington DC, 1997
9. Alexander Garvin: WHAT MAKES A GREAT CITY; Island Press, Washington DC, 2016
10. Peter Harnik: INSIDE CITY PARKS*, Urban Land Institute, Washington DC, 2000
11. Steve Lerner and William Poole: THE ECONOMIC BENEFITS OF PARKS AND OPEN SPACE*, Trust for Public Land, San Francisco, 1999

Week 10

1. Alexander Garvin: THE HEART OF THE CITY: Creating Vibrant Downtowns for a New Century*; Island Press, Washington DC, 2019
2. Jon C. Teaford: THE ROUGH ROAD TO RENAISSANCE*, Johns Hopkins, Baltimore, 1990
3. Lawrence O. Houstoun, Jr.: BUSINESS IMPROVEMENT DISCTRICTS*, Urban Land Institute, 1997

Week 12

1. Alexander Garvin: THE PLANNING GAME: LESSONS FROM GREAT CITIES
2. Christopher Tunnard: THE MODERN AMERICAN CITY*, Van Nostrand, 1968
3. Eugenie Birch (editor): THE URBAN AND REGIONAL PLANNING READER, Routledge, New York, 2009
4. Duerksen, Dale, and Elliott: THE CITIZEN'S GUIDE TO PLANNING (4th edition): American Planning Association, Chicago, 2009
5. Daniel Burnham & Edward Bennett: PLAN OF CHICAGO, 1909
6. Victor Gruen: A GREATER FORT WORTH TOMORROW, Greater Fort Worth Planning Committee, Fort Worth, 1956
7. (Edmund Bacon): COMPREHENSIVE PLAN FOR THE CITY OF PHILADELPHIA, City of Philadelphia Planning Commission, Philadelphia, 1960
8. NYC Planning Commission: PLAN FOR NEW YORK CITY (6 volumes), NYC Planning Commission, New York, 1969
9. Hilary Ballon and Kenneth Jackson: ROBERT MOSES AND THE MODERN CITY, W. W. Norton, New York, 2007

Syllabus: ARCH 4244 Cartographies of Climate Change 2020

Faculty: Joyce Hsiang

Overview

Climate change disproportionately affects the people and places with the least power and resources. As our sea levels have risen, so too has the extreme socioeconomic disparity of specific communities and countries, creating a drowning class of climate refugees. Entire countries on the front lines of sea level rise[1] face the specter of nationhood without territory, despite the undeniable fact that their contribution to this global problem is negligible. And if climate change is in fact "the result of human activity since the mid-20th century,"[2] it is in actuality a largely male-made phenomenon, if we unpack the gender dynamics and underlying power structures of the proto-G8 nations, the self-proclaimed leaders of industrialization. These power dynamics become even further exacerbated as we consider the implications of the particularly American interest in doubling-down on investing in the heaviest piece of infrastructure ever — climate engineering.[3] The architectural community appears to be in agreement. Climate change is a fundamental design problem. And yet calls to action have been ineffectual, responses underwhelming in the face of this overwhelming challenge. As the architectural community is eagerly poised to jump on the design bandwagon, this course seeks to reveal, foreground, empower and give physical form to the spatial dimensions and power dynamics of the people and places most impacted by climate change. More broadly, the course aspires to help students develop their own critical stance on climate change and the role architects play.

Course Objectives

1. Study the spatial, cultural, and political implications of climate change within the context of the communities that are affected the most.
2. Through a series of analysis exercises, seek to develop a stance on climate change and the role in which architects can play in combating it.

Assessment Breakdown

Participation	15%
Weekly Responses	15%
Drawings (5)	70%

1. This is particularly acute in small island nations in the Indian and Pacific Ocean, such as the Maldives, Tuvalu, Kiribati, the Marshall Islands and Vanuatu, the first countries projected to be eradicated by sea level change in the next 50 years.
2. https://climate.nasa.gov/evidence/ accessed November 14, 2019
3. In 2008, former Congressman and presidential candidate Newt Gingrich stated, "Geoengineering holds forth the promise of addressing global warming concerns for just a few billion dollars a year. Instead of penalizing ordinary Americans, we would have an option to address global warming by rewarding scientific invention...Bring on the American ingenuity."

