processes investigations

As I organize all materials developed across this past year I am faced with a plurality of issues, both practical and conceptual;

- how will I design the cover?
- is the text going to be written in first or third person?
- will I be selective or cumulative?
- will I revisit the projects before inserting them into the portfolio or will I place them as they are and understand their state as points of departure to my future career
- what fonts will I use?
- what colors will I use?
- do I include all assignments?
- (...)

Amongst many others that arise one thing becomes clear to me, the only purposeful way to respond to these questions is to understand what is the function of this portfolio. Past the practical answer (that it is a requirement for my graduation in Columbia University's GSAAP Master of Science in Advanced Architectural Design program), I am faced with an answer that has become coincidently and intentionally, the same response to the way I have come to understand (or at least explore) the purpose of architecture within our contemporary society.

Both are tools to legitimize the contents and institutions that they store, address and interact with. The explorations presented in this collection each develop and investigate this function at different scales and contexts, from legitimizing new work-living means of production to different interspecies relationships, from legitimizing institutions to forgotten territories and voices.

All discussions and voices manifested obtain a different value once they are placed within the architecture exploration which I am hesitantly naming legitimacy and which is important to state has no relation to architecture as built or tangible manifestation.

This portfolio, as an object, aims to not only legitimize my experience at GSAPP from the first of June of 2019 to the 16th of May of 2020, but to legitimize the discussions, processes and statements made throughout each project presented, denying reductions and simplifications and embracing architecture's capacity and necessity for complexity.

project: GSAPP Portfolio _ developed by: Frederico G. Castello Branco _ term: June 2019 - May 2020 _ program: Master of Science in Advanced Architectural Design _ program area: Architecture _ Graduate School of Architecture Planning and Preservation _ Columbia University in the city of New York // 132 pages _ cover _ 65 spreads _ back cover _ layout: 8.5 inches x 10 inches _ assembled in Adobe Indesign // a portfolio that presents individual work but is in fact a collaboration for which I must thank my wife Julia, my family Zarouk-Gualberto Castello Branco, and gsapp friends that collaborated and endured through sleepless nights and quarantine while contributing to each others work and life // right page _ objectives *

studio | summer

transcalarities

arguments

studio | fall

visual studies

history & theory

studio | spring

design seminar

visual studies

project: **Frameworks for Living Systems** _ studio: Towards a Newer Brutalism _ instructor: Emmett Zeifman _ teaching assistant: Juan Pablo Uribe _ developed with: Tarun Tony Abraham _ term: **Summer 2019** _ sequence: Advanced Architecture Studio _ program: Master of Science in Advanced Architectural Design _ program area: Architecture _ Graduate School of Architecture Planning and Preservation _ Columbia University in the city of New York // **left page** _ descriptive text // **right page** _ perspectival section through adaptable space _ line drawing with MEP systems overlay _ model: developed in rhinoceros 3D _ post production: view capture exported to Adobe Photoshop •

Frameworks for Living Systems

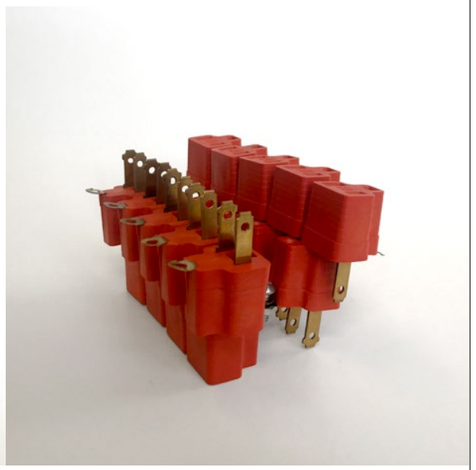
Advanced Studio | Summer 2019
Towards a Newer Brutalism | led by Emmett Zeifman
t.a. Juan Pablo Uribe
with Tarun Tony Abraham

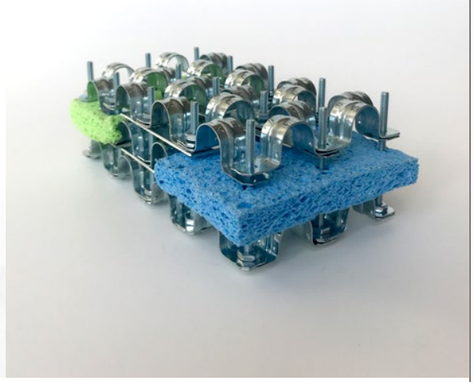
The studio presented an opportunity to speculate on the relationship of housing and working in our contemporary society, responding to these continuous changing conditions with a proposal that incorporated the ethics of what was named, the Newer Brutalism. Beyond direct references of materials or solutions, this approach strives to materialize a "brutalist" understanding of architecture and it's processes, revisiting the principles for architecture articulated by Alison and Peter Smithson and Reyner Banham in the early 1950s: a legible (or "imageable") synthesis of spatial, structural and material organization; individual buildings conceived as urban theses; the ambition to directly express new technologies and social relations through architectural form.

Housing developed by the real estate market is designed on the basis of the homogenization and standardization of individuals within our society, targeting the nuclear family and their supposed way of life as the basic social unit of cities. Establishing generic consensus in regards to what constitutes luxury, social hierarchy and relations within it's boundaries.

This has never been an adequate approach to the development of cities because it does not contain the heterogeneity and flux characteristically of our society, which would normally lead to the acquisition or rental of a unit and the subsequent "mandatory" renovation to accommodate to it's user's realistic needs.

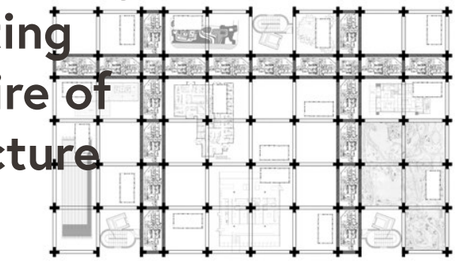
project: **Frameworks for Living Systems** _ studio: Towards a Newer Brutalism _ instructor: Emmett Zeifman _ teaching assistant: Juan Pablo Uribe _ developed with: Tarun Tony Abraham _ term: **Summer 2019** _ sequence: Advanced Architecture Studio _ program: Master of Science in Advanced Architectural Design _ program area: Architecture _ Graduate School of Architecture Planning and Preservation _ Columbia University in the city of New York // **left page** _ found object model _ assemblage of objects utilizing specific object's connection properties _ clockwise from top left: copper u-bend + screw + zip tie / plug connector / aluminum u-bend + aluminum plate + sponge + screw / aluminum u-bend + aluminum plate + sponge + screw // **right page** _ collage drawings _ plans, section and elevations assembled through the collage of existing drawings fragments scaled to the site dimensions _ assembly through Adobe Photoshop *

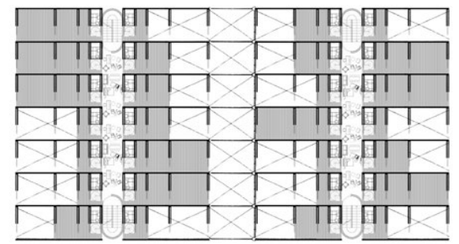


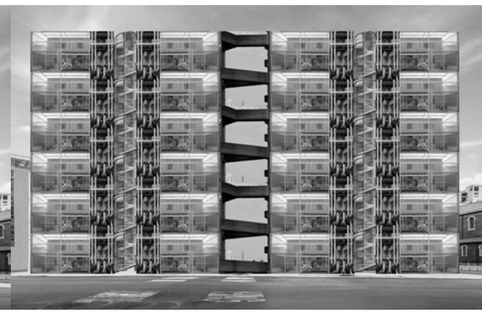


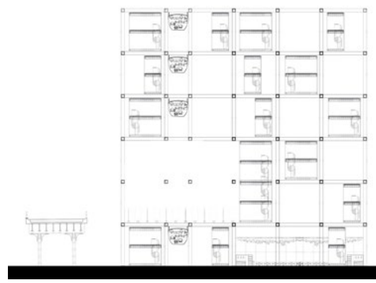
No Diagrams. Built form itself is sufficient in its explanatory and expressive power

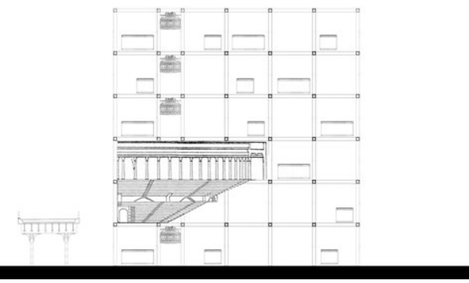
design through an existing repertoire of architecture

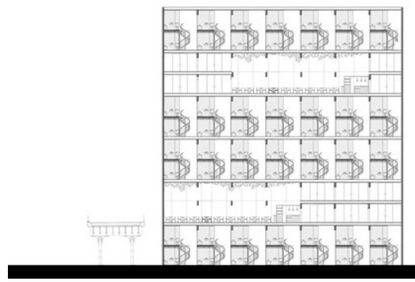


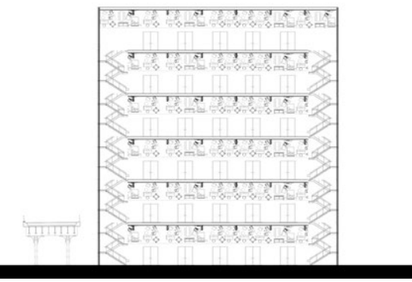






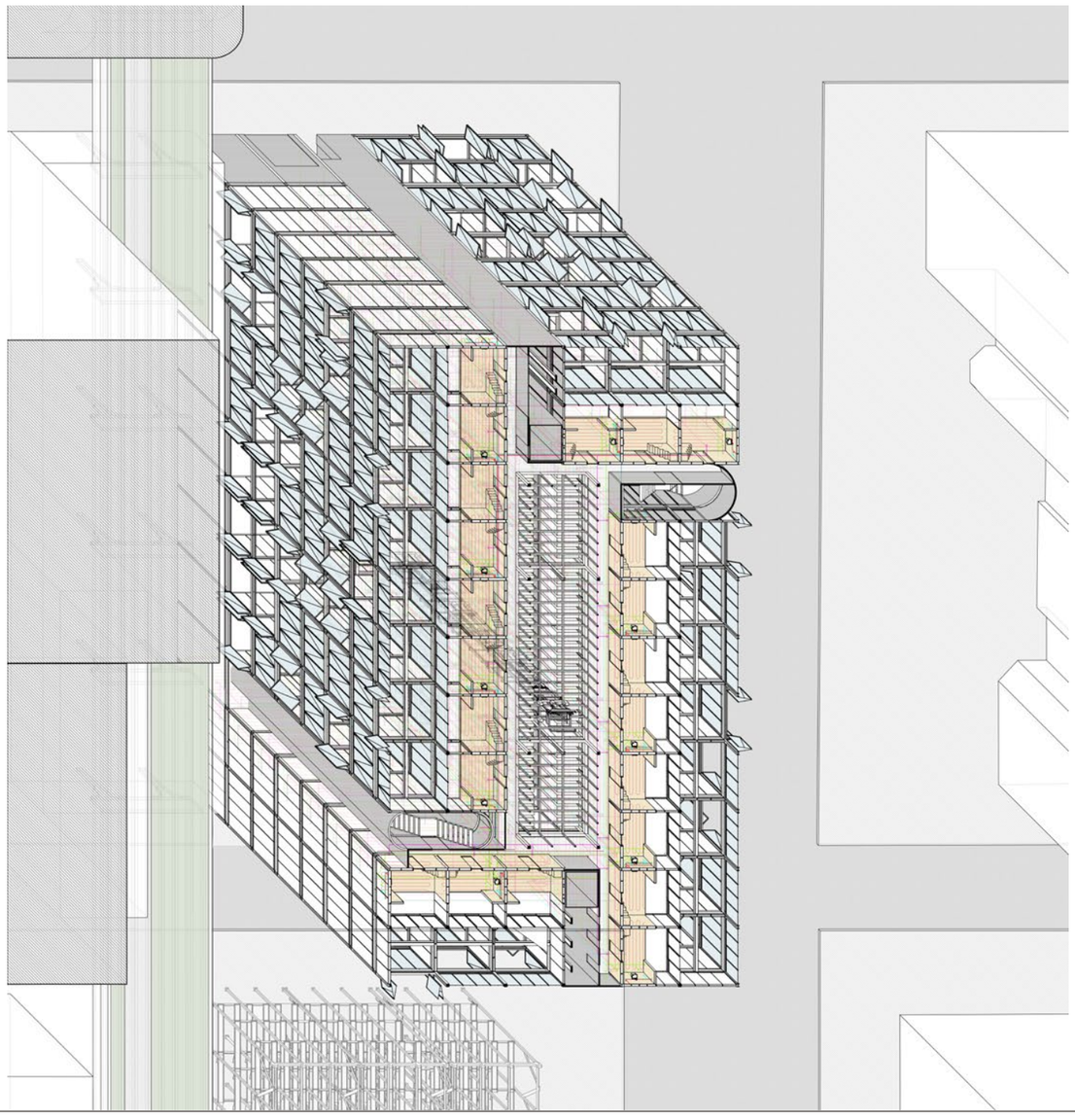


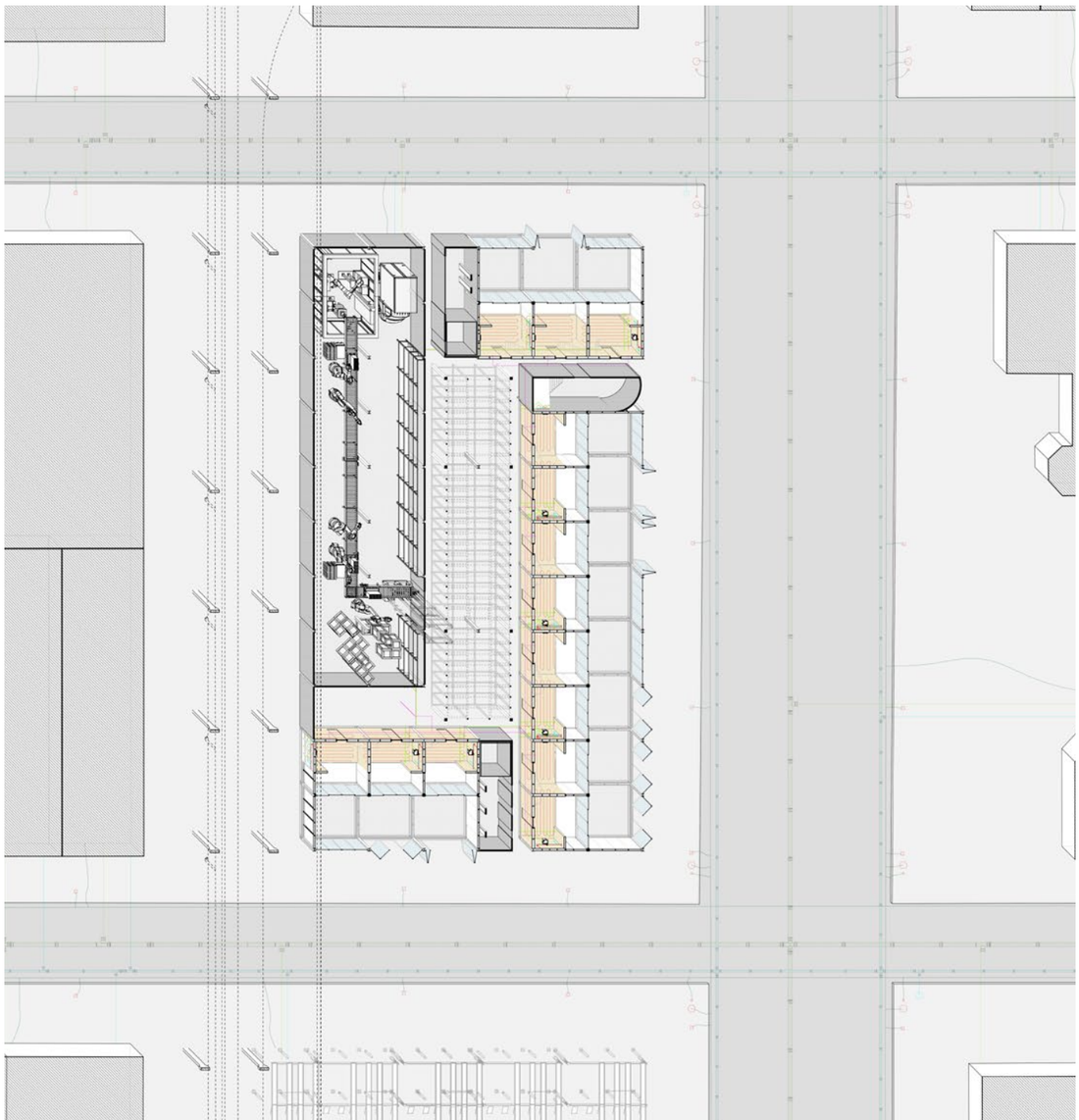




project: **Frameworks for Living Systems** _ studio: Towards a Newer Brutalism _ instructor: Emmett Zeifman _ teaching assistant: Juan Pablo Uribe _ developed with: Tarun Tony Abraham _ term: **Summer 2019** _ sequence: Advanced Architecture Studio _ program: Master of Science in Advanced Architectural Design _ program area: Architecture _ Graduate School of Architecture Planning and Preservation _ Columbia University in the city of New York // **spread** _ perspectival section through adaptable space _ line drawing with MEP systems overlay _ model: developed in rhinoceros 3D _ post production: view capture exported to Adobe Photoshop •

project: **Frameworks for Living Systems** _ studio: Towards a Newer Brutalism _ instructor: Emmett Zeifman _ teaching assistant: Juan Pablo Uribe _ developed with: Tarun Tony Abraham _ term: **Summer 2019** _ sequence: Advanced Architecture Studio _ program: Master of Science in Advanced Architectural Design _ program area: Architecture _ Graduate School of Architecture Planning and Preservation _ Columbia University in the city of New York // **left page** _ typical plan _ sheared orthogonal drawing with MEP systems overlay _ model: developed in rhinoceros 3D _ post production: view capture exported to Adobe Photoshop // **right page** _ ground plan _ sheared orthogonal drawing with MEP systems overlay _ model: developed in rhinoceros 3D _ post production: view capture exported to Adobe Photoshop •





project: **Frameworks for Living Systems** _ studio: Towards a Newer Brutalism _ instructor: Emmett Zeifman _ teaching assistant: Juan Pablo Uribe _ developed with: Tarun Tony Abraham _ term: **Summer 2019** _ sequence: Advanced Architecture Studio _ program: Master of Science in Advanced Architectural Design _ program area: Architecture _ Graduate School of Architecture Planning and Preservation _ Columbia University in the city of New York // **left page** _ descriptive text // **right page** _ building isometric view _ isometric orthogonal drawing of building with "x-ray" of uses overlayed by pin on building _ model: developed in rhinoceros 3D _ post production: view to capture exported to Adobe Photoshop *

Our buildings intentions are to acts as architecture that responds to and reflects the constant changes in social structure in regards to genders, constitution of family, individual and collective needs and the infinitely diverse relations between living and working within our society generated by our ways of production. The building itself aims to generate and speculate relations that are commonly relegated from urban area.

To do so, we propose the construction of an infrastructure that allows for life to accommodate, settle and easily develop within the building.

Each unit is divided into two, one being a minimum living space with preset infrastructures (plumbing, heating, ac, etc.) and the other half is constituted by an empty structural grid. Located in the perimeter of the building.

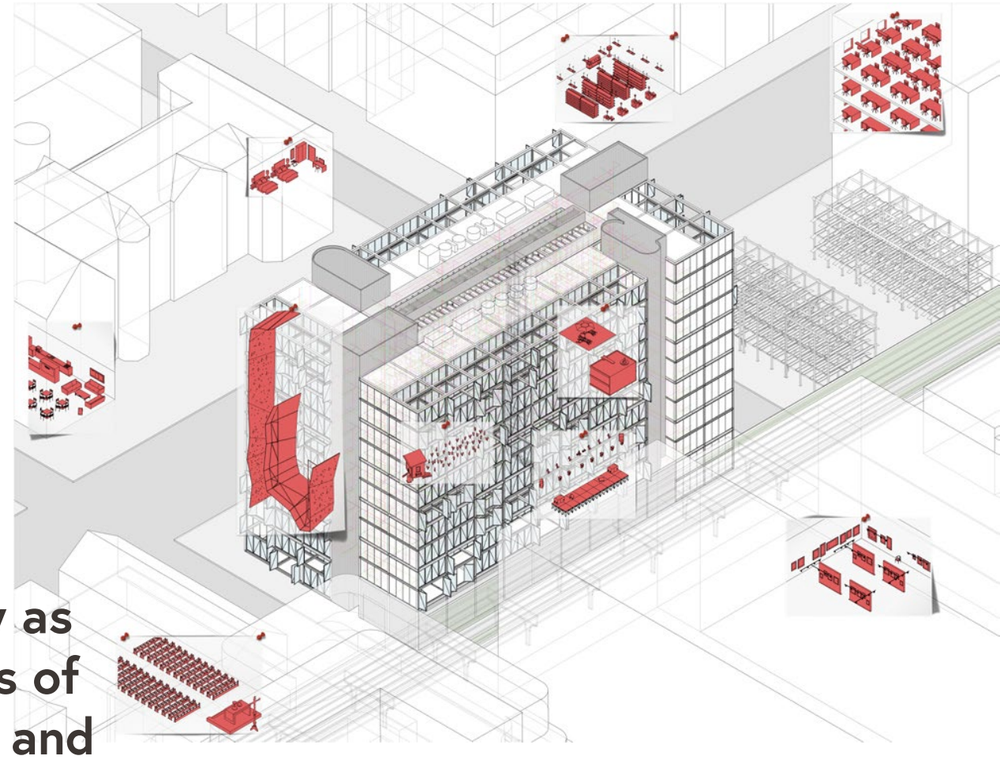
Complimenting the unit, the building houses an automated storage which holds a shared economy system within the building itself. This would be made up of boxes in which a variety of items would be held and that could be accessed by the unit's user at any time. This would range from prefabricated construction materials to household utensils.

Through access to this system, the building's user would be able to easily customize his own unit in order to accommodate any short, medium or long term need he might have. This could range from furniture and equipment for a party to be held one night and returned the next morning, to the installation of a pool during the summer months.

Extrapolating from the definition of luxury as the availability of space by Lacaton and Vassal, we propose the definition of luxury as the capacity to easily change available space.

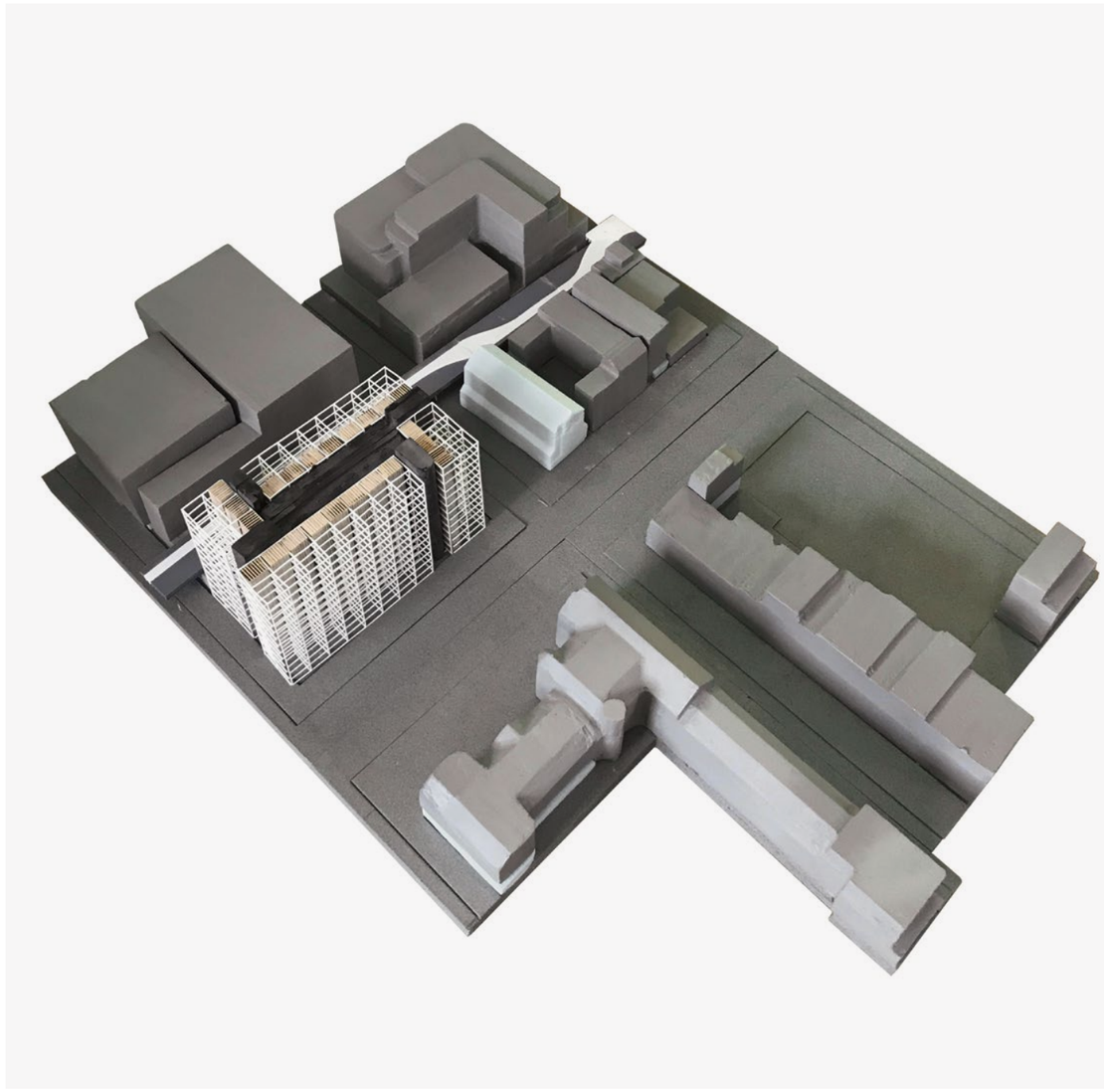
The empty grid previously stated would act as the agent to democratize space within the building. This space can be understood as a commodity to be utilized and negotiated within the building's economy. Social interactions within the building would be therefore not only confined to quick elevator interactions but would expand to talks where the action of one part would necessarily involve others. The individual act of customizing their own unit would necessarily impact the collective.

