

AASHKA AJMERA

SELECTED WORKS OF 2023 - 24

Architecture Portfolio
MS AAD Columbia University GSAPP

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01

INHABITING POST EXTRACTIVIST SCARS

*In-s/citing negotiations between actants in the abandoned ruins of
Widow Jane Mine*

Advanced Studio IV | Summer 2023

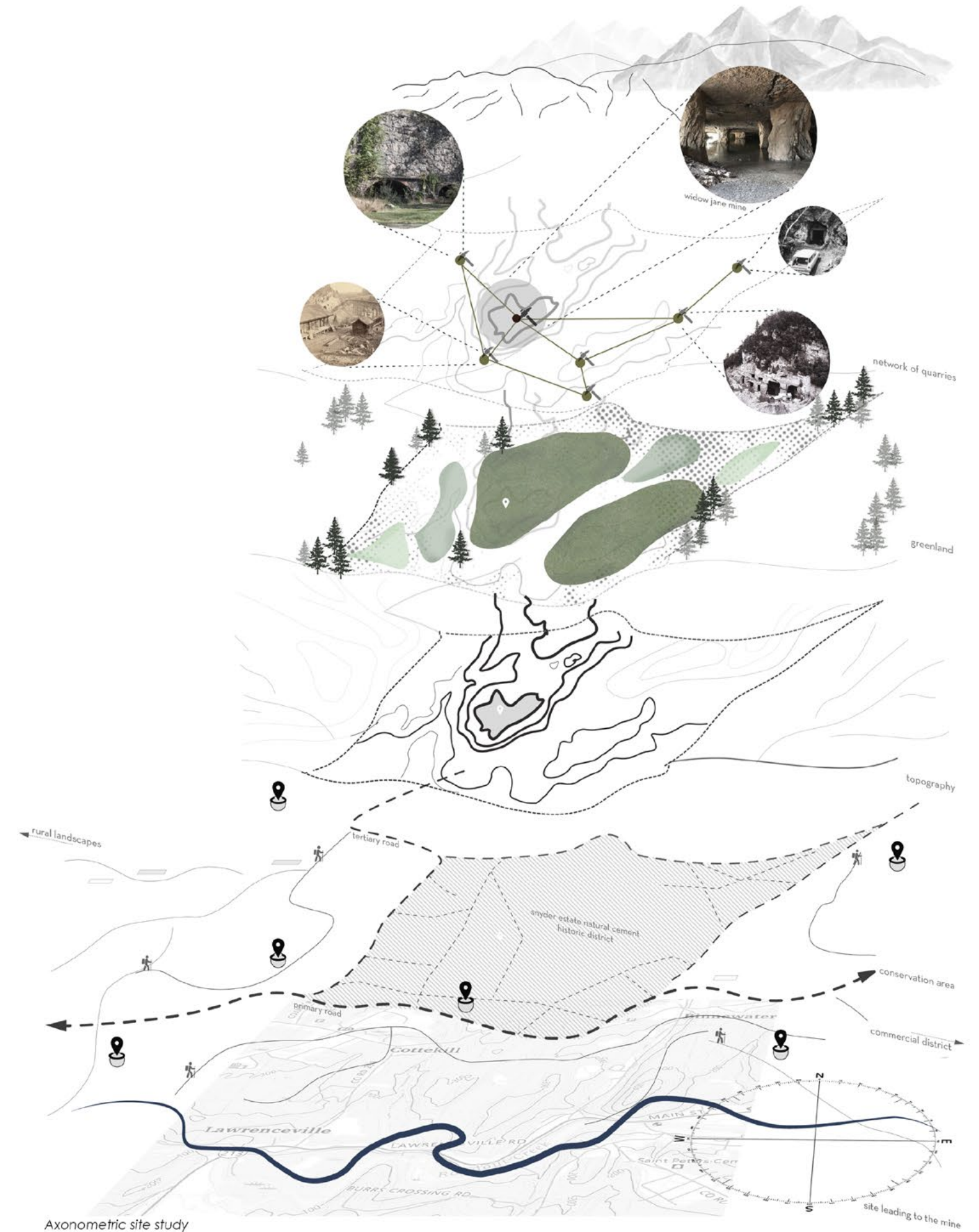
Instructor - Uriel Fogué

Individual Project

For over 50 years the Widow Jane Mine has been in ruins. This site is a landmark of exploitation of labor and ecological disruption. Lost machinery fragments, stone tools, and campfires are all evidence of the past found hidden beneath the rocks.

I believe ruins are artifacts that remind us of the passage of time, not only a remnant of the past but also a fragment of the future. This project investigates the indigenous social structure of the immigrant workers as well as the topography of ruins. It attempts to rejuvenate this space through deeper understanding of the history as well as the ecological aspect of these mines.

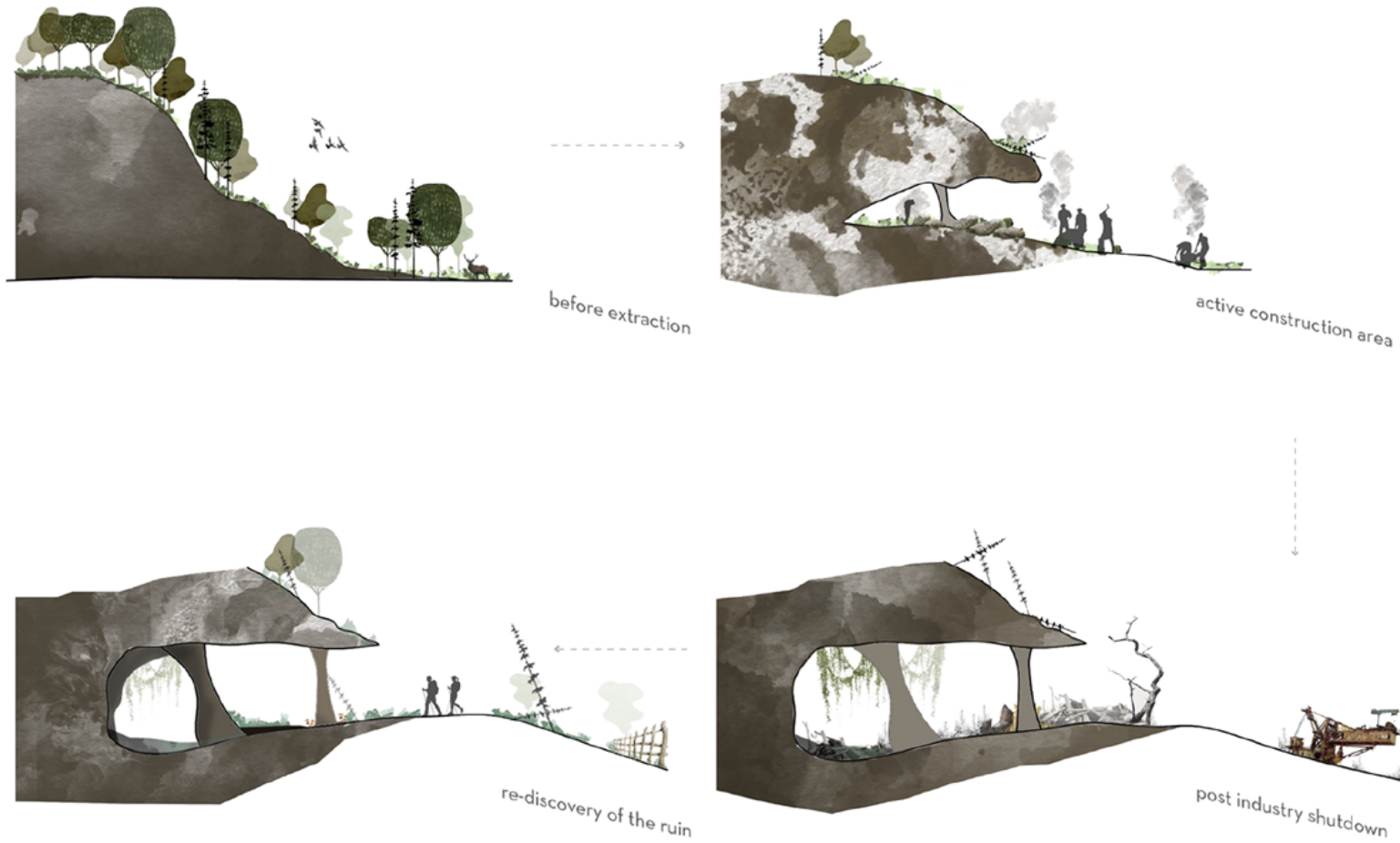
The proposal seeks to create a valuable area that welcomes interaction from the public and connects the rich history of the mines with the construction impacts that occurred at the time.





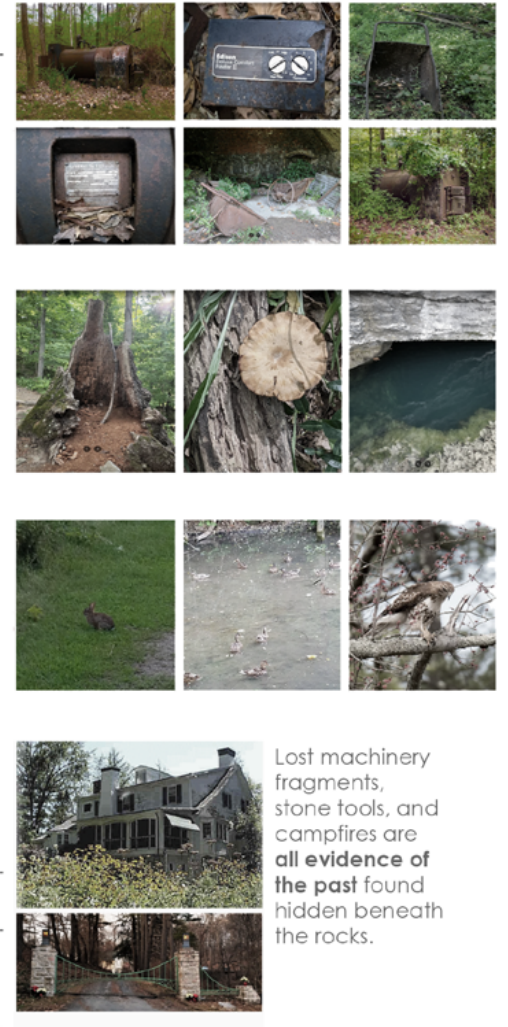
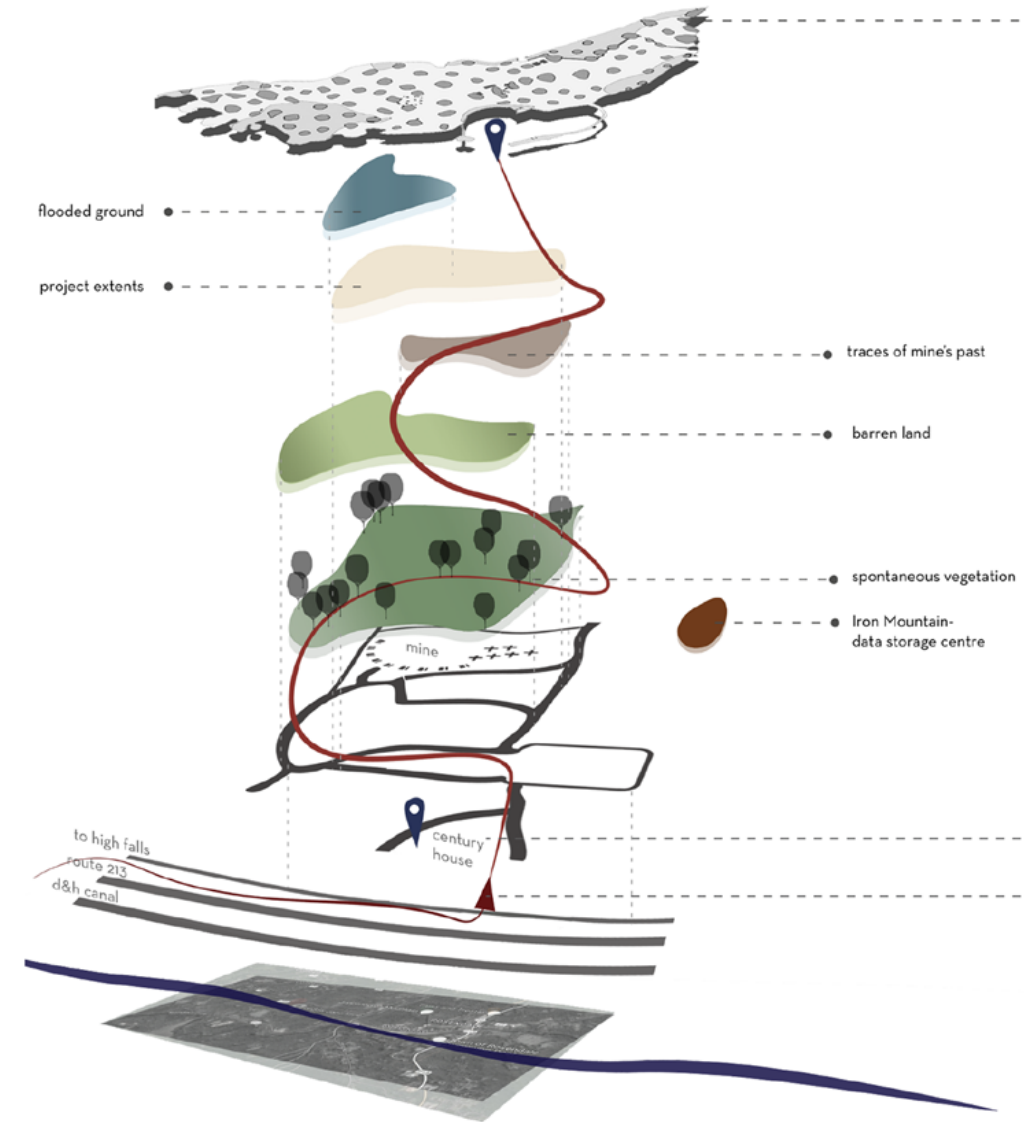
The averagely **25-ft tall cave** situated at the mouth of Randout Creek was an important transportation route for industries. The mine is **hidden** beneath the forested land.

With **massive and evenly distributed pillars supporting the ceiling**, the space once was extracted as a limestone mine. There are **two entrances and a body of water** inside the cave.

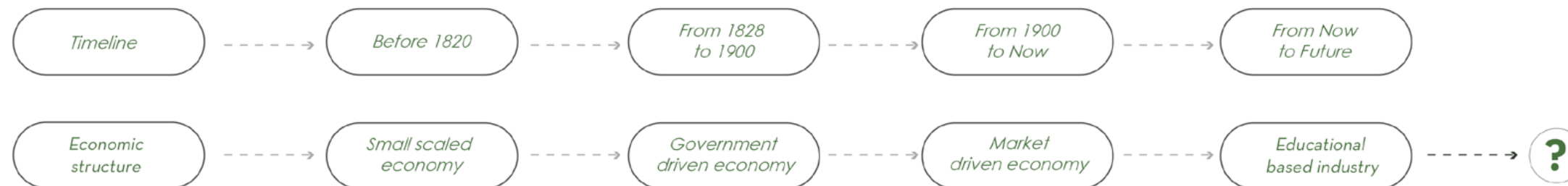


PRESENT SITE CONDITIONS

Its essential to highlight the importance of the mine and **preserve its stories, landscapes, and artifacts**. These sections show **a transition of a healthy forested land to a shattered extracted land**. Human activities transform the original morphology but they don't accept this new situation. This is to the detriment of the landscape, which is **witness to this degradation, and abandonment**.



Lost machinery fragments, stone tools, and campfires are **all evidence of the past** found hidden beneath the rocks.





locals and tourists looking at histories of the mine

remains of the construction

TRACES OF PAST

TOURIST TRAIL

The proposal is primarily for **other beings rather than humans**, who have brought huge imbalances. For different users ranging from **tourists to environmentalists**, the experience is tied together through a walking and cycling trail, completing the loop.



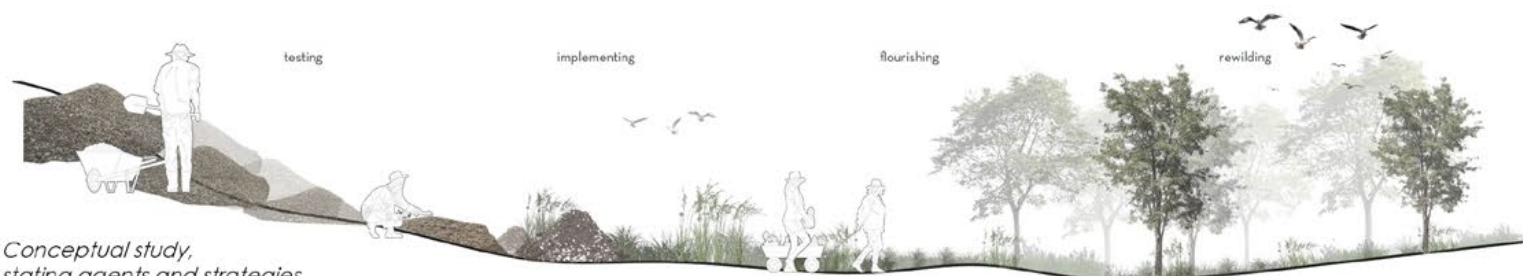
OVERGROWN GRASS

REHABILITATION OF FLORA



Rehabilitation of degraded and disturbed landscapes has become **critical for counteracting habitat loss**.

To allow for testing of diverse ideas, the project operates at a **multiplicity of programs** by embracing incremental interventions that are **strategically positioned** and superimposed in the park.



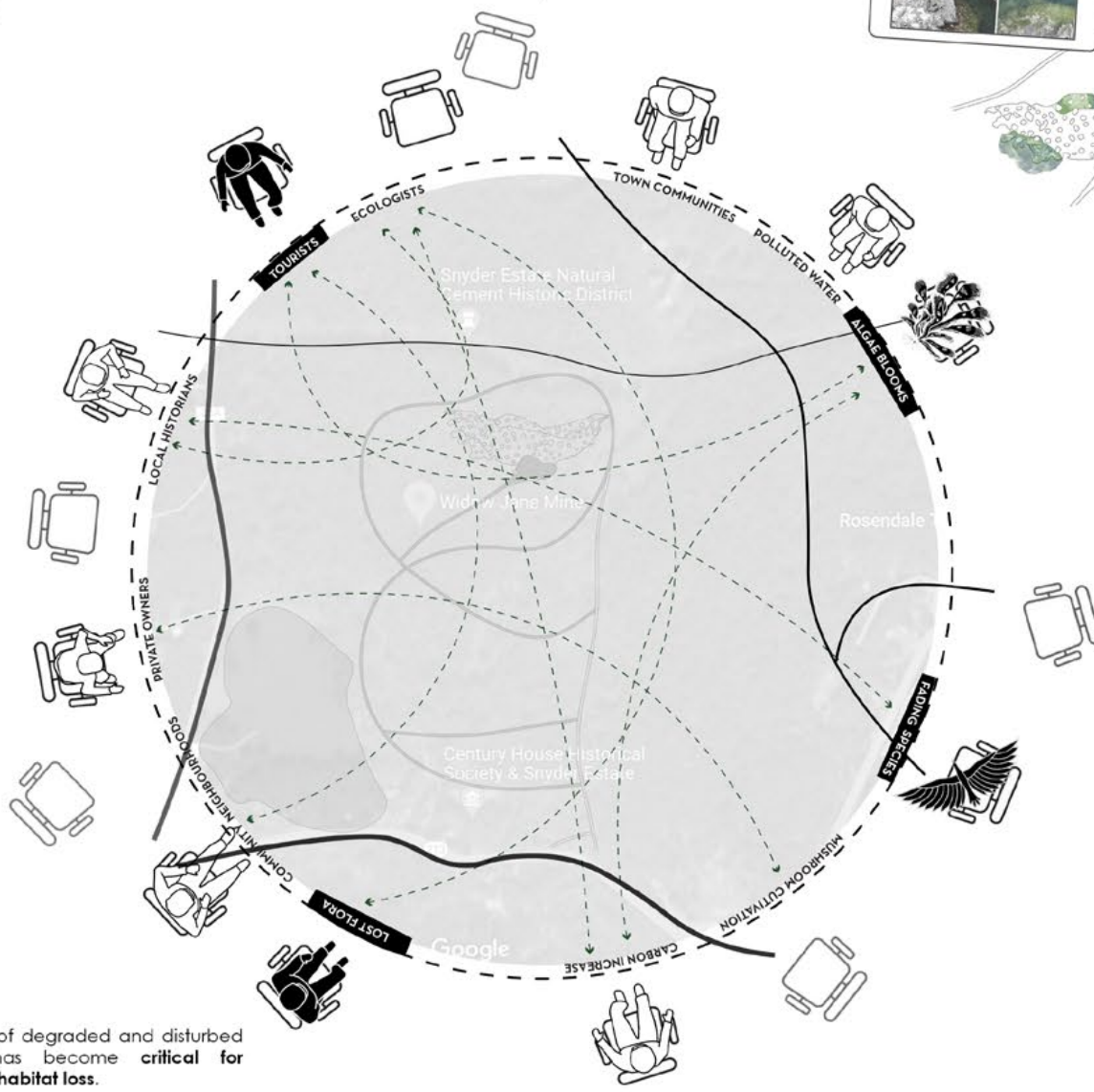
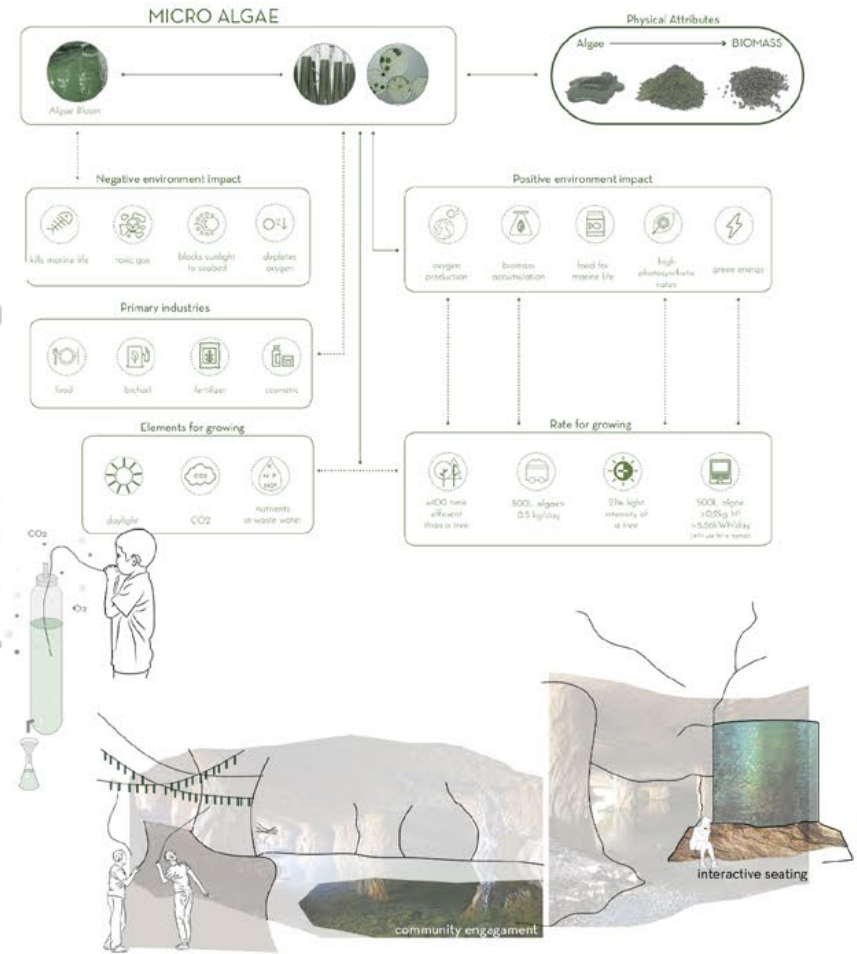
Conceptual study, stating agents and strategies

ALGAE BLOOM

ALGAE ECONOMY

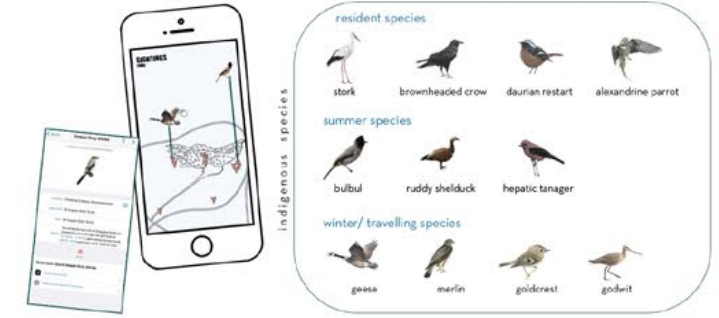
Algae is farmed in a **closed system photobioreactor** and the raw biomass is harvested.

Looking into **community learning** as well as **industrial scale production** component, side-by-side.