Methods

This exploratory seminar uses methods of research and spatial analysis to conceptualize and materialize climate change and more broadly consider the world as an architectural project. The explorations will emphasize planetary form and technique. As a research and drawing seminar, the course seeks to instrumentalize cartography, using spatial analysis and speculation as the main mode of inquiry. We will experiment with ways of mapping and drawing the physical forms, power dynamics, and infrastructures of marginalization and socioeconomic inequity at a planetary scale that have emerged through global urbanization and climate change. These "cartes" - maps, survey drawings, graphs, diagrams, site plans, sections, and timelines - will go behind the scenes of each site to uncover the contours of their global geographies and ecologies to trace cartographies of climate change. A diverse and hybrid range of research and representational methods reflecting the intersectional agenda will be explored and may include GIS data, satellite imagery, ecological, and geologic information alongside geopolitical, economic, and sociocultural histories. By visually and spatially surveying, documenting, and drawing the planetary spheres, spaces, and subjects of climate change, this seminar seeks to explore techniques and modes of production that intensify the potency and advance the agency of cartography as an architectural project in the anthropocene.

Class Organization

The seminar will frame cartography and climate change through five approaches:

1. The Myth of the Line - A Critical Cartography for Climate Change or How to Draw the World
2. The Map is the Territory - Agency & the Anthropocene
3. Downed Power Lines - The Demographics of Disaster Displacement
4. World-Making & Geoengineering
5. The Flight & Plight of Icarus - Playing Ostrich, Opportunism & the Overview Effect

Each approach spans two sessions and will be sequenced as a *Talk, Reading, Text, & Discussion* for the first session, alternating with discussions of the *"Carte"* drawing assignment in the second session. Coursework is comprised of readings, text and drawings as well as discussion.

Talks & Readings will introduce themes, precedents, & terminologies. The authors include anthropologists, art historians & astronauts alongside novelists, philosophers & geologists and offer a diverse range of tones and types of writing. Like a call for papers, proposals or a design brief, they are envisioned as prompts and provocations for response through the research and production of the Text & Cartes. How do we respond as architects through the things we make?

Text is to be treated as an architectural project — be it a proposition, research agenda, fiction, narrative, fable, poem, word diagram, myth, paper abstract, or op-ed. They should not be conventional reading responses, lit reviews or faithful summaries of the readings. Each ~250-word piece of creative writing should be crafted to explore tone, agency, and the role you are assuming, and relate to or frame the intent of and approach to your drawing. Texts will be due on Tuesday evening and (optionally?) shared with the class. You're encouraged to look over texts before class for the discussion.

Cartes are the maps and drawings you will be producing and will range from the analytic to the speculative. They should be imbued with an intensity of research.

Schedule and Bibliography

Week 1 (January 15)
Overview

THE MYTH OF THE LINE
A Critical Cartography for Climate Change or How to Draw the World

Week 2 (January 22)
Talk + Discussion
Due: Readings + Text

> Tim Ingold, "Bindings against boundaries: entanglements of life in an open world," Environment and Planning A, vol. 40 (2008), p. 1796-1810.
> Bruno Latour, Down to Earth: Politics in the New Climatic Regime (Cambridge: Polity, 2018), ch 1-5 &19, p 1 - 16, 90 - 99.
> Italo Calvino, "The Traveller in the Map" in Collection of sand: Essays (London: Penguin, 2002), p. 18-25.
> Roi Salgueiro Barrio, "What World? Reframing the World as One City," (urbanNext.net by Actar Publishers, December 2, 2015) https://urbannext.net/what-world/
> Joyce Hsiang & Bimal Mendis, "The City of Seven Billion," in Island New Geographies 08, eds. D. Daou and P. Perez-Ramos, Harvard University Graduate School of Design, (Fall 2016), p. 204-211.