Beyond being able to buy two units to merge and expand their own space, users would be able to use or rent the empty grid space as they pleased making it possible to merge units and air space to create unique spatial combinations that would allow for a infinitely wider possibilities of use and would

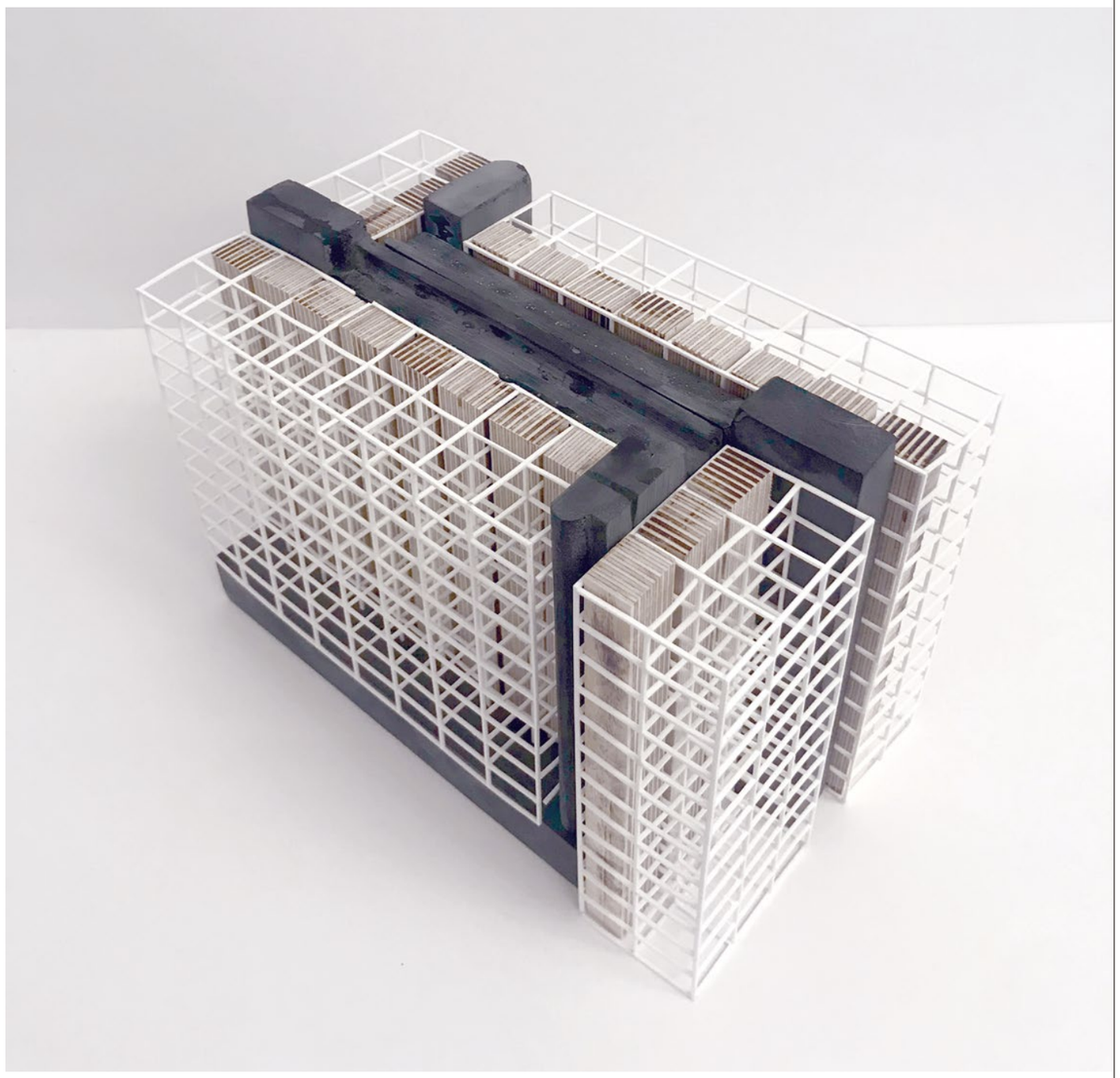


luxury as excess of space and efficiency of customization

project: **Frameworks for Living Systems** _ studio: Towards a Newer Brutalism _ instructor: Emmett Zeifman _ teaching assistant: Juan Pablo Uribe _ developed with: Tarun Tony Abraham _ term: **Summer 2019** _ sequence: Advanced Architecture Studio _ program: Master of Science in Advanced Architectural Design _ program area: Architecture _ Graduate School of Architecture Planning and Preservation _ Columbia University in the city of New York // **left page** _ collective studio site model representing six sites distributed along the highline and 10th avenue // **right page** _ project model photograph _ model representing the site located between 10th avenue and the highline _ base in plywood coated in spray paint + neighboring building (non residential) in CNC sculpted blue foam + 3D printed highline + neighboring residential building in CNC sculpted blue foam coated in spray paint + project model •



project: **Frameworks for Living Systems** _ studio: Towards a Newer Brutalism _ instructor: Emmett Zeifman _ teaching assistant: Juan Pablo Uribe _ developed with: Tarun Tony Abraham _ term: **Summer 2019** _ sequence: Advanced Architecture Studio _ program: Master of Science in Advanced Architectural Design _ program area: Architecture _ Graduate School of Architecture Planning and Preservation _ Columbia University in the city of New York // **left page** _ project model _ top view _ grid in laser cut 1/8" white acrylic sheet + volumes in plywood + circulation and shared spaces in black polyurethane cast resin with sandblasted finish. // **right page** _ project model _ side view _ grid in laser cut 1/8" white acrylic sheet + volumes in plywood + circulation and shared spaces in black polyurethane cast resin with sandblasted finish. *

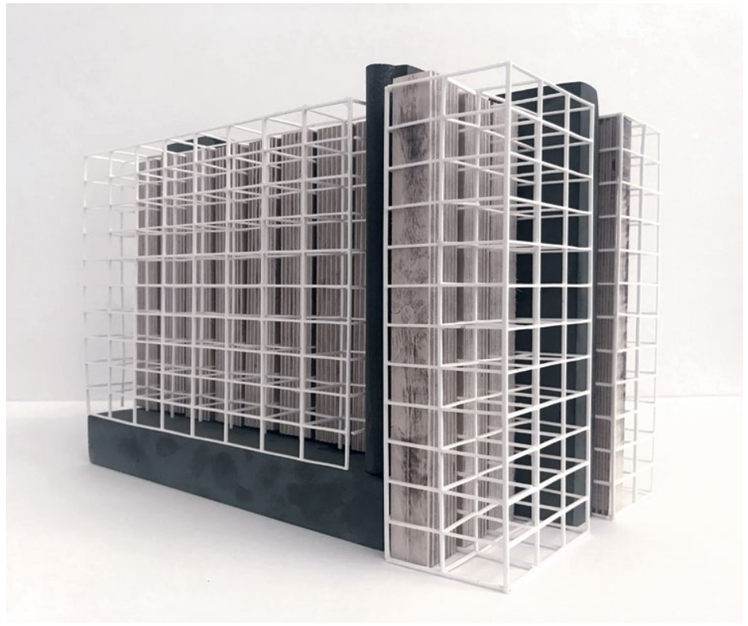


itself create unique social dynamics.

It is to say that a user would for example be able to rent out the “air right” of his grid to a neighbor that was planning to build a climbing wall. The users might negotiate not only the rent of the space itself but the rules to facilitate the accommodation of these conflicting activities (such as time where use of the wall were to be available).

The building does not aim to replicate the loft typology which itself democratized uses of the city when it first appeared, but to challenge the boundaries that define this type of unit nowadays.

Where the loft typology utilizes the possibility of horizontal expansion in order to create higher individuality and isolation, our architecture proposes through the possibility of horizontal and vertical mergers, the accommodation of individuality and the creation of social dynamics.



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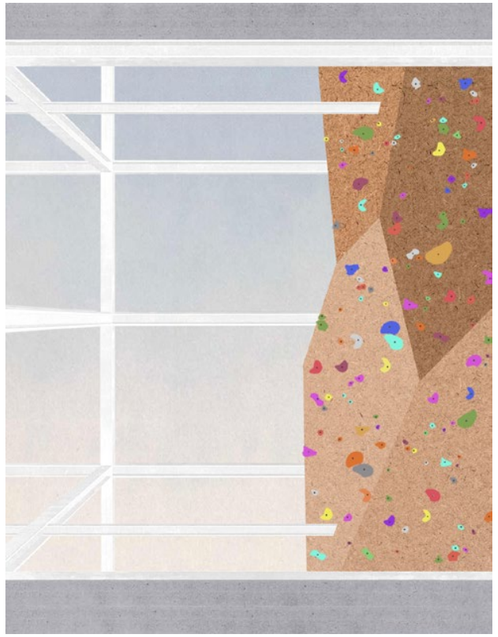
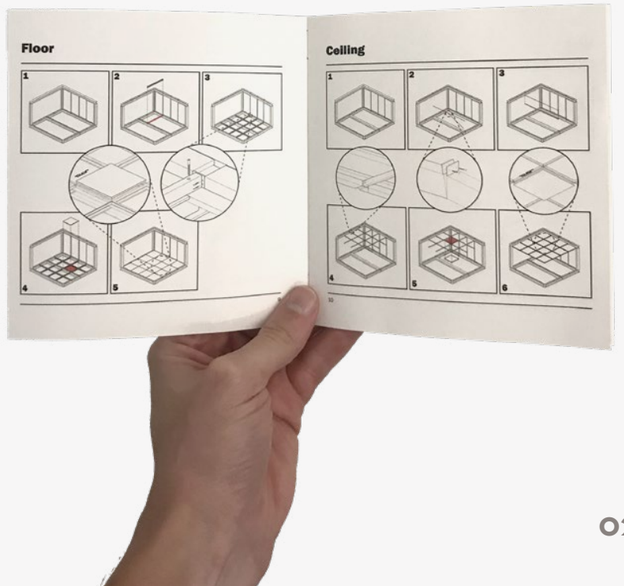
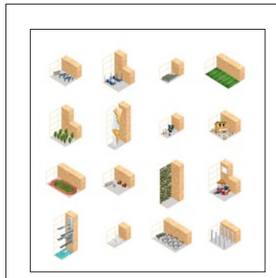
challenge the boundaries that define the typology of the loft and reinterpret them to fit our contemporary needs



project: **Frameworks for Living Systems** _ studio: Towards a Newer Brutalism _ instructor: Emmett Zeifman _ teaching assistant: Juan Pablo Uribe _ developed with: Tarun Tony Abraham _ term: **Summer 2019** _ sequence: Advanced Architecture Studio _ program: Master of Science in Advanced Architectural Design _ program area: Architecture _ Graduate School of Architecture Planning and Preservation _ Columbia University in the city of New York // **left page** _ user manual _ systems and parts used throughout the building are cataloged in a user manual that describes assemblages and possibilities _ model: developed in rhinoceros 3D _ post production: view to capture exported to Adobe Photoshop // **right page** _ user manual layout _ manual pages _ model: developed in rhinoceros 3D _ post production: view to capture exported to Adobe Photoshop *



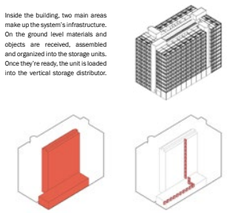


Content

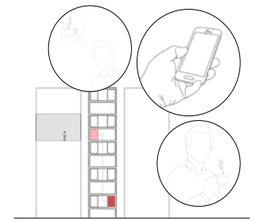
Frederico Gualberto Cassetti Branco Goncalves - hg2489
Tarun Tony Abraham - hw2168
M.S.A.A.D. - GSAPP // Columbia University
Studio Emmett Zeifman

Distribution

Inside the building, two main areas make up the system's infrastructure. On the ground level materials and objects are received, assembled and organized into the storage units. Once they're ready, the unit is loaded into the vertical storage distributor.

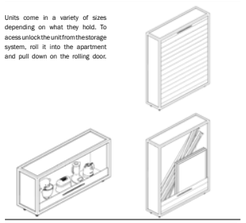


Ordering



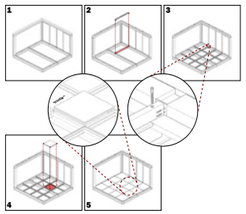
Unit

Units come in a variety of sizes depending on what they hold. To acess unlock the unit from the storage system, roll it into the apartment and pull down on the rolling door.

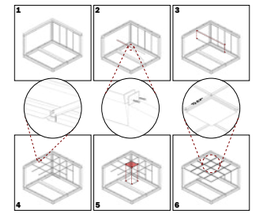


Assembly

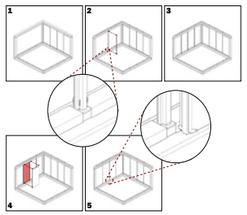
Floor



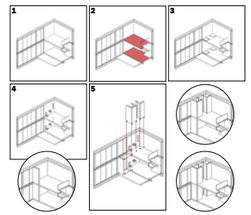
Ceiling



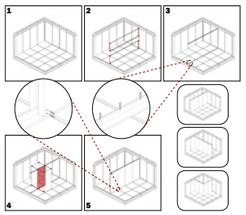
Wall



Wet Wall

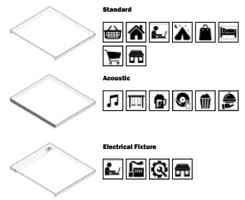


Partitions

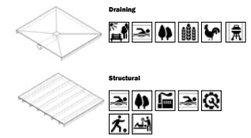


Catalog

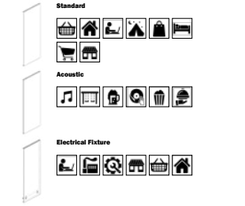
Floors



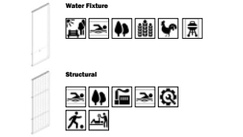
Floor



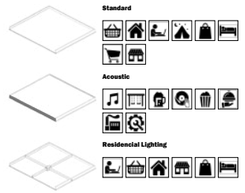
Walls



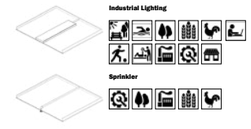
Walls



Ceiling



Ceiling



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project: GSAPP Portfolio _ developed by: Frederico G. Castello Branco _ term: June 2019 - May 2020 _ program: Master of Science in Advanced Architectural Design _ program area: Architecture _ Graduate School of Architecture Planning and Preservation _ Columbia University in the city of New York // 132 pages _ cover _ 65 spreads _ back cover _ layout: 8.5 inches x 10 inches _ assembled in Adobe Indesign // right page _ project index •

studio | summer
transcalarities
arguments
studio | fall
visual studies
history & theory
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design seminar
visual studies

Sewage Blues

A Brief History of the Riverbank Sewage Treatment Plant

Uthra Varghese, Frederico Castello Branco, Chang Pan, Dylan Denton

Riverbank State Park, located at the banks of the Hudson river is a controversial topic in the city of New York and among the West Harlem community, as made evident by the statement made a West Harlem resident following an explosion in the plant in 2011, ""It would be nice if they didn't disguise something that could blow up Manhattan with such a nice park, pool and carousel." Some who were born after the incident might not even be aware of the sewage treatment plant underneath the park, this has however not hindered the sewage treatment plant from affecting the neighboring community. In spite of regular monitoring by the NY State Department of Health that determined that recorded levels did not pose an immediate health risk; many residents have moved away due to concern for their children's health. Even though this 28-acre park provides West Harlem with necessary infrastructures, the invisible pollution in both the air and the Hudson River will always be a matter of concern.

New York City wastewater infrastructure is made up of fourteen treatment facilities, three of which serve Manhattan Island. One of these, the North River Treatment plant, also known as the Riverbank Sewage Treatment Plan, serves the entire western stretch of the island, from the Meatpacking district to Fordham Hills. Plans for a plant that would address the environmental degradation of the Hudson River as a result of the existing precarious sewage infrastructure date as early as 1914. The first master plan imagined a distributed system with dozens of smaller facilities to be built in Manhattan including seven along the Hudson River waterfront. Before this plan was realized, however, in the 1950s, the Department of Public Works re-imagined the waste management system as a single larger plant which could handle all the sewage waste from Manhattan's West Side. The early designs sited this facility between 70th and 72nd street along the Hudson River.

On March 28, 1962, this site mysteriously changed after The New York City Planning Commission held a closed-door meeting, that moved the facility north to between West 135th and 145th streets. The vote for this modification was unanimous. Over the next six years, city planners and bureaucrats rushed this proposal through red tape without informing any of the West Harlem residents.

It was only in 1968 when newly elected Mayor John Lindsay passed the Open Meetings Law, which ushered in an era of transparency to the city government, that board meetings regarding the Riverbank Sewage Treatment Plant became public. This was the first indication to West Harlem residents that there would be an enormous, pungent, and possibly toxic sewage treatment facility built in their neighborhood. Despite immediate and resolute push back from this community, the project was already underway.

The Harlem community was distressed by the idea of building a sewage treatment plant close to a residential neighborhood. Borough President Percy Sutton, Democratic District Leader David Dinkins, and Congressman William Ryan began campaigning against the plant, spreading awareness of the issues to the West Harlem community in order to stop the North River Plant proposal. Ignoring the overwhelmingly negative response from the community, the Board of Estimate, New York City's principal governing body, still allocated funds to support the proposal. In an effort to earn some support from the West Harlem community, Mayor John Lindsay appointed Philip Johnson, at the time one of the worlds leading architects, to work a solution for the project. It was Johnson who originally came up with the idea of designing a park on top of the sewage plant. Johnson's detailed design for the parks and fountains were still not well received by the community when work on the foundations was completed in 1978.

After several projects proposals that were denied due to budget constraints and/or acceptance from the neighboring community, the project was handed over and completed by Dattner Architects and Abel Bainnson Butz landscape architects in 1993. It was a challenging situation as few precedents exist for such a project; however, both firms had previous experience with riverside projects on the Hudson. As proposed by Johnson, the park built on the plant renders the sanitation facility completely hidden to the general public, except for the smoke stacks which hover above the park creating confusion and interest for many of the park-goers as stated by the executive director of WE ACT for Environmental Justice group .

Odors and related health issues appeared soon after the plant opened, and they got worse when the plant shifted to full capacity several years later. Gradually, some residents accepted the proposal after altering the planning and design of the park numerous times. However, many residents were still concerned and bitter over the North River Plant, and protests resurfaced. In 2013 the city completed a $106 million project to quell the stench of the plant which was largely successful.

Today, Riverbank State Park is the second most visited park in New York. Sports fields, aquatic centers, auditoriums and picnic tables are packed with people of all ages. The smell still lingers in certain areas but is not a deterrent from the park's use. Despite all the controversy surrounding its construction and suspicion surrounding the possible health risks that arise from a treatment plan (warranted or not) as made evident from the quote by Marcus Simmons, a construction worker from The Bronx, who visits the park sporadically, "if we came on a regular basis and had young kids, I would be concerned because you don't know what's in the air..." it remains an integral part of Harlem's community.

This model, successful or not, was replicated in Philadelphia's Venice Island having been better received from the community since, from the offset, air filters and other methods of preventing toxic gases from being released into the neighborhood were a main concern. More recently The Upper East Side Marine Transfer Station in NY, slated to open in 2020 has produced similar tension between government officials and the surrounding community.

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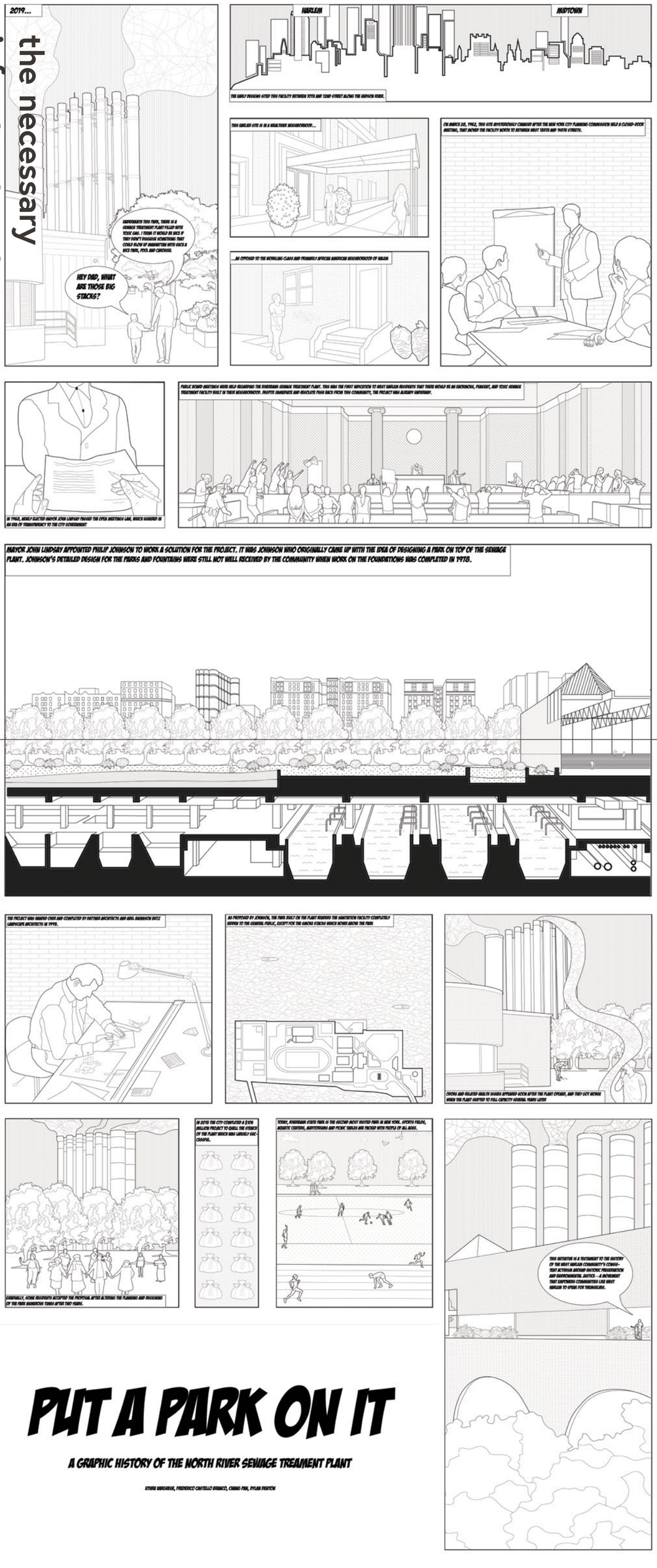
the necessary infrastructure to manage waste within our cities tend to materialize socio-economical conflicts



PUT A PARK ON IT

A GRAPHIC HISTORY OF THE NORTH RIVER SEWAGE TREAMENT PLANT

UTHRA VARGHESE, FREDERICO CASTELLO BRANCO, CHANG PAN, DYLAN DENTON

project: GSAPP Portfolio _ developed by: Frederico G. Castello Branco _ term: June 2019 - May 2020 _ program: Master of Science in Advanced Architectural Design _ program area: Architecture _ Graduate School of Architecture Planning and Preservation _ Columbia University in the city of New York // 132 pages _ cover _ 65 spreads _ back cover _ layout: 8.5 inches x 10 inches _ assembled in Adobe Indesign // right page _ project index •

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The Open Work and Applicability

The lectures given throughout the past months presented a diverse range of artists, architects and academics whose works varied in form, object, methodology and discourse amongst many other items. However, in spite of this wide range of works, all of them dealt with a common thread which relates to the form in which the audience, viewer and/or visitor interacts and understands the work.

In the work and text provided by Neeraj Bhatia from the Open Workshop, there is an effort to deal with the concept of openness as translated from Umberto's Eco 1962, Opera Aperta definition, which according to Bhatia in his text, New Investigations in Collective Form; "…characterized a work of art as either "closed" or "open" depending on the relationship it crafts between the subject (the viewer), object (the work of art), and author (the artist). For Eco, a closed work of art compels the subject to view and interpret the object in a singular manner, prescribed by the author. In contrast, the open work is strategically designed by the author to allow each individual subject to project his or her final missing pieces onto the work, in order to complete it."

Bhatia aimed to translate this concept which in the text is analyzed through the study of autonomous arts such as music and theatre, to the heteronomous art of architecture. Through this process, the differences between the application of this concepts in different types of media emerges, and it is important to understand how Neeraj himself understands how this concept would have to diverge to be adequately appropriated to the built environment and architecture itself.

While architecture implies a basic degree of what Neeraj would call "openness" when compared to other types of media such as painting and music, for the architect, venturing into the world of the open work would mean a continuous process of developing spaces where architecture does not orchestrate a field of possibilities sub guided within a world intended by the author. To exemplify what the open work would not be, Bhatia mentioned the example of the critic made by Archizoom in relation to Peter Cook + Archigram's Plug-in City, which offered (according to Archizoom) what they said were not real possibilities, but commoditized possibilities which create an illusion of difference, an illusion that there is individual autonomy by that choice but it is actually a fake one, once choices are actually determined by the mega structure itself , which in the end becomes itself a representation of choice.

Although the open work in architecture would imply that the built environment presents a field of possibilities for it's user, according to Bhatia's answers during his lecture, he would argue that rather than developing architecture around the issue of choice a better methodology would be to extrapolate beyond the scenarios which the author could anticipate that difference could occur and to analyze how difference has occurred through time. Exemplified through the lofts in Soho and through larger changes such as the conversion of a bank into a hospital mentioned by the one of the speakers, Neeraj mentions a level of "genericness" which allows for the accommodation of these changes over time and that starts to tie the concept of the open work to flexibility.

In tying these two concepts it is important to determine what is flexibility in the context of architecture, for which Neeraj lays out two different possibilities. On one side, he mentions the work developed by Super studio in the late 60s in which, taken to it's absurd conclusion, flexibility would mean "almost nothing". Endless surfaces where the use of furniture would determine the use in a variety of contexts and scales, where the architect as a figure distances himself from the built object and the orchestrator of space to become a setter of this surface. On the other hand, he would mention the urge that designers have to do more than creating landscapes of furniture and to insert their own perspectives in a process where the architecture produces more determinism but categorizes their voice and their roll in a project to allow for openness. He would much rather identify with the latter.

From the examples given by Bhatia, and the relations with other concepts that he produced during his lecture and his texts, we could assume that for Neeraj the open work in architecture diverges from the open work in music and painting described by Umberto Eco, in the sense that in the autonomous arts the open work produces and can be understood as a concrete result, while in heteronomous arts, the open work emerges from the process of determining the definitions and applications of the concept itself. In this context, it would be possible to determine that Bhatia's portfolio is a production of the open work due to the fact that he constantly aims to challenge and evolve the definition of this concept from one project to the next.

Through his lecture and text, Neeraj gives an insight into his own views of architecture and the concepts in which he aims to debate and insert his production. It is, however, possible to see contradiction between what has been described previously from the ways that Bhatia deals with the open work as a concept in the projects he exposed. These derive from the nuances that characterize architecture as a product which does not necessarily affect autonomous art.

In his installation, The Space of Representation within the exhibition New Investigations in Collective Form, the architect produces a field of hanging modules tied together in a continuous tensile structure which reacts as a system when being pulled or lifted. The user is invited to maneuver the modules, individually or collectively in an effort to alter the installation. In analyzing this work upon the discourse presented by Bhatia, it would be clear to characterize this and example of an orchestration of difference sub guided by the author, where choice is merely representational as exemplified previously.

This contradiction is not mentioned in an effort to criticize the architect's work which was surely subject to a large number of requirements and constraints, but to question the validity and possibly the existence of a true open work in the built environment which is by definition subject to these influences. If as architects, we strive to design and to input our own views into our work, and this action inherently means our personal understandings in regards to ethics, aesthetics, socio-economical-political ideas under constraints of a variety of forms (physical, economical, political, etc.), then the only viable production of the open work would negate the architect as a figure which envision outcomes as exemplified in Super studio's work, where we design structure capable of adapting to uses even though we do not speculate, assume or even care which of these could be.