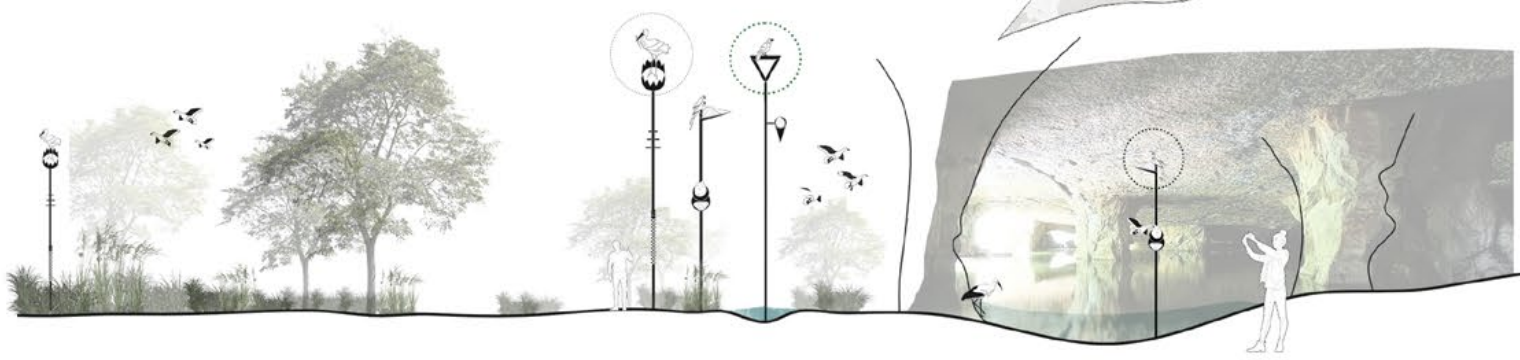


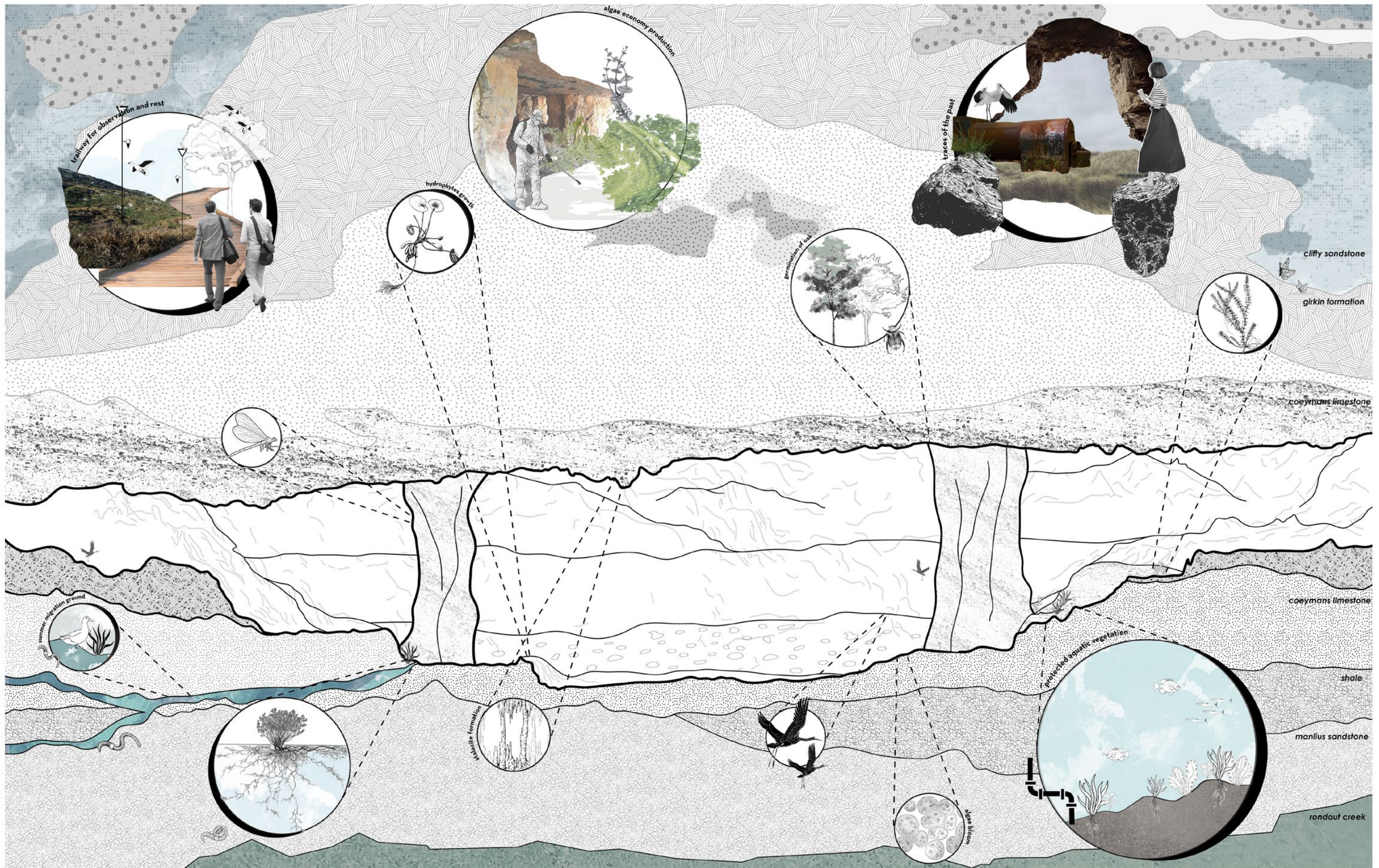
RE-INVITING

FADING COMMUNITY



A space for the **encounter between the birds** (native and non-native, feral and wild) and the **people of Rosendale** (residents and commuters, students and tourists).





02

ARGUMENTS

'Half-Earth Socialism: A Plan to Save the Future from Extinction, Climate Change and Pandemics'
by Drew Pendergrass and Troy Vettese

History Theory | Summer 2023
Instructor - Guillermo S. Arsuaga
Essay

In this book, Drew Pendergrass and Troy Vettese set out a vision of how we can avoid a dystopian future by stabilizing the environment and simultaneously working towards a just society.

With the concept model of 'Half Earth Socialism', the question arises of how will the political and geographical border be affected? How realistic is the concept of a Half-Earth?

Despite the poor condition of the biosphere, 'Half-Earth Socialism' fervently contends that there is still time to stop its decline and work towards the development of an equitable society. A global system of governance based on mathematical tools seems improbable, as does the eco-socialist revolution that serves as the catalyst for the half-earth socialist utopia. The author believes a mathematical approach to allocating resources would be efficient. It would work under the control of deep democracy.

This begs the question of how the government may facilitate the environmental efficiency of these neoliberal liberal routes. The main issue is how ordinary individuals like us can make decisions in situations where economic decisions aren't democratic. If 'we' were genuinely given the opportunity to participate democratically in debates and solutions, things would change.

The author concurs that bio conservationists need to use more exacting and useful techniques. Perhaps one of the solutions is half-earth socialism, but we need a lot more of these kinds of ideas.

The book allows considerable room for challenging the central notion of state control and the web of bureaucracy that currently govern inequity, even though details are not essential to picturing utopias. They only make a few sporadic remarks on engagement, avoiding the urgent issues of land restitution, and other issues brought up by Indigenous and rural peoples and their supporters.

It is helpful to keep in mind experiences of Indigenous-led governance, which show that "there is no one-size-fits-all approach to bringing about socially just and effective land and sea decision-making," rather than imposing such demands through majority rule.

Similar problems arise with Vettese and Pendergrass's contention that "the easiest—and perhaps only—way to achieve large-scale reforestation and feed the world at the same time is through widespread veganism."

When applied to more arid regions, such as parts of Africa, Latin America, and Asia, where attempts to impose sedentary agriculture on Indigenous populations have undermined pastoral livelihoods with disastrous social and ecological effects, this may be less of a problem in the United States, where even the lowest estimate of the maximum population fed by U.S. agriculture is 1.3 times the size of the U.S. population in 2010.

With the concept model of 'Half Earth Socialism', the question arises of how will the political and geographical border be affected? How realistic is the concept of a Half-Earth?

By framing their plan as a utopia, Vettese and Pendergrass are able to ignore some of the limitations that dominant ideologies set on what is thought to be feasible. However, it is also somewhat problematic to declare their program of universal veganism and Half-Earth rewilding as guiding principles without considering whether a large-scale movement could be created around these goals.

The readers are left wondering about the specifics, the scope, the applicability, and, most importantly, the ingrained ideals of justice in half-earth socialism after this revival of tradition.

Any socialist future will undoubtedly require global integration, coordination, and planning, but it seems that the political, geographic, and cultural aspects of this issue would be just as significant as the technical and economic ones, which take up the majority of Vettese and Pendergrass' attention.

In the last chapter, which is set in 2047 and imagines and builds a neighborhood in a half-earth socialist society, the authors consider what life would be like without the threat of unemployment, how central planning and local decision-making are possible, the possibility of rewilding while coexisting with wildlife, and economic coordination without a market in place. Despite the authors' stress that the fundamental issue with the application of linear programming is not merely mathematical but philosophical, this runs counter to their condemnation of the pseudo-rational basis of the existing capitalist society.

As a result, Half-Earth Socialism presents a wide range of guiding principles without endorsing any particular future. They contend that the choice should eventually be made by the global working class. There will be much to disagree about in a socialist society, perhaps even more than our present circumstances because socialism makes visible the tradeoffs between goals more obvious than what we can discern in the opaque market.

Yet it is in the creation of new, numerous, and conflicting visions of the future that socialist democracy is practiced. This is not to say that we are certain that a socialist society will choose to create Half-Earth, yet its mere possibility is something to be cherished in contrast to our current society where solutions to the environmental crisis will forever elude the blind grasp of capital.

There are no easy solutions, and it is time that conservationists and eco-socialists acknowledge that.

03

TRANSSCALARITIES

Curatorial Pedagogy

History Theory | Summer 2023
Instructor - Elena M'Bouroukounda
Essay

If experiential engagement is one of the most powerful features of the metaverse as a medium, a good example of a curatorial project based on an intense experiential approach is case studied in the IBM Pavilion of the 1964 New York World Fair, designed by Charles Eames in collaboration with Eero Saarinen's office.

The designers had hit a Dionysian button calling up emotions of awe, terror, recognition, and joy, for the viewers who came to visit the pavilion. The educational idea of the Pavilion and its specific film THINK was to demystify computers: "they help solve the most complex problems with the simple principles of logic, similar to those we all use in making decisions every day".

Said to have been inspired by the typing ball in the new IBM Selectric typewriter, the pavilion was a striking sight from any angle. The effect of the auditorium inside was like being in a control room or TV studio and thus anticipates the audiences' dashboard-driven computer navigation. 'A chance for us in 1964 to show seventy-five million people from all over the world, what kind of country we are and what is coming in the future. That is what a World's Fair should be about and the theme of this World's Fair is most appropriate in these years of the Sixties.'

One of the designers' main clients was the US Government, for whom IBM worked on Cold War military technology, including missile systems. Even worse – wasn't it IBM who helped the Nazis collate their statistics?

While the Eameses had been employed as a design team to promote the understanding of science, their approach seems characterized by immersion, saturation, and information overload. If Think proved an integral part of the information machine, then the Eames Office provided a propaganda machine for US values, ideals and policies through experimental strategies that embraced the latest technologies and sources of power, including information and information theory through communications, computing and tele-technological control.

For IBM, its 1964 pavilion served as a popularizing, soft sell of the corporation, aimed at the American public while simultaneously indicating to the government that IBM was a company that had a squeaky-clean image; it was trustworthy and educational. The views, values, hopes and dreams held by the Eames Office were those of the US federal government too, of course.

The average visitor could not buy or lease a computer; IBM knew it. However, they tried to prove that these gadgets were user-friendly, not a threat.

04

MAISON SERRAGO

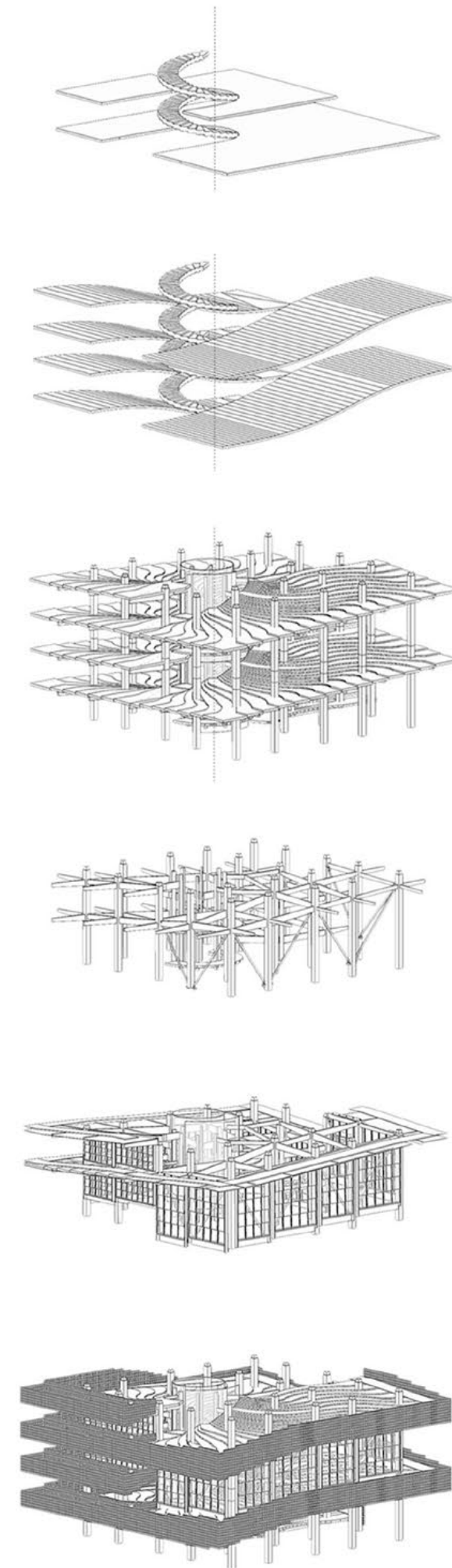
Embodied carbon study to design for disassembly

Advanced Studio V | Fall 2023
Instructor - Gordon Kipping
Collaborator - Rachita Viswanath

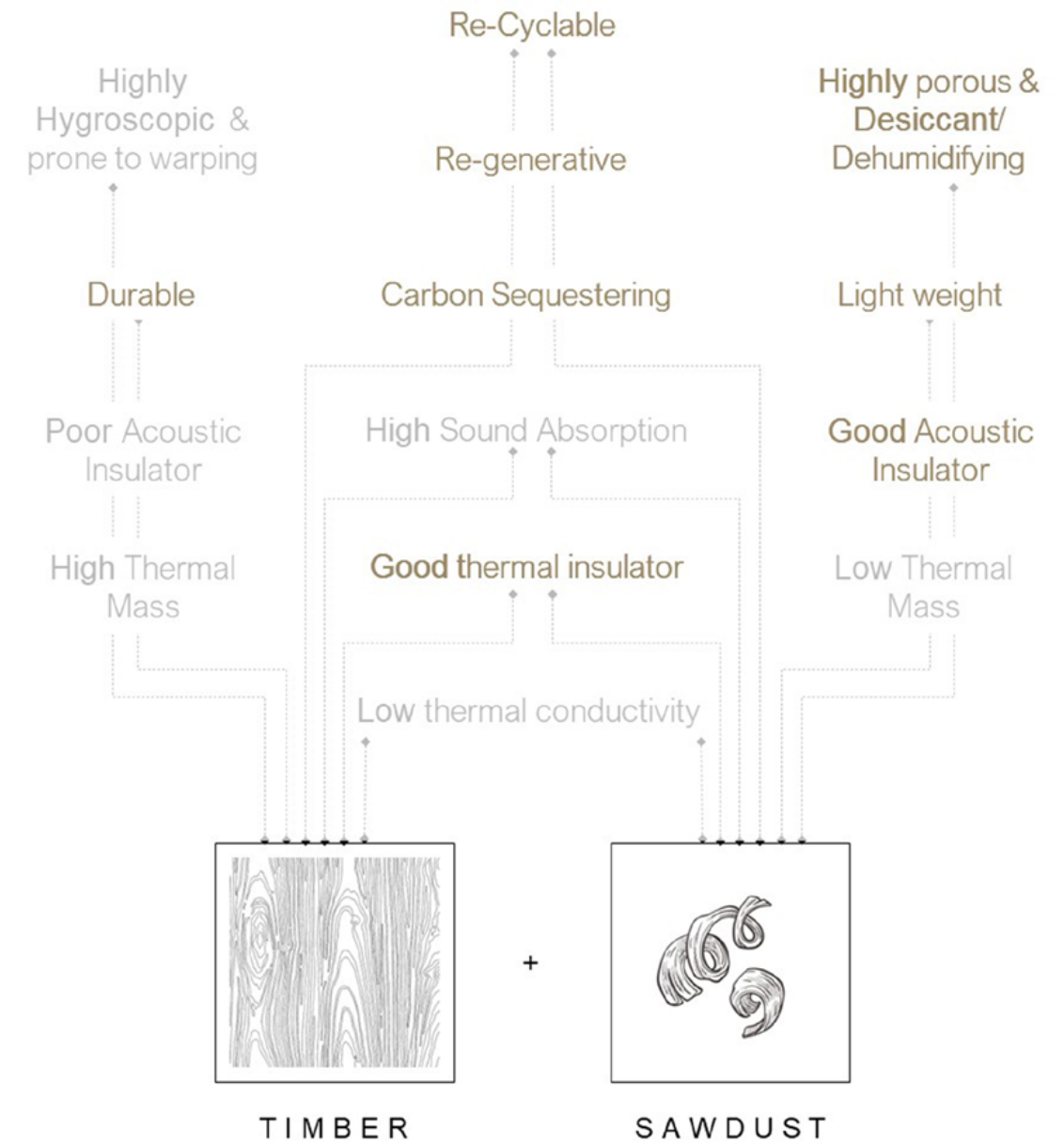
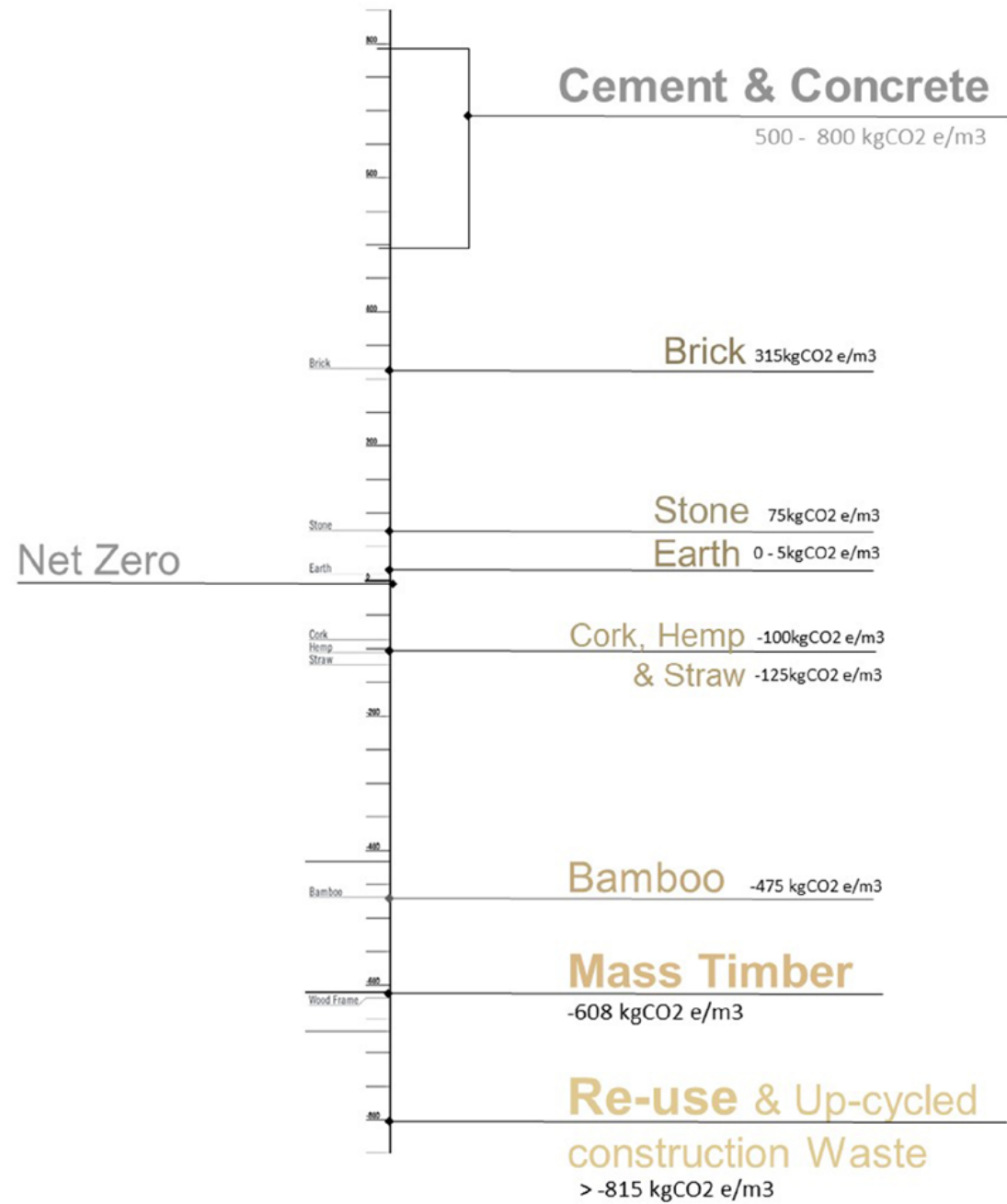
Mass timber sequesters more CO₂ than it emits, making it the most carbon negative resource. Compared to concrete buildings which in their production process emit almost the inverted value of what timber sequesters. An even lower carbon negative scope can be achieved by repurposing and reusing materials. Hence the project looks into construction and demolition waste.

The project intervenes within the proposed circular economy, looking at combining mass timber and timber framing, with upcycled wood waste specifically sawdust, strategized and designed for disassembly.

Along with mass timber and timber framing components, the proposal also looks at 3D-printed sawdust possibilities in terms of passive screens and thermal buffers. The final module suggests different ventilation strategies for both summers and winters.



Form development



"Say the typical steel and concrete building has an emissions profile of 2,000 metric tons of CO₂," said Andrew Ruff, of Connecticut-based Gray Organschi Architecture, a leading proponent of the laminated wood revolution. "With mass timber you can **easily invert so you are sequestering 2,000 tons of CO₂. Instead of adding to climate change you are mitigating climate change.** That's the goal."

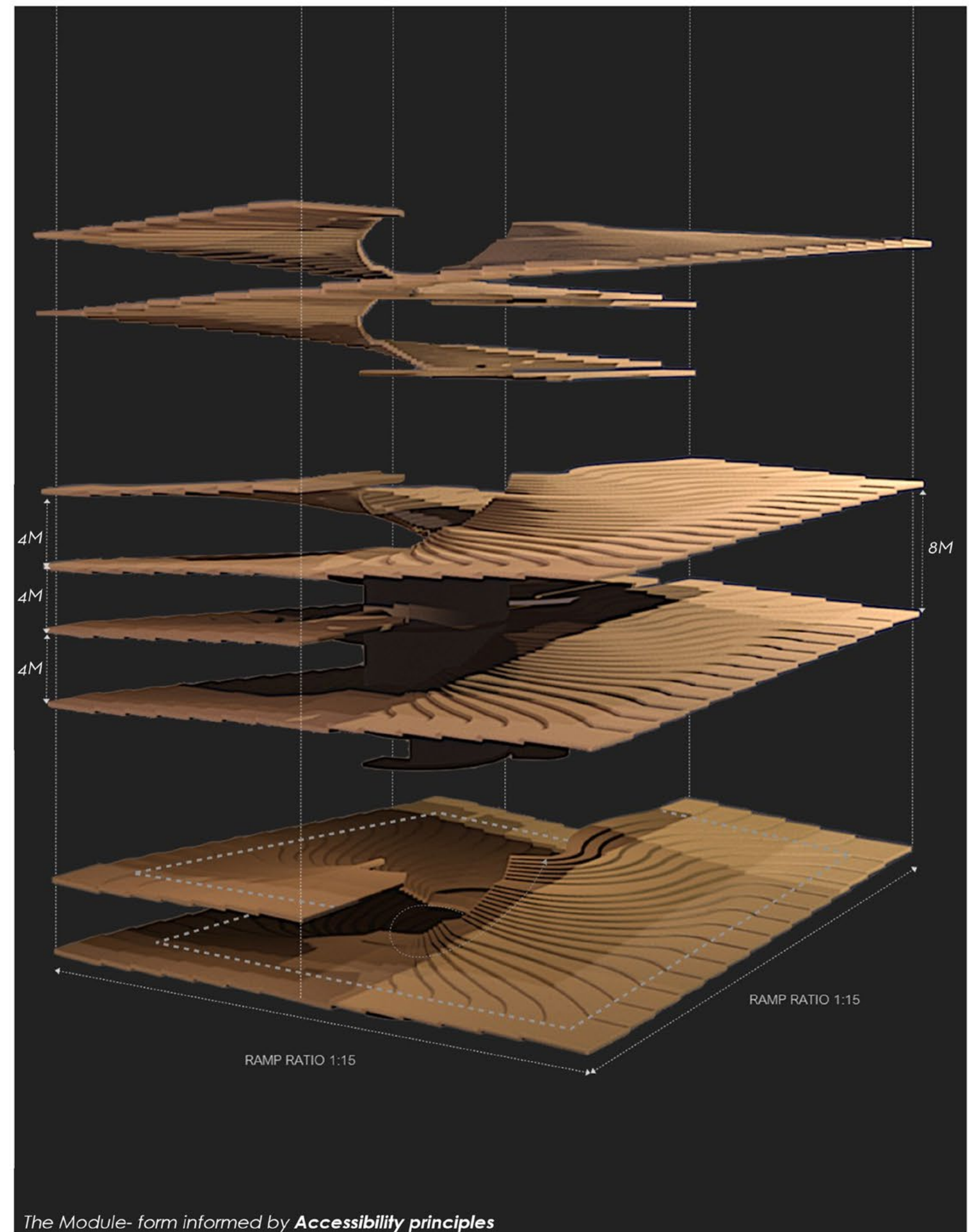
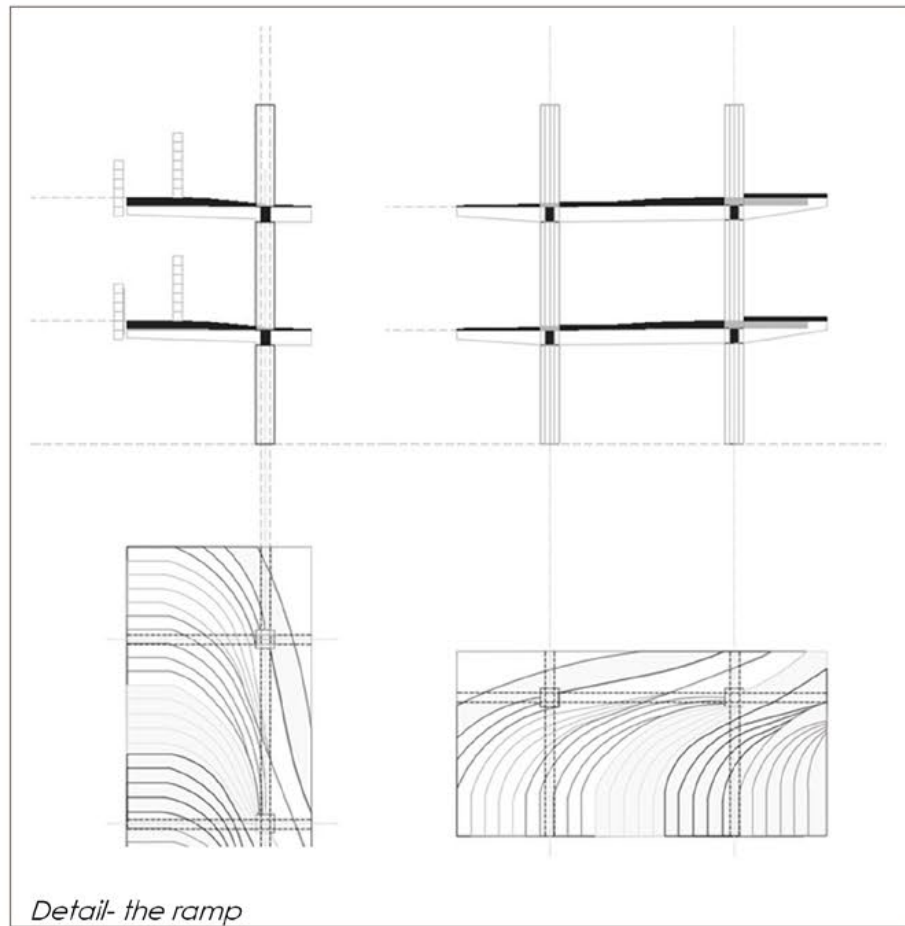
Published at the Yale School of the Environment

The **Biogenic Materials Revolution Has Begun and Mass Timber Is Leading the Way.** As practitioners of the built environment, we have the tremendous opportunity to reimagine the linear global building materials paradigm by leveraging principles of regeneration to **create closed loop systems.** For a building material to be regenerative it must be renewable and lead to overall systemic health.