Week 3 (January 29)
Presentations of Work
Due: Carte 1

THE MAP IS THE TERRITORY
Agency & the Anthropocene

Week 4 (February 5)
Talk + Discussion
Due: Readings + Text

> Jorge Luis Borges, "On Exactitude in Science" in Collected Fictions (New York: Penguin, 1998), p. 325.
> Lewis Carroll, "The Bellman's Speech" in The Hunting of the Snark: an Agony in Eight Fits (London: Macmillan and Co, 1876), p. 15-24
> Bruno Latour, "Agency in the Time of the Anthropocene," in New Literary History, vol. 45, no. 1 (2014), p. 1-18.
> Bill Rankin, "Introduction: Territory and the Mapping Sciences" in After the Map: Cartography, Navigation, and the Transformation of Territory in the Twentieth Century, (University of Chicago Press, 2016).
> Manuel de Sola-Morales, "The Culture of Description" in Perspecta, vol. 25 (1989), p. 16-25. Vittorio Gregotti, "The Form of the Territory" in Oase #80 (2009), p. 7-22.
> Neil Brenner and Christian Schmid, "Planetary Urbanization" in Urban Constellations, edited by Matthew Gandy, (Jovis: Berlin, 2011), p. 10-13
> Donna Haraway, "Anthropocene, Capitalocene, Plantationocene, Chthulucene: Making Kin," in Environmental Humanities, vol. 6, (2015), p. 159—65.
> Constantinos Doxiadis, Ecumenopolis: The Inevitable City of the Future, (New York: Norton, c1974) excerpt tbd.

Week 5 (February 19)
Presentations of Work
Due: Carte 2

DOWNED POWER LINES
The Demographics of Disaster Displacement

Week 6 (February 26)
Talk + Discussion
Due: Readings + Text

Esther da Costa Meyer, "La Donna e Mobile: Agoraphobia, Women, and Urban Space," in The Sex of Architecture (New York: Harry N. Abrams, 1996) 141-56

Joyce Hsiang & Bimal Mendis, "Countries without Borders: Reterritorializing the Maldives," in New Constellations New Ecologies, ACSA 101 Proceedings, (2013) p. 704-712.

Dolores Hayden, "What Would a Non-sexist City be Like? Speculations on Housing, Urban Design and Human Work," in Signs, Vol. 5, No. 3, Supplement. Women and the American City (Spring, 1980), pp. S170-S187

Leslie Kanes Weisman, "Women's Environmental Rights: A Manifesto," in Gender, Space, Architecture, edited by Jane Rendell, Barbara Penner and Lain Borden (London: Routledge, 2000), p 1-5

Week 7 (March 25)
Presentations of Work
Due: Carte 3

WORLD-MAKING & GEOENGINEERING

Week 8 (April 1)
Talk + Discussion
Due: Readings + Text

Buckminster Fuller, Operating Manual for Spaceship Earth (New York : Simon and Schuster, c1969) excerpts.

Hashim Sarkis, "Architecture of the World: Oekoumenos redux," in Global Design, edited by Peder Anker, Louise Harpman and Mitchell Joachim, (Munich and London: Prestel, 2014) p. 14- 23

Nelson Goodman, "Words, Works, Worlds" in Ways of Worldmaking (Indianapolis: Hackett Publishing Company, 1978) p. 1-22.

Rania Ghosn, "Carbon Re-Form" in Log 47 Overcoming Carbon Form edited by Elisa Iturbe (2019) p. 106 -117.

J. A, Zalasiewicz, and Mark Williams, The Goldilocks Planet: The Four Billion Year Story of Earth's Climate, (New York: Oxford University Press, 2012) excerpts.

Week 9 (April 8)
Presentations of Work
Due: Carte 4

THE FLIGHT & PLIGHT OF ICARUS
Playing Ostrich, Opportunism & the Overview Effect

Week 10 (April 15)
Talk + Discussion
Due: Readings + Text

Alexander Nemerov, "The Flight of Form: Auden, Bruegel, and the Turn to Abstraction in the 1940s," in Critical Inquiry, Vol. 31, No. 4 (Summer 2005), p. 780-810 excerpts.
Frank White, The Overview Effect: Space Exploration & Human Evolution (Reston: American Institute of Astronautics and Aeronautics, 2014), excerpts.
Ulrich Beck, "How Climate Change Might Save the World," in Harvard Design Magazine 39 Wet Matter, (Harvard Graduate School of Design, 2014).