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project: **Toxic Entanglement** _ studio: Transscalar Towers _ instructor: Andrés Jaque _ teaching assistant: Marylynn Antaki _ developed with: Christopher Spyrakos and Frank Mandel _ term: **Fall 2019** _ sequence: Advanced Architecture Studio _ program: Master of Science in Advanced Architectural Design _ program area: Architecture _ Graduate School of Architecture Planning and Preservation _ Columbia University in the city of New York // **left page** _ descriptive text // **right page** _ exported frame by frame sequence from presentation video at 2,3 frames per second _ content assembled and edited in Adobe After Effects _ content: assemble of images extracted from the Internet + model images extracted from rhinoceros 3D and edited in Adobe Photoshop and Illustrator *

Toxic Entanglement

Advanced Studio | Fall 2019
Transscalar Towers, The Ultra Clear-Glass Plan | led by Andrés Jaque
t.a. Marylynn Antaki
with Christopher Spyrakos and Frank Mandel

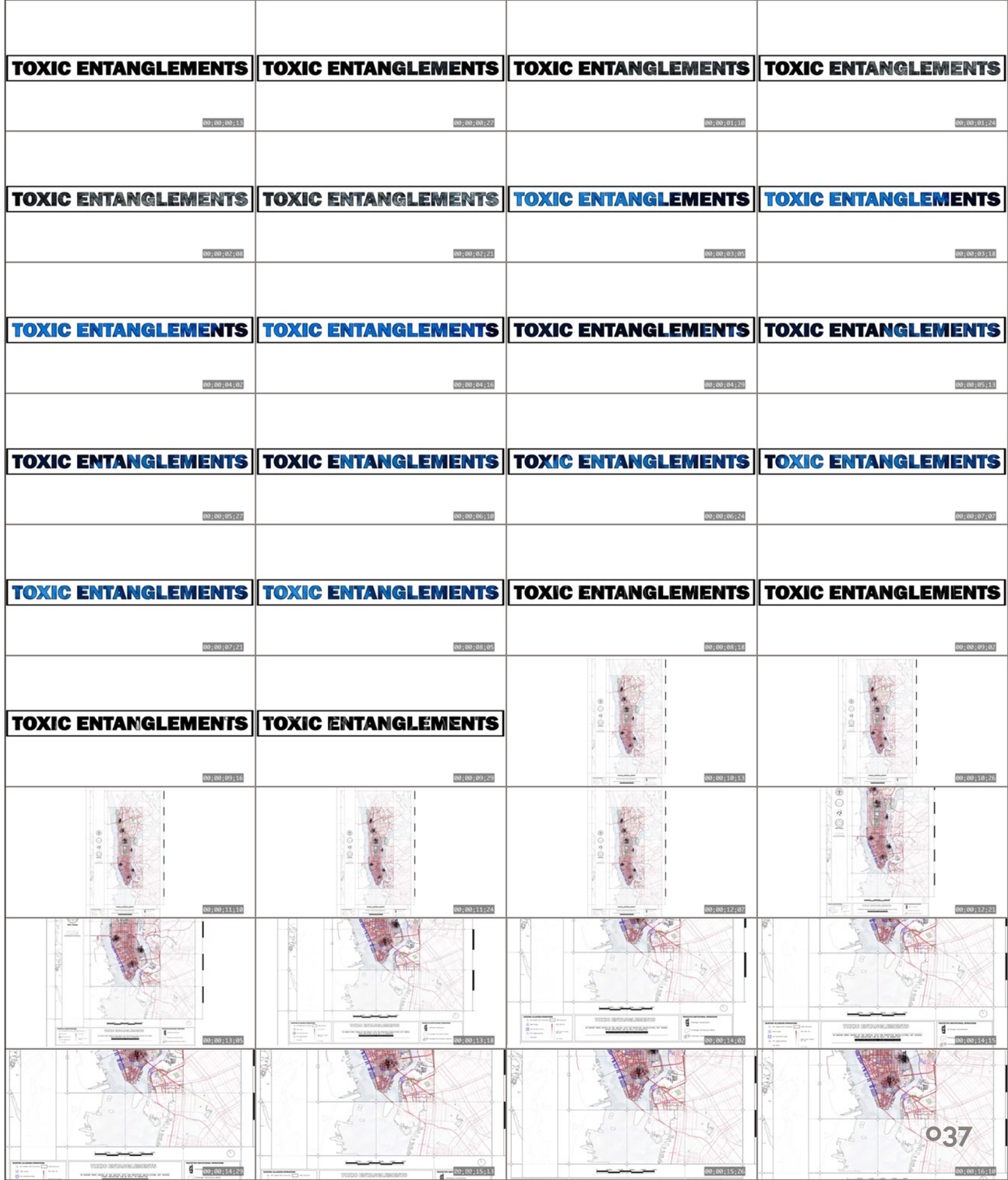
* Awarded with Columbia's Buell Center Paris Prize

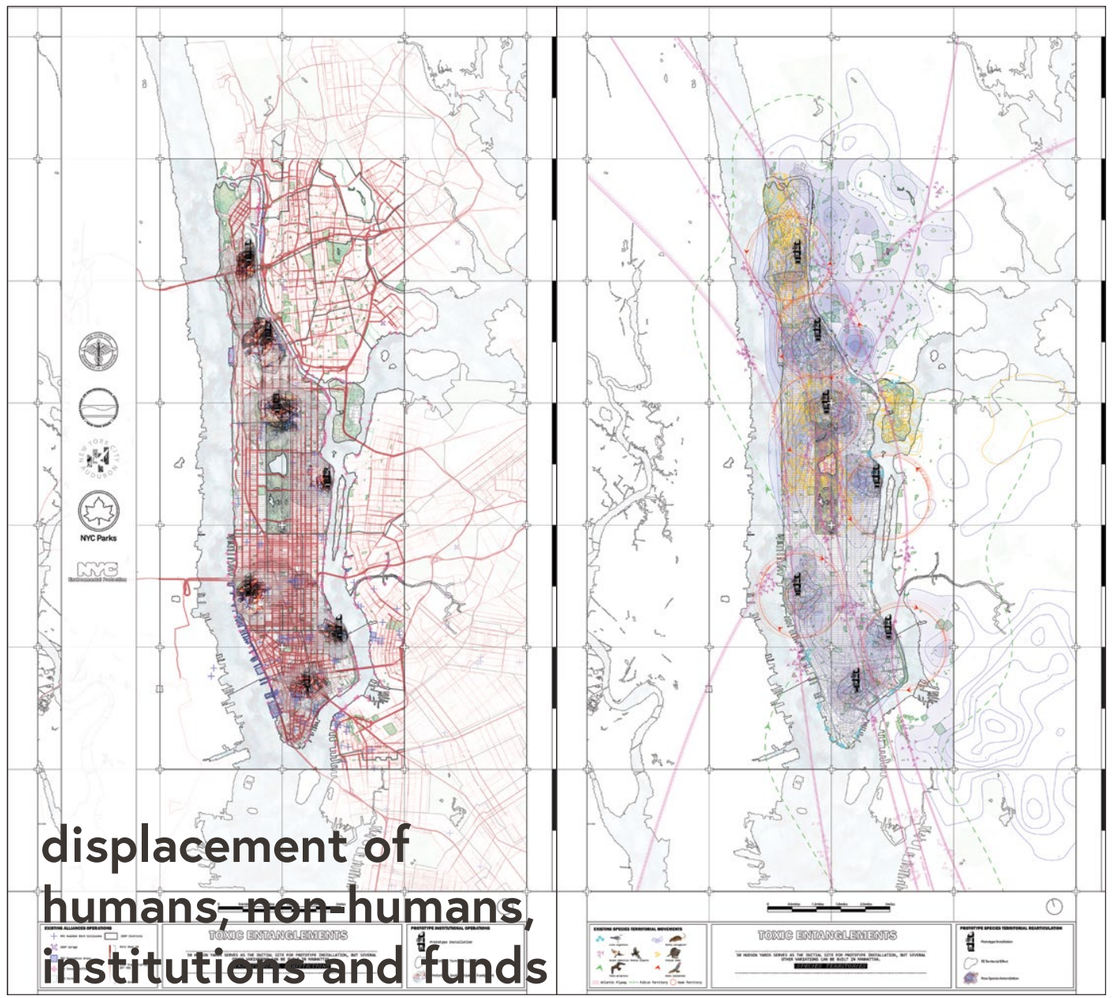
New York City's residents, workers, and visitors generate more than 20,000 tons of solid waste (equivalent to 1430 garage trucks) and use more than 1 billion gallons of water daily (equivalent to Jacqueline Kennedy Onassis Reservoir). The management of this solid waste and treatment of wastewater is responsible for 1.84 $MtCO_2e$ (million metric tons Co_2 equivalent) annually. Costs associated with waste management exceed 1.7 billion dollars in New York alone. This is larger than many countries total annual budget (Montenegro, Haiti, Barbados, etc.).

Historically, any infrastructure for waste management relies on a strategy of displacement, circulating the effluent materials from one location to other communities outside the center, establishing a territorial inequality rooted in a proximity to toxicity. Since China's ban on importing foreign waste in January 2018, cities in the US have gone from earning a profit selling these materials to paying up to 40 dollars a ton for companies to haul it away.

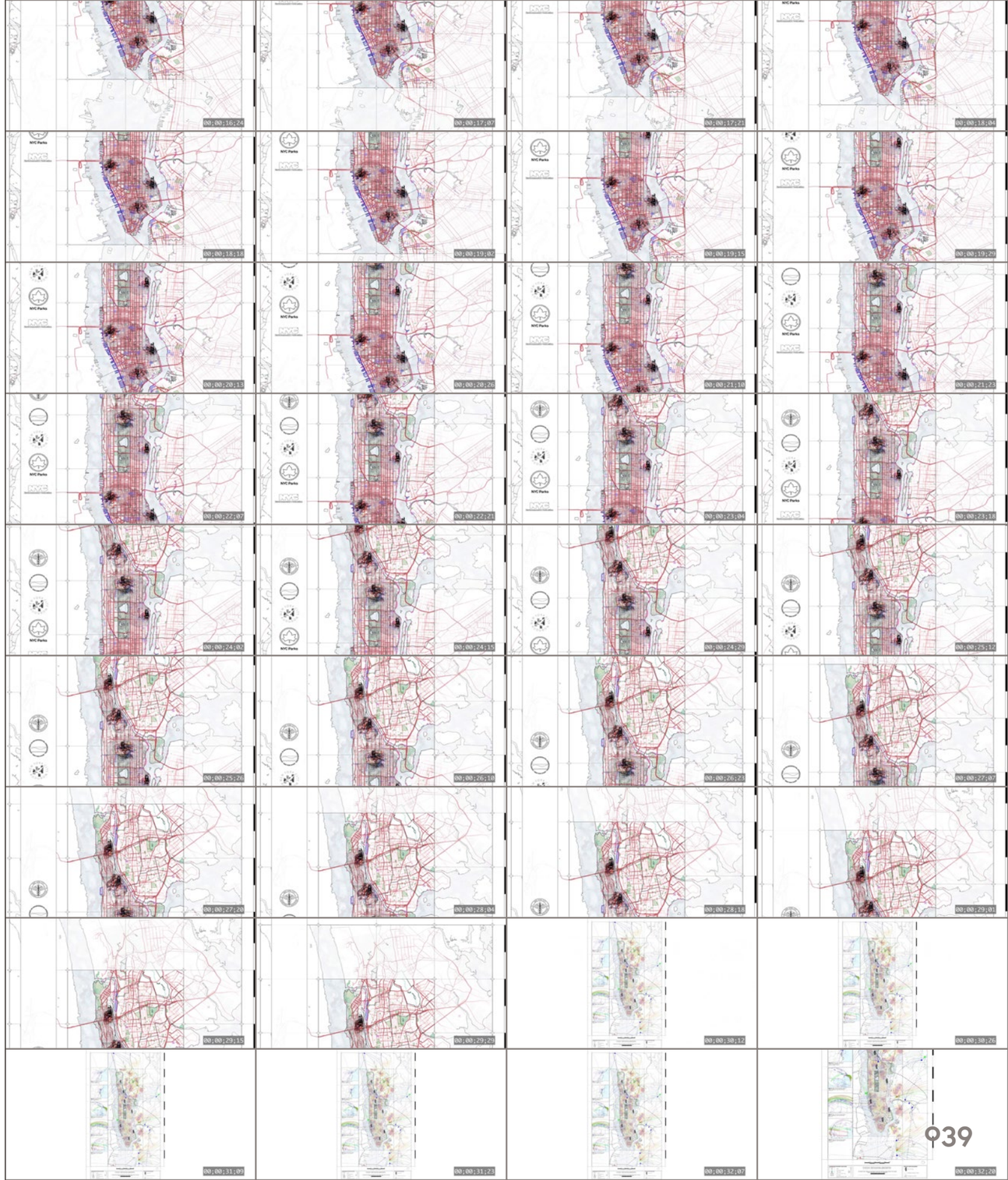
This displacement perpetuates both an image of New York as hygienic, opening the city to development, and the territorial inequality enabled by this conceptual frame.

Levels of toxicity and our relationship to them are ever changing. In spite of our effort in hiding and separating from it, their presence is absolute. As an





displacement of humans, ~~non-humans~~, ~~institutions~~ and ~~funds~~ of diverse scale around waste management



project: Toxic Entanglement _ studio: Transscalar Towers _ instructor: Andrés Jaque _ teaching assistant: Marylynn Antaki _ developed with: Christopher Spyrakos and Frank Mandel _ term: **Fall 2019** _ sequence: Advanced Architecture Studio _ program: Master of Science in Advanced Architectural Design _ program area: Architecture _ Graduate School of Architecture Planning and Preservation _ Columbia University in the city of New York // **left page** _ left to right: maps of physical and institutional alliances in the island of Manhattan + maps of nonhuman species territories and migration paths in the island of Manhattan _ map drawn in Autodesk AutoCad and edited in Adobe Photoshop and Illustrator // **right page** _ exported frame by frame sequence from presentation video at 2,3 frames per second _ content assembled and edited in Adobe After Effects _ content: assemble of images extracted from rhinoceros 3D and edited in Adobe Photoshop and Illustrator + model images extracted from the Internet

example,a large portion of Manhattan Island itself has been built over landfill that surge and affect our everyday life. This example present opposite relationships to waste, the effort of making it invisible and the opportunities in appropriating and benefiting from it to create land.

Hudson Yards presents and prides itself as the apotheosis of this unsustainable system. It promotes a highly technical sustainable infrastructure, that only continues to reinforce the existing system of waste displacement, here, now, more invisible and efficient than ever before. As stated by Michael Samuelian, Related's Vice President, "There will be no garbage trucks anywhere around Hudson Yards - even in the most posh buildings uptown, you'll see trash bags in front of the building on trash day. You won't see that at Hudson Yards."

The monetary and physical effort in creating this segregative relationship perpetuates a system that has brought us to our contemporary climate crisis.

We propose to challenge this system through the opportunities that arise from interspecies relationships and articulation. Reevaluating the anthropocentric constructions of waste and toxicity has benefited society historically, as in the case of pigsties inside New York City in the past, where a mutualistic relationship benefited both humans and non humans. Humans would care for the pigs which would assist in the management of daily waste and would become food in harsh winter. This relationship however has been banned within the effort of creating a hygienist image of NY.

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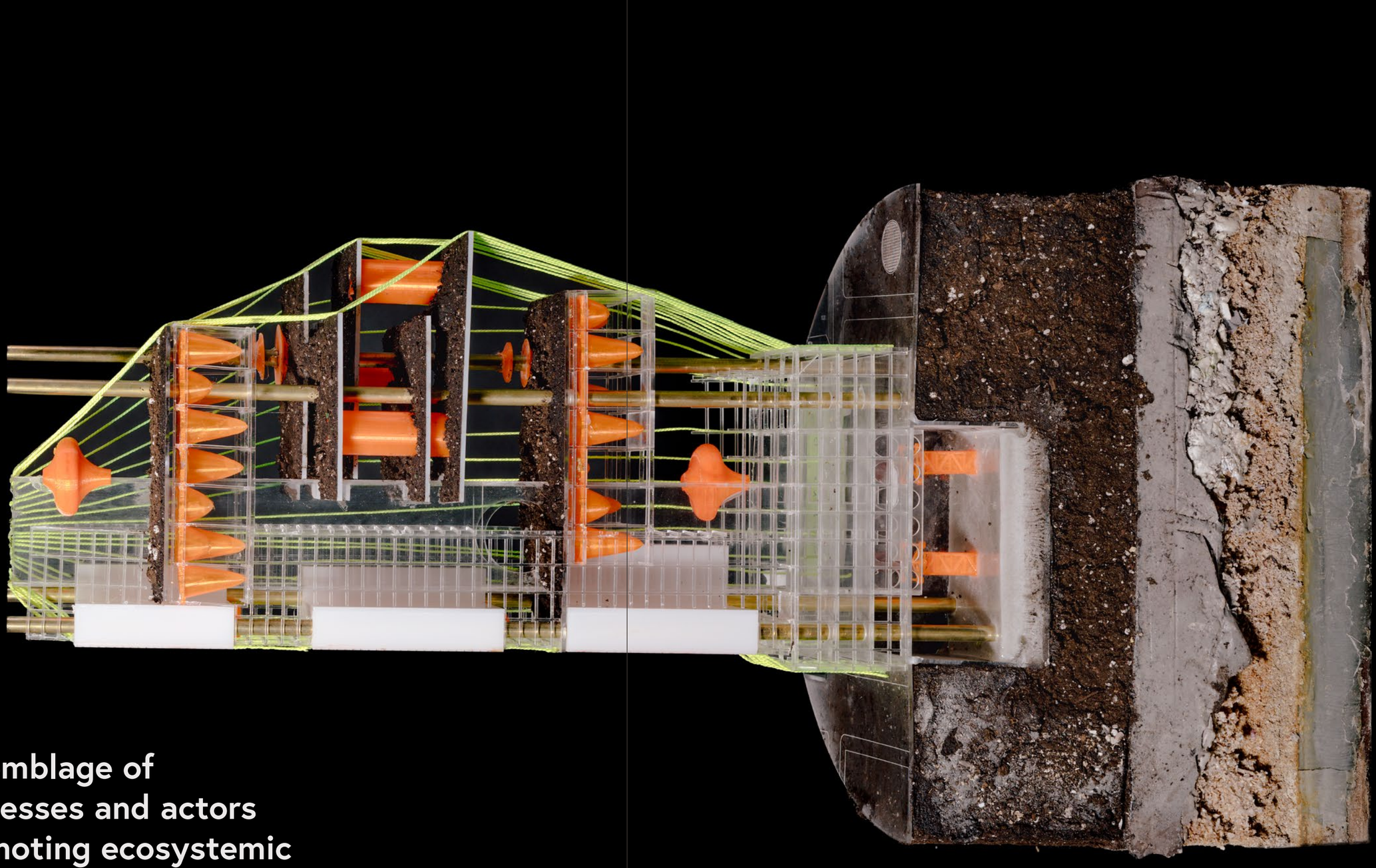

assemblage of processes and actors promoting ecosystemic cohabitation through the circulation of matter,

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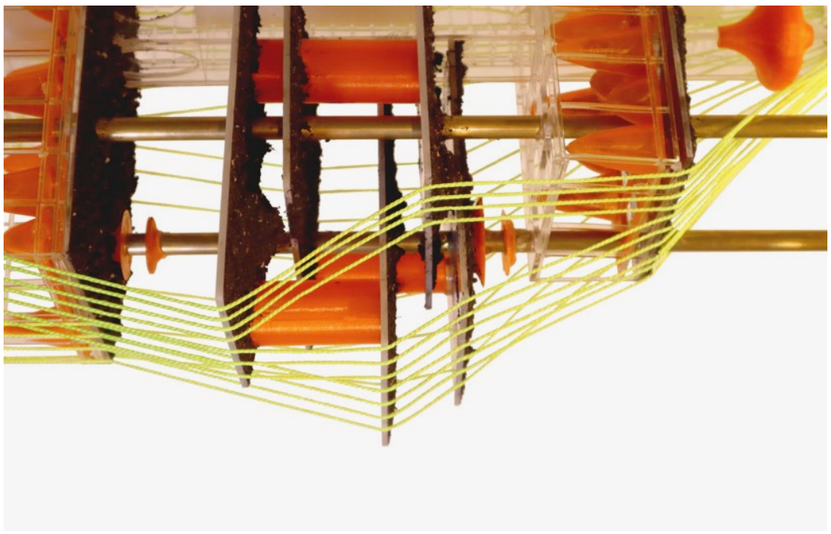

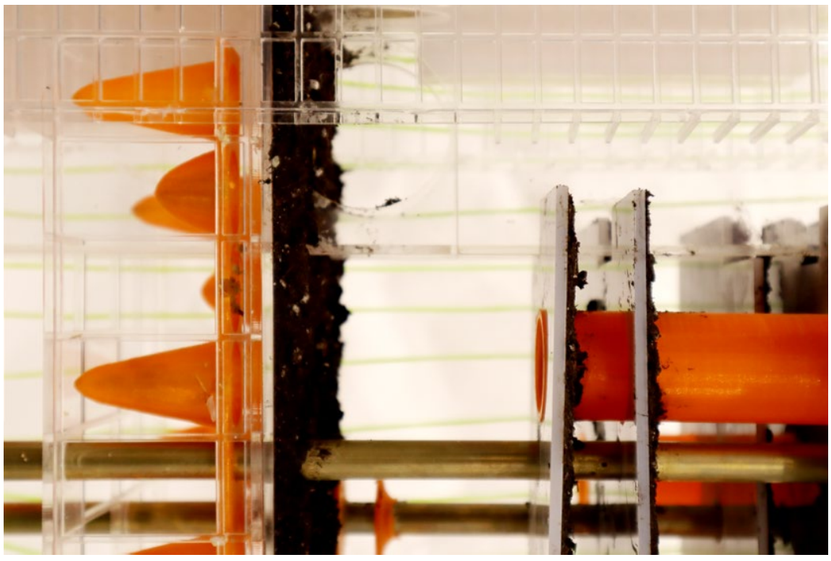

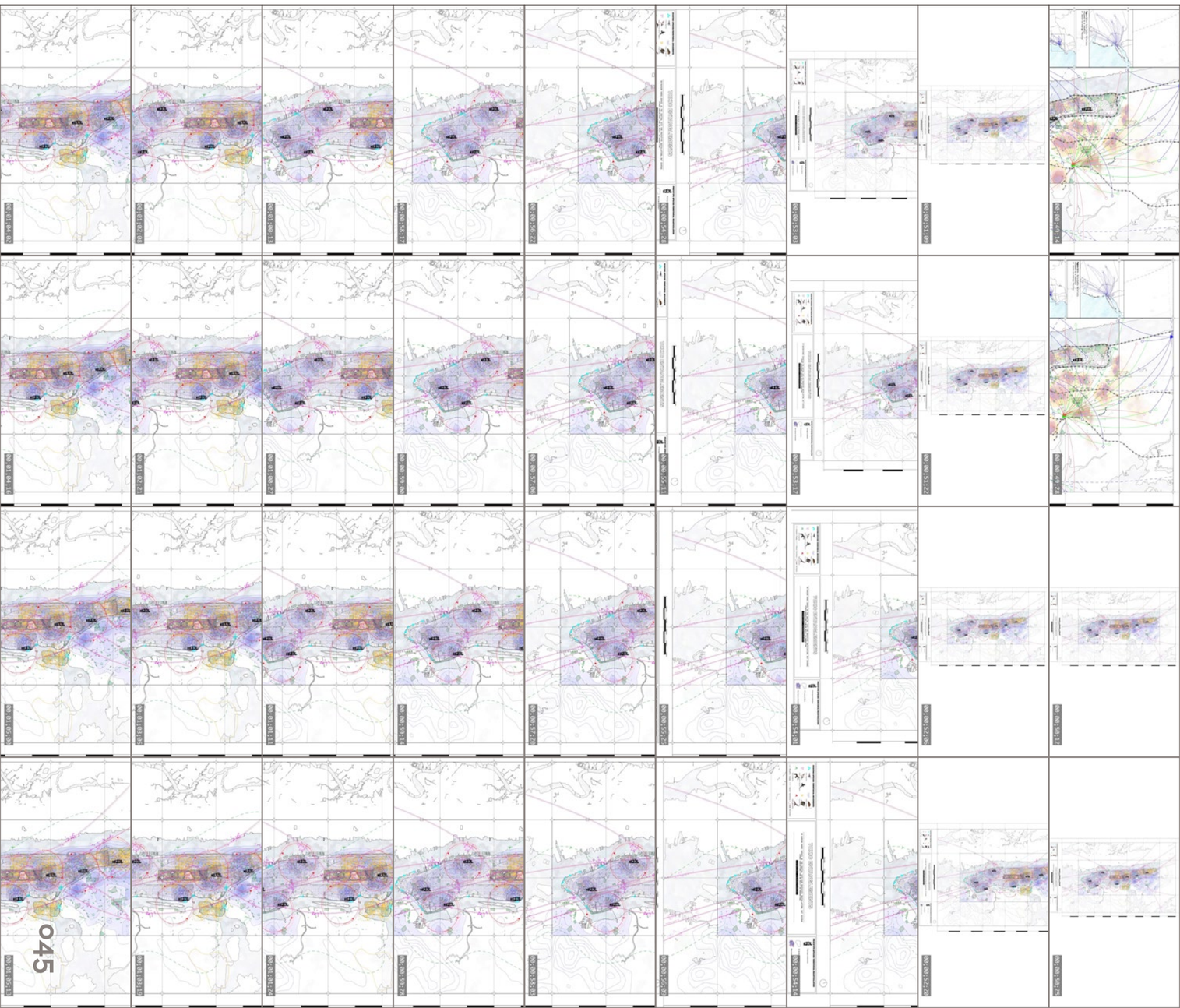

We propose *Toxic Entanglements*, a prototype at 50 Hudson which utilizes architecture as a vehicle for the assemblage of processes and actors at various scales, that promotes ecosystemic cohabitation through the circulation of matter, within existing institutional frameworks.

Through the implementation of a single prototype, we can reduce emissions of metric tons of CO_2 equivalent by 92%, relative to its populations, and provide housing equivalent to10% of its immediate surrounding population, while maximizing architecture's potential to impact climate crisis productively, as a new public infrastructure.

Hudson yards itself was chosen as the site for the implementation of this first prototype due to its conceptual and geographical location, placed at the interstice of unsustainable waste infrastructure, problematic relations to animals, toxic sites. Built upon a platform which articulates a huge amount of effort in order to make it float.

The construction of Hudson yards is representative of a trans-territorial articulation of institutional partners that enabled its development. The diversion of funding FROM EB-5 VISA program for example, which tied creation of jobs in Harlem to the development. Past discussions of justifiability, this model exemplifies the capacity for working within existing institutions legislations to forward an ostensibly impossible project. We appropriate this model and search within the D.E.P., E.P.A. and other state and city environmental institutions to make the project viable.

The territorial infrastructure of waste and waste management provides existing environments and resources to facilitate our development. The existing resources that mobilizes an enormous amount of capital, 1.7 billion dollars to displace materials elsewhere globally, are themselves reevaluated in order to reduce displacement.

In spite of the effort of creating and perpetuating the image of a segregated city, where humans are separated from non human actors, and waste management tactics works to make diverse ecosystems invisible, we need to re-articulate our relationships to other species. We analyze existing environments that are tied to waste management today to forecast and envision a possible New York City. In this, reevaluating our charismatic relationship to species of various scales.

The prototype utilizes architecture as a vehicle for the articulation of existing alternative waste treatment processes tying space, funding and actors in order

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systems brought
together through the
architecture working
across different scales
and actors

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to enable the implementation of these systems. In this prototype, humans and non humans populations alike are organized to feed and provide for each other. Matter and resource are exchanged, produced, consumed and expelled. What is toxic for certain species nurtures the next, through a continuous circular system. An assemblage of 10 processes, interconnecting diverse actors, humans, non humans and mechanical systems, conditioned by a heat and humidity emitting envelope. Assemblages that function together regulating and providing for each other. An infrastructure that arranges ecosystems through biological and mechanical processes that circulates matter in various states of transformation.

Developed in partnership with experts in various fields such as waste management, nonhuman architecture economy, and the biological sciences —Toxic Entanglements supplies for a necessary and urgent demand. As our collaborator, bio-remediation engineer and member of the board of the EPA, Ponisseril Somasundaran has explained to us again and again, “we are ready to do it, what we need is the funding”.

In order order address this urgent crisis, and reduce emissions to avoid climatic catastrophe for both humans and ecosystems we must change our current system of habitation into cohabitation with toxicity .Contemporary mainstream solutions that address the issues presented previously are neither quick nor effective. They perpetuate unsustainable divisions of matter and environments. Toxic entanglements utilizes the existing institutional and technical framework to provide an immediate and viable alternative that reduces carbon emissions and provide for housing through the assembly of existing processes which lack the necessary articulation in order to be implemented in our society.

