

STUDIO 2028

Speculating on Energy, Infrastructure and Architecture



What will shape and extend our urban and ex-urban areas in the 21st Century?

As peak oil arrives and globalism accelerates, what will the dominate mode of energy storage and generation be? Energy generation in the American Southwest presents numerous challenges and opportunities given simultaneous abundance *and* lack of water, together with its exceptional potential for solar generation.

Hoover Dam is a concrete arch-gravity dam in the Black Canyon of the Colorado River, on the border between the U.S. states of Nevada and Arizona. In the early 20th century, the U.S. Bureau of Reclamation devised plans for this massive dam to tame the Colorado River and provide water and hydroelectric power for the developing Southwest. It was constructed between 1931 and 1936 during the Great Depression, the largest dam in the world at the time of its completion in 1935. This National Historic Landmark stores enough water in Lake Mead to irrigate 2 million acres and serves as a popular tourist destination.

Hoover Dam “is the focus of a distinctly 21st Century challenge: turning the dam into a vast reservoir of excess electricity, fed by solar farms and wind turbines that represent the power sources of the future.” The proposal supported by Mayor Eric Garcetti of Los Angeles and The Los Angeles Department of Water and Power; providing a model for California’s most imminent issue: developing an affordable and efficient power storage mechanism on a very large scale.

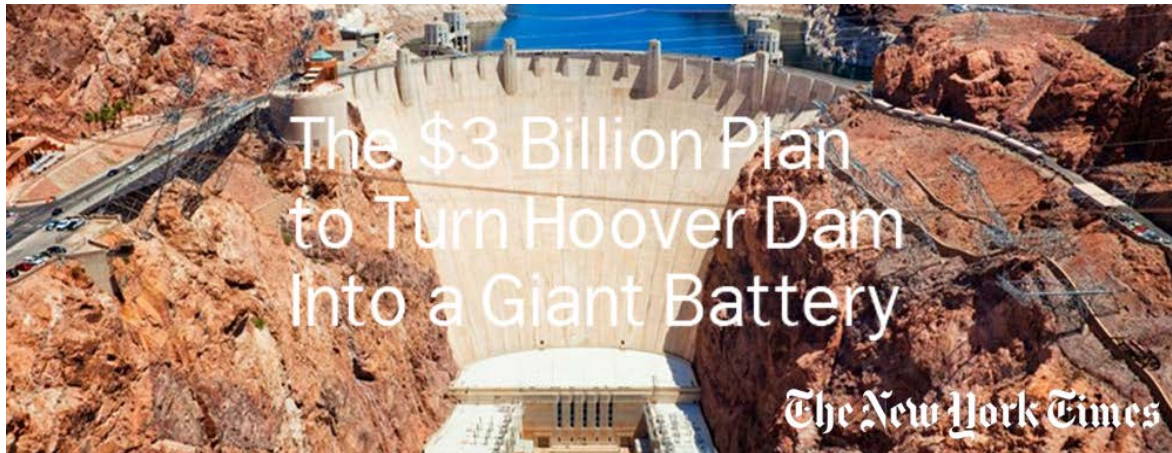
With a project of this scale, what are the unique opportunities for alternative power generation together with cultural production that could catalyze the site?

Can these systems synthesize sustainable development and provide public amenities as well?

California’s population continues to grow at accelerating rates each year. To sustain this increasing population, new forms of energy storage must grow. Most of this new growth must go into existing urban areas: how might remote areas such as this site might change, accommodate, engage and partner with energy production at a very large scale?

Are these systems more reflective of the US’s dominant ideology and easier to implement on a cultural, economic level than the systems modeled on European or Asian prototypes? In utilizing existing infrastructure, rather than conceiving anew, are we selling out our future to reuse what is fundamentally problematic? Is energy generation more likely to shape the urbanisms of the future in the globalized “instant age”? Are there clever methods of reuse that anticipate architecture and figure into the evolution of those systems?

At the core, what unique new hybrids and social arrangements are suggested by these potential future systems?



The \$3 Billion Plan to Turn Hoover Dam Into a Giant Battery, Ivan Penn, The New York Times July 24, 2018

Hoover Dam helped transform the American West, harnessing the force of the Colorado River – along with millions of cubic feet of concrete and tens of millions of pounds of steel – to power millions of homes and businesses. It was one of the great engineering feats of the 20th century.

STUDIO AGENDA

In this studio we will identify issues, imagine strategies, develop programs, and create designs for power storage and transfer, recreation and educational programs to be enacted on a site, twenty miles west of the Hoover Dam on the Colorado River. The class will analyze this complex and extra-large-scale physical environment through many trajectories: geophysical, historical, technological, political, cultural, and economic. We will look to develop proposals beyond the accommodation of the facility and propose public programs to partner at the site as well. The first phase of construction is planned for completion by 2028. Designs should project what life will be like in this near future scenario. Speculate changes in lifestyles, social behaviors, and envision how your designs may impact California's growing population.

Could issues of energy, ecology, together with public interface and recreation be our framework for thinking about Architecture and Infrastructure at this site?

Given this civic act of visionary will and the speculated completion date of 2028, how might architecture engage with this impending infrastructure?

Could this new infrastructure physically connect, and combine various types of industry such as tourism, commerce, entertainment, culture in innovative ways?

What are the potential environmental, scientific and aesthetic impacts of this project on the downstream recreation when considering demographics, land use, terrain, and industry.

Can Architecture be treated as leading or alongside infrastructure rather than an after thought?

How can Architecture galvanize projects around big ideas and capture new value for both the public and infrastructure?

What program would you propose to partner with this initiative?

The term “big” may be interpreted in many scales; is it an accumulation of small installations—or something of a tremendous infrastructural dimension and scope?

STUDIO STRUCTURE

Design work will progress concurrently with the research. Through case studies, comprehensive research, and design investigations, we will work to explore how the systems of energy storage, infrastructure, and ecology are integrated together with architecture in innovative ways. Students will work individually or in teams to develop programs and site strategies at the site location to formulate concept proposals. Each project will be developed as a thesis, and thus, defended and argued for at critical points during the semester.

Energy and sustainability issues are essential components and leading concerns for the studio and the studio projects. To take seriously this imperative, we will work closely with environmental engineers and structural engineers at critical points in the semester to test your ideas. Professor Visilis Fthenakis, an expert in renewable energy from Columbia and Brookhaven National Laboratory will consult with our studio.

Students will begin by critically mapping the site using GIS, among other data sources; and will make assumptions projecting how things may change by 2028 and beyond. The studio will participate in the GSAPP/GIS Tutorials to effectively benefit from the cartographic investigation. Additionally, the Studio will have the use of four 360 Theta Cameras in analyzing the complexities of the site and for immersive visualization of their projects.

The studio will make physical site model(s) and installation formats within which projects will be conceptualized, developed, and presented throughout the semester.

By midterm, each student or team will locate their project in the site to test their proposed strategy. This selected area of study as a detailed architectural proposal will be developed in the second half of the semester.

For the Final Review, students will present their site strategy, the production of a scenario, and the detailed development of their test site at an architectural scale using drawings, models, mock-ups, and large-scale sections.

Week 1- 3 360 Theta Camera Workshop and Concept Studies
Team Research Topics for Studio Colloquium
GIS + Studio Site Model development

Week 4-7 Studio Site models
Studio Research Colloquium
Studio Travel*

Week 8 Midterm

Week 9-11 Advanced Model and 360 Theta Camera immersive representations
¾ Review

Week 12-14 Large Sections
Final Review Documentation
Dec. 11 Final Review

*** TRAVEL - September 27-30**

Preliminary Itinerary: Hoover Dam, Solar One (large solar energy installation), the proposed site, and Double Negative by Michael Heizer.

REFERENCES / BIBLIOGRAPHY

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Ellis, Nash, & Nash, Brush (Writer). (1999). Hoover Dam [Television Series Episode]. *Modern Marvels*. New York, NY: The History Channel. <https://www.youtube.com/watch?v=ivvkJNmzl30>

Easterling, Keller, *The Year in Weather*, Artforum, 2017

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Hall, Jeremy (Writer). (2006). Hoover Dam [Television Series Episode]. *Megastructures*. New York, NY: National Geographic. <https://www.youtube.com/watch?v=m97-1nVp8FM>

Malm, Andreas, *The Progress of This Storm – Nature and Society in a Warming World*. VERSO 2018

McPhee, John, *Assembling California: Annals of a Former World #4*, Published February 1st 1994 by Farrar, Straus and Giroux (first published 1992)

McPhee, John, *The Control of Nature*, Farrar, Straus and Giroux 1990

McPhee, John, *Water War*, April 26, 1993 P. 120 The New Yorker
<https://www.newyorker.com/magazine/1993/04/26/water-war>

Park, Ivan, "The \$3 Billion Dollar Plan to Turn Hoover Dam Into a Giant Battery," *The New York Times*, July 24, 2018, <https://www.nytimes.com/interactive/2018/07/24/business/energy-environment/hoover-dam-renewable-energy.html>

Reisner, Marc, *Cadillac Desert: The American West and its Disappearing Water*, Viking Penguin 1986.

Waterman, Jonathan, "The American Nile," *National Geographic*,
<https://www.nationalgeographic.com/americanile>

In May 2018, at the final review of the Enrique Walker studio, one critic amicably questioned the premise of the studio, which took unfinished modern Japanese architectural masterpieces of the 1960s as its starting point. Reinhold Martin questioned the students' intervention in such masterpieces. "Who, then, is the author, the student or the original architect?" Reinhold's incisive question changed the course of the discussion and led to an extremely animated review. The question of "What is the Author?" was back.

Four months later, our Fall 2018 studio takes up this challenge. Is there such a thing as "the death of the author" in architecture today? Has the architect been resurrected at a time when "signature architects" and "archi-stars" populate the mass media in both cultural and commercial marketplaces? Or will digital hyperrealist software and Revit standards kill off the author-architect? Does "culture" dominate and predetermine architectural originality, anyway?

Program Hypothesis: The Manhattan "World Museum Block"

The site will be a generic block in an area of Manhattan not yet subjected to extremes of real-estate economic pressure, hence in a "neglected neighborhood." The site has been selected to house six major international organizations.

At a time when global politics have taken a sinister nationalistic and protectionist turn, a number of major worldwide organizations have assumed enlarged roles and adopted broader responsibilities so as to ensure the survival of Planet Earth.

While the World Health Organization (WHO), Human Rights Watch, International Red Cross (ICRC), European Organization for Nuclear Research (CERN), World Meteorological Organization (WMO), World Intellectual Property Organization (WIPO), World Trade Organization (WTO), and many other entities have headquarters in Geneva, it has been suggested that developing outposts—individual museums dedicated to explaining their histories—in different world cities might help them communicate their messages.

These outposts will be located on our generic block and designed by our Studio as we simultaneously explore theoretical concerns about concept and authorship and try to give proper identities to each organization.

Theoretical Hypothesis: What is an Author? What is a Concept?

As a quick reminder: The two short texts "What is an Author?" (Foucault, 1969) and "The Death of the Author" (Barthes, 1968) radically questioned the clichéd notion of literary authorship throughout history. Transposed to architecture, these texts suggest that architecture may not originate from the subjective creativity of a master author-architect, but rather exist within an objective and somewhat neutral cultural field whose significance is given by the user-viewer.

This radical questioning opens up a number of issues: Is contemporary architecture the product of a master/creator/author/architect? Or is it, instead, a cultural concept that is materialized by real exterior constraints? Does the architectural work stem from the architect, or is it equally or even primarily the result of pre-existing cultural precedents as well as "fundamental" tectonic elements—walls, columns, windows, roofs, etc.?

Our Fall Studio aims to investigate these concepts within the context of our Manhattan World Museum Block.

AQA
AQUATIC-ARCHITECTURE STUDIO
**“an underwater interspecies alliance for an inshored
coexistence”**

ADVANCED ARCHITECTURAL DESIGN STUDIO
ANDRÉS JAQUE (OFFICE FOR POLITICAL INNOVATION)
_instructor

XIAOXI CHEN *_teacher assistant*

Travelling studio, developing field work in ICELAND November 5–11, 2018





What?

An estimated sea level rise of 70 inches by 2100¹ caused by climate change is arguably the most significant fact that will fuel architectural evolution in the coming decades. No longer avoidable, the expansion of the maritime into the built environment, and the emergence of a new *trans-geographical* aquatic mixture of oceanic and humanized demarcations, provides a unique laboratory. In this laboratory, contemporary notions of the tensions between nature and architecture, as interdependent and mutually including realms, can be interrogated and reinvented. The problematic transformation of the coastal line has become a scenario of inequalities, catastrophes, toxicity, and environmental crises. But the coast is also a location where new architectural possibilities, technologies, forms of politics, communicational strategies, and beauty are being urged and tested.

This studio will invent [and test] architectures to operate in the growing and problematic boundary between the oceanic and the earthly—aquatic, architectures where air-based beings will negotiate with salt-water-based beings for coexistence.

If Coney Island (NY) was the prototype of the coastal line at a time of unlimited resources exploding metropolitan domains, and if Elizabeth Harbor (NJ) was the prototype of the-ocean-seen-as-a-source-of-globalized means, then this studio asks: What is the architectural vernacular of the post-Anthropocene age?

Each student or group of students will develop an inventive aquatic architecture, bringing together the human with the oceanic, allocated in a specific point of the geographical planetary band affected by particular conflicts resulting from climate-change-caused sea-level rise.

¹ Source: COP21. However, this is a disputed figure. Delta Commese establishes a 1.5 m (59") rise by 2100. COP21 predicts a potential high rise of 4.19 m (165") by 2215.



How?

1. The studio will start with an immersion in the challenges that sea-level rise comprises and the way it has been analyzed by scientists, ecologists, artists, and politicians.
2. Each student or group of students will start working with a specific “challenge” caused by sea-level rise. The studio will provide the means and connections so that each work will rapidly capture the necessary expert insight to navigate the complexities of each challenge.
3. Each student or group of students will search for the location/s where responses to their challenges can be best tested.
4. Each student or group of students will develop simultaneously:
 - A. An ecosystem-scale invention. This is to say: a design strategy to respond to (not to resolve) the specific problematics her/his/their challenge is part of.
 - B. An aesthetic approach, a new vernacular that caters to the making of an evolved sensitivity responding to the project’s needs. This is to say: a visual and sensorial ecosystem of references and options where the problematic can be reconstructed as a cultural milieu.
 - C. A number of material inventions that will become components of the project. This is to say: a number of devices that can be tested through the making of 3D prototypes fabricated in GSAPP’s shop and performed in the studio.
 - D. 3D representations of the architecture resulting from applying 1, 2, and 3 into a specific location. This is to say: an architectural device set in a specific existing location where its effects can be envisioned.
5. In conjunction with the development of these projects are a number of discussions featuring experts from different fields working on the evolution of the coastal line in facing sea-level rise. These sessions will be organized by the instructor and the TA, and the work developed by studio participants will become the material discussed by guest experts.

The methodology of the studio is intended to make research, design, and invention come together to address urgent and non-explored challenges as a means to prompt distinct architectural propositions.



Field Trip

November 5–11, 2018

Iceland, an island nation radically dependent on the evolution of sea-level rise, contains all the geographical features mobilized by the discussion of climate change: the melting of ice caps, the rise of coastal lines, the loss of drinkable water resources, the rising of earth level due to loss of ice load, the exacerbation of volcanic activity, a popular culture heavily engaged in providing cultural tools to face environmental challenges, a political ecosystem structured through earthly and oceanic engagements.

The studio will engage in a six-day field trip experience, visiting the most important locations where environmental and geographical innovation and reinvention is happening—geothermal infrastructures, sensitive coastal locations, pop culture venues, melting ice caps, and volcanic landscapes—together with Iceland-based experts and activists.

Calendar

Week 1. 9/5–9. September 5. Lottery. Group is constituted. September 6. First Studio Meeting. 1st presentation by Andrés Jaque: Sea Level and its architectural challenges. Distribution of challenges.

Week 2 . 9/10–16. With the advice and support from the Instructor and TA, the studio will develop research to construct the cases focus on exploring 'Challenges and architectural modes to face them'.

Week 3. 9/17–23. The result of the 'Challenges and modes to face them' research will be presented on week 3. This 3rd week a new research on 'Aesthetics to engage with challenges culturally and to seanse them' will be started' with a brainstorming of a number of cases of artists, filmmakers, designers and photographers (from Armin Linke to Sarah Sze, from Björk to Alexander Kluge or Joan Jonas) developing ways to engage culturally and politically with the earthy and the oceanic.

Week 4. 9/24–30. The result of 'Aesthetics to engage with challenges culturally and to seanse them' will be presented this 4th week. In conversation with guest experts, this 4th week prototypes of architectural components will start to be proposed and its development discussed and planned at GSAPP fabrication workshop.

Week 5. 10/1–7. Planning and development of a specific architectural proposal for a targeted site based on the A. Ecosystem-scale invention. B. Aesthetic approach. C. The material inventions as components of the project.

Week 6. 10/8–14. Discussion of the interspecies theory and architectural design practices with guest experts. From Donna Haraway to Rosi Braidotti. From Isabelle Stengers to Bruno Latour and Maria Puig de la Bellacasa. And from Forensic Oceanography to Cooking Sections, and from Revital Cohen & Tuur Van Balen to Melanie Bolanio. A design shift from the culture of resources to the culture of assemblages, and from matters of concerns to matters of caring. Development and studio testing.

Week 7. 10/15–21. Development and studio testing. Studio discussions, experts input and mutual support sessions.

Week 8. 10/22–28. October 26. Midterm review. A selection of experts and activists will contribute readings of their work, and will advise students in our to take their propositions further.

Week 9. 10/29–11/4. Development of methodologies and tools to be applied during the field trip to Iceland.

Week 10. 11/5–11. Field Trip to Iceland.

Week 11. 11/12–18. Debate week, devoted to plan the final development and testing of components, strategies and applications.

Week 12. 11/19–26. Final consulting with external advisors.

Week 13. 11/27–12/2. Final developments and editions

Week 14. 12/3–9. Final developments and editions

Week 15. 12/10. Final Review



Bibliography

Braidotti, Rosi. "Post-anthropocentrism: Life beyond the Species"

Braidotti, Rosi. *The Posthuman*

Demos, T.J.. "Against the Anthropocene" (Ch. 4 in: *Against the Anthropocene, visual culture and environment today*)

Federici, Silvia. "Feminism and the Politics of the Common in an Era of Primitive Accumulation"

Graham , James with Caitlin Blanchfield, Alissa Anderson, Jordan Carver, and Jacob Moore (eds.) "Climates: Architecture and the Planetary Imaginary"

Haraway, Donna "Awash in Urine: DES and Premarin® in Multispecies Respond-ability"

Charles Heller, Lorenzo Pezzani, Maurice Stierl. "The Politics and Antinomies of Freedom of Movement — a view from the Mediterranean Frontier"

Latour, Bruno. "Politics of nature: East and West perspectives"

Latour, Bruno. "From Multiculturalism to Multinaturalism: What Rules of Method for the New Socio-Scientific Experiments"

Lee, Spike. *When The Levees Broke. A Requiem in Four Acts* (2006)

Mancuso, Stefano. Chapter 5 (Where he writes: "Each Plant Is a Living Internet Network") from *Intelligence of Plants*

Maribel Casas-Cortes, Sebastian Cobarrubias, John Pickles. "Riding Routes and Itinerant Borders: Autonomy of Migration and Border Externalization"

Nixon, Rob. *Slow Violence and the Environmentalism of the Poor*

Paglen, Trevor "Some sketches on vertical geographies"

Pasquinell, Matteo. *The Automaton of the Anthropocene*.

Stengers, Isabelle. In *Catastrophic Times: Resisting Coming Barbarism*

Steyerl, Hito "A Sea of Data: Apophenia and Pattern (Mis-) Recognition" (Chapter 5 from: *Duty Free Art. Art in the Age of the Planetary Civil War*)

Toni Morrison, (chapter 1 "Romancing Slavery" or 3 "Color fetish") from "The Origin of Others", 2017

Viveiros de Castro, Eduardo. "The Crystal Forest: Notes on the Ontology of Amazonian Spirits"

Andrés Jaque

Andrés Jaque (Phd Architect (ETSAM), Alfred Toepfer Stiftung's Tessenow Stipendiat (Hamburg) and Graham Foundation grantee) is the founder of the Office for Political Innovation, an international architectural firm working at the intersection of design, research and critical practices. He is the author of awarded projects including 'Plasencia Clergy Hall of Residence', 'House in Never Never Land', 'TUPPER HOME', 'ESCARAVOX', 'Rolling House for the Rolling Society', 'Ròmola', 'CA2M Art Museum' and 'COSMO, MoMA PS1'.

In 2016, he received the Frederick Kiesler Prize from the City of Vienna; he has been awarded a SILVER LION for Best Research Project at the 14th Venice Biennale, the Dionisio Hernández Gil Award, and the London Design Museum's Designs of the Year.

His publications include Transmaterial Politics (2017), Calculable (2016) PHANTOM. Mies as Rendered Society, Different Kinds of Water Pouring into a Swimming Pool, Dulces Arenas Cotidianas (2013), Everyday Politics (2011), and Melnikov: 1000 Autos Garage in Paris 1929.

His research work has been published in Perspecta, Log, Thresholds, and Volume, among many others.

The design work of his office has been published in the most important architectural and general media, including A+U, Bauwelt, Domus, El Croquis, The Architectural Review, The New York Times, Wall Street Journal, The Guardian, and El País; and has been exhibited at the Museum of Modern Art MoMA, London Design Museum, MAK in Vienna, Tel Aviv Museum of Art, RED CAT Cal Arts Contemporary Art Center in Los Angeles, Z33 in Hasselt, Schweizerisches Architektur Museum in Basel, the Cité de l'Architecture et du Patrimoine de Paris and Princeton University SoA among many others.

His office is currently developing projects for Real Madrid, Thyssen Bornemisza Art Contemporary, Reggio Emilia Schools, CA2M Contemporary Art Museum, Victoria and Albert Museum.

Andrés Jaque is Associate Professor at Columbia University Graduate School of Architecture, Planning and Preservation; where he directs the Advanced Architectural Design Program. He has previously taught at Princeton University, UA, ETSAM, Bezalel Academy.



WHAT IS FEMINIST PRACTICE?

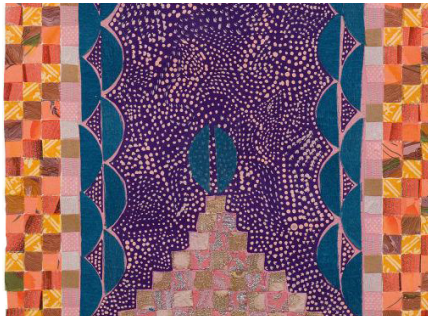
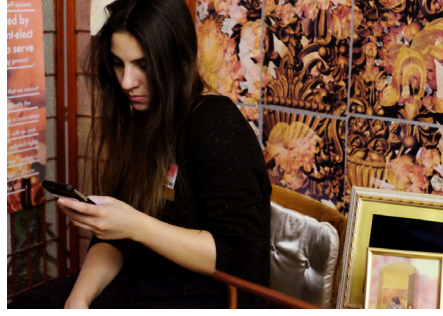
WHAT IS FEMINIST PRACTICE? / ADVANCED STUDIO V / COLUMBIA GSAPP / FALL 2018
CRITIC: BRYONY ROBERTS

Feminism is in a state of rapid expansion and instability. Having transformed from a taboo to a trend, feminism is now serving as a rallying cry for political solidarity, and as a marketing tactic to sell everything from jeans to coffee to real estate. Simultaneously, feminist political agendas are multiplying and transforming, as greater awareness of gender fluidity and intersectionality have broadened the discourse. In the midst of these changes, this studio takes stock of what feminist practice can mean for architecture now.

Looking back at seminal projects from the 1970s through the 1990s, the studio critically assesses past definitions of feminism in art and architecture, and asks how to transform them for contemporary design. Rather than seeking one singular definition of feminist practice, the studio is an open-ended conversation about what is possible. The course is open to anyone, not only those living as women, and explores how the tools and principles of feminist practices can be applicable to architecture broadly.

In the first phase of the studio, students are immersed in case studies of radical projects from the 1970s to the present, which offer alternative models for the architectural design process, program and/or materiality. For *process*, students examine projects by Muf, Matrix, and Feminist Architecture Collaborative that develop non-hierarchical, collaborative, and user-informed design. For *program*, students consider projects such as the Woman's Building and the New York Feminist Art Institute as models for collectivity. Finally, for *materiality*, students remake projects of feminist art from the 1970s to the present that involve textile, fiber, and craft techniques once designated as "women's work." By remaking projects by Claire Zeisler, Senga Nengudi, and Lin Tianmiao, students explore in the physical logic of wrapping, weaving, dyeing, unravelling, and spilling—processes for producing environments outside of normative architectural techniques.

Learning from these case studies, students develop their own design proposals for remaking the women-only co-working space The Wing. With three locations in New York City and many locations across the U.S., the Wing is a rapidly growing business model that bills itself as a feminist work space and social club. But with expensive, exclusive membership and private venues, the Wing is also not accessible or affordable to most women in New York City. The studio re-imagines the site of the Wing in Dumbo, Brooklyn both in terms of its architecture and business model, to create a different version of collective work space that is inclusive, affordable, and connected to the surrounding public space.



CASE STUDIES

PROCESS

Womens Design Service
At Your Convenience, 1990

Matrix Feminist Design Co-Operative
Jagonari Women's Educational Centre, 1991

Muf
Pleasure Garden of the Utilities, 1998

Feminist architecture collaborative
#ICalled

PROGRAM

The Woman's Building
Founded by Judy Chicago, Sheila de Bretteville, and Arlene Raven in 1973

New York Feminist Art Institute
Founded by Miriam Schapiro and Nancy Azara, et al., in 1979

Dolores Hayden
What Would a Non-Sexist City Be Like?, 1980

Mark Wigley
Untitled, the housing of gender, 1992

MATERIALITY

Judy Chicago
The Dinner Party, 1974-79
Claire Zeisler

Coil Series III, 1978

Harmony Hammond

Hunkertime, 1979-80

Floor Piece VI, 1973

Faith Ringgold

For the Woman's House, 1971

Street Story 1985

Senga Nengudi

Inside / Outside, 1977

Miriam Schapiro

Theater of the Egg, 1979

Lynda Benglis

Untitled (VW), 1970

Diller + Scofidio

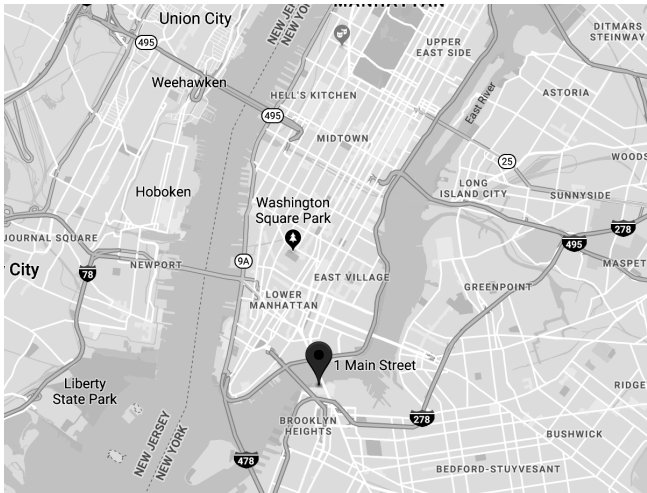
Bad Press, 1993

Liz Collins

Distance Pursuer, 2013

Lin Tianmiao

Protruding Patterns, 2014



SITE: THE WING

The site for this studio is The Wing, a national chain of coworking spaces geared towards women, which has emerged as part of the recent rise in coworking spaces catered to freelancers, entrepreneurs, and creative practitioners. The Wing is one of many female-only coworking spaces that have opened internationally, including the AllBright in London, the Riveter in Seattle, and Make Lemonade in Toronto. The Wing has carefully marketed itself as a feminist version of a coworking space, tracing its roots back to 19th- and 20th-century womens clubs, and offering amenities catered to female-only members such as lactation rooms, beauty rooms, and a program of speakers and gatherings. But the Wing has also come under heavy criticism for being elitist, exclusionary, for offering an under-informed representation of feminism. The forms of exclusion are many: this is a private club with a high membership fee, a long waiting list, and a practice of eliminating applicants on the basis of sex.

