

jsd  
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35

COLUMBIA  
**GSAPP**

SELECTED WORKS

*After a year of intense observation and practice, architecture no longer appears to me as the pursuit of form or authorship, but as the continuous negotiation between systems, ecological, political, and human. It is not about control, but about response.*

*To design today is to acknowledge entanglement. Buildings are no longer inert shelters for human life alone, they are participants in broader networks of matter and meaning. Air, water, insects, fungi, structural failure, administrative delay: all are co-authors.*

*What we build, and how we build it, affects not only our cities but also the species we rarely account for. The work must go beyond human-centered narratives and embrace a more distributed idea of relevance, one that includes the silent actors that make life possible.*

*This past year has not been about perfecting technique, but about expanding perception. About recognizing that the most urgent architecture might not be what we add, but what we allow. Not what we imagine, but what we notice.*



## PLUG IN **COMMUNITY**

ADV. STUDIO IV\_SUMMER

## BUILDINGS **ON BUILDINGS**

ADV. STUDIO V\_FALL

## **DAYLIGHT, METHABOLISM**

DAYLIGHT ANALYSIS\_FALL

## **MYCOBAGS\_SYSTEM** FOR A REGENERATIVE FUTURE

ADV. STUDIO VI\_SPRING

## **REGGIO SCHOOL** SECTION

SEMINAR OF SECTION\_SPRING

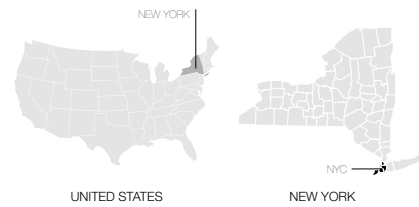
## **SUSTAINABLE FOOD** PRACTICES

TRANSSCALARITIES\_SUMMER

## **CONVERSATION SERIES**

ON POSSIBILISM\_SPRING



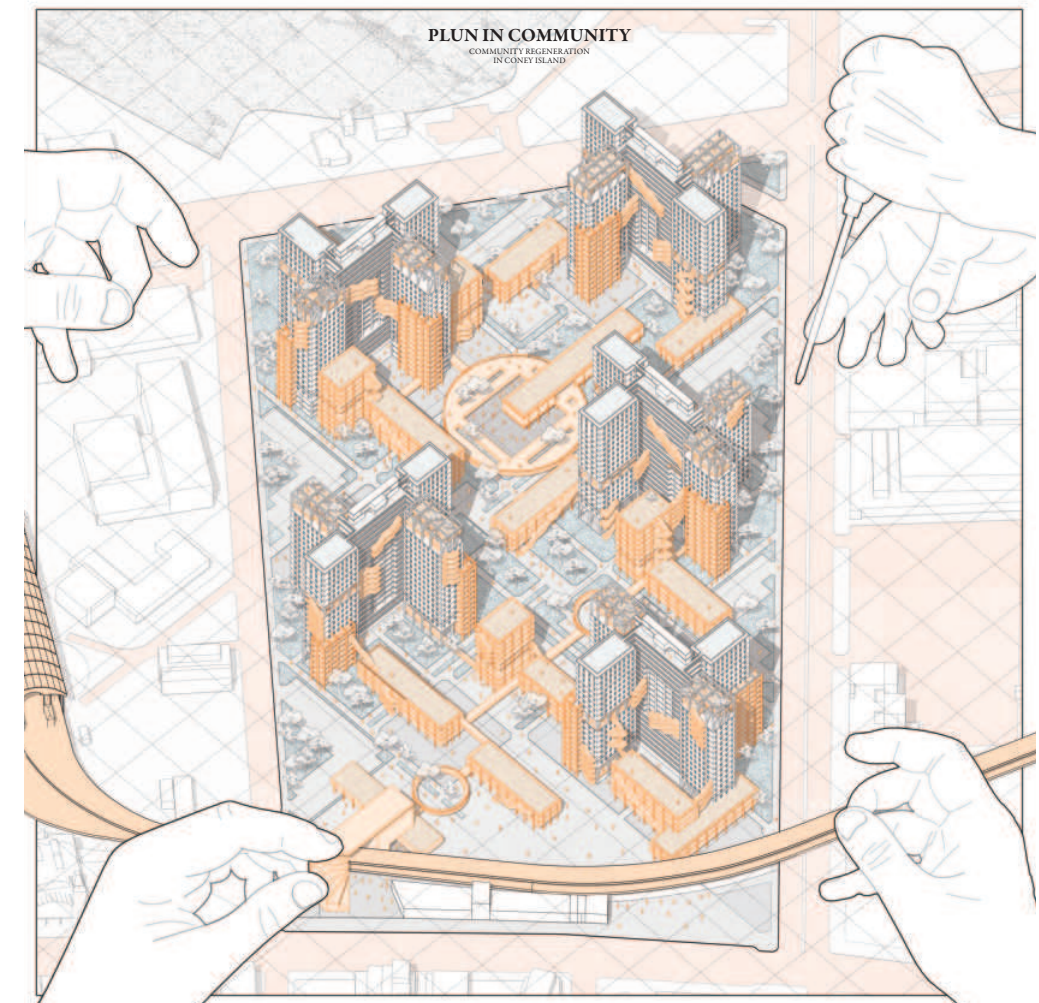
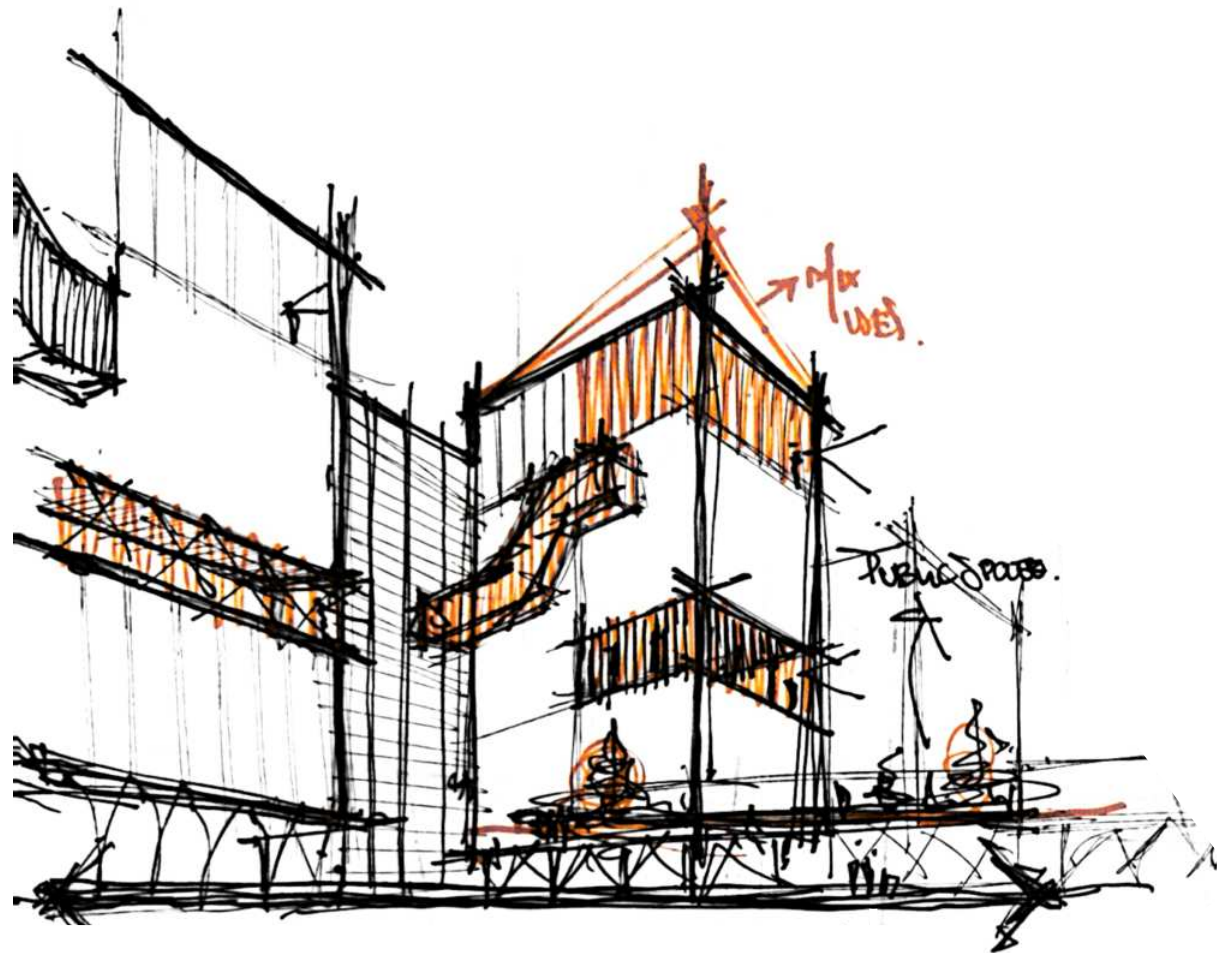


**COURSE** ADV STUDIO IV\_SUMMER  
**AUTHORS** SEBASTIÁN DOMÍNGUEZ  
 JAEJUN CHOI  
**INSTRUCTOR** YOUNG-JU CHUNG  
 DAVID EUGEN MOON  
**LOCATION** CONEY ISLAND, USA

# PLUG IN COMMUNITY

Contrasting the existing segregation in Coney Island with the gentrification generated by the housing projects developed by Robert Moses, this project aims to foster inclusion through an intervention in one of the most controversial projects on the island: the Luna Park Housing Corporation. The primary concept introduced is the internal connectivity of the project, which will then extend into its surroundings, creating a complete integration within Coney Island. By adding new community services as well as new housing units, the idea is to plan a system of cohesion between local residents and visitors, who are primarily connected to the MTA system. Through specific design strategies, the project seeks to implement various systems that enhance connectivity and adapt to NYC's 100-year flood hazard mitigation plan.

This involves creating elevated interconnected pathways at different heights that traverse existing buildings, linking them with the new units, as well as creating public spaces on rooftops and at specific heights of these buildings, spaces that will adapt to rising water levels. Additionally, structures were designed to adapt to building facades, expanding the usable space of existing apartments, improving them, providing more natural light. These structures also include gardens that are fed by rainwater collected through an installed system, which connects to the network on the ground floor that collects water from rooftops and new structures, distributing it throughout the site. With these systems and new community spaces that serve not only the residents but also local wildlife, the result is a network that allows seemingly incompatible elements to coexist.

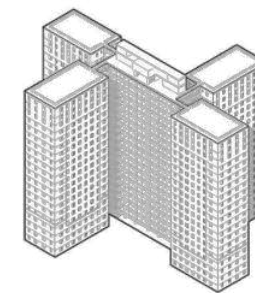




# MONOPOLY - DEGENERATION

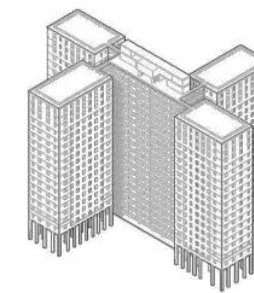
\* The following diagram represents the buried history of Coney Island and the entertainment practices of the time, as well as the gentrification initiated by Robert Moses, which changed the history of this iconic island forever.

1900-1950



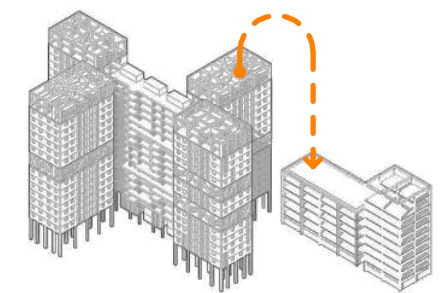
## PRE-EXISTING ANALYSIS

Despite being in acceptable condition, the buildings currently face issues with lighting and space. Additionally, they are out of scale, which results in a lack of connection with their immediate context.



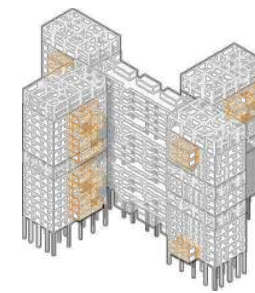
## BUILDING ELEVATION

Based on the 100-year floodplain, it is deemed necessary to elevate the first three levels, freeing up space for the implementation of new community programs and creating connections at different heights.



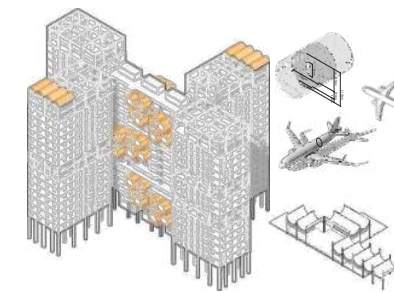
## RELOCATION OF MANSORY

To address the scale issue, it is proposed to relocate the masonry from the upper levels, including their roofs, allowing for greater permeability in the project. This masonry will be used to construct new housing blocks with an appropriate scale.



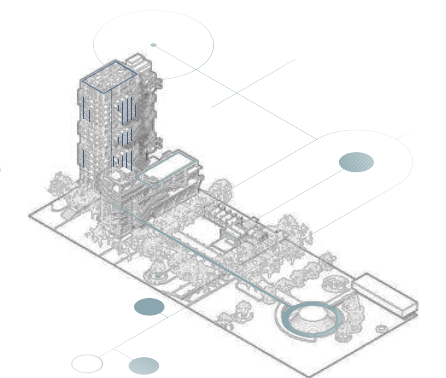
## VERTICAL GARDENS

To tackle lighting and space issues, the proposal includes anchoring metal structures to the facade, adding dynamism while serving as green spaces or integration areas for the residents.



## AIRCRAFT RECYCLING

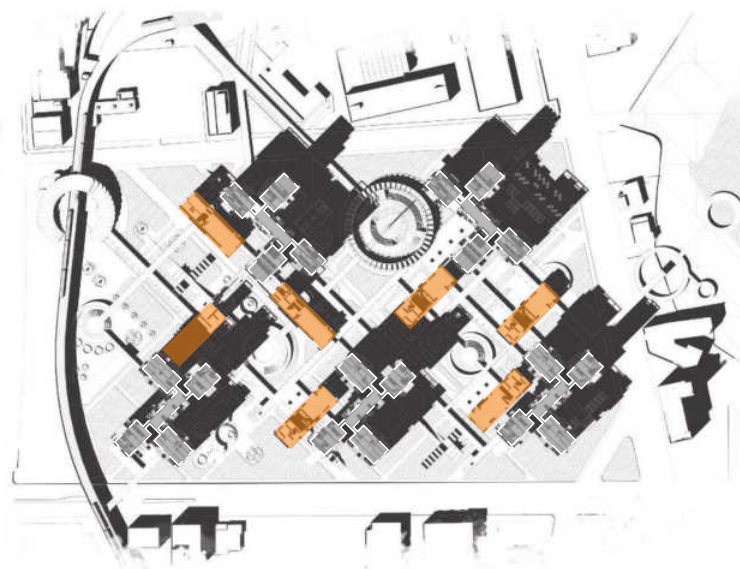
Aligned with prior research, we believe it is necessary to incorporate aircraft recycling within the project, highlighting their potential by using them as roofs and taking advantage of their shape for rainwater collection and distribution.



## RAINWATER RECYCLING SYSTEM

Finally, the system is connected by a complex rainwater network integrated into the proposed facade structures, serving as an irrigation system for the community gardens and collecting water to be distributed throughout the project via the ground level.





### NEW HOUSING UNITS

The proposal integrate new housing units into the existing framework to improve the scale and density of the project. These units will be low and mid-rise, designed to blend various social strata, including affluent residents, NYCHA,, etc.



### ELEVATED WALKWAYS

Due to the 100-year floodplain, a new network of elevated walkways and paths is proposed to connect the new spaces at different heights, providing greater dynamism and integration for users and immediate community .