Published by Gensler, April 26, 2023

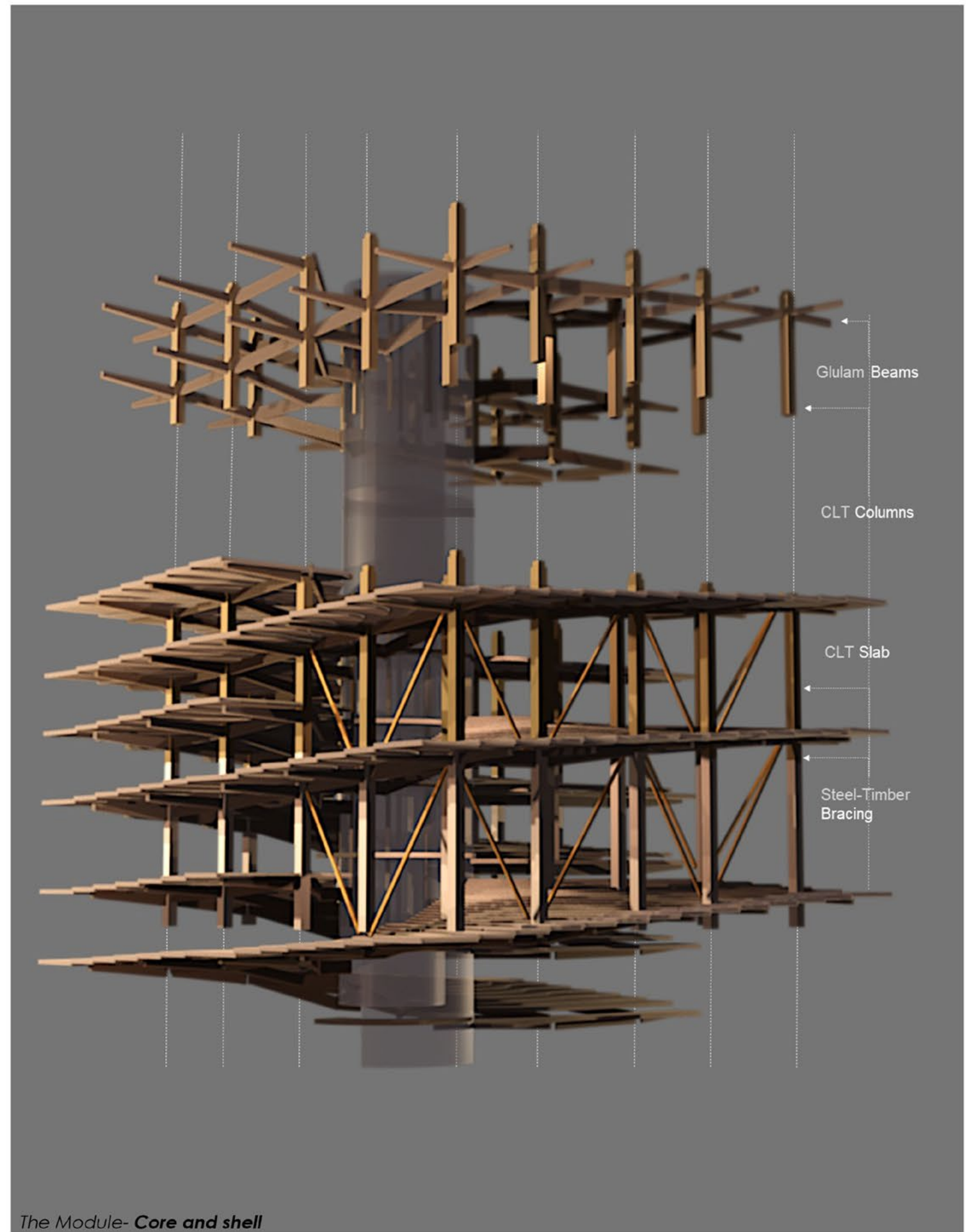
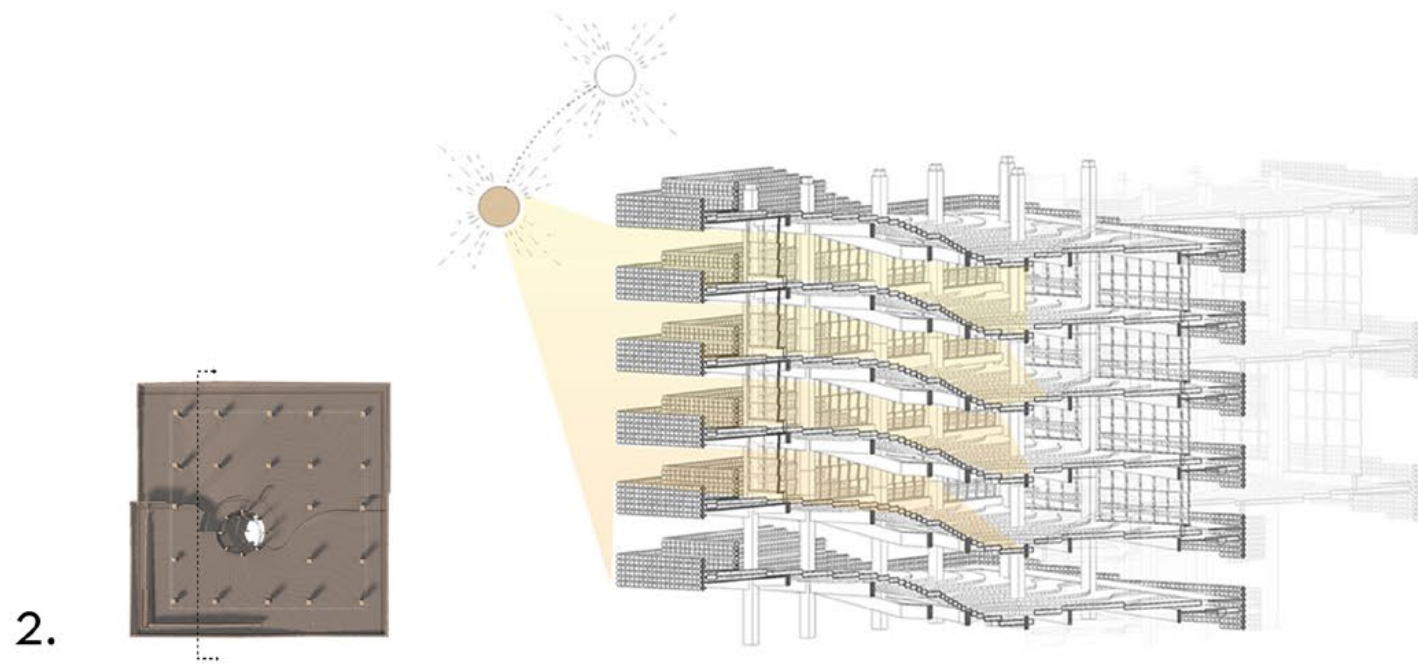
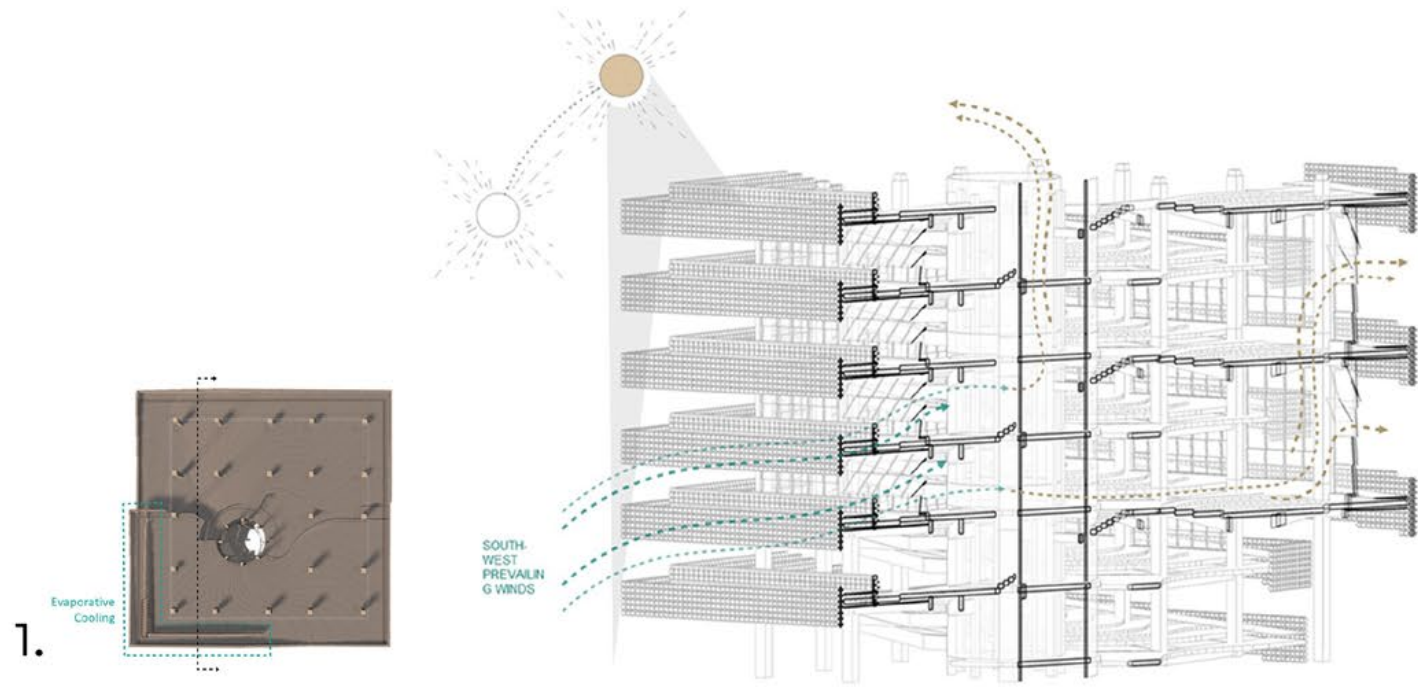
Inspired by particular profile of the Maison Domino, the initial module development is informed by similar principles. An essential concern that the module aspires to solve an universal accessibility.

Taking accessibility into consideration, the spiral staircase core radially generates into a traversable, peripheral ramp - ratio of 1:15.



Four key passive climatic strategies which informed the static modular form

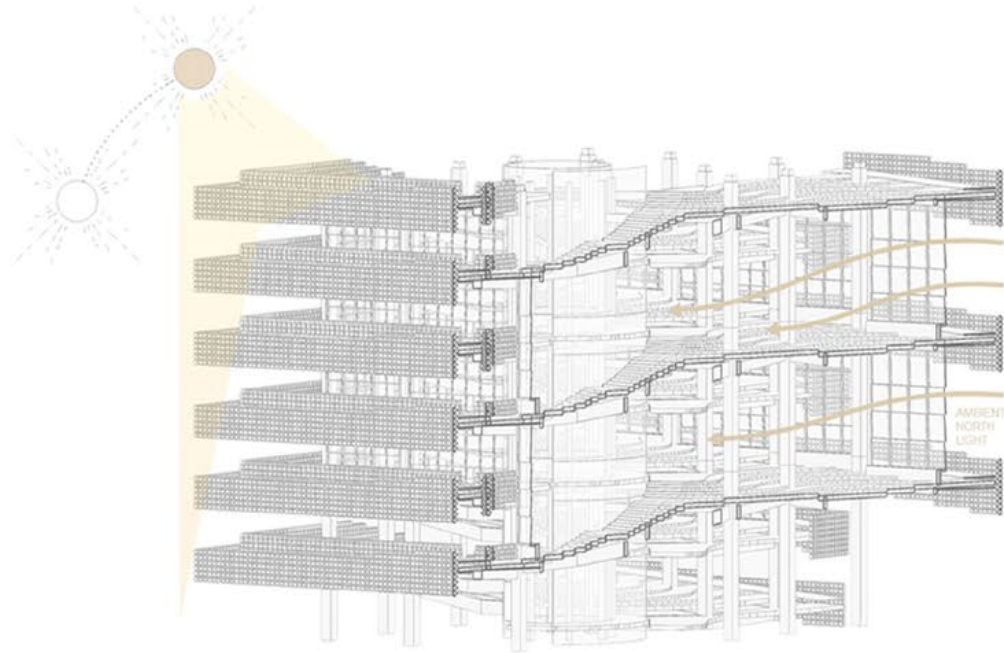
1. Optimised light ventilation during winters
2. Shading from the summer sun
3. Ventilation during winters
4. Ventilation during summers



Four key passive climatic strategies which informed the static modular form

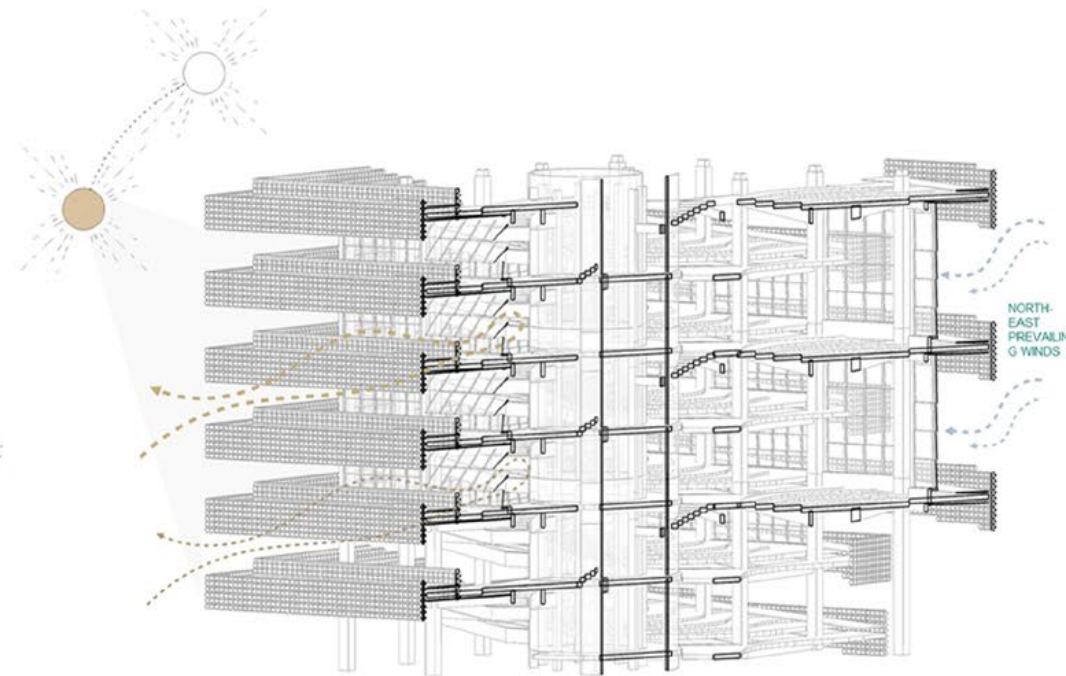
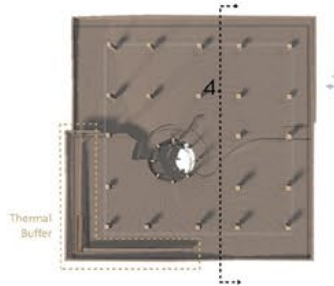
1. Optimised light ventilation during winters
2. Shading from the summer sun
3. Ventilation during winters
4. Ventilation during summers

3.



3.

4.



Key Plan



Static form informed by climate flux

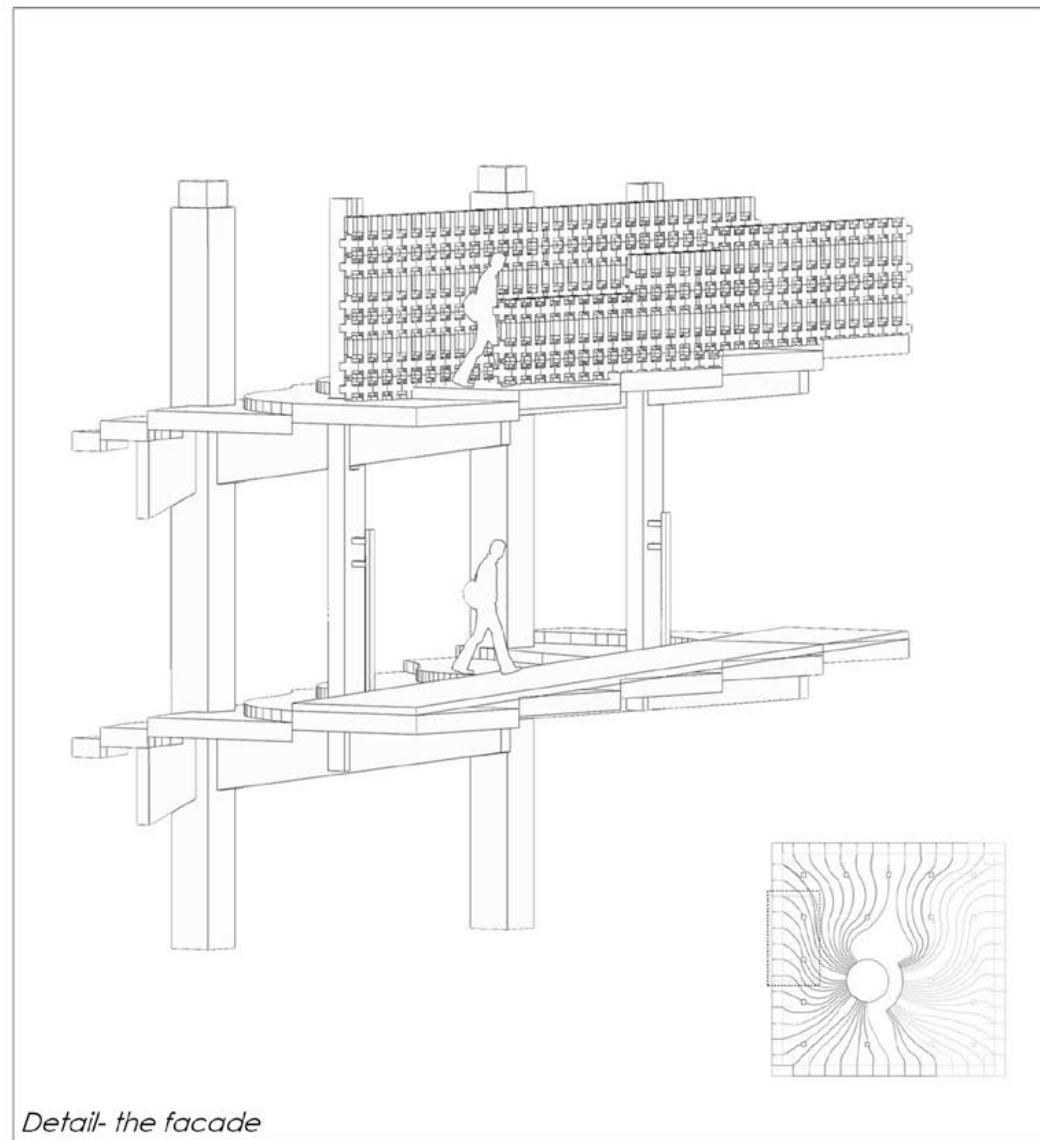


The Module- **Secondary skin**



Modular Facade Components :
Sawdust screens

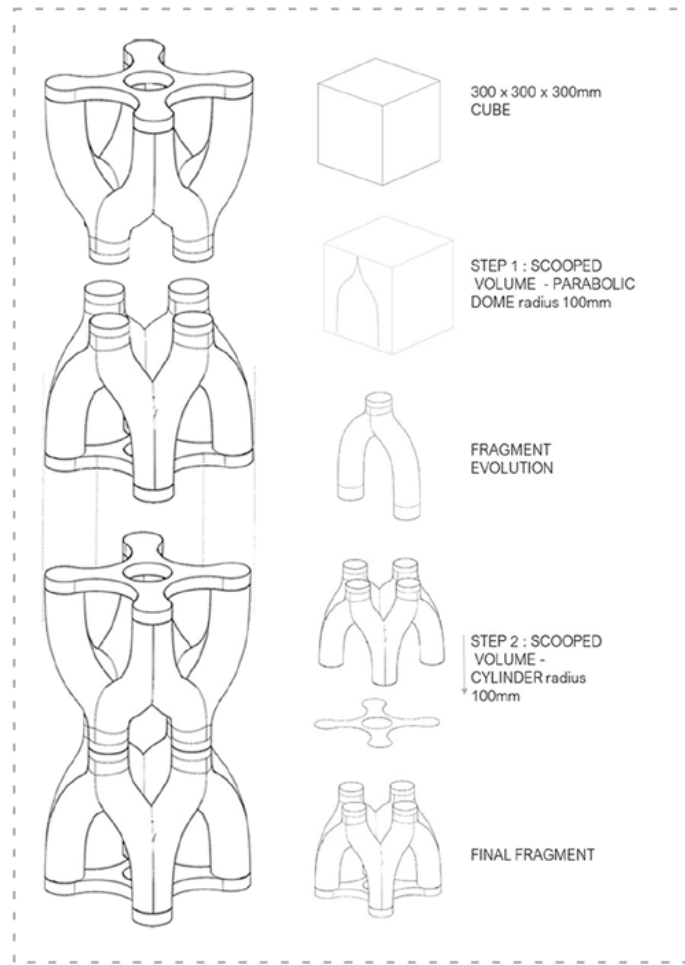




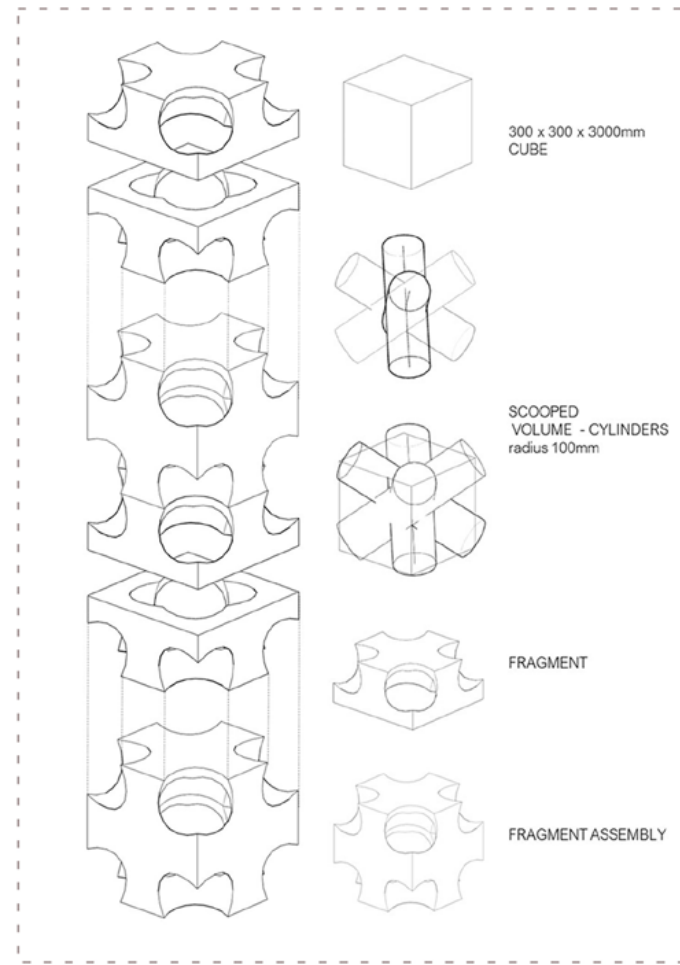
Screen design development

The secondary skin of the module comprises of the fragment - a composite sawdust screen that aims to create thermal buffers within the architecture of the module.

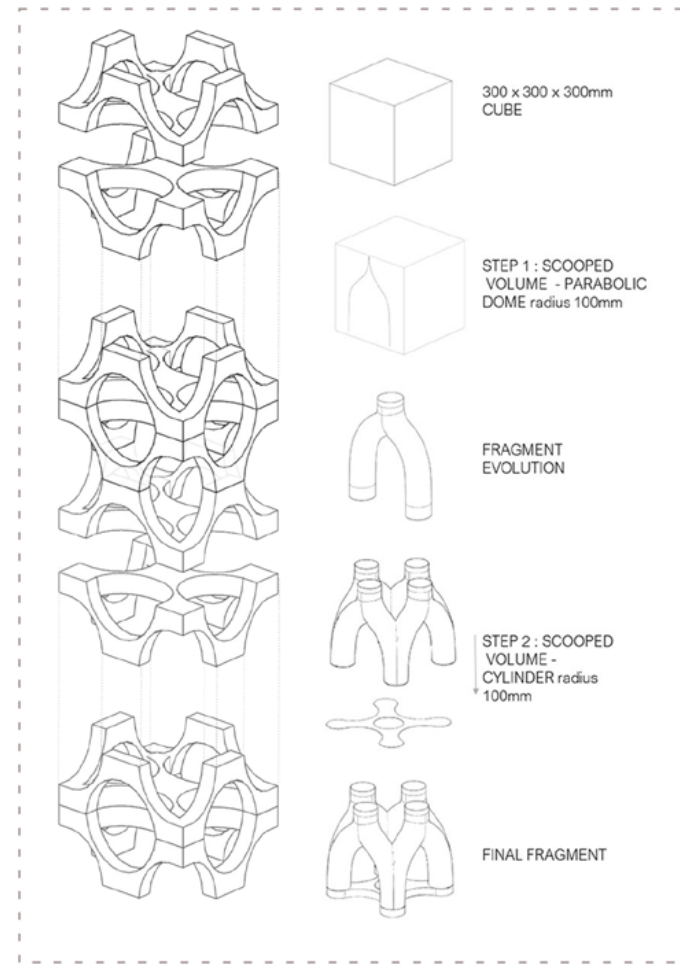
The screens facilitate evaporative cooling, insulation and other key passive strategies that respond to climatic flux. At a molecular level sawdust absorbs excess moisture & dehumidifies the air passing through it, while the screen's geometry aims to create potential differences in air pressure, and maximise its surface contact with the air.