This studio re-imagines the Wing to create an alternative model of collective spaces that are inclusive, affordable, and public, and serve as better platforms for political agency. Students will develop alternative architectural and financial models for collective spaces of work that are available to a broader range of women of within New York City. The Wing has currently has three locations within NYC, in the Flatiron, Soho, and Dumbo. Students have the option of re-envisioning in detail the Dumbo location at 1 Main Street, Brooklyn, NY 11201, or of creating a kit of parts for transforming all three locations. Proposals will rethink the audience, funding, organization of program, architectural form, materiality, and connections to public space.

SCHEDULE

Week 1 - Introduction

Thursday, Sept 6 - Introduction, readings assigned

Week 2 - Case Studies

Monday, Sept 10 - Discussion of readings, selection of case studies

Thursday, Sept 13 - Desk crits - case study research, draft of diagrams

Week 3 - Case Studies

Monday, Sept 17 - Desk crits - draft of case study models

Thursday, Sept 20 - Desk crits - finalize case study models + Guest lecture

Week 4 - Case Studies / Site

Monday, Sept 24 - **Presentation of Case Studies - Research and Models**

Thursday, Sept 27 - Research Site - The Wing, the 1 Main Street building, Dumbo context

Week 5 - Site

Monday, Oct 1 - Desk crits - Site research + Guest lecture

Thursday, Oct 4 - **Presentation of Site Research** + select Process, Program, Material precedents

Week 6 - Concept Design

Monday, Oct 8 - Desk crits - Five studies for concept design - drawings and sketch models

Thursday, Oct 11 - Desk crits - Three studies for concept design - drawings and sketch models

Week 7 - Concept Design

Monday, Oct 8 - Desk crits - Refine concept design

Thursday, Oct 11 - **Presentation of Concept Design**

Week 8 - Schematic Design

Monday, Oct 15 - Desk crits - Schematic Design

Thursday, Oct 18 - Desk crits - Schematic Design

Week 9 - Midreview Week

Monday, Oct 22 - **Draft presentation of Midreview drawings and models**

Thursday, Oct 18 - **Midreview - 1pm - Room 504, 505**

Week 10 - Design Development

Monday, Oct 29 - Desk crits - Revisions after Midreview

Thursday, Nov 1 - Desk crits - Design Development

Week 11

Monday, Nov 5 - Election Day Holiday

Thursday, Nov 8 - Desk crits - Design Development

Week 12

Monday, Nov 12 - **Interim Review**

Thursday, Nov 15 - Desk crits - Design Development

SCHEDULE (Continued)

Week 13

Monday, Nov 19 - Desk crits - Representation

Thursday, Nov 22 - Desk crits - Thanksgiving Break

Week 14

Monday, Nov 26 - **Draft of Final Review presentation**

Thursday, Nov 29 - Desk crits - Revisions to drawings, models, verbal presentations

Friday, Nov 30 - 3-5pm - Super Crit

Week 15

Monday, Dec 3 - Desk crits - Revisions to drawings, models, verbal presentations

Thursday, Dec 6 - Desk crits - Revisions to drawings, models, verbal presentations

Week 16

Tuesday, Dec 11 - **Final Review - 1pm, Ware Lounge**

REFERENCE TEXTS

ARTICLES

Fausch, Deborah. "The Knowledge of the Body and the Presence of History--Towards a Feminist Architecture." In *Architecture and Feminism*, edited by Deborah Coleman, Elizabeth Danze, and Carol Henderson, 38-59. New York: Princeton Architectural Press, 1996.

Hayden, Dolores. "What Would A Non-Sexist City Be Like? Speculations on Housing, Urban Design, and Human Work." In *Gender, Space, Architecture*, edited by Jane Rendell, Barbara Penner and Iain Borden, 266-281. London: Routledge, 2000.

Lorde, Audre. "The Masters Tools will Never Dismantle the Master's House." In *Gender, Space, Architecture*, edited by Jane Rendell, Barbara Penner and Iain Borden, 53-55. London: Routledge, 2000.

McLeod, Mary. "Everyday and 'Other' Spaces." In *Gender, Space, Architecture*, edited by Jane Rendell, Barbara Penner and Iain Borden, 182-202. London: Routledge, 2000.

Rendell, Jane. "Gender," and "Gender, Space, Architecture." In *Gender, Space, Architecture*, edited by Jane Rendell, Barbara Penner and Iain Borden, 15-25, 225-239. London: Routledge, 2000.

Rendell, Jane. "Feminist Architecture from A to Z." Accessed August 5, 2018, <https://www.readingdesign.org/feminist-architecture-a-z/>

Rendell, Jane. "Architecture and Interdisciplinarity." *Building Material*, No. 19, Art and Architecture (Autumn 2009), pp. 10-17

Wigley, Mark. "Untitled, the housing of gender." In *Sexuality & Space*, edited by Beatriz Colomina, 327-389. New York: Princeton Architectural Press, 1997.

VOLUMES

Auther, Elissa. *String Felt Thread*. Minneapolis: University of Minnesota Press, 2009

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Bryan-Wilson, Julia. *Fray: Art and Textile Politics*. Chicago: University of Chicago Press, 2017

Coleman, Deborah, et al., ed. *Architecture and Feminism*. New York: Princeton Architectural Press, 1996.

Haraway, Donna. *Staying With The Trouble*. Durham: Duke University Press, 2016.

Parker, Rozsika. *Subversive Stitch*. London: I.B. Taurus, 2010

Rendell, Jane, et al., ed. *Gender, Space, Architecture*. London: Routledge, 2000.

CONTEMPORARY PRACTICES AND COLLECTIVES

Architexx
Atelier d'architecture autogérée
FATALE
Feminist architecture collective
Liquid Incorporated
Muff

Mycket
Parlour
Taking Place
Jane Rendell's Situated Design track at the
Bartlett School of Architecture

COURSE INFORMATION

Class meetings: Mondays and Thursdays, 1:30-6:30pm
Contact information for Bryony Roberts: bryony@bryonyroberts.com

EXPECTATIONS

Students are expected to be independent and to take initiative to find the resources and supplies that they need to complete their work. Students are expected to be active participants in group conversations, to attend all studio meetings, pin-ups, and reviews and to keep up with a rigorous level of production. Students are expected to spend a large portion of their time in the studio working and to be active participants in the collaborative studio environment. Sharing knowledge, techniques, and ideas with your fellow students is incredibly important to your own creative development and to your success in this studio. Students are expected to keep the studio space orderly and clean, and to keep clear a large table and wall space for group meetings and pinups.

EVALUATION

The final grade in the course will be given on the basis of:

Attendance and design production for twice-weekly studio meetings: 40%
Assignments and Midreview presentation: 30%
Final review presentation: 30%

ATTENDANCE

Students are expected to be present and working during all studio meetings, which occur twice a week. Students are also expected to be present during all reviews. Absences from studio meetings and reviews will affect the final grade and multiple unexcused absences will result in course failure.

DESIGN PRODUCTION FOR STUDIO MEETINGS

Students are expected to be self-motivated and ambitious in their design development. During each twice-weekly studio meeting, students will discuss new work on their project. Students are expected to revise their work for each session in response to earlier feedback from their instructors.

MIDREVIEW AND FINAL REVIEW

Work presented for both the midreview and the final review will be evaluated for:

CONCEPTUAL CLARITY

Students should demonstrate proactive engagement with the material and self-motivated intellectual pursuits that enhance their own design ambitions. Students are expected to clearly articulate their ambitions and the intellectual underpinnings of their work in pinups and desk crits.

TECHNIQUE

Students are expected to execute all assignments with care and precision. Assignments will be evaluated not only on the basis of the ideas, but also to a large degree on the quality of the execution. Students are responsible for planning sufficient time for developing appropriate and thorough representation.

DEADLINES

Students must complete assignments by the given deadline. Deadlines and required deliverables are not negotiable. No printing is allowed after the deadline. Deadlines can only be extended in cases of illness or family emergencies, and requests for extensions must be submitted before the deadline in writing, accompanied by a medical certificate when necessary. Keep your active files backed up - loss of data is not an excuse for an incomplete project.

Columbia University
Graduate School of Architecture, Planning and Preservation
Advanced Studio V, Fall 2018, Rebirth of a city “Micro Geoje”

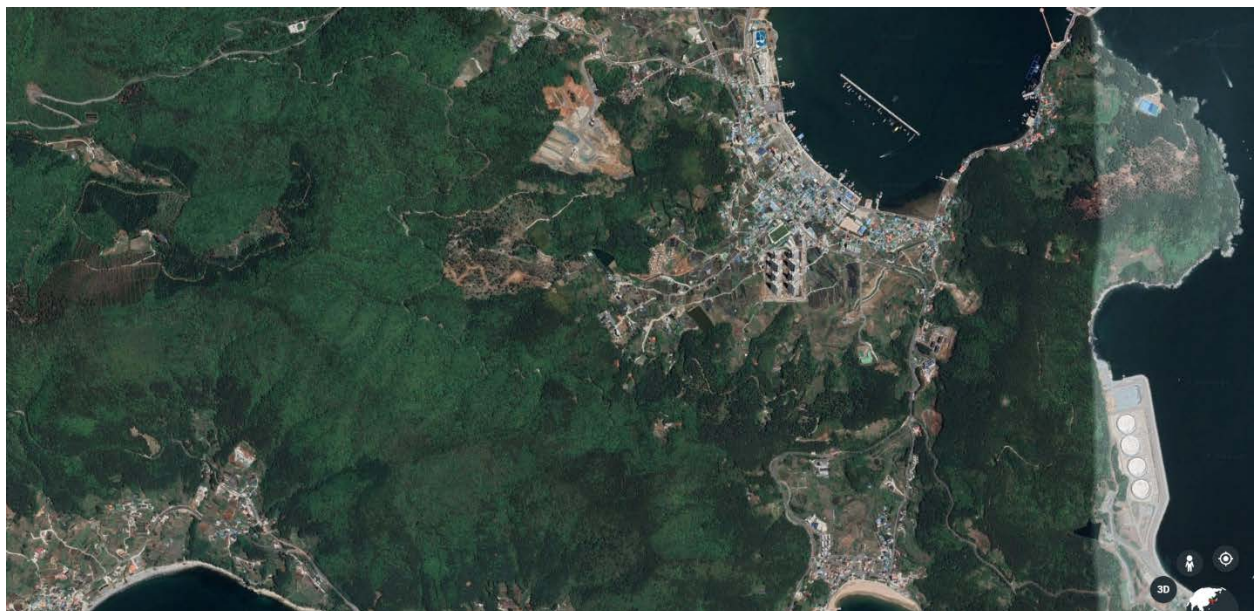
Studio Syllabus, Jinhee Park

‘Rome wasn’t built in a day?’

OVERVIEW

Geoje’s glorious history with shipbuilding industry is rebirthed by positioning its new identity in between the second largest city, Busan and the historical cultural city, Tongyeong: allowing it to be the prosperous destination once again. This island will be reimagined from the disturbed landscape of a delicate ecosystem with heavy shipyard infrastructure cutting through it not as scars but as valuable characteristics of its own. The Korean context is especially a significant backdrop to address these current issues. With the creation (and re-creation) of new urban areas, architecture has not only become the vehicle through which these territories compete for a sense of identity, it has also become the catalyst through which the concept of the public domain is defined within a climate of dynamic social change. Three sites in Geoje, pivotal to its future development and identity, will act as the framework through which each studio member will question, invent, and define the terms of ‘Micro-Urbanism.’ A visit to Geoje in Korea and its surrounds is planned where we will tour the site, hold a workshop and meet key individuals and organizations of the island.

SITE Geoje, Korea: Negotiations of Infrastructure, Culture, and Ecology





During the last few decades Geoje has emerged as a leader in the shipbuilding industries which was robust enough to survive even during the economic crisis. It served a key role as a powerhouse of the industry particularly due to the geographical location but on the other side of coin, its constantly evolving housing, industrial, and infrastructural construction overshadowed its rich historical architectures and delicate landscape in the surge of the economic demands.

Here and in many other regions in Asia that are radically transforming from obsolete industrial centers to technology and culture based economies, the question remains of how to leverage existing infrastructural buildouts, programmatic uses, and historical fabrics so that they add cultural and pragmatic value to new layers of development. The broad strokes of partially realized masterplans and speculative development thus far has led to non-characteristic urban developments that has destroyed valuable historical villages and natural habitats. As the faltering economy due to the shipbuilding industry crisis that the city is currently facing, the studio will have the rare opportunity to critically witness and evaluate firsthand the city's transformation from within this brief hiatus. This will in turn allow us to intervene into Geoje's future materialization with new synthetic paradigms toward development within existing infrastructures, fabrics, cultures, and ecologies.

The studio will focus its investigation on the most essential natural and constructed elements in reflection of Geoje's history and culture. As a fragment of what is occurring at the larger scale, the first goal will be to gain insight into and forge methodologies for negotiating the conflicting forces of development: the tensions between new density and existing fabric, the contrasting programmatic needs of local and international stakeholders, and the leveraging of existing hard/soft infrastructure versus the current methods of a tabula rasa style urbanism. Secondly, we will research past and current high sloped land building techniques to propose new prototypical conditions that transform Geoje's interface between land and water from its former industrial use to its new role as a socio-environmental system that supports leisure, wildlife habitats, and sensitively link infrastructural needs. Thirdly, we will critique the current piecemeal urban development strategies and investigate ways in which Geoje can successfully reconnect to the immediately adjacent historical cultural city, Tongyeong as well as the high commercial city, Busan with visionary yet pragmatic design solutions. Instead of the 'smoothness' of tabula-rasa style urban renewal, we hope to open up a territory of design inquiry that intercedes

between conflicting parts of the larger whole. At the urban scale, students will produce a framework that demonstrates a thesis about leveraging existing conditions to negotiate the conflict between fragile ecologies, historical and cultural identity, transformations in programmatic use, contemporary developmental pressures,. At the scale of architecture and landscape architecture, new spatial-ecological paradigms for the Geoje Island City will be seen as the catalyst that concretely focuses an attitude about the urban redevelopment.

‘Micro Urbanism’

As our cities rapidly densify it is undeniable that we now need new forms of urbanism to address new demands. How can a new conception of city-making be conceived so that it not only provides efficient space and economical value but also provides flexibility for changing demographics and social values? Micro-Urbanism offers radical flexibility within existing cities in the face of rapid change caused by political, economic, and cultural forces. It reformulates relationships between the essential elements of a city at a finer grain. Instead of the broad generalist descriptions of housing, retail, culture, etc. that current modes of urbanism are based on, understanding spatial and programmatic relationships as activities at the micro scale opens up new possibilities of collaboration, environmental performance, and urban efficiency. This studio will aim to redefine value by new innovative terms that each studio member will invent guided by 10 principles below. Beginning from the human scale instead of the overall aerial view, we will generate ‘fragments’ that nonetheless have embedded in them new social/cultural/economic possibilities. In this case ‘Micro’ does not necessarily mean ‘small,’ instead it is about accommodating interrelated variables by breaking down to essential elements to maximize their effect. Now with rapid social adaptation to advanced technology, creating a sense of publicity and privacy can be handled in many other ways. Spaces can now hybridize. Commercial and institutional spaces are being used as surrogate living rooms calling into question of what is ‘domestic.’ Individuality and community is achieved not through generic space, but paradoxically through designing highly specific conditions.

Principles of Micro-Urbanism

1. Physical / Perceptual (define space by its quality rather than its quantity) The pressure of real estate development artificial maps literal size onto the ‘value’ of space. Instead the role of perception can augment spatial experience and inhabitation.
2. Owning / Sharing (support ownership to create sharing) When taken to the extreme, ownership creates programmatic redundancy and material and energy waste. Through gradations of privacy and publicity, new productive social relationships and interdependencies can be gained while at the same time decreasing the energy footprints.

3. Contracting / Expanding (use contraction to achieve expansion) By contracting multiple programs into more intense alliances and overlapping patterns, space can be expanded rather than subdivided into smaller units.
4. Timing / Programming (program with time to avoid underutilized space) Not all spaces must be used at all times. By aligning use and timing, spatial redundancy can be minimized.
5. Division / Continuity (divide with finer grain to create continuity) Instead of broad descriptions of housing, retail, culture, etc. of modes of urbanism, understanding spatial and programmatic relationships as activities at the micro scale opens up new possibilities of collaboration, environmental performance, and urban efficiency.
6. Local / Global (be local to be global) Alliances between local infrastructure, economies, and social relationships create momentum when viewed from the overall urban framework allowing the local to create culture and resources rather than merely consuming it.
7. Future / Past (use the past to create the future) Instead of tabula rasa urbanism that starts from a condition of erasure, existing conditions can be leveraged for their specificity into new infrastructures, spaces, and programs.
8. Diversity / Density (use density to create diversity) Instead of density merely fitting more inhabitants into a smaller space, it can be utilized to gain programmatic and spatial diversity.
9. Security / Amenity (turn oppressive control into public amenity) While the one-way gathering of information of the 'smart city,' threatens privacy, multi-way networks can turn the concept of security into a form of real and virtual public space and amenity.
10. Curated Use / Mixed Use (curate programs and activities to maximize synergies) The concept of mixed-use as a general framework can be radically sharpened so that specific curation at the fine grain scale can create greater synergies socially and economically.

Geoje is relevant and powerful for the application of Micro-Urbanism. Students will be asked to analyze the existing citymaking strategies, invent upon emerging concepts of Micro Urbanism, then project an architectural and ecological future for Geoje. How can we recharacterize the city of depleted industry so that its obsolete symbolic trace serves the public wellbeing? How can we leverage the underutilized infrastructure, buildings, farmhouses and open areas into new spaces that allow it to become a sustainable keystone in the loncal/global network? Finally how can it become a prototypical city for other cities that have undergone periods of crisis due to unsustainable monopoly industry?

SCHEDULE

Studio will be conducted on Tuesday and Thursday afternoon. Typically there will be desk crits on Tuesday, followed by pinups on Thursday. Because of the research nature of the studio the group discussions during the pinups will be crucial to the advancement of the ideas of the studio as a whole,

so, while the pinups will be informal the students should work in such a way that good presentations can be made each week.

For the first few weeks the studio will work on analysis and gathering material on the site. After the analysis phase, the students will work again in groups to draft proposals for the design work that will consume the balance of the semester. These proposals will operate as programs for a more inclusive version of design, outlining the strategies. After the site visit the studio will split up to pursue individual projects based on the group's proposals and flesh out the proposed designs for the remainder of the semester. The final presentations will make use of the initial analysis work in support of the design thesis as appropriate.

Week 1

5 Sept: Studio Lottery
6 Sept: Introduction

Week 2

11 Sept: Studio Pinup/ Discussion: urban analysis, spatial identity research
13 Sept: * No Class

Week 3

18 Sept: Studio Pinup: Program organizational strategies / diagrams / massing
20 Sept: Desk Crits

Week 4

25 Sept: Desk Crits
27 Sept: Studio Review: Goeje Micro proposals

Week 5 Studio Trip: comprehensive city perception analysis*

Week 6

9 Oct: Studio Pinup: massing and aggregation development 'compatibility'
11 Oct: Desk Crits

Week 7

16 Oct: Desk Crits
18 Oct: Studio Pinup: urban development 'multiplicity' *

Week 8

23 Oct: Desk Crits
25 Oct: Mid Review :

Week 9

30 Oct: Desk Crits
1 Nov: Studio Pinup: Structure 'constructability'*

Week 10

6 Nov: Desk Crits

8 Nov: Studio Pinup: Envelopes 'breathability'

Week 11

13 Nov: Desk Crits

15 Nov: Studio Pinup: Image 'interchangeability' Urban Spectacle *

Week 12

20 Nov: Desk Crits

22 Nov: No Class, Thanksgiving *

Week 13

27 Nov: 3/4 review*

29 Nov: Desk Crits

Week 14

4 Dec: Desk Crits

6 Dec: Desk Crits / Dry Run

Week 15 **Final Review: 12 Dec**

READING & REFERENCE

Edifice complex, Deyan Sudjic, 'Chapter 1 WHY WE BUILD'

The city of tomorrow and its planning, Le Corbusier , 'Part I, IV PERMANENCE'

Crating Architecture and the City, Sarah Chaplin and Alexandra Stara,

'From flash art to flash mob: how have new gallery spaces informed the nature of contemporary display?', Corinna Dean'

'The necessity of distance, : setting the position for critical spatial practice, Catharina Gabrielsson'

Architecture between Spectacle and Use,

'The Way the World Sees London: Thoughts on a Millennial Urban Spectacle, Mark Dorrian'

Learning from Las Vegas, Robert Venturi and Denise Scott Brown

Delirious New York, Rem Koolhaas,

Program and Manifestoes on 20th century Architecture, Ulrich Conrads

Theorizing a New Agenda for Architecture:: Architectural Theory 1993-2009, A. Krista Sykes
Towards an Architecture / Le Corbusier

The Vertical Village: Individual, Informal, Intense / MVRDV

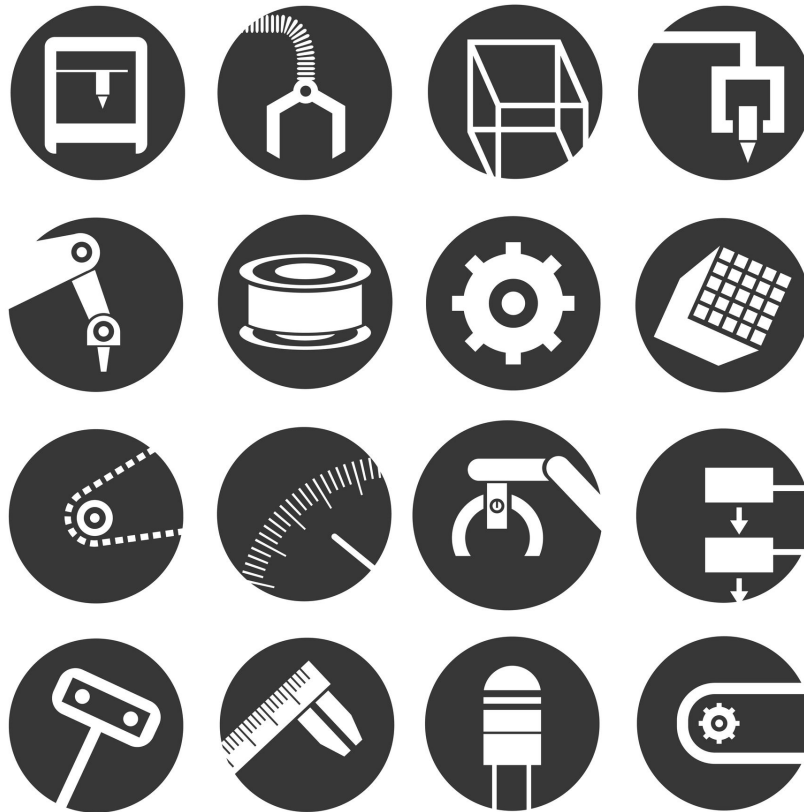
Project Japan / Koolhaas, Obirst,

Made in Tokyo /

The Image of the City / Kevin Lynch

Garden City of Tomorrow / Ebenezer Howard

Columbia University GSAPP
Fall 2018 Advanced Design Studio V
Critic: Lise Anne Couture



PRODUCTION+

PRODUCTION+

ABSTRACT 23/08/18

In light of rapid technological change what is the future of manufacturing?

With an increase in automation what is the future of work?

Might a lower demand for labor be an opportunity to be 'productive' in new ways?

How might time be valued? Where and how might time be spent?

These are some of the themes that the studio will interrogate as we investigate the future of the urban manufacturing workplace and generate speculative architectural proposals that re-envision the light industrial/manufacturing zone along the Newtown Creek waterfront in New York City.

Preamble

In reaction to the gradual disappearance of local manufacturing since the middle of the last century, New York City as well as many other cities from Zurich, Switzerland to Melbourne, Australia, has stepped up efforts to incentivize new types of urban manufacturing in order to diversify its economy and urban demographics as well as to revitalize derelict urban areas, support environmentally responsible urban strategies and integrate smart technologies.

Urban manufacturing however is inextricably linked to an even larger sphere beyond its immediate context and specific issues. As we create new visions for urban manufacturing we must also develop new concepts for what we understand as "productivity" in order to address the broader impact of technology and automation on the changing nature of work, the viability and consequences of a universal income or the potential implications of a much debated future 'leisure society'.

Recently we have seen 'Maker Culture' cast a light on innovative and non-conventional modes of production through new methods of producing, collaborating, sourcing and distributing into the mainstream. Yet with its roots in hacking, DIY (Do-It-Yourself) and the sharing economy, Maker Culture risks being tied to a limited scale of investment, production and output. This studio seeks to pump up the volume and increase the stakes to envision new architectural speculations that will accommodate a next generation of urban manufacturing and workplaces that may have affinities to Maker Culture, but are much more than a simply scaled up version.

The studio will explore new concepts of "productivity" by re-interpreting our understanding of 'investment' relative to 'output and return'. Productivity can be understood not only as a measure that assigns value in conventional terms i.e. revenue and profit but "value" can also be measured relative to the Circular Economy and with respect to benefits that more broadly affect social, political and environmental spheres.

The studio will generate a diverse range of places of "Production" to be sited along the light industrial and manufacturing zone of the Newtown Creek waterfront with the goal of

contributing to the revitalization of this toxic Super Fund site and its planned environmental remediation.

To engage the future of the site and as well the future of the workplace and its implications on individuals and the community at large, the studio projects will re-invent the program of urban manufacturing to introduce other uses and amenities in combination with innovative approaches to the site. The studio will speculate upon new programs that include not only the conventional production of materials, objects and assemblies, but also the production of energy, of food, of content, of culture, of social services, of events, of ideas, and more.

The “+” in **Production+** therefore constitutes a range of desirable “By-Products”. By speculating on collateral programs and spaces, putting forward new concepts of productivity might enable other types of outputs: By-Products that are publicly engaging and have a cultural, social, environmental or other type of collective benefit - yet are also intrinsic to, and even the driver for, an overall site strategy and the design of an architectural outcome.

Selected references:

Future of Work

Where Machines Could Replace Humans - And Where They Can't (Yet)

<https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/where-machines-could-replace-humans-and-where-they-cant-yet>
[Future of Work](#)

Jobs Lost, Jobs Gained: Workforce Transitions In a Time of Automation

<https://www.mckinsey.com/featured-insights/future-of-organizations-and-work/jobs-lost-jobs-gained-what-the-future-of-work-will-mean-for-jobs-skills-and-wages>

Is Finland's basic universal income a solution to automation, fewer jobs and lower wages?

<https://www.theguardian.com/society/2017/feb/19/basic-income-finland-low-wages-fewer-jobs>

Post-work: the radical idea of a world without jobs

<https://www.theguardian.com/news/2018/jan/19/post-work-the-radical-idea-of-a-world-without-jobs>

Circular Economy

<http://www.ellenmacarthurfoundation.org>

Urban Manufacturing

Cities Report, Cities of Making, Brussels May 2018

http://citiesofmaking.com/wp-content/uploads/2018/05/CoM_CityReport-0523-HR.pdf

Rappaport, Nina. The Vertical Urban Factory, Actar, 2015. Print

Book sample: https://issuu.com/actar/docs/vertical_urban_factory

Futureworks NYC

<https://futureworks.nyc>

NYC Dept. of Planning: North Brooklyn vision Plan

<http://www1.nyc.gov/site/planning/plans/north-brooklyn-vision-plan/north-brooklyn-vision-plan.page>

Urban Manufacturing Alliance
<http://www.urbanmfg.org>

Newtown Creek

Newtown Creek Vision Plan 2018

<https://www.riverkeeper.org/campaigns/restore-nyc-waterways/newtown-creek-vision-plan/>
<https://www.riverkeeper.org/wp-content/uploads/2018/03/Newtown-Creek-Exec-Summary.pdf>

Waterfront Alliance

<https://waterfrontalliance.org/2018/07/19/new-wetlands-in-newtown-creek/>

Full syllabus with references and studio schedule to follow.