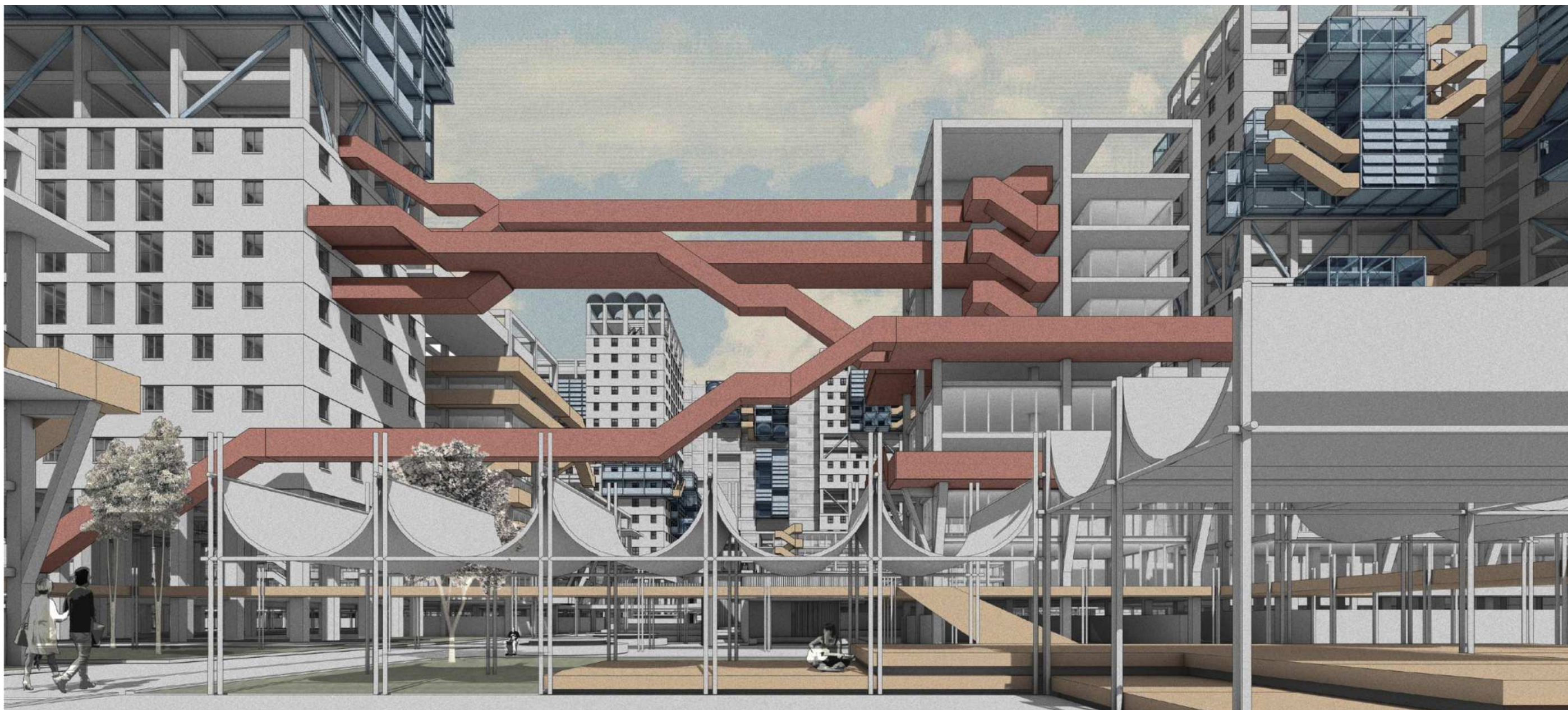


### RAINWATER NETWORK

Following the proposed rainwater collection on rooftops and facade structures, a network at the ground level is needed for distribution and storage. This will create an irrigation system for existing and future vegetation.



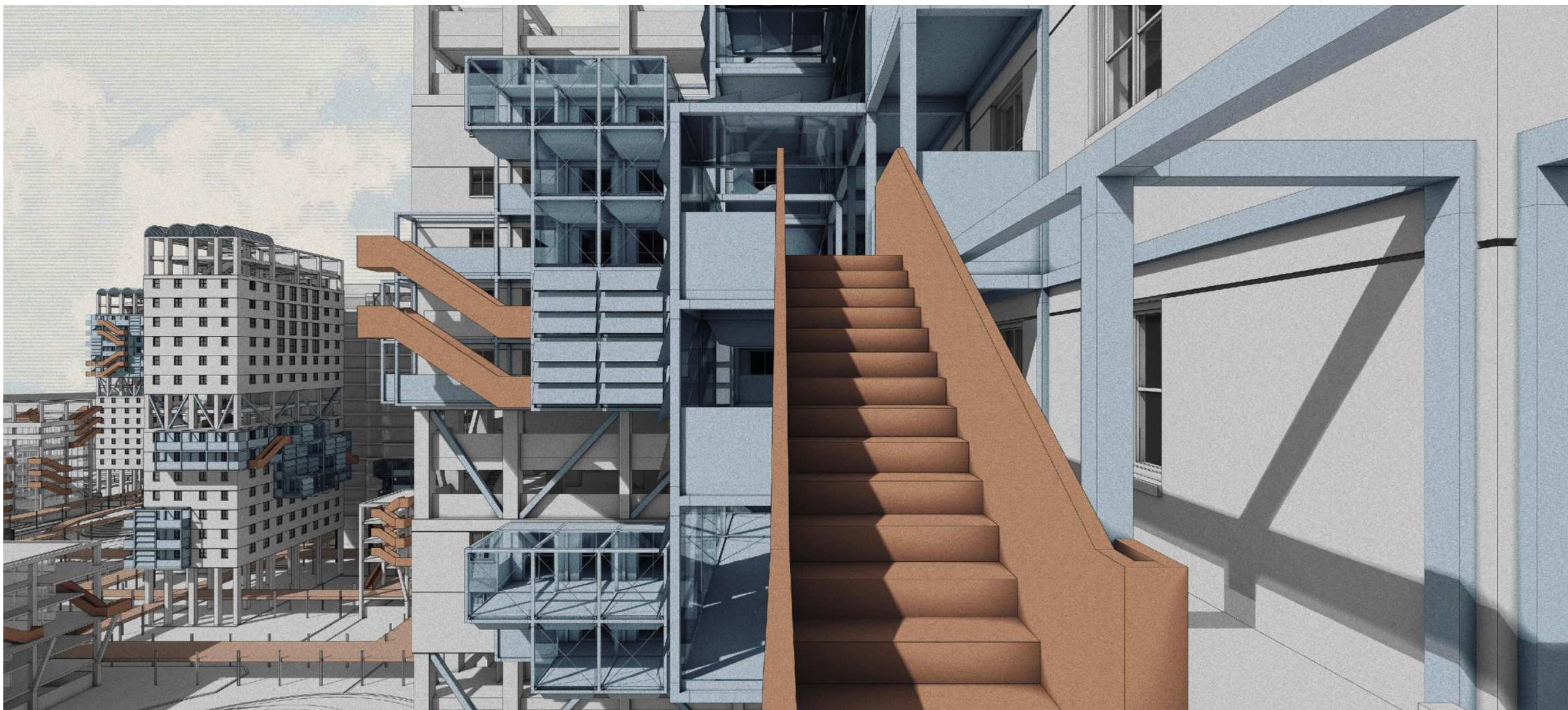




PAVILION  
MADE BY RECYCLED AIRCRAFTS

A pavilion constructed using decommissioned aircraft components sourced from JFK Airport—materials that, due to federal regulations, can only be recycled by the U.S. government. Given the airport's proximity, the proposal repurposes these aircraft bodies as rainwater collectors, integrating them into the site-wide system that distributes harvested water across the entire complex.

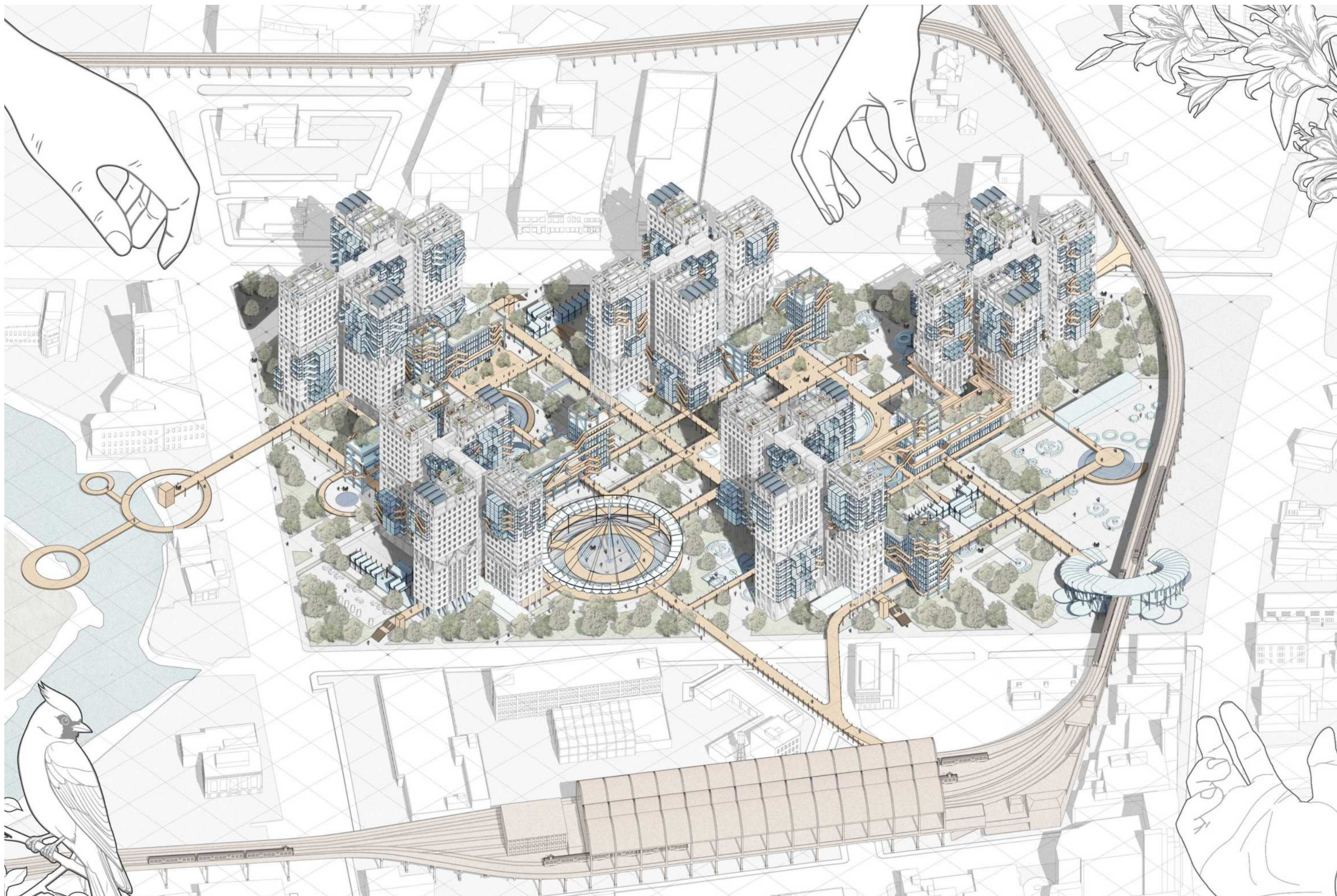




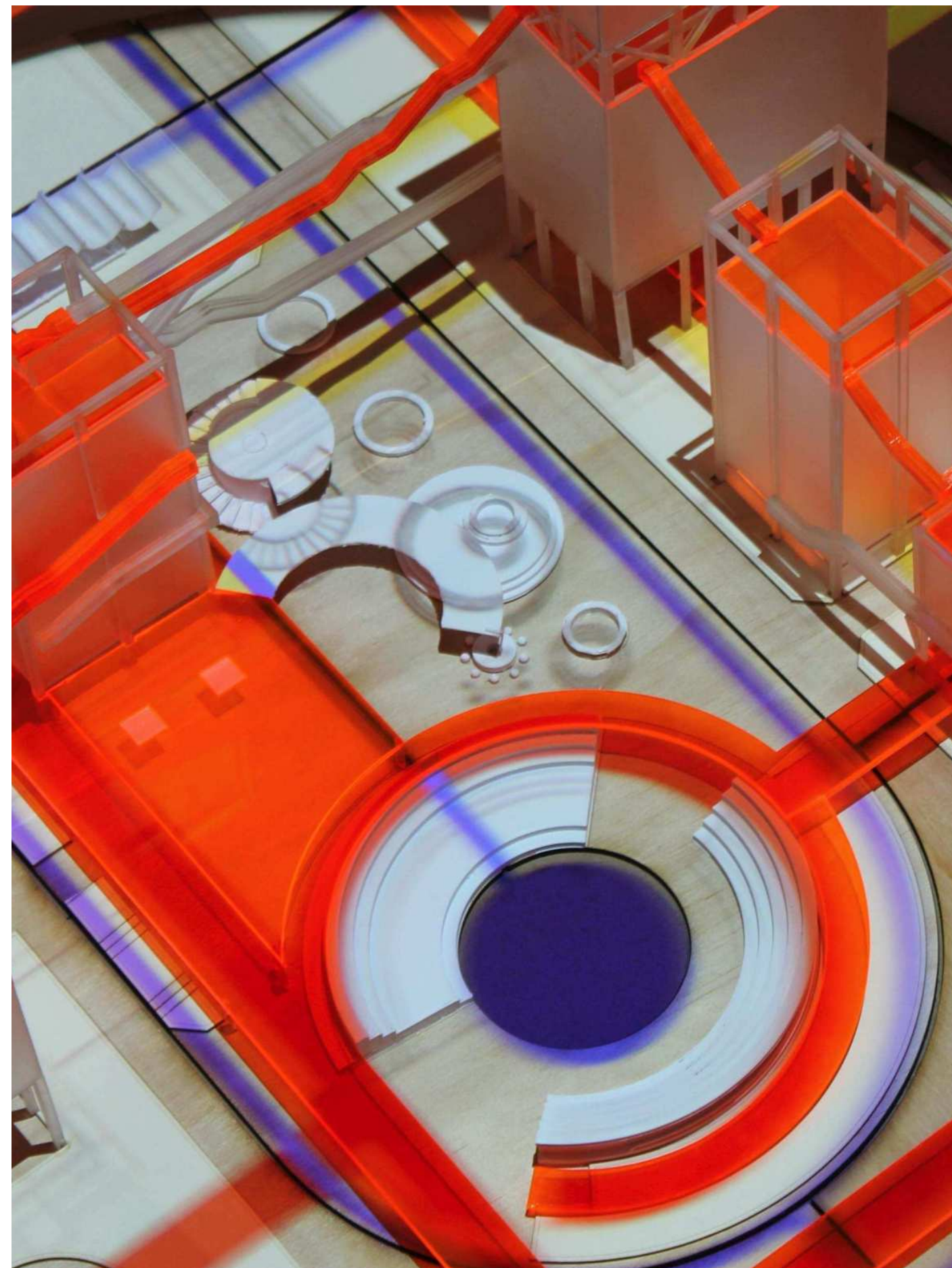
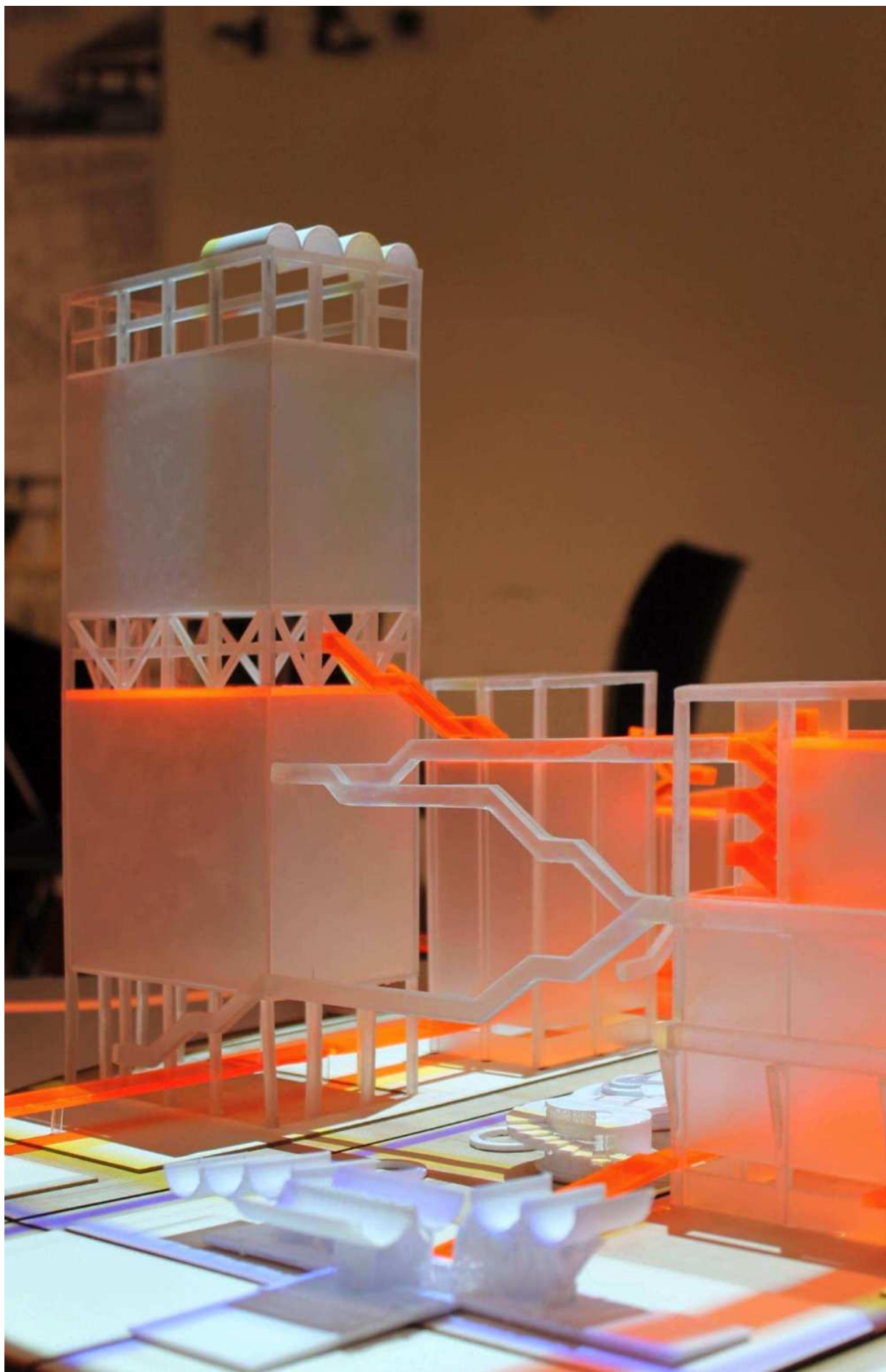
**PLUGS IN**  
MODULES ATTACHED TO THE FACADE

Modular structures are anchored to the existing façades to expand the usable area of the apartments. In addition to increasing interior space, these additions improve natural ventilation and daylight access. The modules create mixed-use extensions that serve as communal gardens and gathering spaces for residents. Interconnected with one another, these modular elements generate new layers of interaction and social engagement among user.