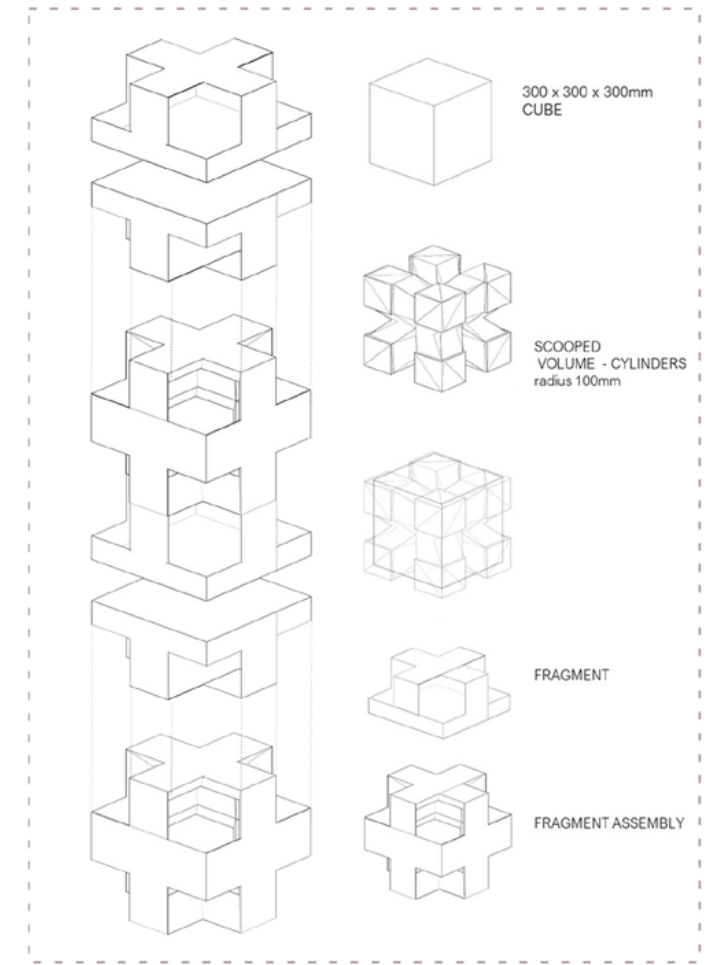
Screen fragment A



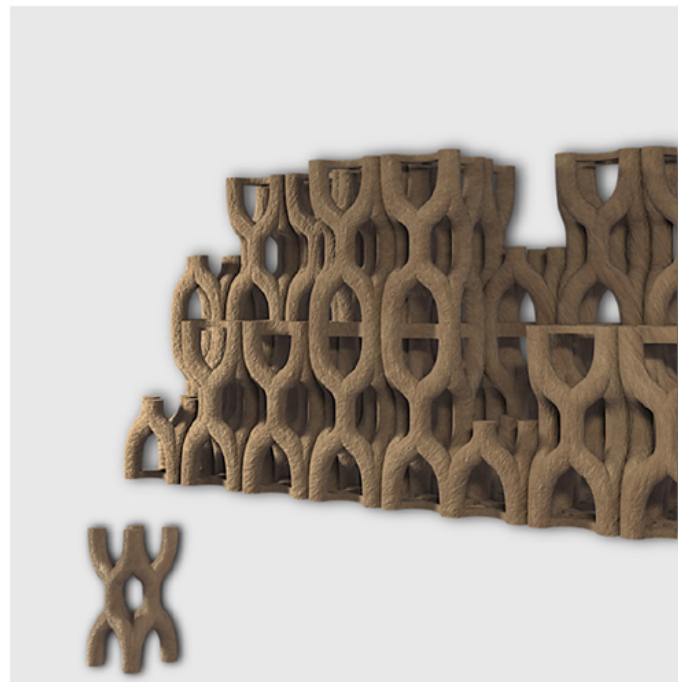
Screen fragment B



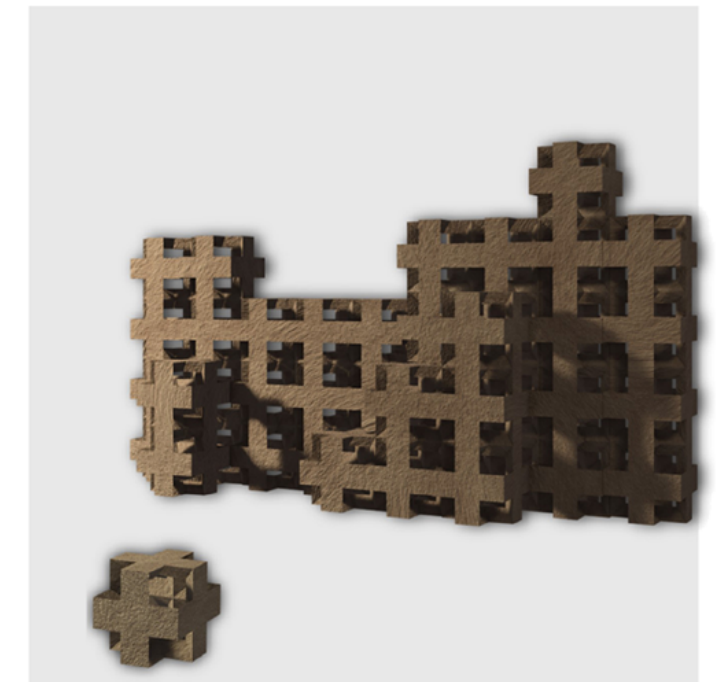
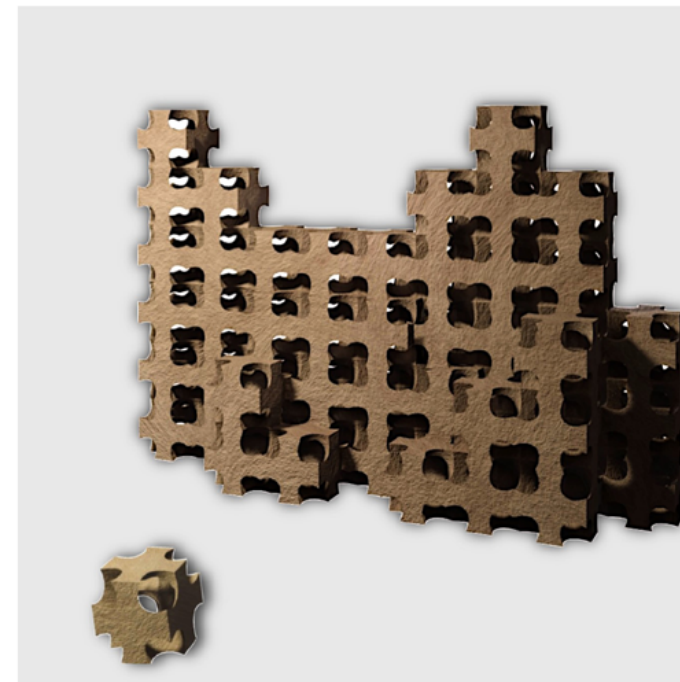
Screen fragment C

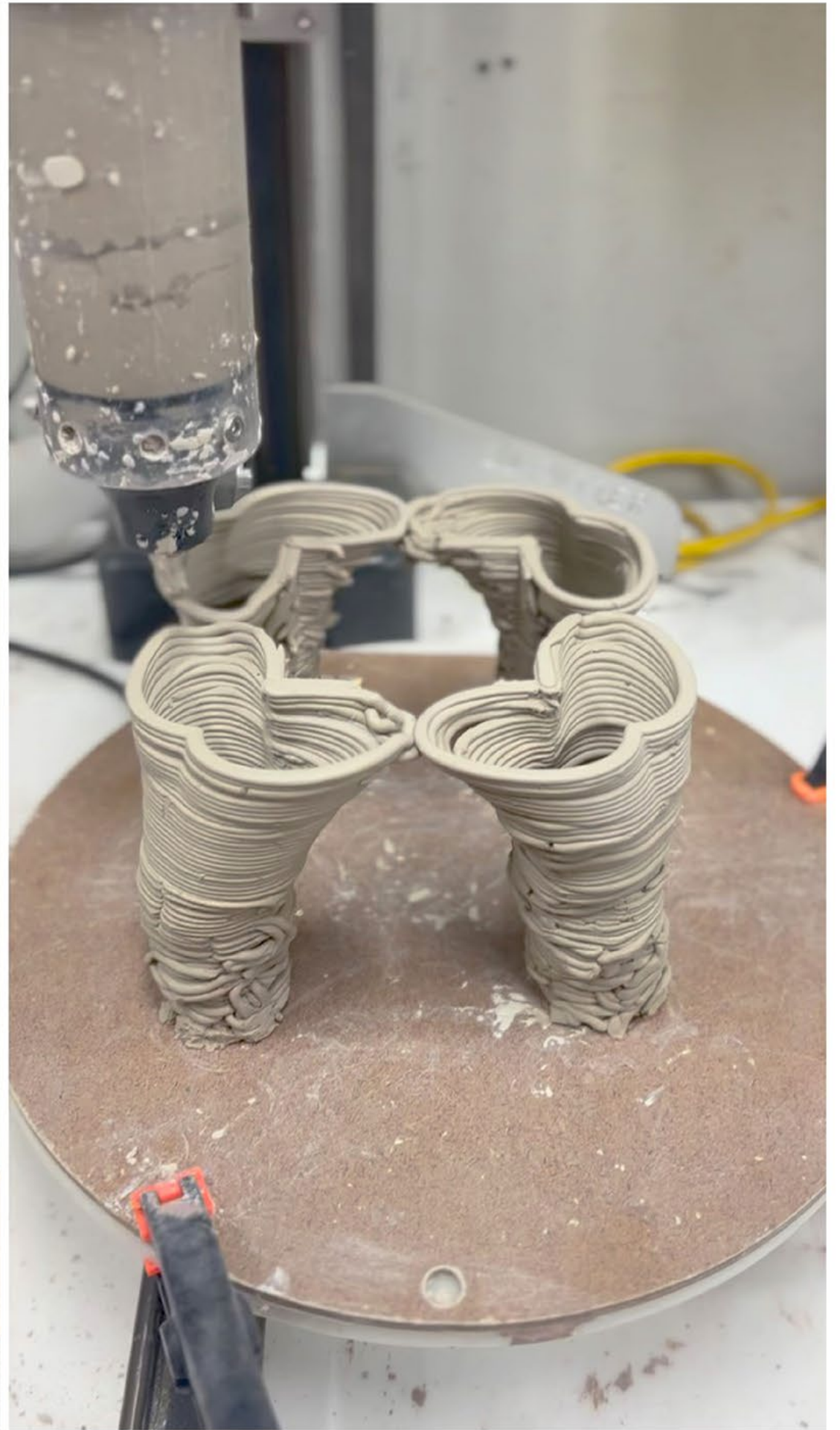
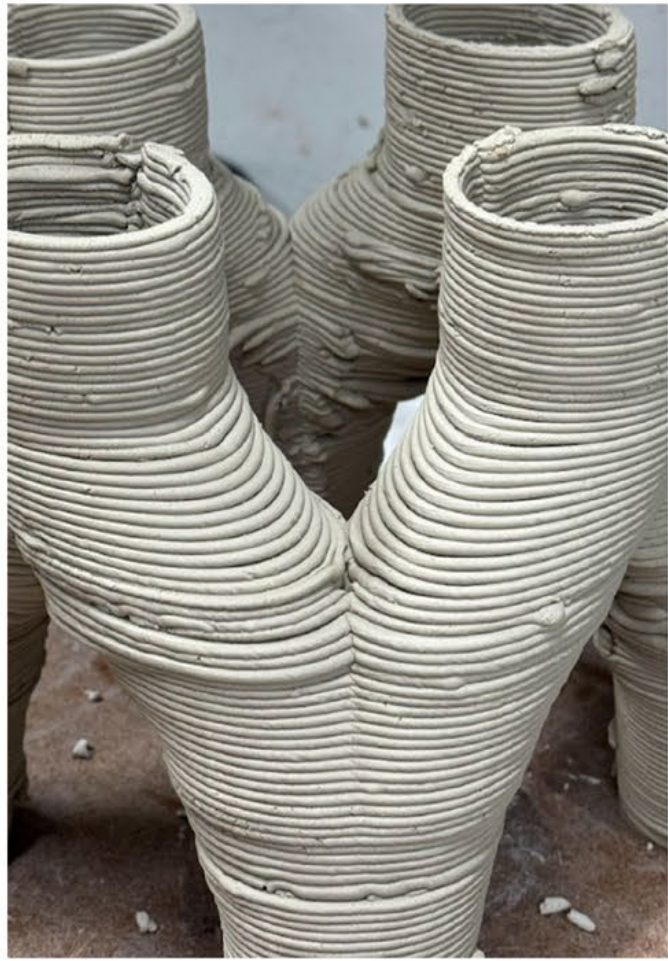


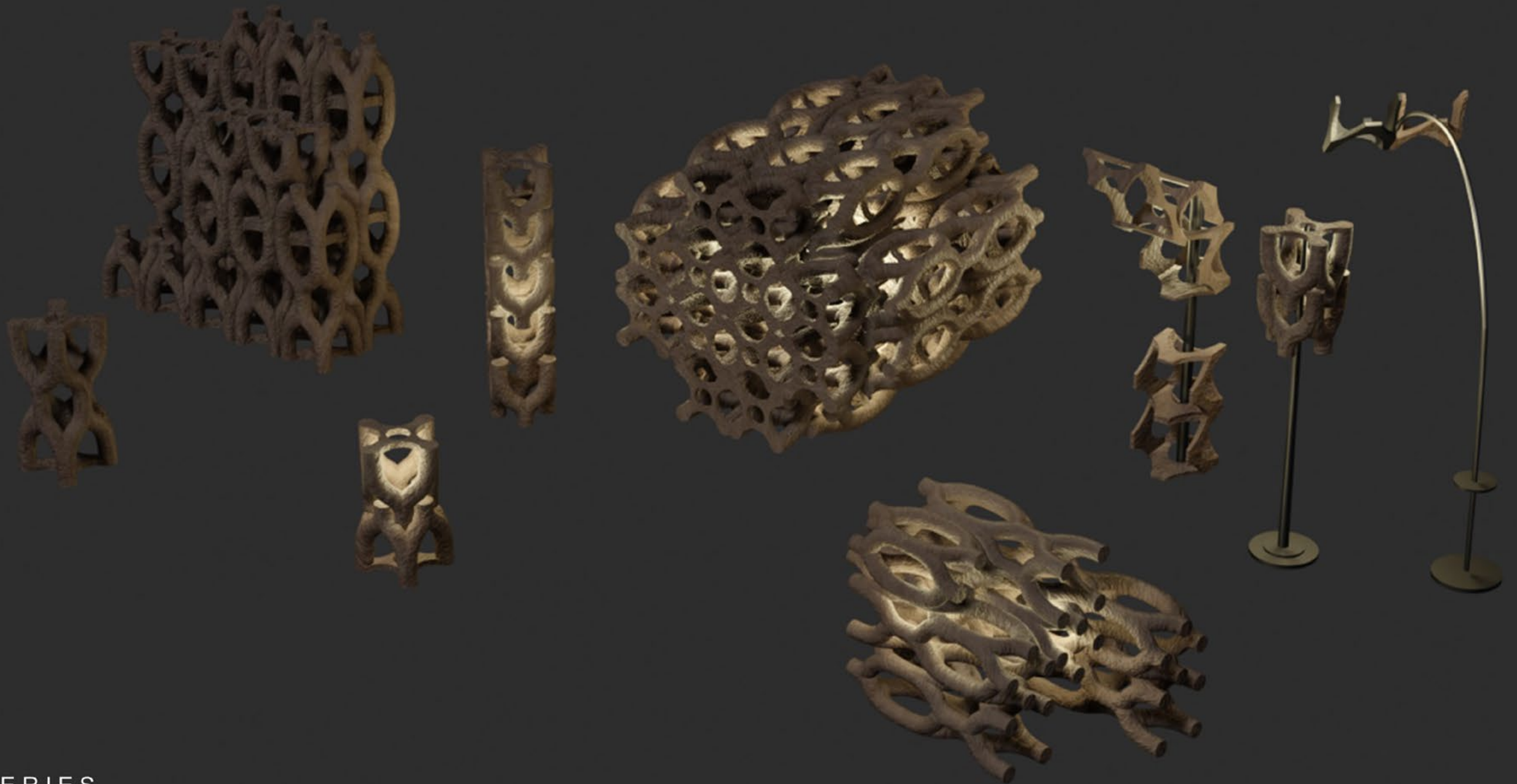
Screen fragment D



Rendered images of the sawdust composite screen fragment







SERRAGO SERIES

THE TOWER

Adapting and multiplying the module, to construct a siteless potential tower, with the same passive climatic strategies and material techniques.



05

HOME IS WHERE TOXICS ARE

Waste textile fabric into acoustic panels

Building Science & Technology | Fall 2023
Instructor - Marta H. Wisniewska
Collaborators - Aishwarya Garg, Foteini Kallikouni

Informed by research, group discussions, readings and input lectures, the project was developed by a thorough understanding of materials' composition, production and local application, as well as their associated global issues.

Inspired by the wide range of smart, carbon-free, regenerative, healthy, circular, durable and/or affordable alternatives, the proposal addressed the stated design problem through material research and product design. The saying, 'one man's trash is another man's treasure.' The same is true when it comes to used clothing/ fabrics. By adopting circular economy principles, implementing innovative recycling technologies and fostering a culture of conscious consumption, we can prevent more waste & pollution from being created. Upcycling materials is one of the best ways that everyday people can help the environment.



Experiments

Is our home making us sick?



CLEANING SUPPLIES
-Neurotoxicants
-Reproductive toxicants

FLOOR TILES
-Carcinogen
-Reproductive and development toxicants

BATHROOM RUG
-Fiber composite/ styrene, 4-phenylcyclohexane (4-PC), benzene based adhesive
-Asthmagen. Respiratory issues

COMPOSITE WOODEN STORAGE
-VOCs such as formaldehyde
-Asthmagens, Respiratory issues, Carcinogens

INDOOR PLANT FERTILIZER
-Nitrogen sulfate
-Reproductive toxicants

WALL PAINT
-VOCs such as xylene, formaldehyde, benzene and ethyl acetate
-Headache, Asthmagens, Reproductive and developmental toxicants, Carcinogens

UPHOLSTERED CHAIR
-Carcinogens
-Asthmagens, Reproductive toxicants

HARDWOOD
-VOCs such as formaldehyde, polyurethane
-Asthmagens, Reproductive toxicants, Carcinogens

CARPET BACKING
-Benzene based adhesive
-Neurotoxicants

UPHOLSTERED CUSHIONS
-Carcinogens
-Reproductive and developmental toxicants, Endocrine disruptors

UPHOLSTERED MATTRESS
-Polyurithane foam
-Reproductive and Developmental toxicants

FLOURESCENT LIGHT BULB
-Mercury
-Neurotoxicants

HEAT RADIATOR
-VOCs such as xylene
-Lightheadness, Asthmagens

TAP WATER

TOOTHPASTE
-Fluoride, sorbitol
-Gastrointestinal toxicants

SOAP
-Glycerol
-Gastrointestinal toxicants

MOLD ON GYPSUM WALL
-Talc, calcite, gypsum, silica and can contain mercury
-Asthmagens, Respiratory issues, Neurotoxicants

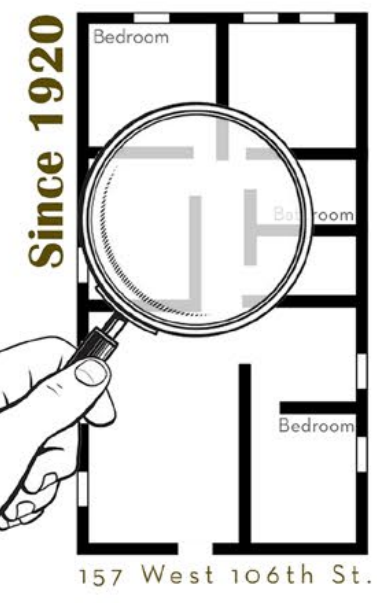
PRESERVATIVES

BUILDING MATERIALS

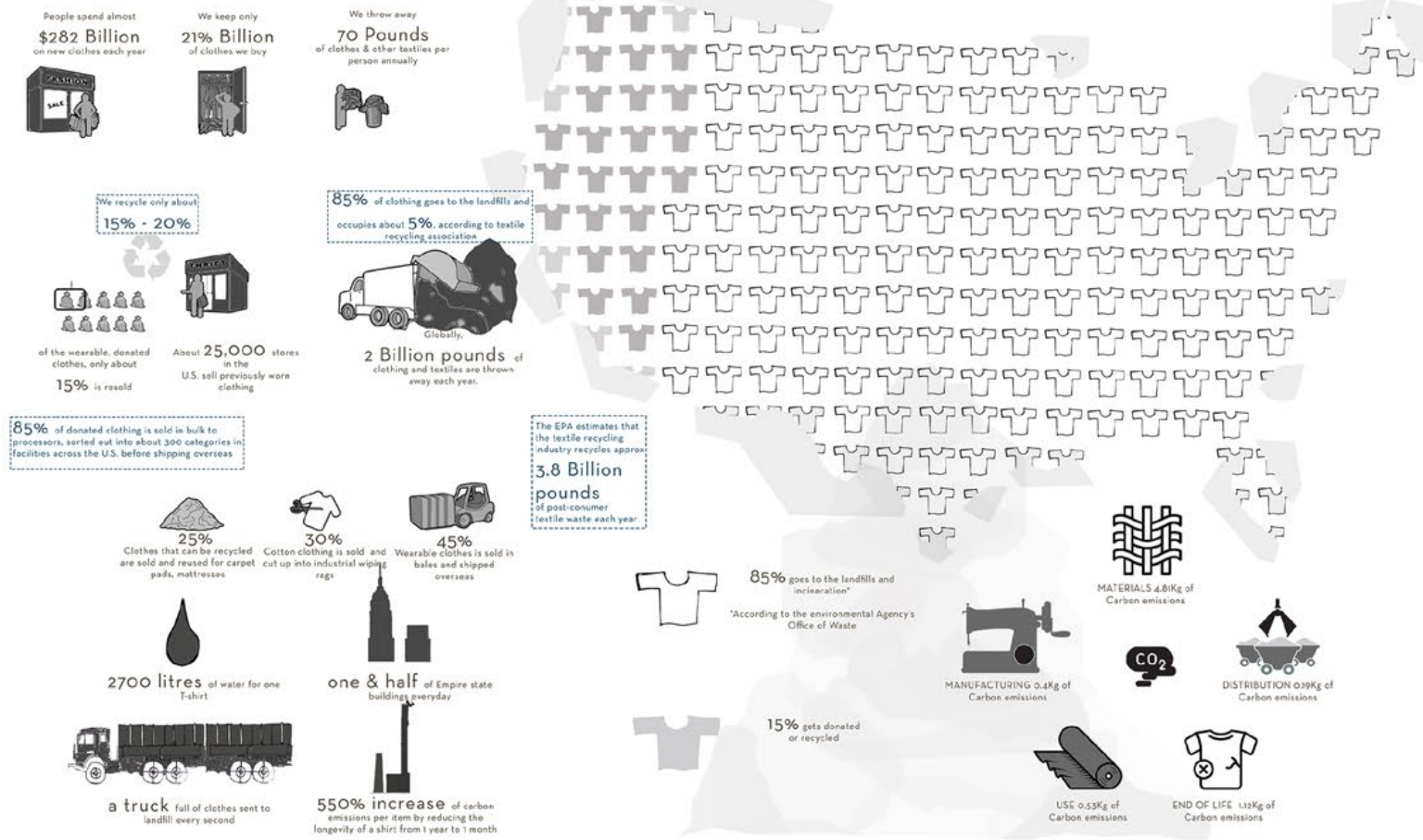
ALLERGENS

POOR AIR FLOW

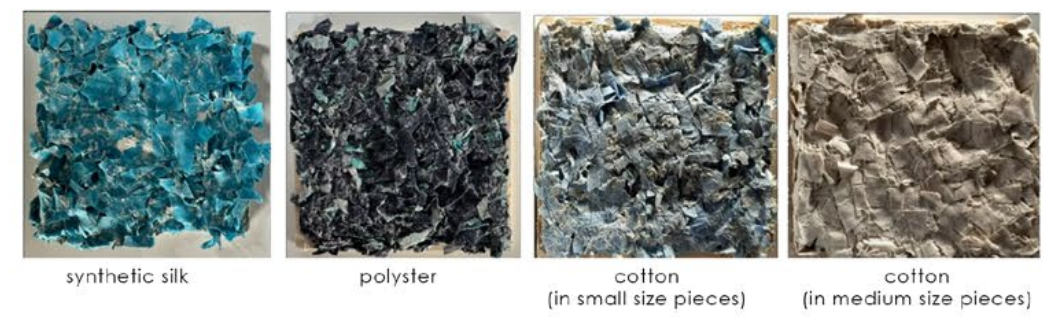
PIPE LEAKAGE



Toxicity in textile waste

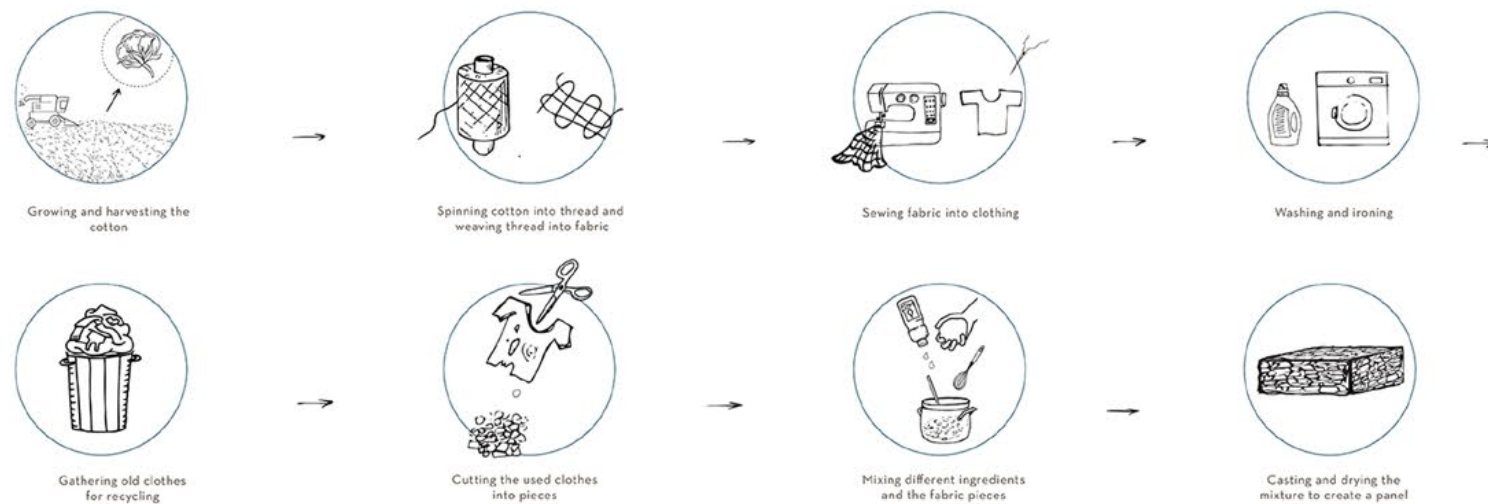


Experiments with different techniques - Production process

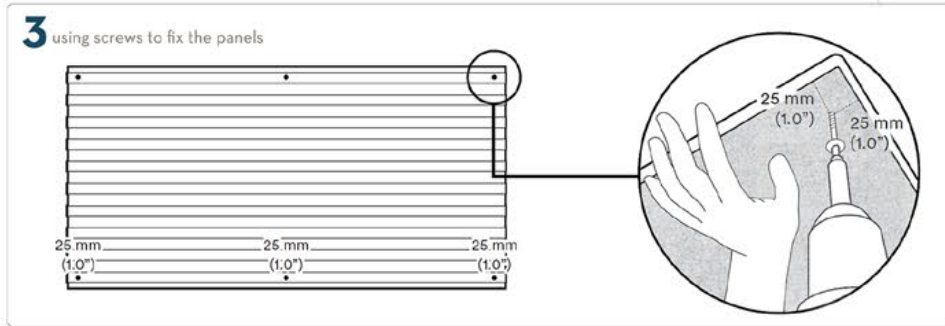
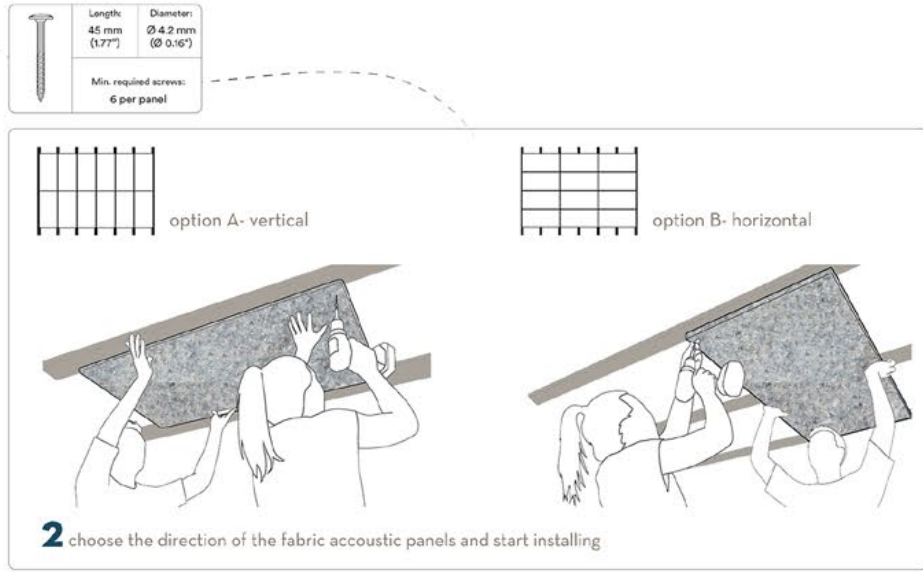
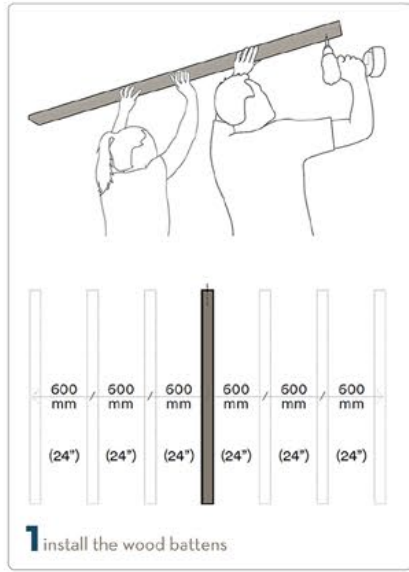