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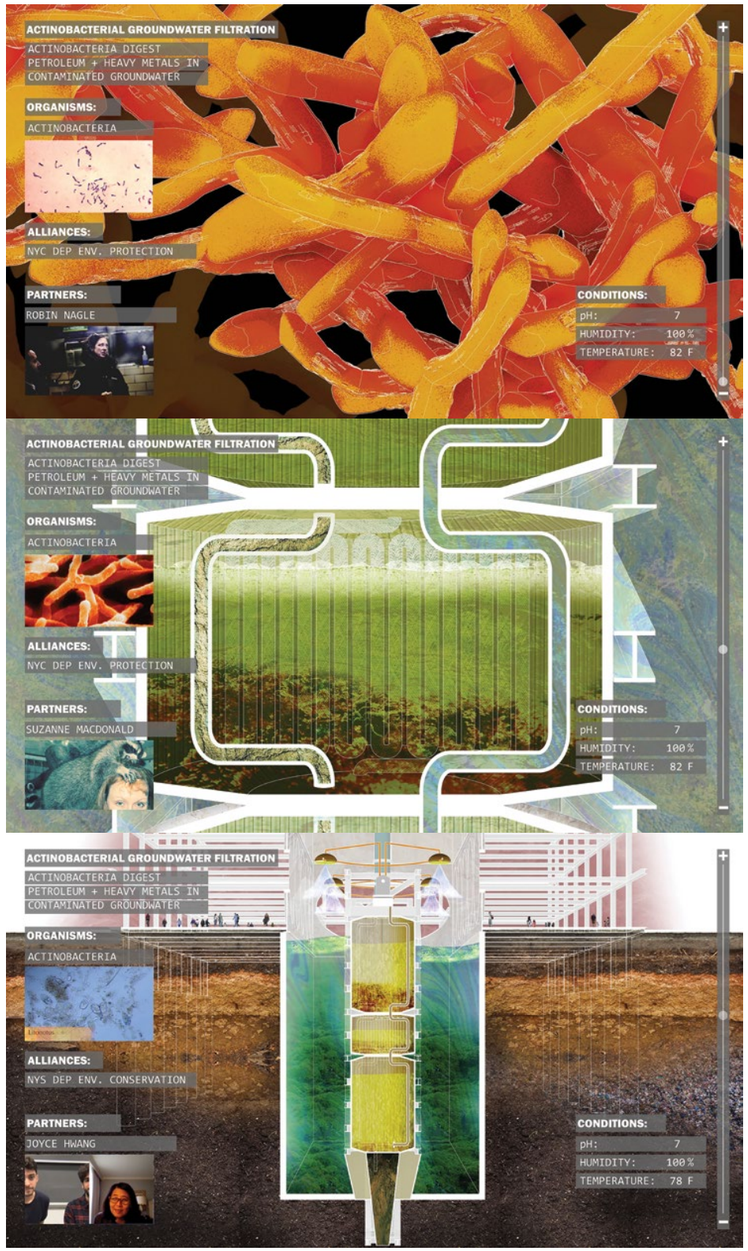
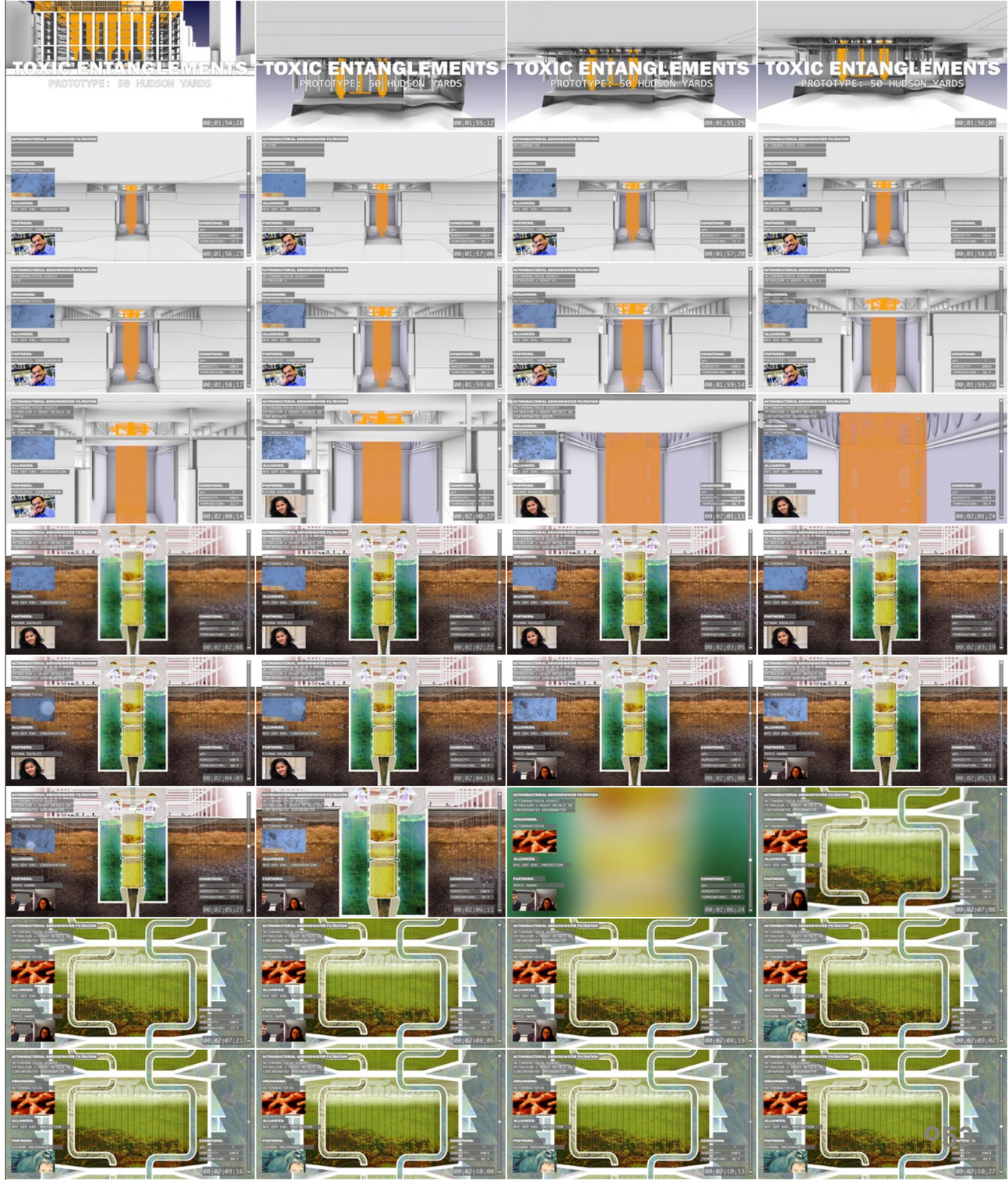
actinobacterial groundwater filtration

Due to the previous existence of a chemical manufacturer and the site of transportation infrastructure, the groundwater is incredibly rich in petroleum and heavy metals. This ecosystem places actinobacteria who naturally process heavy metals from the groundwater.





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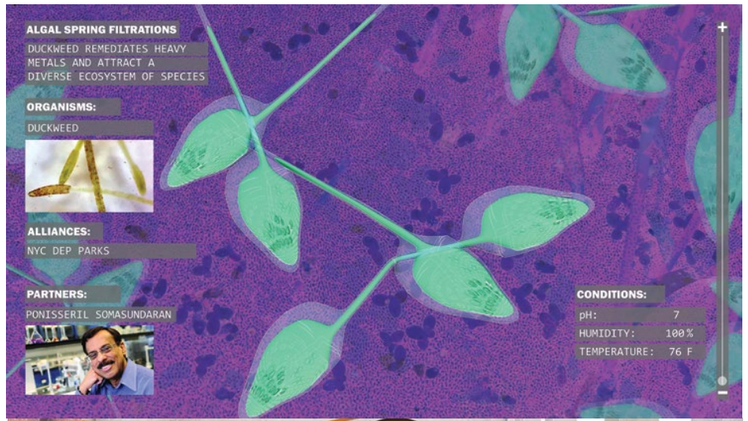
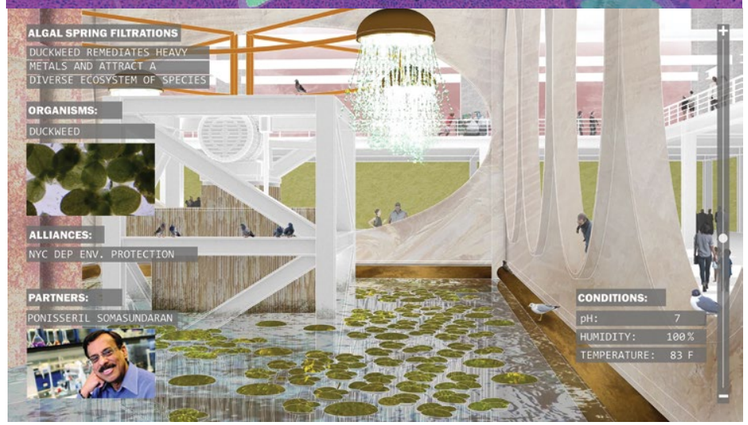
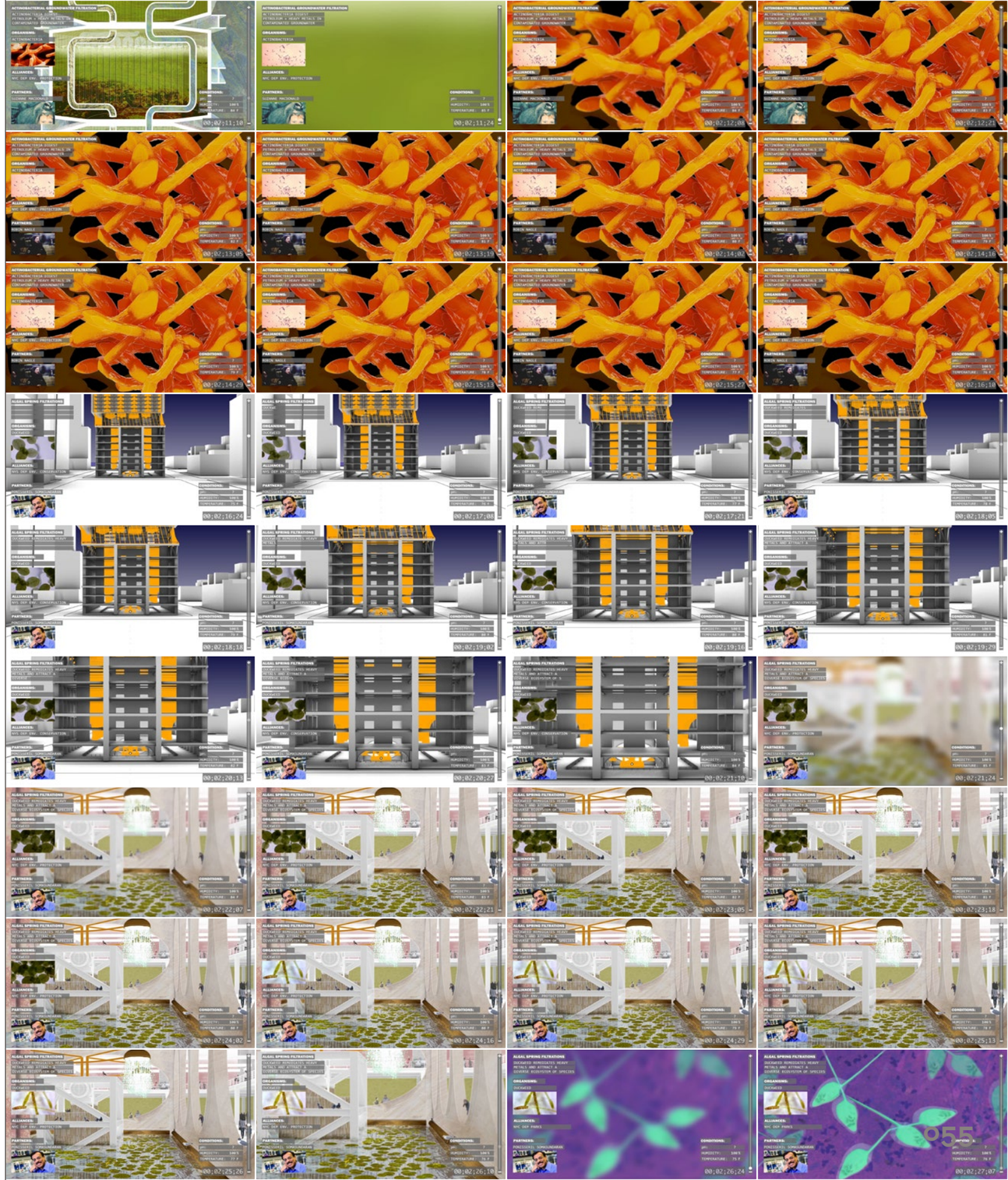
algal spring filtration

The petroleum free water is then dispersed into a pool, collecting the processed groundwater to form an open air environment where duckweed continues to re-mediate water heavy metals while acting as an important bio indicator of the condition of water. While serving as a well spring for the rest of the building, the pool allows for its own ecosystem to develop, attracting diverse species.



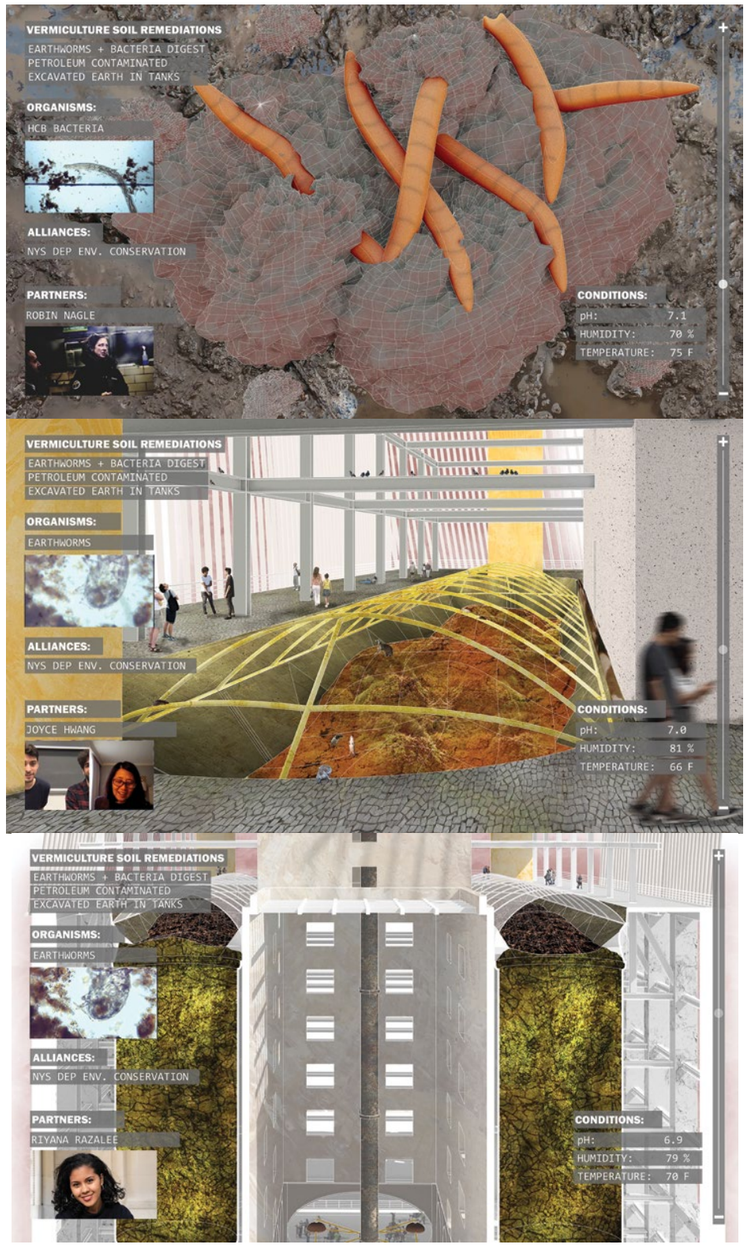




project: **Toxic Entanglement** _ studio: Transscalar Towers _ instructor: Andrés Jaque _ teaching assistant: Marylynn Antaki _ developed with: Christopher Spyrakos and Frank Mandel _ term: **Fall 2019** _ sequence: Advanced Architecture Studio _ program: Master of Science in Advanced Architectural Design _ program area: Architecture _ Graduate School of Architecture Planning and Preservation _ Columbia University in the city of New York // **left page** _ vermicular soil remediation system _ model developed in rhinoceros 3D and edited in Adobe Photoshop / data and information overlay with system temperature, acidity, humidity and components // **right page** _ exported frame by frame sequence from presentation video at 2,3 frames per second _ content assembled and edited in Adobe After Effects _ content: assemble of images extracted from the Internet + model images extracted from rhinoceros 3D and edited in Adobe Photoshop and Illustrator •

vermicular soil remediation

Much of the layers of soil excavated for construction also possess similar petroleum and heavy metals levels to the groundwater. This ecosystem locates earthworms in a series of connected, large, soil remediation tanks, who gradually consume and process contaminants, allowing the worms to flourish. After the remediation is complete, the tanks are opened, and serve as an integrated open air plaza.



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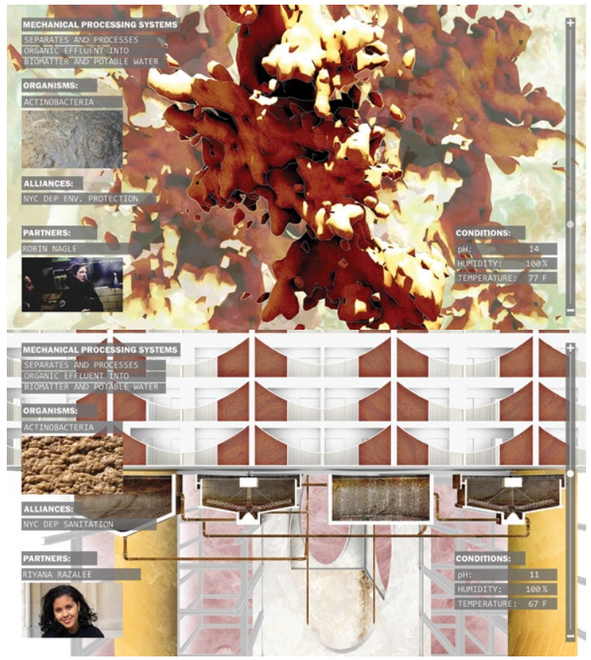
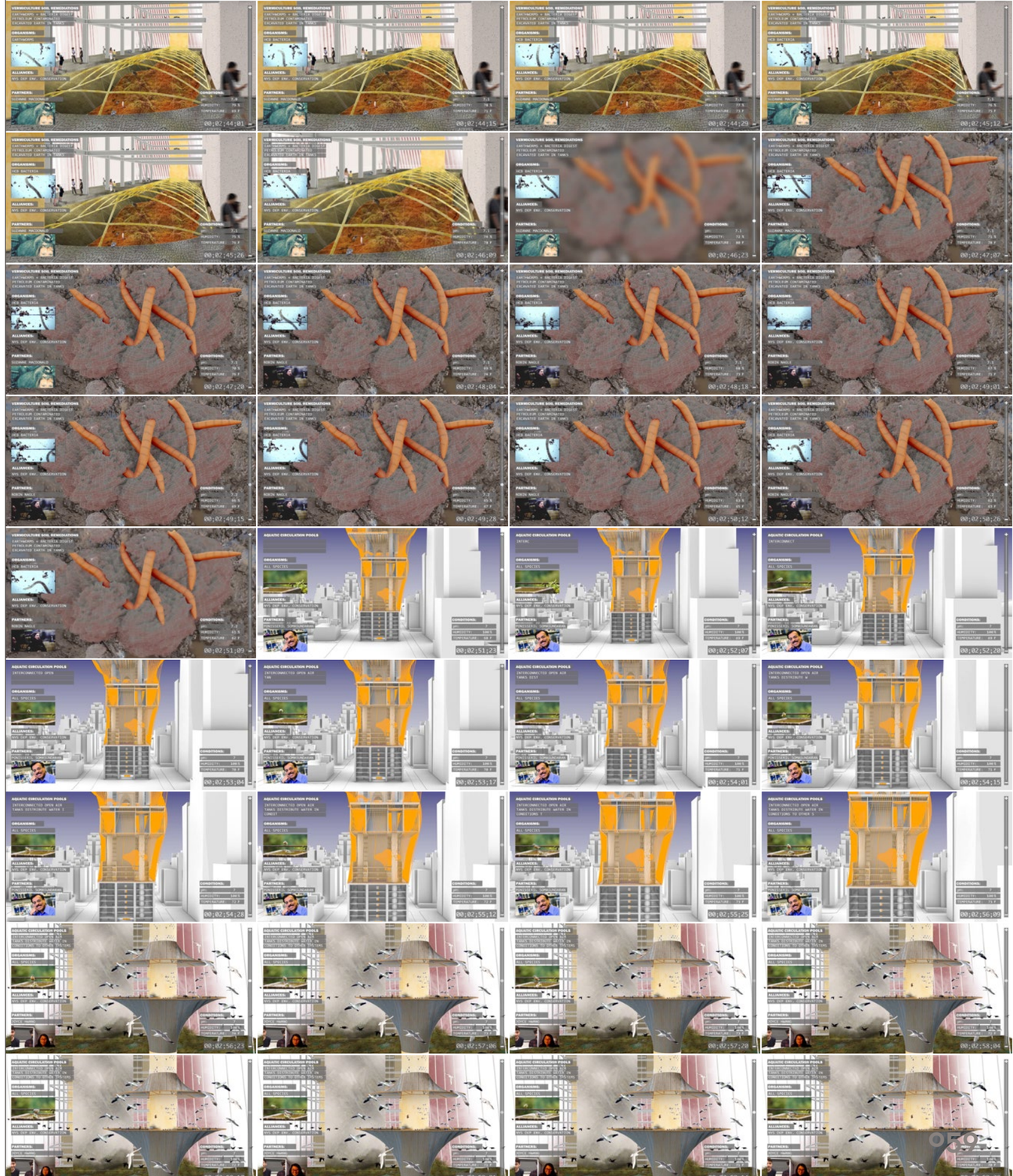
aquatic circulation pools

From the duckweed pools of the building, water rich in micro-bacterial life circulates through interconnected systems of large vessels that are at times open aired and at times closed, distributing water throughout the entire building and allowing for the maintenance of their systems.

mechanical processing systems

A mechanical treatment process that separates the byproducts of human living into bio matter and usable water





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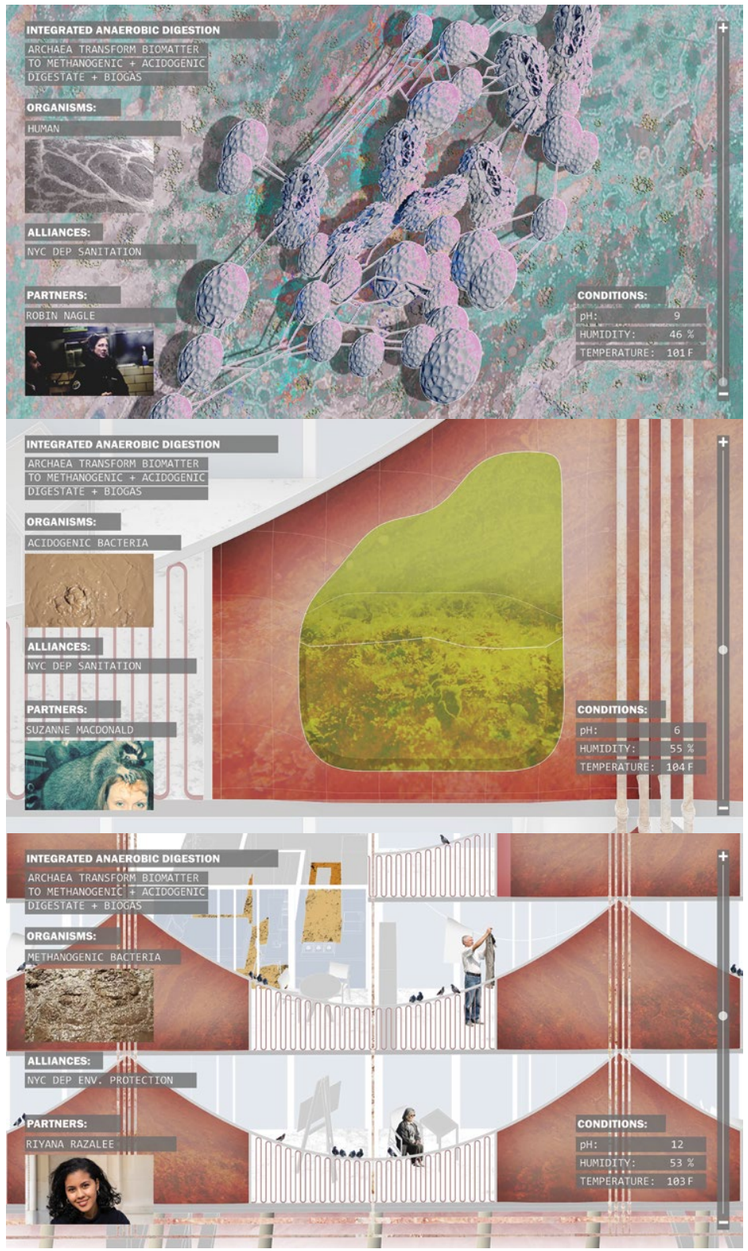
integrated aerobic digestion

A digester that utilizes a continuous chain of bacteria to transform bio matter into a fertilizing digestate and biogas, stimulated by the presence of sunlight