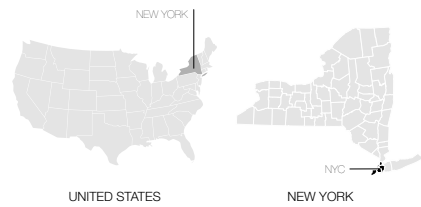










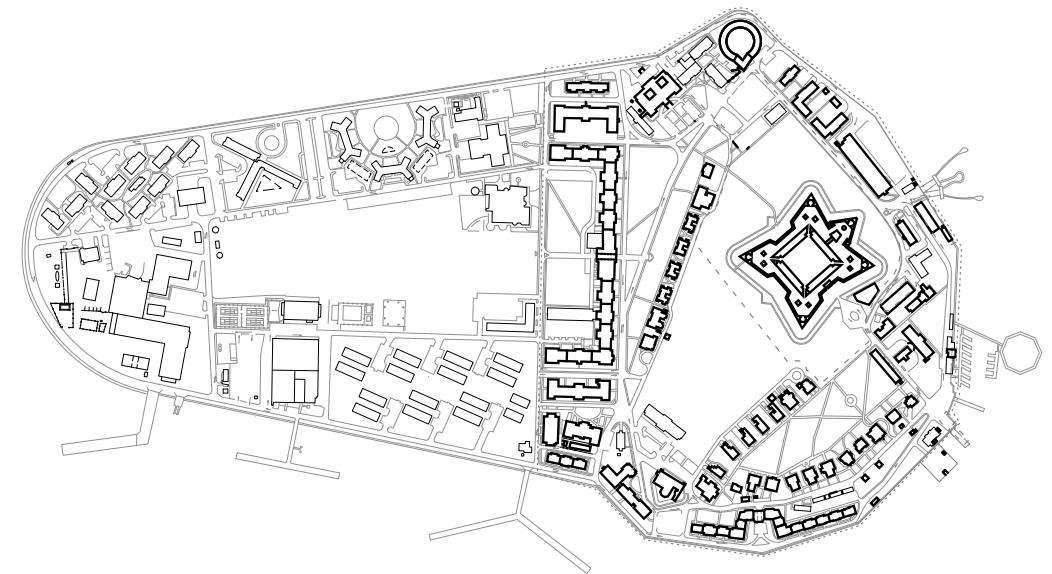
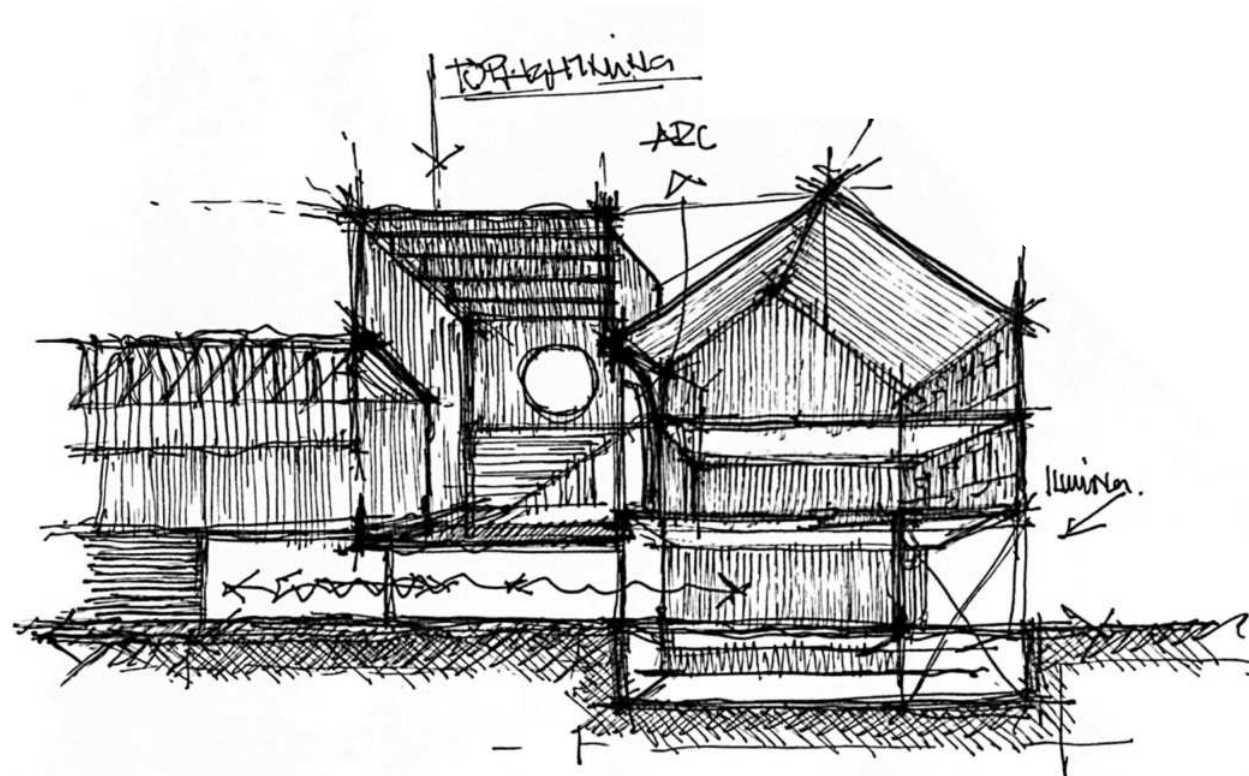


**COURSE** ADV STUDIO V\_FALL  
**AUTHORS** SEBASTIÁN DOMÍNGUEZ  
ESTEBAN MARTÍNEZ BACIGALUPPI  
**INSTRUCTOR** WONNE ICKX  
**LOCATION** GOVERNORS ISLAND, USA

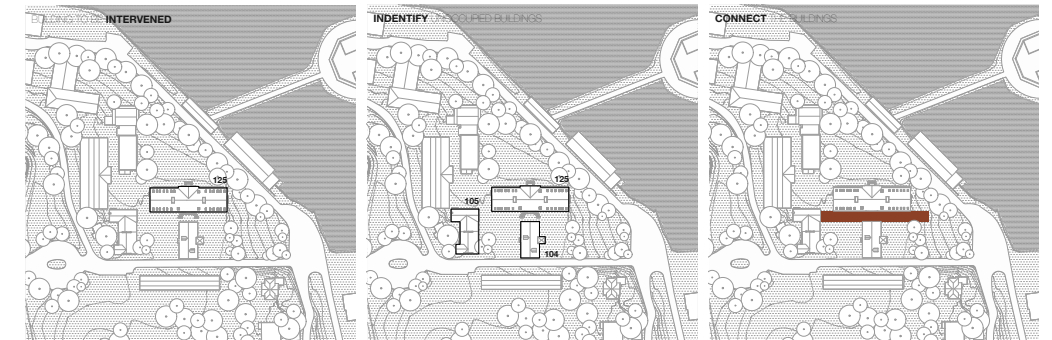
# BUILDINGS ON BUILDINGS

This architectural project addresses the challenge of establishing an archive for architecture within an abandoned structure on Governors Island. The fundamental question is whether to preserve the existing building or demolish it. Taking a critical stance, the proposal advocates for minimal intervention, preserving as much of the existing fabric as possible while recognizing the necessity for additional space. Instead of imposing a singular new structure, the project seeks to integrate with other abandoned buildings on the island, forming a network of interconnected spaces. With a single design gesture, the intervention unifies these structures, allowing them to function as a cohesive archive while respecting the island's historical and spatial character. The project is conceived as a phased development, presenting a unique challenge: how to ensure that each stage functions independently while contributing to its purpose.

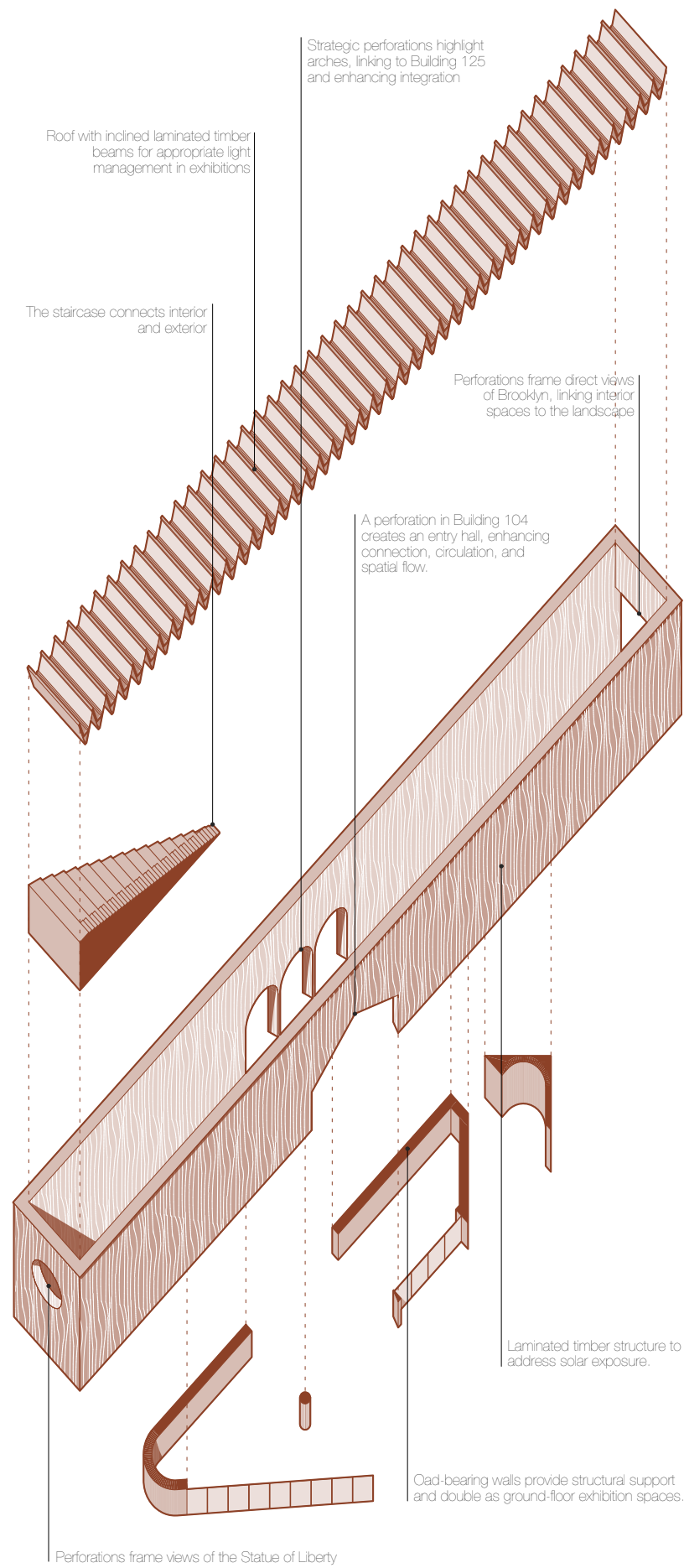
This phased approach results in a dynamic architectural system—one that adapts to existing conditions and transforms according to programmatic needs over time. To align with the island's commitment to sustainability and technological innovation, the intervention is constructed entirely using Cross-Laminated Timber (CLT). This choice not only minimizes the environmental footprint but also enhances the project's dialogue with the island's ecological research initiatives. By reducing material impact and maintaining a light footprint, the archive becomes a model for sustainable reuse, offering a unique timber-clad space for exhibitions and events. Through this strategy, the project challenges conventional preservation and expansion methods, demonstrating that architecture can be both adaptive and respectful of its context while fostering new ways of engaging with the built environment.



GOVERNORS ISLAND

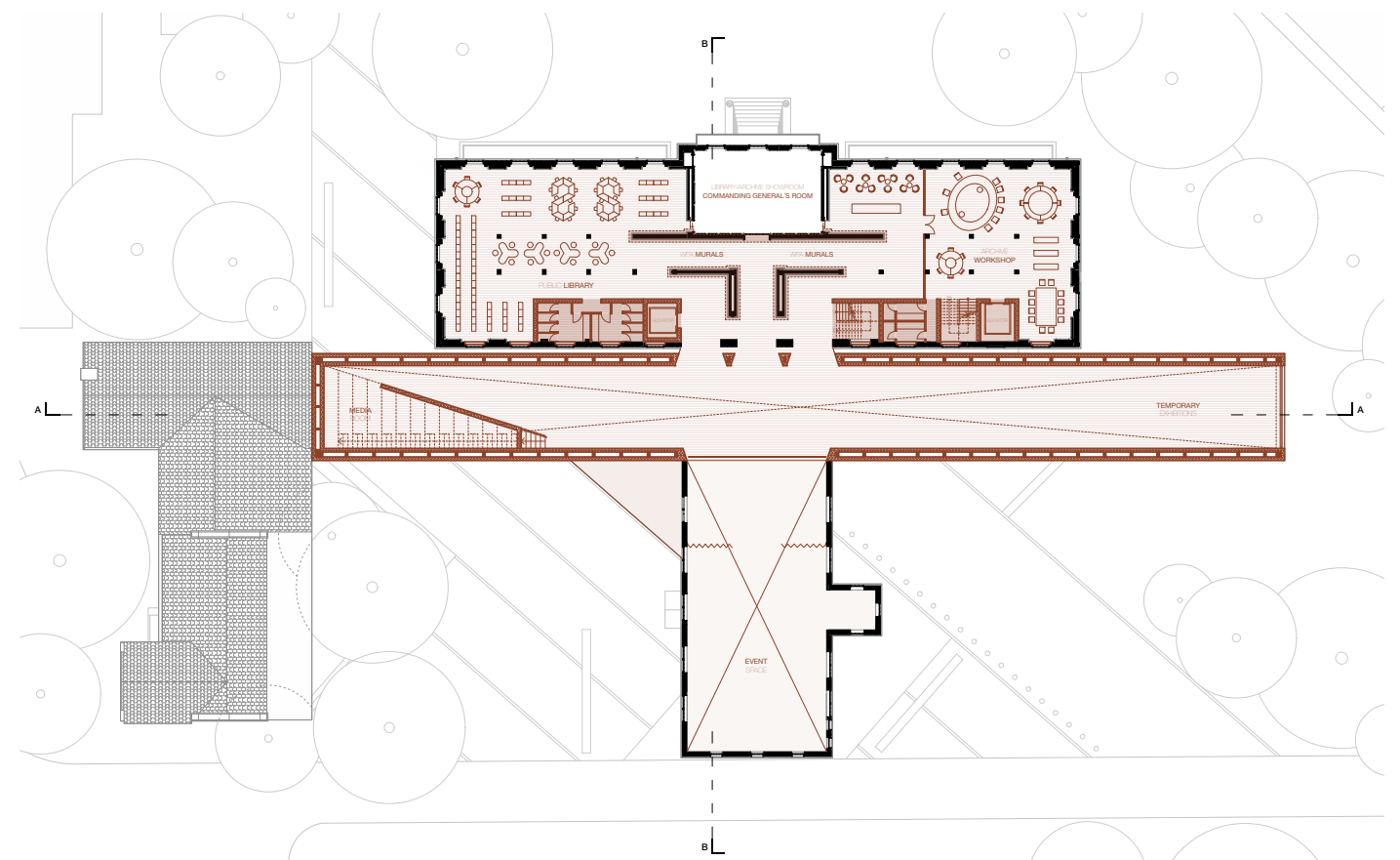
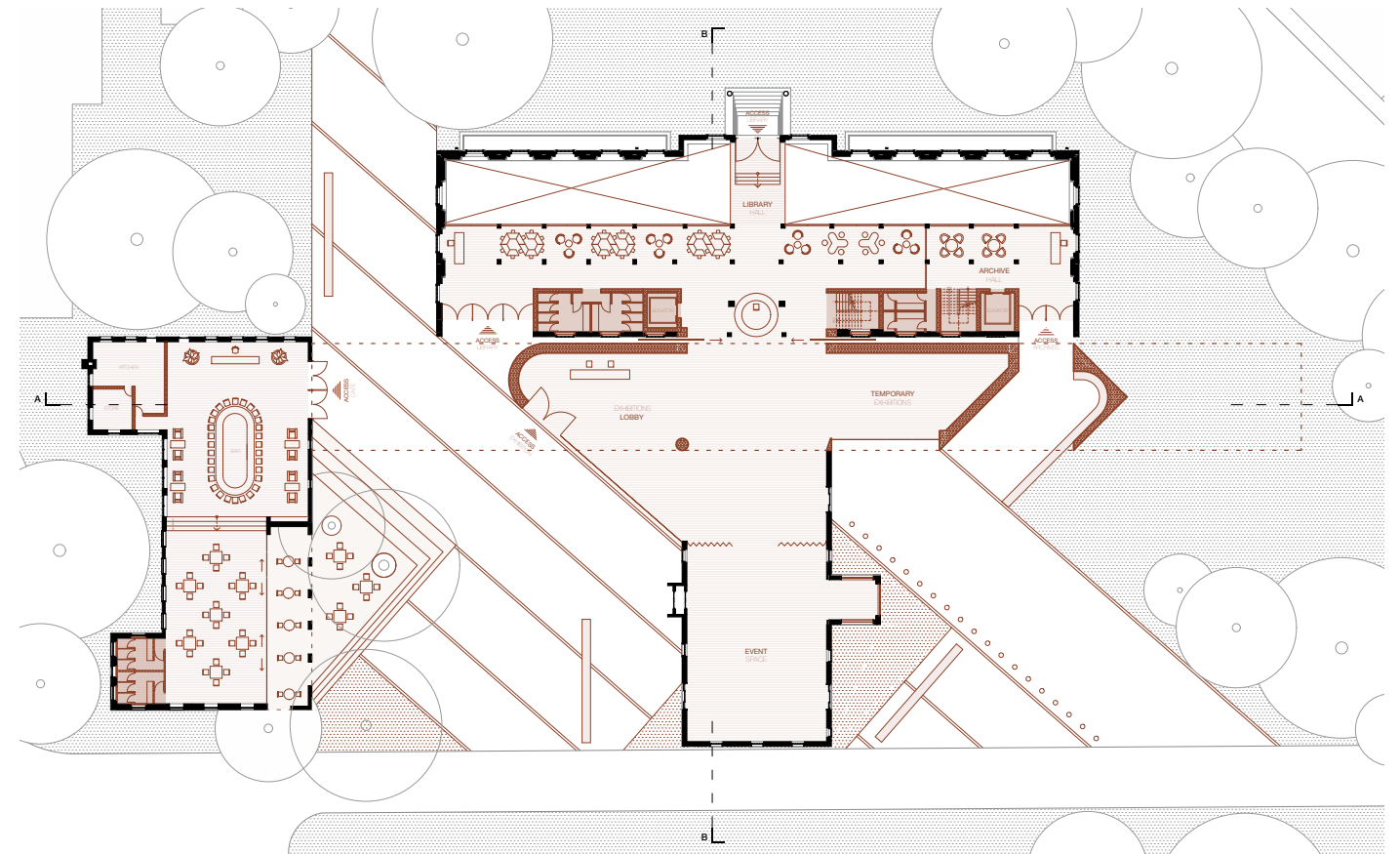