Columbia University, Graduate School of Architecture, Planning and Preservation
ARCH 4105.007, Fall 2018

Advanced Studio V: **Super Manhattan**

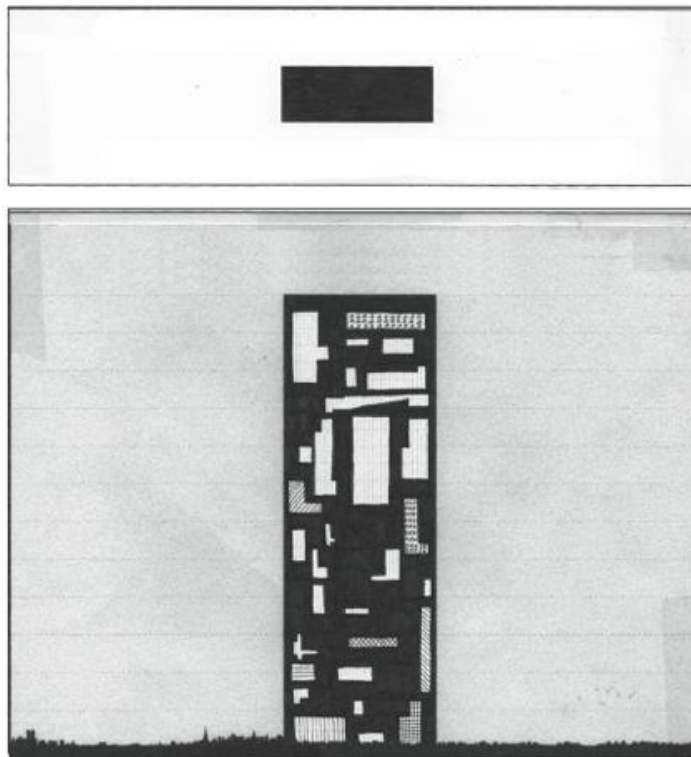
Subtexts: 1. Utopic Journalism 2. Metamodernism & Architecture 3. Bigness, Again 4. Age of the Raster

Jimenez Lai (jimenez.lai@bureau-spectacular.net)

Matthew Davis (matthew.e.davis@columbia.edu)

Super Manhattan

Subtexts: 1. Utopic Journalism 2. Metamodernism & Architecture 3. Bigness, Again 4. Age of the Raster



Babel, from Citizens of No Place (Jimenez Lai, 2012)

Studio Project

This studio is a collection of cities inside of a building, a phalanstery. Participants of this studio will subdivide the building into individual prefectures and sub-jurisdictions, where focused theses by individual designers can be mobilized. Apart, this is a city of cities - every prefecture or jurisdiction will take on their own architectural, economic, or socio-political agendas. However, when re-combined together, this city is one oversized building with sub-pockets of plural cultures. Akin to a surrealist Exquisite Corpse, each individual jurisdiction will take on their own “thesis”.

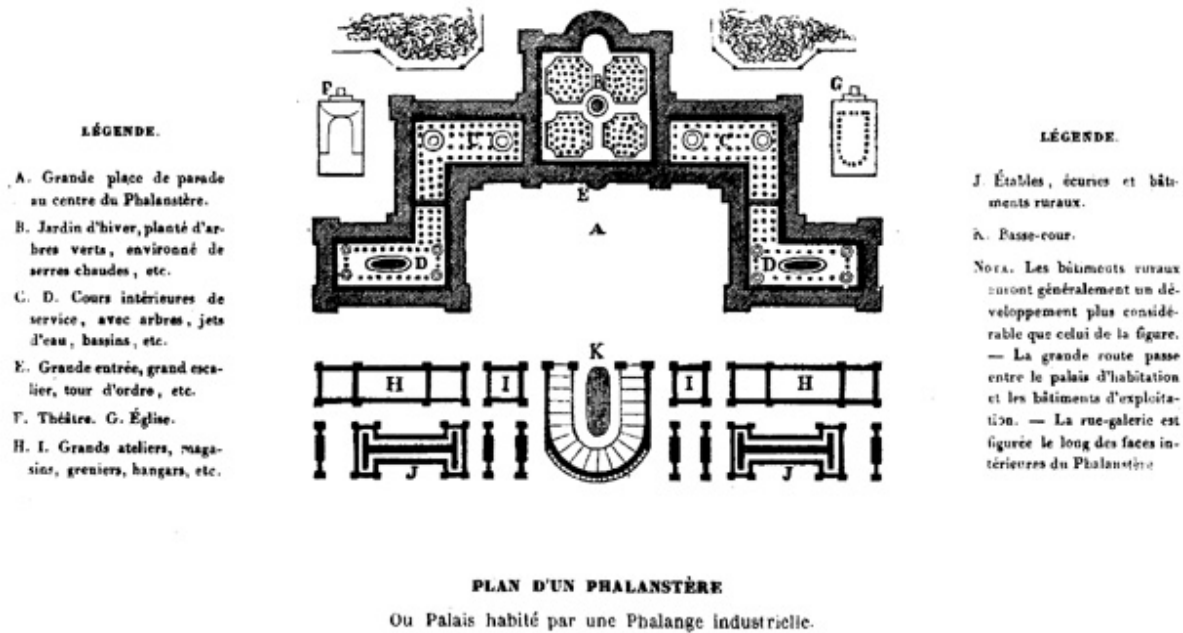


Illustration of Charles Fourier's Phalanstère

Site

This studio is based on the Babel Universe within Citizens of No Place (2012). The question of “how high can we build” is answered by our relationship with air. At roughly 12 kilometers, we will be close to the stratosphere and therefore will not have enough oxygen. The Babel Tower in Citizens of No Place is an extrusion of Central Park (4 km x 800m x 12 km), with enough room to shelter at least 80 million people.

This extrusion of Central Park reverses the figure-ground relationship of Manhattan. Additionally, it creates a population density high enough to absorb many of the nearby states - as a Phalanstery, this project is more than just a city inside of a building - this is an architecture as a political and economic entity at the scale of a State or Country.

Conventionally, urbanism is mostly a plan problem. However, architecture at the scale of urbanism transitions the question of size and scale into a sectional problem. We will develop the individual claims of territory via their relationships with the ground, air, clouds, sun, and privacy.

Studio Subtexts

Additional to the primary design project, there are four subtexts to this design studio:

1. Utopic Journalism
2. Metamodernism & Architecture
3. Bigness, Again
4. The Age of the Raster

Subtext 01: Utopic Journalism

The Function of “Utopia”

What has Utopias ever done other than a vehicle to reveal contemporary issues within the realities the authors lived in? “Utopia”, in its etymology, does not describe an “ideal place” - but rather, utopia is a “not-place”. As far back as Thomas More and as recent as Superstudio, the function of utopia has been a placeless thought-experiment to examine and reveal the critical concerns within the world they lived in. A Post-68 Italian experience may offer a very different project than that of a 16th Century English problem. It is as such we should consider the nuanced differences between *parody*, *parable*, *caricature* and *satire*. All of these formats of fiction hold a particular attitude about realism. Moreover, all of these formats of fiction have a close relationship to “journalism”. If the hyperboles of The Onion only highlight aspects of truths, or if Jon Stewart re-tells familiar stories in order to articulate the cultural textures of his times, the function of such fictions are there to offer a new lens to re-look at the world we live in.

Heterotopia (Of Other Spaces)

In the work of Michel Foucault, the status of “norm” is a moving target always under pressure. As people engage with matters of fact, their relationship with “norm” is dependent on the subjectivity of the observer. The relationship between the status of self and the society that the self belongs to is a relationship of shifting standards that continuously re-shape the identity of a culture. In this studio, we are counting on the individual selves to play out their individual concerns, and construct a composite society with many identities.

Political Architecture

It's important to estate the distinction between “politics” and “political”. The readings of the philosopher Chantal Mouffe and the architect Andres Jaque provide a key to understand the conflict of this concept in our society. Mouffe understands “politics” as the set of practices and institutions corresponding to the traditional political activity in our society trying to establish an order in a controversial present while “the political” refers to the a dimension of antagonism that can take various forms and can arise in

various social relationships. This antagonism is a dimension that can be eradicated. As Jaque argues, we will try to envision an architecture that instead of eliminating conflicts by simplification, generates a conflictive everyday life. The issues of "The political" are not mere technical issues intended to be resolved by experts. The properly political questions always involve decisions that require us to choose between conflicting alternatives.

The Politics of Normal

"Normal" is relative over time and space. Something "normal" to Los Angeles in 2018 would not be normal to Los Angeles in 1918 - nor would the "norm" be the same between Los Angeles 2018 and New York 2018. Having the message of being an "independent" "centrist", in fact, requires a lot more work than having a position. While many of us probably lean one way or another, it is interesting to observe how politicians identify or construct "normalcy" over time and space. Normal is not any of the following: boring, generic, bland, punchless... it is in fact the average temperature of the spirit of the time – of a time, a space. We will try to rethink about this idea of average user trying to generate an object that escapes from channels of functionalist simplification. The material design of this construction should be understood as the translation of a conflictive social milieu and at the same time a device that enunciates and constructs the social from multiple points of view. In our utopias, we will articulate strange "normals".

Fictions and Facts

2016-2018 has been a strange time for the field of journalism, and by extension our relationships with facts and fiction. In this studio, such notions of facts and fictions will be examined as we continue to discuss the relationship between relativism, pluralism, and other formats of considering the re-telling of accounts as we reflect upon the reality we live in.

Subtext 02: "Metamodernism & Architecture"

Metamodernism is a term extended thanks to the articles of the Timotheus Vermeulen and Robin Van den Akker that acquired great fame, above all, to the association with the controversial artist Shia Lebov. Metamodernism has gained traction in recent years as a means of articulating developments in contemporary culture, which, it is argued (and our generation appears to intuitively recognise) has seen a move beyond the postmodern mode of the late 20th century. In the wake of the myriad crises of the past two decades—of climate change, financial meltdown, and the escalation of global conflicts—we have witnessed the emergence of a palpable collective desire for change, for something beyond the erroneously proclaimed "End of History."

“The metamodernism discourse is thus descriptive rather than prescriptive; an inclusive means of articulating the ongoing developments associated with a structure of feeling for which the vocabulary of postmodern critique is no longer sufficient, but whose future paths have yet to be constructed.”

Instead of opting for an ironical-passive-critical position against reality, Metamodernism architecture represents that spirit of inclusion of opposites, dissidence and empowerment and the search and acceptance of contradictions revealing new ways of understanding cities complexities.

Subtext 03: “Bigness, Again”

Pans and Zooms (Big Paintings)

Garden of Earthly Delights (1503–1515, Hieronymus Bosch) and Along the River During the Qingming Festival (1085–1145, Zhang Zeduan) are two enormously big paintings. Because of the format of these two paintings, two cinematic techniques can be applied to read the details of these two paintings:

Pan:

At 25.5 centimetres in height and 5.25 meters in length, the aspect ratio of Along the River During the Qingming Festival is a very long scroll painting. The aspect ratio produces a scenario where the part-to-whole relationship renders the parts difficult to read and the whole difficult to register. As a painting, it demands the human to walk alongside the painting and consume only a little bit of the painting at a time. The details within such a scroll can be well-understood via a long, horizontal pan.

Zoom:

At 220 × 195 cm, 220 × 97.5 cm and 220 × 97.5 cm, Garden of Earthly Delights is a triptych, comprised of three panels. There is an abundance of details inside the three parts of this painting, the kind of details only visible when we zoom into the image. There are plenty of surprising moments hidden in plain sight, made possible by the sheer size of the painting.

When We Talk About Bigness...

1. Beyond a certain critical mass, a building becomes a Big Building. Such a mass can no longer be controlled by a singular architectural gesture, or even by any combination of architectural gestures. The impossibility triggers the autonomy of its parts, which is different from fragmentation: the parts remain committed to the whole.

2. The elevator-with its potential to establish mechanical rather than architectural connections-and its family of related inventions render null and void the classical repertoire of architecture. Issues of composition, scale, proportion, detail are now moot. The 'art' of architecture is useless in BIGNESS.

3. In BIGNESS, the distance between core and envelope increases to the point where the façade can no longer reveal what happens inside. This points at the obvious question of the communicative qualities of architecture, and of interior architecture. If the question of a Duck and a Decorated Shed is not necessarily the exact question to be asking, what are the semiotic opportunities in an urban interior? The humanist expectation of 'honesty' is doomed; interior and exterior architectures become separate projects, one dealing with the instability of programmatic and iconographic needs, the other-agent of dis-information- offering the city the apparent stability of an object. Where architecture reveals, BIGNESS perplexes; BIGNESS transforms the city from a summation of certainties into an accumulation of mysteries. What you see is no longer what you get - and, in this massively intertwining collection of "interior filmstrips", the question of form and function is going to be a complex one.

4. Through size alone, such buildings enter an amoral domain, beyond good and bad. Their impact is independent of their quality.

5. Together, all these breaks-with scale, with architectural composition, with tradition, with transparency, with ethics-imply the final, most radical break: BIGNESS is no longer part of any issue. It's exists; at most, it coexists. Its subtext is fuck context.¹

Subtext 04: Age of the Raster

The First Digital Age: A Story of Vectors (1994 - 2014)

The Paperless Studios at Columbia University marked many of the beginning points for architects working with computer-aided technology. From the then-young professors who taught the early digital studios (Greg Lynn, Jesse Reiser, et al) to the then-students who became masters digital architects and future leaders in their own right (Ulrika Karlsson, Winka Dubbeldam, Hernan Diaz Alonso, Jason Payne, Marcelo Spina, et al), this was an important chapter in the recent history of architecture.

In looking at some of the early investigations of the digital era of architecture, perhaps one important milestone is the comparison between the croissant studies of Enric

¹ This portion is entirely borrowed from the essay Bigness by Rem Koolhaas in 1993, with some minor modifications by Jimenez Lai

Miralles and the serial cuts of the Statue of Liberty from Greg Lynn. In both cases, some notion of animated cuts were established - and, in both cases, the drawings established analytical logic that is based on vectors.

Vector continued to play a major role in the early developments of digital architecture. Throughout the early developments of the digital age of architecture, the computing powers were not advanced enough for raster to play a meaningful role yet. Renders would have taken hours - if not days - and the resolution would still be low. Vector, on the other hand, was independent of resolution. Furthermore, accompanying technology such as laser cutters and CNC machines worked with vector files. The early installations, such as the Man O' War (2003) installation by Jason Payne and Heather Roberge, draped catenary linework to physically translate the serial cuts of a massing.

The question of resolutions was able to be advanced during the "hot-cool" debates instigated by Robert Somol in the mid to late 2000s. Low-resolution allowed for a act of distancing to occur - a type of distancing that allowed for abstractions to occur in the shapes of architecture.

The Million Dollar Homepage (2005) by Alex Tew was an early example of the rise of the raster project. At 1000 pixel by 1000 pixel, Tew sold a pixel for a dollar and welcomed anyone to purchase pixels from his website. The Million Dollar Homepage is at once a billboard and a digital decorated shed. In our Super-Manhattan studio, we will subdivide the massive whole into individual parts - not dissimilar to this idea of the deconstructed raster collections.

Today, we have the computing power to generate incredibly large raster images. Perhaps in the zooms or pans of the subdivisions of an oversized object, we might be able to further mull over the status of scale, size, and resolution from a raster frame of mind.

SCHEDULE

09.05 W	Ballot
09.06 R	Studio Introduction
09.10 M	Desk Crits
09.13 R	Thesis Statement Pin-Up & Presentations
09.17 M	Desk Crits
09.20 R	<i>Review of Thesis Statement / Introduction of Assignment 02</i>
09.24 M	Divide & Conquer: The Battle of the Block
09.27 R	Desk Crits
10.01 M	Desk Crits
10.04 R	<i>Divide & Conquer Review</i>
10.08 M	Infrastructures & Typologies
10.11 R	Desk Crits
10.15 M	Desk Crits
10.18 R	Desk Crits
10.22 M	Midterm
10.25 R	Zooms & Pans: Towards a Total Interiority
10.29 M	Desk Crits
11.05 R	Desk Crits
11.12 M	Desk Crits
11.15 R	Desk Crits
11.19 M	<i>Zoom / Pan Review</i>
11.22 R	Thanksgiving
11.26 M	Final Production Mode: Refine and Expand
11.29 R	Final Production Mode
12.03 M	Final Checkpoint Review
12.06 R	Final Production Mode
12.10 M	Final Production Mode
12.11 T	Final Review



Ralph Erskine, Arctic City (1958)

References & Resources:

We will set up a shared google document that contains a very large quantity of architectural, visual, cinematic, philosophy and art references.

Must Watch:

Kung Fury
 Still Life with Yum Yums
 History of the Entire World, I Guess
 Blade Runner
 Four Rooms
 Delicatessen
 Dogville
 Akira
 Rashomon
 Koyaanisqatsi
 Metropolis

More References and Resources

Bigness, Rem Koolhaas
 Phalanstere, Charles Fourier
 Citizens of No Place, Jimenez Lai
 12 Reasons to Get Back into Shape, Bob Somol

Ethics

Schools of ethics in Western philosophy can be divided, very roughly, into three sorts. The first, drawing on the work of Aristotle, holds that the virtues (such as justice, charity, and generosity) are dispositions to act in ways that benefit both the person possessing them and that person's society. The second, defended particularly by Kant, makes the concept of duty central to morality: humans are bound, from a knowledge of their duty as rational beings, to obey the categorical imperative to respect other rational beings. Thirdly, utilitarianism asserts that the guiding principle of conduct should be the greatest happiness or benefit of the greatest number.

Space as Ethical Catalyst

For most of the history of architecture, buildings have provided the space for religious ritual, personal refuge and collective community in the form of temples, churches, mosques, etc. At their best they have also provided the experiential, metaphorical and ontological platforms for discussions and contemplation of our humanity and our place in the world.

As is all too familiar, and for good reason, the erosion of formal religious institutional authority has accelerated over the past 50 years. Theological rigidity, radicalization, politicization, scandal and general societal secularization have all contributed to the decline of formal religious practice. Many would say that the increasing narcissism of western society has accelerated this trend. The result is, in eschewing traditional religious platforms, people are left without a community identity or forum for conversation about larger issues of our lives.

We, as a collective, have lost the art of moral and ethical practice in every day life. Mass, call to prayer, shabat—the regular reminders of a quest for meaning, or a greater good beyond our day-to-day concerns.

The need for this sense of belonging to a collective pursuit is still a fundamental human need and manifests itself in allegiance to sports teams, political parties, and various clubs and associations. The meteoric rise of online communities can be attributed as much to emotional need as to technological availability. The search for belonging, the desire to take part in a discussion of the ideas, ideals and ethics of our time are unsated.

In our time of moral crisis, when lies are labeled “non truth” or “alternative facts” to make them more palatable, when it is becoming mainstream to espouse divisive, discriminatory, racist and nationalist ideals, and when violence is asserting its presence more and more around the world—a question may be raised as to what role architecture can play in redirecting a conversation of morality, ethics and societal ideals.

This studio will posit an architectural response to the crisis of ethics in the world today. I believe architecture, and specifically visceral spatial and sensory experience, can play an inspirational, propositional and provocative role in this issue. **We will attempt to create architecture that will bring people together, to create an active platform for thinking and action.** Space that inspires the mind and moves the soul.

In doing so, **we will also address the fundamental question of the role of built space in social inspiration and cultural action.**

Purpose

The more time I spend in the practice of architecture, the less interested I am in the application and intent of design, whether as a formal or symbolic exercise, to the point where I disdain the word and subject. **What interests me is what architecture serves,** and what ideas, concepts, space and landscape can architecture elevate and amplify with its physical presence and uniquely visceral voice. To that end, focusing the vehicle of architecture on the subject of contemporary ethical practice, in an endeavor to see what it can offer, is of utmost importance. I believe that architecture can elevate and inform this conversation. And it is of utmost importance to the world today, to our greater shared humanity.

Morality

(from Latin: *mōrālis*, lit. ‘manner, character, proper behavior’) is the differentiation of intentions, decisions and actions between those that are distinguished as proper and those that are improper. [1] Morality can be a body of standards or principles derived from a code of conduct from a particular philosophy, religion or culture, or it can derive from a standard that a person believes should be universal.[2] Morality may also be specifically synonymous with “goodness” or “rightness”.

Program Sketch

This building may be seen as a catalyst for conversation and contemplation. A place of learning, dialogue and training in a chosen discipline or spiritual practice. And foremost, the intention is to create a place of inspiration, interaction and profound experience. The program must generally engage some form of all the elements listed below. It can be platonic: an open non-associative architectural platform. Or, you may model this new institution after any theological, scientific, natural or shamanic model of spiritual investigation you are inspired by and wish to bring into the conversation.

Spaces for Refuge:

A Place Away

- providing time and space apart
- offering safety for thought and questions
- a platform for expansion

Spaces for Gathering:

finding & cultivating community

- collective identity
- what brings people together
- accessing support of all kinds

Spaces for Education:

accessing information

- respect and reverence for scholarship—akin to the great monastic libraries
- enhancing critical thinking, sharpening tools of discernment
- providing accessible and inclusive spaces of learning

Spaces for Exhibition:

presentation of ideas re above.

- spoken word: readings, lectures, panels, symposia
- visual expression
- musical performance
- movement / performance art

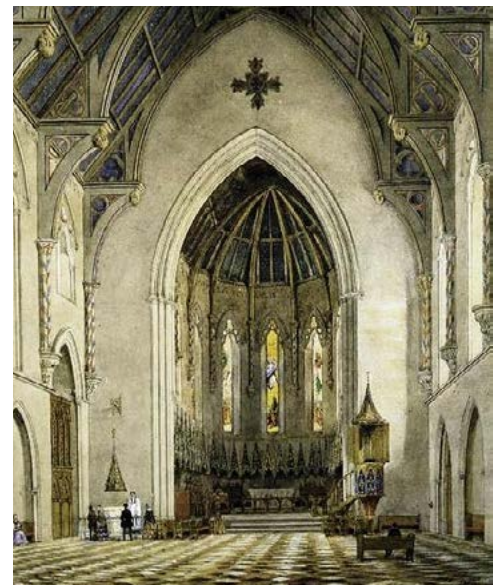
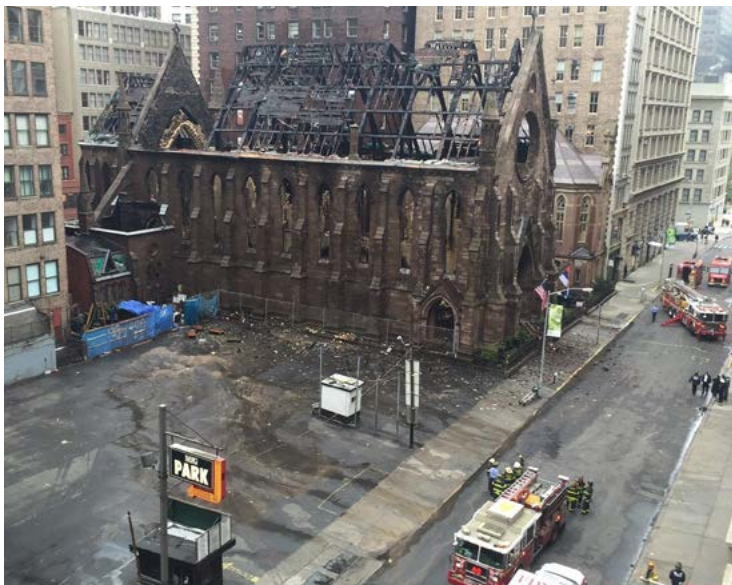
Spaces for Landscape:

- The project must include an intentional landscape / garden / court.

Site & Form

The proposed site is the former Trinity Chapel Complex located at 15 W 25th Avenue in Manhattan, between Broadway and Avenue of the Americas. The stone and hammerbeam trussed chapel was designed by Richard Upjohn and completed in 1855. Formerly the home parish of the uptown, Episcopal elite of New York, the church featured prominently in the social life of the Gilded Age and continued to be a focal point until the onset of World War I. Edith Wharton, who was married in Trinity Chapel, chronicled this era, its places and personae in her 1920 novel *The Age of Innocence*. As the district changed, and its base of support continued to migrate northward, the church and ancillary buildings were transferred to the Serbian Orthodox Church, and was re-christened as the Cathedral of St-Sava in 1944. On May 1, 2016, the Cathedral was almost completely destroyed by a fire, only hours after the completion of Easter services. An adjacent Parish House and Clergy House were not damaged in the blaze. Funds are being raised for restoration, however, current plans underway need not factor in to your design proposal.

Along with these elements, a large surface lot immediately to the west of the church walls may also be incorporated as part of the project site. Additional edits, insertions, alterations of the streetscape and extensions into nearby Madison Square / Madison Square Park will also be considered.



Historical Building Types

The following are useful building/institutional types for research and analysis:

- Churches, chapels, temples
- Monasteries
- Theological schools / ecumenical centers
- New age centers / retreats
- Confraternities / benevolent organizations
- Holy spaces
- Sacred precincts
- Pilgrimage sites

Studio Guests & Site Visits

To offer further insights and inspiration, we plan to hold conversations with theologians, religious leaders and writers who actively engage in these concerns. We may also visit some sites of significance, inspiration and precedent in the city and region as studio time allows.

Readings

Students are encouraged to read broadly on the ideals of spiritual space and religious experience, the philosophy of ethics and morality, as well as the spaces of activism in history. The list below is a beginning. I would love your suggestions.

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2. Jacques Maritain, "Art and Scholasticism" (Art et Scholastique, 1920) in *Art and Scholasticism with Other Essays* (Paperback edition, Kessinger Publishing, 2007), pp.5-27 (*The Schoolmen and the Theory of Art; The Speculative Order and the Practical Order; Making and Doing; Art an Intellectual Virtue*).

3. M.-A. Couturier, *Sacred Art*, texts selected by Dominique de Menil and Pie Duployé, translation by Granger Ryan (Univ of Texas, 1983): "Secular Art, Sacred Art (1950): For the Eyes; Purity"; "To the Great Men, The Great Works (1950); "Ronchamp (1953)" pp. 13-39 and pp. 153-157.

4. "Introduction to the Couturier Collection at Yale: The Significance of the Collection" *The Father M.-A. Couturier Papers at Yale, Archival Register* compiled by Joan Weber, (Yale, June 1994) pp. 1-5.

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9. "The Baha'I House of Worship," "Design and Construction" and "Lotus and Other Design Highlights," in *Lotus in Concrete ECC Construction*, quarterly journal of L&T, special edition on the Lotus Temple, reprint c. 1990(?)

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<https://www.metropolismag.com/ideas/preservation/whats-the-role-of-sacred-architecture-in-our-cities/>

<https://www.newyorker.com/magazine/1977/05/23/forms-under-light> "Forms Under Light," New Yorker, On Philip Johnson's Tower of Hope

Possible Guest Speakers

Glenn Adamson, Former. Director, Museum of Arts and Design — Discussions on Activism

Julia Watson, Horticulturalist / Spiritual Gardener (link to her firm: <https://www.studiorede.com/design>)

Mark Wunderlich, Poet (website: <http://markwunderlich.com/index.php>)

Schedule

A schedule will be distributed the first class.

Questions & Contact

Brad Cloepfil: btc@alliedworks.com

Luke Anderson, TA: lukea@alliedworks.com

GROWN | Bio-fabrication across Ecosystems and Nations

A design studio traveling to Santiago and Patagonia, and collaborating with the Federici Lab at Universidad Católica

Critic: David Benjamin

OVERVIEW

Architects have always worked with the heft and grit of materials. Despite the recent rise of data, digital technologies, and virtual environments, the tangible presence of physical objects is as relevant as ever. But in the past twenty years, there have been dramatic shifts in the environmental context and the material palette available to architects.

One opportunity within this context is to explore new possibilities for grown materials. Rather than keeping the living out of architecture—which has been an assumed goal for most of architectural history—we might start bringing the living into architecture, including growing the building blocks and building systems of our buildings and cities.