Week 11 (April 22)
Presentations of Work
Due: Carte 5

Week 12 (TBD)
Final Discussion/Review

Reference

Reyner Banham, Los Angeles: The Architecture of the Four Ecologies (University of California Press: Berkeley, 2001 ed).
Roi Salgueiro Barrio, "What World? Reframing the World as One City," (urbanNext.net by Actar Publishers, December 2, 2015) https://urbannext.net/what-world/
Pierre Bélanger and Jennifer Sigler eds., Harvard Design Magazine 39 Wet Matter, (Harvard Graduate School of Design, 2014).
Neil Brenner and Christian Schmid, "Planetary Urbanization" in Urban Constellations, edited by Matthew Gandy, (Jovis: Berlin, 2011), 10-13
Neil Brenner ed., Implosions/Explosions: Towards a Study of Planetary Urbanization (Berlin: Jovis, 2013).
Rania Ghosn, "Carbon Re-Form" in Log 47 Overcoming Carbon Form edited by Elisa Iturbe (2019) p. 106 -117.
Nelson Goodman, "Words, Works, Worlds" in Ways of Worldmaking (Indianapolis: Hackett Publishing Company, 1978) p. 1-22.
Vittorio Gregotti, "The Form of the Territory" in Oase #80 (2009), p. 7-22.
Joyce Hsiang & Bimal Mendis, "The City of Seven Billion," in Island New Geographies 08, eds. D. Daou and P. Perez-Ramos, Harvard University Graduate School of Design, (Fall 2016), p. 204-211.
Joyce Hsiang & Bimal Mendis, "Countries without Borders: Reterritorializing the Maldives," in New Constellations New Ecologies, ACSA 101 Proceedings, (2013) p. 704-712.
Tim Ingold, The Life of Lines (New York: Routledge, 2015).
Tim Ingold, "Bindings against boundaries: entanglements of life in an open world," Environment and Planning A, vol. 40 (2008), p. 1796-1810.
Ian McHarg, Design with Nature (Garden City, N.Y: Published for the American Museum of Natural History [by] the Natural History Press,1969).
Alexander Nemerov, "The Flight of Form: Auden, Bruegel, and the Turn to Abstraction in the 1940s," in Critical Inquiry, Vol. 31, No. 4 (Summer 2005), p. 780-810 excerpts.
Peter Sloterdijk, Spheres (Los Angeles, CA: Semiotext(e), 2011).
Manuel de Sola-Morales, "The Culture of Description" in Perspecta, vol. 25 (1989), p. 16-25.

Frank White, The Overview Effect: Space Exploration & Human Evolution (Reston: American Institute of Astronautics and Aeronautics, 2014), excerpts.

Climate and the Anthropocene

Esther da Costa Meyer, "Architectural History in the Anthropocene: Towards Methodology," Journal of Architecture, vol. 21, no. 8 (2016), p. 1203-1225.

James Graham ed., Climates: Architecture and the Planetary Imaginary (New York: Lars Muller Publishers, 2016).

Donna Haraway, "Anthropocene, Capitalocene, Plantationocene, Chthulucene: Making Kin," in Environmental Humanities, vol. 6, (2015), p. 159—65.

Bruno Latour, "Agency in the Time of the Anthropocene," in New Literary History, vol. 45, no. 1 (2014), p. 1-18.

Bruno Latour, Down to Earth: Politics in the New Climatic Regime (Cambridge: Polity, 2018)

Etienne Turpin, ed., Architecture in the Anthropocene: Encounters Among Design, Deep Time, Science and Philosophy (Anexact, 2013), excerpt. tbd

Lucas Van der Velden, The Geologic Imagination (Amsterdam: Sonic Acts Press, 2015).

J. A, Zalasiewicz, and Mark Williams, The Goldilocks Planet: The Four Billion Year Story of Earth's Climate, (New York: Oxford University Press, 2012)

Space and Politics

Esther da Costa Meyer, "La Donna e Mobile: Agoraphobia, Women, and Urban Space," in The Sex of Architecture (New York: Harry N. Abrams, 1996) 141-56

Donna Haraway, "A Cyborg Manifesto in Science, Technology, and Socialist-Feminism in the Late Twentieth Century," in Simians, Cyborgs and Women: The Reinvention of Nature (New York: Routledge, 1991), p.149-181

Dolores Hayden, "What Would a Non-sexist City be Like? Speculations on Housing, Urban Design and Human Work," in Signs, Vol. 5, No. 3, Supplement. Women and the American City (Spring, 1980), pp. S170-S187

Leslie Kanes Weisman, "Women's Environmental Rights: A Manifesto," in Gender, Space, Architecture, edited by Jane Rendell, Barbara Penner and Lain Borden (London: Routledge, 2000), p 1-5

Leslie Kanes Weisman, "Diversity by Design: Feminist Reflections on the Future of Architectural Education and Practice," in The Sex of Architecture, edited by Diana Agrest, Patricia Conway and Leslie Kanes Weisman (New York: Harry N. Abrams, 1996), p. 273-286

Alejandro Zaera Polo, "The Politics of the Envelope, A Political Critique of Materialism," in Log, No. 13/14, Aftershocks: Generation(s) since 1968 (Fall 2008), pp. 193-207

Architecture and the World

Constantinos Doxiadis, Ecumenopolis: The Inevitable City of the Future,.(New York: Norton, c1974) excerpts. Tbd.