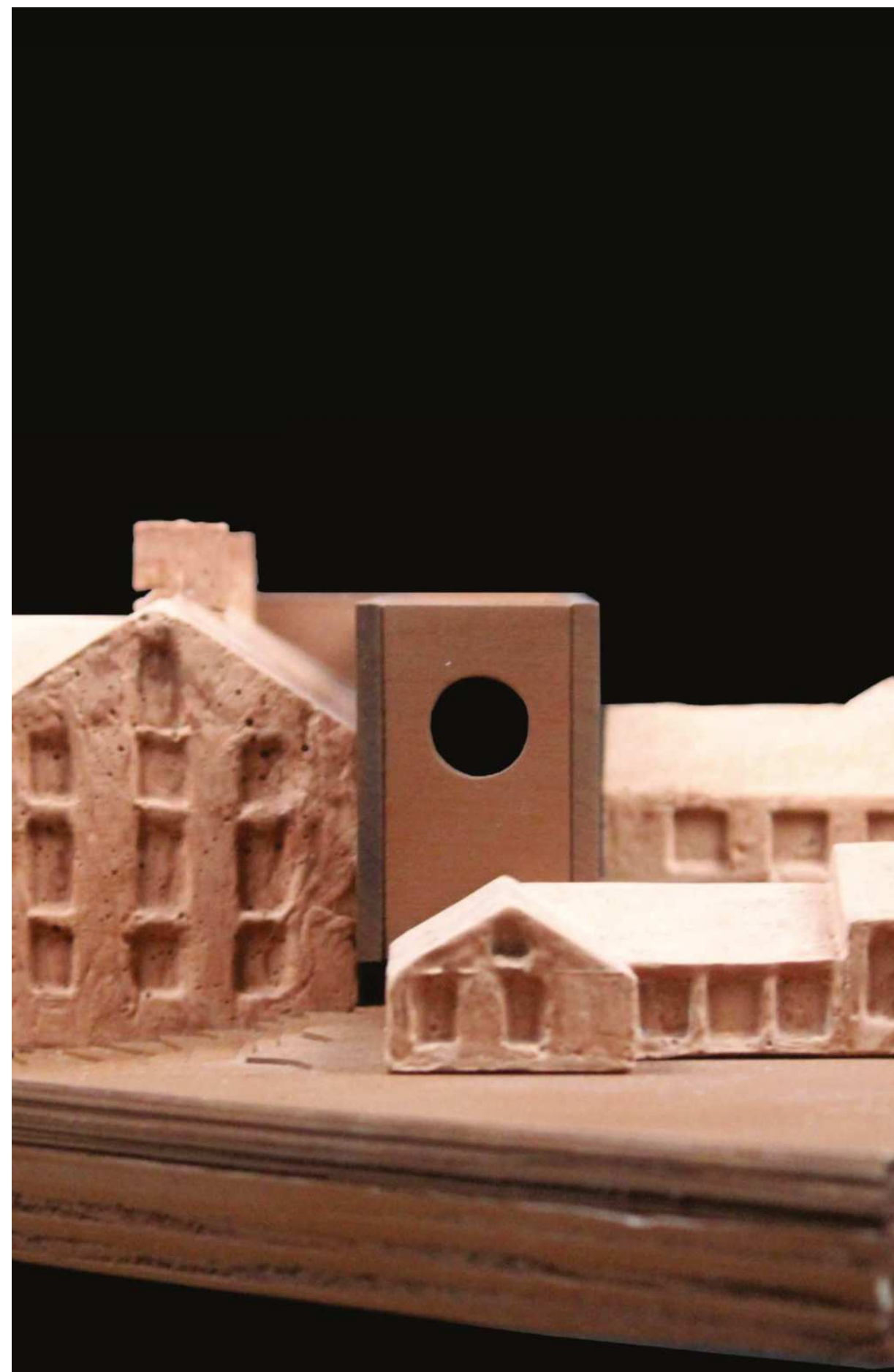
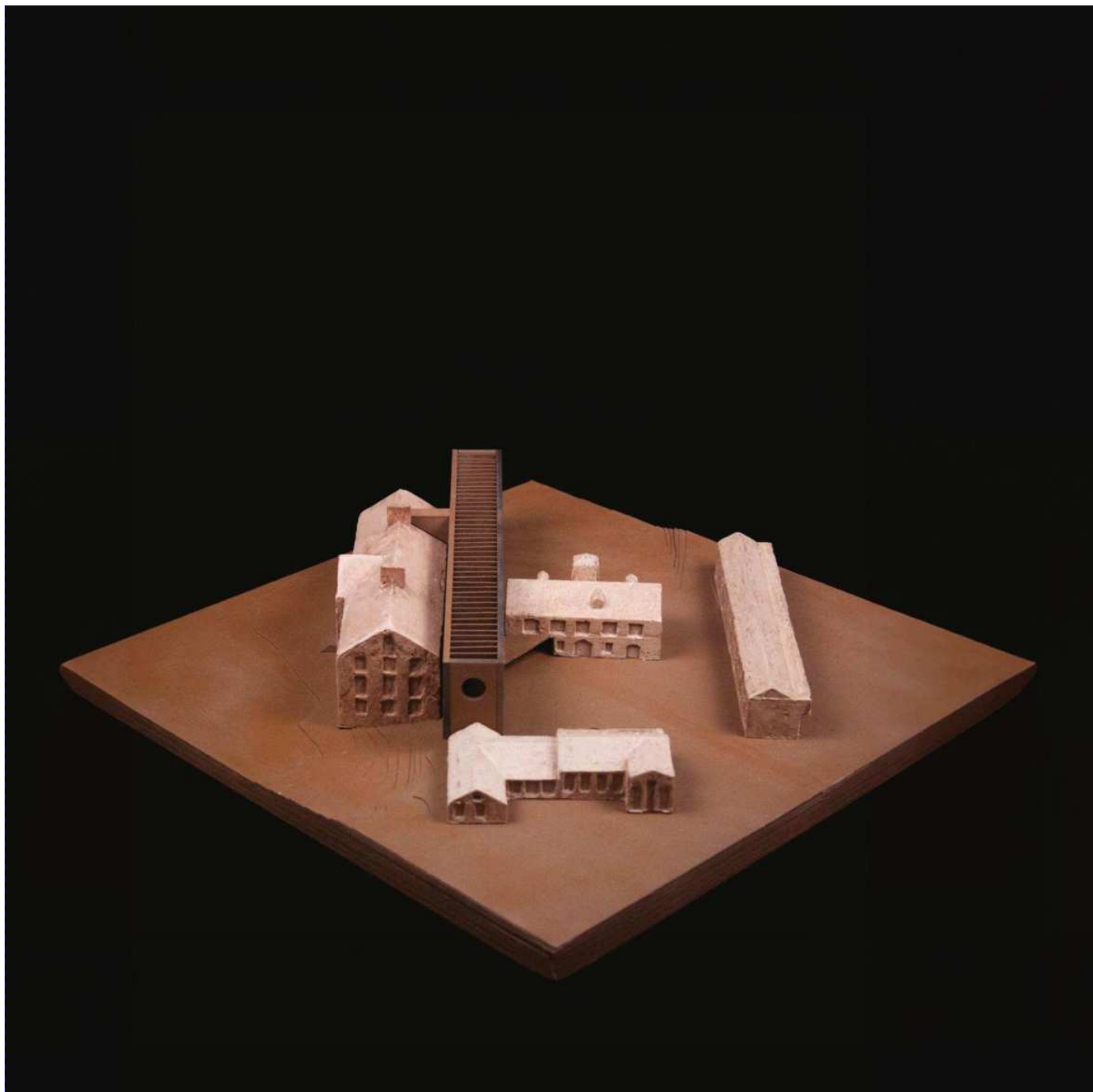




GROUND LEVEL

FIRST LEVEL



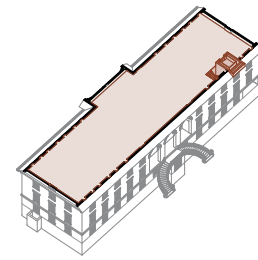




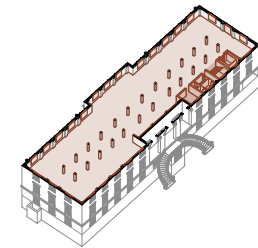
## PHASE 01

The archives are located on the building's upper levels to ensure protection from flooding. An independent vertical circulation system provides secure, controlled access, prioritizing preservation and operational efficiency by isolating this function from the rest of the building.

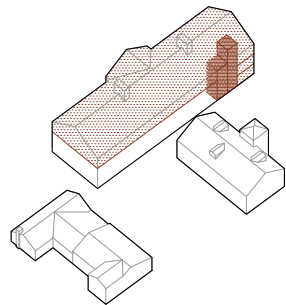
ARCHIVES  
1500m<sup>2</sup>  
+  
RESEARCH OFFICES  
& RESTAURATION  
500m<sup>2</sup>



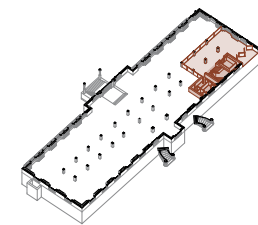
THIRD LEVEL



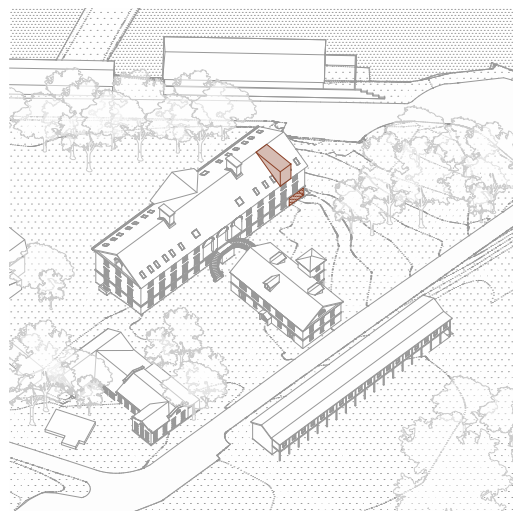
SECOND LEVEL



FIRST LEVEL



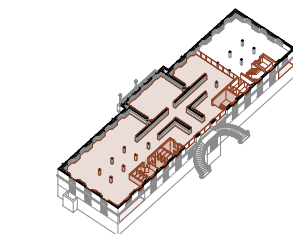
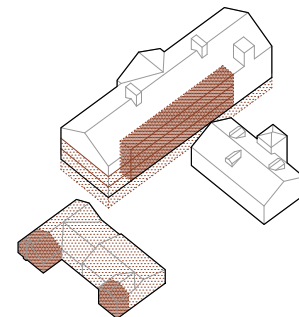
GROUND LEVEL



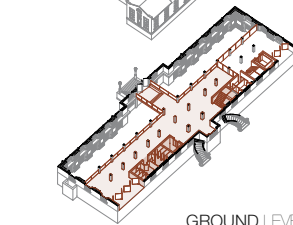
## PHASE 02

Services and circulation are centralized along the southern façade to optimize space and efficiency. Double-height spaces bring natural light to the basement, improving the environment and reducing artificial lighting. Building 105 is repurposed as an independent café, enhancing visitor amenities and the island's offerings.

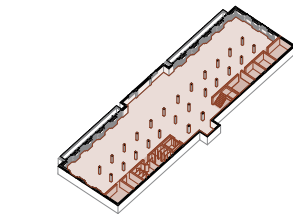
PUBLIC LIBRARY  
& STUDY CENTER  
1500m<sup>2</sup>  
+  
CAFE  
500m<sup>2</sup>



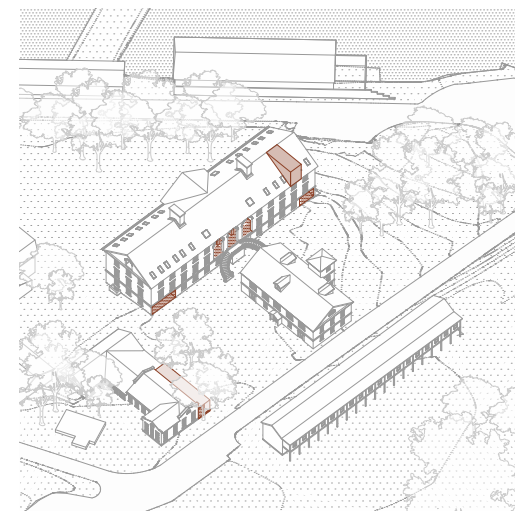
FIRST LEVEL



GROUND LEVEL



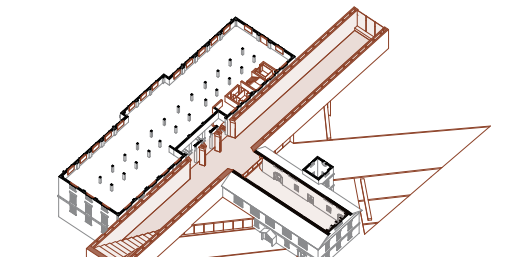
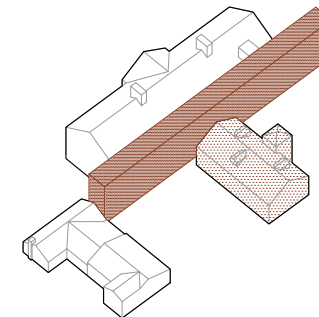
BASEMENT LEVEL



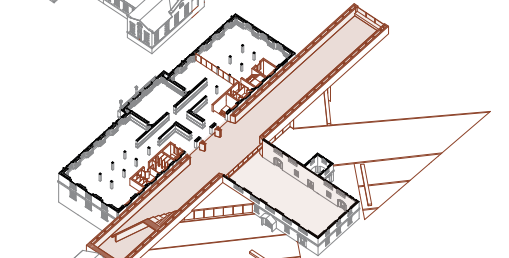
## PHASE 03

An elongated volume is added to connect existing structures at ground level, enhancing circulation and spatial integration. Linked to Building 125 via the earlier vertical circulation system, it ensures seamless access. Carefully controlled sunlight creates an atmosphere suited for exhibitions, balancing illumination and preservation.