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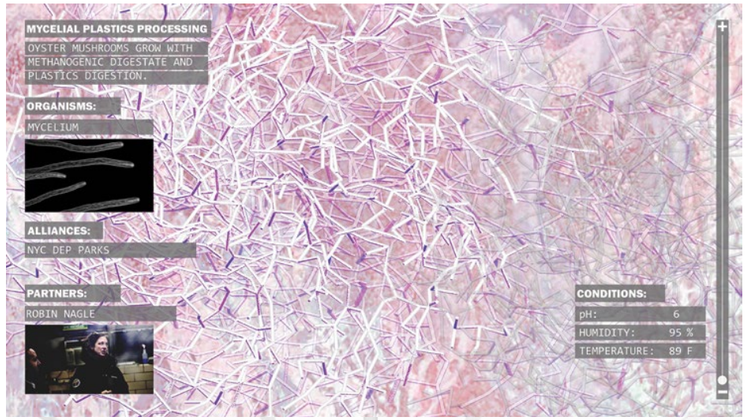
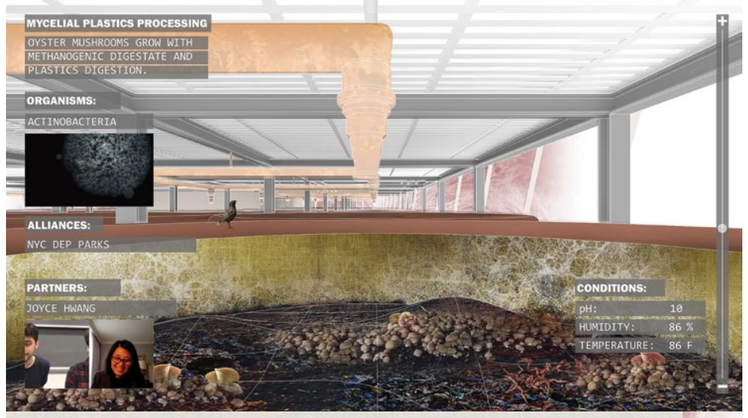
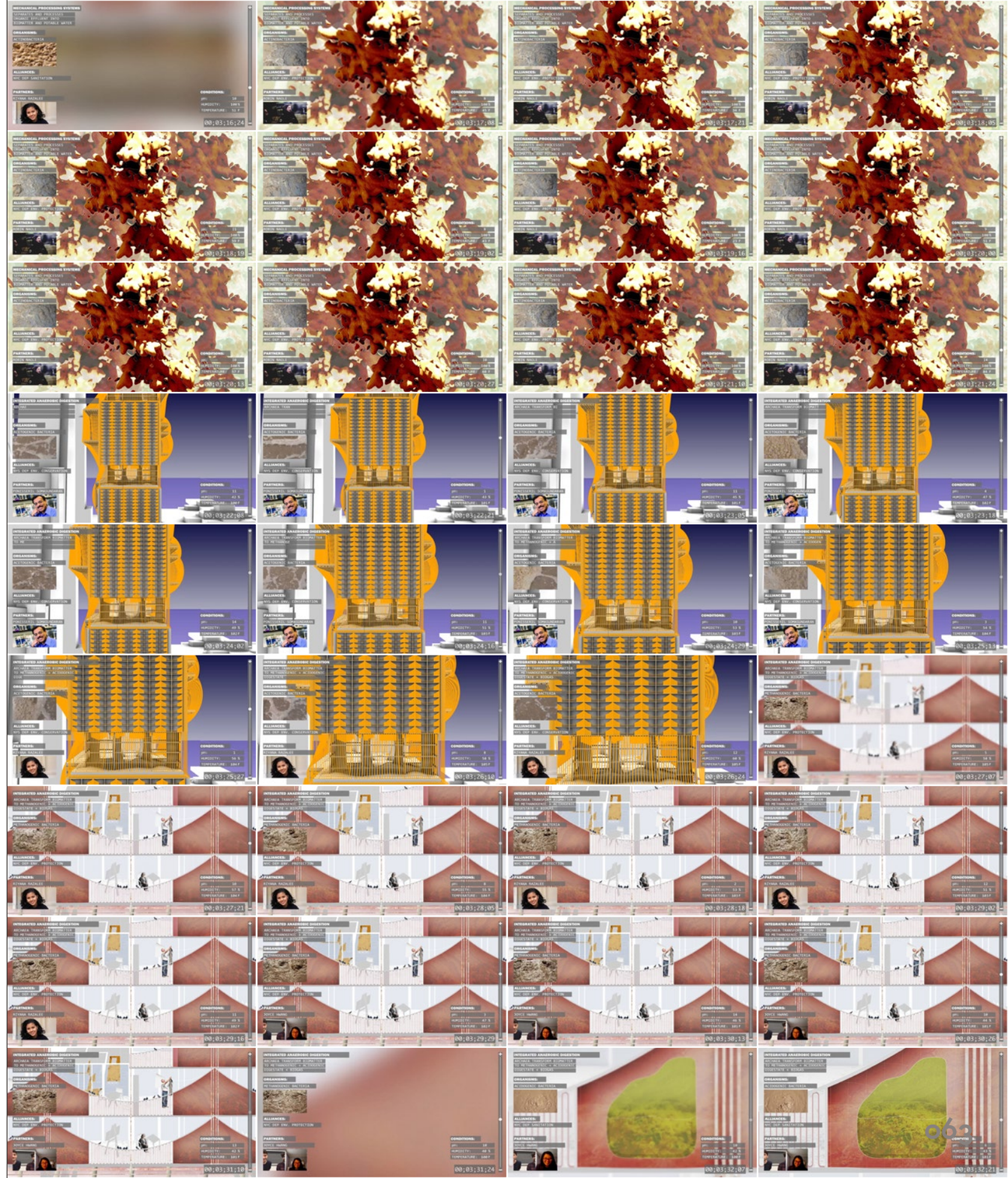
mycelial plastics processing

A series of hanging sacks that join digestate, mycelium to process plastic residue







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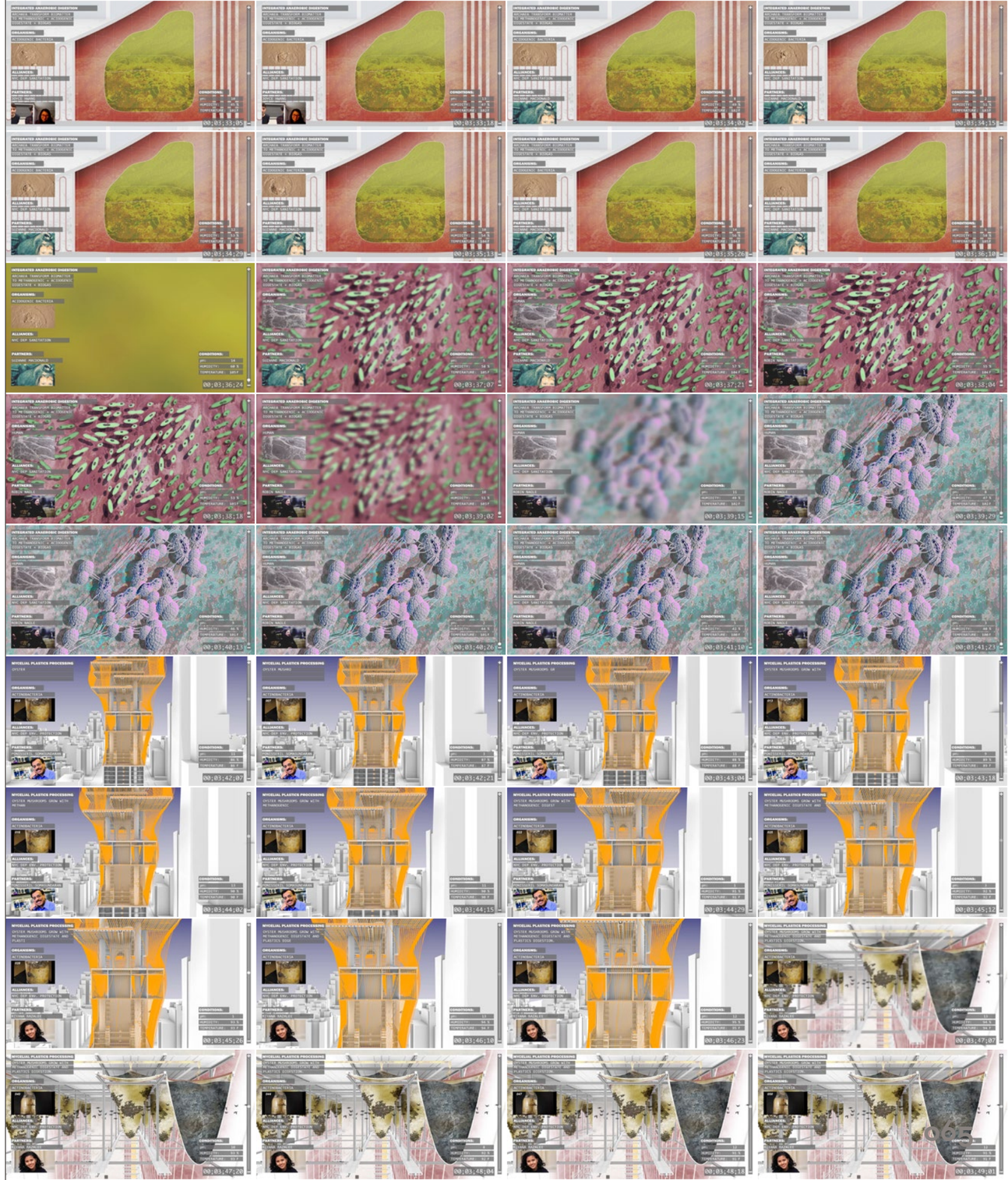
ecosystemic ground

A latent ecotone of matter that grows continuously generating shelter for rats, plants, amongst others.



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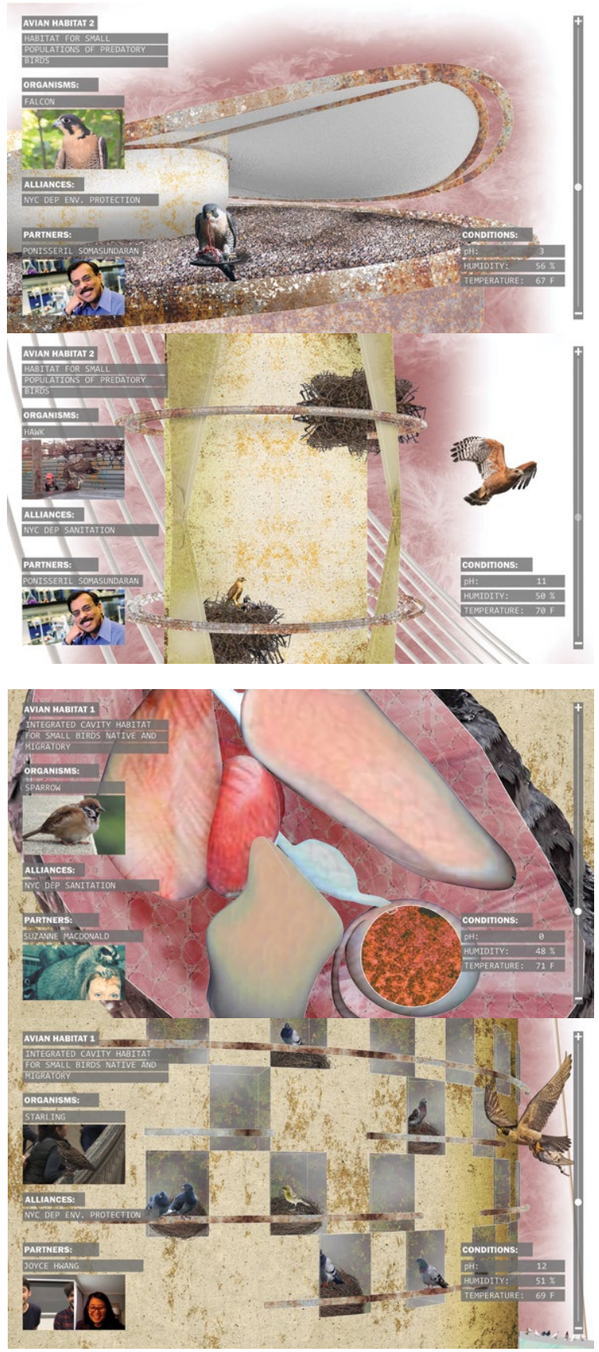
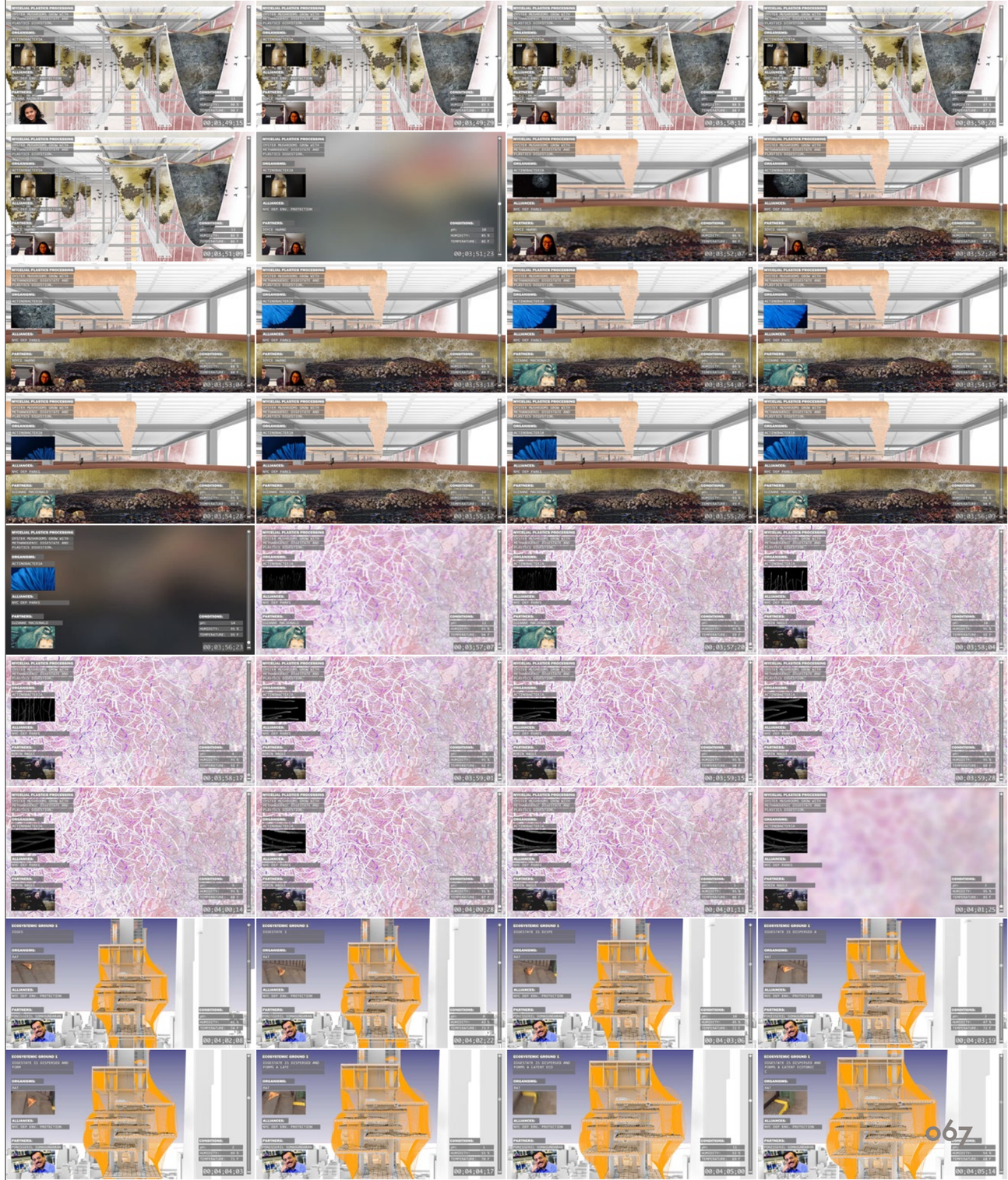
avian habitat

A variety of bird shelters that maintain and regulate interconnected actors. Serving specific needs





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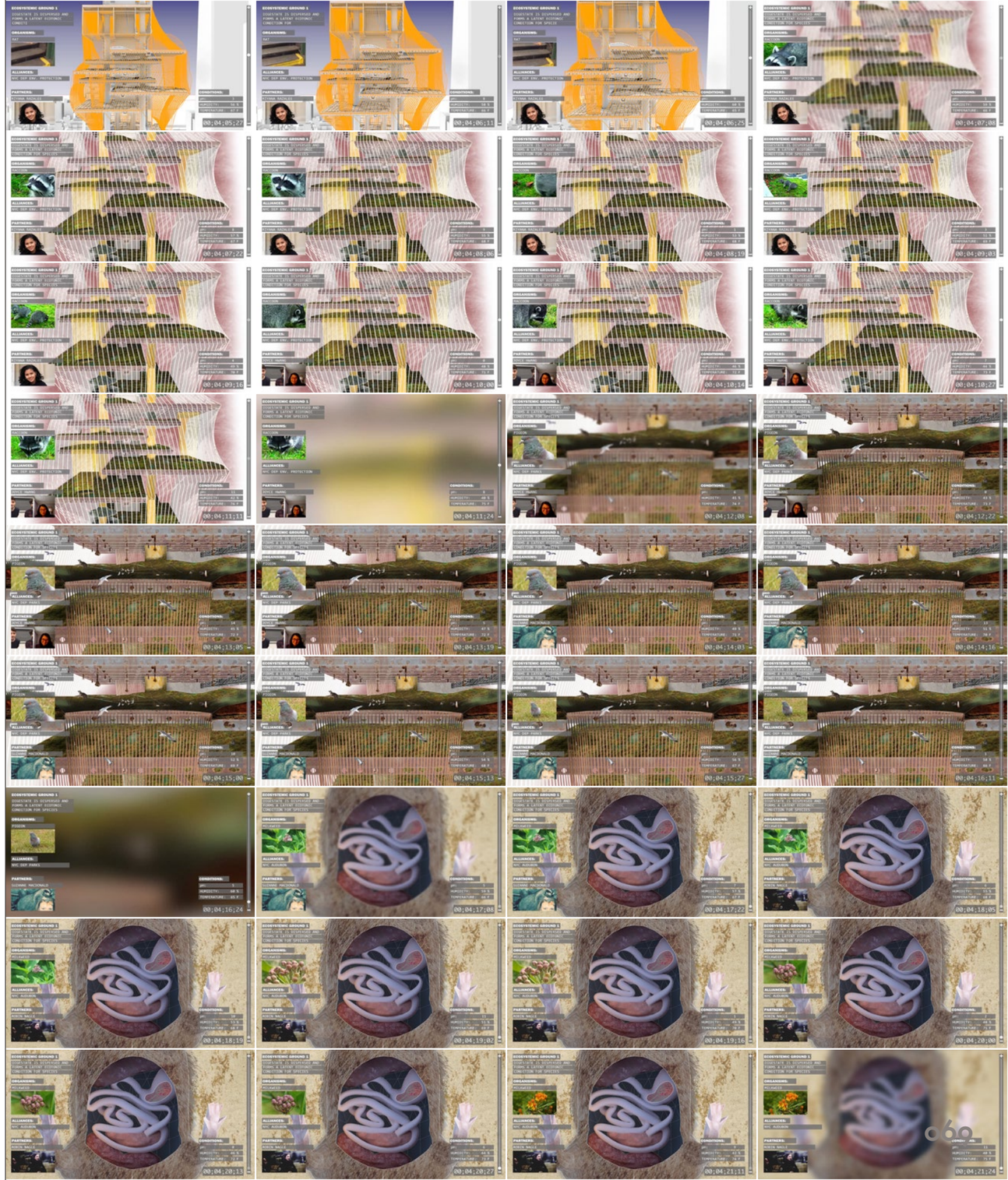
methanogenic biogas inflation

A flexible container at the top of the building which gathers the biogas produced prior to shooting it into the existing kogen plant that provides energy not only for the building, but to the city.



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soek.
graphics manual

Graphic Architecture Project: Design and Typography
Fall 2019 | led by Yoonjai Choi

The definition of architecture's boundaries has always been an issue worth questioning. From theory to practical matters where the architect's responsibilities and duties end have always been subject of discussion throughout the architecture realm and a personal interest.

Graphics Architecture Project is based on the premise that architecture starts and ends as graphic design, eliminating any difference in scope between either professions. Departing from this principle exploration of design elements focused on the production and editing of books and around the subject of typography present repertoire and methodology sustaining this argument.

At the intersection of this investigation and of my particular personal interest around this discussion, a book emerges materializing both aspects.

The book is a standard manual that sets the guides for the graphical material developed at my own architecture practice. It is the most literal manifestation of the intersection between academic exploration and personal interest. Through its development and construction issues surrounding objectives and purpose are examined, the production of this book is itself understood as its primary function. The manual's purpose in our contemporary society that has irreversibly been replaced by more practical digital processes becomes to legitimize the content published within.

It is not the design that is being standardized through the built object but the institution that becomes legitimized through its production.

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architecture as a tool, process, objective and result of graphic design

project: **SOEK Graphics Manual** _ course: Graphics Architecture Project I: Design and Typography _ instructor: Yoonjai Choi _ term: **Fall 2019** _ sequence: Visual Studies _ program: Master of Science in Advanced Architectural Design _ program area: Architecture _ Graduate School of Architecture Planning and Preservation _ Columbia University in the city of New York // **right page** _ book photography _ building sign spread _ book printed in heavyweight matte paper, enclosed in a steel plate cover with sandblasted graphics and Indesign // **left page** _ book photography _ sequence of photos of graphics manual developed _ book printed in heavyweight matte paper, enclosed in a steel plate cover with sandblasted graphics and riveted binding_ content developed through Adobe Illustrator, Photoshop and Indesign •

a manual that legitimizes the institution represented within

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Essays on Buildings and Programs

Anam Izhar Ahmed, Frederico Castello Branco, Maria Victoria Macchi

Seattle Central Library
OMA – Office for Metropolitan Architecture

Through the 80s and 90s, the Office for Metropolitan Architecture led by Rem Koolhaas, has developed their own stance addressing two critical issues regarding the library as a built environment; digitization and their perceived shrinkage in the public realm. The library as a typology has been imagined by the architects through projects and essays which culminate with the construction of the Seattle Central Library in 2003.

OMA initiated this public affair with their proposal Très Grand Bibliothèque (The very big library) for a competition to build a new national library in France in 1989. The project, a massive solid of information that contains a variety of media, relies on voids to create public and undefined spaces. Here the public space is seen as liberated from rigid defined "archival" space, to imagine and redefine "…the symbolic spaces that accommodate the persistent desire for collectivity", as stated by the architects.

This iteration was followed by their scheme for Jussieu in 1992 which may be seen simultaneously as the further development of many ideas proposed previously and as the contradiction of that first concept. Public space here is seen intertwined with archival space. Where previously the public space was seen as a "bubble" amongst the block of information, now the distinction was blurred and even eliminated. A continuous surface that strives to replicate the qualities of the outside street/boulevard interiorly, where the library's programmatic elements are now the "bubble" which are accessed and viewed by and through this promenade.

In 1998, the group finally had the chance to implement their developed view for a library through their proposal for the Seattle Central Library.

This project, might be seen as the ultimate culmination and assemblage of ideas and concepts proposed and developed in the two iterations mentioned previously as well as ideas addressed in their publication Delirious New York in the late 70s, specifically around the example of the Downtown Athletic Club. It is important to stress that within the framework in which OMA works, culmination is not necessarily understood as a continuous development of an idea, but might as well be viewed as a contradiction to many aforementioned concepts.

Their proposal builds upon the separation and compartmentalization of what they coin "stable" and "unstable" programs. Where a "flexible" library would promote the shrinkage of public space as a consequence of the ever increasing archives, a library built on the separation of what is considered stable and unstable would conserve public space square footage and allow for the development of program within that area.

The compartmentalization of what programs fall into which denomination is subject to scrutiny and questioning. In the architects' discourse, through what we would consider "typical Dutch fashion", their process is synthesized in a sequence of graphs which represent their proposed line of thought. Through these graphs, OMA presents a linear quasi-undiscussed, so called hyper-rational process in which the various spaces required by the competition's organization arrange themselves into building form. The programs are divided into two types, those with predictable expansions (stable) and those without (unstable). From the original program, through the categorization of what are books and what is the rest, a program consolidation, a reshuffle and finally its transformation into building. This graph however is most interesting and speaks louder through what is not represented, the architectural actions and decisions that allow for the jump between the graphs of "program consolidation" and "program reshuffle". The programmatic decisions that transform graph into building and that define and form the uses within the stable and unstable spaces.

Most of the "stable" programs are contained in closed volumes which are accessed through the "unstable" spaces. Archives for example, whether those are books or digital media are constrained to a volume called the spiral. What may be considered a reduced size of Jussieu is allocated to this volume where a single surface spirals down through shelves of books and workstations. The constraint dimension entails the limited availability of archival space which surplus has to be dealt with exteriorly. In addition, the new notion of media tech that imagines a future with fewer space for physical books, allows the architects to create this constrained spiral with a maximum of available space.

What is outside of these volumes are what is considered generally the "unstable" programs. Named by the architects as a reading room, mixing chambers and living room, these are the spaces in which most of the qualities within the library are found. Generous spaces, connected by escalators which allow for a continuous and easy promenade up and through the building. The "uncontainment" of these spaces, delimited only by the larger envelope that makes up the facade, creates well lit environments that vary in ceiling height, ideal for a wide and unrestricted number of uses.

Throughout these spaces, the uses of what many may consider "secondary" architectural elements are vital for programing. Tapestry, lighting fixtures and furniture, juxtaposed to the variety of spaces created by the distribution of the "stable" volumes, determine uses that are practiced by the library's users.

These uncontained spaces represent the idea of public life that the architects envision adding to the project a translation of a portion of the city life of Seattle. In a city known for the absence of sunlight and the constant rain, areas next to the facade with high ceiling and generous natural lighting provide ideal spaces for those who seek to work or study when filled with the necessary furniture, for example. The opposite happens in spaces where the ceiling height is much smaller located in the center, far from the facade, where sound does not echo as much which provides for a more secluded work space. Maybe a clearer example for the use of these programming strategies lies in the book and coffee shop. Right next to the main entrance, the bookshop is defined exclusively by the use of shelves and common stanchions, while the coffee shop is delimited by a change in the flooring material.

The result of the Seattle Central Library designed by OMA is a project that addresses publicness through the typology of libraries. In this way it is similar to Toyo Ito's Sendai Mediatheque, a contemporary building which not only deals with many of the same issues that Rem tackles, but also uses many of the same programming tools to build, as the reliance on furniture to define use. Projects that can have most of their qualities traced back to the effort in recreating public space in the private realm.

Yamanashi Press and Broadcasting Center
Kenzo Tange

To fully understand the concept that drove the design and consequently programming of the Yamanashi Press and Broadcasting center it is important to reflect on Kenzo Tange's works in the metabolist movement. Around 1960, the movement was born along with the social and political movements claiming a decisive break with the past and the sense of an emerging order that architects and planners wished to take control of.

After the war, Japanese society found itself with a time of drastic changes and a system that cannot keep up with them. Seeking a solution, architects which included Kenzo Tange, found a clear path to output their utopic ideas and speculations as a response to the rapid growth of large cities that needed to be addressed. The uncontrollably expansion of these, translated into the loss of a coherent organism that made the metabolist architects dream about new cities with an imposed order and structure.

Among these professionals, Tange, Kikutake, Kurokawa, Maki and Otaka, the ideas of creating a new city from scratch, guided by the utopic ideas, was a vehicle to promote and reflect their political ideas and social ambitions. This resulted in the plan for Tokyo Bay, by Kenzo Tange, one of the projects that is still central to the movement and also significant to the building. It proposed a new spatial order for the contemporary society and a linear trajectory for growth.

The metabolists had the dichotomy among themselves between the mega-structure and group form. The first one conceived the city as one gigantic building whereas the second one, suggested grouping smaller elements together.

In the case of The Yamanashi Press and Broadcasting Center, Kenzo Tange tried to fulfill his desire of materializing these metabolist ideas. The challenge was to articulate different spaces within the same building serving different functions. Among these, there were a broadcasting studio, a printing plant and offices of three companies serving the area. In addition to this, a cafeteria and shops needed to be included.

The programmatic idea responded to the necessity of location of

these spaces in order for them to function properly. The architects first idea was to sort the offices, production areas and studio spaces around the function component which allowed them to share the common facilities and work all together. Each of these spaces were conceived as units by Tange. This idea allowed him to stock them up in an apparent vertical arrangement to the overall.

The cafeteria and shops were considered the public life program which needed to be located in the ground level in order to connect them with the city. Moreover, the printing plant required constant contact with the street for function purposes that included loading and transportation through ramps. Studios were designed as sealed boxes and located in upper levels so the interference with the city was minimized. The offices were stacked in the middle of the building and wrapped with balconies that provided optimal natural lighting.

Once that the functionality of the spaces was sorted out, Tange grouped and loaded all services spaces such as elevators, stairs, pipes, equipment rooms and bathrooms, into the structure of the building. This consisted of sixteen concrete cylindrical towers with an identical five meter diameter that served the building and carried all the systems in order to make it work.

The containers were conceived as elements that could work independent from the structure. This division between "serve" and "being served" recalls to Louis Khan's designs in which a huge service structure will serve open floor plans. In The Yamanashi Press and Broadcasting Center, the concrete towers filled with services serve the slabs in which the broadcasting and offices can be served and work as their were designed.

What made Tange's design part ways with Kahn's theory was the idea of expansion. Not only the physical expansion of the building, but also the possibility of growth of the companies that inhabited it. As the broadcasting firms were small, the architect predicted that they would eventually become larger and would need more space. What it can be argued about this statement it is that the broadcasting firm would eventually become obsolete as technology advances. So why create a building based on the need to grow when there was no way of predicting that this could happen?