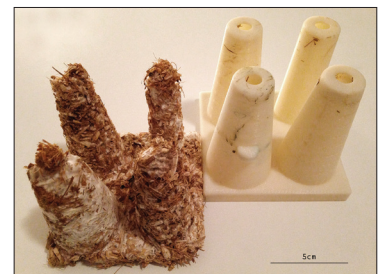
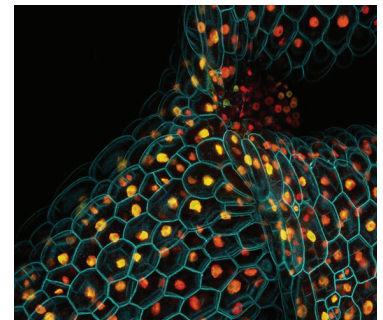
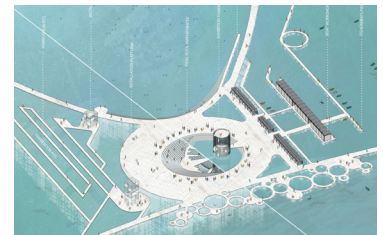
Examples of grown materials include bricks grown from bacteria, fabric grown from microbes, panels grown from mycelium, and of course, all kinds of wood. Some of these grown materials behave like non-grown materials. Others offer new types of performance. All grown materials involve a new relationship to resources, energy, and manufacturing. The framework of grown materials is not about regressing to an old version of nature. It is about inventing a new nature.

This is the primordial soup of Grown, a design studio exploring the frontier of architecture and bio-materials. In our research, we will become immersed in this new science and its possibilities, dangers, and myths. We will use new software workflows—including parametric modeling, digital simulation, genetic algorithms, and optimization—that allow non-specialists to begin designing with biology. And we will conduct hands-on lab experiments with some of the latest examples of bio-materials.

This studio will travel to Santiago to participate in an intensive bio-materials workshop with the Fernan Federici Lab at Univesidad Catolica de Chile. Students will present in-progress work with materials, attend lectures about new developments in biotechnology, and gain hands-on experience with synthetic biology experiments in the lab. The studio will also visit Patagonia as part of a research expedition to identify local ecosystems and learn about local building practices. We will collaborate with Catolica students and faculty and stay in Puerto Williams, the southern-most city in the world, where Catolica has a Biodiversity Research Center and a new fab lab to support interdisciplinary research local organisms “extremophile” organisms.

Within this context, we will design new building materials, systems of global production, and definitions of sustainability, as well as the new architecture that these forces generate. We will design at multiple scales simultaneously—from DNA with a radius of about a billionth of a meter, to Earth with a circumference of about 40,000 meters—engaging 16 powers of ten in the same project.

Yet while we will employ serious tools of biology, engineering, and computer science, we will not limit our studies to technical performance. We will also develop positions about culture and ecology that are difficult to quantify. We will operate in



Images (top to bottom): Factory in Campinas, Brazil (Benjamin Studio 5, Chris Gardner); Same; Aguahoja Artifacts (Neri Oxman); Same; Production center and community center (Benjamin Studio 5, Omar Bacho); Confocal microscope photo of plant cells (Fernan Federici Lab); Mycelium and 3D printed model (Benjamin Studio 5, Thomas Wegner).

both the distant future and the urgent present. We will study the anxieties, fictions, images, and aesthetics of this new science and technology. And over the course of the semester, we will have an informed, critical, and open-ended discussion about biology, materials, and the future of architecture.

BIO DESIGN

There is general consensus that if the Twentieth Century was the century of physics, then the Twenty-first Century is the century of biology. Biology is already the largest field of the sciences, and it now ranks higher than physics in budgets, workforce, and major discoveries.

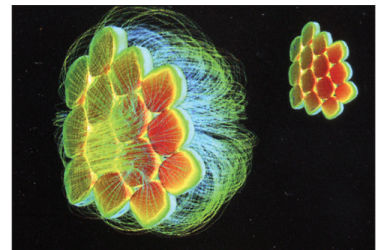
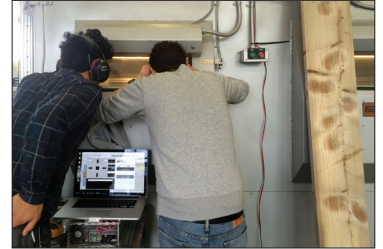
Of course, architects have been drawing on biology for hundreds of years. But this history is largely a conceptual one, drawing on the metaphors, knowledge structures, and imagery of biology, while rarely engaging the actual research protocols of biology or understanding buildings and materials as living biological systems. This conceptual focus may be in part due to the intense difficulty of creating actual living materials and constructing dynamic forms. Yet this context is changing in a fundamental way.

Biology of today is different than biology of a hundred years ago. It is now possible to grow cells on a glass chip isolated from other cells instead of in a living organism. It is now possible to cut and paste DNA and bring to life organisms that never before existed in nature, such as bioengineered yeast that excrete bioplastics. And as of just three years ago, with the demonstration of Crispr-Cas9 and gene drives, it is now possible for humans to re-design or eliminate an entire species very quickly, essentially designing evolution itself. The possibilities are both inspiring and terrifying, but this new biology is unequivocally here to stay.

In addition, it is now possible to apply the latest techniques of computation—such as computer vision and machine learning—to functions such as biological growth. Biology is extremely complex, but when biological functions are encapsulated in computer models, they become a more actionable part of the design ecosystem. Furthermore, the new framework of synthetic biology enables non-specialists—such as architects, artists, material scientists, and computer scientists—to design biological systems even if they are not experts in the complex molecular behavior of the biological parts.

For architects, some aspects of designing with biology may feel like an extension of familiar computation tools. But other aspects are likely to be unfamiliar. Despite recent advances and discoveries, in the near future anyone designing with biology may have to do so with only partial understanding and partial mastery of the forces and systems involved. Design with biology may require design with uncertainty.

And in this sense, design with biology may feel like the opposite of design with computation and Building Information Modeling (BIM). Design with BIM involves complete control of all of the features, relationships, datasets, and tolerances of a project. It overcomes complexity with human logic and precision. Every feature of the model is authored by architects, engineers, or contractors. But design with biology may involve designing on top of existing machines that were authored



Images (top to bottom): Factory design and visualization (Benjamin Studio 4, Abraham Murrell and Edward Palka); Bio-fabrication process for CNC-sandblasted wood (Embodied Computation Lab, The Living); Botanical Fur (Carole Collet); Calcite precipitation model (Benjamin Studio 5, Omar Bacho); Digital simulation of acoustics; Tadpole embryo development (Ali Brivanlou Lab).

by natural forces, rather than designing machines from scratch. It may require managing a few known forces that will inevitably interact with many unknown forces.

This biological outlook offers an important counterpoint to the framework of efficiency that has long been implied in computational thought. The abstraction of data, economies, ecologies, and life itself—which is always latent within an algorithmic outlook on the world—lends itself to a strain of managerialism and runs the risk of neutralizing difference (as in the case of artificial intelligence’s “white guy problem”) or promoting single-minded bottom-line results (such as maximizing profit at the expense of more egalitarian and qualitative goals).

By contrast, the biological outlook of a “good solution” that has evolved in part due to random variations, asks us to leave any pretense of universalizing optimization to the side. This outlook aims for variation, diversity, and robustness of the population rather than perfection of the individual. Biology demands that we see things more multiply. It suggests that there are many versions of the good enough.

COMPUTATIONAL DESIGN

Our studio will interrogate this biological outlook, and develop a corresponding, updated version of computation and engineering. Recent advances in cloud computing, digital simulation, and data science offer new design tools for design with biology. In this studio, we will explore generative design, scripting, digital simulation, and biological algorithms.

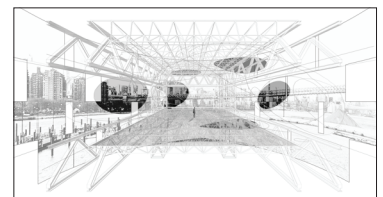
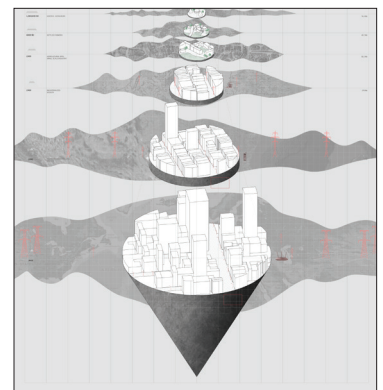
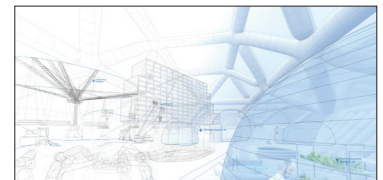
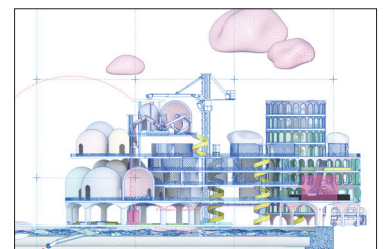
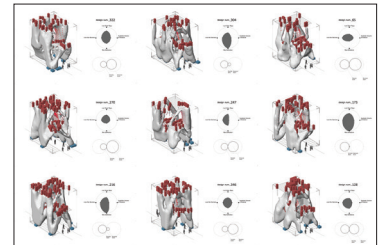
This hybrid of algorithms and the physical world allows for new design possibilities and a new outlook on nature. In this studio, we will use software to investigate data, to explore a very wide potential design space, to minimize our preconceptions, to avoid relying on old rules of thumb, and to derive unexpected high-performing results. For our purposes, computation will not be about achieving cold-blooded efficiency—but rather it will be about enhancing our creativity.

Yet while this studio will explore new frontiers of design and computing, no prior experience is necessary.

GROWING BUILDING MATERIALS

We will apply these digital and physical processes to the design of new materials, building systems, and architecture. Building materials no longer need to be static and inert. They no longer need to be produced by methods of heat, beat, and treat. Architects can begin to collaborate with natural systems rather than resist them. They can engage reciprocal flows of resources and energy rather than simply consuming resources and breaking the flow of energy.

One inspiring example is mycelium-based materials that are grown from waste. This “low-tech biotech” approach makes use of agricultural byproducts and living organisms to produce useful objects. The process starts by mixing together chopped-up corn stalks and mycelium and placing them in a mold of any shape. In five days the mixture grows into a solid object. The physical object is similar to



Images (top to bottom): Factory in Campinas, Brazil (Benjamin Studio 5, Chris Gardner); Generative design for community-built grown structure (Benjamin Studio 5, Lorenzo Villaggi); Production facility (Benjamin Studio 4, Yanling Deng); Inflatable government response center (Benjamin Studio 4, Quentin Yiu); Recycling center (Benjamin Studio 4, Michael Hoehn); Software for custom CNC-sandblasting of wood (Embodied Computation Lab, The Living).

Styrofoam, but it involves almost no waste, no energy required for manufacturing, and no carbon emissions. In addition, the object is completely biodegradable. Styrofoam and other petroleum-based plastics take hundreds or thousands of years to decompose. Mycelium material returns to earth in 60 days. Petroleum-based plastics are linear. Mycelium material is circular.

Other examples include bacteria that fuse sand into bricks with no heat required, microbes living in a vat that eat sugar and generate sheets of fabric-like material, and engineered bamboo that is both stronger and more flexible than natural bamboo.

In a broader sense, this approach demonstrates how living organisms can become healthy factories to grow material. Energy consumption can be reduced. Manufacturing waste can be nearly eliminated. Equipment from Industrial Revolution-era manufacturing can be retired. And new objects, buildings, and cities can be imagined.

REDEFINING GLOBAL PRODUCTION

Once building materials can be grown rather than mined, the way buildings are designed and constructed will change, and current production flows and global supply chains will be transformed.

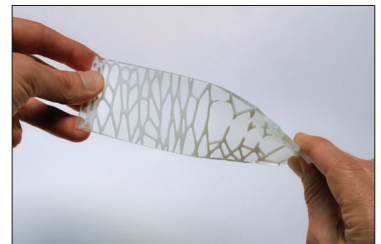
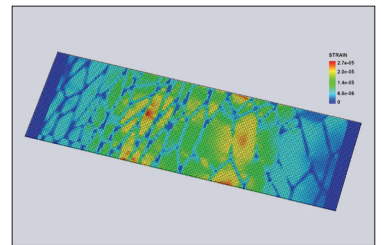
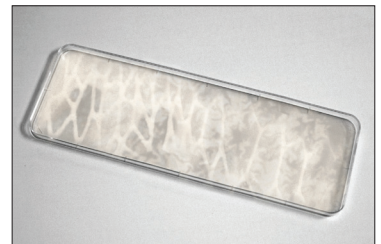
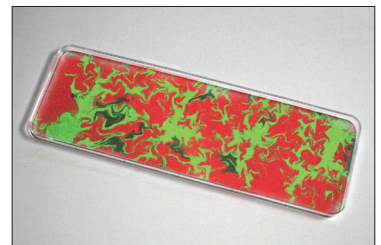
In addition to working with new building materials and new building systems, this studio will explore new cycles of global production. It will investigate the possibility of local production of building materials, similar to the movement for local production of food. It will explore how a nation might pursue material independence, in a manner similar to the pursuit of energy independence. It will explore the social and political implications of a massive transition in the way building materials are created and distributed. It will speculate about what this might mean for buildings, for cities, for developing countries, and for the trend of globalization.

TRAVEL TO SANTIAGO AND PATAGONIA, CHILE

This studio will involve an intensive bio materials workshop with the Fernan Federici Lab at Univesidad Catolica de Chile. The studio will travel to Chile in early November, and students will present in-progress work with materials, attend lectures about new developments in biotechnology, and gain hands-on experience with synthetic biology experiments in the lab. The studio will then visit Patagonia as part of a research expedition to to identify local ecosystems and organisms, and to learn about local building practices and ways of engaging the grown world. We will collaborate with Catolica students and faculty and visit Puerto Williams, the southern-most city in the world, where Catolica has a Biodiversity Research Center and a new fab lab to support interdisciplinary research.

COLLABORATION WITH GROWN MATERIALS MANUFACTURERS

In addition to this workshop, the studio will visit or meet online with several grown material experts, including Ecovative (a company that uses mycelium and



Images (top to bottom): Factory in Campinas, Brazil (Benjamin Studio 5, Chris Gardner); Bacterial cellulose (BioCouture); Bacteria-grown brick (BioMason); Bacterial patterning (Fernan Federici Lab and The Living); Same; Simulation of multi-material sheet (The Living); 3D printed model of multi-material composite sheet (The Living).

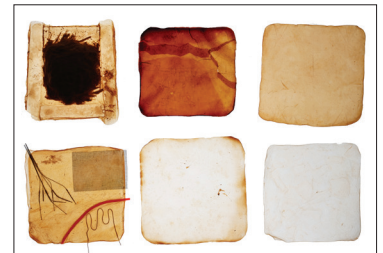
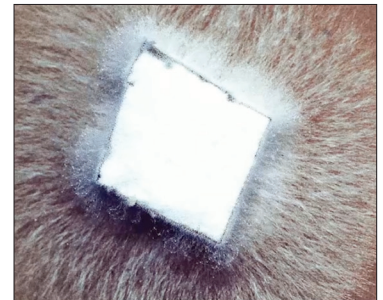
agricultural waste to grow packaging material and boards), BioMason (a company that uses bacteria and sand to grow bricks), Modern Meadow (a company that uses synthetic cells to grow leather without animals), and Material Connexion (a materials library that hosts an extensive catalog of grown and hybrid materials). While these applications may seem like science fiction, some of the giant companies known for providing the materials of the Twentieth Century are betting on their success. 3M is investing in mycelium as a materials platform as flexible as plastics. And the former chief of staff for the chief science officer at DuPont recently became chief technology officer at Modern Meadow.

INTERNATIONAL CENTER FOR FAIR AND EQUITABLE BIODIVERSITY

In 2014, the Nagoya Protocol (an extension of the Convention on Biological Diversity) was established by the international community with the goal of ensuring fair and equitable benefits from the utilization of genetic resources. It has now been ratified by 106 United Nations states and the European Union. And among other things, this means that there are strict limitations on transporting organisms—including living bio-materials—across national borders. This protocol adds a wrinkle to the inevitable march of globalization. It suggests that new ecosystems of local materials may arise. It challenges the Silicon Valley views of openness, innovation, and human-invented biotechnologies.

Our studio will investigate the implications of the Nagoya Protocol and design an International Center for Fair and Equitable Biodiversity in Patagonia. This mixed-use building will respond to a wide range of natural and artificial forces. It will incorporate research labs, offices, residences, community services, and production facilities. More broadly, the project will bring together local building practices and technology, politics and bio-materials, nations and ecosystems, biotechnology and the Global South.

Over the course of the semester, we will apply all of our best biology, computing, and imagination to the design of innovative and viable building proposals.



Images (top to bottom): Mycelium Grow-It-Yourself material (Ecovative and Benjamin Studio 5); Mycelium brick (The Living); Mycelium grown (Ecovative); Bacterial cellulose (Benjamin Studio 5, Chris Gardner); Glacier in Patagonia; Mycelium with natural reinforcement (Benjamin Studio 5, Lorenzo Villaggi); Seeds grown inside mycelium material (Benjamin Studio 5, Peter Hunt).

NEW PARADIGMS FOR A RESILIENT VIEQUES



Vieques, Playa Caracas, May 2018

If as Julio Ortega has argued, 'whatever happens in Puerto Rico will be a rehearsal of what's going to happen in Latin America,' in the same manner we contend that whatever happens in Vieques will be a rehearsal of what's going to happen in Puerto Rico.
Luis Galanes Valldejuli, *Tourism and Language in Vieques* (2018)

'We need reinvention not reconstruction...'
quoted in Naomi Klein, *The Battle for Paradise* (2018)

Vieques is a small island adjacent to the main island of Puerto Rico, with a population of about 9,000. It took a direct hit from Hurricane Maria on September 20 of 2017, a Category 4 storm that left over 400 homes destroyed and hundreds more damaged. Now, one year later, large questions remain about the processes of rebuilding. Under consideration is not only short-term return to some form of "normalcy," but also potentials for a radically new approach to resources and quality of life. This studio presents opportunities to engage several scales within the Vieques spectrum: to include immediate rebuilding needs while researching longer-term options for reinvention and the opportunity to develop innovative design responses at manageable scales. Innovation on Vieques will have the potential to reverberate on the Puerto Rican mainland and on other Caribbean islands.

Vieques can be described as a "colony of a colony." Whereas mainland Puerto Rico is heavily dependent on imports from the mainland United States, Vieques depends almost completely on the big island for energy, water and food. Now, in our Post-Maria thinking, aspects of the island's peripheral existence can represent opportunity. Given that Vieques is a small community on a small island, changes can allow Viequenses to have greater control over their destiny. Such is the hope of many in the Vieques community and is the utopic aspect of this studio challenge: how to imagine and visualize the potentials of

Vieques and how to empower the local community to "re-imagine Vieques" as a new kind of self-sustaining environment. This question will be integrated with the highly pragmatic aspect of our challenge, which has to do with the remaining immediacy of addressing the partial or complete destruction of homes.

Our core concern will be the study of housing and related livelihood futures for Vieques. Working within a coalition of local officials and experts, families and local students, our studio team will evaluate existing housing needs and options for residents, with particular reference to the constraints of post-Maria FEMA and HUD recovery efforts. From this starting point, we will attempt to create a new recovery strategy for the island that better addresses development potentials. The end product will be the design of new resilient housing prototypes and correlated community nodes. **Three scales** of design exploration will be pursued:

1. **First** is engagement with the **HOUSES** and needs of **LOCAL RESIDENTS**, who are still experiencing immediate housing difficulties and have aspirations for re-imagining their lives and livelihoods. We will examine a group of 8-12 houses. This exploration will inform the demonstration **HOUSE DESIGN(s)** to be proposed by each student. Low density single-family housing is the predominant model on the island. Given the small, shrinking population, this is unlikely to change. Land ownership is highly valued, especially given a history of expropriation by the US Navy. Existing conditions provide an opportunity to create housing that challenges the dichotomy between urban and rural, man-made and natural.
2. A **second** core design concern is to examine several **SITES** available for innovative community design options within the village of Isabel Segunda and periphery (6-10 site options). This exploration will inform a **COMMUNITY NODE DESIGN** to be proposed by each student. This aspect of the studio will focus on undeveloped municipally-owned sites that may become a locus for public functions that improve community resilience. This may be accomplished by increasing food security, improving communication networks, bridging divisions between native Viequenses and newcomers/tourists, or addressing other aspects of community needs.
3. A **third** core design concern is to research long-term resilient **BUILDING SYSTEMS** with regard to climate considerations and to address questions of ecology, resources, and identity. This exploration will inform a **BUILDING COMPONENT DESIGN** to be proposed by each student. This scale of design will provide the opportunity to address building and maintenance as a process in which the act of construction is as important as the building itself to the Vieques community. And it will point to the need for radically rethinking of the long-term nature of building systems to address resiliency in the face of intensified present and future ecological challenges.

Vieques community client and partner organizations will work closely with the studio both for the field study and design development components. Included are: the Vieques Conservation and Historical Trust, the Municipal Government of Vieques, Hope Builders and the Institute for Puerto Rican Culture. On the Columbia side, this initiative stems from collaboration with the Earth Institute Urban Design Lab.

Field Study in Vieques will be as follows: Arrival **Sunday, September 23** and departure **Saturday, September 30**. Semester schedule is below:

Week 1-2	Preparation of base survey materials and background review
Week 3	Vieques Site Survey (in Vieques)
Sept 23-29 SITE VISIT	
Week 4-6	Processing Survey/Initial Program. Design development
Week 7	Progress Review and Report (with Vieques representatives)
Oct 25 MIDTERM REVIEW	
Week 8-9	Housing design prototyping
Week 10-13	Overall design development: community node and building component scales.
Nov 6 pre-FINAL REVIEW (with Mark Martin Bras, Vieques Conservation and Historical Trust)	
Week 14:	Final Review and Report Preparation
December 12 FINAL REVIEW (with Vieques representatives)	

Advanced Design Studio V, Fall 2018

Instructor: Marc Tsurumaki

Paradoxical Efficiencies Exorbitance and Efficiency in Architecture

Introduction

“It is obvious that the utilitarian role of an object never completely justifies its form, ... that the object always exceeds its instrumentality. Thus is it possible to discover in every rational object an irrational residue...”-Caillois

Efficiency regulates architecture in a multiplicity of forms – witness net to gross ratio's, fast track construction, the aesthetics of the minimal, net zero buildings and mass pre-fabrication to name just a few. There is structural efficiency, spatial efficiency, energy efficiency, material efficiency, and so on. Efficiency is ingrained in the language of architectural discourse. Efficiency is seen as a moral imperative. Efficiency even defines production in the academic studio – how much work in how little time.

More and more, instead of less is more, we want more from less. And perhaps this is as it should be in a world increasingly defined by a sustained crisis of economic and ecological scarcity. However, it is necessary to ask whether a positivist application of efficiency –more often driven by the ruthlessness of market forces than principles of enlightened stewardship –results in an unquestioned privileging of the quantitative over the qualitative. If efficiency is the overriding imperative in a contemporary culture predicated on the bottom line -on ever faster and cheaper- then what is lost and what is gained in the exchange? Whereas the Taylorization of labor and mass production were considered unambiguous advancements at the beginning of the 20th century, they also reveal the double-edged nature of efficiency. The streamlining of work flows intended to minimize drudgery often compounded it -necessitating new forms of control and devaluing the individual worker. At the same time, the rise of industrialized production stimulated the consumption of a proliferating array of disposable goods, magnifying the depletion of resources and the generation of waste.

But what if efficiency itself was interpreted as a paradox? If efficiency entails the coupling of any maximum to any minimum, then how might a reconsideration of efficiency become conceptually generative rather than restrictive? This studio will be driven by a critical re-evaluation of notions of efficiency in architecture – recognizing that every efficiency paradoxically implies a corresponding excess, exorbitance or waste. Efficiency of movement implies a surplus of circulation, optimization of daylight might generate a superabundance of apertures, efficiency of structural footprint might create

an extreme density of structural members and so forth. This coupling of efficiency to its opposite creates a fertile contradiction -an irrational residue- that can be used to hijack a narrow functionalist conception of efficiency. In an era of performance-driven optimization, we will pursue extreme, perverse, or satirical efficiencies as a means of generating new programmatic and spatial opportunities. If the value of architecture exists to the precise degree that it transcends the strictly utilitarian, then we will seek the point at which efficiency folds back on itself, to the point where it generates a productive exorbitance.

Background:

An early critique of efficiency can be found in William Jevons' 'The Coal Question' from 1865, an appraisal of Britain's coal-based iron industry. Jevons contended that, contrary to intuition, an increase in technological efficiency results not in the conservation of resources but rather in their accelerated depletion: stimulating demand and increasing use. The Jevons paradox, as it is now known, can be found in a wide variety of disparate phenomenon. For example, over the course of the last 25 years the efficiency of air conditioning in the U.S. has improved by more than 30%. However, rather than reducing consumption, energy use for cooling has nearly doubled over that same time period. Today, despite ever more stringent codes we use more electricity to air condition our buildings than the sum total of all electrical use at midcentury. At a minimum, such phenomena call into question a simplistic understanding of efficiency and point to the way that economies of scarcity are often implicated within systems of overproduction and obsolescence.

At least since the emergence of modernism however, the valorization of efficiency within architecture has been virtually complete: from Mies' famous dictum to Le Corbusier's machines for living in, from the aesthetics of structural optimization to the streamlining of transportation flows in the multi-layered networks of contemporary cities. Principles of efficiency have permeated every facet of architectural production, encompassing both the application of scientific management to the intimate spaces of the home and the standardization of the American building industry in the aftermath of World War II. Emblematic of this imperative toward efficiency, the repetitive floor plate building provided a means for speeding construction while maximizing financial return on limited urban sites. Aligning perfectly with the demands of capital, the Chicago Frame and Domino system prefigured a sectional efficiency that threatened to cancel out the very potentials of section as an architectural technique, relegating the vertical development of buildings to the ad nauseum repetition of generic space. Paradoxically, the very limitation presented by the stacked floor plate provoked a proliferation of invention, from variations in height to complexly sheared, perforated and inclined assemblies that reasserted a diversity of spatial strategies and effects. Simultaneously accepting and diverting the logics of the stack, these techniques demonstrate the potency of a critical engagement with efficiency.

Today, questions of efficiency in architecture are as dominant as ever: New forms of computation promise the optimization of performance as a driver of architectural form. The urgency of the climate crisis has rendered sustainability an

omnipresent aspect of architectural practice spawning an entire sub-industry predicated on new standards of environmental efficiency. And the emergence of the sharing economy, from Air b and b to breather, is extracting new spatiotemporal capacities from existing urban formations. Meanwhile, mass customization and modular prefabrication seek to further speed and individualize construction processes, while at the same time, the bulk of building is subject to market driven formulas— generating a taxonomy of building types – from micro-hotels to mini storage, from automated parking structures to fulfillment centers –driven by various forms of maximization or minimization typically outside the purview of architects.

While taking seriously the very real imperatives that underwrite impulses toward efficiency, we will deploy a logic of paradox to question efficiency itself – pursuing rational trajectories to the point that they render a precipitate of unanticipated architectural effects. These projects will take the form of precise architectural proposals and will be governed by four interrelated constraints: 1.) the isolation and propagation of a specific category of efficiency, 2.) the identification of a spatial type related to this efficiency and 3.) the definition of a programmatic logic and 4.) the limits of a physical site located within New York City. In these speculations, efficiency will be shadowed by its opposite in the form of the excessive, the residual, and the wasteful. Rather than seeking the elimination of these negative terms, we will leverage them to generate a productive exorbitance, challenging dominant narratives of optimization, catalyzing new, imaginative potentials within the rationalized spaces of contemporary systems.



COLUMBIA GSAPP Advanced Architecture Studio

SPACES THAT LEARN: FROM OBJECT TO SUBJECT

Giancarlo Mazzanti
Carlos Medellín
TA: Andrea Chiney

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This studio will be taught by Giancarlo Mazzanti (El Equipo Mazzanti) and Carlos Medellín (horizontal) on Mondays and Thursdays, and will include fieldworks in Queens, and a hand by hand transdisciplinary work with an artist, a social scientist and a video producer. Our local partner will be the Queens Museum, through their New New Yorkers Program.

ARCHITECTURE, IN OUR
VIEW, IS ACTION

1. ABOUT THE STUDIO

SPACES THAT LEARN

This is an advanced architecture studio that seeks to identify existing synergies and complementary methodological approaches between art, architecture, design and social sciences as communication entities, that can be applied transversally into problem solving scenarios.