Process - Cradle to Cradle

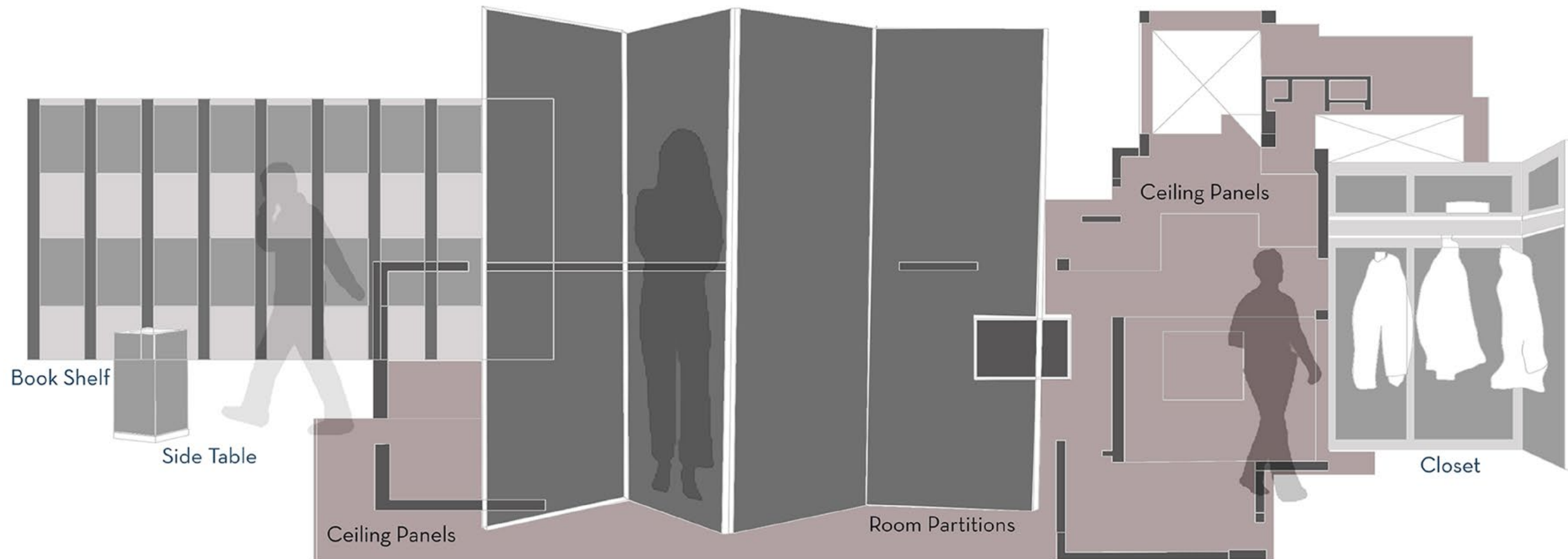
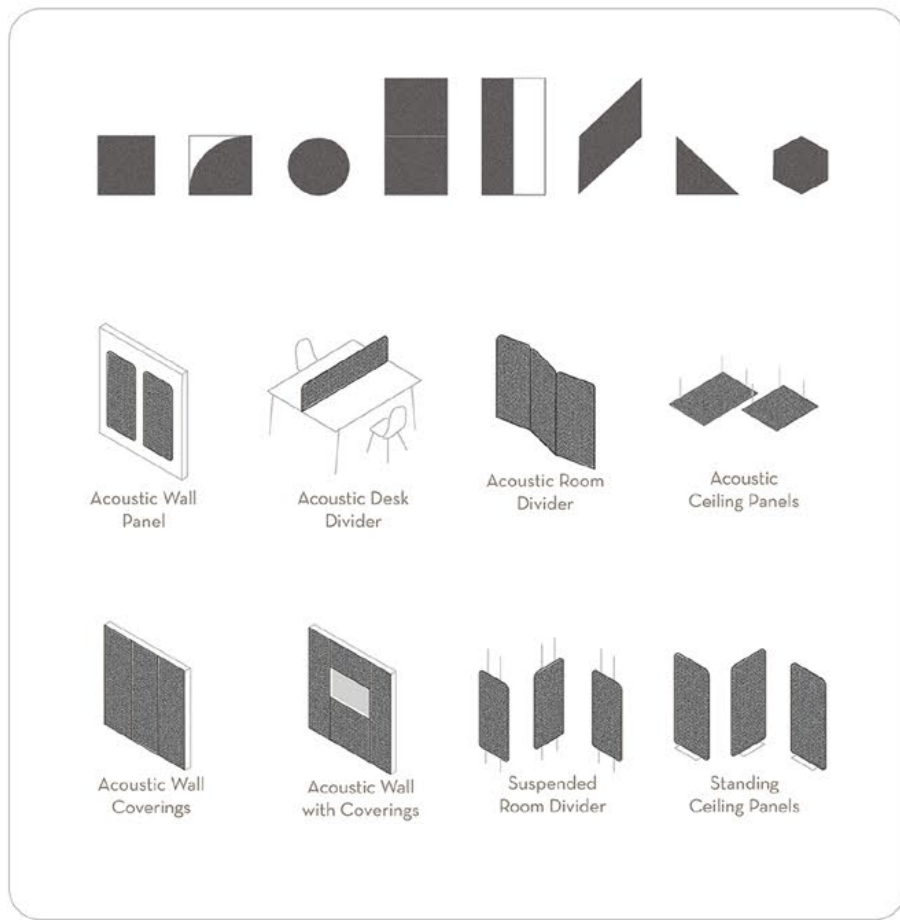
To eliminate the problem and realize the potential of wasted resources, are the implementation of large scale solutions needed. The project developed a resilient circular product from wasted textiles and prolonged the raw material lifetime – while adding value as a sound-absorbing panel and creating a healthy indoor environment. The process of turning the old garments into new acoustic panels is simple, afterward, the panels are mounted combined with other materials such as upcycle wood or in existing ceiling systems. Throughout this process, no toxic chemicals are added.



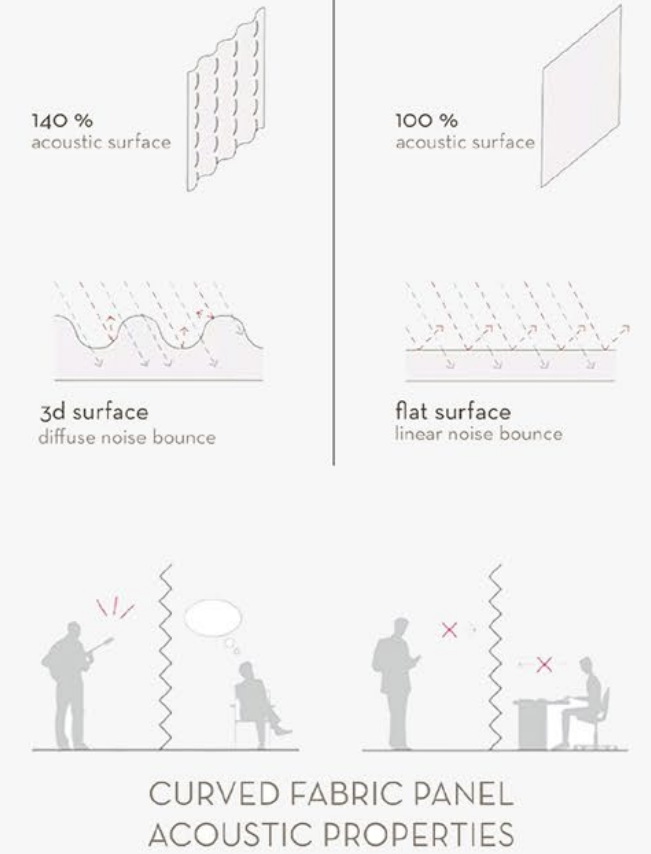
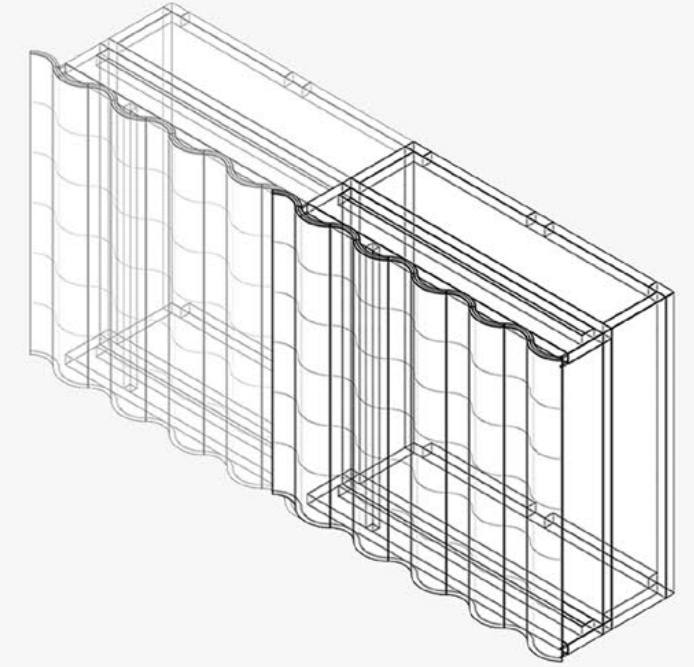
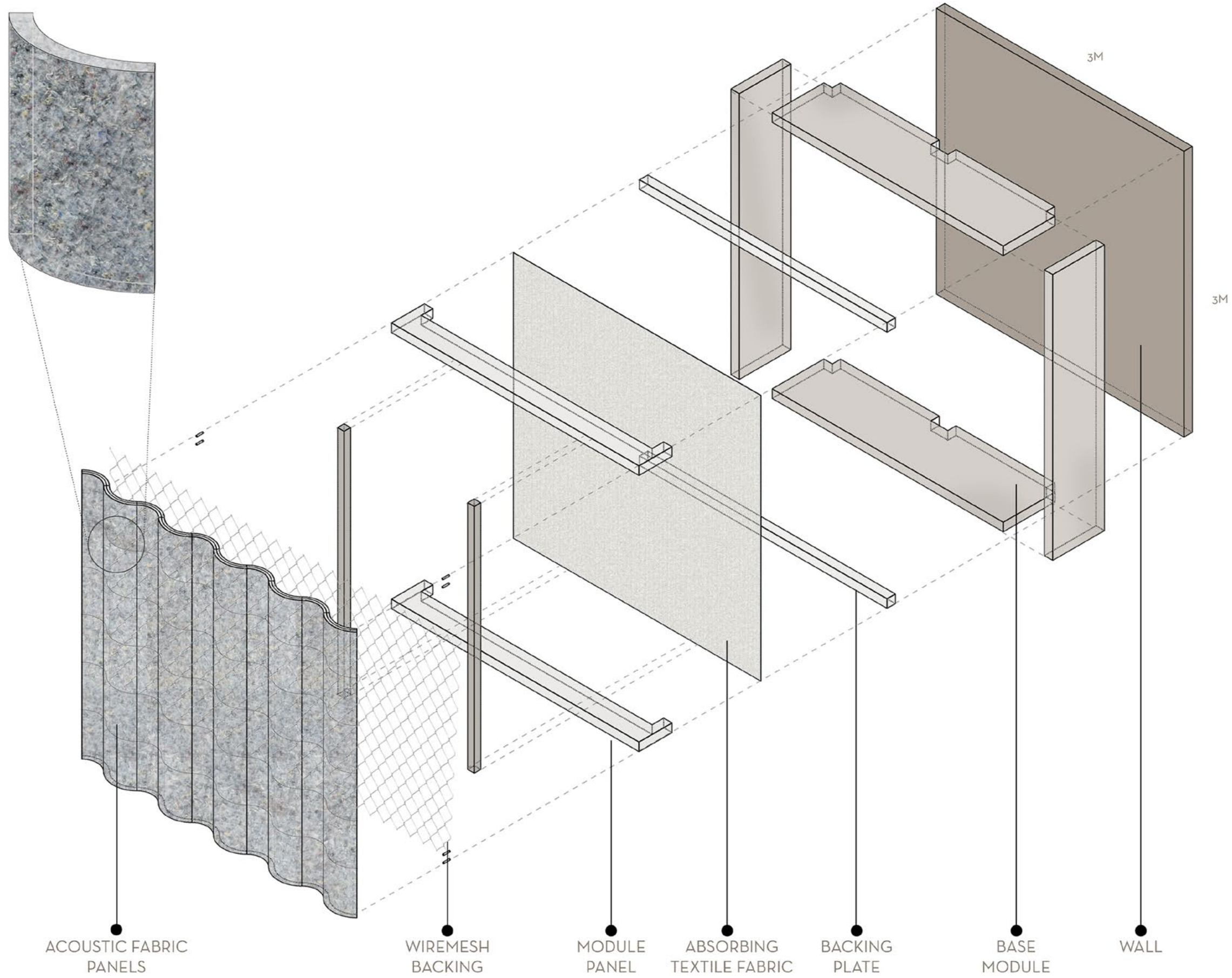
Construction manual



Applied products



Installation detail



06

HISTORY OF THEORY

The Eyes of the Skin - Architecture and the senses
by Juhani Pallasmaa

History Theory | Summer 2023
Instructor - Mark Wigley
Essay

This classic work of architectural theory, poses the profound question of why, despite there being five senses, sight has come to dominate architectural culture and design. The thesis clarifies issues about how the physical, sensuous, embodied sensations of architecture are disappearing from the modern world. Since the first edition was published in the mid-1990s, the subject has become even more relevant now due to the rise of digital and the widespread use of electronic images.

Pallasmaa begins by looking into how and why, through time, sight came to be valued more highly than the other senses.

Touted as a 'gentle manifesto,' this book aims to challenge the conventional wisdom in architectural thought, arouse audience curiosity, and encourage introspection regarding one's own self-concept in the world. It makes the case that, especially in architecture, we have gone too far in elevating sight above the other senses and that there is a more profound approach to comprehending and forming the spaces we create. Pallasmaa challenges the rationalist worldview that prioritizes vision over sensory experience in his discussion of modernist architecture. The combination of one liner quotations is rich in meaning and straightforward translations of the main idea. It renders these citations approachable and specifically significant to the topic at hand.

The sensations of light in a landscape and the warmth of a tub that are evoked by Renaissance and Baroque art are similar to those evoked by buildings. Not only do we live in buildings, but we also react to them in equal proportion. The author discusses pieces by Le Corbusier, Frank Lloyd Wright, and Alvar Aalto that arouse similar feelings and haptic perceptions in the spectator. With its eye-catching images and experiential allusions, the book compels the reader to engage and presents a strong case for his views that makes you want to nod in agreement.

Every experience with duality prompts the reader to reflect on and challenge what at first was believed to be unchangeable facts. Pallasmaa dangles several of them in his opening paragraphs, much to a movie trailer: self and the world, interiority and exteriority, time and duration, life, and death.

Although Pallasmaa does not specifically quote this aspect of philosophy, it is clear from the organization of his writing that the French philosopher Maurice Merleau-Ponty had a significant influence on him. Merleau-Ponty opposes total determinacy in his research of perception, awareness, and the experience of the 'self' in the universe.

Pallasmaa expresses concern about the way architecture is conceptualized, saying that it 'contributes to the disappearance of its physical, sensual and embodied essence' when it is based on functional, rational, and intellectual dimensions. Philosophy has always been thought to be influenced by the eyes and vision. Understanding something is being able to 'see' it clearly.

Additionally, the notion of perspective in a story or sequence with a plot or horizon tends to create a visual framework for understanding the world. Architecture is our fundamental understanding of how space and time connect to us and how we give these dimensions a human measure.

Architecture is 'multi-sensory,' meaning that one must immerse oneself in time and place while using all of the senses. Although the author encourages us to consider how senses interact simultaneously in a complex network, our understanding of senses tends to be a collection of distinct sensations, such as sight, hearing, smell, taste, and touch.

He acknowledges that sight 'flattens the present, speed, and simultaneity, causing us to live increasingly in the present', which in turn turns pictures into commodities. He cautions that 'superficial architectural imagery today, devoid of tectonic logic and a sense of materiality and empathy' does not reflect what architecture is about.

Using his whole body and sense of self, an architect can work with the existential knowledge of existence. Architecture has two main points of emphasis: the outside world and one's own inward self. Furthermore, it is a mirror of the outside world reflecting back into one's personal experiences and subsequently out into society as a whole.

Rigidly dividing these senses tends to hide the fact that when combined, they foster understanding. Time has collapsed due to the speed of modern life and the constant stream of meaningless images. Sound, more than any other sense, gives architecture a sense of time again. Sound incorporates all directions and has the ability to articulate and structure experience. Additionally, the smell also evokes memories more strongly than other senses. Pallasmaa finds that a place's aroma is frequently what he remembers about it the most.

Buildings and cities are the instruments and museums of time. They enable us to see and understand the passing of history, and to participate in time cycles that surpass individual life'

Trying to address the most controversial concept in this book, that is the fundamental value of the hand as a tool, disproving the use of computers to replace hand drawing or similar tasks. The reason it is contentious is that Pallasmaa discussed the never-ending flood of pictures in the modern world before the internet evolved into the connected culture medium it is today. If that was accurate in 1996, it's even more accurate now. Thus, architecture is only an intellectual game of surfaces and a tool for self-expression.

The Eyes of the Skin is a perfect example of Pallasmaa's acute understanding of human experiences in the world and how crucial they are to architecture. His idea that 'architecture is the art of reconciliation between us and the world, and this mediation takes place through the senses' is revealed by his research of the various senses, and the phenomenological conditions we experience.

In order to establish a lasting human experience, connect with communities, and forge a deep bond with the environment, it is critical for people of society to employ their imagination in addition to their senses.

07

CATALYSTS FOR CATADORES

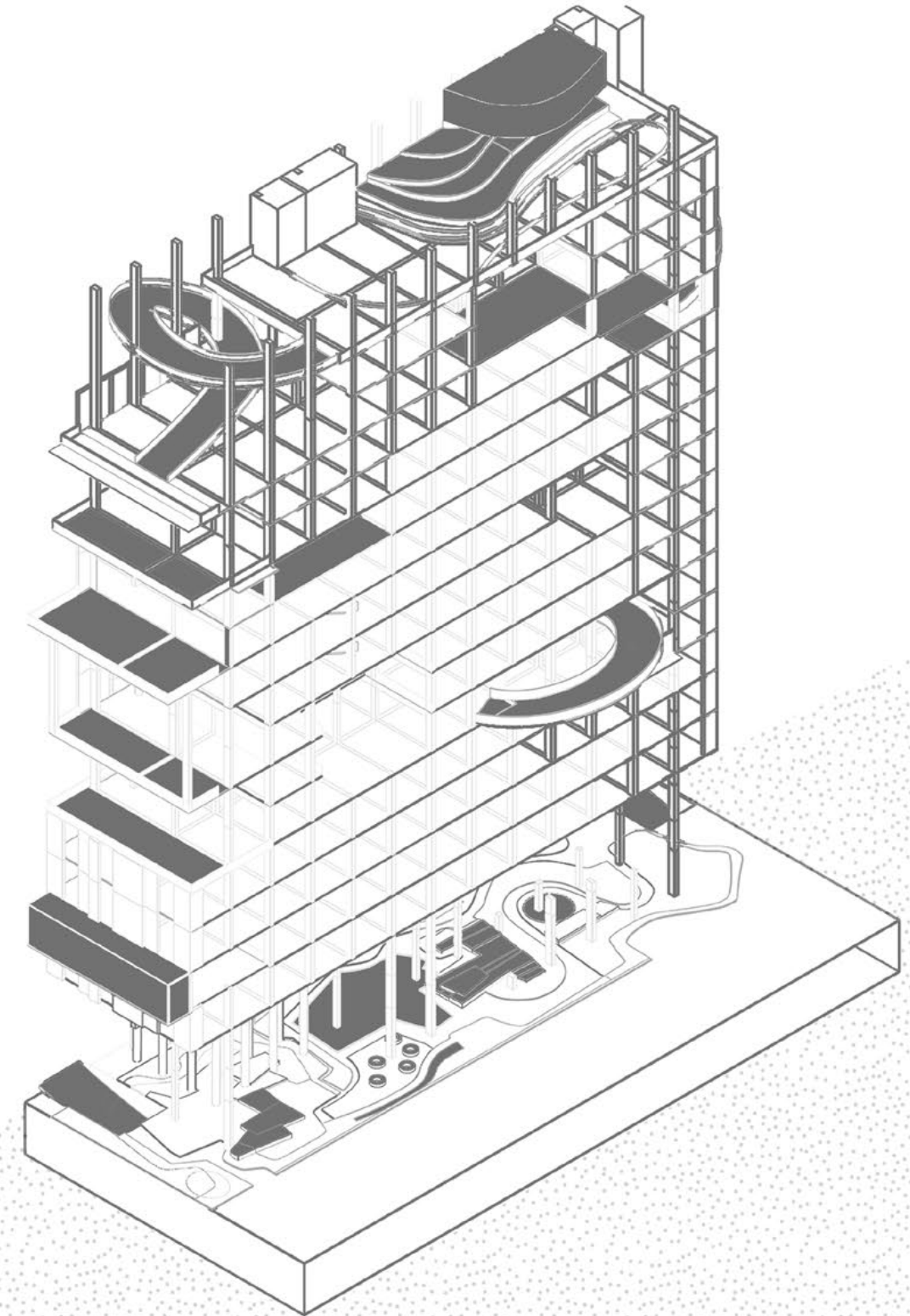
*Tropical Promenade through a Plastic Recycling facility
in the center of the city*

Advanced Studio VI | Spring 2024
Instructor - Galia Solomonoff
Collaborator - Aishwarya Garg

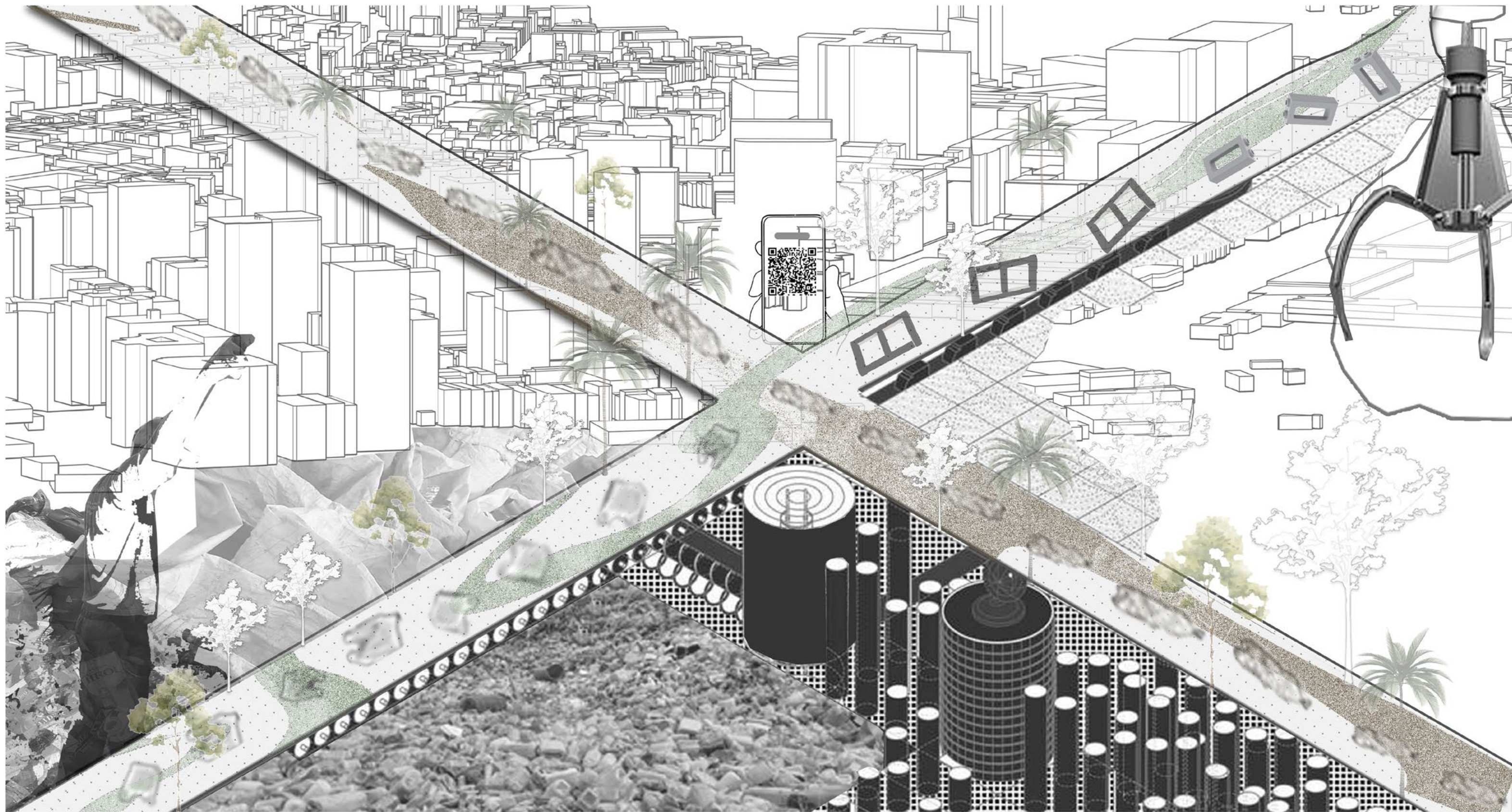
Rio De Janeiro has a system of recycling waste and catadores are a vital part of that system. Most of the unseen/ignored heroes on the streets of Rio are not even registered in the system. What happens to them, where do they come from, who knows?