In addition to the idea of expansion, Tange took some architectural decisions that emphasized the theory. The units that were stacked and filled the in between of the building, had some voids left. The spaces were potentials ones to house the future expansions. Not only the units could grow, also the structure was meant to expand. All of the towers ended at different heights in the air implying the capacity of infinite growth. Moreover, some of the beams joints were left on purpose implying that more containers can be added if needed and that eventually this system will grow and take over the whole town.
The project was designed as part of the urban life in concordance with the metabolist theory of a city. As Kenzo Tange stated, "This is a proposal for both a single building and for urban design. The structural elements were the vertical streets of a city, and the horizontal spaces connecting them are like the buildings along the streets in a city"

The Yamanashi Press and Broadcasting Center resulted in a building that responded to the utopia of an idea about growth and expansion but in practice had the limitations of a program that needed to be located and established in specific areas in order to work completely. Tange's will and dream of expanding the units and the structure had an attempt and even some offices grew in size. But the voids left had a limit, the structure had it also and the beams joints were not able to take in more weight. So up to which point the architects speech and description of what the building was supposed to be actually was materialized and did not stay in the utopia of a movement that could not succeed?

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project: **Monument of Memory** _ studio: Infrastructural Geography _ instructor: Juan Herreros _ teaching assistant: Jesse McCormick _ research developed with: Guillermo Hevia Garcia and Alex Hudtwalcker
_ term: **Spring 2020** _ sequence: Advanced Architecture Studio _ program: Master of Science in Advanced Architectural Design _ program area: Architecture _ Graduate School of Architecture Planning and Preservation _ Columbia University in the city of New York // **left page** _ descriptive text // **right page** _ exported frame by frame sequence from presentation video at 2,8 frames per second _ content assembled and edited in Adobe After Effects _ content: assembled of images and videos extracted from the Internet + model images extracted from rhinoceros 3D and edited in Adobe Photoshop and Illustrator •

Monument of Memory

Advanced Studio | Spring 2020
Infrastructural Geography | led by Juan Herreros
t.a. Jesse McCormick
research developed with Guillermo Hevia Garcia and Alex Hudtwalcker

Postindustrial territorial archive in the Empty Spain

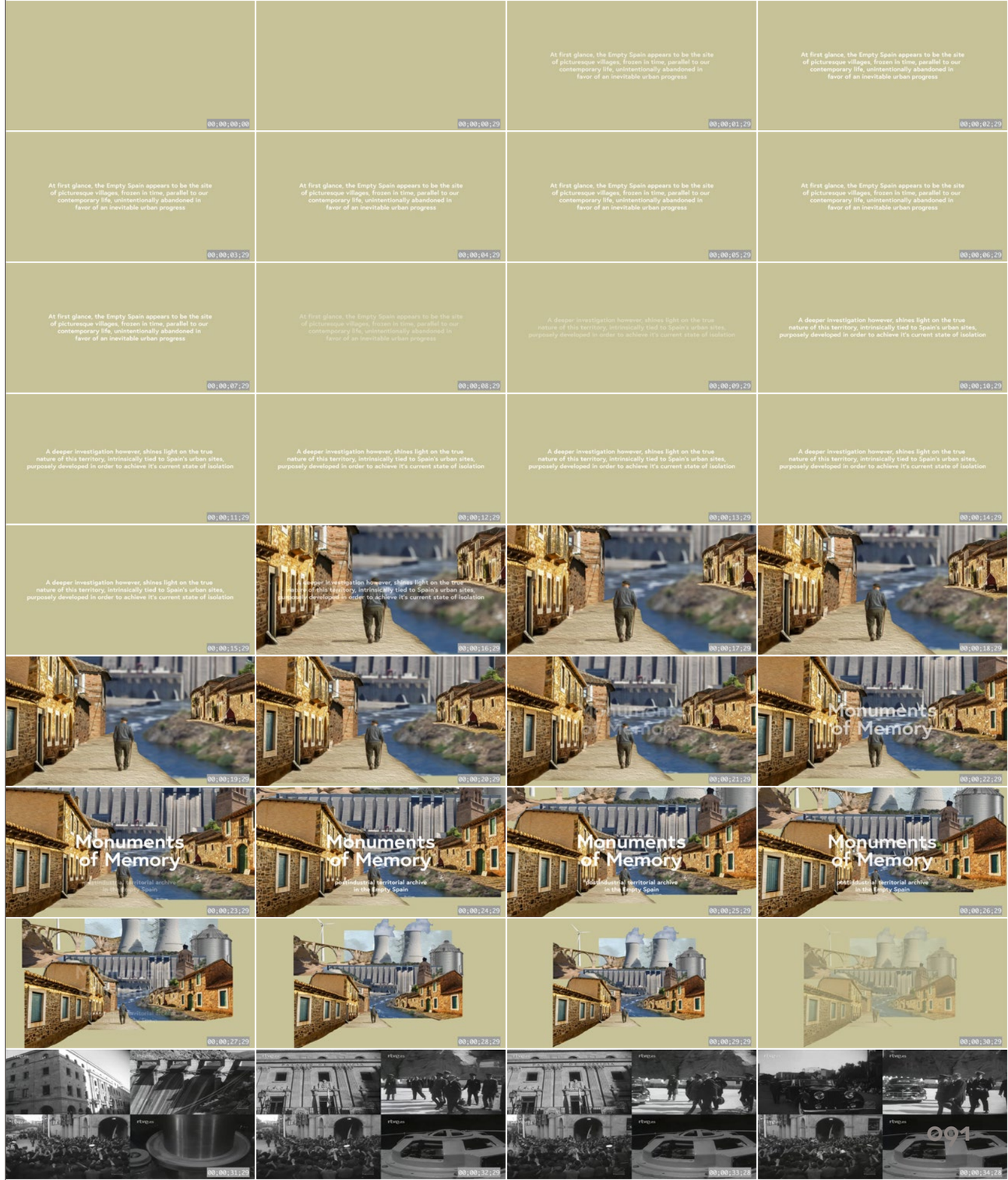
At first glance, the Empty Spain appears to be the site of picturesque villages, frozen in time, parallel to our contemporary life, unintentionally abandoned in favor of an inevitable urban progress.

A deeper investigation however, shines light on the true nature of this territory, intrinsically tied to Spain's urban sites, purposely developed in order to achieve its current state of isolation.

Decreasing rural demographics has been the Spanish normal since the second half of the 20th century. This migratory movement divided the nation into two distinct territories; urban centers, Spain's performatic stage, and rural spreads, a physical and symbolical Back-House. This division that has been marked by the contentious relationships between memory and modernity, density and vacancy, isolation and unity, symbols and materiality.

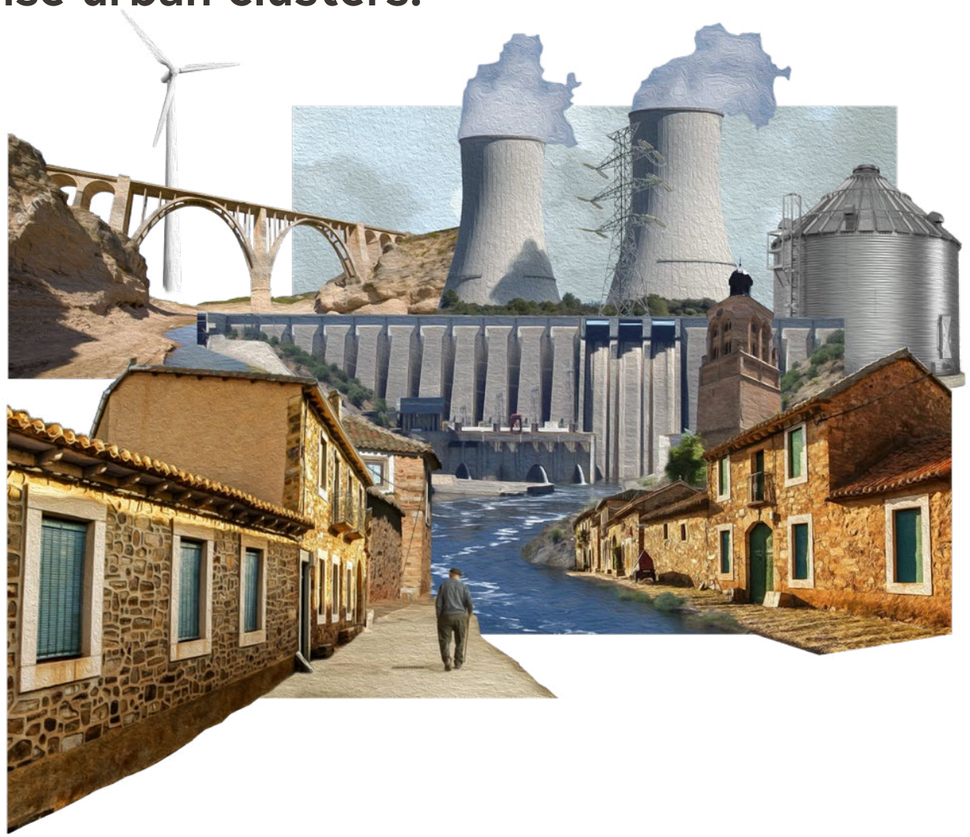
The true composition of this back house is much more complex than it appears to be.

A repetitive territory molded and developed to serve Madrid and a handful of

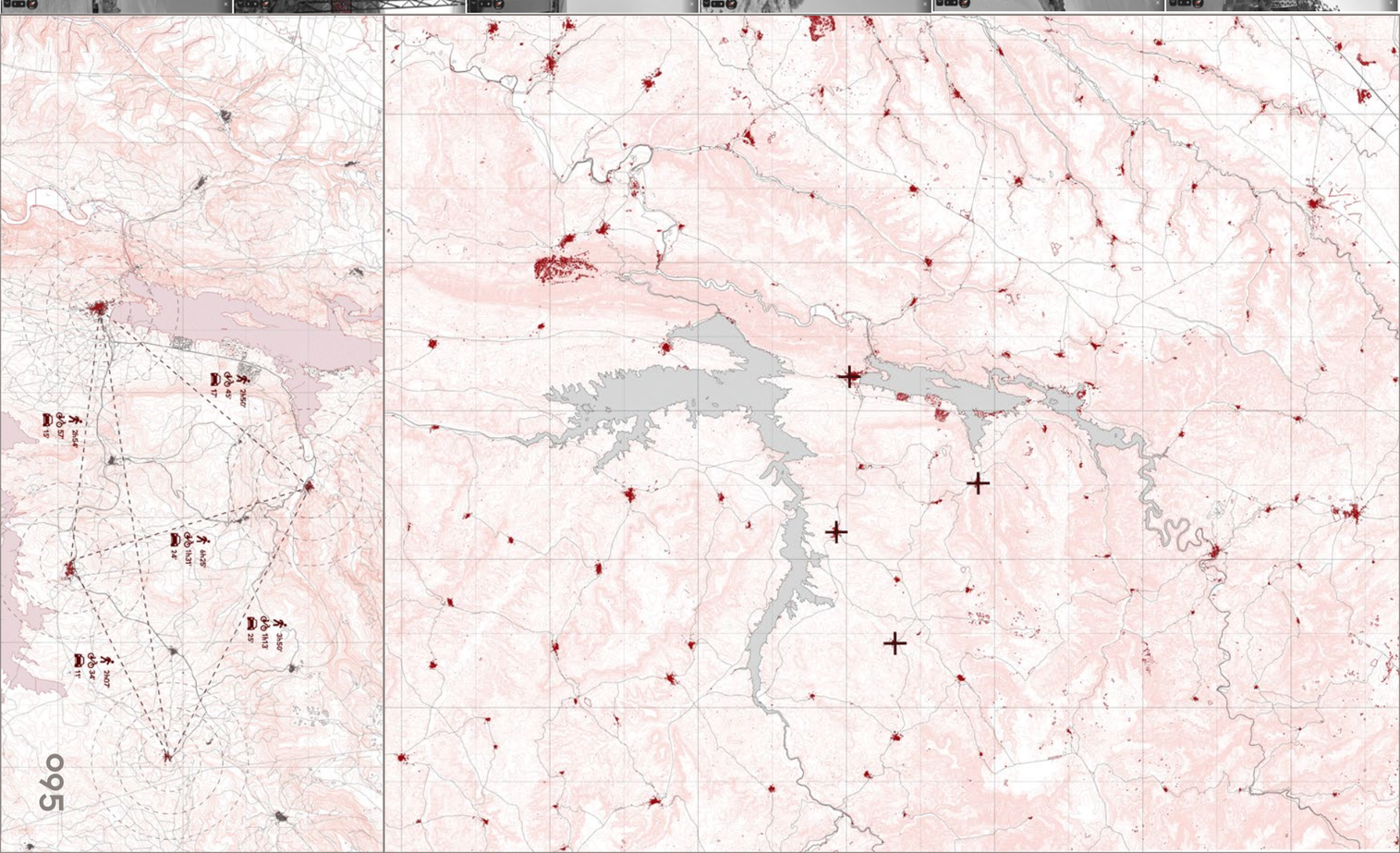


project: **Monument of Memory** _ studio: Infrastructural Geography _ instructor: Juan Herreros _ teaching assistant: Jesse McCormick _ research developed with: Guillermo Hevia Garcia and Alex Hudtwalcker
_ term: **Spring 2020** _ sequence: Advanced Architecture Studio _ program: Master of Science in Advanced Architectural Design _ program area: Architecture _ Graduate School of Architecture Planning and Preservation _ Columbia University in the city of New York // **left page** _ concept collage _ images extracted from the Internet, edited and assembled in Adobe Photoshop // **right page** _ exported frame by frame sequence from presentation video at 2,8 frames per second _ content assembled and edited in Adobe After Effects _ content: assemble of images and videos extracted from the Internet + model images extracted from rhinoceros 3D and edited in Adobe Photoshop and Illustrator *

A repetitive rural territory molded and developed to serve Madrid and a handful of dense urban clusters.



project: **Monument of Memory** _ studio: Infrastructural Geography _ instructor: Juan Herreros _ teaching assistant: Jesse McCormick _ research developed with: Guillermo Hevia Garcia and Alex Hudtwalcker _ term: **Spring 2020** _ sequence: Advanced Architecture Studio _ program: Master of Science in Advanced Architectural Design _ program area: Architecture _ Graduate School of Architecture Planning and Preservation _ Columbia University in the city of New York // **left page** _ street view photographs of structures distributed in the territory extracted from Google Street View and edited in Adobe Photoshop // **right page** _ site and area map _ modeled in Autodesk AutoCad and edited in Adobe Illustrator •



dense urban clusters. The scattered nature of villages spread throughout this landscape provided the ideal conditions for the implementation of the large infrastructural equipment such as power plants, dams, solar field and reservoirs, all deemed essential for urban development.

Substituting existing resources, religion and traditions that acted in the past, these infrastructures are the current developers of the surrounding land and population. Displacing soil and capital in order to mobilize actors to perpetuate the continuous centralization of the country's cultural, economic and political systems

A centralizing process that has been historically efficient in gathering not only the physical artifacts produced throughout the territory and archiving them in the cities museum and libraries, but perhaps even more important, of centralizing memory and identity. Cities were transformed in the countries archive.

Architecture however, has proven to be the one kind of artifact immune to this process. Throughout a landscape that had its literature, artwork, and artifacts removed, the built environment remains as relics of the local memory. Churches, monasteries, bullrings and the aforementioned infrastructures replace museums, theaters and libraries. Complementing cities as archives of the gathered memories, here the landscape itself is the archive of the territories history and symbols of the current isolation.

From the architectures found, Bullring stands at the confluence of centralization, identity, memory, and displacement, representing and consolidating the shifting cultural and political concerns of the current Spanish landscape. More than any other architecture mentioned previously, this typology is abundant throughout the territory, differing from any other as the one large scale infrastructure located within the village's boundaries.

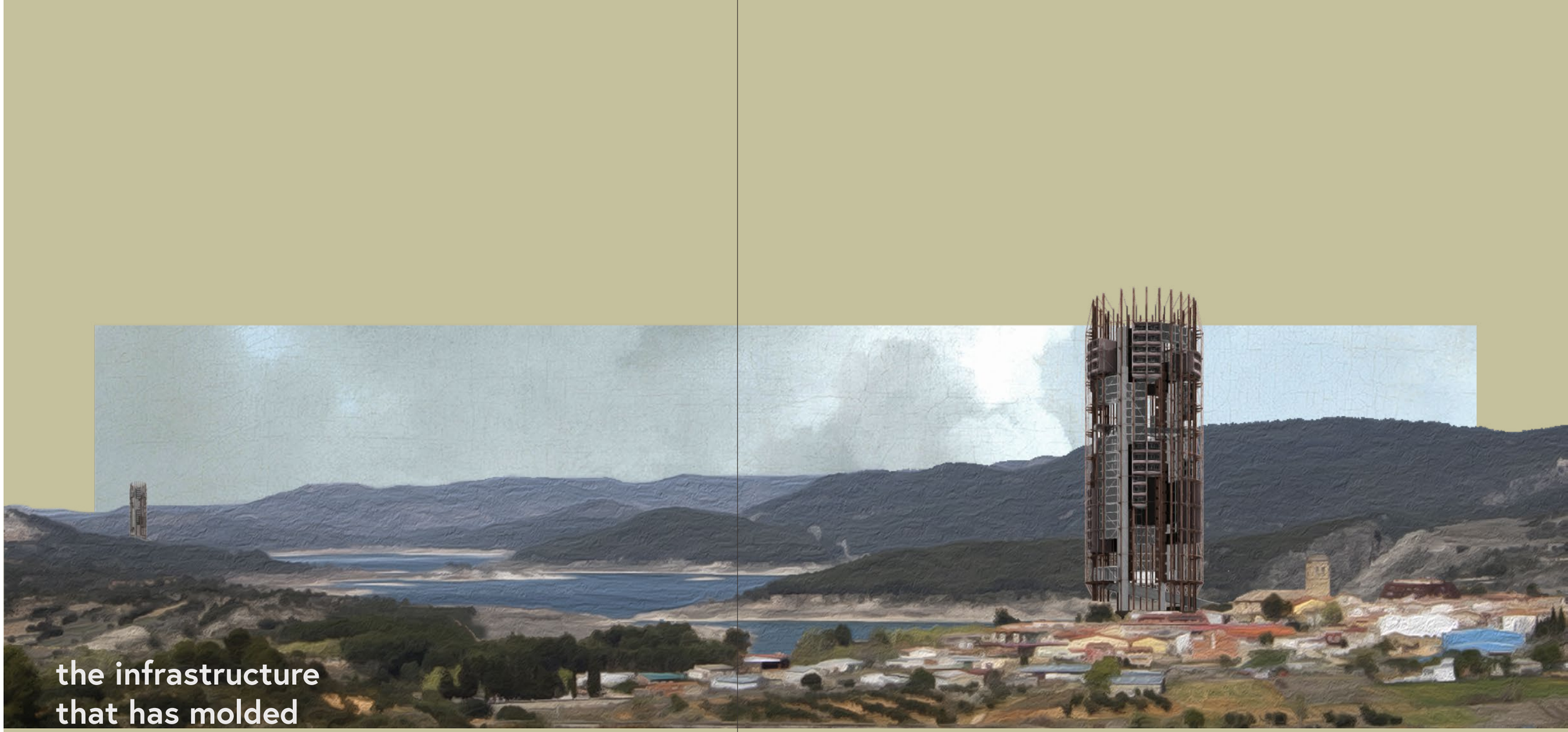
The necessity for creating a new paradigm within the relationship of these two complementary territories is evident and urgent.

To do so, a fragment of this typical Spanish back of house is selected and studied. Located one hour and a half drive east from Madrid, this area has a composition as typical and common as the fragment itself. Along the Tagus river, in the region of Guadalajara, the area contains the reservoirs of Buendía and Entrepeñas the Trillo Nuclear Power Plant (all three of which are fundamental for generating resources in far urban centers) as well as hundreds of villages of small density.

From this constellation of generic communities, a genericness which would

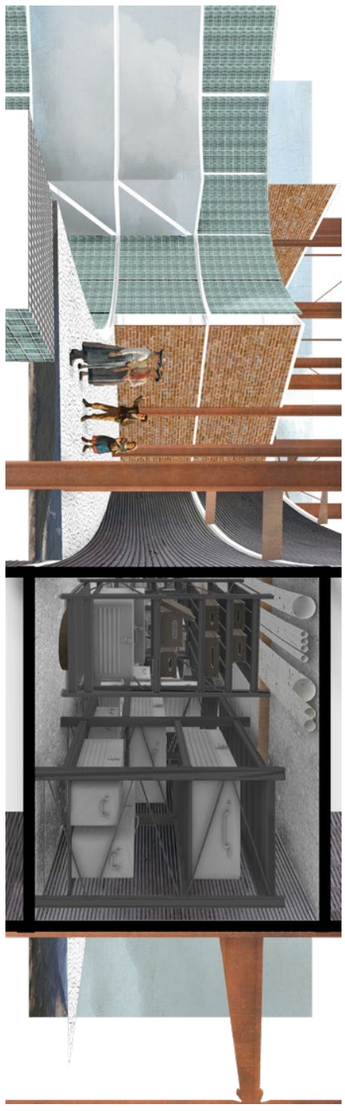
project: **Monument of Memory** _ studio: Infrastructural Geography _ instructor: Juan Herreros _ teaching assistant: _ term: **Spring 2020** _ sequence: Advanced Architecture Studio _ program: Master of Science in Advanced Architectural Design _ program area: Architecture _ Graduate School of Architecture Planning and Preservation _ Columbia University in the city of New York // **left page** _ descriptive text // **right page** _ exported frame by frame sequence from presentation video at 2,8 frames per second _ content assembled and edited in Adobe After Effects _ content: assemble of images and videos extracted from the Internet + model images extracted from rhinoceros 3D and edited in Adobe Photoshop and Illustrator *

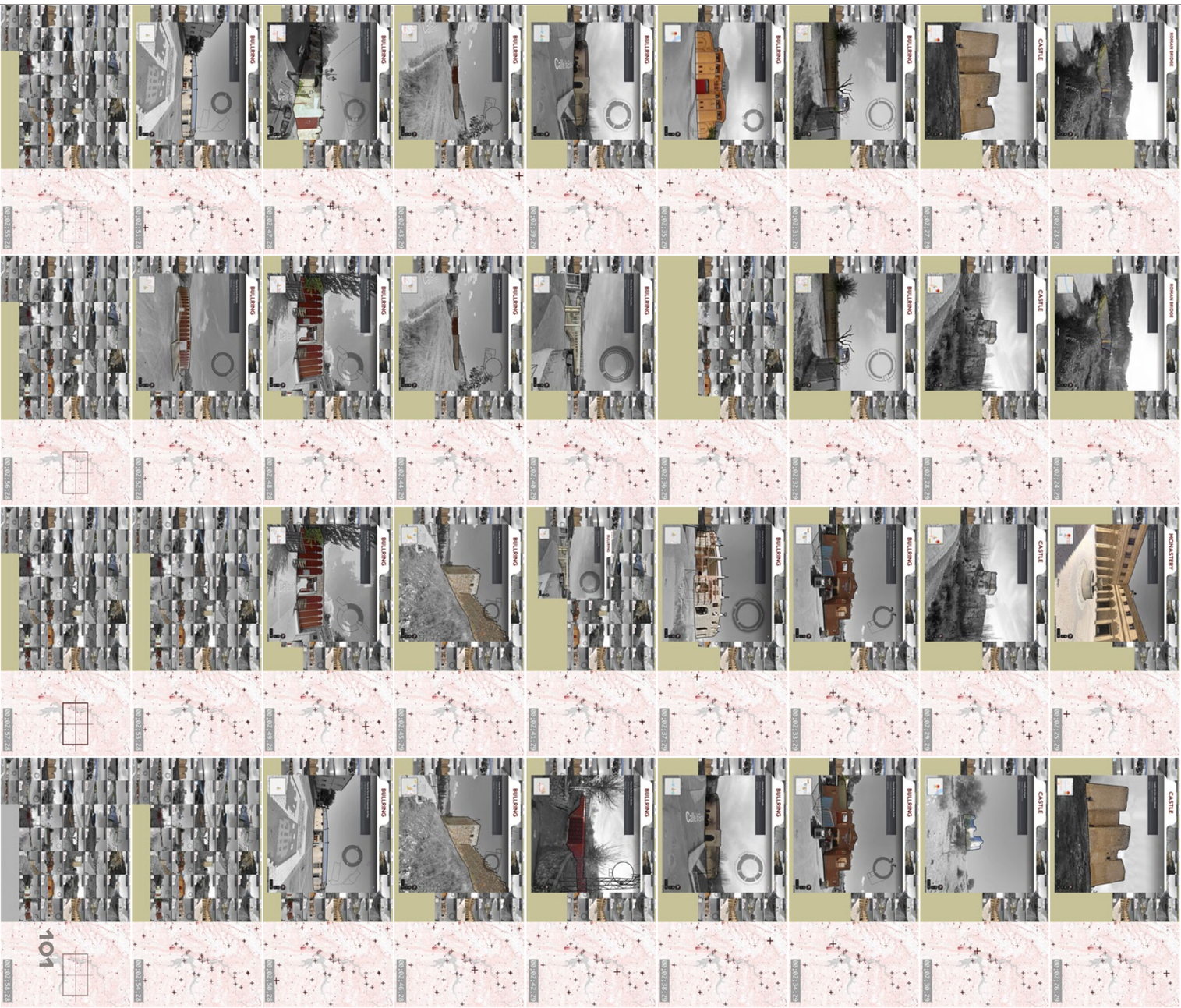
project: **Monument of Memory** _ studio: Infrastructural Geography _ instructor: Juan Herreros _ teaching assistant: Jesse McCormick _ research developed with: Guillermo Hevia Garcia and Alex Hudtwalcker
_ term: **Spring 2020** _ sequence: Advanced Architecture Studio _ program: Master of Science in Architecture _ Graduate School of Architecture Planning and Preservation _ Columbia University in the city of New York // **spread** _ landscape perspective image_ infrastructures distributed in the territory _ model images extracted from rhinoceros 3D and edited in Adobe Photoshop and Illustrator •



the infrastructure
that has molded
these communities
for decades is finally
placed within its
limits

project: **Monument of Memory** _ studio: Infrastructural Geography _ instructor: Juan Herreros _ teaching assistant: Jesse McCormick _ research developed with: Guillermo Hevia Garcia and Alex Hudtwalcker _ term: **Spring 2020** _ sequence: Advanced Architecture Studio _ program: Master of Science in Advanced Architectural Design _ program area: Architecture _ Graduate School of Architecture Planning and Preservation _ Columbia University in the city of New York // **left page** _archive perspective image_ view of center void + section of archival room _ model images extracted from rhinoceros 3D and edited in Adobe Photoshop and Illustrator // **right page** _ exported frame by frame sequence from presentation video at 2,8 frames per second _ content assembled and edited in Adobe After Effects _ content: assemble of images and videos extracted from the Internet + model images extracted from rhinoceros 3D and edited in Adobe Photoshop and Illustrator •





allow for replication of this proposal in numerous other locations in the area and across the Spanish territory, a network is created containing 4 villages located within a 10 km radius, of similar geographical and population sizes. Sacedón, Pareja, Alcocer and Salmoroncillo are brought together in order to function as a single economic unit capable of mobilizing political, social and economic actors in order to disrupt the pattern of centralization.

In each of the villages, the infrastructure that has molded these communities for decades is finally placed within its limits, physically connecting the village, the infrastructure and their inherent relationship. Drawing from a long history of architecture that is simultaneously utopic and realistic, ruins of the past and of the future, symbolic and physical, a tower is erected within each village's bullring.

The tower appropriates material and materiality, dimension, aesthetic and tradition of what has become the local architectural heritage and gathers them into a singular built artifact. It's monumentality allows not only for archiving the landscape through visual connections in a predominantly flat terrain through an unparalleled view point, but is itself an archive of the region.