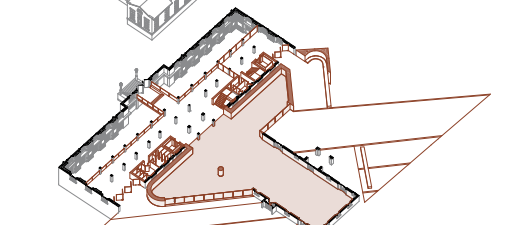
EXHIBITION SPACES  
1500m<sup>2</sup>  
+  
EVENT SPACE  
500m<sup>2</sup>



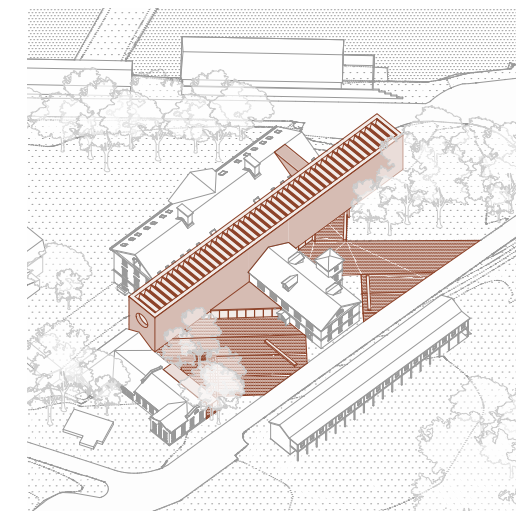
SECOND LEVEL



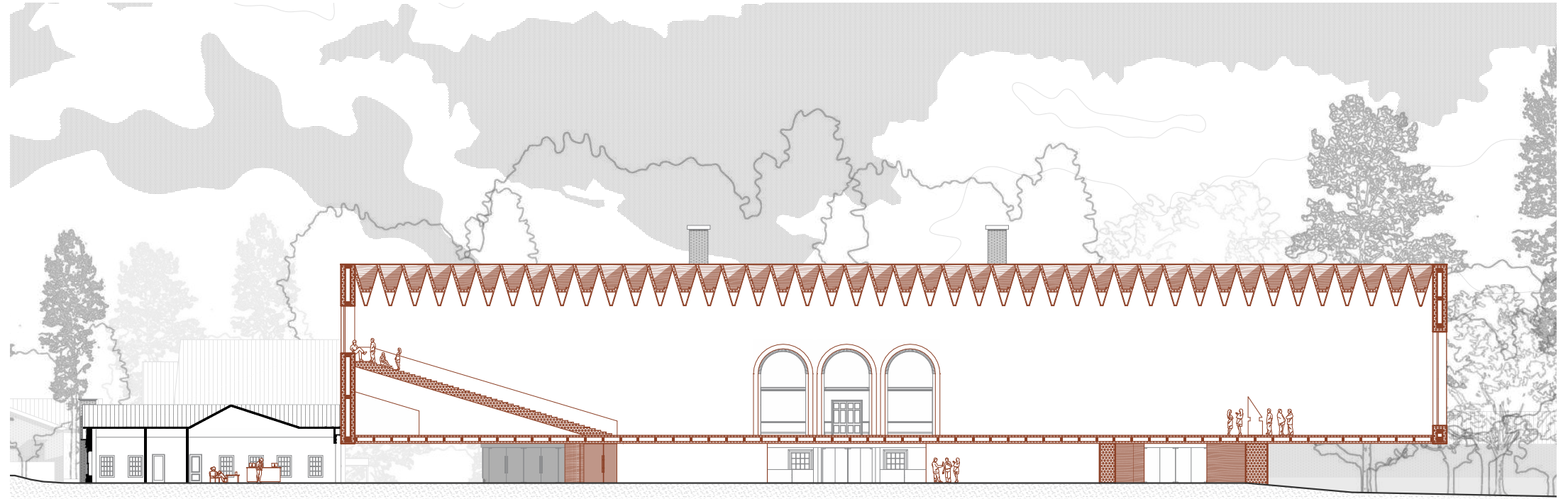
FIRST LEVEL



GROUND LEVEL



LONGITUDINAL SECTION B-B



CROSS SECTION B-B







MULTI-PURPOSE GALLERY SPACE  
INTERIOR VIEW

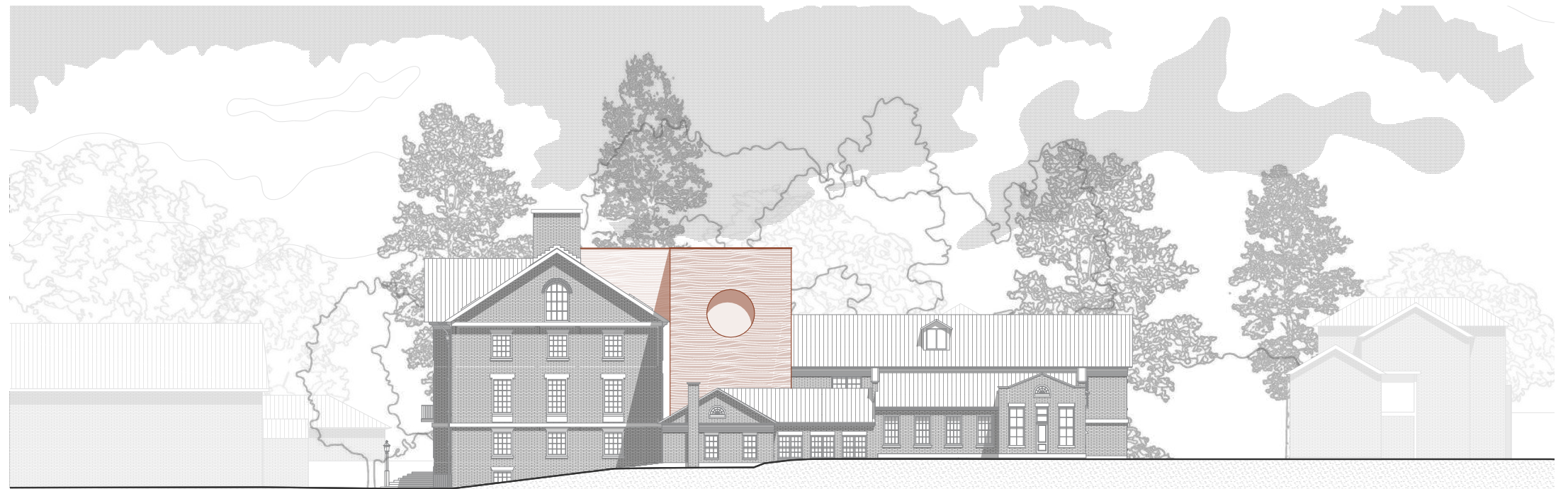


MAIN GALLERY AND EXHIBITIONS  
INTERIOR VIEW

**NORTH** ELEVATION



**WEST** ELEVATION







**MAIN ACCESS GALLERY AND CAFE**  
 EXTERIOR VIEW

With the inclusion of the gallery block in the third phase, a central plaza is created that connects the three existing buildings, activating and integrating them through a single unifying gesture. This expansive surface not only provides covered access points to each structure, but also enhances the spatial tension and dialogue between them, transforming previously disconnected elements into a cohesive and dynamic public realm.

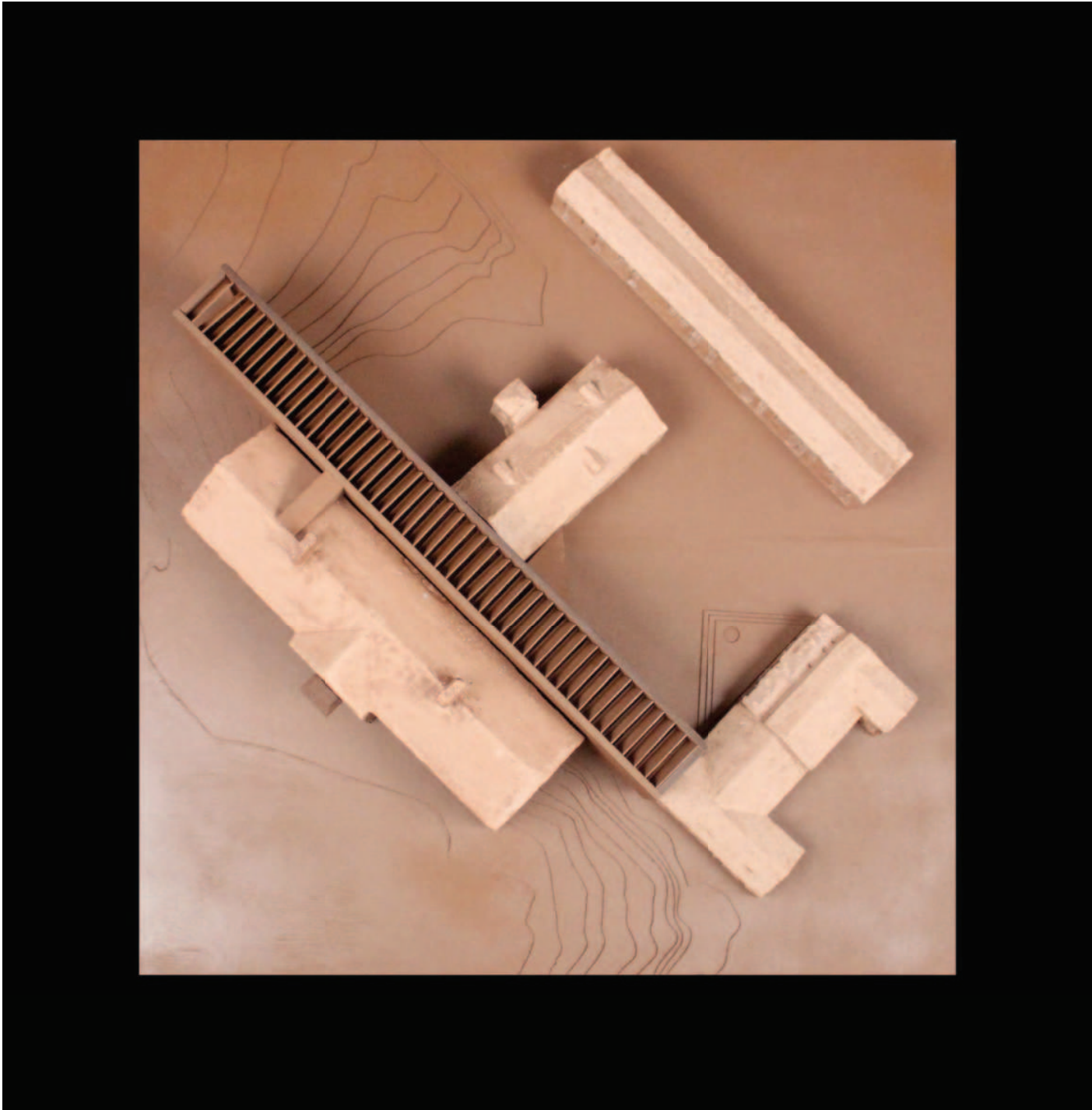




**ARCHIEVES MAIN ENTRANCE**  
EXTERNA BUILDING 304 VIEW

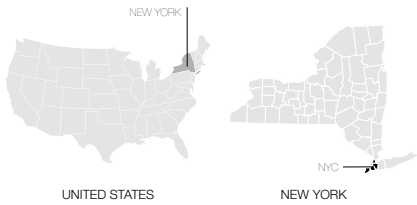
In this phase, we also observe the direct connection to the project's private section, which includes offices and archives. This connection generates direct visual relationships with the pre-existing structures, resolving the dialogue between new and existing elements. The design carefully respects the architectural language of the original buildings, establishing a coherent and respectful integration across the entire complex.







# DAYLIGHT\_SITE ANALYSIS



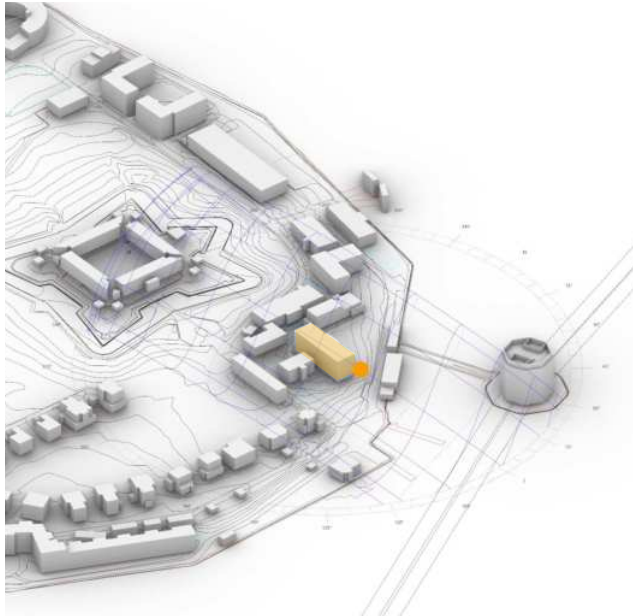
**COURSE** DAYLIGHT, METHABOLISM  
**AUTHOR** SEBASTIÁN DOMÍNGUEZ  
**INSTRUCTOR** ELLIOT GLASSMAN  
**LOCATION** GOVERNORS ISLAND, USA



## CLIMATE/SITE ANALYSIS SUNPATH

The building benefits from excellent natural lighting as it is situated on an island with an open environment that allows sunlight to reach the structure from multiple angles throughout the day. Additionally, there are no tall buildings or large constructions nearby that could obstruct the flow of light or cast significant shadows over the site, enhancing its overall exposure to daylight. However, one important factor to take into account is the surrounding vegetation.

The presence of trees and greenery, while contributing positively to the aesthetic and environmental qualities of the site, may affect the intensity and distribution of light entering the building. Therefore, careful consideration must be given to how this vegetation is managed or integrated into the design, ensuring that it does not hinder the building's potential for optimal natural illumination while maintaining its connection to the landscape.

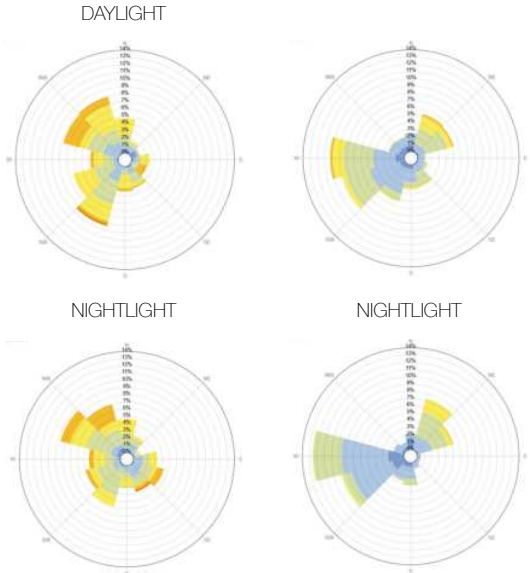


## CLIMATE/SITE ANALYSIS WIND/SKY



The building is subject to significant wind exposure due to its location on an island, surrounded by large bodies of water. The absence of large structures nearby allows the wind to flow freely across the site, making wind a crucial element to consider in the design process. The island's open environment amplifies the effects of prevailing winds, which can vary in intensity throughout the year. Additionally, the proximity to the water enhances the likelihood of stronger coastal winds, particularly during seasonal storms or weather changes.

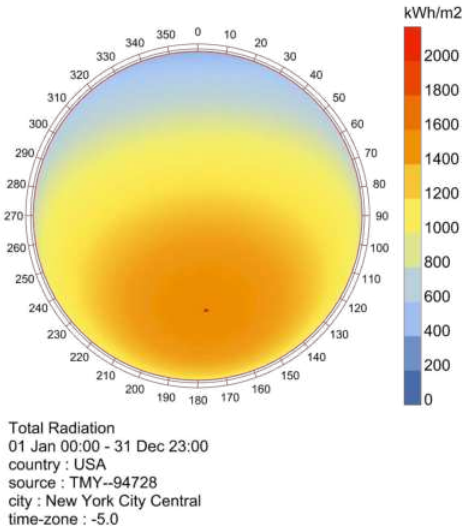
While this wind exposure can be beneficial for natural ventilation and cooling, it also requires careful consideration in terms of the building's structure, orientation, and materials to ensure durability and comfort for occupants. Windbreaks or strategic landscaping could be introduced to mitigate the strongest gusts, while the building envelope must be designed to withstand these forces without compromising energy efficiency.



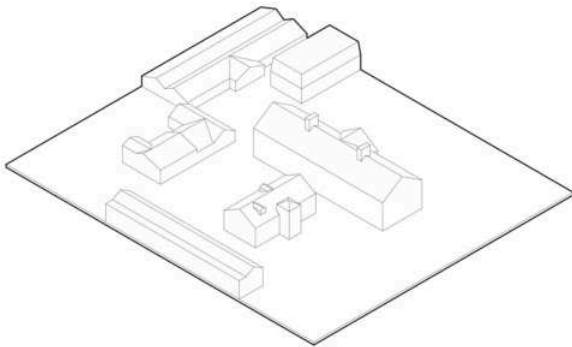
## CLIMATE/SITE ANALYSIS RADIATION

The building's location on an island, surrounded by open water, also makes solar radiation an important factor to consider. The lack of tall structures nearby allows for unobstructed sunlight throughout the day, which can result in higher levels of solar radiation hitting the building's exterior. This exposure to sunlight can be beneficial, especially for maximizing natural light and passive heating during cooler months. However, it also brings challenges, particularly in controlling the heat gain and potential glare inside the building.

Given the building's location and the strong solar exposure, implementing strategies for solar control is essential. These could include shading devices, reflective materials, or even green roofs to reduce the heat load on the building. Additionally, the design should consider how to optimize solar gain during the winter while minimizing it during the summer to maintain a comfortable indoor climate. Solar radiation can also impact the outdoor spaces around the building, making it important to provide shaded areas for comfort and to protect sensitive materials or exhibits inside the building from prolonged exposure to sunlight. By carefully managing solar radiation, the building can achieve a balance between maximizing natural light and minimizing energy consumption for cooling.