An attempt to educate the locals and tourists about the issues related to waste in the city and explore the smart ways to recycle it, while incorporating it in the building itself as a system and material.

The abandoned building serves as a comprehensive material-reuse project, aiming to engage the community with the recycling process, encouraging more participation, education, and enthusiasm. In conjunction with the recycling facility, the tropical vertical walkway allows the public to integrate with the functioning system. This would be a new take on a sustainable recycle prototype for plastic processing, generating opportunities, a learning center, and providing architectural building components in a closed-loop system.



Form development



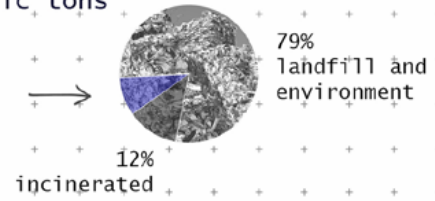
RIO DE JANEIRO

recycling in dense urban fabric through existing infrastructure

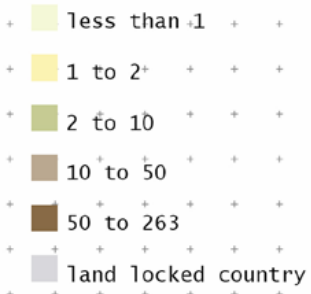
PLASTIC WASTE PRODUCED AND MISMANAGED

Since 1950, humans have created approximately 6,300,000,000 metric tons of plastic waste.

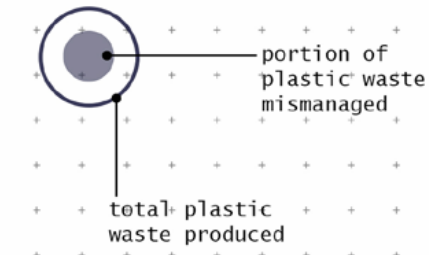
To date, only 9% of this amount has been recycled.



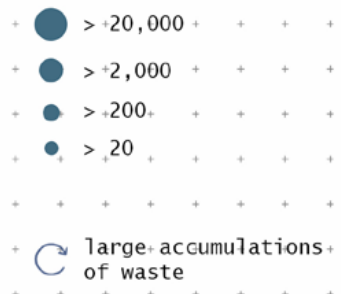
Coastal population
million people



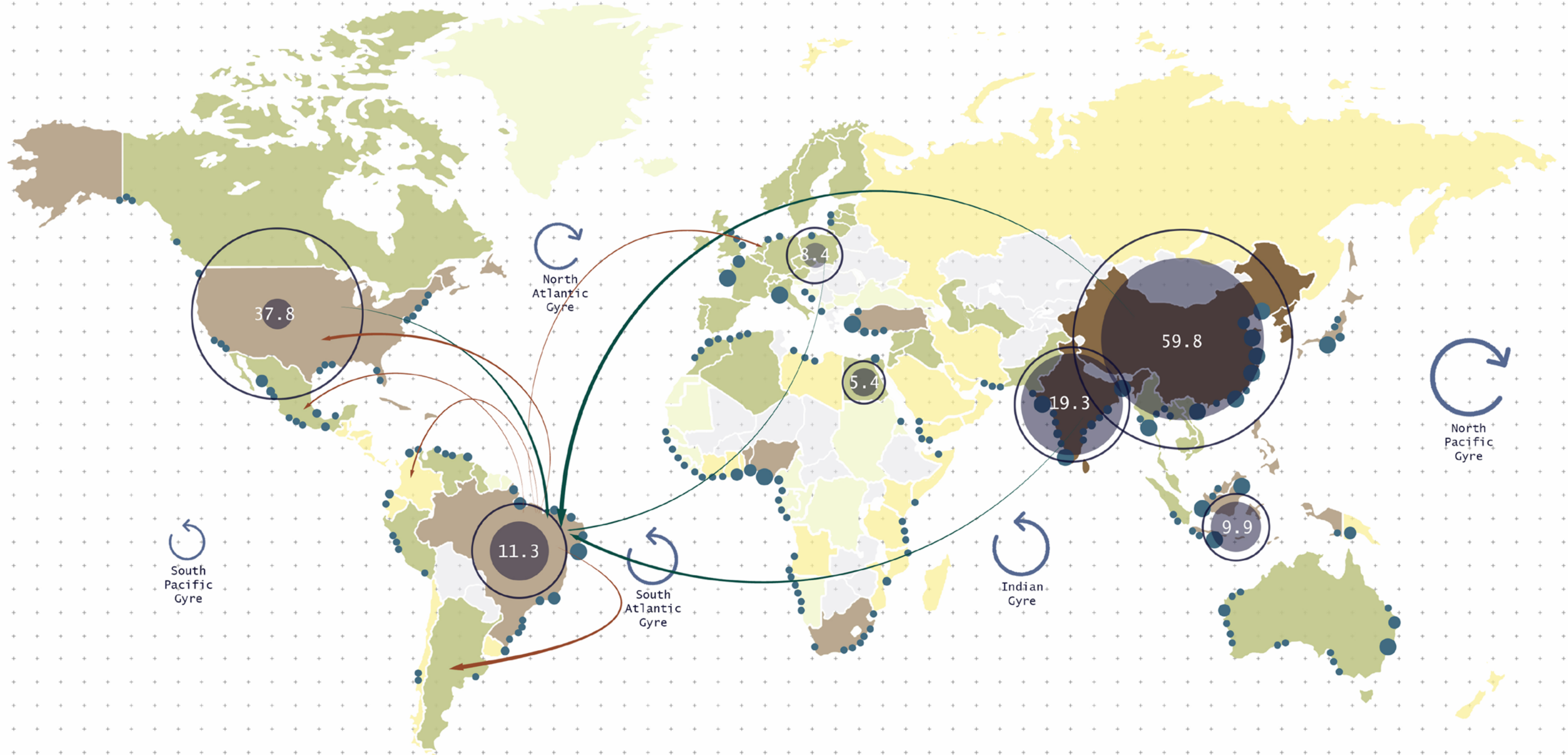
Plastic waste production
thousand tonnes per year



Plastic inputs from ocean
tonnes per year



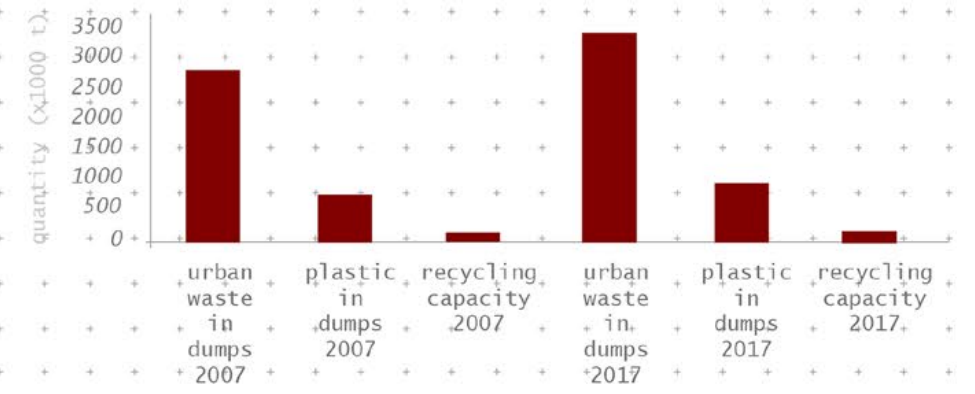
Plastic trade

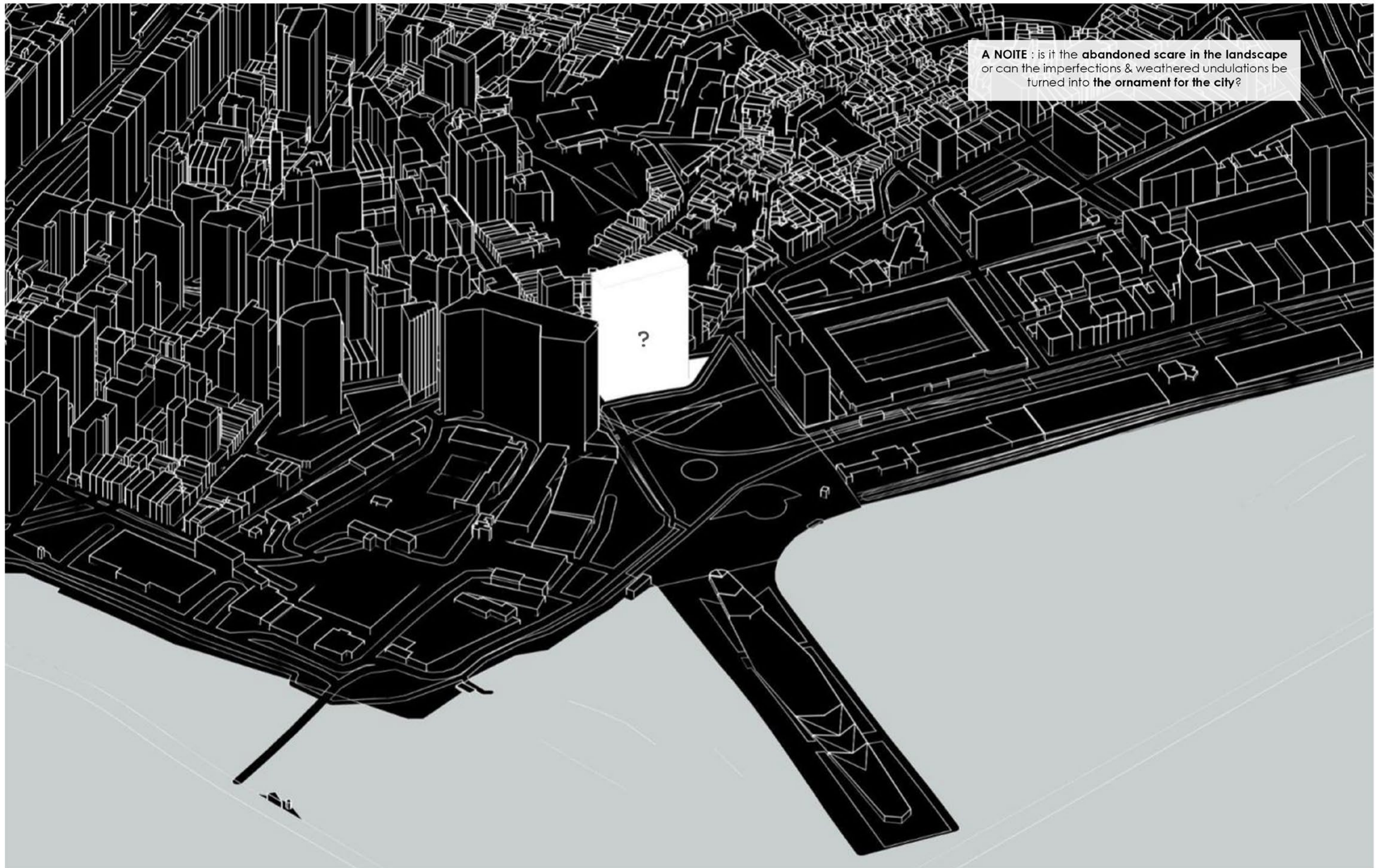


recycling and waste collecting facilities

abandoned buildings

A NOITE

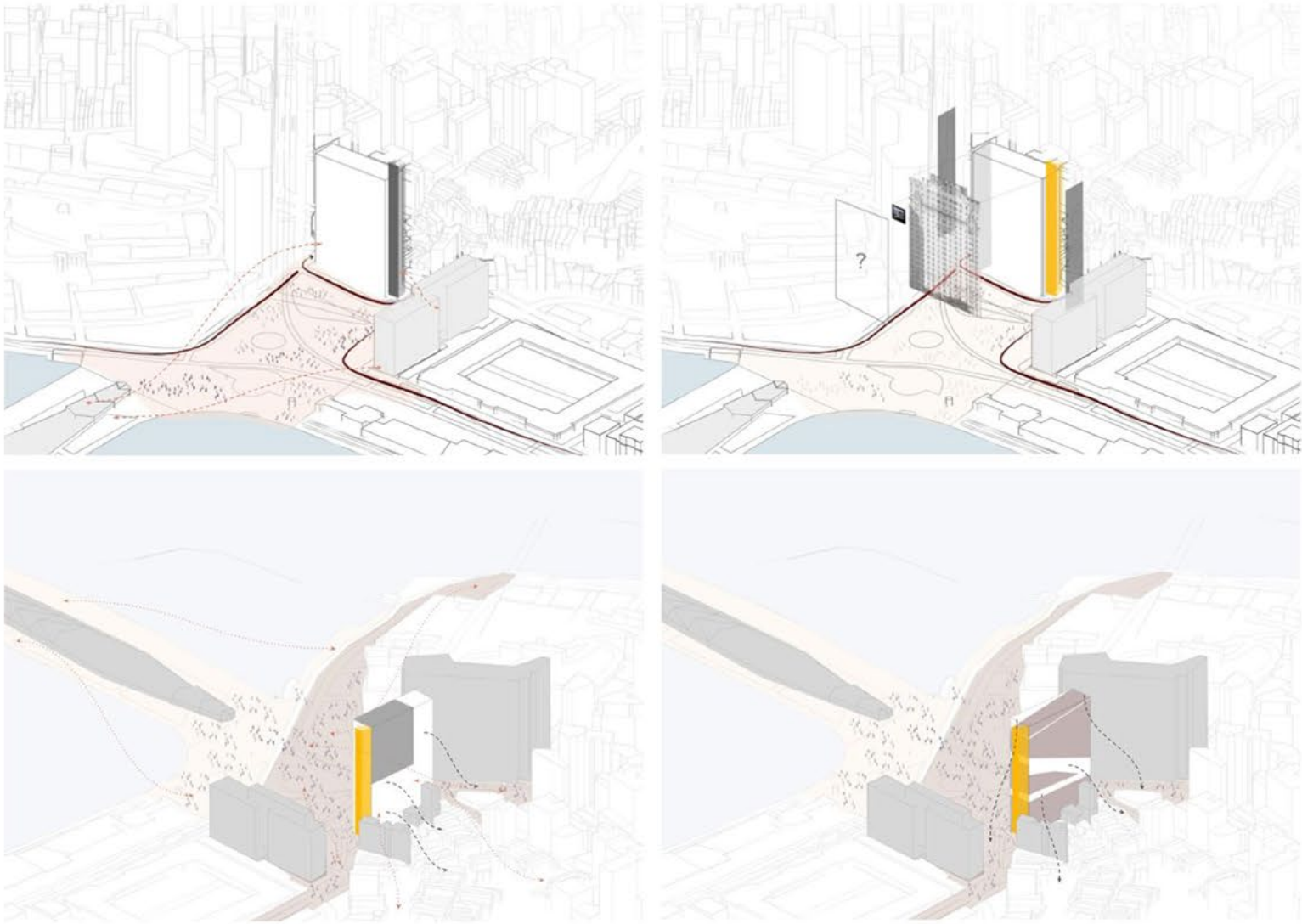




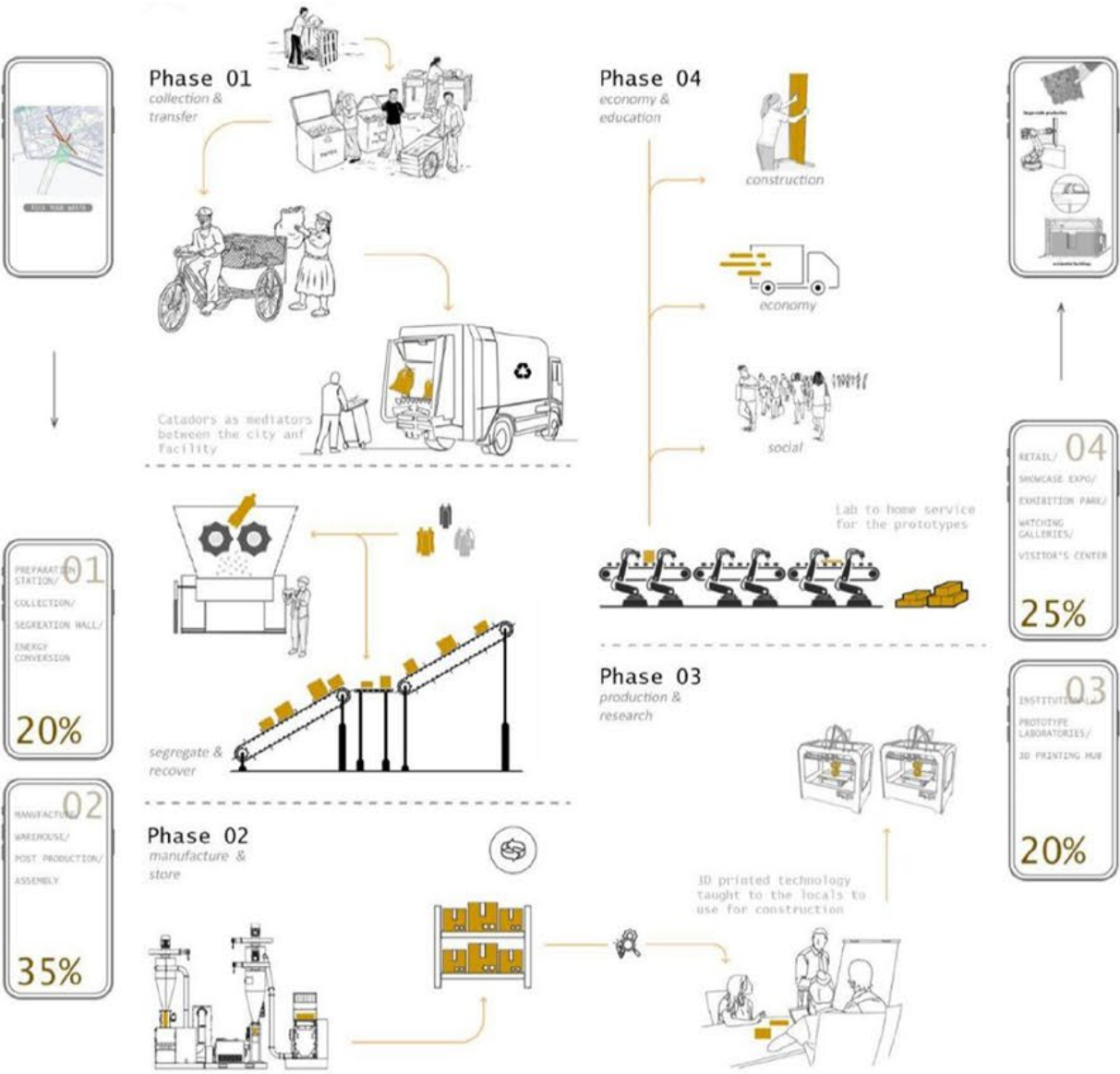
A NOITE : is it the **abandoned scare** in the landscape or can the imperfections & weathered undulations be turned into **the ornament for the city**?

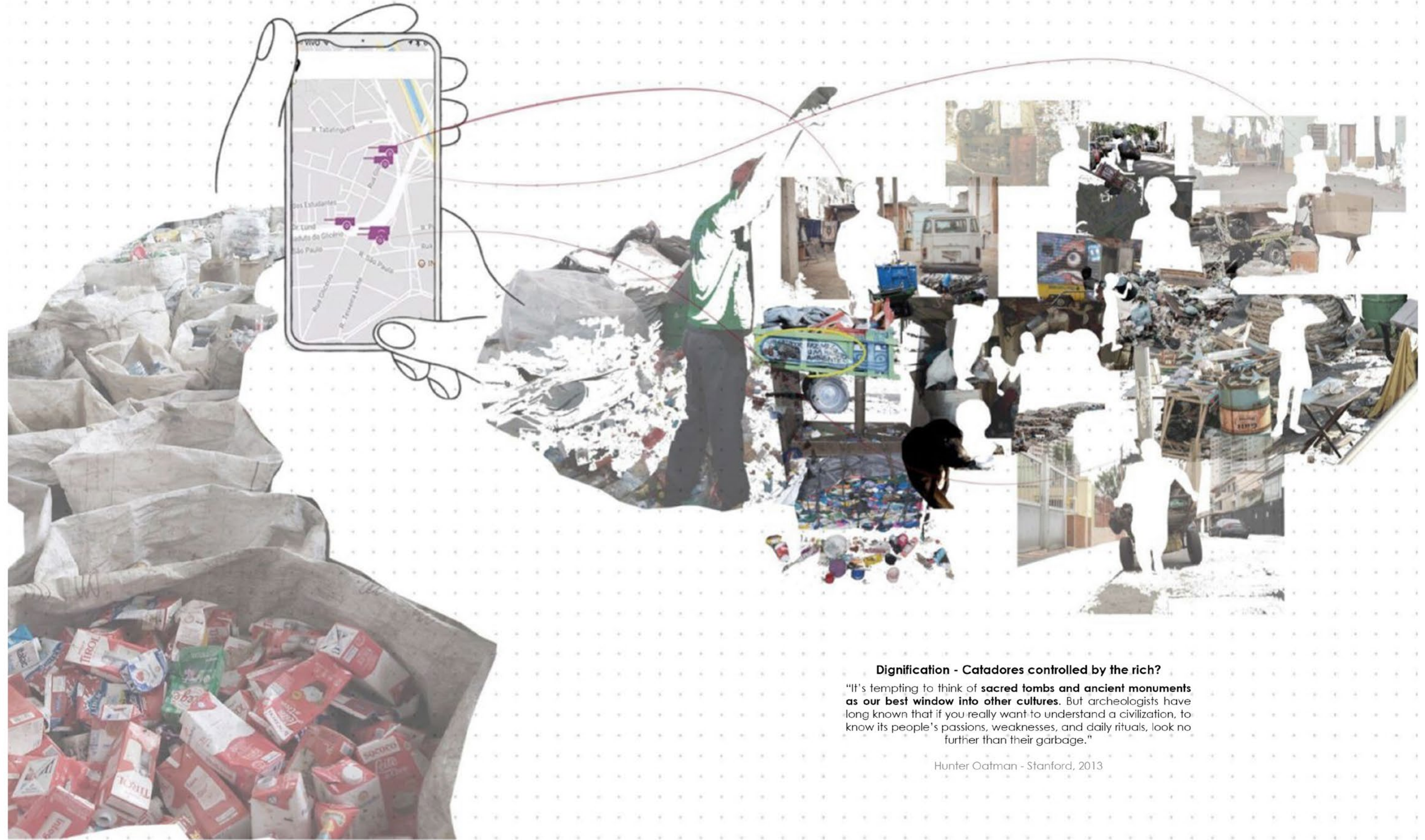
How **wasted** is the city?

Dozens of independent truck drivers transport **the recyclable waste to massive processing facilities** located far outside the city. The plastic recycling center to **retrofit the abandoned building** and ignored catadores can add dignity to the disparities from Gatos to the alleys of the favelas beyond the pretty beaches of the landscape.



initial site approach





Dignification - Catadores controlled by the rich?

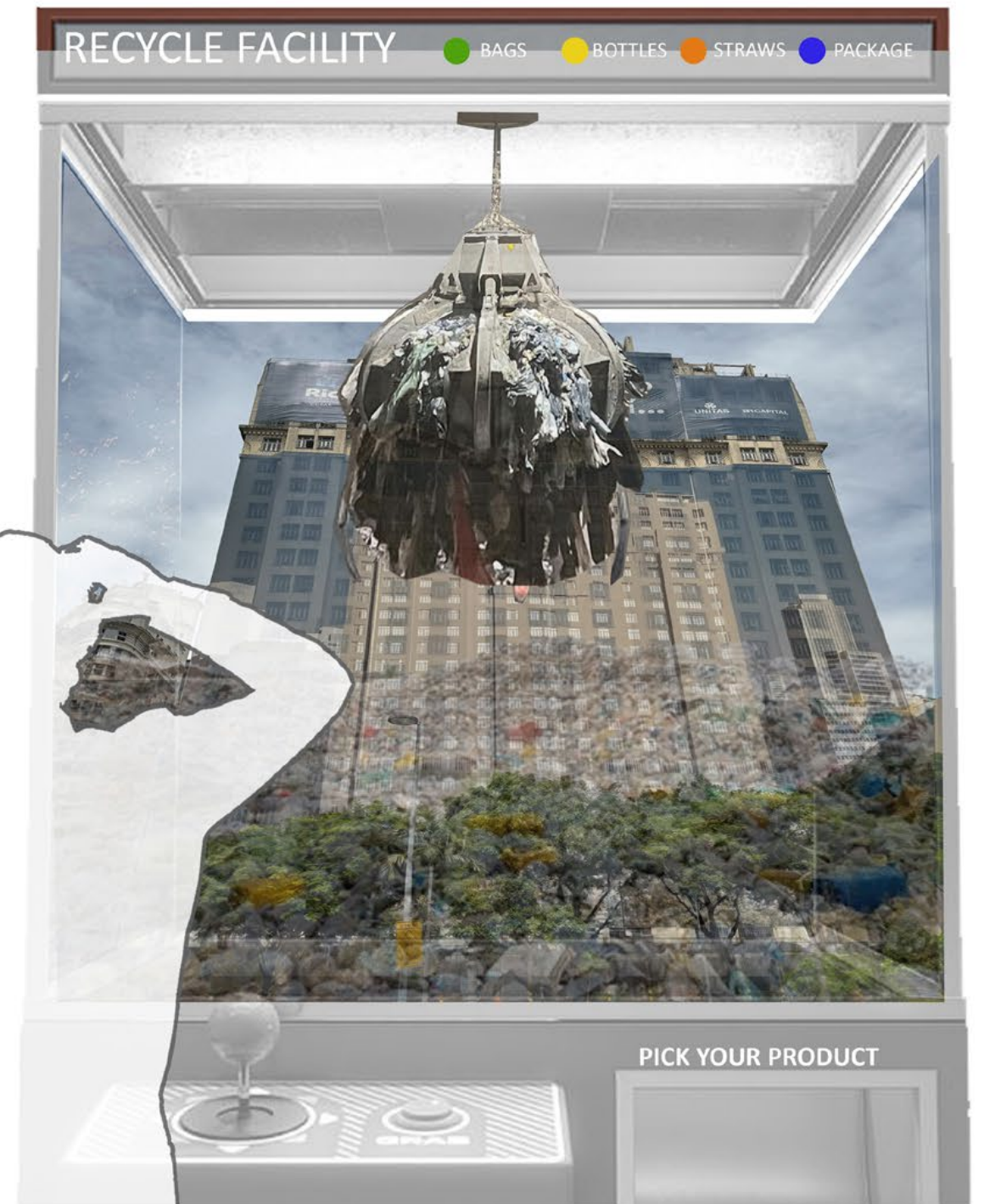
"It's tempting to think of **sacred tombs and ancient monuments as our best window into other cultures**. But archeologists have long known that if you really want to understand a civilization, to know its people's passions, weaknesses, and daily rituals, look no further than their garbage."