Through an interactive exchange between the students and a specific community, this class aims to provide methodological tools to be applied to the design process. The studio will use Queens, NY as a case study to explore how spaces can be designed through the understanding of its users. Therefor challenging the idea of architecture as object transforming into subject.

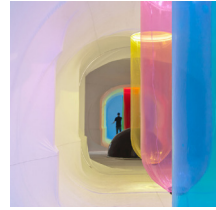
We will explore research methodologies including: ethnographic techniques, asset based- methodology and design thinking applied in participatory games/toys, in addition to cognitive mapping and knowledge exchange strategies. These will allow us to gain different forms of understanding and identifying social practices that inform place-making processes on site (Jackson Heights, Corona and Flushing, Queens). And will enable a ludic and diverse engagement with the new proposed architecture and urban interventions.



El Equipo Mazzanti: Milano Triennale - 2016

1.1 KEY CONCEPTS

EDUCATION – LEARNING – DIVERSITY – INTERSECTIONALITY – INEQUALITY
COMMUNICATION PROCESSES – TRANSLATION – DIALOGUE – PLAY
HETEROTOPIAS – INFORMAL LEARNING PROCESSES – PARTICIPATION
ARTIFACTS – POROSITY – CO-CREATION – SPACES THAT LEARN



2. VISION

Learning
'lə:nɪŋ/

noun

1. The acquisition of knowledge or skills through study, experience, or being taught.

Space
spers/

noun

2. The dimensions of height, depth, and width within which all things exist and move.

We can easily recognize the way in which architecture modifies and shapes behaviors; therefore opening spaces for actions and foster interactions. It seems obvious as well, how architecture can control and operate as an instrument of power. In other words, we have become aware that to build is to govern, that is to say, to organize, direct and control.

A paradigmatic example is the Panopticon, a space for control. As a penitentiary typology that allows for a 360-degree field of vision, it allows the guard to see the entirety of the inmate population. The Panopticon aims for a psychological effect: to feel that you are being watched day and night. This can be translated into the idea of a society that in its totality, through its institutions, observes and controls its members. Is it surprising, as already Foucault pointed out, that prisons resemble factories, schools, barracks and hospitals.¹ Architecture has become more and



Panopticon illustration: Sebastián Rivera

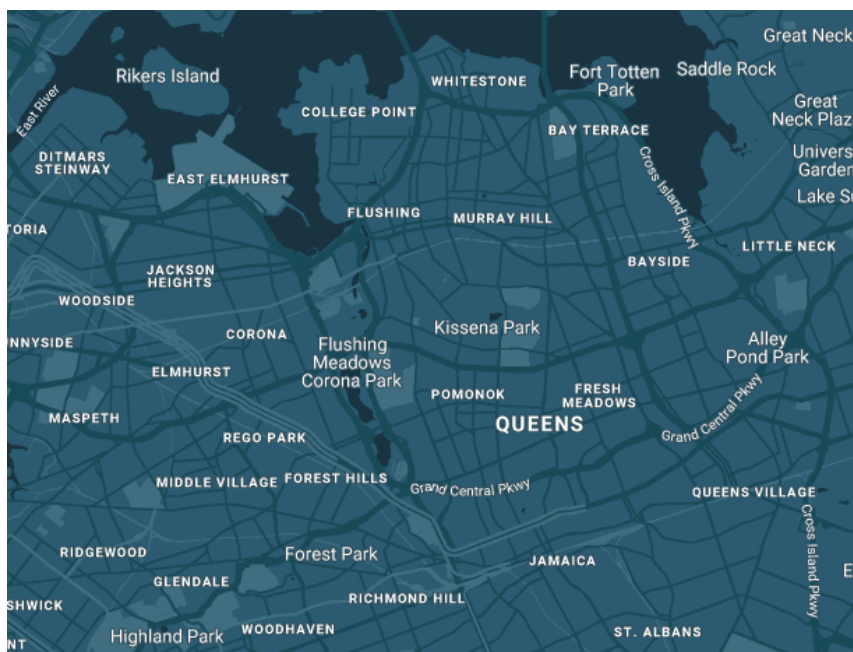
From this perspective, architecture can be thought of as the design of spaces that “teach” us something, i.e: behaviors, actions, interactions, feelings, sensations. It is as simple as saying that built spaces affect humans and the way in which they relate to each other and their environment. But what does it mean, then, to talk about spaces that learn? It means, first of all, to change the epistemological perspective of the architectural analysis, that is to say, to rethink the relationship between the architect and/or the user, inhabitant or visitor –the subject– and the built space –the object–.

The epistemological shift we propose is that of observing the learning process of architecture and to show this process’ emancipatory nature. It is precisely through this analysis that we can understand how architecture can open up possibilities of emancipation in repressive or unequal contexts, or scenarios where under-represented groups and minorities can find a safe space. In other words, how the other, in an individualistic society, can find a place to affirm themselves within a society where space has been built in many cases precisely to exclude them. Then again, perhaps to talk about spaces that learn can mean to talk about the moment when architecture loses its sheer character of object and becomes a “subject”.

3. QUEENS, THE CONTEXT:

PROCESS OF LEARNING TO LIVE IN NEW YORK CITY

Queens is one of the most diverse communities in the world. There are more than one hundred and fifty different languages spoken in the borough, which makes it one of the most ethnically and culturally diverse counties in New York. Queens used to be an undeveloped and rural area organized by Dutch and English settlers in 1635, constantly redefining its borders and the towns that made part of its territory, until it was officially established as a borough in 1898. Transportation between Queens and Manhattan, usually by ferry or bridges in Brooklyn, changed in 1909 when the Queensboro bridge was finished, it wasn't until 1915 that most of the borough became connected to the New York City Subway system. Additionally, the creation of two airports in 1939 and 1948 made it the center of the NYC gateway and attracted migrants from other communities. Because of these infrastructural changes the population of Queens grew rapidly in the following years.



Queens. Snazzy Maps.



Jackson Heights. 2015. Jay Santiago.

One of the most defining events in the reconfiguration of Queens as an immigrant community was the 1965 Immigration and Nationality Act, also known as the Hart-Celler Act, which changed the immigration policies that gave preference to certain nationalities while restricting others. The change of immigration law resulted in massive demographic changes that increased the number of the migrant Hispanic and Asian population. Nowadays, Queens's spatial configuration has been deeply influenced by all of the migrant flows and dynamics inside the borough, the organization of communities with different backgrounds, inside the same territory, has led to a great diversity not only of ethnicity but of gender, religion and culture, that has been consolidated through community based organizations, educational initiatives and art spaces.

Although it is the largest borough of New York and the second most populated, we will focus on the area of three specific neighborhoods: Jackson Heights, Corona and Elmhurst. This area will work as a living laboratory for ideas, that intend to highlight the community's ability to learn through culture and art. Inside these neighborhoods we will address public space as a space for encounter, conversation and collective creation, where the artifacts created for the study and observation of the community will become intertwined with the everyday interactions that these spaces already promote. For this case we have selected two public plazas, the Diversity Plaza in Jackson Heights and the Corona Plaza in Corona. These plazas have both been intervened by the local government and community to adapt to the cultural diversity found in the neighborhood.

The Diversity Plaza is considered by many as one of the most important centers for encounter in Jackson Heights; Since it has been a place for community gathering since 2011, the site's importance predates the renovation and construction of the formal plaza, done by the NYC department of transportation.¹ On the other hand, Corona Plaza has been part of a large project of transformation, programming and re-design, working with actors such as the Queens Museum that promote activities that aim to engage the different immigrant communities through an act of co-creation of public space.²

These plazas are a clear example of public space that has been appropriated by its users and adapted to their needs and desires as a community.

Initiatives like the Queens Museum New New Yorkers program³ that offers free multilingual classes to adult immigrants emphasize on subjects like painting, photography, performance and crafts, as activities that change perceptions and interactions, using personal creative expression as an outlet for identity construction.



Diversity Plaza Groundbreaking Ceremony. 2017. New York City DOT.

¹ Mayor de Blasio Announces Start of Diversity Plaza Construction in Jackson Heights. (2018). Retrieved from <https://www1.nyc.gov/officeof-the-mayor/news/508-17/mayor-de-blasio-start-diversity-plazaconstruction-jackson-heights#0>

² Queens Museum. (2018). Retrieved from <http://queensmuseum.org/2016/01/15288>

³ Queens Museum. (2018). Retrieved from <http://queensmuseum.org/2016/01/15288>

4. THE PROJECT

ARCHITECTURE AS A LEARNING PROCESS RATHER THAN A RESULT

Communication systems are processes that structure the relations between people and the environment. They become key elements as we absorb culture, costumes and behavior, as part of formal and informal processes of learning and creating identity. They rule the way in which we understand each other and define the way we relate to spaces we inhabit.

There are different types of systems of communication, the most used by society are: verbal, non-verbal and visual communication.

We consider architecture as a process of translation, creating a space that learns and changes from its users interactions, means a space that is transformed through dialog. Communication between people, objects and space.

The aim of the project will be to understand how it is possible to create architectures that are defined by experiences, life stories, wishes, values, beliefs and perspectives of the different actors involved in a context. The main task will be to think about spaces that can learn from those communities or individuals that inhabit them.

The project will be divided into three parts, each part will work as an act of translation between different dialogs, media, materials, and disciplines. Thus, the final part will result in an architecture through process, by intersecting different lenses and systems of communication learned from its possible users.

4.1 FIRST EXERCISE

FROM "OTHER" SPACES

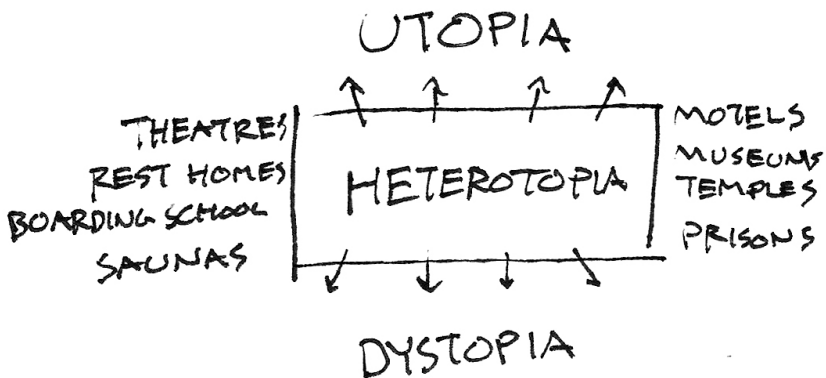
"MICHEL FOUCAULT INTRODUCED THE TERM 'HETEROTOPIA' IN A LECTURE FOR ARCHITECTS IN 1967. POINTING TO VARIOUS INSTITUTIONS AND PLACES THAT INTERRUPT THE APPARENT CONTINUITY AND NORMALITY OF ORDINARY EVERYDAY SPACE. BECAUSE THEY INJECT ALTERITY INTO THE SAMENESS. THE COMMONPLACE. THE TOPICALITY OF EVERYDAY SOCIETY. FOUCAULT CALLED THESE PLACES 'HETERO-TOPIAS' - LITERALLY 'OTHER PLACES'." ⁴

⁴Foucault, M. (1984). Of other spaces: Utopias and heterotopias. Architecture /Mouvement/ Continuité.

This first exercise wants to find spaces (buildings) or times (moments) in which normality is suspended in order to give a place to 'the rest'.

By using architecture as the main source of analysis, the students must find successful meeting places in the city, may they be real or imagined or hidden behind common sites. The idea is to understand how the sacred, the taboo, the eccentric, the abnormal, the monstrous, the secret, the extraordinary, the grandiose, the genius, the irrational, the transgressive, the frivolous or simply the aimless, can somehow have a place within the city.

The analysis will have as an outcome, design tools, that will foster the development of the second exercise.



4.2 SECOND EXERCISE

A TOY FOR “THE OTHER”

“THE SPIRIT OF PLAYFUL COMPETITION IS, AS A SOCIAL IMPULSE, OLDER THAN CULTURE ITSELF AND PERVADES ALL LIFE LIKE A VERITABLE FERMENT. RITUAL GREW UP IN SACRED PLAY; POETRY WAS BORN IN PLAY AND NOURISHED ON PLAY; MUSIC AND DANCING WERE PURE PLAY....WE HAVE TO CONCLUDE, THEREFORE, THAT CIVILIZATION IS, IN ITS EARLIEST PHASES, PLAYED. IT DOES NOT COME FROM PLAY...IT ARISES IN AND AS PLAY, AND NEVER LEAVES IT.”⁵

⁵Huizinga, J. (2016). Homo ludens: A study of the play-element in culture. Angelico Press..

Aware of the cultural differences that exist in the context, “playing” can become a common language to build abnormal moments of interaction, that can take citizens to intimate environments to foster more genuine and critical dialogues.

Students will design toys/games to facilitate interaction with people from diverse immigrant communities, and to promote the collection of experiences, life stories, wishes, values, beliefs and perspectives. The objective is for the students to learn from “the other”, as they would be researching different comprehensions, meanings and limits within six common topics that affect everyday life as a way of learning how to live in the New York City:

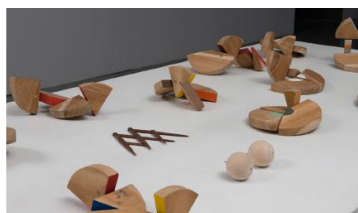
- **HOW DO WE CELEBRATE?**
- **HOW DO WE GROW?**
- **HOW DO WE LOVE?**
- **HOW DO WE SOLVE CONFLICTS?**
- **HOW DO WE MOBILIZE?**
- **HOW DO WE PRODUCE?**

***THIS IS A SHARING EXPERIENCE. THE TOY/GAME IS AN EXCUSE TO LEARN FROM EACH OTHER. SO IT IS VERY IMPORTANT TO UNDERSTAND WHAT BOTH STUDENTS AND COMMUNITIES WILL WIN.**

SOME EXAMPLES:



1. PEDRO REYES: Collective Hat



2. NICOLÁS PARIS
Herramientas para diálogos erráticos
o asociaciones por simpatía



3. YONA FRIEDMAN: Le Musée du Quotidien



4. EL EQUIPO MAZZANTI: We play, they play. Exhibition
Pompidou, Paris.



5. SOL ARAMENDI: Migrant Camera.

4.3 THIRD EXERCISE

INTERSECTIONAL DEVICES FOR COMMUNICATION

"INTERSECTIONALITY IS UNDERSTOOD AS THE INTERCONNECTED NATURE OF SOCIAL CATEGORIZATIONS SUCH AS CLASS, RACE, SEXUAL ORIENTATION, AGE, DISABILITY AND GENDER, AS THEY APPLY TO A GIVEN INDIVIDUAL OR GROUP, REGARDED AS CREATING OVERLAPPING AND INTERDEPENDENT SYSTEMS OF DISCRIMINATION OR DISADVANTAGE"⁶

⁶ Intersectionality. (2018). In The Oxford English dictionary (3d edition). Retrieved from <https://en.oxforddictionaries.com/definition/intersectionality>

Even though there are common points within communities, each individual's identity consists of multiple intersecting factors, and in fact, some prefer to use the plural word "identities", emphasizing that identity is fluid and changes throughout one's life.

From this point of view, and aware that difference and diversity are a multilayered catalyst, the idea of this third exercise is to explore the topics funded with the toy, by proposing devices able to foster dialog in an intersectional way.

By using the New New Yorkers program from the Queens Museum as a starting point, the students will propose communication tools and exercises that will work as opportunities to build, together with the citizens, narratives about the singularities within the different issues and limits that Queens and its inhabitants face.

This devices aim to build an understanding of common points within communities and individuals, inside the different range of comprehensions about specific situations that one can have.



"Restorative Justice communication devices" by horizontal + Nicolás París.

THE DEVICE MUST BE BASED ON THE POSSIBILITIES OF THREE SYSTEMS OF COMMUNICATION:

1. VERBAL:

Verbal communication is when information is shared by using speech.

- Language learning
- Discourses
- Singing

2. NON-VERBAL:

Non-verbal communication consists in the use of body language or the changes in tone of voice.

- Dance
- Crafts
- Performance

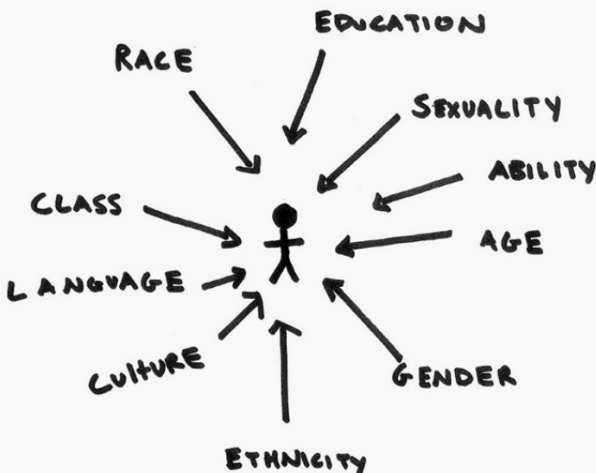
3. VISUAL:

Visual communication is when symbols and signs are used, such as writing or the use of images.

- Video
- Writing
- Signage

... AND SUPPORT ONE OF THIS ESTABLISHED CLASSES:

Painting, book making, crafts, photography, video editing, performance, graphic design, web design, computer literacy, arts literacy or english for speakers of other languages.



Intersectionality. Taken from <https://iwda.org.au/what-does-intersectional-feminism-actually-mean/>



***THE IDEA IS THAT THE DEVICE CAN BE DESIGNED TAKING INTO ACCOUNT THE FINDINGS OF THE SECOND EXERCISES AND POSSIBLE DIALOGS WITH THE TEACHERS OF THE DIFFERENT PROGRAMS.**

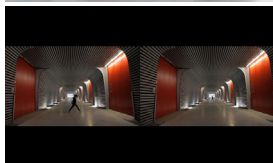
SOME EXAMPLES:



1. HALPRIN WORKSHOPS:
Driftwood Village Community



2. MARINA ABRAMOVIC:
The artist is present



3. LUIS URCULO: AIC video

4.4 FOURTH EXERCISE

ARCHITECTURE THAT LEARNS FROM THE LIMITS

The exercise proposes to design architectures that should work as a tool for mediation, by bringing together the possibility of constructing an intermediate and intermediating space. In such space, limits should be broken, and citizens should have a place to negotiate their ways to behave, without losing their fundamental identity values.

The material and conceptual framework will be to think of buildings able to engender a double condition: (i) a new space that is constructed by visions in conflict; and (ii) that is simultaneously a “hollow” in a solid physical condition. These conditions will allow the construction of interactions, interchanges, and encounters between different points of view and antagonistic standpoints.

A way of understanding a limit breaking design is a “porous space”. This kind of architecture is always in conflict and conciliation, it is a point of encounter and contradiction, that is ambiguous by definition and simultaneous in its use. The multiplicity of encounters based on porosity, allows us to integrate, into the infrastructure, new actions, attitudes and performances.



“Cubetas prototipo Barrancabermeja”. El Equipo Mazzanti.



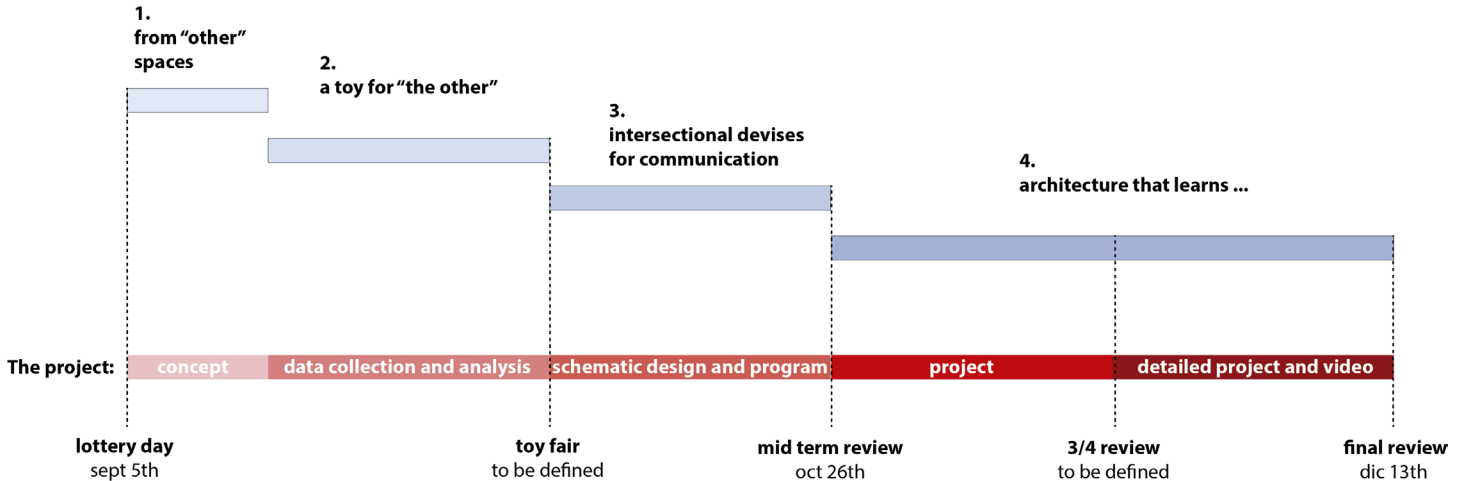
"Parque educativo de Marinilla" El Equipo Mazzanti + Horizontal + Nicolás París.

Rather than designing “buildings” we want to produce growing and changing “artifacts”, according to particular or temporal circumstances. The space itself must be a strategy that admits changes, accidents and interchangeability, thought more as a method than as a permanent shape. The project should become a strategy to create dynamic spaces that will learn how to react to people’s behaviors.

Additionally, students will create an audio-visual to document their projects, and to be able to show spaces in alternative ways, that goes beyond architecture practice, and that can find ways to speak to any public. Using video as a common language that affects space as well; the decisions made when composing an image act as the lines that trace an imaginary space.

This final task aims to expand the understanding of architecture, by moving away from just looking at it from its function or aesthetics, as an object, and pushing the boundaries to explore it as a pedagogical process, that focuses open opportunities for new ways to relate, new forms of use and new types of space.

Four exercises:



Spaces that learn will have two parallel processes.

(i) The project and (ii) four exercises.

The studio will produce deliverables with specific objectives, which will guide the architecture design process step by step

COLUMBIA
GSAPP

Columbia University

GSAPP

A4105 Advanced Studio V

M. Arch

600 Avery: M, Th (1:30-6:30pm), F (3:00-5:00pm)

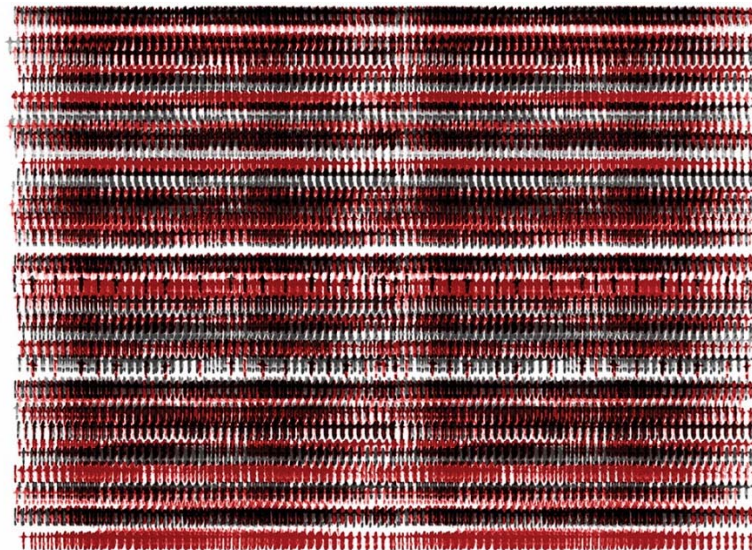
Fall 2018

Studio Critics: Phu Hoang, Rachely Rotem

Studio T.A.: Julie Pedtke

Second Nature:

Behaviors and Environments (*Ver. 8/24/18*)



Mechanisms, Michal Rovner

Questions

This studio will explore the parallel interpretations of second nature: one is based on repetitive behavior in society, and the other on phenomena in the physical world. The first interpretation of second nature involves the everyday habits so deeply ingrained in our spatial memory that they appear automatic—as in opening a door, entering an elevator, or walking through a lobby. When these habits are repeated through collective action, they form a set of social relations that occur repeatedly in the built environment. In this way, an act as simple as walking through a lobby is different in Italy than in Japan, as is sitting in an urban plaza. The studio will question the second nature of assumed behaviors by designing architecture for new spatial habits.

The second interpretation of second nature questions the previously held belief that nature is architecture's opposite. This ideology has reinforced many borders in the built environment, especially between the artificial and natural. However, the term "natural" is an ideology constructed by human perception—the natural is, in fact, manmade. Nature, on the other hand, is the sum of phenomena that occur regardless of human consciousness in both indoor

and outdoor environments. Second nature argues that architecture and nature are not in opposition but function as extensions of each other—with architecture as an extension of nature, and vice versa. The studio will explore this idea of nature that redraws borders between technology and the natural world, indoor and outdoor, interior and urban.

Designing for new spatial habits and extending borders is the foundation of the studio.

Description

This studio will be conducted as a collaborative, cross-disciplinary open workshop. It is recommended, though not required, that students work in groups. Students will design second nature architecture—a future in which nature, technology, interiors, and atmosphere work in synthesis. Each student will define a programmatic argument; all programs should hybridize architecture and nature in unexpected ways. Some examples of possible program combinations are a Media Forest, an Open-Air Archive and Kindergarten Reserve. These examples are anti-typological, resulting in programs that change and are not based on singular building types.

The methodology of the Second Nature studio will first involve designing to unlearn a habitual behavior. Unlearning is a step toward developing new spatial habits in second nature. This process of unlearning to learn anew involves designing with behavior and sociology in mind. Behavior are the everyday actions that occur in space; when they are repeated they formulate an urban sociology. Students will begin by designing architecture without a singular architectural system of their choosing. An example is a building without walls; the absence of walls amplifies the design of other architectural systems—such as floors and roofs— and requires people to unlearn and learn spatial habits anew. This methodology for designing second nature will be implemented for a site selected from several possible locations on New York's Governor's Island.

Program

The studio brief does not assign a singular, fixed program. Instead, programs will be defined by students and will be hybrid combinations between an architectural/technological entity and one based on nature. Possible architectural or technological states are media, kindergarten, archive, and lobby. States from nature are garden, open-air, forest, and reserve. The combinations will be different for each group or student. As a result, a media fog should lead to a different design outcome than a media garden.

Project Site

Historically, Governor's Island has had multiple forms of nature—from its original, smaller island to the much larger landfill island and its emerging form of urban recreational nature. These various forms of nature make the island an ideal site for second nature architecture. The studio will be presented with 3 sites on Governor's Island. The chosen sites will be designed to imagine new futures for the changing island that transform over time according to its second nature.

How We Will Work

The studio will be conducted as an open workshop in which collaboration between students is highly encouraged. Students will design for several sites, thus allowing for parallel discussions

between classmates. Expanding the boundaries of the architecture discipline will be integral to the studio methodology. The students' work will be transdisciplinary in its nature and will be influenced by the social sciences, arts, and sciences. A series of transdisciplinary discussions with sociologists, climate scientists, and artists will be integral to each student's project. Studio readings will similarly be from various disciplines outside of architecture.

Schedule

Workshops of various formats will be held each Monday. The workshops will allow students to engage with each other's projects and provide critical feedback.

Detailed schedule to be determined.

Studio References:

To be determined.