Buckminster Fuller, Operating Manual for Spaceship Earth (New York : Simon and Schuster, c1969).

Hashim Sarkis, "Architecture of the World: Oekoumenos redux," in Global Design, edited by Peder Anker, Louise Harpman and Mitchell Joachim, (Munich and London: Prestel, 2014) p. 14-23

Island New Geographies, 8, by Daniel Daou and Pablo Perez-Ramos eds., Harvard University Graduate School of Design, Fall 2016, excerpts

Representation and Cartography

James Ackerman, "Introduction: the Conventions and Rhetoric of Architectural Drawing," in Conventions of Architectural Drawing, (Cambridge: Harvard Graduate School of Design, 2000).

Amale Andraos et al, "How to Build a City, Roman Operating System," Harvard Project on the City, in Mutations, (Barcelona, Actar, 2000), p 10-18

Timothy Barney, "The Peters Projection and the Latitude and Longitude of Recolonization," in Journal of International and Intercultural Communication 7 (2014), p. 103—126.

Jorge Luis Borges, "On Exactitude in Science" in Collected Fictions (New York: Penguin, 1998), p. 325.

Italo Calvino, "The Traveller in the Map" in Collection of sand: Essays (London: Penguin, 2002), p. 18-25.

Lewis Carroll, "The Bellman's Speech" in The Hunting of the Snark: an Agony in Eight Fits (London: Macmillan and Co, 1876), p. 15-24

Paul Edwards, "Representing the Global Atmosphere: Computer Models, Data, and Knowledge about Climate Change," in C. Miller and P. Edwards, eds., Changing the Atmosphere: Expert Knowledge and Environmental Governance (Cambridge: MIT Press, 2001), p. 31—66.

Peter van der Krogt, "The Origin of the Word 'Cartography'", in e-Perimetron, vol.10, No. 3 (2015), p. 124-142.

Bruno Latour, "Panoramas," in Reassembling the Social, (Oxford: Oxford University Press, 2005), p 183-190.

Mark Monmonier, How to Lie with Maps (Chicago: University of Chicago Press, 1991), excerpts.

Alberto Perez-Gomez and Louise Pelletier, Architectural Representation and the Perspective Hinge, (Cambridge: MIT Press,1997)

Bill Rankin, After the Map: Cartography, Navigation, and the Transformation of Territory in the Twentieth Century, (University of Chicago Press, 2016), excerpts

Christian Topalov, "The City as Terra Incognita: Charles Booth's Poverty Survey and the People of London, 1886— 1891," in Planning Perspectives 8 (1993), p. 395—425

Edward Tufte, Envisioning Information (Cheshire: Graphics Press, 1990)

Syllabus: ARCH 4248 Curating Cities: The Power of Zoning 2021

Faculty: Sara Bronin

Overview

Zoning tells us what can be built where, and therefore, what we can do where. Since zoning emerged a century ago, it has become the most significant regulatory power of local government. But it is also the most underappreciated: even architects don't always understand how zoning — hidden in plain sight — governs our places, and, by extension, our health, wealth, and happiness. Indeed, very few architects are actually engaged in shaping and influencing the way these codes operate. Instead, planners, lawyers, and volunteer community members take the lead drafting role, which sometimes results in zoning codes that have unfortunate, perhaps unintended consequences on the way people experience place.

This seminar will explore several key questions. How do the origins of zoning — rooted in a segregatory impulse — shape land use patterns today? How and why is it that our laws lock in outdated, homogeneous, and uninspired places and hinder modern thinking about design? How has zoning simultaneously managed to undermine social justice, cultural heritage, and our ability to respond to climate change? Whose agency is constrained or enabled by the political processes of zoning itself? And what must we as architects do to change the status quo?

The goal of this interdisciplinary course is to explore the tension between law and design, by exploring law's influence on the creative enterprise. Students will explore the implications of zoning rules and processes, both through observation and through translation into graphic form. The course will give students deeper familiarity with a critical force that shapes not only their future work as architects but the public realm we all experience. Ultimately, this course will position architects to be change-makers and advocates for the built environment that people need and deserve.