Hunter Oatman - Stanford, 2013

existing



proposal

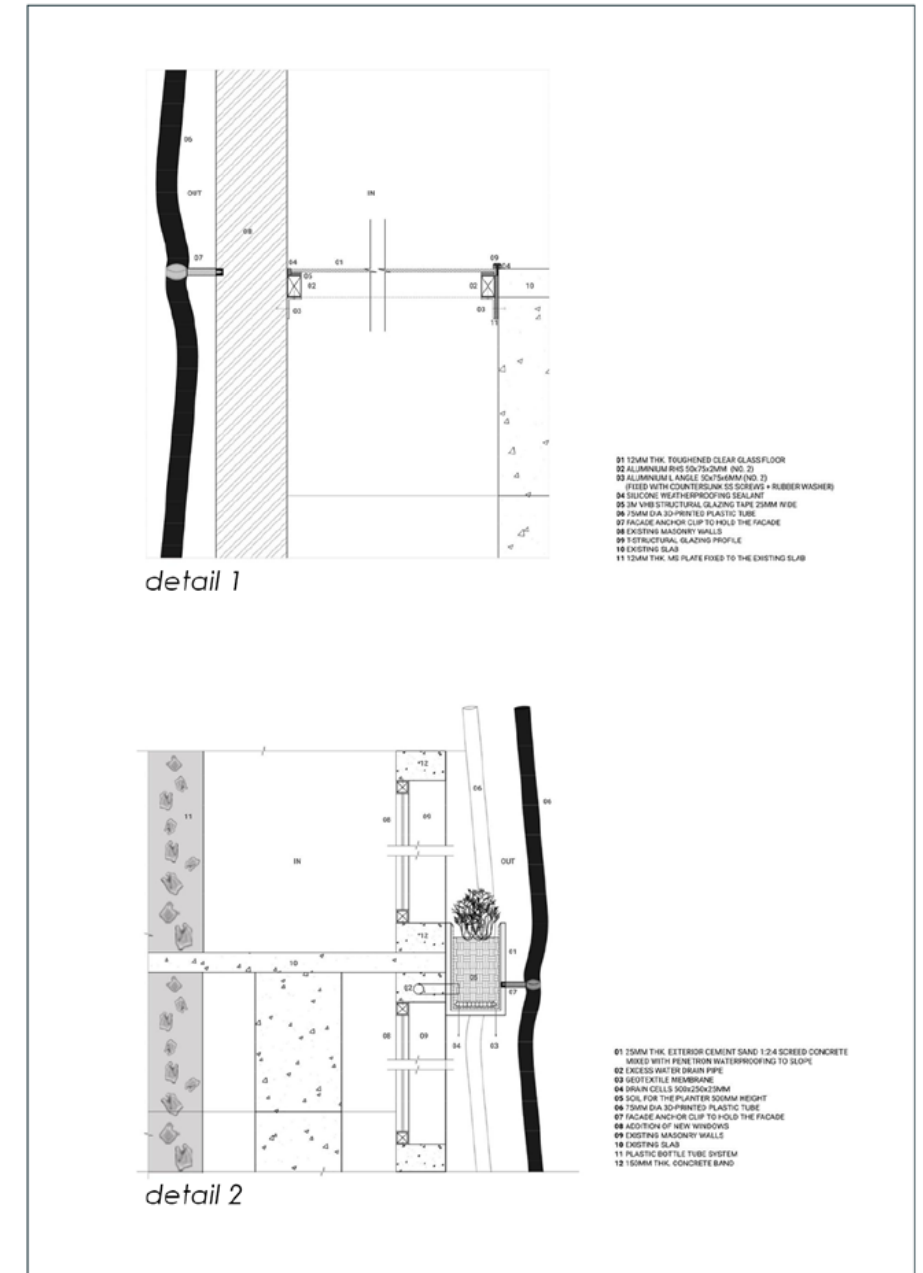
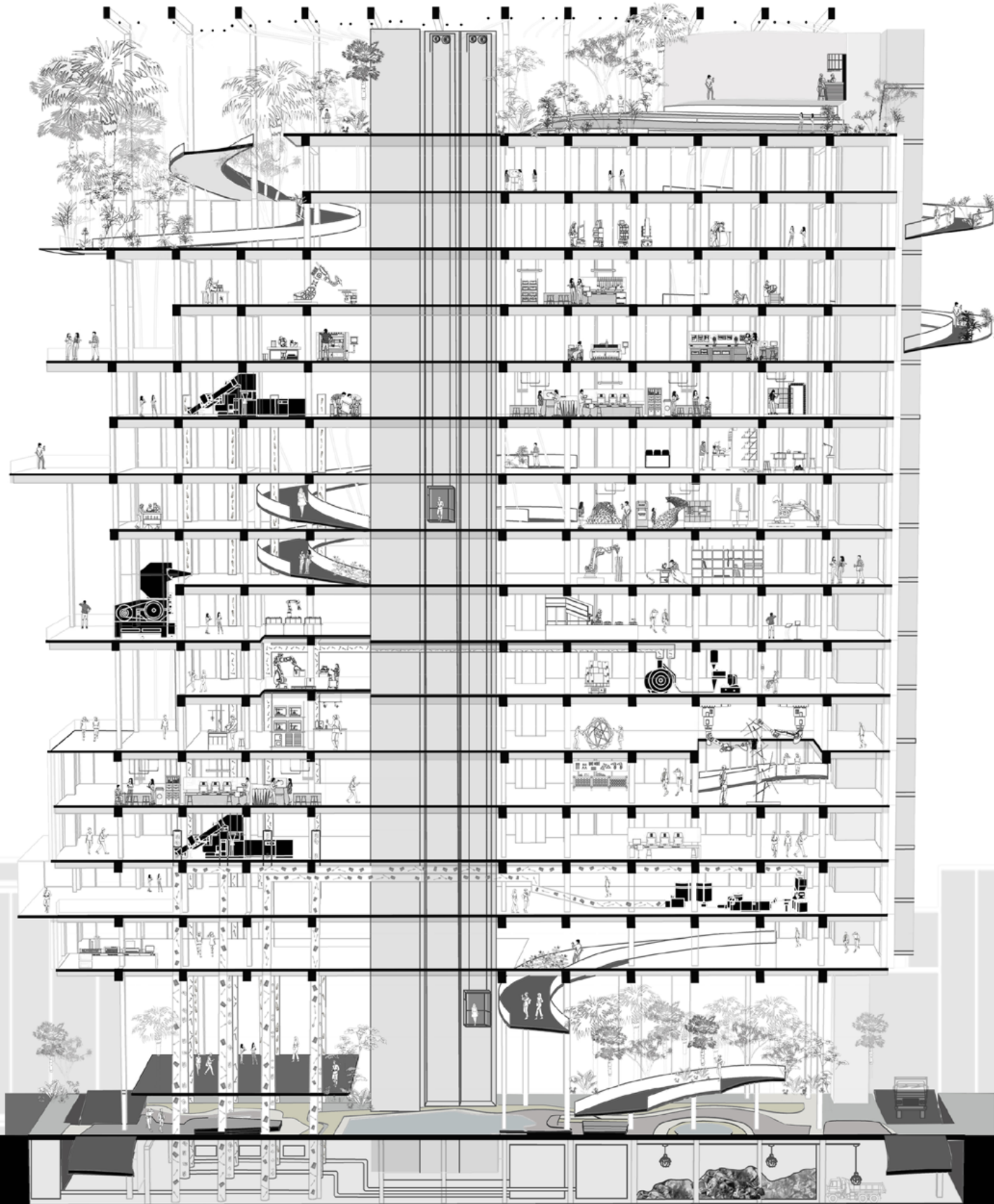


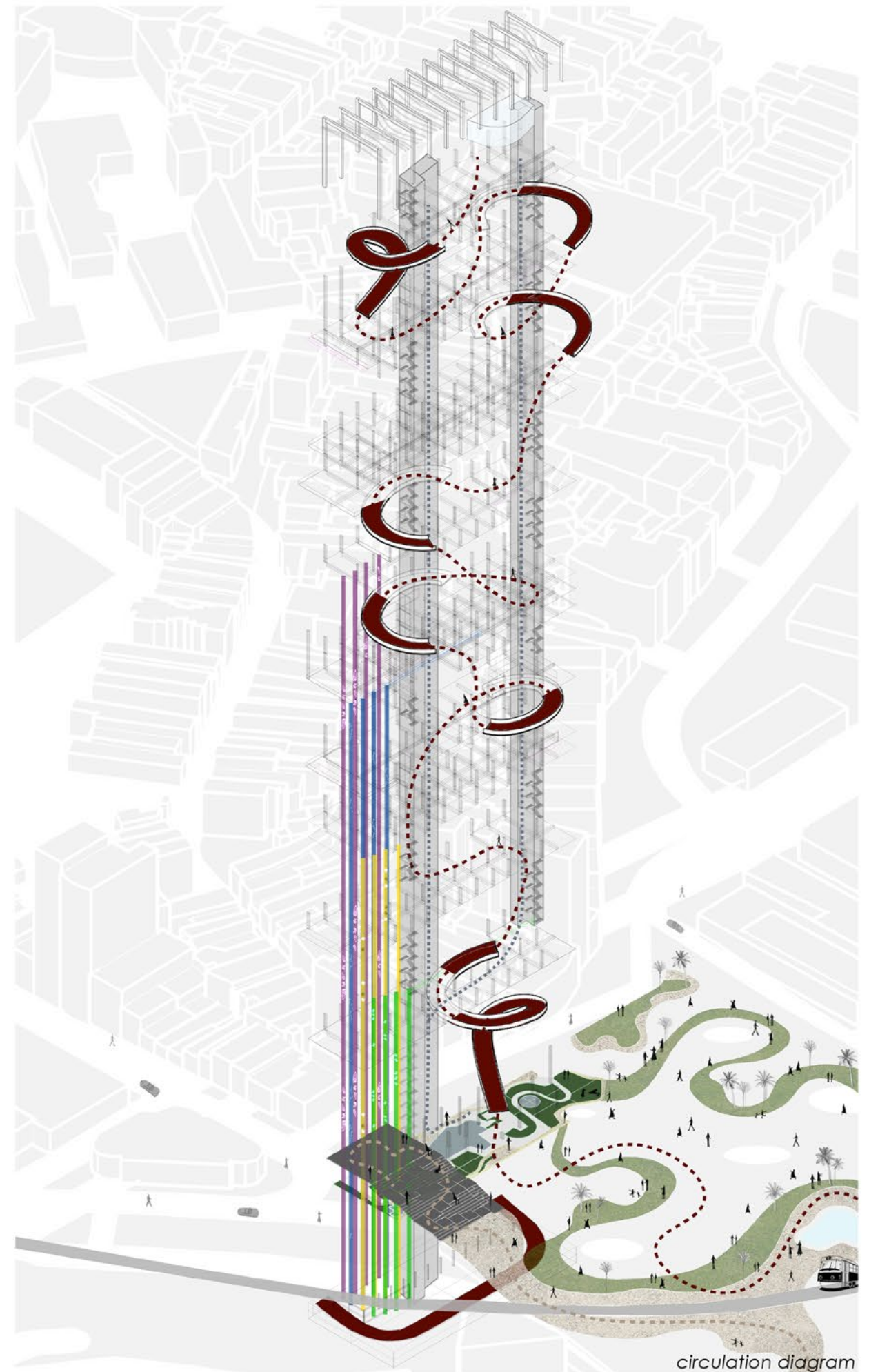
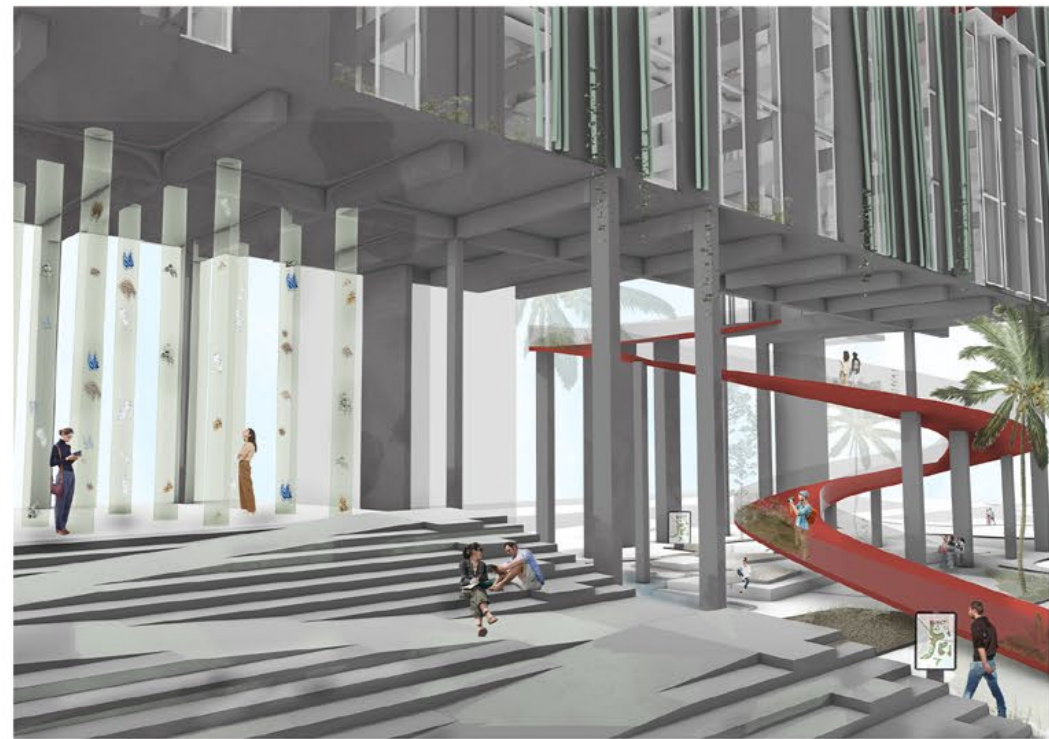
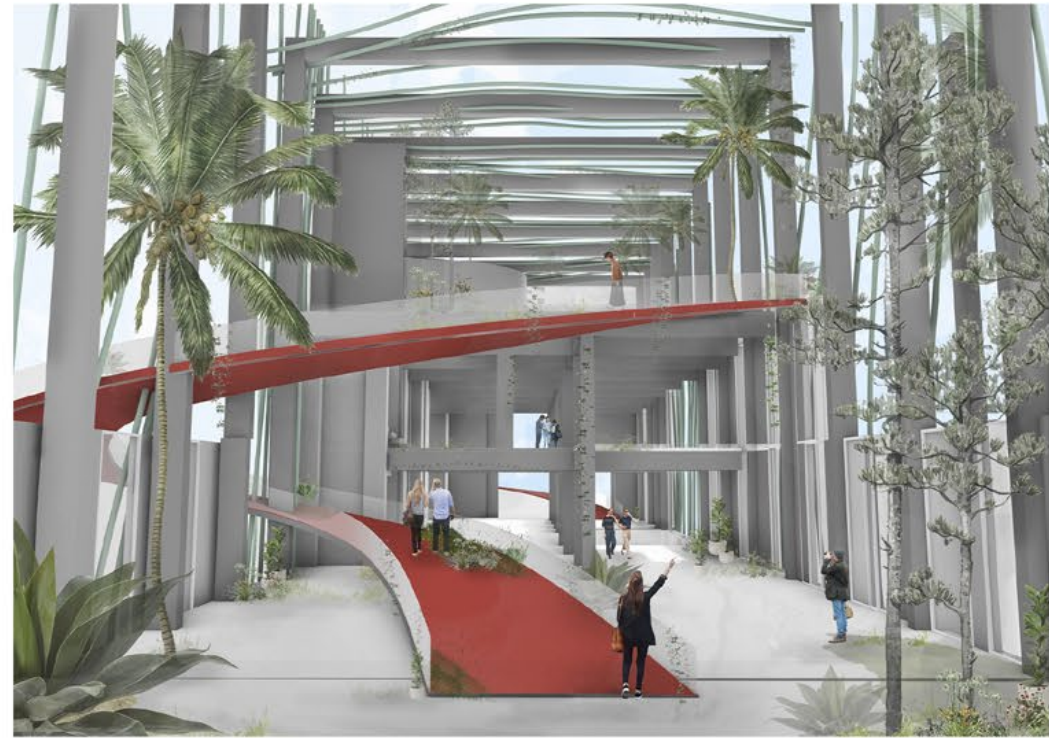




facade detail

axonometric focusing on landscape





08

RETHINKING BIM

Exploring different methods of leveraging Building Information Modeling to enhance all processes within our industry

Visual Studies Computation | Spring 2024

Instructor - Joe Brennan

Collaborators - Aishwarya Garg, Chuxi Xiong, Pallavi Jain

Nomad is a neighbourhood in transition, situated to the north of Madison Square Park and to the east of Penn Station. It contains a mixture of retail and aging office spaces, but also historic residences and hotels.

The stepped massing allows for unobstructed views to the city and allows for private terraces on selected floor. Inspired by this precedents of the project, proposal maximizes the number of units that have continuous sunlight access throughout the day.

The project also analyzes the correlation between the optimized access to daylight that massing provides and increased value of the units through an improved user experience. The concept strategy that conforms to zoning. The design meets the zoning and climatic conditions to execute the complex facade.



View A
Site Surroundings

View B

View C

View D

View E

Zoning and Land Use

- Tax Lots
- One & Two Family Buildings
- Multi-Family Walk-Up Buildings
- Multi-Family Elevator Buildings
- Mixed Residential & Commercial Buildings
- Commercial & Office Buildings
- Industrial & Manufacturing
- Transportation & Utility
- Public Facilities & Institutions
- Open Space & Outdoor Recreation
- Parking Facilities
- Vacant Land
- Other

Zoning Districts

- Commercial Districts
- Manufacturing Districts
- Residence Districts
- Parks
- Battery Park City

Supporting Zoning Layers

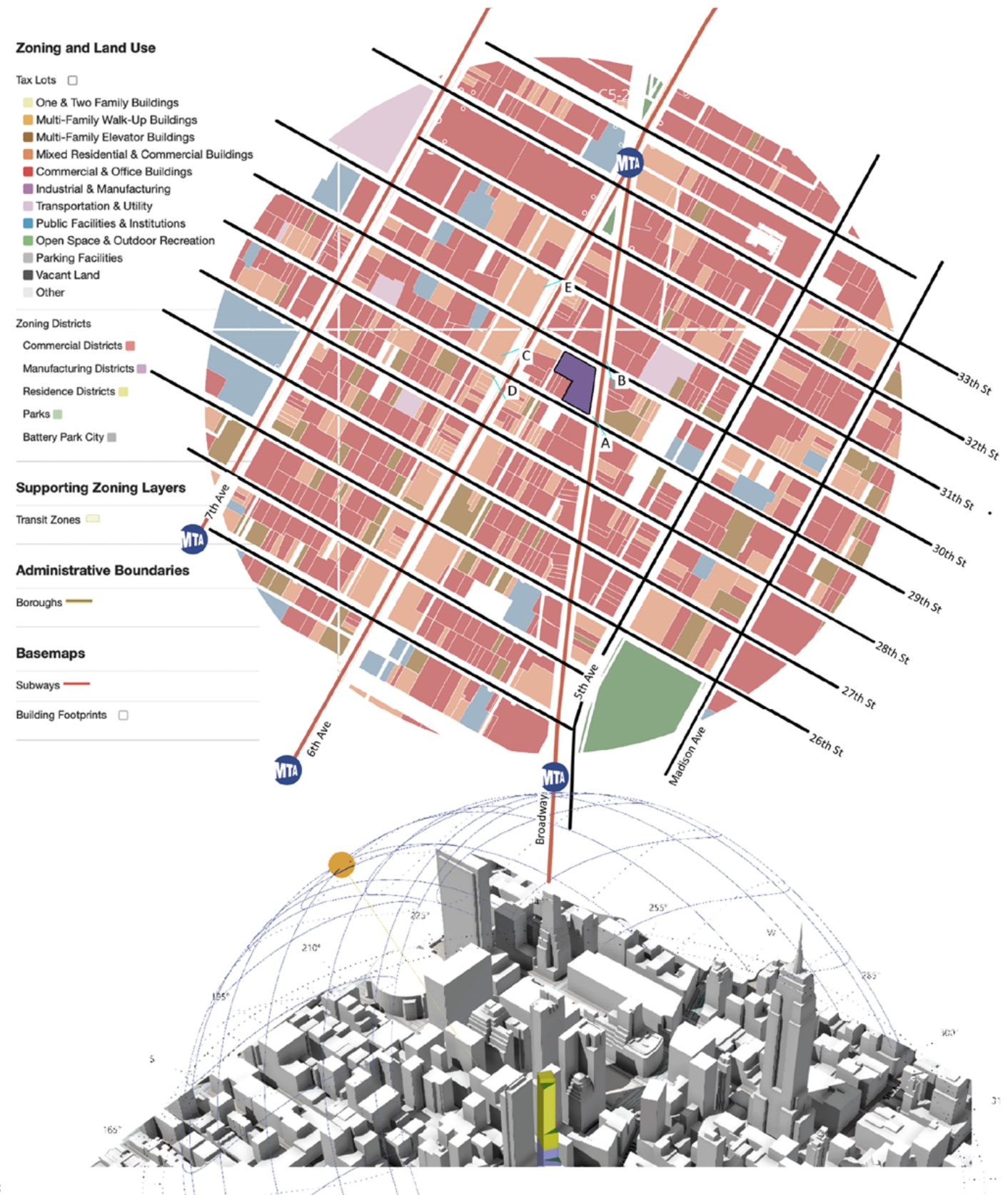
- Transit Zones

Administrative Boundaries

- Boroughs

Basemaps

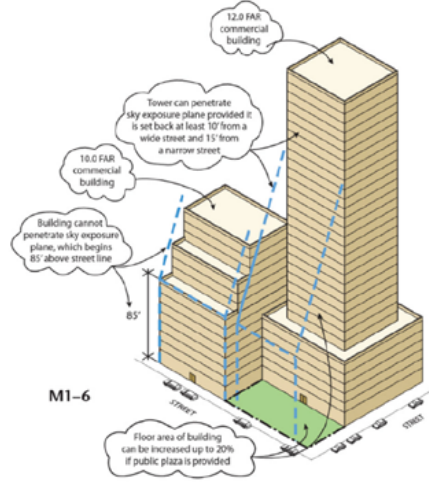
- Subways
- Building Footprints



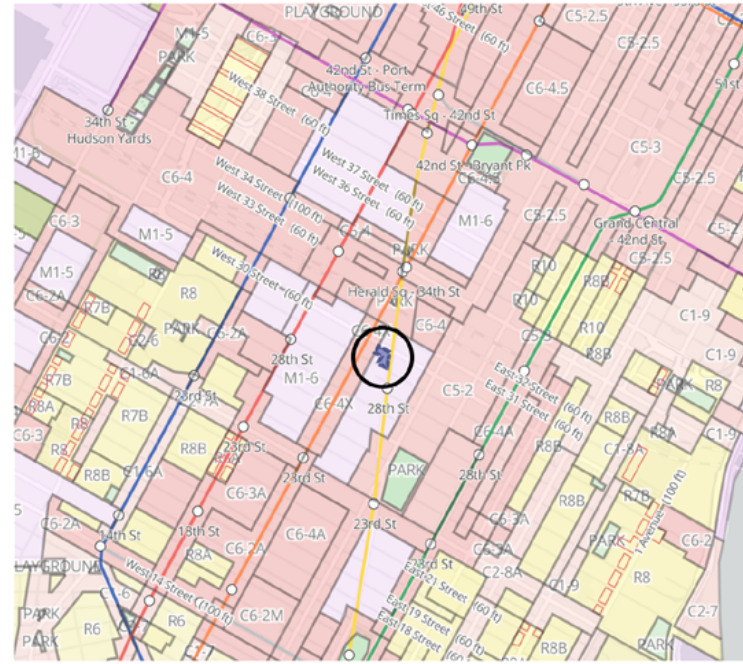
Site Analysis

Zoning Analysis & Building Codes

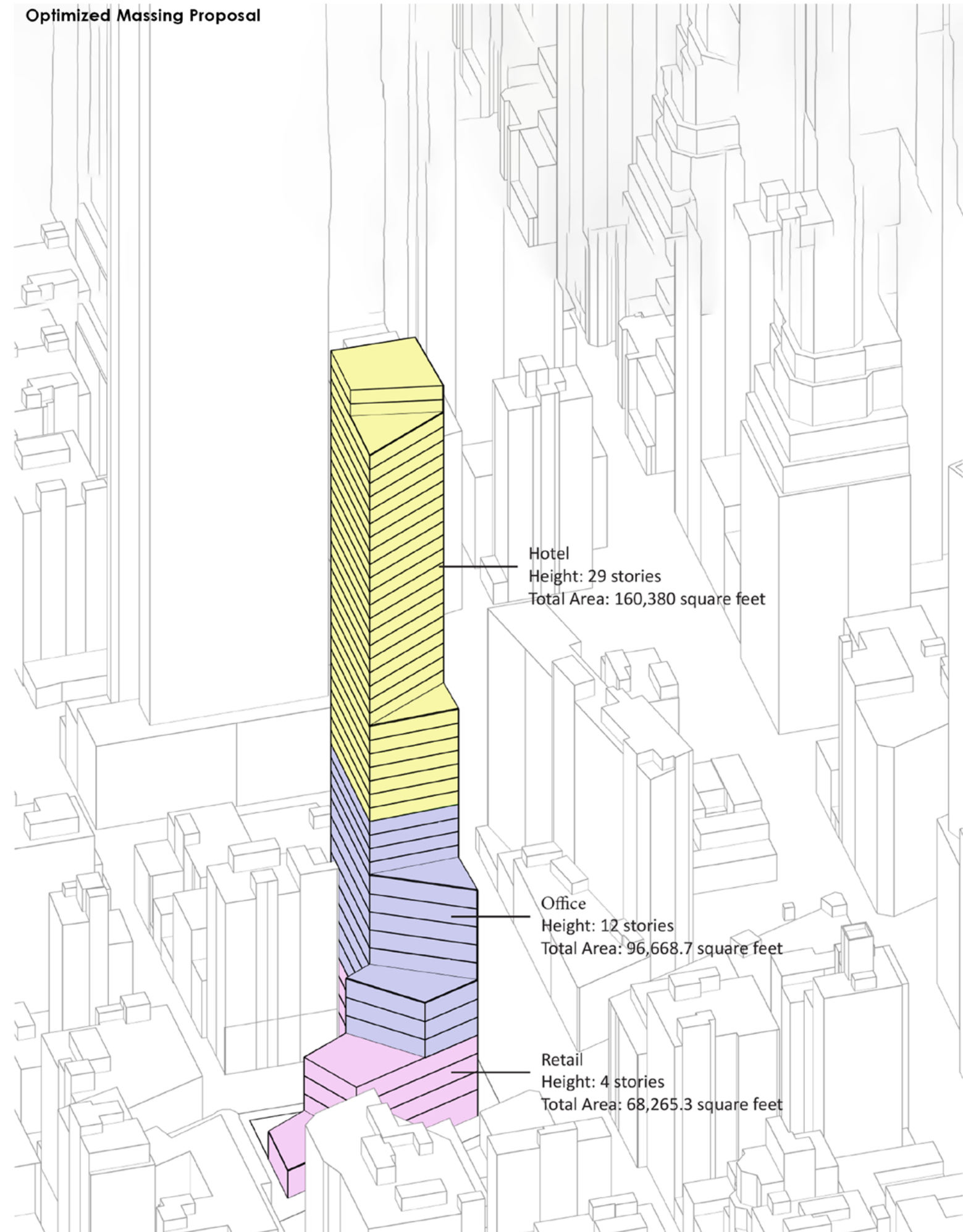
- SITE AREA : 29,900 sqft.
- M1-6 FAR : 10.0 = 29,900 sqft.
- M1-6 FAR with Public Plaza bonus 12.0 = 358,800 sqft.
- SKY EXPOSURE : ZR 43-45
- Tower footprint max. 40% of lot area : 11,960 sqft
- 15 feet from narrow street
10 feet minimum from wide street
- PODIUM LIMIT : 85' or 6 stories