Held within are artifacts that reconstitute the territories past and future history. Letters, objects, clothes, provenances, conveyances, tools, all that builds local tradition is places inside this monumental archive, for which scale is purposely disproportionate allowing for a dystopic accumulation of material. Storage in the tower is understood as an institution for archival hoarding,

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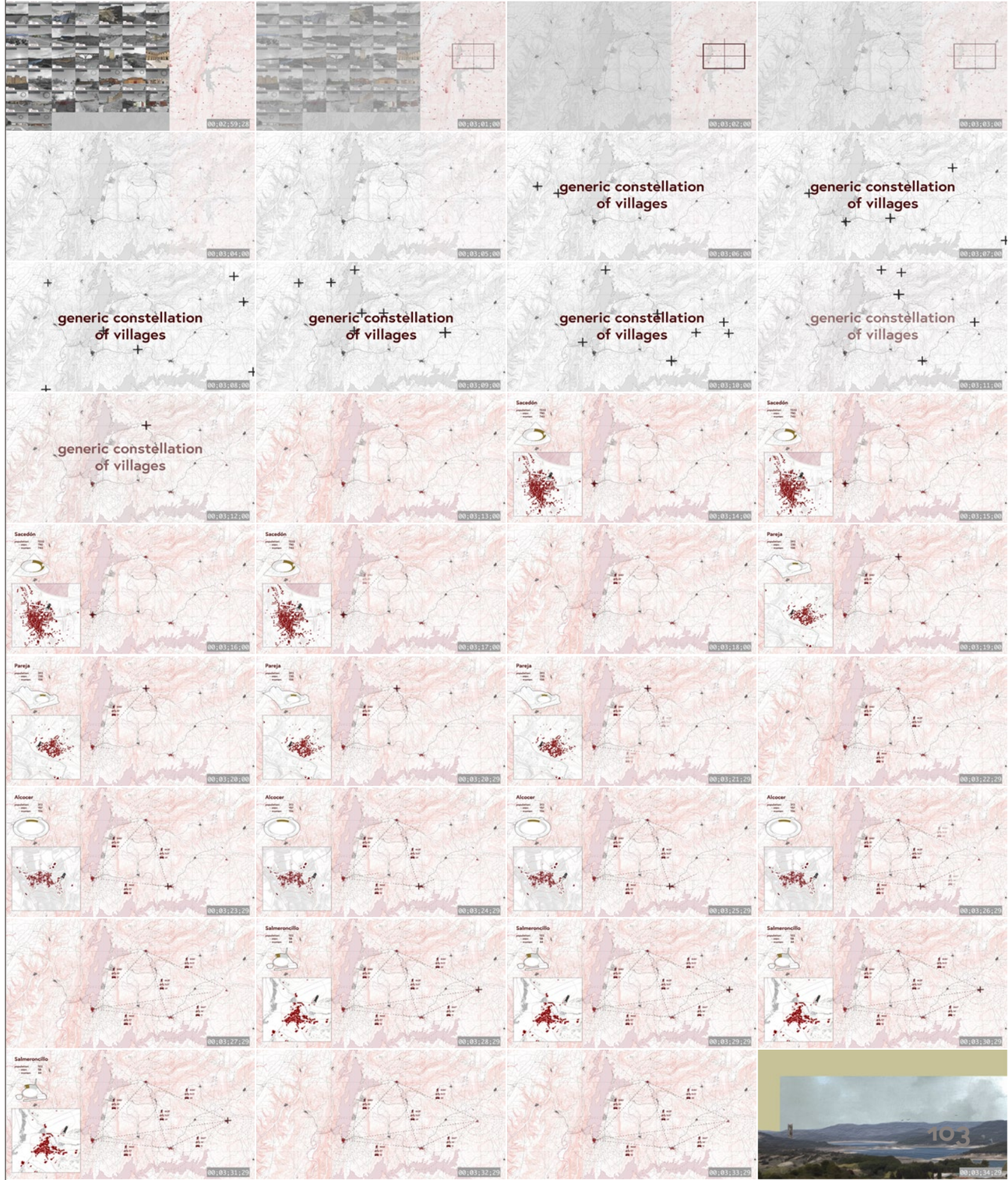
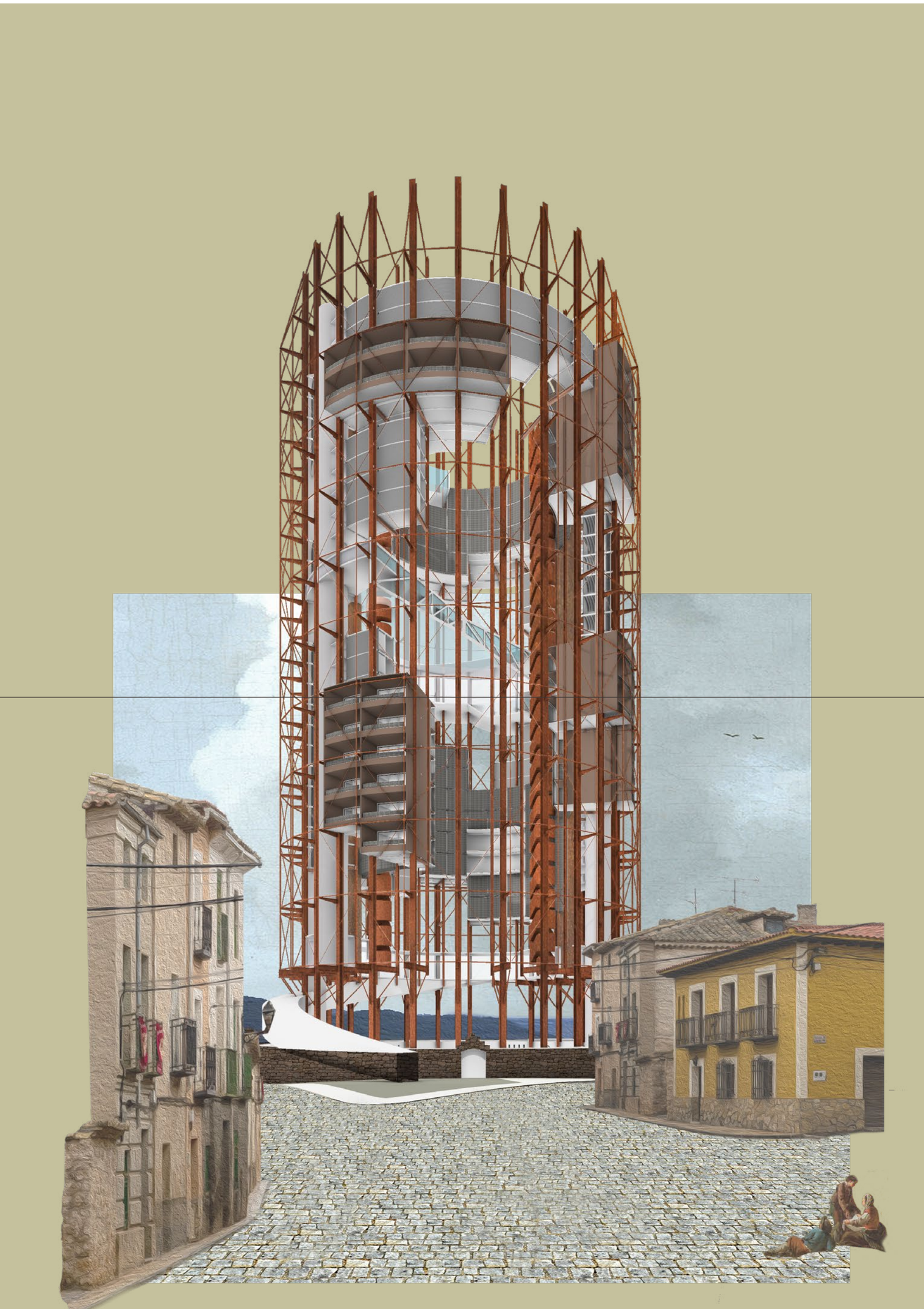
_ term: **Spring 2020** _ sequence: Advanced Architecture Studio _ program: Master of Science in Advanced Architectural Design _ program area: Architecture _ Graduate School of Architecture Planning and Preservation _ Columbia University in the city of New York // **left page** _descriptive text + bullring perspective image _ bullring benches replaced with support programs for pools and leisure _ model images extracted from rhinoceros 3D and edited in Adobe Photoshop and Illustrator // **right page** _ exported frame by frame sequence from presentation video at 2,8 frames per second _ content assembled and edited in Adobe After Effects _ content: assemble of images and videos extracted from the Internet + model images extracted from rhinoceros 3D and edited in Adobe Photoshop and Illustrator •



project: **Monument of Memory** _ studio: Infrastructural Geography _ instructor: Juan Herreros _ teaching assistant: Jesse McCormick _ research developed with: Guillermo Hevia Garcia and Alex Hudtwalcker _ term: **Spring 2020** _ sequence: Advanced Architecture Studio _ program: Master of Science in Advanced Architectural Design _ program area: Architecture _ Graduate School of Architecture Planning and Preservation _ Columbia University in the city of New York // **spread** _ external perspective image_ ground level external render of new structure placed above existing bullring _ model images extracted from rhinoceros 3D and edited in Adobe Photoshop and Illustrator •



enabled by automation, from which the material placed within becomes legitimized through the physical institution of the architecture itself.

Blended amongst the archival spaces along the tower, a diverse range of programs are distributed within the rigid metallic structure that allows for the architecture's verticality.

Pools are placed along the tower and democratized to the local population creating infrastructures for leisure through water. A typology of leisure that in the region, has been historically exclusive to urban weekenders. Within the central void, Sun, shadow, water and humidity entangle to create a microclimate. Both passive and active, this microclimate overflows to the surrounding village, an antagonist to the effects and legacy of the 50'clock sun, as well as becoming a phenomenological instrument towards the tower's users.

In the ground level, the main pool intervenes within the bullring consolidating a political and social shift in Spanish traditions. All but two boundaries that historically organized this building are demolished. The outer facade, made out of stone and mortar and the inner ring, the circle that was once used as the spaces where entertainment was observed at a distance. In this space, pools bring the local village into the area, inverting the existing spacial logic turning the center ring into a space of use and the perimeter as complimentary programs

Lodging is also incorporated into the tower following the 20th century Span-

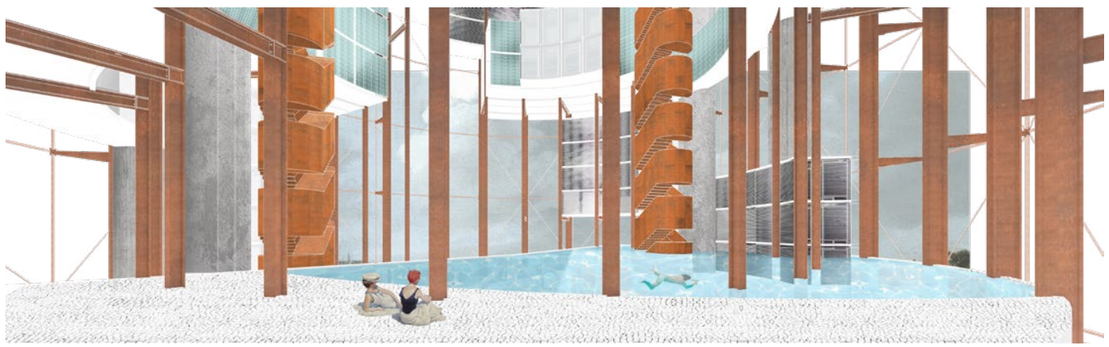
project: **Monument of Memory** _ studio: Infrastructural Geography _ instructor: Juan Herreros _ teaching assistant: Jesse McCormick _ research developed with: Guillermo Hevia Garcia and Alex Hudtwalcker
_ term: **Spring 2020** _ sequence: Advanced Architecture Studio _ program: Master of Science in Advanced Architectural Design _ program area: Architecture _ Graduate School of Architecture Planning and Preservation _ Columbia University in the city of New York // **left page** _ descriptive text + bullring perspective image_ center void with ground level pool _ model images extracted from rhinoceros 3D and edited in Adobe Photoshop and Illustrator // **right page** _ exported frame by frame sequence from presentation video at 2,8 frames per second _ content assembled and edited in Adobe After Effects _ content: assemble of images and videos extracted from the internet + model images extracted from rhinoceros 3D and edited in Adobe Photoshop and Illustrator •

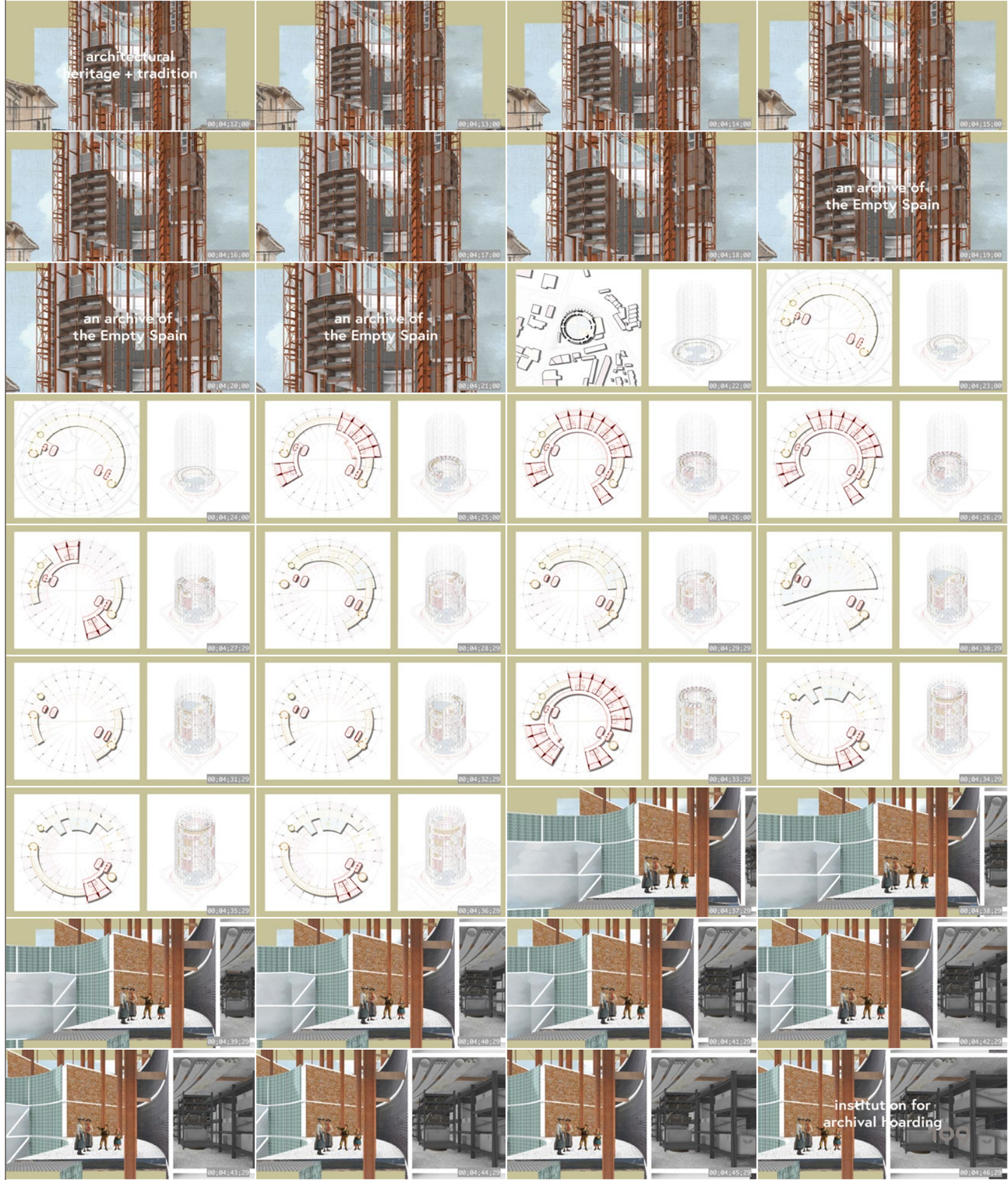
project: **Monument of Memory** _ studio: Infrastructural Geography _ instructor: Juan Herreros _ teaching assistant: Jesse McCormick _ research developed with: Guillermo Hevia Garcia and Alex Hudtwalcker
_ term: **Spring 2020** _ sequence: Advanced Architecture Studio _ program: Master of Science in Advanced Architectural Design _ program area: Architecture _ Graduate School of Architecture Planning and Preservation _ Columbia University in the city of New York // **left page** _descriptive text + upper level perspective image_ pools distributed along the center void _ model images extracted from rhinoceros 3D and edited in Adobe Photoshop and Illustrator // **right page** _ exported frame by frame sequence from presentation video at 2,8 frames per second _ content assembled and edited in Adobe After Effects
_ content: assemble of images and videos extracted from the Internet + model images extracted from rhinoceros 3D and edited in Adobe Photoshop and Illustrator •

ish government led program of the paradores that decentralized tourism through high-quality services and restaurants in previously isolated locations. This program establishes a direct mutualistic relation with local entrepreneurs from which both entities feed into each other, supplying a necessary infrastructure for a repopulating area.

In the physical intersections of these distinct programs, sites for exhibition of the archive held in the tower act as pop up museums of diverse artifacts. Circulating material within the network of villages allows for frequent exhibitions of local history through common objects

This menagerie of programs, actors, scales and aesthetics function in unison in order to reveal the true composition of this currently isolated territory. Separation between people, infrastructure and memory is rendered impossible. The proposal is simultaneously dystopic and utopic, ruin of the past and future, postindustrial monument of memory.





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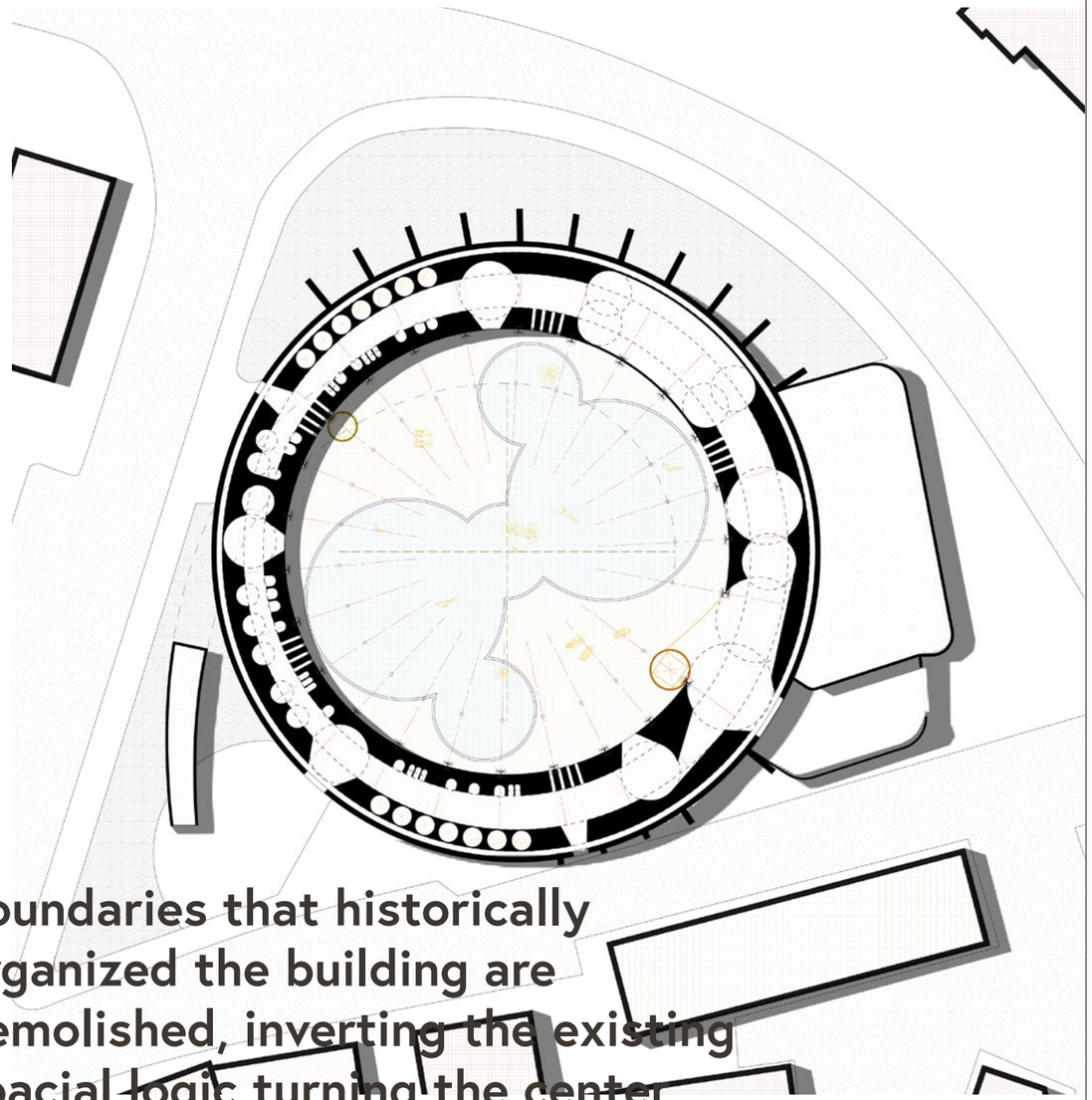
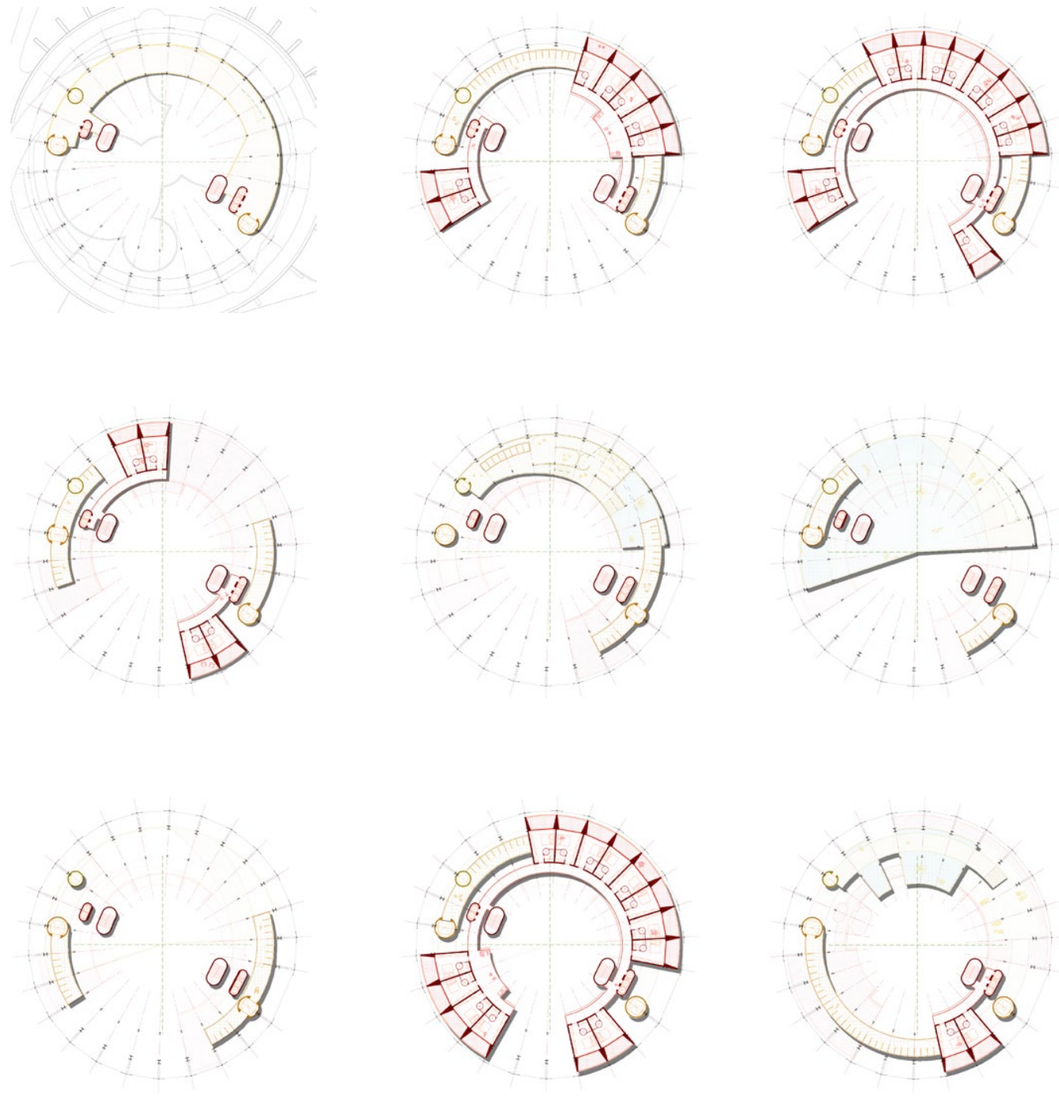


boundaries that historically organized the building are demolished, inverting the existing spacial logic turning the center ring into a space of use and the perimeter into its service areas



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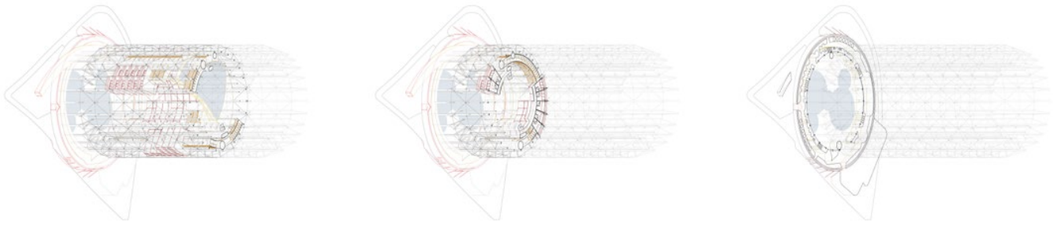