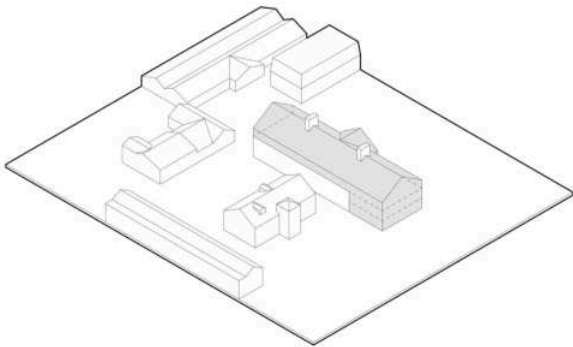


CURRENT **STATUS**



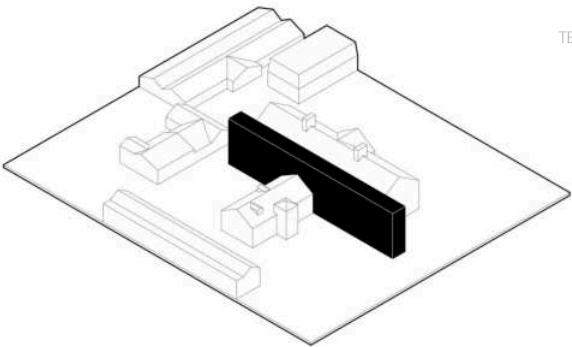
PHASE **01**

ARCHIVES  
+  
RESEARCH OFFICES  
RESTAURATION



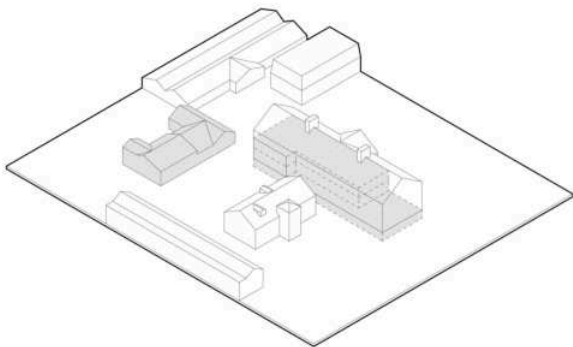
PHASE **03**

EXHIBITION SPACES  
+  
EVENT SPACE &  
TEMPORARY EXHIBITIONS



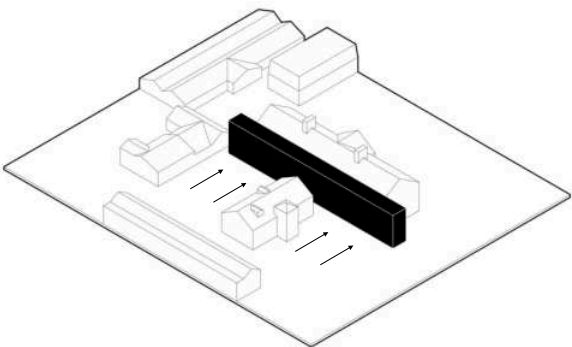
PHASE **02**

PUBLIC LIBRARY &  
STUDY CENTER  
+  
CAFE



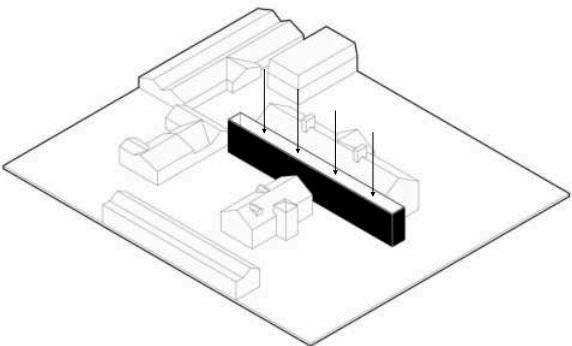
PHASE **03**

FREE GROUND FLOOR

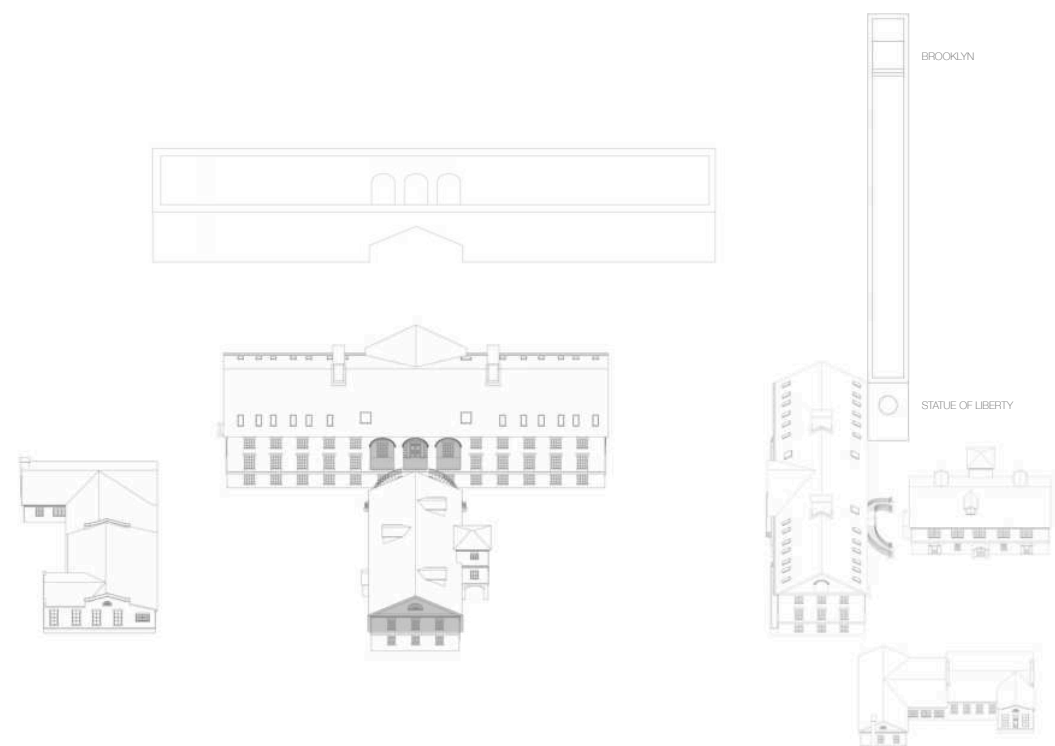


PHASE **03**

TOP LIGHTING  
DUE TO SUNLIGHT



PROPOSAL  
**RADIATION**



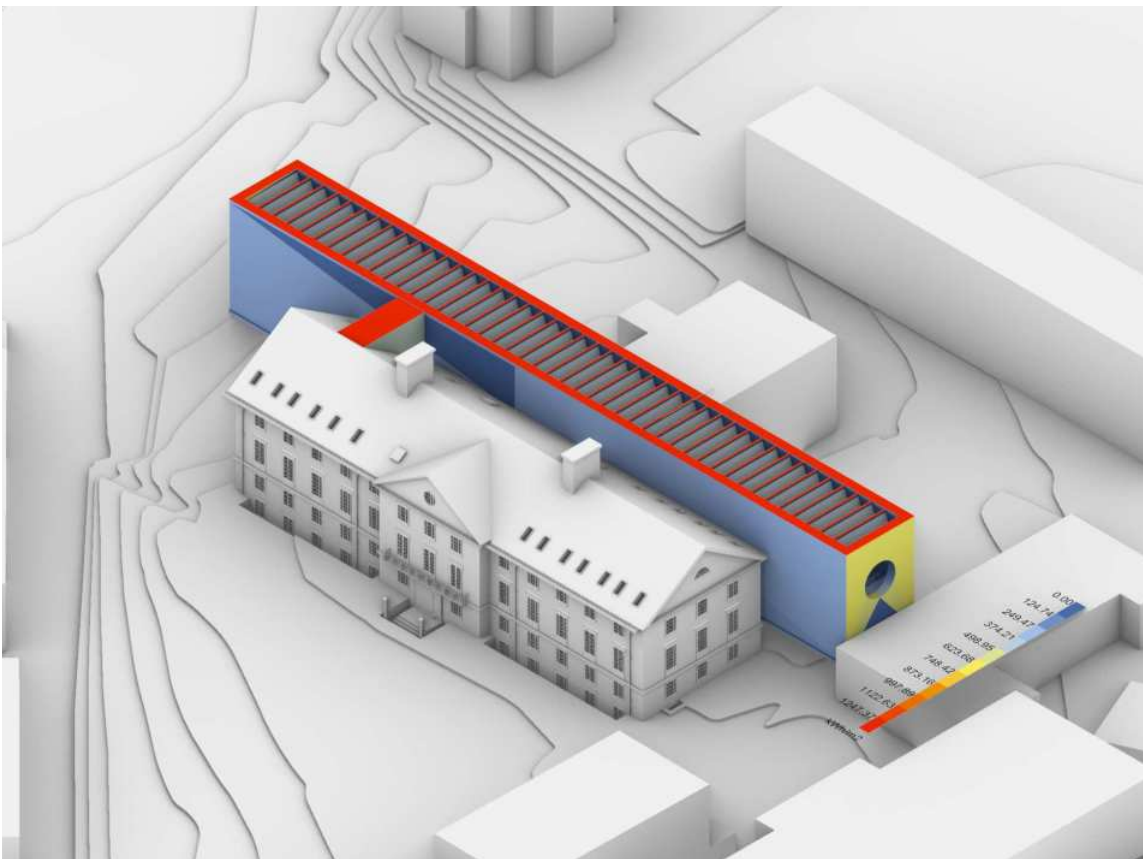
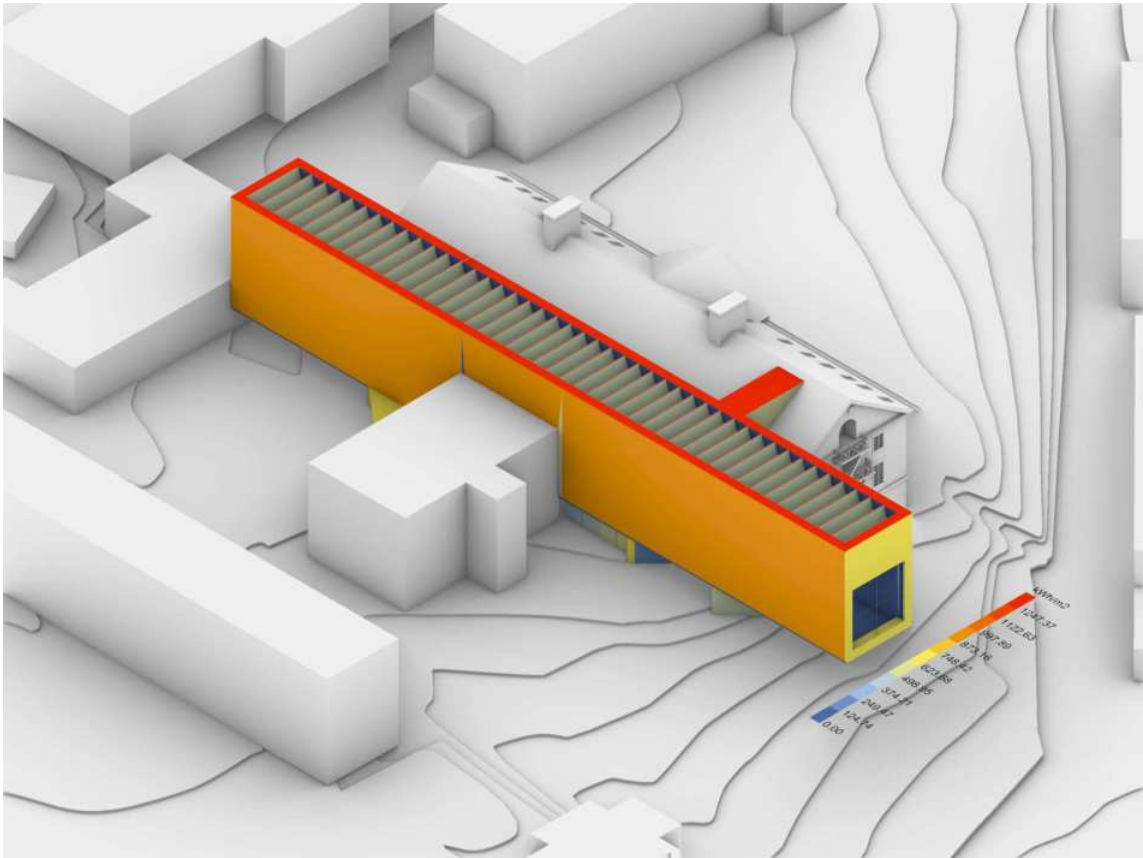
The positioning and geometry of the block have been carefully conceived so that its perforations are not arbitrary, but rather the result of a precise spatial and environmental strategy. Each opening is calibrated to establish seamless integration between the new structure and the existing buildings, allowing for both physical and infrastructural continuity throughout the complex. This deliberate arrangement ensures that circulation paths, service lines, and structural systems align, reinforcing the project's commitment to cohesion and spatial clarity.

The perforations play a critical role in regulating environmental conditions. The block acts as a protective shell for sensitive programs such as archives and exhibited works, where temperature, light, and humidity must be carefully controlled. The apertures are strategically located and dimensioned to minimize direct solar radiation, preventing material degradation

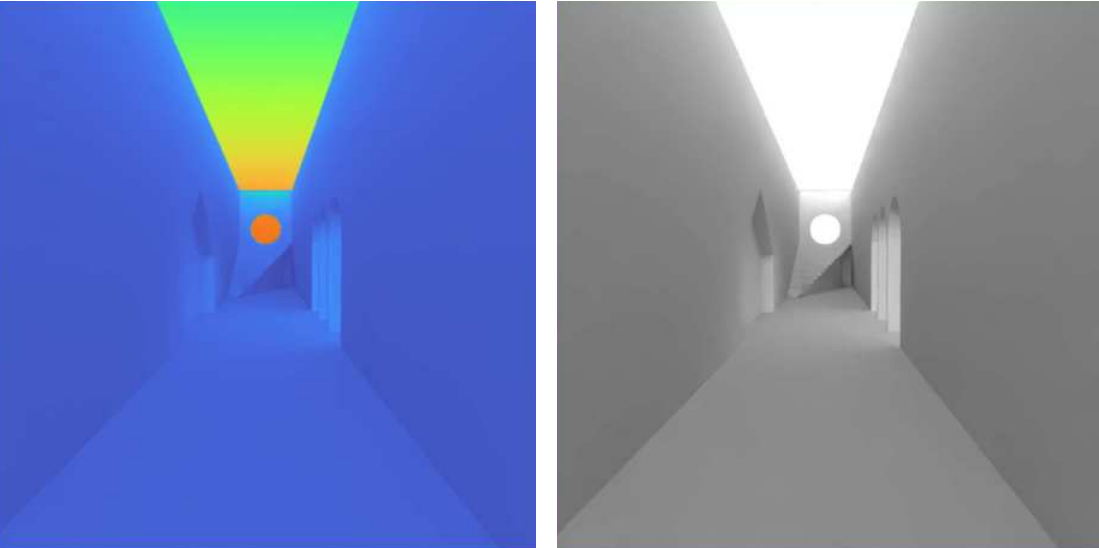
while still allowing for controlled daylighting and visual transparency. These openings are not passive voids—they are spatial instruments. They frame views, establish visual connections with the surrounding urban and natural context, and modulate the relationship between interior and exterior. The upper roof structure further reinforces this environmental responsiveness: its form and orientation are optimized to provide solar control, channel natural ventilation, and support passive climate regulation within the gallery and archival spaces.

The result is a porous yet protective architecture—one that operates across multiple registers: technical, perceptual, and ecological. It does not isolate, but filters. It does not dominate, but mediates. Through its precise disposition and environmental intelligence, the block becomes more than a container—it becomes an active interface between context, climate, and content.

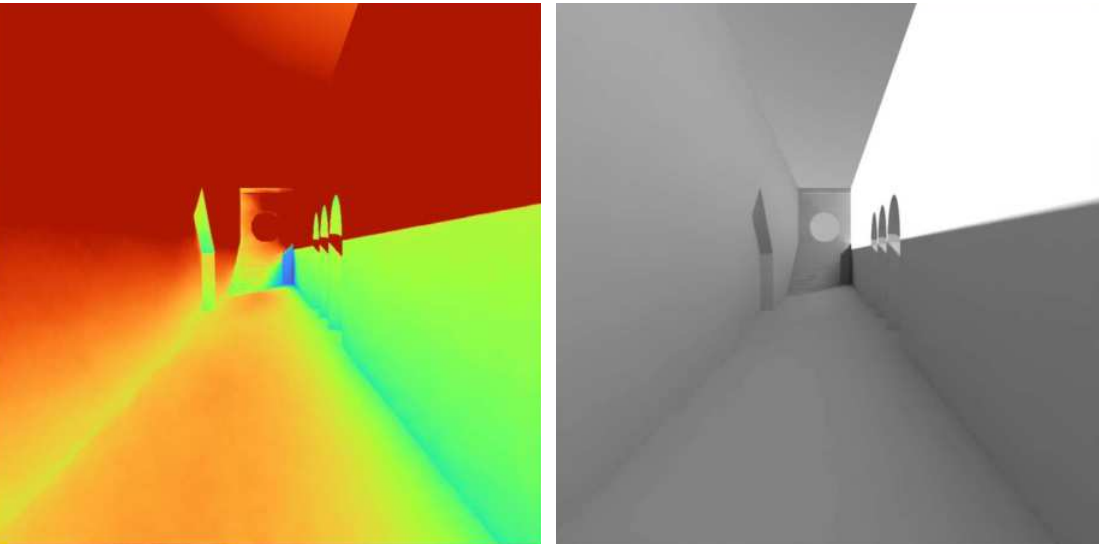
PROPOSAL  
**RADIATION**



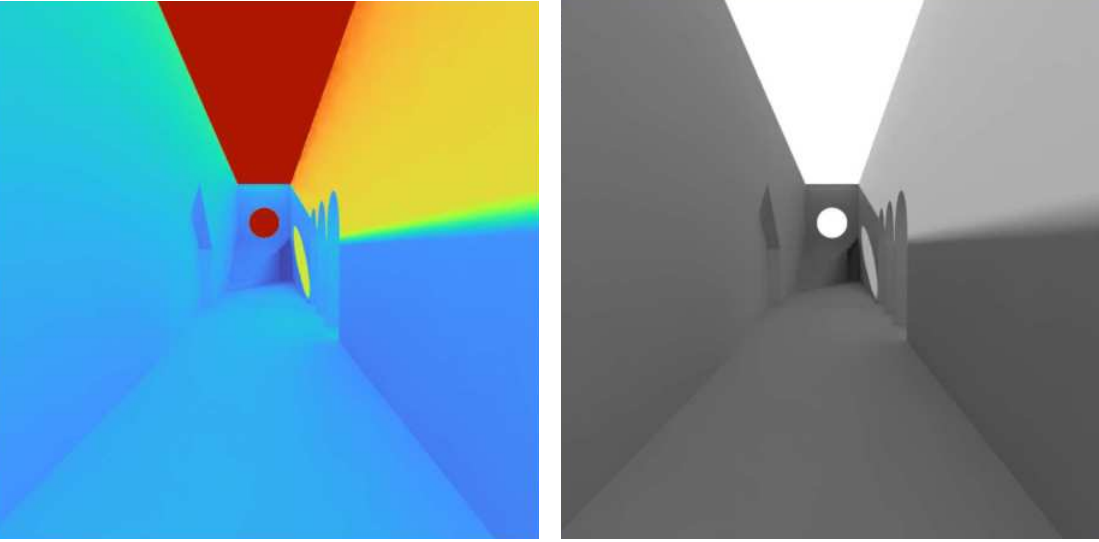
VIEW 01 VERNAL EQUINOX\_March\_8pm DA % OF HOURS > 300LUX 0 25 50 75 100 USA NY CENTRAL PARK\_SKY CLEAR CONDITIONS