SITE- Nomad, Manhattan



Optimized Massing Proposal



Hotel
Height: 29 stories
Total Area: 160,380 square feet

Office
Height: 12 stories
Total Area: 96,668.7 square feet

Retail
Height: 4 stories
Total Area: 68,265.3 square feet

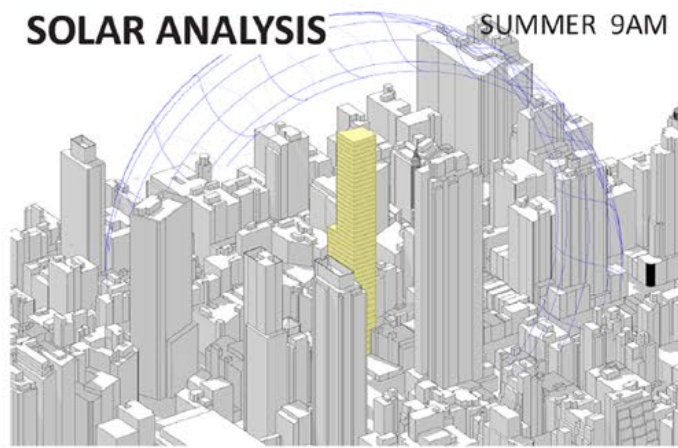
Site Plan



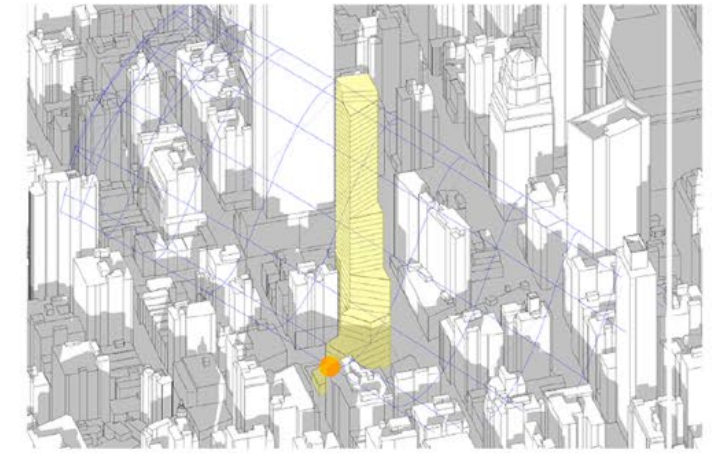
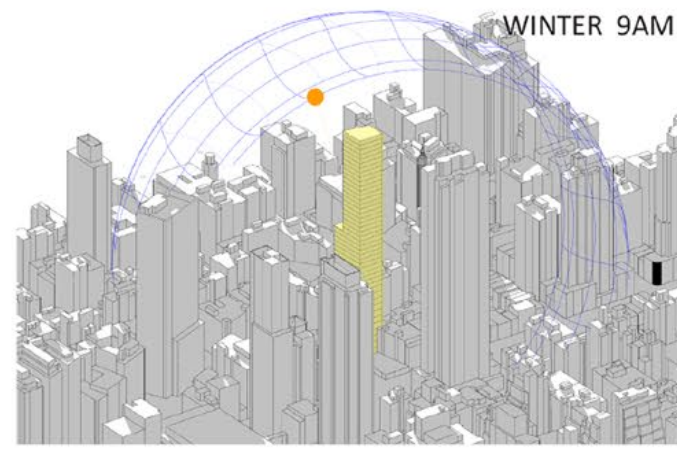
As designers we were interested in adding an architectural layer to this optimization process. Since the optimized option suggests a larger, more open plaza space; we continued the stepping massing language to reduce the number of columns in the optimized option. This design move allowed us to have some additional units, less columns and more open plaza that forms connections to the city.

SOLAR ANALYSIS

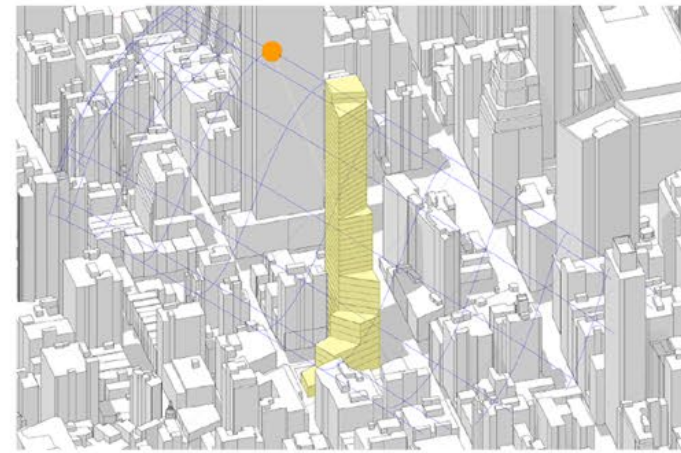
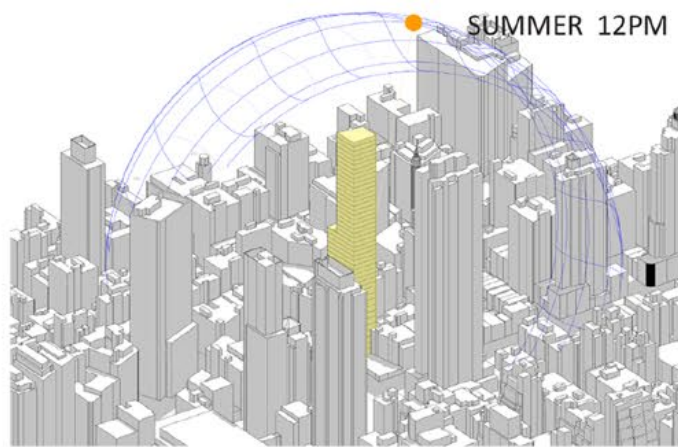
SUMMER 9AM



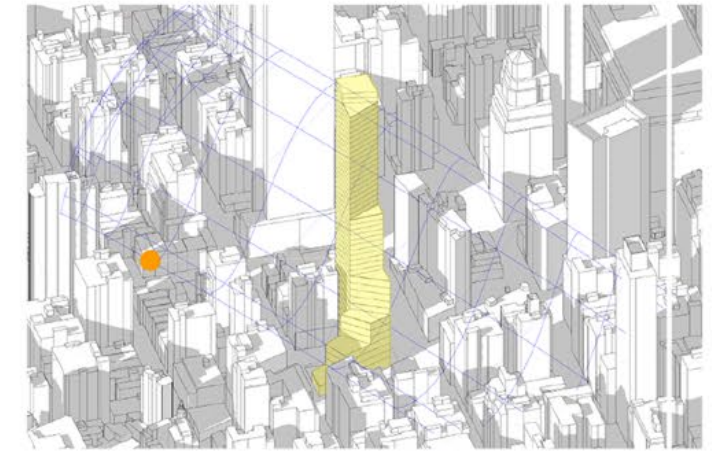
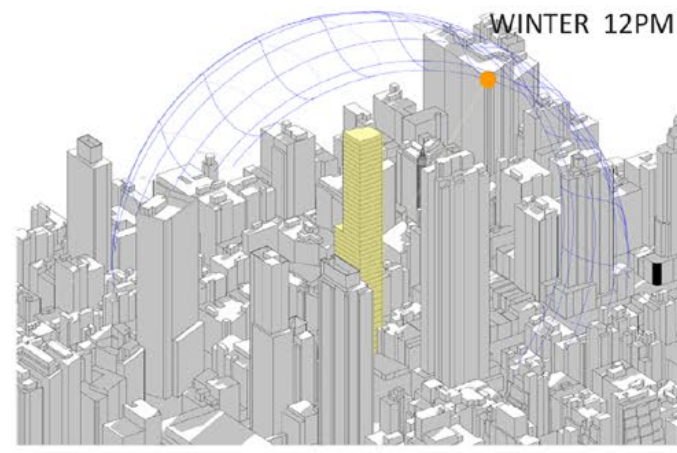
WINTER 9AM



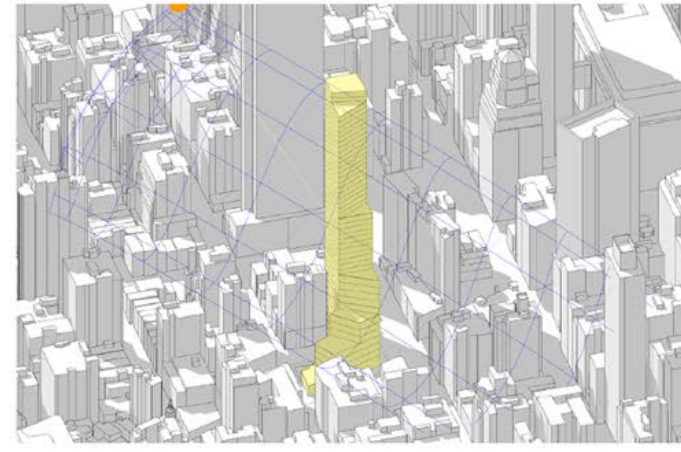
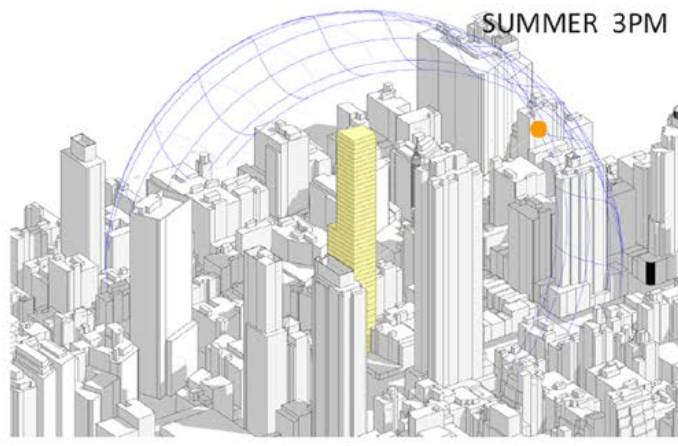
SUMMER 12PM



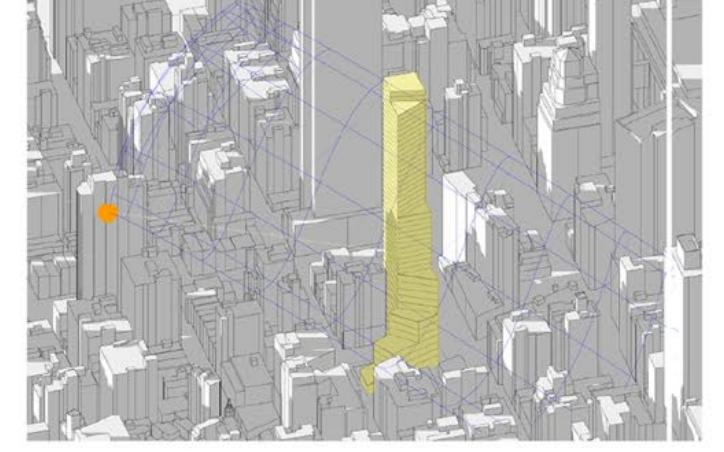
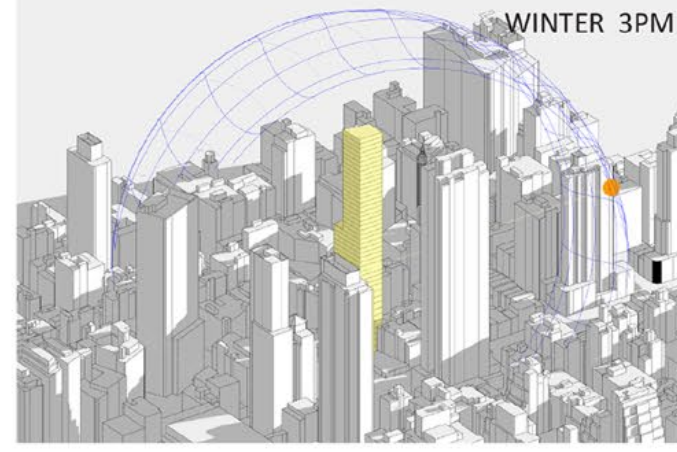
WINTER 12PM

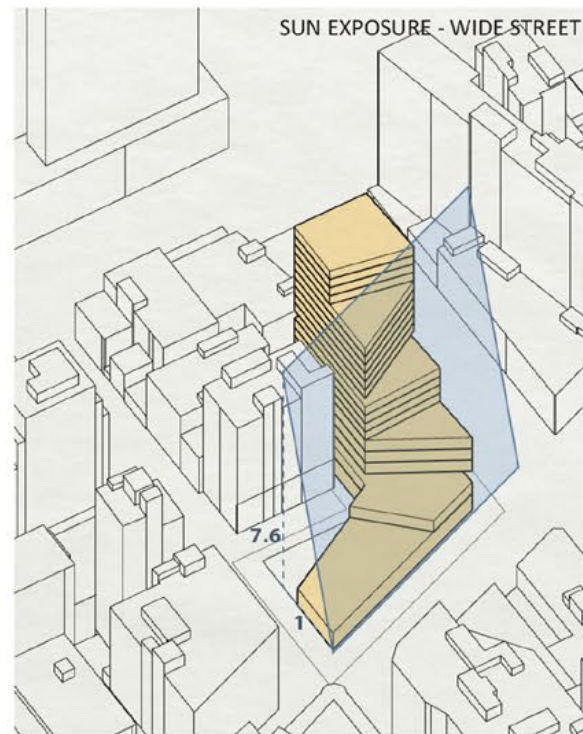
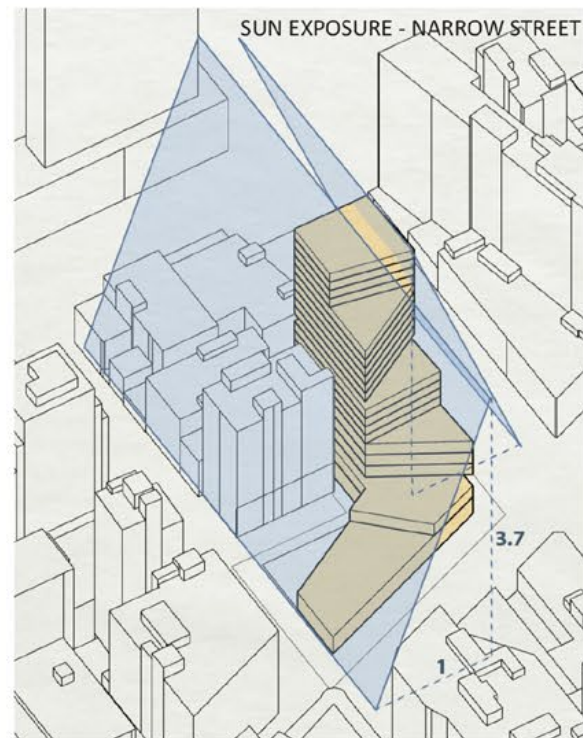


SUMMER 3PM

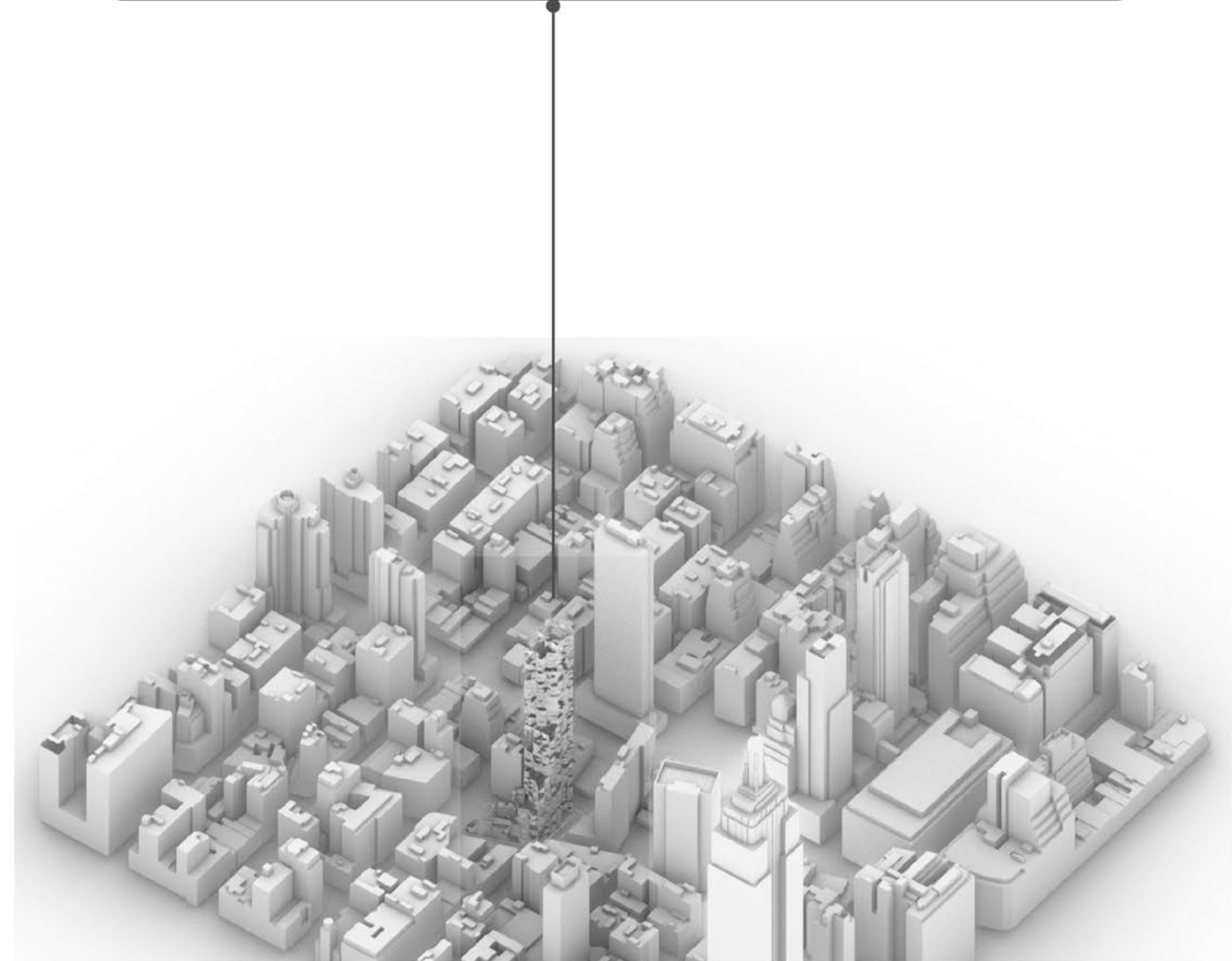
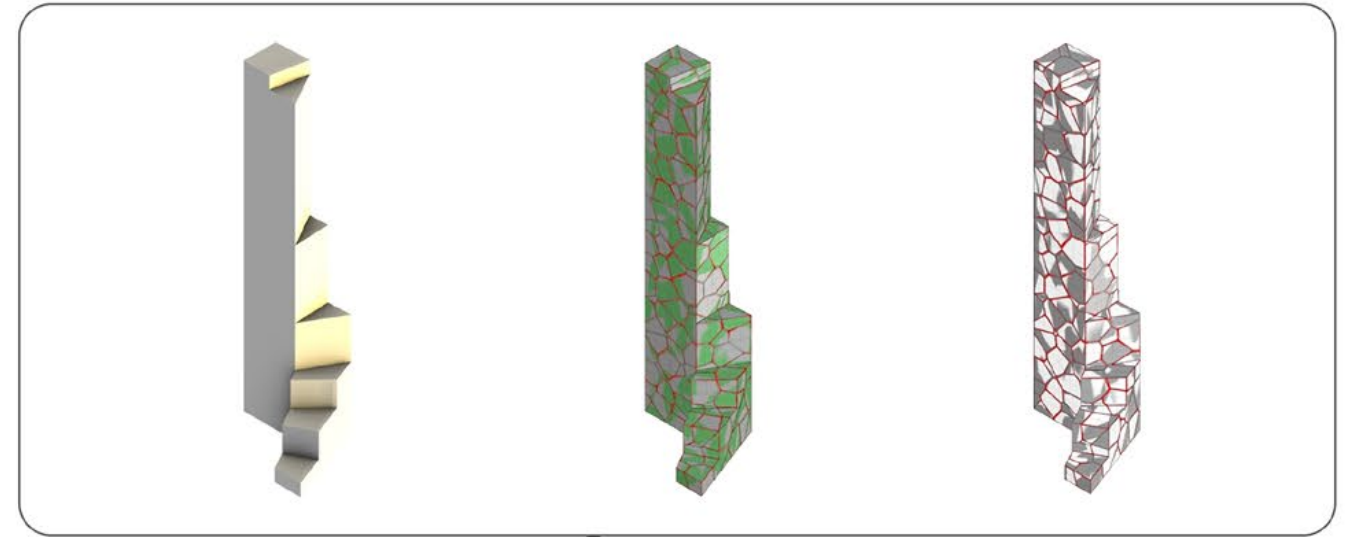


WINTER 3PM





FACADE DEVELOPMENT through grasshopper



09

EXHALE

The Outside In project

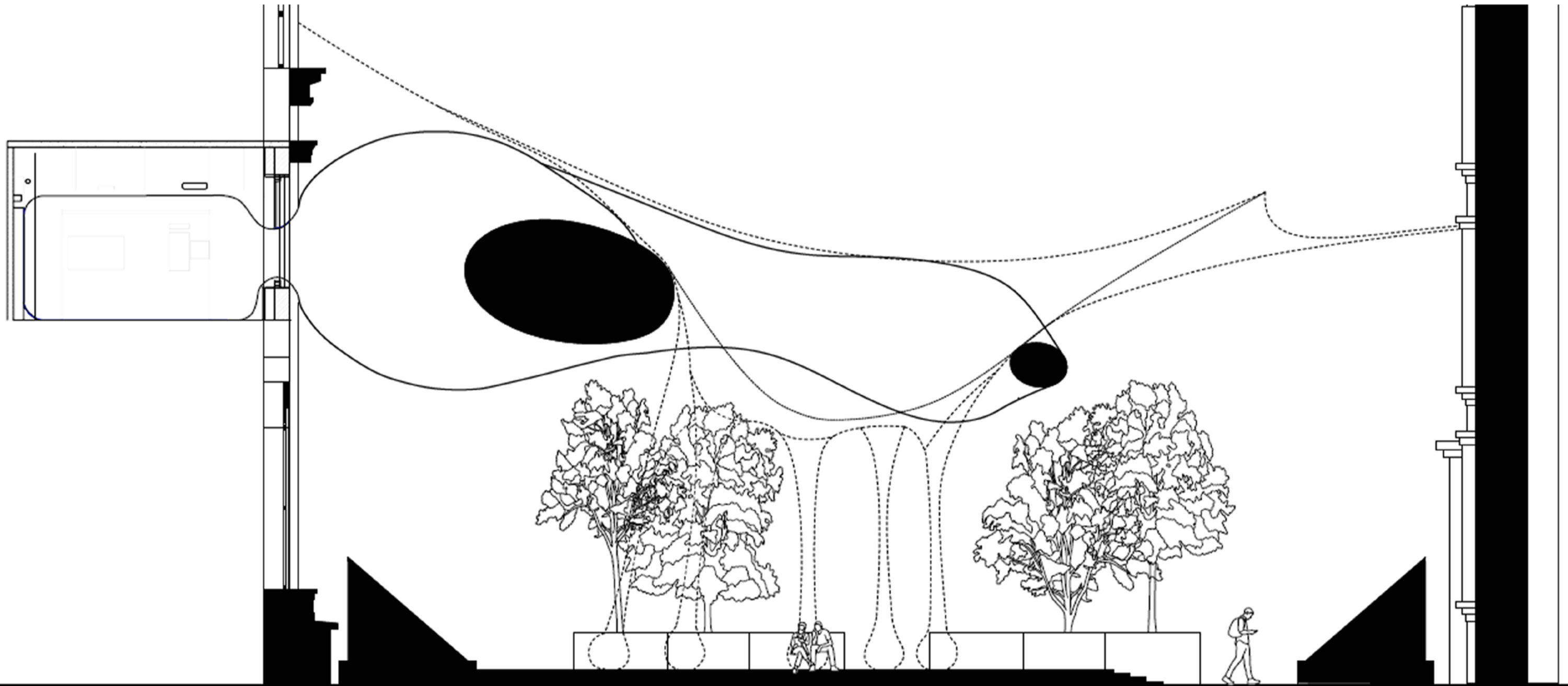
Building Science & Technology | Spring 2024
Instructors - Galia Solomonoff, Laurie Hawkinson
Collaborators - 37 students from Batch 2024

Exhale is a unique, student-driven temporary installation on Columbia's Morningside Campus. The creation is a 2-part installation that plays with the viewer's perception of geometry and light, and invites a new element of activation and playfulness to Avery Plaza.

The exterior portion is an inflatable donut powered by 4 blowers, suspended by 16 cables anchored to 4 steel beams in Avery and Fayerweather Halls, and tied to 9 points on the ground. A net rests atop the inflatable donut, descending into the center with 8 tube-like appendages that serve as moveable, adjustable seating.

The interior portion is a highly interactive installation that extends from the exterior inflatable into Avery Hall, occupying the inside of classroom Avery 408. The materiality is inverted from the metallic exterior to one of darkness and discovery.





SCALE: 1/8" = 1'-0"