ART HOUSE

Columbia University Graduate School of Architecture FALL 2018

A4105-14 Advanced Studio V – vPPR: Tatiana von Preussen, Catherine Pease (assisted by Jessica Reynolds and Julia Molloy)

INTRODUCTION



Set on Randall's Island Park, the week-long event is an experiment in ephemeral placemaking: a flexible and open space for contemporary art in a natural context. The winding form of the tent echoes that of the shoreline, re-establishing a connection to the landscape. Its curves create a sculpture garden at one point, and wrap behind foliage to make way for a deck and food trucks at another. The lightweight tent fabric aids in creating a diffused light ideal for the display of art. The modularity of the tent allows the fair organizers to quickly assemble and reconfigure the space year after year.
<http://so-il.org/projects/frieze-art-fair>

For one week each year in May, the entire international art community lands on Randall's Island to buy, sell, collect, invest, review, observe, consume, discuss and display art. Launched in 2012, Frieze New York is now considered New York's most important art fair, annually generating multi-million dollar revenues (a large booth costs a gallery \$125,000), contributing to New York's image as a global cultural capital. Hosted inside SO-IL's elegantly designed tent and more recently Universal Design Studio's "temporary town for art"¹, Frieze is not only a commercial trade fair for gallerists, collectors and artists, but also a critical cultural event open to the general public as well – albeit at a price of \$48 a day – programmed with an array of talks, screenings, an outdoor sculpture park, special artist commissions, fringe and outreach events, and more. For the remaining 51 weeks of the year, there is barely a trace of the art world or any lasting investment for adjacent existing communities. Should art fairs, such as Frieze, be held accountable, beyond their temporary staging, to deliver permanent social and cultural infrastructure to strengthen the local community?

Today majority-owned by Hollywood entertainment, sports, and fashion company Endeavor, Frieze has moved since its inception from media (founded first as an art magazine in 1991 by Amanda Sharp and Matthew Slotover in the UK) to art fairs (Frieze Art Fair was launched in 2001 in London) and now potentially to... real estate. We will hijack and interrogate Frieze's unrealized 2016 "Frieze South Bronx" proposal by Marvel Architects, which envisaged an arts district in the South Bronx incorporating housing, art galleries, restaurants, artists' studios and collaborative workspace across 280 acres. The project was to be located in the industrial Port Morris and Mott Haven areas, currently consisting of municipal

¹ <https://www.dezeen.com/2018/05/03/universal-design-studio-erects-temporary-town-for-art-frieze-new-york/>

buildings, scrap metal facilities, and family-run manufacturers. It has less than 2600 residents, of which more than 40 percent live in poverty. Only 10 minutes north from Randall's Island, and not far from Gavin Brown's enterprise and Elizabeth Dee Gallery, does this area have the capacity and drive to be transformed like Soho in the 1970s and Chelsea in the 2000s into a vibrant art community? Can global brand art fairs become community developers and if so, what when wrong with Frieze's ambitious plan?² And how can the high end art scene live side by side one of the poorest communities of New York City?

To ensure that artists continue to thrive and work in New York City, Mayor Bill de Blasio announced in the 2015 State of the City Address a commitment to create 1,500 units of affordable housing and 500 units of artist workspaces for the cultural community over the next decade.

An inter-agency taskforce, including the Mayor's Office, the Department of Cultural Affairs (DCLA), Housing Preservation and Development, and the New York City Economic Development Corporation (NYCEDC) have begun to implement strategies for the equitable development of housing and workspace for artists. This initiative, known as Affordable Real Estate for Artists (AREA), will work with residents, real estate developers, cultural partners, housing agencies, and the philanthropic community to implement these goals.

NYC Department of Cultural Affairs: <https://www1.nyc.gov/site/dcla/programs/area.page>

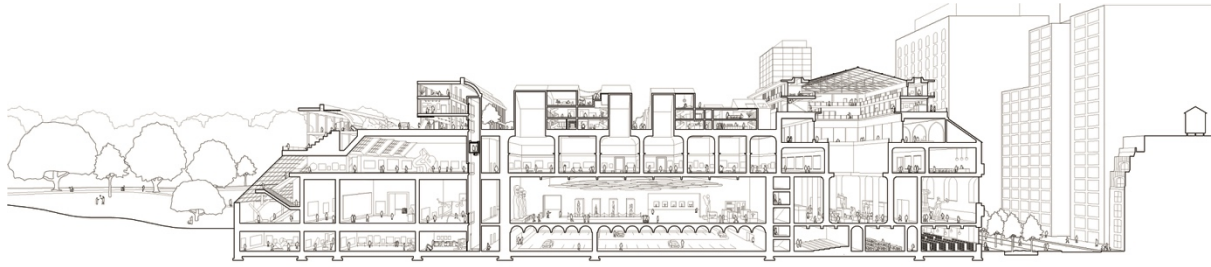
Whilst the circumstances of the Frieze's failed plan have been buried, the studio will propose alternatives that embed art infrastructure into the community with both bottom-up and top-down strategies whilst also considering its relationship to the DCLA (New York City of Cultural Affairs) and Create NYC's Cultural Plan published in July 2017. By appropriating certain programmatic intentions of Frieze's brief, we will continue our investigation from last year into the potential of hybridizing places of art display and affordable housing for artists, on the premise that they are mutually interdependent for the production of art. We will propose mixed use hubs funded by Frieze combining permanent affordable housing for both existing local residents and artists, as well as art exhibition/event spaces run by the local community in affiliation with Frieze, which will be activated for fringe events during the fair. In order to succeed, the proposals must be financially sustainable and fully integrate into the community, consulting local stakeholders, and being able to control the inevitable waves of gentrification.

The studio will invite a number of curators, exhibition designers and artists to participate in guest crits and site visits. The unit will also be running in parallel to Brian Loughlin's MSRED studio, also based in Mott Haven and we will be able to share knowledge between the two studios. We will use geometry as a primary design tool, understanding how a specific formal language embodies a particular theoretical position. Physical model-making will be the key mode of representation in the studio. Over the course of the semester we will investigate hybrids of the domestic and the public, of culture and community and of production and consumption. We will tackle the social and cultural cost of international art fairs on their local contexts, focusing on the case study of Frieze New York and find opportunities for them to create permanent constructive urban legacies.

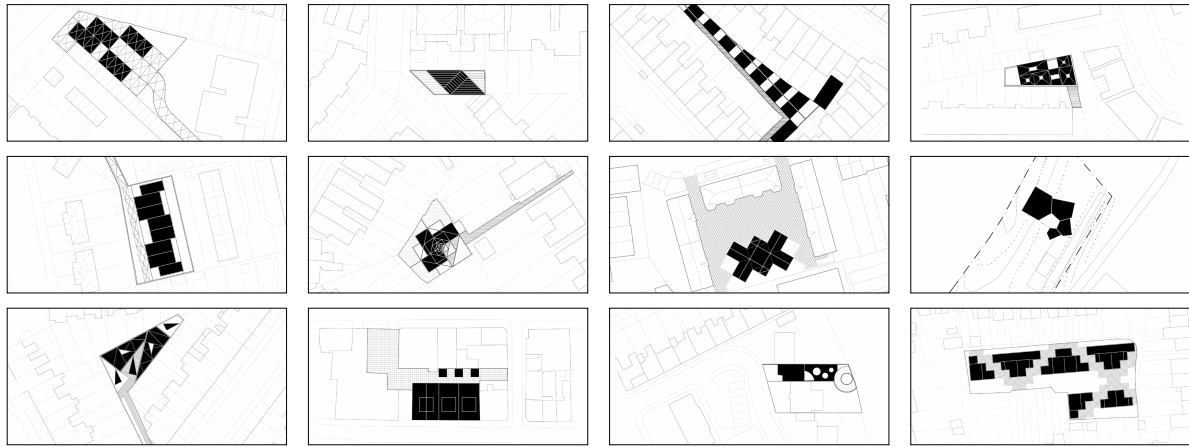
The studio is interested in new economic and financial models to provide affordable housing for artists. Is it the responsibility of private companies to provide this social function or should be left to the government? What is the role of philanthropy in relation to that of the State? Is the art fair a place of contemplation or a site of consumption filled with booths and cafes— and now housing too? What are the effects of the digital on the art fair and house? If each artwork creates a world of its own, then the display space is a world of many worlds, with capacity for endless new ones.

² Is this a new trend? In September 2017, Art Basel launched the Art Basel Cities program in Buenos Aires, an initiative designed to "be an accelerator to propel cities' cultural and economic development in a significant way."

METHODS AND APPROACHES



Artists' Housing on the roof of the Metropolitan Museum, Clifford Champion, GSAPP Fall 2017



Infill typologies, vPPR 2017

For the last half century armies of architectural thinkers have been in search of an automatic writing, a methodology of design that would absolve them from the crime of building without authority – and only a very few have made peace with the absence of a secure source of authority and legitimacy for their formal decisions. The truth is, if you're not a formalist, you're probably just asleep.

Judith Wolin, ANY: Architecture New York No. 7/8, Form Work: Colin Rowe (1994), pp. 58-65

When taste conforms to the sensus communis the collective moral dimension of good survives, but when taste is expected to express individual freedom, we can only embrace the resulting plurality (or cacophony) of approaches and styles. Under these conditions, and beyond questions of utility and efficiency, it is as impossible to be bad as it is to be good in any universal (or even general) sense. This is an odd condition for geometry, whose value to architectural design had heretofore relied on apodictic clarity and consistency (often supplemented by cultural conventions, as in so-called scared geometry).

Peter Carl, Log 43, The Geometry Issue pp 121

While we are all accountable for the language of the buildings that we design, we often try to attribute our architectural forms to client, context, program or computational accident. And yet, in an age of relativism, it appears impossible to justify any one architectural style, language or geometry, except in terms of taste: which is governed only by the glib value of the market.

We propose to make intensive investigations into how geometric systems or compositions, employed rigorously, even obsessively, at each scale of a building, can be used to discover new typologies: generating gradients of public and private space; creating unexpected relationships between different display and domesticity; producing distinct formal identities; and bringing to light hidden opportunities afforded by the site.

We will learn from the history of typology – from Quatremère de Quincy to Dogma – and at the same time we will employ aspects of the non-authorship of methods of the 1990s and 2000s, whose choreographed chance encounters and intentional happenstances we recognize as powerful creative tools, but while reclaiming our accountability as architects operating in the politically charged context of the South Bronx. Through rigour and obsession, we hope to empower new typological relationships with meaningful values beyond arbitrary, commercial taste.



Marina Abramovic Institute, OMA

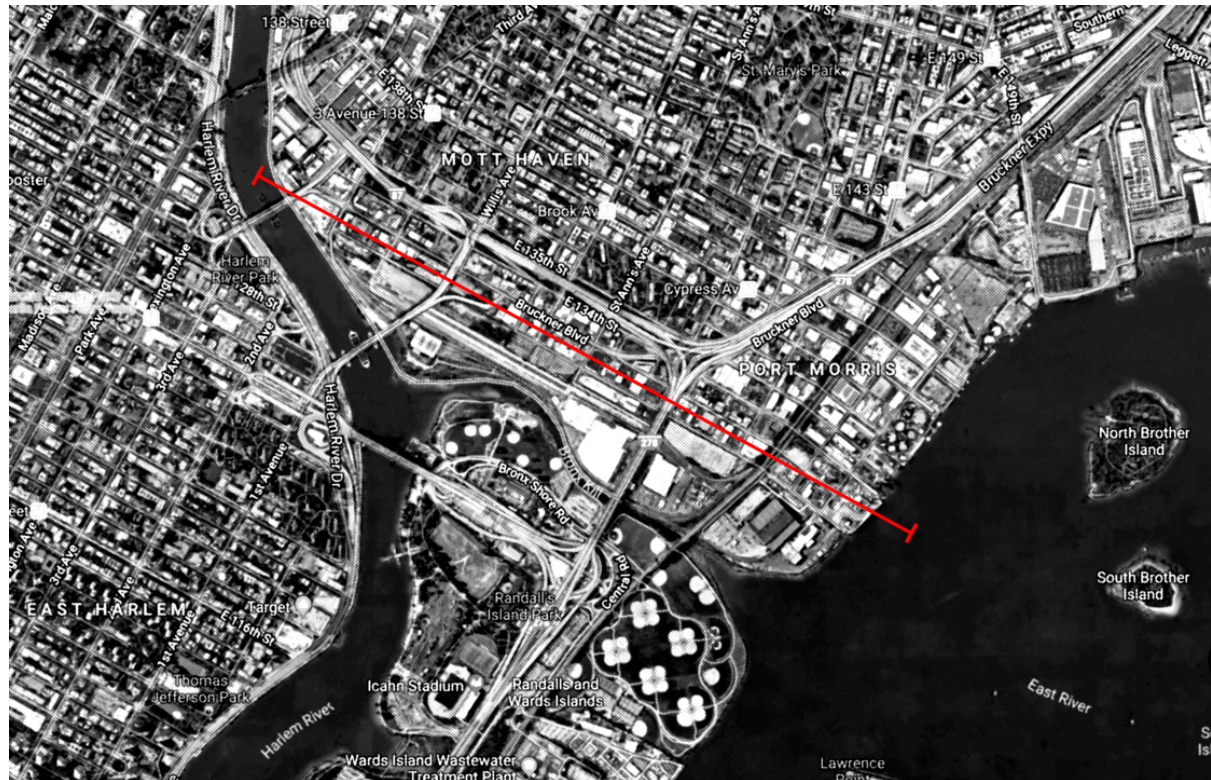
We will be working along a block-wide strip that runs between the Harlem River and the East River. It is an area zoned for a mixture of residential and manufacturing uses, which could accommodate artists' making and display spaces alongside their living accommodation. In doing so the studio will take into consideration the rich history of art and dwelling: the display of art in domestic settings; the home as subject in the artwork; the house itself constituting the artwork; and artists residing inside the gallery.

The house itself became artwork, in part as a critique of the commercial and institutional nature of galleries (with art fairs being the most extreme example of this) seen to instrumentalise artists (only recently embracing minority groups), so that many artists have looked elsewhere for sites of intervention. Examples include Gordon Matta-Clark's deconstructed suburban 'Splitting, and the Unmade House' (1974), and Rachel Whiteread's cast concrete 'House' (1993). The house was literally brought into the gallery in reconstructions such as Marcel Breuer's House in the Museum Garden (1949) at MOMA and later revisited in Barry Bergdoll's exhibition, 'Home Delivery: Fabricating the Modern Dwelling' (2008) at the same museum.

While the white cube is not an obvious place to call home, with its highly controlled environments and puritanical surfaces, many performance artists have inhabited display spaces overnight, such as Joseph Beuys's 'I like America and America Likes Me' (1974) where he spent three days in New York's Rene Block Gallery with a wild coyote, a felt blanket, 50 Wall Street Journals, walking stick and gloves. Others have approached living inside an art expo in a more straightforward fashion, such as 'Metavilla' by Exyzt for the French Pavilion at the Venice Biennale, who occupied the pavilion day and night, and invited audiences to join them, to share a meal, lie down, take a bath.

In this brief, the focus is on the messy intersection of a display space and a home, where myriad dichotomies will play out between program and form, culture and commerce, ethics and aesthetics, art and architecture, life and art, interior and exterior, privacy and publicity, real and unreal. This complex interface constitutes the inbetween space of negotiation and sharing. It creates the potential for new types of living, new types of art display, and perhaps new types of art. Through precedent research, readings and art history, students will study the successes and failures of art fairs and community art spaces today, and how walls, windows, doors and floors divide and connect different inhabitants to create new opportunities for social encounters.

COURSE STRUCTURE SUMMARY



Mott Haven, South Bronx Waterfront

The studio will be structured in the following parts. Research should be considered on-going with additional findings informing the complexity of the project. The final studio session of each section will take place in the form of pin-ups when students will have an opportunity to review and to share their outputs. Physical models will be the primary mode of representation. Selected readings will be discussed in parallel to studio work. Tutorials will be given by Tatiana von Preussen and Catherine Pease. They will be assisted by Julia Molloy on-site, and Jessica Reynolds off-site. Despite being a visiting studio, either Catherine or Tatiana will be present at every tutorial, except in the early site research week (week 1), when desk reviews will be given via skype and assisted on-site by Julia Molloy, a New York based collaborator of vPPR. Our studio runs parallel to Brian Loughlin's studio in the MSRED program, which is also based in Mott Haven, and there will be opportunities for knowledge exchange between programs.

Part 1: ABSTRACT: INTRODUCTION TO GEOMETRY AND SITE (6-17 September)

Group site research: Students will be divided into four groups to carry out in-depth analysis of our site: a strip of land that cuts through Mott Haven, South Bronx.

Group outputs: 1) a physical sectional model/drawings of the site; 2) an urban and social history of the site including any relevant existing policies; 3) a history of art fairs and art expos, particularly Frieze art fair; 4) analysis of successful precedents that integrate art and the community.

Individual Geometry research: In parallel, students will analyse specific geometric typologies, interrogating the formal language and theoretical discourse of selected precedents, which will inform upcoming designs.

Individual outputs: Geometry/typology precedents booklet

Part 2: BOOTH IN THE BRONX (17 September- 1 October)

Temporary intervention: Students will create a proposal for an art booth – based on the dimensions of a typical art fair booth – but located in the community, hosting fringe and outreach events for the duration of the Art Fair. Informed by our previous research into geometrical typologies, these folly-like additions to the urban landscape will provide a living accommodation for a specific Art Fair artist-in-residence and a small public space for art display and events. The objective is to investigate how particular geometries can affect specific relationships between art and dwelling, and art and the community.

Outputs: 1:10 model, photographs of model on site.

QUARTER REVIEW

(1 October)

Part 3:	ART HOUSE CONCEPT	(1 October – 26 October)
Permanent intervention, urban provocation: Students will develop a conceptual vision for a mixed use hub managed by the Art Fair and the local community together, that hosts exhibition and events space, and up to 10 to 100 affordable dwellings for local artists on an allocated site in the community. Students will develop a critique that relates their chosen geometry to the wider site context and to your neighbours proposals. Outputs: 1:500 site proposal, concept models, renders, diagrams		
MID TERM REVIEW		(26 October)
Part 4:	LIVING FAIR	(26 October – 19 November)
Permanent intervention, architectural proposal: Urban designs will be resolved at an architectural scale, through an iterative model-making process. The intention is to create a sustainable artist community that is fully integrated into the local community, so that the Art Fair can exist beyond its week-long annual event, and contribute socially throughout the year. Outputs: 1:50 sectional model, 1:100/1:200 plans and sections, renders, diagrams		
THREE QUARTER REVIEW		(19 November)
Part 5:	BEDDING DOWN	(19 November–11 December)
Final presentation of concepts and detailed drawings Outputs: Refinement of 1:50 sectional model, 1:100/1:200 plans and sections, renders, diagrams		
FINAL REVIEW		(11 December)

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Everything must Scale

Architecture at the dawn of the autonomous factory.

Columbia University
Graduate School of Architecture, Planning and Preservation
Arch 4105 / FALL 2018

Michael Bell, Professor of Architecture
GSAPP <https://bit.ly/2nW6mCQ>
Amazon Author's Page <https://amzn.to/2MpeTwR>

Abraham Murrell, Studio Teaching Assistant



Studio Site **TRIC: Tahoe Reno Industrial Center** / 12 Miles fronting I-80 the Lincoln Highway <http://tahoereno.com/>
TRIC encompasses 107,000 acres / 167 sq. miles. ** This equals 54% of New York City.

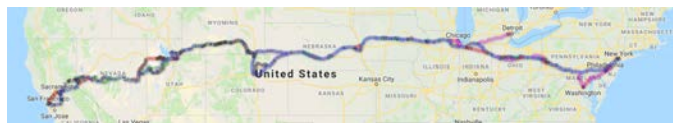
Programming *Energy Station: electric charging station for trucks/automobiles with food, retail, showers and short-term hotel for transit.*

Research Travel for Site Visit + workshops @
Xerox Parc, Palo Alto <https://www.parc.com/>
Stanford University
Archeology Center / d School: Professor Michael Shanks <http://www.mshanks.com/>
Center for Design Research, Engineering: Professor Larry Leifer <https://stanford.io/2EYsKXa>

Abstract

As the Nevada desert expanse emerges on the eastern outskirts of Reno our studio will explore architecture's capacity in a landscape characterized by natural formations and newly immense technological/commercial outpost that hydrates Silicon Valley and advanced manufacturing. The studio confronts the *near* placeless automated factories and aspiring "lights out" manufacturing and data centers of Google, Tesla, Switch and Blockchains LLC.

The studio site is within the 167 sq. miles, 107,000 acres TRIC development and desert adjacent the nation's first trans-continental highway, US I-80 – Lincoln Highway.



While emerging technologies drive the real-estate development the topology of the vast interiority of the industrial concerns coupled with the enveloping expanse of desert beyond recalls an entire genre of art that had taken the western deserts as their spatial genesis. Our studio will seek to understand the current site and its technological / financial basis while also re-exploring key works from art and architectural history that were based in issues of scale, and perception of immense scale. In particular how a *small* work of art or architecture becomes a lever on immense spaces.

The City and the Autonomous Factory

As new forms of industrial and urban development take shape in the context of Internet based commerce and retail; electric and

possibly autonomous mobility; artificial intelligence, machine learning and robotic labor; and a rapid increase in local renewable energy production where and how we live and work are changing. The breadth and layering of technological change that are converging escape disciplinary boundaries and now deeply affect how we organize cities, social life, economic activity and increasingly settlement and architecture. We long ago reached the limits of the software economy and are instead deep into a new version of the "valleys" mantra of scale; one that is becoming newly enmeshed with material, with architectural space and human experience, and one that might have architectural forerunners in the art of the 1970's earthworks. This new desert occupation east of Reno portends a newly robotic factory – a world apart from public spaces of all kinds but one that nonetheless demands a class of human workers who have full or part time residency.

There is a clear evidence of a new form of territory emerging: a zone where work (and post-work) and domestic consumption (of all kinds) are for most of the population un-anchored and increasingly (if not severely segregate) from manufacturing and the physical-social aspects of retail space. Today Amazon runs more than 120 fulfillment and sorting centers in the United States and as of 2017 operated out of more than 240 million sq. feet of offices, warehouses and data centers. Their expansion of their real estate footprint has been in part fueled by the acquisition of Whole Foods creating a new presence in the everyday life of people and blurring the boundary between net-based commerce and the physical architectural world. The wider physical presences of Internet based commerce is by its very nature often hidden and private – indeed often based in a cartography divorced from historical forms of urban settlement and realized in distant relation to urban centers of the past. How the net meets the existing urban

world is no longer a nascent matter – it is at immense scale. TRIC dwarfs the scale and its urban partner Reno.



Hiding in Plain Sight

Our studio site is based at an emerging, remote and yet *hidden in plain sight* (anti) epicenter of this form of development. An immense but also deeply private business park.

At the **Tahoe Reno Industrial Center** we will explore how new forms of industrial interiority, newly automated sorting stations, data centers and advanced manufacturing, increasingly place new economy jobs and housing needs on the outskirts of even the extended suburbs and sprawl of past half century. While some of the companies are well known (Amazon, Tesla Giga Factory, Wal-Mart.) others are less known yet increasingly based in the matrix of the new remote developments.

The studio will investigate this as an architectural prompt – a new mode of architectural plastic space and experience.

Trade, commerce, fields of economic geography and technological or industrial change are not new to cities, but what is new in this era is a question of scale – both literal scale such as that of measure, but also in terms of the rapid expansion of a new product or technique. Scale as the key denominator in industrial development and product marketing is here also driven by the deep integration of Internet based logistics, automation, communications and data processing.

Taken as a whole, Amazon is one indicator of the emerging conflation of the Internet and urbanism – a reorganization of social relations of all kinds and in any number of extrapolated indices. The wider picture of a burgeoning disruption of the economy has a deep well of scholars and analyst, but the issues of scale and new visible urban impacts breach a threshold of everyday experience – we see side effects of change before us even when the drivers are hidden as it is in an Amazon warehouse or data center.

Our studio will take on a site and program at the center of this evolution as a test case.

The site is a transit vector -- one of the earlier and still most important national highways. We will look at two forms of transit stops, for passenger cars and trucks. Both are being redefined in the new internet/physical nexus—to electric and possibly autonomous mobility and shipping.

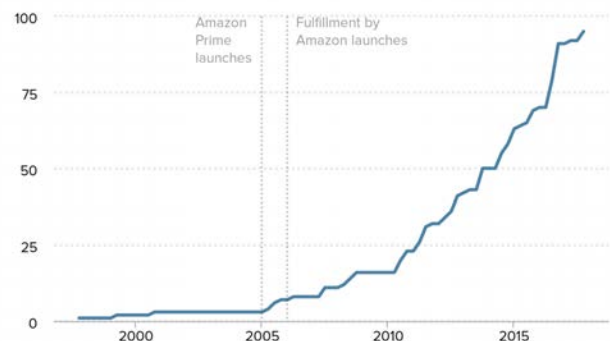
Our focus will look towards new themes and mechanics of scale (in business models, in commerce, in geography +) and what remains or is newly possible in terms of architectural plasticity and human spatial experience in this realm.

Data Things

Amazon sells things and data services. While this may indeed be an era where manufacturing, distribution and consumption are more tightly woven it is an era that will increasingly rely less on stores, or retail and be less engaged with all form of intermediary between consumer and maker. This trajectory as it is portrayed to date upends a near century of suburbanization that gave rise to a single family house (79 million in the United States) that was supplied by a Venn diagram of retail spaces, schools, churches and public parks, fire houses – architectural and social spaces the were between the home and the work place.

Do remote distribution and manufacturing sites such as TRIC portends a world of home and office. With little in between?

Total number of Amazon fulfillment centers
Cumulative openings, 1997–2017



Source: Fulfillment center opening dates compiled from Avalara ("Amazon Fulfillment Center Locations," accessed October 2017), Guided Imports ("The Complete List of Every Amazon Warehouse and Distribution Center in the World," last updated April 2017) and MWPVL International ("Amazon Global Fulfillment Center Network," accessed October 2017).

The United States means of Distribution and Consumption is Changing (fast).

Amazon.com fulfillment centers

We find ourselves in a world where the intermediary of shipping and manufacturing are seemingly increasing disconnected from settlement patterns.

Amazon Is Changing the Labor Market

As shoppers shift more of their spending from stores to websites, department store jobs once spread around the country are being replaced by warehouse jobs in fewer locations.

● = Amazon warehousing facility¹ ● = Recently closed KMart, J.C. Penney, Macy's or Sears²



1 — Includes announced Amazon warehouses

2 — Includes all announced closings for 2017

Sources: Amazon, JCPenny's, Macy's, Sears

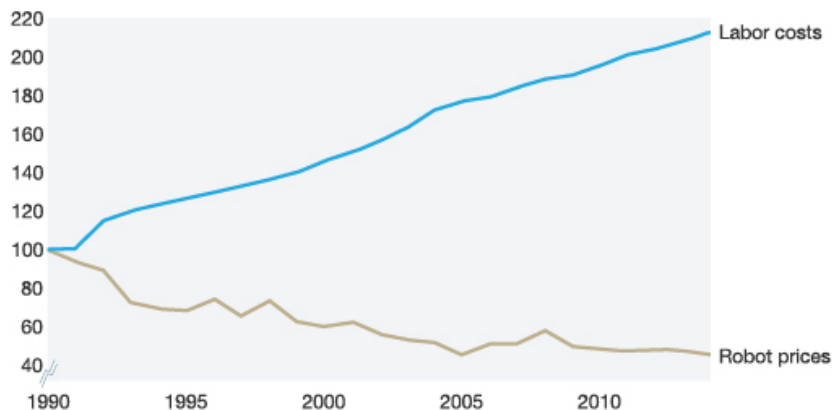
Bloomberg

A Digital – Industrial – Robotic Desert



Cost of automation

Index of average robot prices and labor compensation in manufacturing in United States, 1990 = 100%



Source: Economist Intelligence Unit; IMB; Institut für Arbeitsmarkt- und Berufsforschung; International Robot Federation; US Social Security data; McKinsey analysis

We are not seeing the first installment of advanced industry in desert landscape. The aerospace and defense industries have been based in the desert regions of California, Nevada, Arizona and New Mexico for a century. The Tahoe-Reno industrial development is at its outset not based in overt defense or the mechanics/physics of aerospace, but instead hosts private logistics centers and data centers and aspiring autonomous manufacturing. Four hours northeast of Silicon Valley they form a structure for *perpetual delivery* — a distant means to sustain residential life without the Venn diagram of retail or other “social spaces.” If the suburban matrix of home/retail/work spaces further collapses into home/work — as consumption commerce architecturally disappears we are left with a form of private domestic space and another of workspace that is likely more private (if not autonomous). Does work become less reliant on place and geographic locations that historically drove industry (to a river, a bay, a lake—to ice in the Great Lakes as a cooling means or food stabilizer)? Does housing continue to follow industry to remote locations where land is cheap and indeed barely part of the logistics save for privacy concerns? The Tahoe Reno Industrial Center coalesces around lower cost robotics and forms of digitally scaled commerce — yet it also converges with the hardware of the past century: highways, trucking, railroads and warehousing.