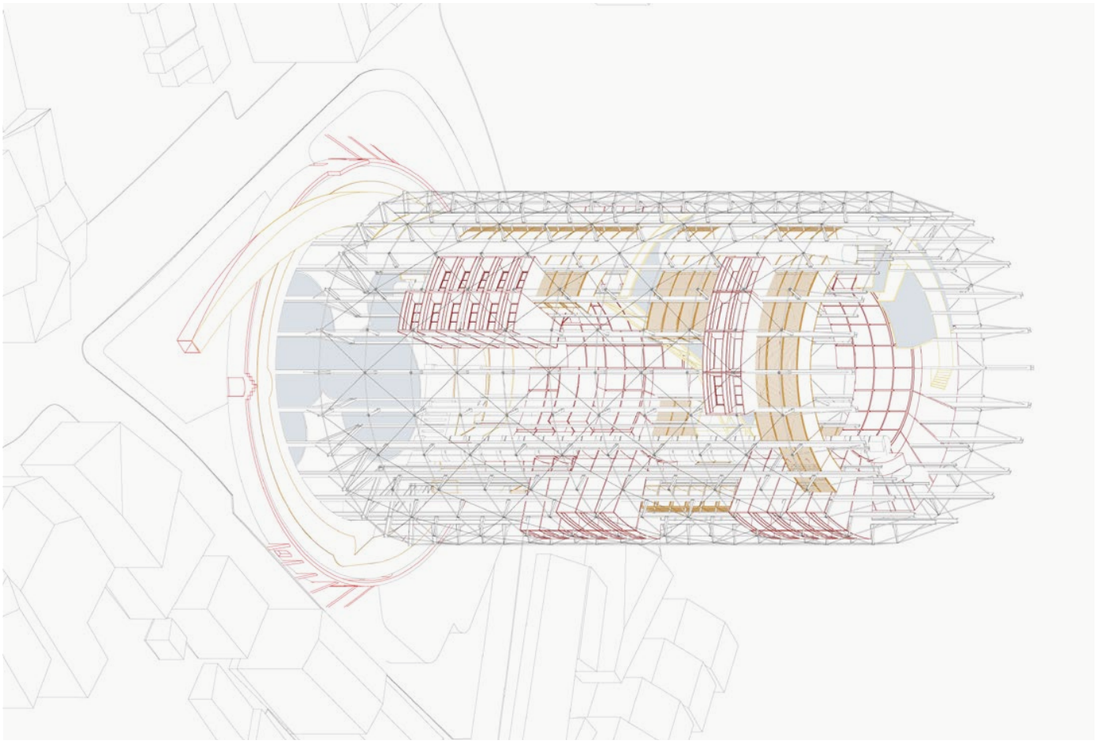

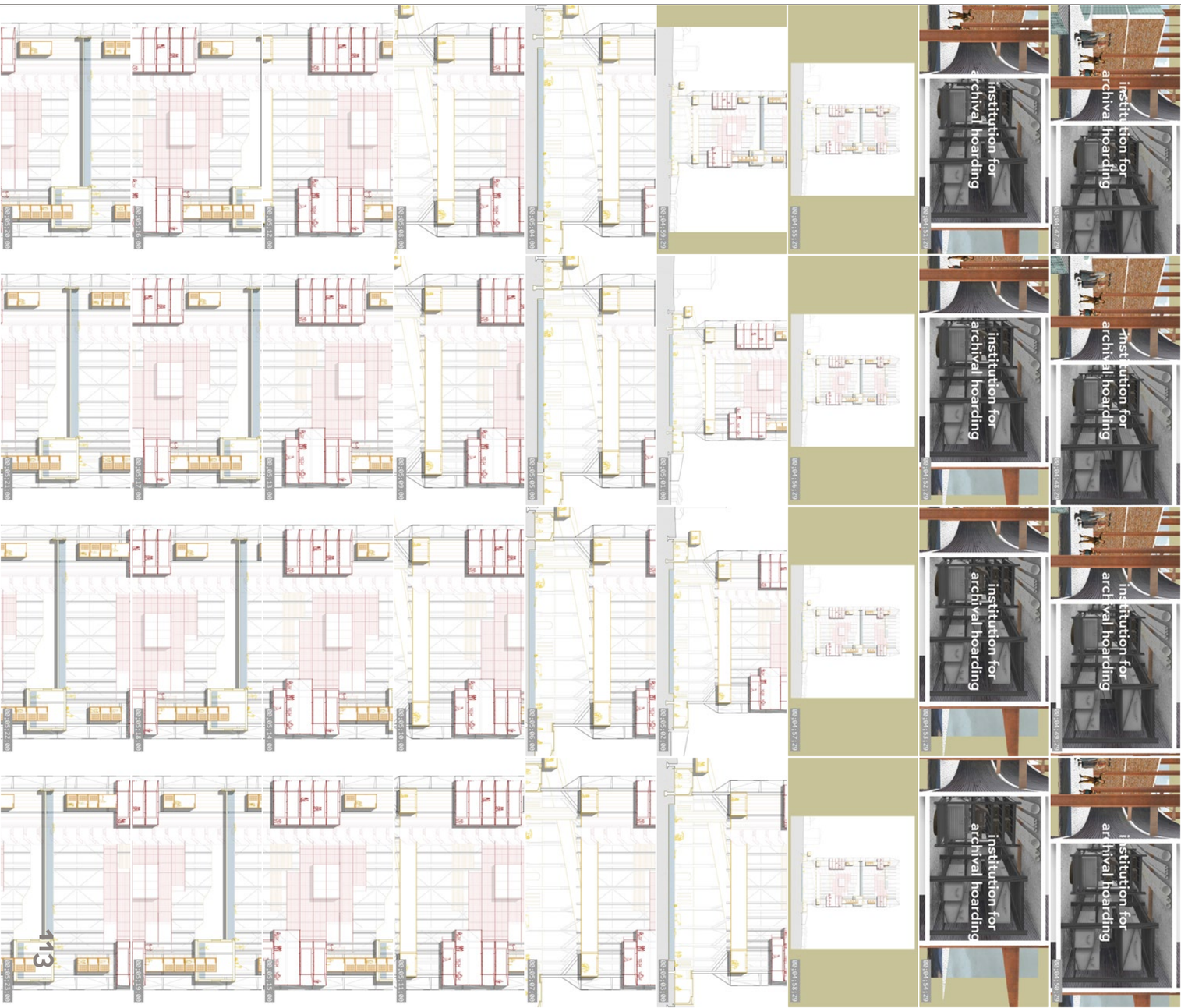

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_ term: **Spring 2020** _ sequence: Advanced Architecture Studio _ program area: Architecture _ Graduate School of Architecture Planning and Preservation _ Columbia University in the city of New York // **spread** _ interior perspective image_ rendered image section of terrace, archive and hotel _ model images extracted from rhinoceros 3D and edited in Adobe Photoshop and Illustrator •

the tower understood as an institution for archival hoarding

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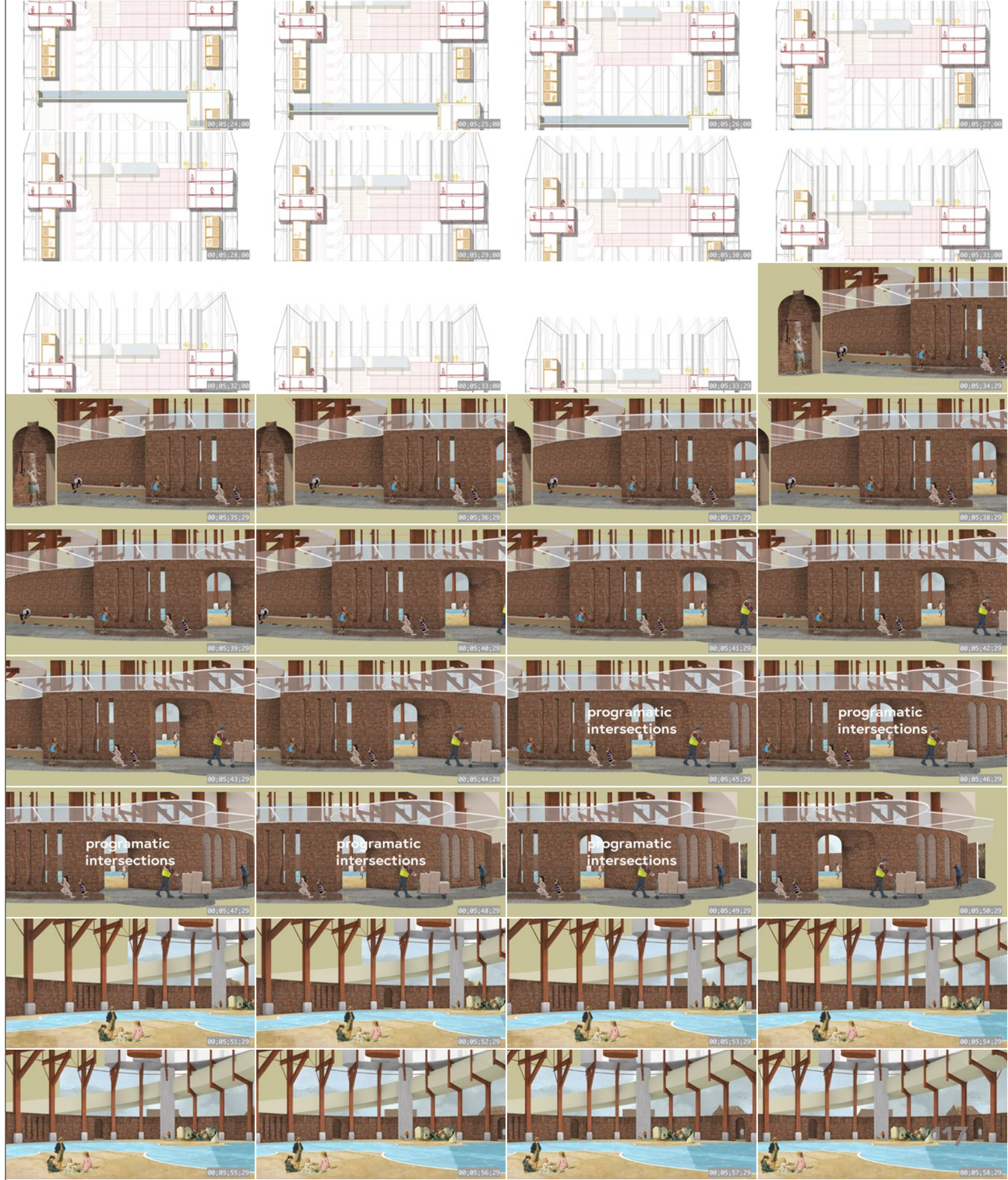
_ term: **Spring 2020** _ sequence: Advanced Architecture Studio _ program: Master of Science in Advanced Architectural Design _ program area: Architecture _ Graduate School of Architecture Planning and Preservation _ Columbia University in the city of New York // **left page** _ section drawing _ model and extracted from rhinoceros 3D and edited in Adobe Photoshop and Illustrator // **right page** _ exported frame by frame sequence from presentation video at 2,8 frames per second _ content assembled and edited in Adobe After Effects _ content: assemble of images and videos extracted from the Internet + model images extracted from rhinoceros 3D and edited in Adobe Photoshop and Illustrator •

the building inserted into the landscape becomes an archive of the territory itself



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_ term: **Spring 2020** _ sequence: Advanced Architecture Studio _ program area: Architecture _ Graduate School of Architecture Planning and Preservation _ Columbia University in the city of New York // **spread** _ exported frame by frame sequence from presentation video at 2,8 frames per second _ content assembled and edited in Adobe After Effects _ content: assemble of images and videos extracted from the Internet + model images extracted from rhinoceros 3D and edited in Adobe Photoshop and Illustrator •

2020 _program: Master of Science in Advanced Architectural Design _program area: Architecture _ Grad-
project: GSAPP Portfolio _ developed by: Frederico G. Castello Branco _ term: June 2019 - May 2020 _p
uate School of Architecture Planning and Preservation _ Columbia University in the city of New York // 13
ork // 132 pages _ cover _ 65 spreads _ back cover _ layout: 8.5 inches x 10 inches _ assembled in Adobe
Indesign // right page _project index •

studio | summer

transcalarities

arguments

studio | fall

visual studies

history & theory

studio | spring

design seminar

visual studies

project: **Materiality of Writing** _ course: Architect Writers _ instructor: Hilary Sample _ term: **Spring 2020** _ sequence: Design Seminar _ program: Master of Science in Advanced Architectural Design _ program area: Architecture _ Graduate School of Architecture Planning and Preservation _ Columbia University in the city of New York // **left page** _ descriptive text // **right page** _ assignment 2 _ reinterpretation of existing book cover _ book cover in mirror paper with geometrical indentes_ developed through Adobe Illustrator, Photoshop and Indesign •

Materiality of Writing

Architect Writers
Spring 2020 | led by Hilary Sample

An open ended investigation on writing within architecture through lectures and assignments that presents different points of views and uses of writing in and around discussions of the built environment.

Four interconnected assignments around a single architect practiotioner who has published or worked in the intersection of writing and architect, are developed by the seminars participates in order to collectively create an archive of materials and documents around the subject.

My investigation is based on architect Jing Liu of brooklyn based SO-IL in order to examine different medias that the architect has published individually or through her practice that use and work around writing as an architectural tool.

Assignment 1 examines five studios syllabi presented in GSAPP over the past five years; Assignment 2 reinterprets the cover of SO-IL's book *solid objective: order, edge, aura*; Assignment 3 present a quote from Jing Liu on housing extracted from the text *Beyond the Four Walls* presented in the book *Home Futures: Living in yesterday's tomorrow*; Assignment 4 investigates writing as an architectural component through the project *Transhistoria*, developed by SO-IL in 2012 for *Stillspotting*, an exhibition curated by the Guggenheim Museum.

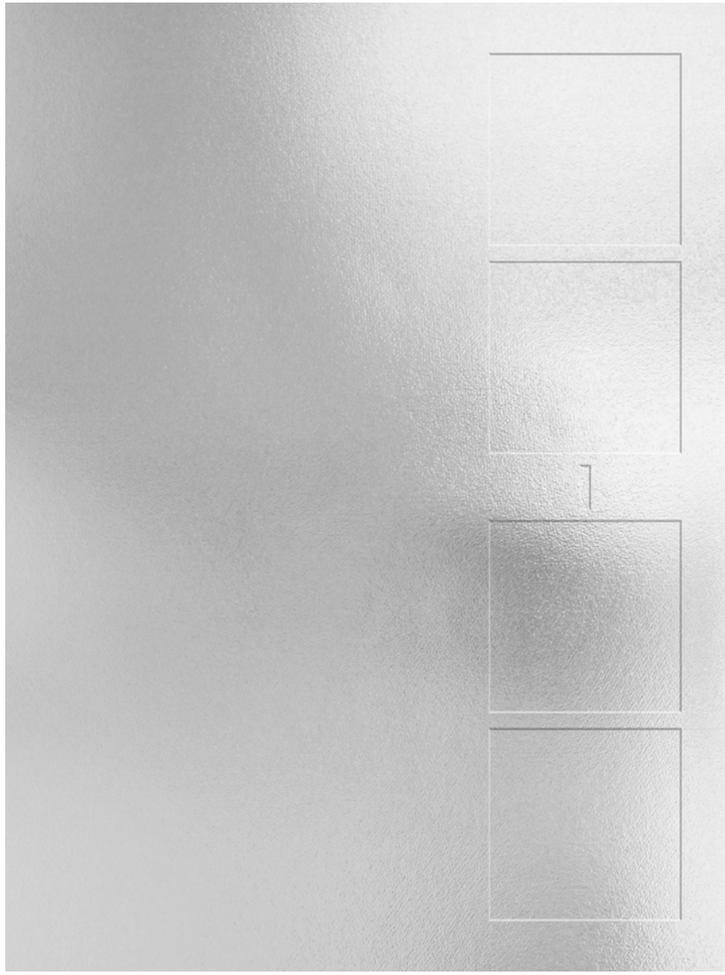
Individually or as a unit, these assignment understand writing as intrinsical to the practice and discussion of architecture

Assignment 2

SO-IL's solid objective: order, edge, aura's cover can be dissected into 3 components. Text at the lower section containing the book's title, publiser and the office's name, a photograph used as background of the project developed by the firm for the Storefront for Art and Architecture in New York City, and a mirror paper overlayed on the background photograph matching the windowpane of an existing building on the upper right corner.

The architecture developed by the firm as portrayed in the book is one that, according to the architects, requires interpretation. Redesigning it's cover, I propose a somewhat obvious representation of the imateriality present in a large number of the firm's projects that allow for these various interpretation. As a study immune to editorial and commercial objectives and interest of the book, this new cover forgoes the image and brand of the office in favor of representing the questions and issues posed by the architecture itself as an independent built artifact.

The same mirror paper that appears timidly in the corner of the original itiration is used as the revised cover. The firm's initials are represented by indented beveled squares separated by a hyphen in the same style of engraved marking.



Assignment 1

In order to expand the courses bibliography, I selected to list and analyze the past five studio syllabi presented by Jing Liu at Columbia's GSAPP. The repetition of the same scope for the production of these texts over the span of five years (2016-2020), provide an insight into two complimentary and important aspects to Jing Liu's career, a punctual and time-specific interest of the architect and an arching thought development that evolves year by year, syllabus by syllabus, introducing new ideas while building upon the previous itiration, where the rupture of sequential logic is a clear reaction to external distrurbance.

• Liu, Jing. Syllabus for Advanced Studio. Graduate School of Architecture Planning and Preservation, Columbia University in the City of New York, New York, Spring 2016

> "Brick is economical; it can be fabricated with local clays, and manipulated easily by hand, without big machinery or specialized skills. It is versatile in its assemblage, creating forms that vary from Louis Kahn's pure geometries to Alvar Aalto's fluid curves. It can be monumental as used by Wang Shu, or ethereal as often applied by Peter Zumthor. Brick is on the streets of many metropolises as informal structures, ingeniously invented by the migrant population, to whom sculpting the earth for our needs is still an immediate skill."

• Liu, Jing. Syllabus for Advanced Studio, How can architecture survive 2016. Graduate School of Architecture Planning and Preservation, Columbia University in the City of New York, New York, Spring 2017

> "Inspired by the sequence of events that followed the AIA president's corroborating response to Donald Trump's proposal of the half trillion infrastructure projects, this studio intends to envision a series of part architectural part infrastructural projects under the assumption that many of these "crumbling" infrastructure might become obsolete in the near future. Think of the high line of the future, and more."

• Liu, Jing. Syllabus for Advanced Studio, The House Today. Graduate School of Architecture Planning and Preservation, Columbia University in the City of New York, New York, Spring 2018

> "The challenge to reimagine domestic space today is to reclaim the house from the economical, and to liberate the home from the technological. It is to contemplates its architecture as a process to knit labor, ownership and identity together. It is to restore the house as social tool for making cities as well as the home as site for making culture. By interrogating the spatial and material relationship between the self and the other, we investigate the possibility of a society formed out of domestic spaces and lives lived productively here."

• Liu, Jing. Syllabus for Advanced Studio, House III. Graduate School of Architecture Planning and Preservation, Columbia University in the City of New York, New York, Spring 2019

> "The House today is conceptually destabilized under the increasing stresses of contemporary society – pressures of economy, identity, belonging, convenience. The challenge to imagine the domestic space of the future, is the challenge to reposition the house in relation to these outside forces. Where previously we investigated the House as a negotiation between an individual's privacy and their community, this iteration will look to the house and its relationship with the realm of production."

• Liu, Jing. Syllabus for Advanced Studio, The Street Studio. Graduate School of Architecture Planning and Preservation, Columbia University in the City of New York, New York, Spring 2020

> "Thus in the streets around the world, along with the apparent as well as latent fault lines of social fabrics and technological apparatuses, profound fractures can be seen everywhere. Domesticity of the disenfranchised confronts civility; camouflage tactics evades state control; the under-represented parades in a rainbow of colors. The old discourse of street design rooted in managerial ethos is fundamentally insufficient. With critical urgency, a new discourse fueled by new polemics needs to be forged in the emergent void."

Assignment 3

Jing Liu of SO-IL | Beyond the four walls

"Many of the problems with our perceptions of the home today can be traced back to its origins in the huis - in its role as storage, a repository, a thing to be traded. This highly static conception of the home has nothing to offer regarding how we should relate with one another, or with the environment around us. While it encourages personal expression through possessions, it does not do so through behavior - and it certainly does not encourage us to try to live uniquely. Other notions of home are more nuanced, more ambiguous, more flexible - but we have lost touch with them. This essay argues that we must try to break free of the house in order to reclaim 'home' as a project that allows us to understand who we really are or who we want to become."

Liu, Jing. "Beyond the Four Wall." Home Futures: Living in Yesterday's Tomorrow, by Eszter Steierhoffer and Justin McGuirk, The Design Museum, 2018, pp. 238–239.

Assignment 4

The Materiality of Writing

Architecture as a profession has more often than not been tied to the act of building, and limited to a restricted set of elements and tools from which design could emerge. In this framework architects are supposed to arrange materials, scales and programs as an equation which results into the built environment. Transhistoria, a project developed by SO-IL's Jing Liu and Florian Idenburg for Stillspotting, a two-year multidisciplinary project organized by the Guggenheim Museum's Architecture and Urban Studies department exhibited in 2012 and curated by David van der Leer, renders an alternative view to architecture's role through the appropriation and use of writing.

In response to how people can "escape, find respite, and make peace with their space in [a] 'city that never sleeps'", commissioned by the organization, SO-IL designed a self-guided walking tour through Jackson Heights. The two-hour excursion through Queen's northwestern neighborhood is punctuated by six different 'stillspots', ranging from sidewalks to roofs, where original pieces by ten writers affiliated to Queens (either current or former residents) commissioned by SO-IL are read by volunteers and discussed. These narrators, poets Roger Sedarat and Maria Terrone, editor and writer Nicole Steinberg, writers Erik Baard, Premilla Nadasen and René Georg Vasicek, chaplain Alan Briceland, and rappers Himanshu Suri and Ashok Kondabolu of Das Racist, offer their personal accounts in order to move away from reports on migration that stress economic or political motives for relocation.

As a design strategy, the project replaces elements such as wood, concrete and plumbing fixtures with writings to accomplish one of architecture most sought after and traditional objectives, to create new experiences in and around our built environment. While this shift might seem radical and completely alien to any conventional understanding of architecture, I would argue that Transhistoria is a project where the architectural process and methodology has been as traditional as most of it's adjacent buildings.

In unison with and arranged around the site (the neighborhood itself), and a single desinged object (a blu and white foam stool that functions both as resting furniture and a marker of the project),writing is understood as an element to be deployed in order to build the architecture. The architect as a liaison between different individuals, a task generally overlooked when in most cases it is the primary function of the profession, organizes and coordinates both site and written piece to achieve the project's goal. Where traditionally the architect might go back and forth with a structural wood supplier or specialist negotiating functions, scale, dimension and details, in this project SO-IL coordinates with each writer to create an assembly of pieces that tell personal stories of individuals and how they achieve "a sense of home and localness in a post-national living situation? And what urged them to leave their old households and countries in the first place?

Through curatorial, editing and negotiating moves, this element and it's assembly is sculpted into Transhistoria. The properties and qualities of these immaterial components are incorporated and presented through the architectural whole. Analogical to the transformation of steel into beams and columns, wood frames into walls and copper pipes into water systems, writing is transformed through its assemblage allowing for the architecture to respond to its proposed scope.

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Solomon R. Guggenheim Museum. (2012, February 21) Guggenheim stillspotting nyc in Jackson Heights, Queens, Presents Cultural and Personal Narratives Recounted by Local Residents [Press Kit]. Recieved from Lauren Van Natten, Associate Director, Media and Public Relations.

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A Priest, Das Racist and the Guggenheim Walk Into a Jackson Heights Coffee Shop: SO-IL Creates Latest stillspotting Installation 2012, Matt Chaban - Observe.com, accessed 1 May 2020, <https://observer.com/2012/04/a-priest-das-racist-and-the-guggenheim-walk-into-a-jackson-heights-coffee-shop-so-il-creates-latest-stillspotting-installation/>

studio | summer
transcalarities
arguments
studio | fall
visual studies
history & theory
studio | spring
design seminar

visual studies

project: **Exploring in Section** _ course: Seminar of Section _ instructor: Marc Tsurumaki _ term: **Spring 2020** _ sequence: Visual Studies _ program: Master of Science in Advanced Architectural Design _ program area: Architecture _ Graduate School of Architecture Planning and Preservation _ Columbia University in the city of New York // **left page** _ descriptive text // **right page** _ fragments of perspective section drawing _ Mont Ras Winery by Vidal-Rahola Arquitectes _model images\ extracted from rhinoceros 3D and edited in Adobe Photoshop and Illustrator •

Exploring in Section

Seminar of Section
Spring 2020 | led by Marc Tsurumaki

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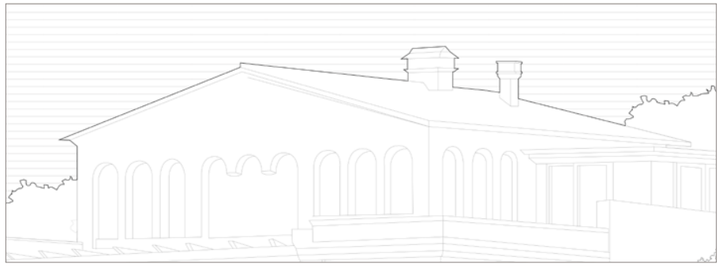

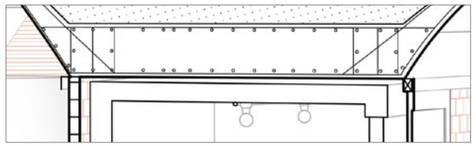

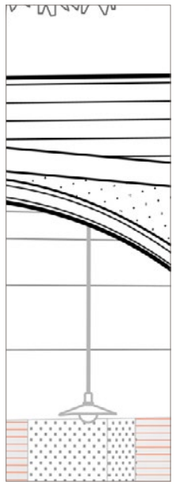

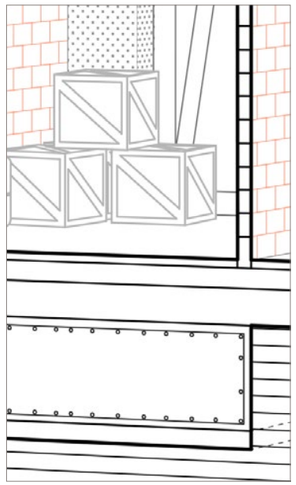

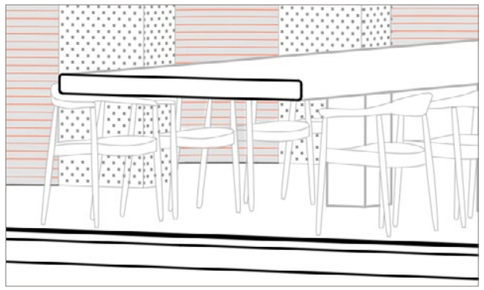

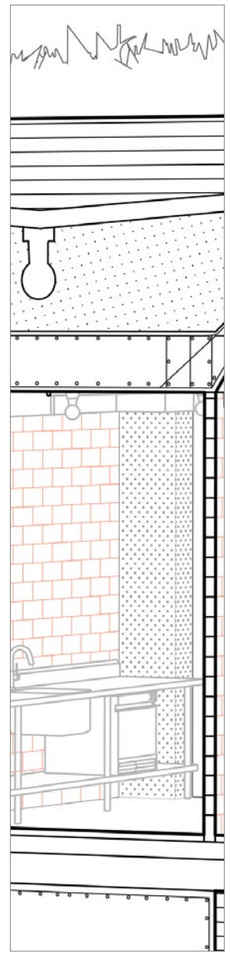

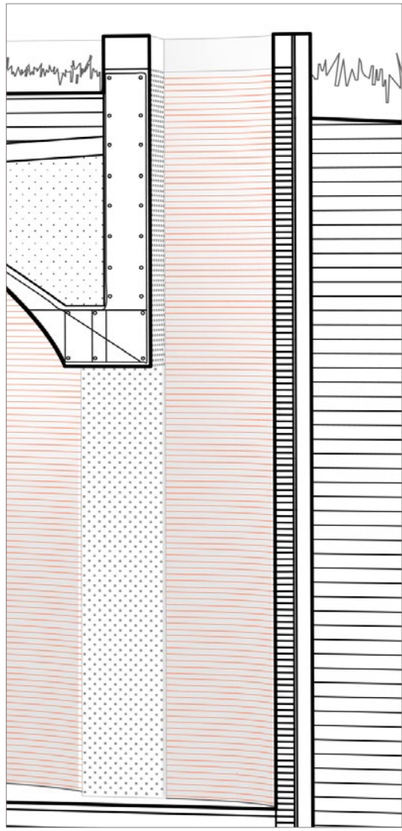

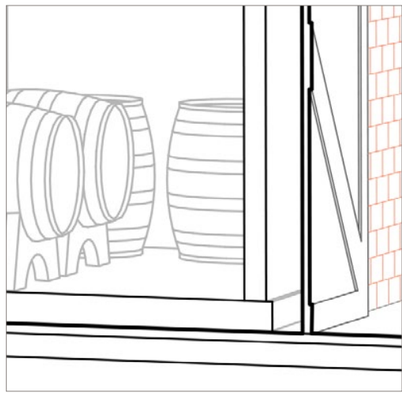

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the section as a tool for both analytical and speculative exploration

project: GSAPP Portfolio _ developed by: Frederico G. 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