Course Objectives

1. Explore the influence that law has on the design of buildings and the formation of communities through a series of analytical exercises.
2. Develop a theoretical position that would situate architects and designers in a role that would create change in policy-making.

Assessment Breakdown

Assignments/Papers (4)   100%

Course Requirements

The following assignments aim to provide a full, interdisciplinary look at zoning codes and to encourage students to explore zoning theory and practice. Please submit everything in hard copy on dates shown. The assignments are all roughly equal weight and are as follows:

A.   Review and Evaluate a Public Meeting
B.   Response Paper
C.   Zoning Code Review
D.   Zoning and You

A. Review and Evaluate a Public Meeting

Attend/review a public meeting (virtually!) — either a planning and zoning commission meeting or a zoning board of appeals meeting, for no more than 1.5 hours. Then draft a memo, of somewhere between 500 and 750 words, with the following information:

- Makeup of the body (e.g., number of members, professional background, other characteristics), to the extent you can determine it
- The substantive issues discussed, referring to:
  - The types of applications submitted
  - Interesting points of debate

I am interested in your broad observations about the nature of zoning meetings and zoning decision-making. (I am not interested in line-by-line meeting minutes.)

B. Response Paper

Once during the semester, turn in a response paper, between 500-750 words, on the day the topic you have chosen to respond to are being discussed. Refer in the paper to one particular zoning code that has relevance to the class topic, and include screenshots or references to specific code provisions. Graphic representations of constraints, conditions, im/possibilities are welcome. You will be expected to speak in class about your response paper.

C. Zoning Code Review

Identify your favorite neighborhood and find the zoning code that governs it. Develop an analysis, of about 500 words with accompanying graphic representations, of 3 specific provisions of the zoning code (e.g., on streetscape, building design, building location, lot size, lot configuration, parking) and how they work (or don't work) to foster the place you like. What does the provision say, and what built environment results? Does the code maintain or undermine what you like about the place?

I expect a high-level overview of the impact of code provisions on a place you know. (I do not expect a full legal analysis.) You will be expected to speak for 3-5 minutes in class about your analysis.

D. Zoning and You

Take a design you have done in a previous or current studio that involved a specific site in an American city with a zoning code. (If you haven't had such a project, I'll assign your design to a specific site — just be in touch!) Find the zoning code that applied to your site. Develop an analysis, of about 500 words, with accompanying graphic representations, of the compliance of your design. If the design did not comply or the use was not allowed, what would have to be rewritten to make your design or use legal? If the design did not comply but the use was allowed, sketch out a compliant massing of the contemplated use. If you knew about zoning, would you have done what you did? Is knowledge about zoning demoralizing or empowering?

You will be expected to make a 5-minute presentation in class about your analysis.

Schedule and Bibliography

Week 1: February 1

What is zoning? Why did it emerge? How does it work?

Readings:

>   pp. 1-12, pp. 23-32, of Stewart Sterk et al., Land Use Regulation, PDF uploaded to Canvas
>   Christopher Serkin, A Case for Zoning, https://bit.ly/3qyFlDT

Week 2: February 8

How do you read zoning codes? How are they structured? How do cities' zoning codes differ? Is design a priority in decision-making?

Compare:

>   Hartford Zoning Regulations and Map, www.hartford.gov/landregs
>   New Haven Zoning Regulations and Maps, https://bit.ly/3nvXp0V & https://bit.ly/3ddP50U

Readings:

>   Comprehensive Rezonings — about Hartford, https://bit.ly/3mL5Ows
>   Katherine Levine Einstein et al., Who Participates in Local Government? Evidence from Meeting
>   Minutes, https://bit.ly/341×mXA

Week 3: February 15

Critiques of zoning. Zoning is a separator, a categorizer, a hierarchy-maker. It is a great driver of inequality and a great gobbler of land. How urgent and how big are the problems zoning creates? How were decisions made at meetings you attended?

Due: (A.) Review and Evaluate a Public Meeting

Readings:

>   Juliana Maantay, Zoning, Equity, and Public Health, https://bit.ly/3mQ6pNt Read: Sacoby Wilson et
>   al., How Planning and Zoning Contribute to Inequitable
>   Development, Neighborhood Health, and Environmental Injustice, https://bit.ly/2JDwrFm

Week 4: February 22

Streets that set the stage. Streets are foundational to the way a place functions and feels. And zoning codes determine key aspects of this important public realm. Since zoning has exalted the car, it's no surprise we think that streets are for cars. But, zoning can give us a wider, more satisfying menu when it comes to the way we get around.