Master of Scale, Pod Cast by Reid Hoffman, founder LinkedIn.

Site: Instant Permitting – 12 Miles of I-80



Here are our competitive advantages that no one in the United States can match:

- The vast majority of industrial **uses are pre-approved**; rarely are special use permits ever required
- **Grading permits** issued within **7 days** of application
- **Building permits** issued within **30 days** of application
Yes, you read that right! Just imagine, you could have your site graded, built and open for business within 180 days following close of escrow.
- **Roads** and all **utilities** (power, gas, fiber, water, wastewater, reclaimed water) are in place and built for industrial capacity



- A Berkshire Hathaway owned **power plant** is in the park with a capacity of 1100 megawatts
- Ample **water rights** secured and banked
- 12 Miles of dedicated frontage on the **I-80 corridor** and Union Pacific Intercontinental **rail line**, which is the central logistics corridor to and from the east coast
- Located in Nevada where there is **ZERO state income tax!**
- All land in the development is **owned free and clear**

Home to the Tesla Gigafactory . . . the Switch/Supernap data storage campus . . . and soon the Google data storage campus.



Studio Programming

Our program is broad and also specific. We will study the Tahoe Reno Industrial Center and the nature of the companies who form its economy and industrial technologies. Our focus at the architectural scale will be a specific new form of a re-fueling stop, lodging for travelers and some form of commerce and social space and programming. Our initial studies will focus on the future of re-fueling stations for trucks and cars - for professional drivers and individuals and families.

One example we will study in depth - the Flying J truck stops: recently Berkshire Hathaway has purchased a controlling interest in the national chain of outlets anticipating their reinvention.

Giving shape to the new Industrial Economy: Berkshire Hathaway has increasingly moved into holding that essential resemble the United States economy:

- Berkshire Hathaway purchases majority interest in Pilot Flying J truck stops.

Pilot Flying J has more than 750 locations in 44 U.S. states and Canada selling gas, diesel fuel, and convenience goods, and offering trucks more than 70,000 parking spaces and 5,000 diesel lanes.

While terms for Tuesday's transaction were not disclosed, Pilot Flying J is 15th-largest private company in the United States, with annual sales of \$19.6 billion, Forbes magazine said. The family-run company employs more than 27,000 people.

<https://reut.rs/2zzPTJP>

- Berkshire Hathaway purchases Precision Cast Parts

Warren Buffett is paying a hefty price for the biggest bet of his career as his Berkshire Hathaway Inc. (BRKa.N) has agreed to buy Precision Castparts Corp PCP.N, valuing the maker of aerospace and other parts at \$32.3 billion.

The purchase is Berkshire's largest, and accelerates its transformation from a company largely dependent on insurance businesses into one resembling the broader U.S. economy, including a railroad, several industrial companies, utilities, a car dealership and consumer goods businesses.

The merger eclipses Omaha, Nebraska-based Berkshire's \$26.5 billion purchase in 2010 of the 77.4 percent of the Burlington Northern Santa Fe railroad that it did not already own.

<https://reut.rs/2w2kHSX>

Programming needs: pragmatic

Energy Source: power generation.

- Fuel for Truck Stop
- Fuel for automobiles

Travels Rest Stop

- Restaurant
- Shopping

Hospitality

- Showers
- Rooms / Hotel
- Meeting rooms

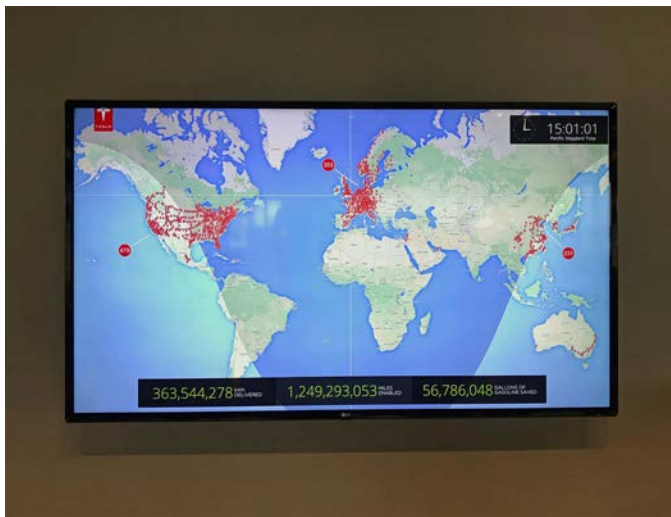


Prototype Site: Private Fueling Station / Rest Stop

Today: Kettleman City, California, Tesla Supercharger: *The gas station becomes an airport private lounge.*



Rending / Model available @ Turbo Squid.



The customer is an advocate in global energy monitoring.

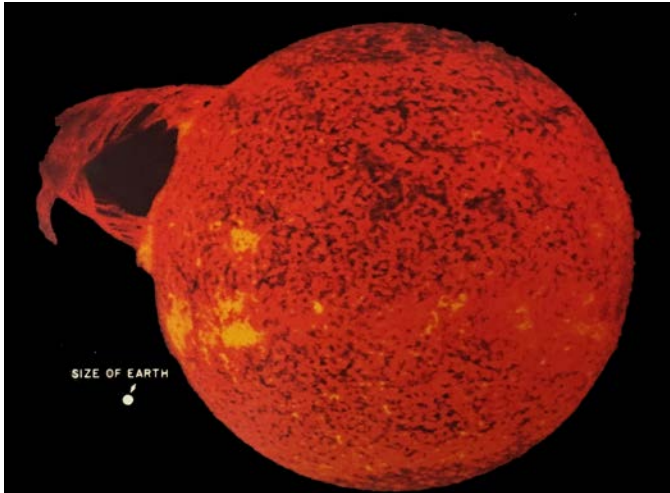


A former fast-food franchise becomes an elite “energy” lounge.
Safety, privacy, security – with ownership and transit.



Rending / Model available @ Turbo Squid.

0 - Energy Site: DESIGNING ENERGY (post scarcity)



"Unique electronic photograph of the sun in the extreme ultraviolet radiation from ionized helium (304 angstrom wavelength) taken 19 December 1973 by the Naval Research Laboratory's spectroheliograph aboard Skylab. The massiveness of the sun and its eruption is indicated by the comparison of it to the size of the earth. Theoretically, if it were possible to harness the energy of this eruption, it would have provided for all of mankind's power needs for the year 1 A.D. to the present – perhaps the next 2000 years

8 minutes from the Sun

Solar energy from the sun reaches the earth's surface in 8 minutes. Fossil fuels, oil and gas form over 250 – 350 million years. How do we imagine the 8-minutes as architecture?

Anyone involved in sustainability and energy knows these measurements and has long sought a transformation of our energy regimes. Whatever the goals the compensatory challenges have seemed intractably staged to stop change (and thus stage environmental calls for change as "revolts"). Blocking sustainability has been market based; there is too much easy money to make in the old energy regimes, too many assets based in fossil fuel protocols, too many stakeholders dedicated to the past. Whatever the source energy expenditures, as we know, are bound to the very nature of modern life. Divided into nomenclatures of housing / office / retail or mobility / production / leisure. Embedded or transitory. Communications and (solid-state) electronics (chips / transistors and batteries). Energy is our basis and every move removes something from the earth and re-releases it into the literal and social atmosphere. If sustainability has been an ethical question we may concern ourselves with doing the right thing; if sustainability is a matter of survival, we had better find a path. Ethics tied to every step—anxiety and conflict. At the moment, however, most of us cannot stop moving or consuming. Anxiety and conflict have often been sustenance of sustainability debates, yet, today, the global turn to renewable energy is not only mature but also perhaps bound to cause more change than we are prepared to imagine. Will a deep implementation of a renewable

energy economy shore up old assets (houses, cars, offices et al) or will possibly instigate entirely new asset classes?

The economy of the past century dramatically reduced and induced scarcity of all kinds; from food to housing; fuel to land; education to medicine. It simultaneously opened immense branches of low cost communication and global communication.

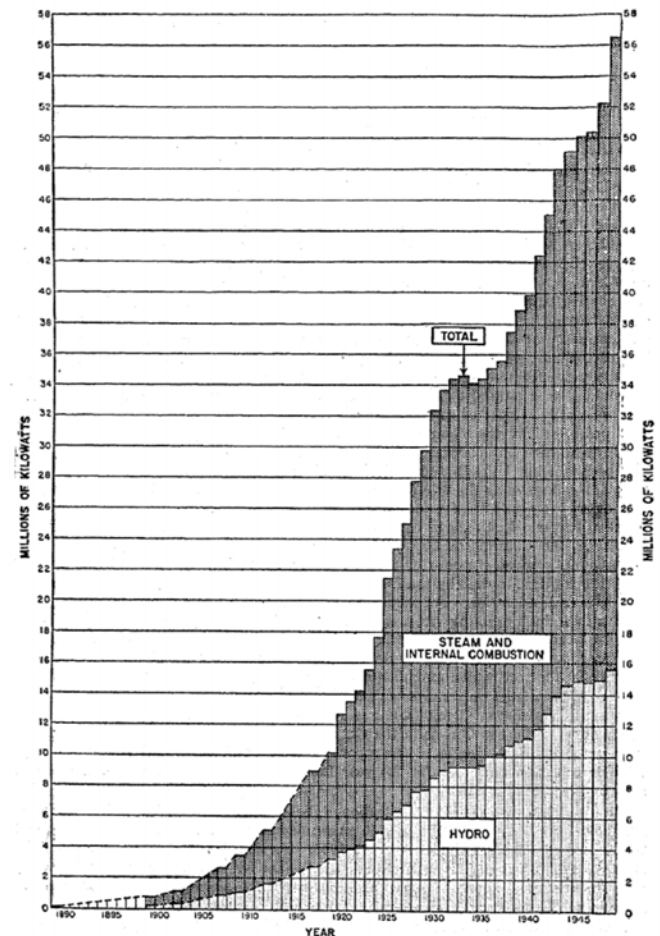
How will the new renewable energy means meet new forms of intelligence, new networks for trade—they will allow us and reallocate energy as we have known it this past century.

510

POWER

FIGURE R.—INSTALLED CAPACITY OF ELECTRIC UTILITY GENERATING PLANTS IN THE UNITED STATES: 1889 TO 1948

[See table 550]



Source: Federal Power Commission.

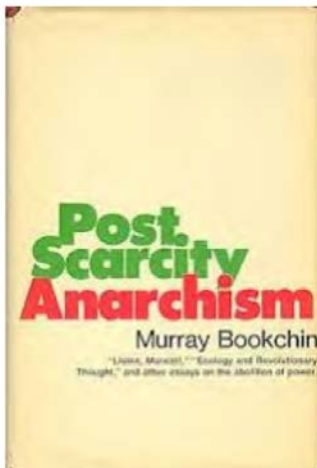
Above: the rise of eclectic power in the United States and the means of generating it.

THE REDEPTIVE DIALECTIC

Is there a redemptive dialectic that can guide the social development in the direction of an anarchic society where people will attain full control over their daily lives? Or does the social dialectic come to an end with capitalism, its possibilities sealed off by the use of a highly advanced technology for repressive and co-optative purposes?

We must learn here from the limits of Marxism, a project which, understandably in a period of material scarcity, anchored the social dialectic and the contradictions of capitalism in the economic realm. Marx, it has been emphasized, examined the *preconditions* for liberation, not the *conditions of* liberation. The Marxian critique is rooted in the past, in the era of material want and relatively limited technological development. Even its humanistic theory of alienation turns primarily on the issue of work and man's alienation from the product of his labor. Today, however, capitalism is a parasite on the future, a vampire that survives on the technology and resources of freedom. The industrial capitalism of Marx's time organized its commodity relations around a prevailing system of material scarcity; the state capitalism of our time organizes its commodity relations around a prevailing system of material abundance. A century ago, scarcity had to be endured; today, it has to be enforced—hence the importance of the

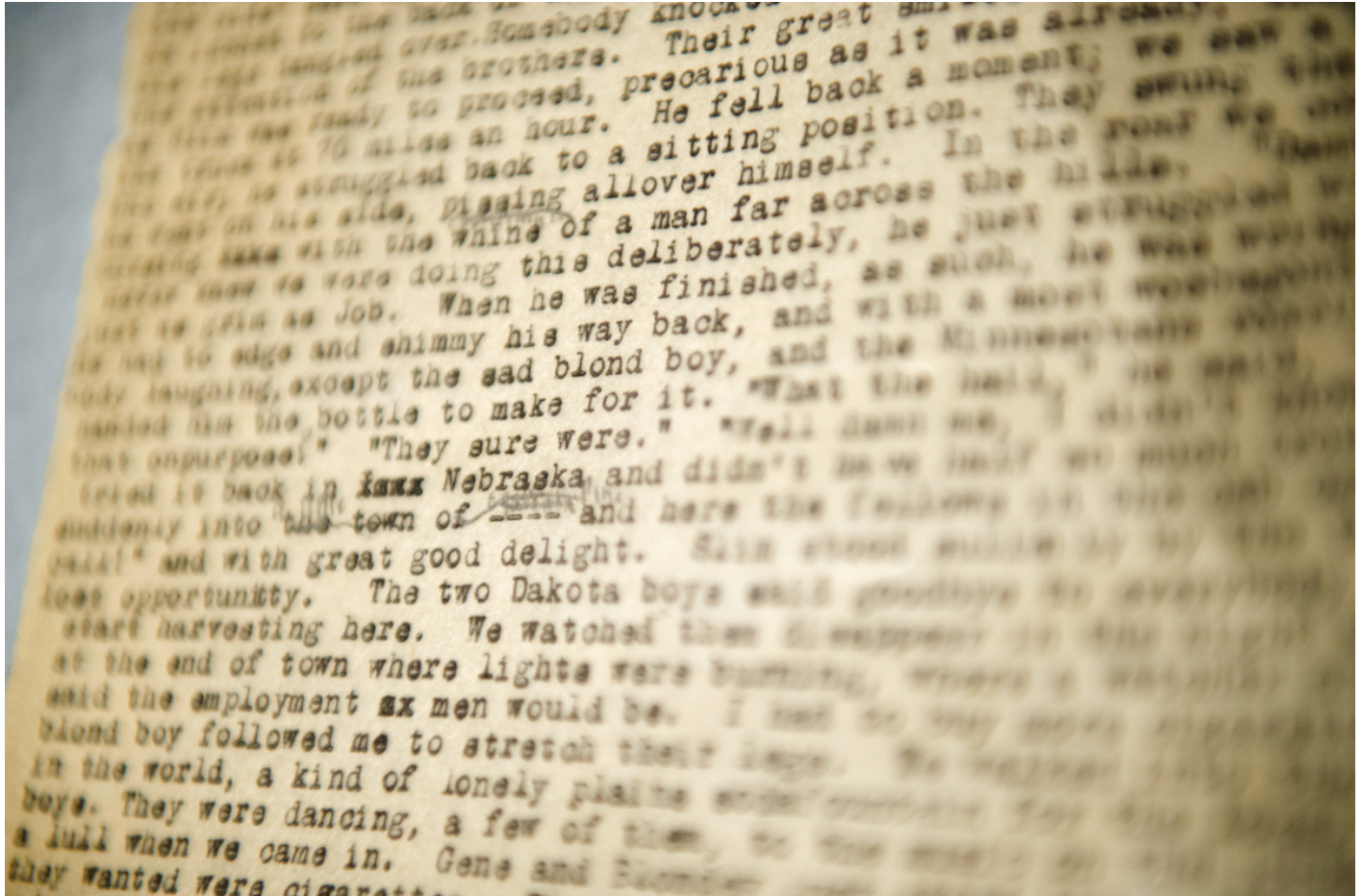
Will energy remain scarce – or does an era of deep renewable energy alter how we allocate energy, of all kinds. In the 1970's Murray Bookchin forecast a world where energy was not scarce. Foreseeing an era of energy abundance – and its potential affects.



1 - Literary Site - Historical Context: On Jack Kerouac's *On the Road* was released on Sept. 5, 1957

Our studio site front US I-80 for 12 miles. I-80, also known, as the Lincoln Highway is the nation's first coast-to-coast highway.

Originating in Trenton, New Jersey and ending in San Francisco, California the highway encompasses the eastern industrial cities; Midwestern farms; near South Chicago and on to the great plains; deserts and mountains of the west. Released in 1957, Jack Kerouac's "On the Road" was written on Teletype paper – a continuous scroll of text. Kerouac's perpetual motion back and forth across the nation on the nation's coast-to-coast highways was in part enacted as the writing of the book.



On Jack Kerouac's *On the Road* ; manuscript as photographed by Time magazine. <https://ti.me/2eGCl9r>



The Lincoln Highway: Trenton NJ to San Francisco, CA

2 –Energy Density: Architectural Physics + Chemistry

Energy Density: Tesla's Giga Factory is a major presence at the Tahoe Reno Industrial Center. The factory's primary mission is to produce lithium-ion batteries for its automobiles. The larger context for this work, however, comes from physics in particular research into **energy density**. Simply put this is a concern for the amount of energy available or stored in a given system or volume/space. The scale of the Giga Factory links energy density in lithium-ion batteries with the commercial and manufacturing scale needed for Tesla to achieve mass production of electric automobiles. If taken to its larger context of matter and energy—that is, away from mobility or batteries the term energy density becomes available to architecture in ways that are distinctly historical and essential to our field. The Giga factory is an experiment in manufacturing and architectural density.

Architectural Physics: Aldo Rossi opened his 1981 book, *A Scientific Autobiography*, with an existential concern and in reference to physicist Max Planck's 1949 publication *Scientific Autobiography and Other Papers*. Rossi refers his architectural reader to Planck and the physicist reaction to a story he had been told as a young student enunciating the principle of the conservation of energy. Planck learns the principle by way of a story of a stone falling to the earth from its place within an architectural wall. The latent of energy accrued in lifting the stone to its height within the wall was released to tragic effect—it killed a passerby.

Rossi's autobiography characterized by a generation of academics as "melancholy" was shaped within a disillusionment with technical progress and the potential of society to change from within its later day scientific/technical, capital driven means. Rossi's manuscript nonetheless infused or one should say witnessed in architecture a latent and unrevealed energy. In the face of a visually fragmented, inchoate, then late modern city--forged by a century of industrial evolution—architecture and the city were in large part revealed by their own disregard for human presence. The energy stored inside architecture (at its making) may allow a semblance of shelter of human life (within its walls) but it also disregards its inhabitants in the seeming monotony of its own self-perpetuation. Building do fail—decay--aside the passage of life but in Rossi's appraisal the city was virtually autonomous; a self-regulated entity that ran parallel to but disregarded its inhabitant's lives--buildings endure beyond and precede human presence registering generations but seemingly withholding the promise of their making and embedded energy and labor. While not his goal, Rossi often was seen as a force that instigated a deep distrust of technology in architecture, and more so, a turning away from the capital or scientific aspects of materials in architecture.

Rossi described his awareness of Planck and more so his understanding of the term conservation of energy and entropy. Our studio will return to this writing to gage how it might open up new readings of our current world – that is the race towards new forms of energy density.

From-Aldo Rossi: *A Scientific Autobiography*. MIT Press, The Institute for Architecture and Urban Studies, 1981, Page 1.

Certainly, a very important point of reference is Max Planck's Scientific Autobiography. In this book, Planck returns to the discoveries of modern physics, recapturing the impression made on him by the enunciation of the principle of the conservation of energy; he always recalled this principle in connection with his schoolmaster Mueller's story about a mason who with great effort heaved a block of stone up on the roof of a house. The mason was struck by the fact that expended energy does not get lost; it remains stored for many years, never diminished, latent in the block of stone, until one day it happens that the block slides off the roof and falls on the head of a passerby, killing him.

Rossi: *It may seem strange that Planck and Dante associate their scientific and autobiographical search with death, but it is a death that is in some sense a continuation of energy. Actually, the principle of the conservation of energy is mingled in every artist or technician with the search for happiness and death.*

In architecture this search is also undoubtedly bound up with the material and with energy; and if one fails to take note of this, it is not possible to comprehend any building, either from a technical point of view or from a compositional one. In the use of every material there must be an anticipation of the construction of a place and its transformation.



Robert Smithson, *Map of Broken Glass (Atlantis)*, 1969, DIA Art Center
"Deeply informed by science in its popularized forms (such as science fiction literature and cinema, encyclopedic collections, even natural history museums), his art focuses on processes of accumulation, displacement, and entropy in order to reveal the contradictions in our visible world."

3 - Historical Context – Art without Frame

Did the earthworks of the 1970's predate the decentered subject of the new industrial desert fortifications? A person on the sidelines of something that they are thwarted from occupying.

Rosalind Krauss' writing on Michael Heizer and the wider movement of earthworks by Heizer, and Robert Smithson but also Donald Judd's installations at Marfa point towards a landscape where the plastic energy or presence of a body fails to be shored up by classical framing devices. The art invokes a new reading of the body in relation to the expanse of the art and the desert.

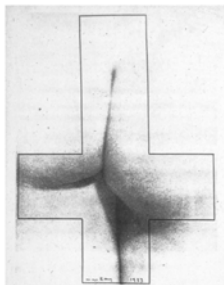


Rosaline Krauss on Michael Heizer, *Double Negative*,
<https://goo.gl/maps/z5bGEeJS9br>

The Double Negative (figs. 206a and 206b), an earthwork sculpture by Michael Heizer, was made in 1969 in the Nevada desert. It consists of two slots, each forty feet deep and a hundred feet long, dug into the tops of two mesas, sited opposite one another and separated by a deep ravine. Because of its enormous size, and its location, the only means of experiencing this work is to be in it — to inhabit it the way we think of ourselves as inhabiting the space of our bodies. Yet the image we have of our own relation to our bodies is that we are centered inside them; we have knowledge of ourselves that places us, so to speak, at our own absolute core; we are wholly transparent to our own consciousness in a manner that seems to permit us to say, “I know what I think and feel but he does not.” In this sense the Double Negative does not resemble the picture that we have of the way we inhabit ourselves. For, although it is symmetrical and has a center (the mid-point of the ravine separating the two slots), the center is one we cannot occupy. We can only stand in one slotted space and look across to the other. Indeed, it is only by looking at the other that we can form a picture of the space in which we stand. By forcing on us this eccentric position relative to the center of the work, the Negative suggests an alternative to the picture we have of how we know ourselves. It causes us to meditate on a knowledge of ourselves that is formed by looking outward toward the responses of others as they look back at us. It is a metaphor for the self as it is known through its appearance to the other. The effect of the Double Negative is to declare the eccentricity of the position we occupy relative to our physical and psychological centers. But it goes even further than that. Because we must look across the ravine to see the mirror image of the space we occupy, the expanse of the ravine itself must be incorporated into the enclosure formed by the sculpture. Heizer's image therefore depicts the intervention of the outer world into the body's internal being, taking up residence there and forming its motivations and its meanings.

Density Unframed

In the context of an essay published in *October* Krauss suggested that the frame of a picture provides a reciprocal supportive reaction to that which it contains. Krauss's frame supports the dissipating body in the Man Ray photomontage *Monument to de Sade*. In her essay “*The Photographic Condition of Surrealism*,” she writes:



Rosalind Krauss, *October*, Vol. 19 (Winter, 1981), pp. 3-34

“Two further aspects of this image bespeak the structural reciprocity between frame and image, container and contained. The lighting of the . . . subject is such that the physical density drains off the body as it moves from the center of the image, so that by the time one's gaze approaches the margins, flesh has become so generalized and flattened as to be assimilated into the printed page. Given this threat of dissipation of physical substance, the frame is experienced as shoring up the collapsing structure . . . and guaranteeing its density.”

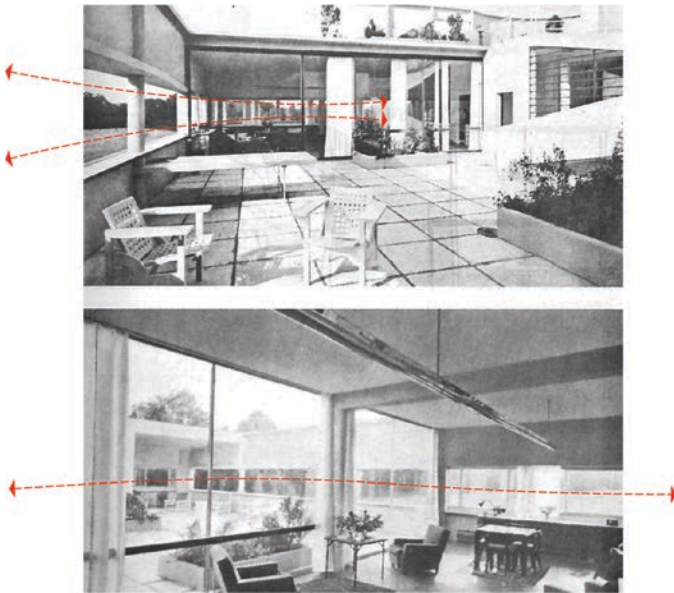
4 – Historical Context - Topological Window - Architecture Inside Out

What kind of window does the desert invoke? What kind of window creates a new horizon?

Is there another design evolution possible inside the architectural nomenclature of window or doorway? Of roof or wall or floor—in foundations? Historically we can point to pivotal moments when terms have changed and where new technologies instigated changes and innovation to the very DNA of an architectural element.

Today relatively inexpensive software offers a technology to examine (to see) materials and structural behavior in ways that could render old categories obsolete. Structural analysis allows us to see stress/strain but the computer is modeling chemical behavior and showing molecular stressing of chemical materials in geometrical mesh. Can we model our way out of the past and indeed find new architectural elements Architectural work is deeply rooted in geometry and form: we are reminded of the emergence of the “ribbon window” and of Bruno Reichlin's later declaration of its extended horizon, a topology of space, that curves and threatens the vertical reciprocity with a standing person. Reichlin's reading of the ribbon window still allowed the term window to persist, but he saw Le Corbusier's window as threatening the stability that his mentor, Auguste Perret, saw as essential to the very term window. For Perret, the vertically proportioned aedicule window delineated a threshold between inside by way of its tense and short horizon line. Yet the ribbon window was still called a window. Was it? Formally, perhaps this is the case but what of the experience?

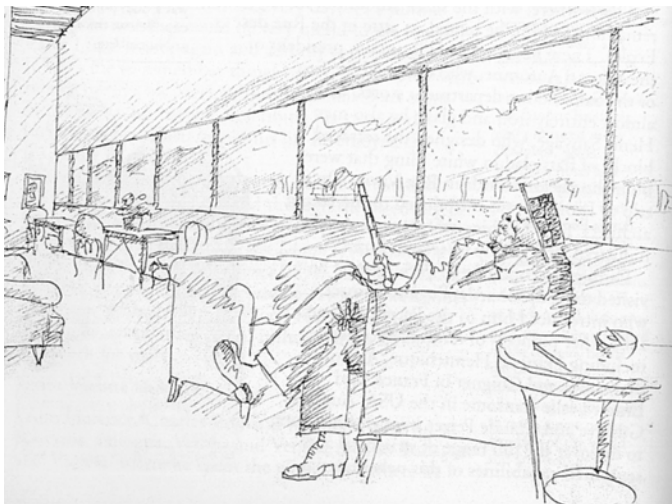




The strip window: an anti-perspectival device

Unlike the traditional opening, the strip window performs best as a link between the inside and the outside when the threshold effect is attenuated. The photograph of the interior of the *petite maison* published in *Almanach*¹³ makes this point most graphically. All that belongs to the building is reduced to a dark background, against which the euphoric image of one of the world's most beautiful panoramas stands out, stretching from edge to edge of the image. The caption for the photograph confirms the effect of sitting in the living room: "le site 'est là' comme si l'on était au jardin."¹⁴ [The site "is there" as if we were in the garden.] The traditional window cuts out a picture from the landscape and thereby manipulates it, giving it the aura of a view. But the strip window satisfies the demands of objectivity so dear to the Purists and the Modern Movement. It renders nature just as it is: "La fenêtre de 11 mètres introduit l'immensité du dehors, l'infalsifiable unité d'un paysage lacustre avec tempêtes ou calme radieux."¹⁵ [the 11 meters window makes the imensity of the outside enter the house, the majesty of a lake landscape with its tempests and radiaus calm.]