VIEW 01 VERNAL EQUINOX\_March\_12pm DA % OF HOURS > 300LUX 0 25 50 75 100 USA NY CENTRAL PARK\_SKY CLEAR CONDITIONS



VIEW 01 VERNAL EQUINOX\_March\_8am DA % OF HOURS > 300LUX 0 25 50 75 100 USA NY CENTRAL PARK\_SKY CLEAR CONDITIONS



# DAYLIGHT\_VISUALIZATION

THE CHANGING OF LIGHT ANALYSIS

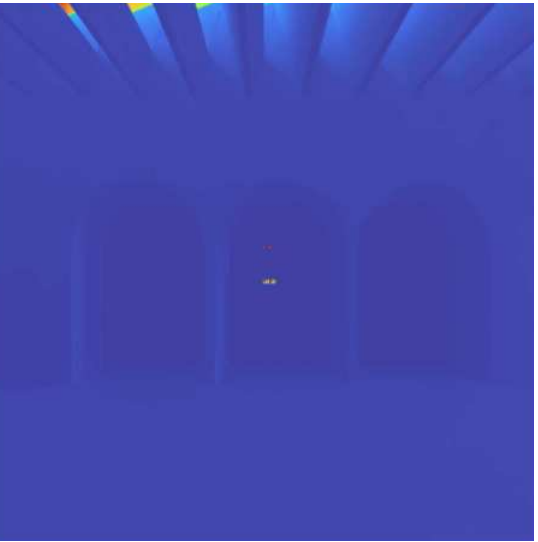




VIEW 01 VERNAL EQUINOX\_March\_8am DA % OF HOURS > 300LUX 0 25 50 75 100 USA NY CENTRAL PARK\_SKY CLEAR CONDITIONS



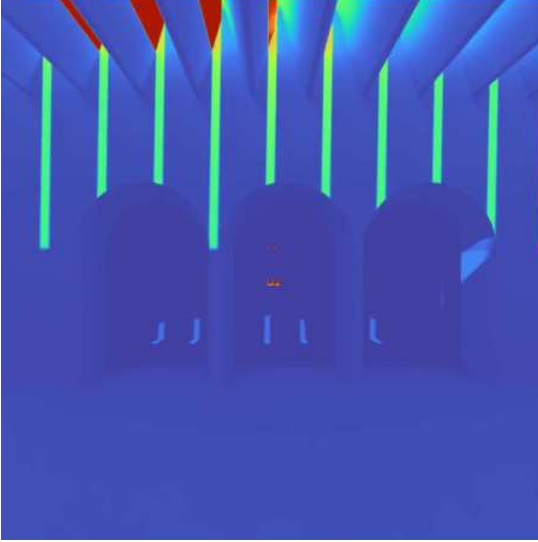
VIEW 02 VERNAL EQUINOX\_March\_8am DA % OF HOURS > 300LUX 0 25 50 75 100 USA NY CENTRAL PARK\_SKY CLEAR CONDITIONS



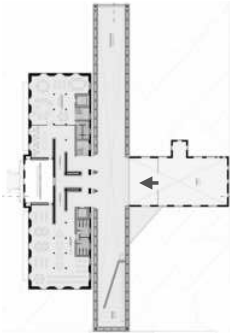
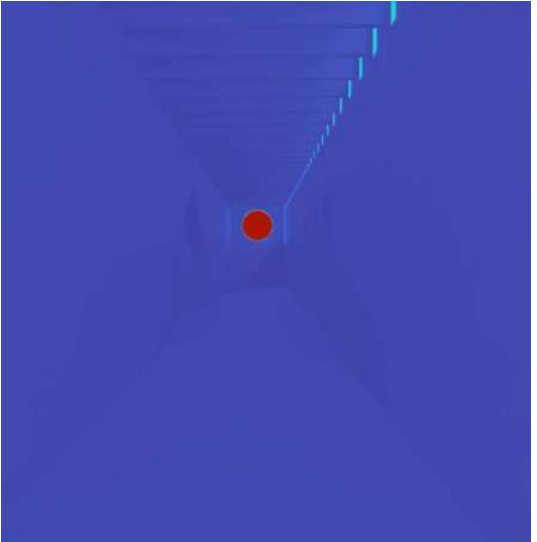
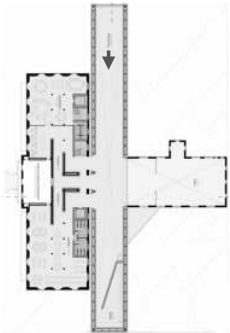
VIEW 01 VERNAL EQUINOX\_March\_12pm DA % OF HOURS > 300LUX 0 25 50 75 100 USA NY CENTRAL PARK\_SKY CLEAR CONDITIONS



VIEW 02 VERNAL EQUINOX\_March\_12pm DA % OF HOURS > 300LUX 0 25 50 75 100 USA NY CENTRAL PARK\_SKY CLEAR CONDITIONS



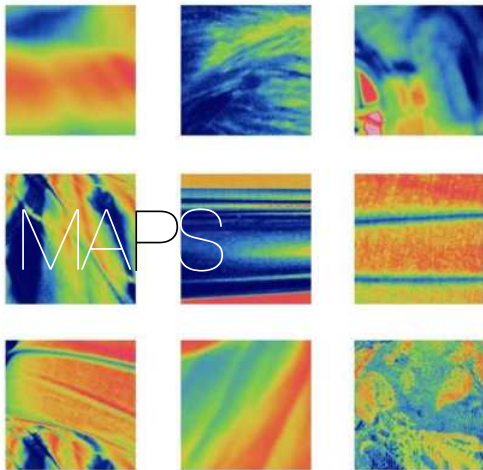
VIEW 01 WINTER SOLSTICE\_December\_12pm DA % OF HOURS > 300LUX 0 25 50 75 100 USA NY CENTRAL PARK\_SKY CLEAR CONDITIONS



VIEW 02 VERNAL EQUINOX\_March\_17pm DA % OF HOURS > 300LUX 0 25 50 75 100 USA NY CENTRAL PARK\_SKY CLEAR CONDITIONS



# DAYLIGHT\_SPATIAL MAPS



## ANNUAL SUNLIGHT EXPOSURE (ASE)

Percentage o of floor area exposed to more than 250 hours of direct sunlight greater than 1500lux



LEED daylight credits

3

Spatial Daylight Autonomy (fraction of area)

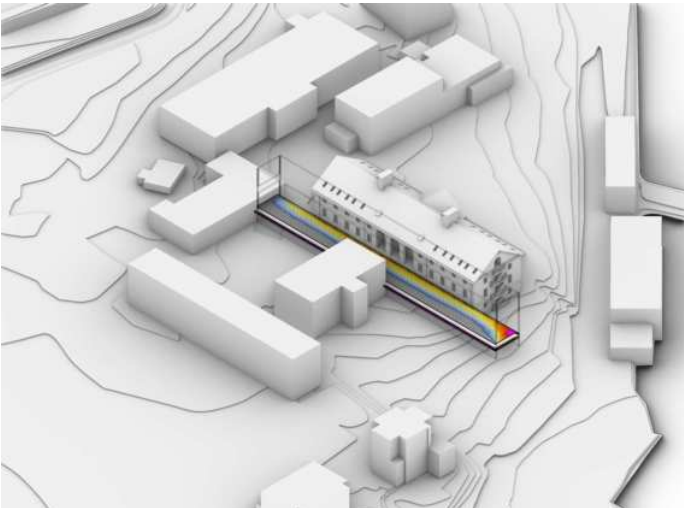
0.9962

Annual Sunlight exposure (% of area)

0.344

Mean illuminance (lux)

7622.0796



The diagrams (left) show a similar analysis of sunlight exposure but add a new dimension: the pink and purple areas that indicate "overlit" zones, meaning areas exposed to too much direct sunlight (more than 1500 lux). This is important since too much direct light can affect visual comfort or damage certain objects, such as those that might be on display in a museum.

## ANNUAL SUNLIGHT EXPOSURE (ASE)

Percentage o of floor area exposed to more than 250 hours of direct sunlight greater than 1500lux



LEED daylight credits

3

Spatial Daylight Autonomy (fraction of area)

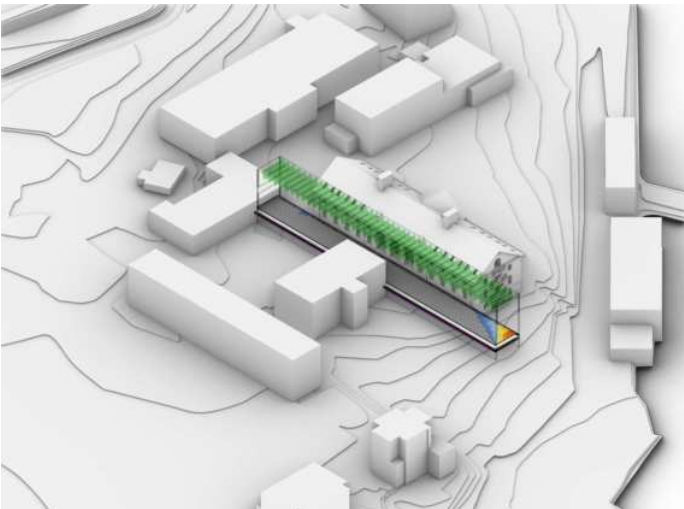
0.9962

Annual Sunlight exposure (% of area)

0.081

Mean illuminance (lux)

4640.7637



The diagrams (left) show a similar analysis of sunlight exposure but add a new dimension: the pink and purple areas that indicate "overlit" zones, meaning areas exposed to too much direct sunlight (more than 1500 lux). This is important since too much direct light can affect visual comfort or damage certain objects, such as those that might be on display in a museum.

## SPATIAL DAYLIGHT AUTONOMY (SDA)

Percentage of area with 50% Daylight Autonomy or greater



LEED daylight credits

3

Spatial Daylight Autonomy (fraction of area)

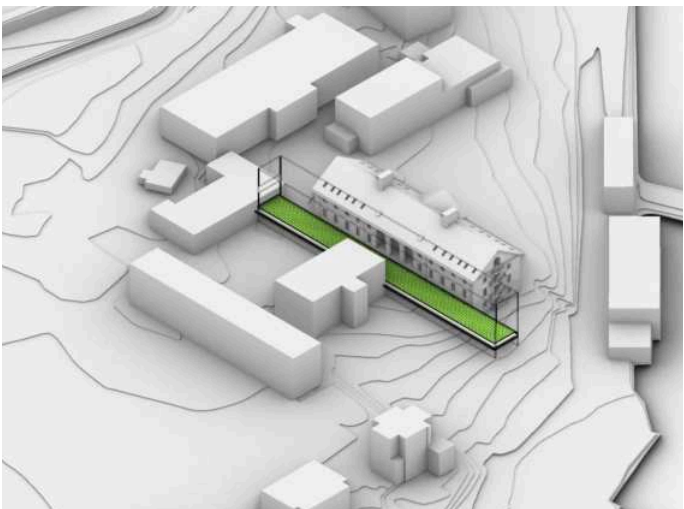
0.9962

Annual Sunlight exposure (% of area)

0.081

Mean illuminance (lux)

4640.7637



In the image), the blue colors represent areas with less natural light, while the yellow and red areas show greater exposure to daylight. Overall, a considerable part of the space receives good natural lighting, especially near the windows, while areas further away get less light.



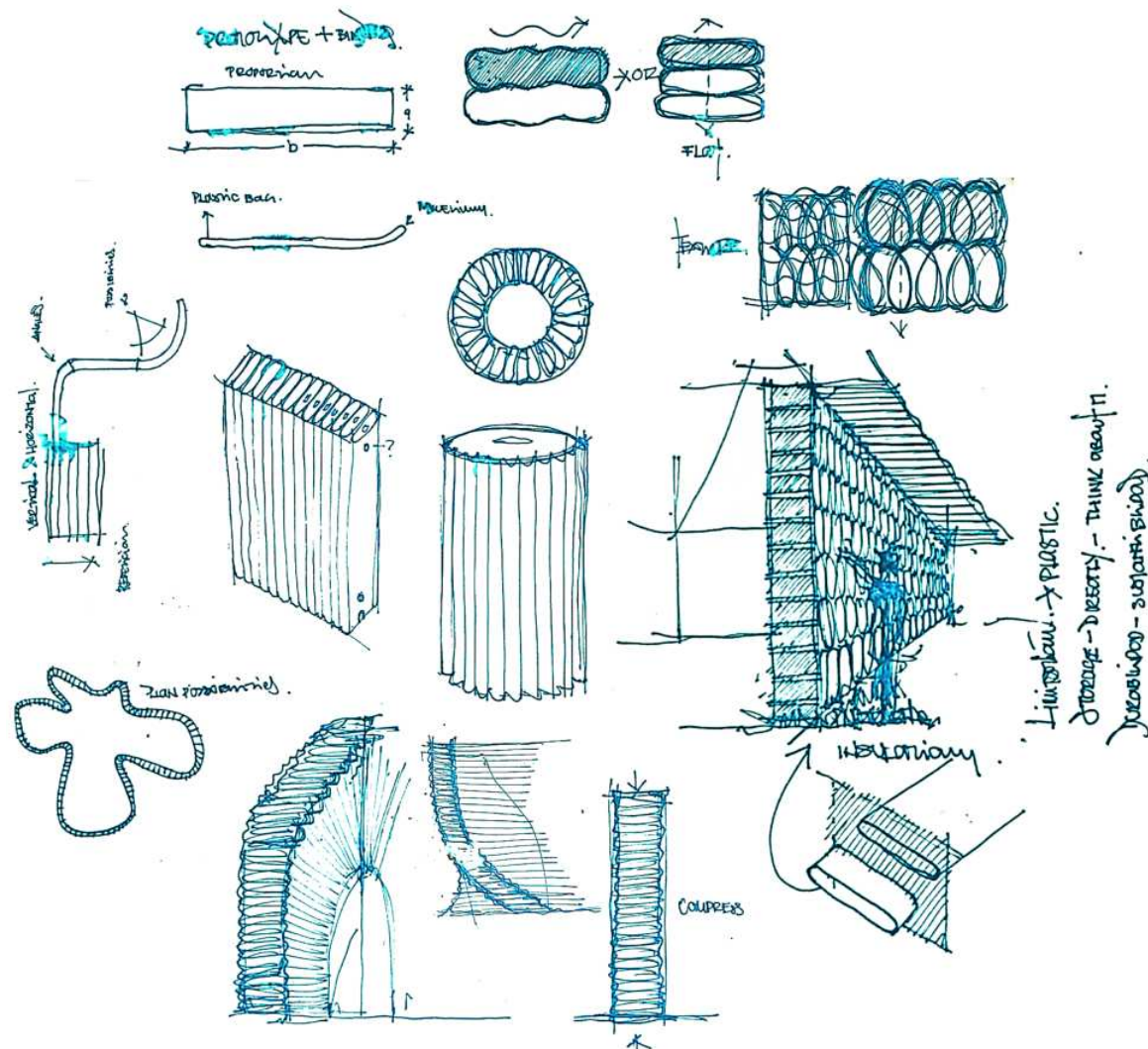


**COURSE** ADV STUDIO V, SPRING  
**AUTHORS** SEBASTIÁN DOMÍNGUEZ  
ESTEBAN MARTÍNEZ BACIGALUPPI  
**INSTRUCTOR** DAVID BENJAMIN  
**LOCATION** WORLDWIDE/HANSALI, INDIA

# SYSTEM FOR A REGENERATIVE FUTURE MYCOBAGS

MycoBag Commons is a material exploration project that proposes a new construction system based on bioplastic bags filled with agricultural waste and mycelium. Through physical prototyping and performance testing, the project investigates the structural behavior, material adaptability, and logistical efficiency of this system as a way to challenge the inertia of conventional construction materials and methods. At the heart of the project lies a deeply intuitive and age-old gesture: storing something valuable in a bag. Across cultures and throughout history, the act of placing food, tools, or goods into a bag has represented protection, portability, and preparation for future use. This project reclaims this familiar logic and elevates it into a construction technique, one that is accessible, scalable, and regenerative. The combination of bioplastic and shredded agricultural waste becomes self-reinforcing once inoculated with mycelium, simplifying the production chain and reducing the need for specialized labor or

infrastructure. The process is designed to integrate effortlessly with existing agricultural routines, from rural regions like Kenya, Punjab, or Indonesia to industrialized contexts such as the United States and France. This seamless compatibility allows the system to scale quickly and adapt to various geographies, climates, and economies. As a carbon-negative, low-tech, and high-impact material system, it enables anyone, anywhere, to build and create with what is locally available, turning agricultural surplus into shelter while storing CO<sub>2</sub> in the built environment. It is a solution for both rural and urban futures, offering a new architectural language rooted in care, circularity, and collective intuition. Ultimately, innovative system envisions a world where ecological responsibility meets design empowerment, where everyday people, not just experts, can become agents of spatial and environmental change.