Guest: Doug Suisman, Founder of Suisman Urban Design

Readings:

>   Vicki Been; Simon McDonnell, Searching for the Right Spot: Minimum Parking Requirements and
>   Housing Affordability in NYC, https://bit.ly/3nXND6G
>   pp.17-39 of Paul Chatterton, Unlocking Sustainable Cities, PDF uploaded to Canvas
>   Laura Bliss, 'Slow Streets' Disrupted City Planning. What Comes Next? http://bloom.bg/38U6GKQ

Week 5: March 1

Nature as infrastructure. We think about zoning as regulating the man-made (e.g., streets and transport), but it can also determine the role and impact of nature as infrastructure, sustaining human activity.

Readings:

>   Georgetown Climate Center, Green Infrastructure Toolkit, http://bit.ly/3iCjsB3
>   Philip Schaffner et al., Green Zoning: Creating Sustainable Communities through Incentive Zoning,
>   https://bit.ly/3oYwGua
>   Healthy Food Policy Project, Zoning for Urban Agriculture, http://bit.ly/3qufYDh
>   Sustainable Development Code, online at www.sustainablecitycode.org

Week 6: March 22

Making it home. Zoning for housing choice can increase our supply of housing, reduce housing costs, and facilitate economic, racial, and social integration. It can also result in more architecturally interesting cityscapes.

Readings:

>   Any two resources here, www.desegregatect.org/data
>   Vicky Chau et al., Zoning for Affordability: Using the Case of New York..., https://bit.ly/2Nhkarl

Please be ready to identify (verbally at the end in class) a U.S. neighborhood you like as you prepare for Assignment C.

Week 7: March 29

A curatorial approach. Now let's consider the rules that govern the best U.S. neighborhood you know. What does its zoning code dictate? Does the code work or not work from a design perspective?

DUE: (C.) Zoning Code Review + presentations

Readings:

> Ch. 1-2 of Sonia Hirt, Zoned in the USA: The Origins and Implications of American Land-Use Regulation, PDF uploaded to Canvas
> Read: pp. 99-112 of Dan Tarlock, Zoned Not Planned, PDF uploaded to Canvas

Week 8: April 5

Engaging all the senses. Zoning can subtly ensure design is more responsive to innate human instincts, biases, and genetic quirks that favor well-defined edges, orientation, connection, and immersion in nature itself.

Guest: Justin Hollander, Professor of Urban and Environmental Policy and Planning

Readings:

> Justin Hollander et al., The 21st Century Paradigm Shift in Architecture and Planning, PDF uploaded to Canvas
> Peter Miliken et al., Identifying Biophilic Design Elements in Streetscapes, PDF uploaded to Canvas

Week 9: April 12

Mixing it up. Zoning should allow for a mixing of uses, and in particular, enable, instead of stifle, the socially beneficial act of creation and congregation. Nightlife is a source of joy that is underappreciated as an element of planning. Zoning can both enable nightlife and make it safe, while also allowing architectural whimsy, ornament, and detail that marks a place.

Guest: Shawn Townsend, Director of Nightlife and Culture in Washington, D.C.

Readings:

> Ch. 3-4 of Sonia Hirt, Zoned in the USA: The Origins and Implications of American Land-Use Regulation, PDF uploaded to Canvas
> pp. 3449-3465 of Hae Laam, Dilemmas of the Nightlife Fix: Post-Industrialization and Gentrification of Nightlife in New York City, PDF uploaded to Canvas

Week 10: April 19

Zoning and you. Using one of your own designs as a test case, what are the implications of zoning rules on your design process? Based on your reviews, should we jettison zoning altogether?

DUE: (D.) Zoning and You + presentations

Reading:

> Ch. 5-6 of Sonia Hirt, Zoned in the USA: The Origins and Implications of American Land-Use Regulation, PDF uploaded to Canvas

Week 11: April 26

Where to begin. Now you know what zoning does, and what zoning impacts, we'll talk about a few types of potential reforms and the practical ways to go about achieving them.

DUE: (D) Zoning and You + presentations (spillover)

Reading:

> Policy Debates, Land-Use Regulation: What's It Worth Anyway? http://urbn.is/2M1ecuj