A topological horizon turns inside out – nearly one hundred years ago a small work of architecture unfolded itself into the landscape.



5 – Historical Context - SF in cinema: Seeing Outside the Frame



Gene Hackman, *The Conversation*. Architecture thwarts surveillance. Seeing around corners. Harry Caul, audio surveillance specialist cranes to see inside a

hotel room he is staking out. The camera watches as he struggles to fill in what he can't see – and what he can't believe he is hearing.

In the 1974 film *The Conversation* two actors pace Union Square in San Francisco. Fragments of the conversation are being recorded by three distant parabolic microphones. The camera follows them as we lose sight of them between people and monuments. They are being watched and recorded - at distance. Using three microphone sources, two parabolic and one up close carried by a contract agent the actual statement was only assembled later in the film. Assembled by correlating the divergent array of recordings and their sound waves into a decipherable whole. Two otherwise wholesome seeming characters utter "he'd kill us if he had the chance" setting into motion a film where vision fails the director and audience and

listening driving the plot. We watch the main character listens to things we (as audience) cannot verify by sight—the words are only partially present as limited spectrums of the sounds waves being recorded. In the mix of fragments captured is a comment on how a person ends up homeless, empathy? But also, an incantation of a criminal plans and covers up.

The actress in a few phases causes deep anxiety in the mind of the person listening to her – or quasi-listening. Our studio will take the film, written and directed by Francis Coppola as a starting point – as a juncture in art's estimation of surveillance and more so surveillance as creating deep unease in what was the privacy and intimacy of what we colloquially call home. Our private lives lead in public spaces and inside our homes. *The Conversation* was released in the immediate wake of Watergate and at a time when theory and criticism of television and media were a vivid component of intellectual life. In 1963 Michel Foucault's *The Birth of the Clinic* was published; in retrospect, one could imagine a time when the concern about surveillance was both intense and real but also still being explored and perhaps nascent in scale.

The Conversation starred Gene Hackman but also relied on two nearly silent characters played by Cindy Williams and Harrison Ford. Williams, strolling Union Square and Ford inhabit a kind of silent motion picture. The issue here is that Coppola has made a film – about listening more than looking. A film that undermines what you can learn by looking. So much so that the main character privy to the entire body of audio surveillance he acquires and constructs is unsure if what he hears actually happened. The audience is left to construct the would-be film in their own imagination – in their own gray matter and brain. We are the makers of the actual visual film.

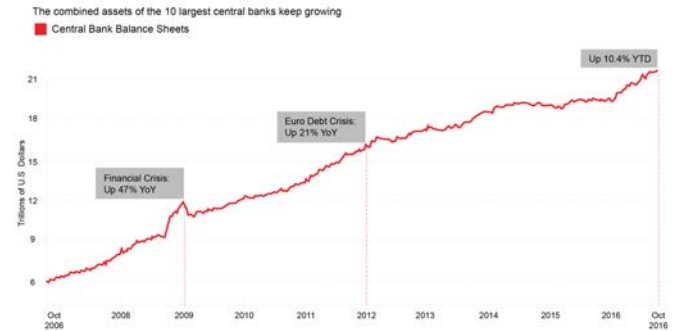


The audience completes the film. We watch an actor assemble a partial whole from diverging spectrum of sound waves. They reveal events in an adjacent, unrevealed hotel room. The verification of what occurred in his audio surveillance is never confirmed and indeed may not have happened at all.

At the Jack Tar Hotel, San Francisco, Harry Caul, master of audio surveillance is confronted by what he imagined but is not sure actually happened – according to his audio surveillance. Caul eventually breaks into the then empty hotel room: a drop of water on the tub drain convinces him evidence of a crime has been erased before a toilet overflows with blood in a surreal flood that to the audience is made to seem a dream. In other words, we are left like Harry unsure of any occurrence. The film's trajectory is negated and its only presence is in our imagination. Caul ends up dismantling his own domestic life—his apartment is torn apart as he seeks evidence of his own being bugged

Today these ideas of surveillance are narrow by this measure but if you put them in perspective with a more limited mobility were people in 1973 easier to surveil then they are today? And does architecture have a sense of where it fits in the pan project of making visible our every move. More importantly are there larger changes in what underpins architecture and development today that would altogether alter how we imagine the place of architecture in this equation?

6: The Desert Industrial Complex: the end of risk?



Central Banks worldwide are holding immense sums of debt off the markets -- effectively shoring up weak assets and their markets. Between 2006 and 2016 the world's top 10 central banks holdings rose by more than 400% -- from approximately 6 trillion to 24 trillion dollars. In the wake of 2007-08 financial crisis central banks entered an unprecedented role in stabilizing markets.

Markets for real estate and virtually every form of production and consumption were sustained by global quantitative easing. Near-zero interest rates. Personal housing debt and household debt as a percentage of the GDP has over the last century seen immense expansion. Will the architecture of the future rely on debt the same way and if not what can sustain it? Architecture today has become very adept at modeling risk and economy. Does this portend a new architectural nomenclature; a new asset?

Markets and reconciliation with scarcity have often gripped the architectural imagination—is this the norm for our future? We are increasingly advanced agents in modeling risk and opening new means—what will this enable?

Architecture and development are to a tremendous extent realized inside financial and economic risk models. Will this continue to the case in our future?

At the annual Berkshire Hathaway shareholders meeting (which is often seen more as a state fair) Jack Bogle, the founder of Vanguard Group, and a confidante of Warren Buffett offered a proclamation on risk by discussing the state of index trading—a use of algorithms to essentially trade the probability and momentum of an entire stock exchange. Indexing removes stock picking or the discrete, strategic, construction of a portfolio (as a means to hedge risk) and instead seeks to harvest the movement of the intelligence evident in the broader trading of the exchange itself. It harvests what everyone else is figuring out via artificial intelligence, machine learning or simply immense computational and stochastic modeling. For many index trading is a low-cost

way to diminish trading risk and yet harvest the collective insight of the market itself.

Indexing, while far from mathematically total, aspires to limit risk associated with accessing a small (minute) or even large sector of the exchange. Bogle seemed to be seeing this aspiration to the removal of risk as a disincentive to trading—if there is not risk and no unrealized opportunity (that is identified by the trader as opportunity) there is not a need to trade. Indexing relies on an active underlying market—it models a propensity that it then seeks to mine. Without real traders there is no risk to mine according to Bogle.

According to Bogle about 1/3 of United States' stock trading is done by indexing: he predicted a turning point, a threshold at which markets would freeze as indexing would arm everyone with a same ability to react to and forecast risk—each trader would in effect thwart the trajectory of the other. “If everybody indexed, the only word you could use is chaos, catastrophe,” he said. “There would be no trading, there would be no way to convert a stream of income into a pile of capital or a pile of capital into a stream of income. The markets would fail.”

Bloomberg, Jack Bogle in *Markets and Stock Indexing: Risk* <https://goo.gl/88bmjo>

Artificial intelligence, machine learning and robotics are often proclaimed to be a threat to labor markets. What do they portend in financial or economic markets? Aside from displaced jobs what do they incentivize or indeed make almost inevitable in development and the distribution of economic resources. What will be built in such a world if, for example, A.I. alters job migration, or collapses asset values?

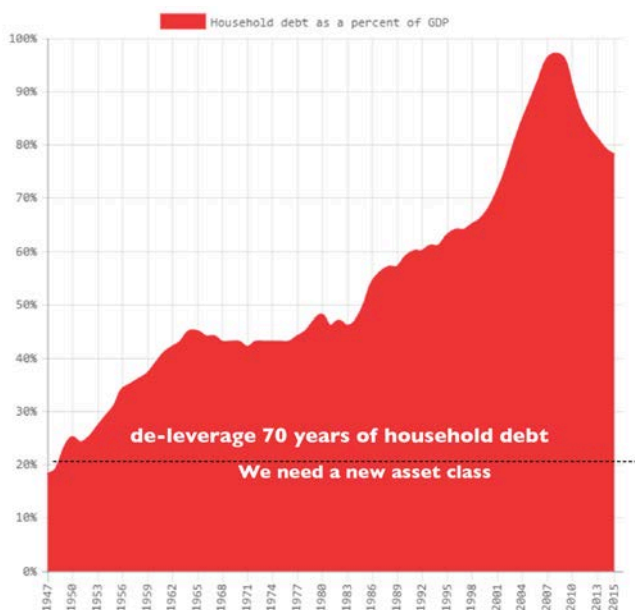
Markets may fear uncertainty but risk is a driver and motivation and it is the unseen or undervalued asset that has historically been a source of future wealth production—if you can see a potential and you are (nearly) alone in knowing its existence the

trade is yours. The wealth could be yours—it could belong to a nation, a city or a state--or neighborhood and constituency.

Today we see new means to model risk of every kind. But we also increasingly imagine ourselves less at the brunt of some forms of risk while others form immense crisis and undermine stability of all kinds. From structural mechanics to chemical engineering to fluid dynamics and geography and economics. Risk as its forecast within relatively low level computational systems is today increasingly made transparent to analysis and thus adjudication. Inside realms of engineering or medicine, advertising or banking or autonomous mobility and safety the prospects of a world driven more by choice than necessity is often depicted as offering a new model of liberty and indeed freedom. From social media to personal delivery—limits seem diminished even as crisis of all kinds still exists. Counter the immediacy of some forms of risk control vs. the global migration from war or climate change.

Much of the confidence (when it occurs) seems to rise from a new and more granular scale to modeling. Risk modeling has opened a finer parsing of the value of what have been seen as stable or older assets: indeed, often exhausted assets. A re-monetization of private housing (Airbnb) or the private automobile (Uber, Lyft)—risk models made possible by anonymous but secure transactions (peer to peer) in effect begin to revise the privacy and value of entire asset classes. You can share a latent temporal value in your home. But do they change the assets themselves and when, if at all, will these new models give rise to entirely new assets. After all, the private car – relied upon by Uber or Lyft – is only a century old as a human invention—an entirely new asset that drove 100 years of urbanization (and de-urbanization).

What are the next assets, how do we find them and more so do we trade them?



The new matrix of commerce: Can we invert the debt and leverage curves of the past century? Or will new forms of manufacturing and commerce simply extend our uses of leverage and debt in creating the settlement of the future?

In 2006 the United States household debt rose to nearly 95% of the national GDP. In 1947, it totaled only 18% of GDP.

7 – Historical Context – Designing from Coast to Coast.

70 years of intellectual history and industrial/technological difference and coincidence. Occupy the distance.

A riff	A riff
West	East
Gold rush	Stock Market NY and Banking and Real Estate
Wood / Douglas Fir/ Redwood	Stone, Steel, terra cotta, concrete
The "valley"	Glass
Solid State electronics	NY and modernism
Transistor, processor	NY and density
The PC	NY and Cubism
Software, code	NY Five
Linguistics (not literature)	The Grays
GUI-anthropology	Abstract Expressionism
Xerox Parc	
Keyboard / mouse	
FROG design	NY and anxiety
	NY and psychoanalysis
Operating system	NY and anomie
Internet	NY and privacy
Java Jini	NY and independence
Social Media	Journalism / Editor / Curators
Epicurean food	Subways
Epicurean social media	
Mirror communities - echo chambers	NY and centralized heating / steam
Fog	Grid
BAY	
Pacific	Rivers
Mexico	Bays
Asia	Atlantic
Russian River	
	NYC / Boroughs
The "Well" net community	
Whole Earth Catalog	Frances Fox Piven / Sociology / Public
Apple	Housing / Rent Control
SAP / VM Software	
	The managed city
Tesla	Silicon Alley
	Offices
Stanford/Berkeley/Cal Tech	Hotels
Lawrence Berkeley Labs	
	Ivy League
Joan Brown, figurative art	Columbia / Manhattan Project
Victorian	City College
Maybeck	
	G Village, east vs. west
The Castro	
	Central Park
The Hills	
Dark Red Suspension Bridges	Bankruptcy 1975
	Trade
Hand held	
Touch screen	Humidity
	Ice
A.I.	
Machine Learning	Institutions: MoMA - Lincoln Center,
Clouds of all kinds	Columbia, FED, Goldman, Met,
Self realization	Whitney....92nd Street Y....
Venture Capital	Mondrian
Algorithm	
	Taxis
North Face-Fleece	
Hike	Immense cultural engines of exchange.
Kaiser Ships / later medical care	
Foucault at Berkeley	
Post Structuralism at Berkeley	
Rabinow and Dreyfus host Foucault	
Stanford Hoover Institute	
Burning Man	

8 – Historical Context – Art is everywhere

Agnes Martin, a painter, migrated from Canada to the United States and New York City in 1957 for ten years. She later stopped making art and over a period of six years traveled across the United States before settling in the New Mexico desert. Martin's spare works done until her death in 2004 are often seen as in part allowed by the crisp air of the desert, and the expanse around her. Having worked in the desert nearby on a house in 1992 I always felt the remote home and studio allowed her to remove her work from overt social speculation and instead allow a focus on the precise act of making the painting – it in effect reveals her state of mind and distance from the cosmopolitan realms of deep urban life and instead is a kind of embodiment of the distance she occupied. Today as manufacturing turns deeper inwards and we move people to remote work places how do artists such as Martin open our mind to the desert?



I Love the Whole World, 1999

DRAFT 1.0

Columbia University, GSAPP

Advanced Studio V, Fall 2018

Critics: Dominic Leong and Chris Leong

TA: Gabriel Burkett

Summary

This studio will look at the contemporary art institution and its role as a technology of civic enlightenment in the American city. Students will design a new contemporary art facility that re-defines the boundary of the institution relative to the city. Simultaneously, the studio will explore architecture as both an aesthetic practice and architecture as a social practice through research into contemporary art practices.

Reference artists include: Andrea Zittel, Hito Styrel, Josh Kline, Maggie Nelson, Arthur Jafa, Liam Gillick, Ian Cheng, Paul Chan, Rirkrit Tiravaniya, Jeremy Deller, Amir Nikravan, Pierre Huyghe, Olafur Eliasson, and others.

Questions

Throughout the United States, cultural institutions are re-evaluating their role as civic institutions. For many museums, the current social and political environment has reinforced a sense of civic responsibility while amplifying long-standing challenges related to accessibility and inclusivity. Words like “transparency” and “community” are prevalent in these narratives to create more democratic and representative institutions.

The place of the museum is not only Fifth Avenue or Wilshire Boulevard but also Crenshaw Boulevard. It's about democratizing our idea of a museum's mission. Darren Walker, Ford Foundation

At a quick glance, it appears that many cultural institutions in the United States accommodate a void in the public realm (and experience economy) as places of ritual, community, and social exchange. Whereas these activities were once accommodated by religious spaces (eg. churches, mosques, synagogues) and then by the consumer landscape of shopping (eg. shopping malls, main streets, markets), technology has gradually reshaped the role of these traditional institutions. Undoubtedly, technology will continue to transform how we

understand ourselves, our relation to others and the spaces in which we interact. This studio will look specifically at the role of the contemporary art institution and its potential as an aspirational technology of civic enlightenment in the American city.

The fundamental question is to explore the possibility for play. To discuss how to produce forms for the presentation of objects, for the organization of spaces that thwart expectations. The main enemy of artistic creativity and political creativity is consensus— that is, the inscription within given roles, possibilities, competencies. Jacques Ranciere

Through extensive readings and conversations with artists and curators, the studio will become familiar with the current discourses informing the role of contemporary art institutions in the US and internationally. As a point of departure, the studio will critically examine the contemporary art institution as a social infrastructure for community outreach (The Underground Museum) as well as a technology for aesthetic entertainment (PS1). Embedded within these narratives about the contemporary art institution, are discourses about the role of contemporary art as an activist social practice directly engaged in the transformation of the world or an aesthetic practice maintaining a critical autonomy from its immediate context. The studio will reflect on the relationship between aesthetic practice and social activism through close readings of contemporary artists with clearly defined social and aesthetic agendas. As a result students will develop their own position on contemporary art it's relationship to architecture informing their design methodology and conceptualization of a new institutional model.

From Rhetoric to Architecture

The studio will decipher the rhetorical language such as “permeability,” “accessibility,” “diversity,” “transparency,” etc. to identify design concepts and methodologies that operate as seductive narratives within public discourse while also providing opportunities for more subversive subtext that propose new social relations, uncanny architectural invention and new aesthetic experiences.

Dichotomies:

- Protection / Permeability
- Intimacy / Monumentality
- Encounter / Image
- Agility / Legacy
- Flow / Fixity
- Cheap / Expensive
- Impermanence / Permanence

- Field / Object
- Network / Node
- Fast / Slow
- IRL / URL
- Virtual Reality / Reality
- Art / Nature
- Difference / Consistency
- Context / Concept
- Contamination / Neutrality

Typological Speculations - From Protection to Permeability

The museum ceased to be a place for a permanent collection and became a stage for changing curatorial projects, guided tours, screenings, lectures, performances, etc. In our time, artworks permanently circulate from one exhibition to another, from one collection to another. And that means that they are getting more and more involved in the flow of time. Boris Groys, In the Flow.

The evolution of the art museum typology over the last few centuries elucidates transformations in the role of the institution and its architectural mutations. In Western culture, the first art museums were semi-public palatial villas of aristocratic families. Accessible by invitation only, the collection of objects functioned as displays of cultural prominence and diplomacy. In the 20th Century, the emergence of the modern art institution sought to “neutralize” the environment of art exhibition within a “white box.” The experience and production of art in the 21st century is intertwined in the proliferation of the art market and the increasing circulation of art objects within the global network of international biennales and art fairs. Curatorial trends point toward art experiences not contained within the protection of a neutral white box but within more permeable environments generating dialogue with the specificity of context, climate and nature.

Methodology

This studio will focus on the making of architecture through physical models and material experimentation. The seminar and studio will create a continuous non-stop feedback loop between cultural speculation and rigorous design production. Design and research will become interchangeable mediums of speculation.

Borders, Boundaries, and Exchanges between People and Things: The (former) United States Embassy in Mexico



There was a time in the postwar period when United States Embassies, instead of projecting defensiveness and even offensiveness at their borders and toward their host countries, sought to project a sense of openness through cultural exchange, inviting the public into the Embassy with open access to libraries, exhibitions, film screenings. As the US Ambassador to Mexico, Robert C. Hill, said in 1958: “We hope that Mexicans will consider the new embassy building as theirs, a Mexican building, one which will mean welcome to them. It is being constructed with the interests of Mexicans in mind—especially in regards to the visa section and the Benjamin Franklin Library.”

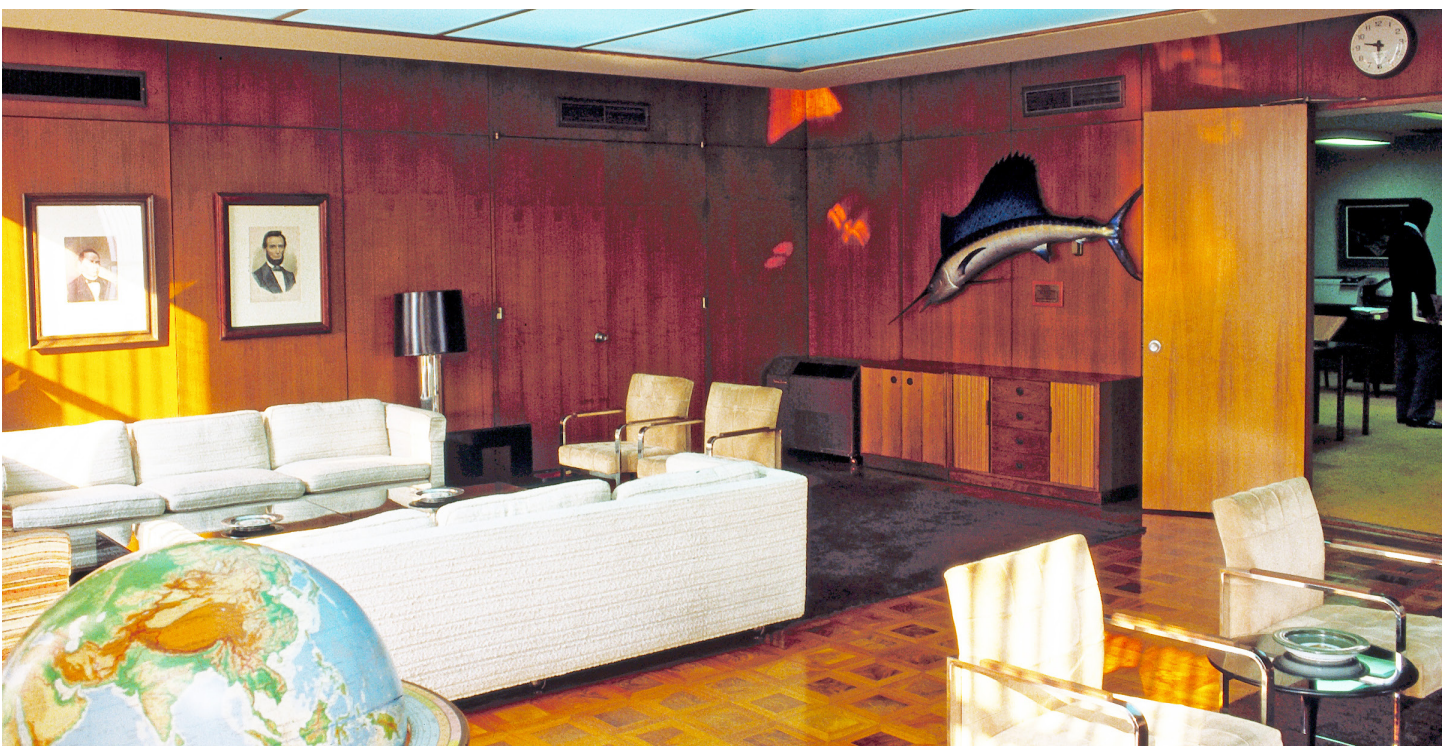
While these exchanges had their own ideological agendas, the design of these buildings by a number of modernist architects put into play the social and spatial boundaries of politics and culture, local and global, public and private. Sixty years later these embassies are surrounded by layers and layers of security barriers and fencing. Indeed, many have now been decommissioned, precisely because of their non-defensive openness are deemed a security risk. We will travel to Mexico to engage the re-opening of the soon-to-be decommissioned US Embassy in Mexico City, designed in 1957 by R. Max Brooks and Llewellyn Pitts of Southwestern Architects, proposing an addition of 50,000 sf (4,645 m²) to foster new programs that address the politics of culture in Mexico, exploring both their local and global exchanges.





The questions of boundaries extends from people to things in the design of the original building, which was nicknamed the “Floating Embassy,” its arched ground level, which leads to the open-air courtyard, is a structurally negotiating exchange between the site’s instable subsoil and its gridded upper construction. The grid appears to serrate the surface into suspended marble panels that also seem to float, emphasized by its open corners. Visitors passed through the arches and were brought up to the second level, which housed the cultural activities of the embassy, circulating along a continuous balcony surrounding the inside of the open court.

The studio will engage in a radical renewal of this modernist building, proposing alternative uses for the Embassy that consider the multitude of issues and exchanges it political origins exposes, pushing the boundaries of an adaptive reuse of the values that an architectural artifact always enacts.





Temple of the Feathered Serpent, Teotihuacan



O'Gorman, Saavedra, Martinez de Velasco | UNAM Library

Following a series of background lectures, office visits, research, and transformative exercises on the formal and political context of the building, we will travel to Mexico City the first week of October to tour the building along with a number of other project and practices engaging in these exchanges of inside and outside, public and private: the conjoined house/studios of Frida Kahlo and Diego Rivera, the constructed domestic landscapes of Luis Barragán, of the modernist campus of UNAM (with its own provocative of exchanges between ornament and tectonics), the porous spatiality of the Museum of Anthropology, the early administrative complex of the pre-Columbian city of Teotihuacan, and visits to contemporary works and offices like GSAPP's own Tatiana Bilbao.



Bilbao | Ventura House



O'Gorman | House/Studio of Frida Kahlo and Diego Rivera



Ramírez Vázquez, Campuzano, Mijares Alcérreca | National Museum of Anthropology

Architecture | Historic Preservation | Joint Studio Schedule Fall 2018

Week 1

Wednesday Sept. 5	Lottery Selection
Thursday Sept. 6	Lecture on Modern and Contemporary Latin American Architecture

Week 2

Monday Sept. 10	Design Desk Crits
Thursday Sept. 13	Design Desk Crits

Week 3

Monday Sept. 17	Design Desk Crits
Thursday Sept. 20	Design Desk Crits

Week 4

Monday Sept. 17	Design Desk Crits
Thursday Sept. 20	Office visit to Tod Williams Billie Tsien Architects, designers of the new US Embassy

Week 4

Monday Sept. 24	Design Desk Crits
Thursday Sept. 27	Design Desk Crits

Week 5

Travel Week | Mexico City

Week 6

Monday Oct. 8	Design Desk Crits
Thursday Oct. 11	Design Desk Crits

Week 7

Monday Oct. 15	Midterm Review Rehearsal Pinup
Thursday Oct. 18	Design Desk Crits

Week 8

Monday Oct. 22	Midterm Review
Thursday Oct. 25	Design Desk Crits

Week 9

Monday Oct. 29	Design Desk Crits
Thursday Nov. 1	Design Desk Crits

Week 10

Monday Nov. 5	No Class Election Day Holiday
Thursday Nov. 8	Design Desk Crits

Week 11

Monday Nov. 12	Design Desk Crits
Thursday Nov. 15	Design Desk Crits

Week 12

Monday Nov. 19	Design Desk Crits
Thursday Nov. 22	No Class Thanksgiving Holiday

Week 13

Monday Nov. 26	Design Desk Crits
Thursday Nov. 29	Design Desk Crits

Week 14

Monday Dec. 3	Final Review Rehearsal Pin up
Thursday Dec. 6	Design Desk Crits

Week 15

Monday Dec. 10	Final Review
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STREET SMART, Revisiting the Institutions of Learning in the city of Tunis

(Travelling Studio: Oct 13 – 20)

Instructor: **Ziad Jamaledine (L.E.FT Architects)**, Teaching Assistant: **Aude Azzi**

"Life within the teaching mosque of al-Azhar required no walls to divide classrooms, no desks, no ordered ranks, no uniforms, no timetable and no posted curriculum. In short, as with the city, there was no order in the sense we expect, as a framework, code or structure that stands apart".

Timothy Mitchell, *Colonising Egypt*. P82

The Studio will investigate the evolution of the architecture of learning institutions in the 'Arab City' from the early modern period until today.

The project of 'modernization' in the Middle East and North Africa (MENA) region, including educational reforms, is commonly believed to have been introduced first by colonial powers and then continued by the emerging secular Nation-States after independence. However, the organic internalization of this project of reform had already occurred within religious institutions—notably in the traditional Islamic school system—as early as the 19th century.

The traditional fluid, individually-focused, decentralized knowledge transmission system practiced in pre- and early modern Islamic *madradas* was slowly hybridized, replaced with a fixed, centralized curriculum, and situated in an isolated building form.

The Studio aim is twofold: 1) to map the physical evolution and emergence of the modern school building typology in the 'Arab City' and 2) to revisit and intervene on this building type, having analyzed its shortcomings and latent potentials, its relationships to the city, its environment, and the communities it is intended to serve.

The Studio will take on the city of **Tunis, Tunisia** as a case study to explore this typology.

Tunis' urban fabric presents us with the full spectrum of this evolution opening the opportunity to physically intervene on these urban scenarios: from the medieval Zaytouna mosque university seamlessly integrated in the everyday life of the old medina; to the late Ottoman Tanzimat period courtyard building for Sadiki College; all the way to the French Lycée's modernist slab building—constructed under the French Protectorate period—and the national university campus systems built post-independence. These buildings, constructed during different historical periods and under varied national narratives, continue to operate at different scales and in a variety of capacities.

The Studio will travel to Tunisia in the 2nd week of October.

Schedule:

Travel to Tunisia: Oct 13 - 20
Mid term Review: Oct 26
Final Review: Dec 12