# CARBON EMISSIONS

## PER-CAPITA FOR COUNTRY

Measuring the total carbon emissions doesn't always paint the most accurate picture of a country's contribution, if their population isn't considered.

For example, even though China is the highest emitter of CO<sub>2</sub>, the average American is responsible for producing 14.4 tonnes of CO<sub>2</sub> per person, compared to 7.1 tonnes for a Chinese citizen.

Here's a look at the biggest per-capita carbon emitters in the world:



\*1 Middle East A  
Bahrain, Oman, Kuwait, Qatar, United Arab Emirates

\*2 Middle East B  
Israel, Jordan, Lebanon, Syria, Yemen

\*3 Asia A  
Brunei, Malaysia, Mongolia, Singapore

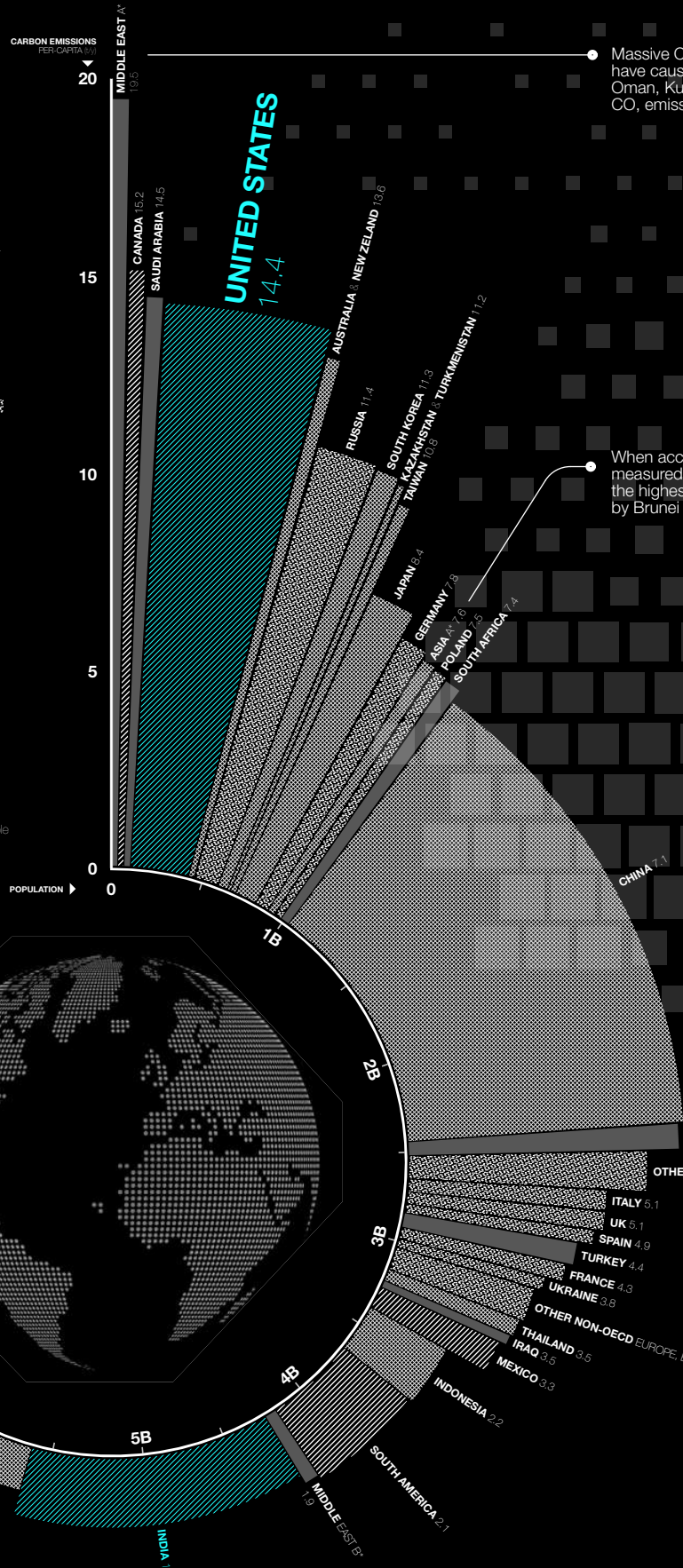
\*4 Asia B  
Asia without Asia A, China, India, Thailand, Taiwan, Indonesia, S. Korea or Japan

\*China  
China, Hong Kong

The CO<sub>2</sub> emission values are based on estimates of the source chart. There may be a negligible difference between the ones provided here and the source data.

Unequal global distribution of wealth plays a factor in carbon emissions. Developed countries like Qatar emit 31t CO<sub>2</sub>/yr, while that of developing countries in Africa can be as low as 0.7t CO<sub>2</sub>/yr.

SOURCE: AQAL GROUP, IEA (2021)



Massive CO<sub>2</sub> emissions, primarily through gas flaring, have caused major oil-producing countries like Bahrain, Oman, Kuwait, Qatar and U.A.E to have high per-capita CO<sub>2</sub> emissions, despite their small population.

## ONE YEAR EMISSIONS

1KM SPHERE  
18.7 KG/M<sup>3</sup>

NEW YORK STATE

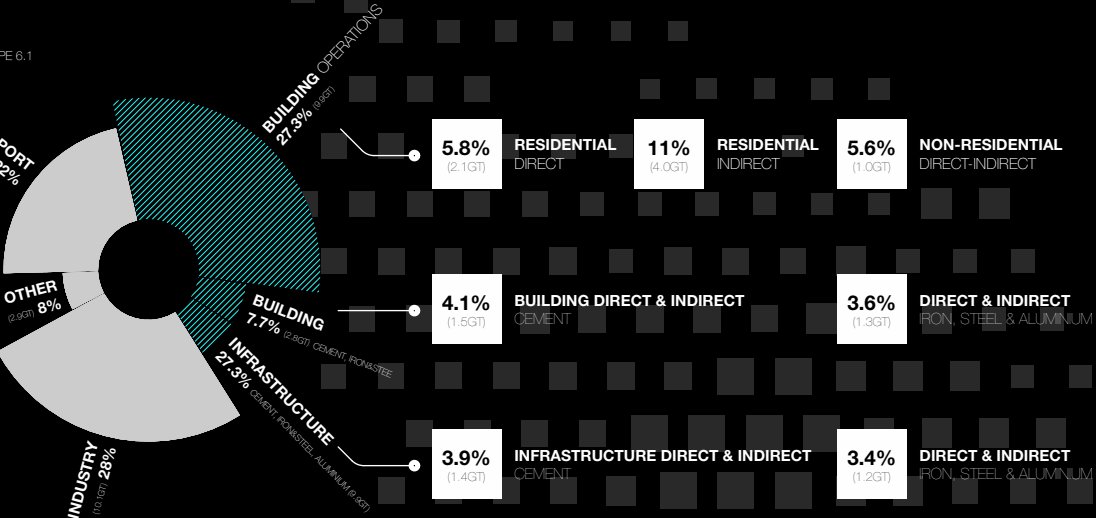
When accounting for the intensity of emissions, measured by emissions per GDP, Mongolia will have the highest per capita CO<sub>2</sub> emissions in 2030, followed by Brunei and Malaysia.

TEN YEARS EMISSIONS

NEW YORK CITY

## WHY THE BUILT ENVIRONMENT?

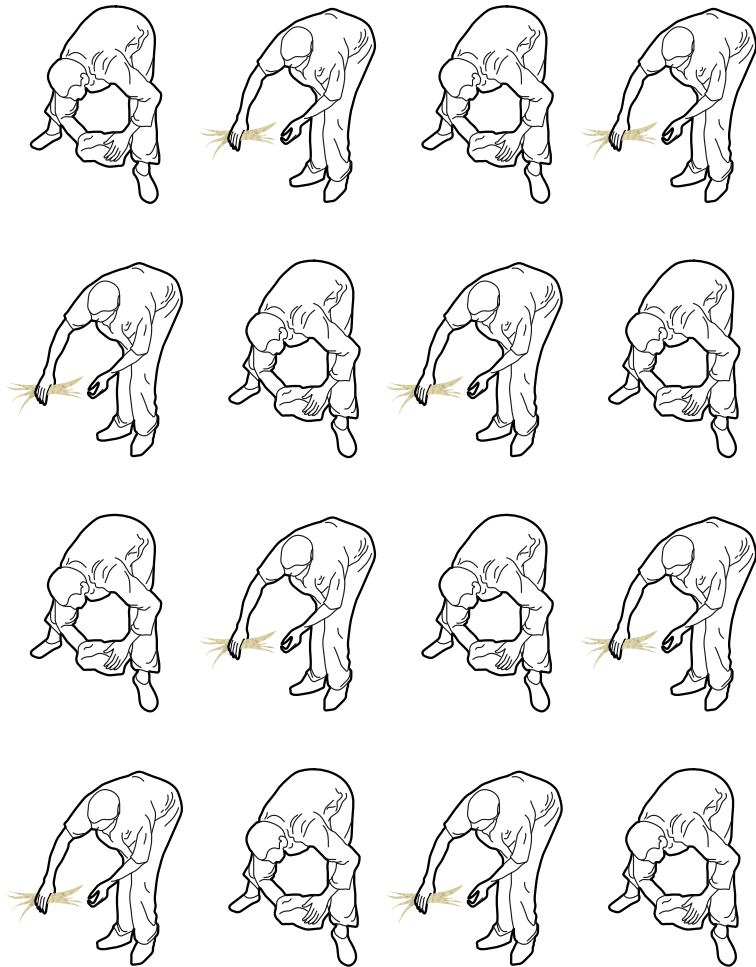
The built environment is responsible for about 42% of annual global CO<sub>2</sub> emissions





**Bags: An Intuitive Human Solution**

Since ancient times, humans have created bags from natural materials to carry and store essentials. This simple, intuitive tool evolved with society, leading to the invention of plastic bags—lightweight, durable, and widely used around the world today.

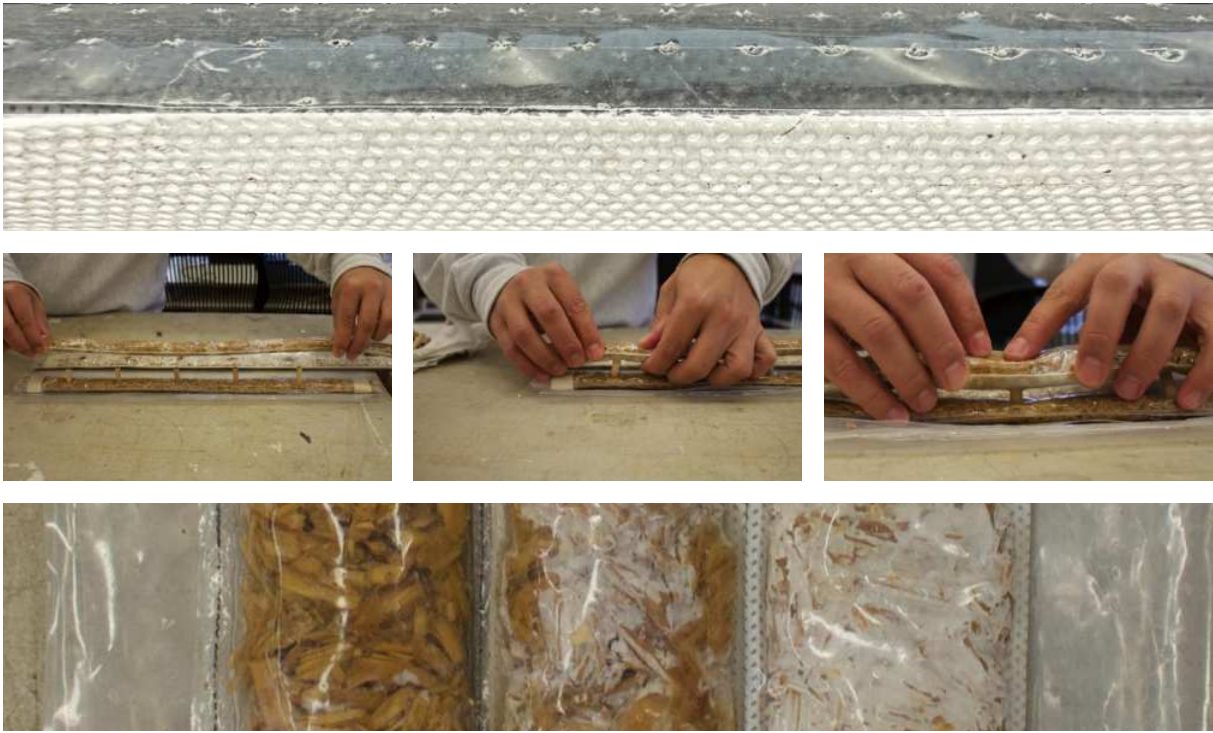


Bags combined with  
**agricultural waste + mycelium**



The mixture of plastic and agricultural waste combines two fragile elements that, when brought together, create a stronger composite. This hybrid material is flexible and waterproof, but once injected with mycelium, it hardens and naturally bonds, forming a durable and resilient structure.

Below are several potential alternatives that could be developed using this plastic format, including inflatable structures to create enclosures without the need for complex formwork, as well as the possibility of constructing vertical silos as structural elements. A future variation incorporating natural textiles is also being considered, which would expand the range of material and formal explorations.



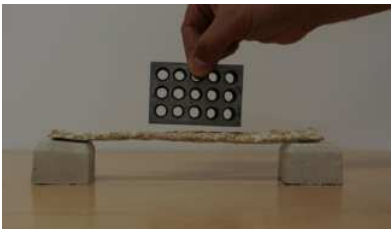
Following a thorough analysis focused on practicality and current relevance, we opted for a perforated plastic tubular format that allows proper ventilation for the healthy growth of mycelium while directly compacting agricultural waste. This format enables greater freedom in design exploration due to its lightness and flexibility.



Several experiments were conducted to demonstrate the advantages of using plastic in the proposed format, revealing a significant improvement in tensile strength, as mycelium performs very well under compression and can also function as a binder when the plastic is cut and heated.

The plastic's waterproofing properties were also considered, along with the potential for achieving a glossy finish in the future. As a next step, a possible surface treatment will be explored, which may vary depending on current market products or evolve alongside the material itself, gradually adapting to the characteristics of traditional construction materials.

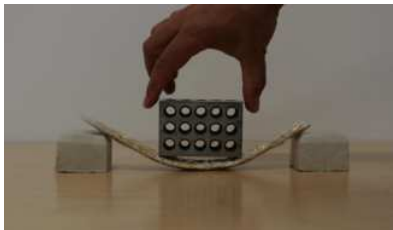
TENSILE



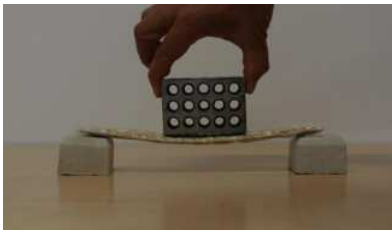
1\_PROTOTYPE WITHOUT PLASTIC



3\_PROTOTYPE WITH PLASTIC



2\_PROTOTYPE WITH PLASTIC



BONDING



1\_MYCELIUM NATURAL BONDING



2\_PLASTIC HEATING



3\_WOOD DOWEL

FINISH

1\_PLASTER & SHELLAC PRIMER



2\_NATURAL MYCELIUM

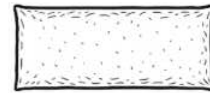
3\_NATURAL SHELLAC

## FORMAT

### IMMEDIATE

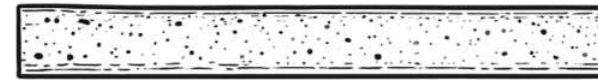


### MIDTERM



This allows for the creation of temporary shelters, single-family homes, and medium-scale structures with storage silos, adapting to various needs and contexts.

### LONG-TERM



Three distinct sizes are proposed, each designed according to the level of urgency related to the need being addressed: an immediate response for emergency situations, a medium-term option for extended yet temporary use, and a long-term solution that can be more permanently integrated into the environment. This classification enables greater adaptability across different contexts, while also allowing for the exploration of diverse design possibilities that vary in scale, construction technique, and degree of permanence.



Once the technology is developed, a new layer is proposed to build upon existing structures, using them as foundations for new carbon-sequestering architectures. These interventions would create mixed-use spaces for both humans and more-than-human species.



## EFFORTLESS ADAPTATION

This made possible by integrating this system into already existing agricultural processes, allowing its implementation without the need for major structural changes. From manual harvesting in regions such as Kenya, Punjab, and Indonesia, to the highly mechanized systems found in industrialized nations like the United States and France, the availability of agricultural waste and established handling practices facilitate its immediate adoption.

This compatibility enables efficient scaling and paves the way for industrialization, offering a sustainable and long-term response to both environmental and housing crises. By using existing technologies adapted to produce this new material, we not only optimize available resources, but also demonstrate the system's versatility and universality—capable of being integrated into diverse economic, social, and climatic contexts.

# VERSATILITY

## BALING

## SHREDDING

## BLENDING

## BAGGING

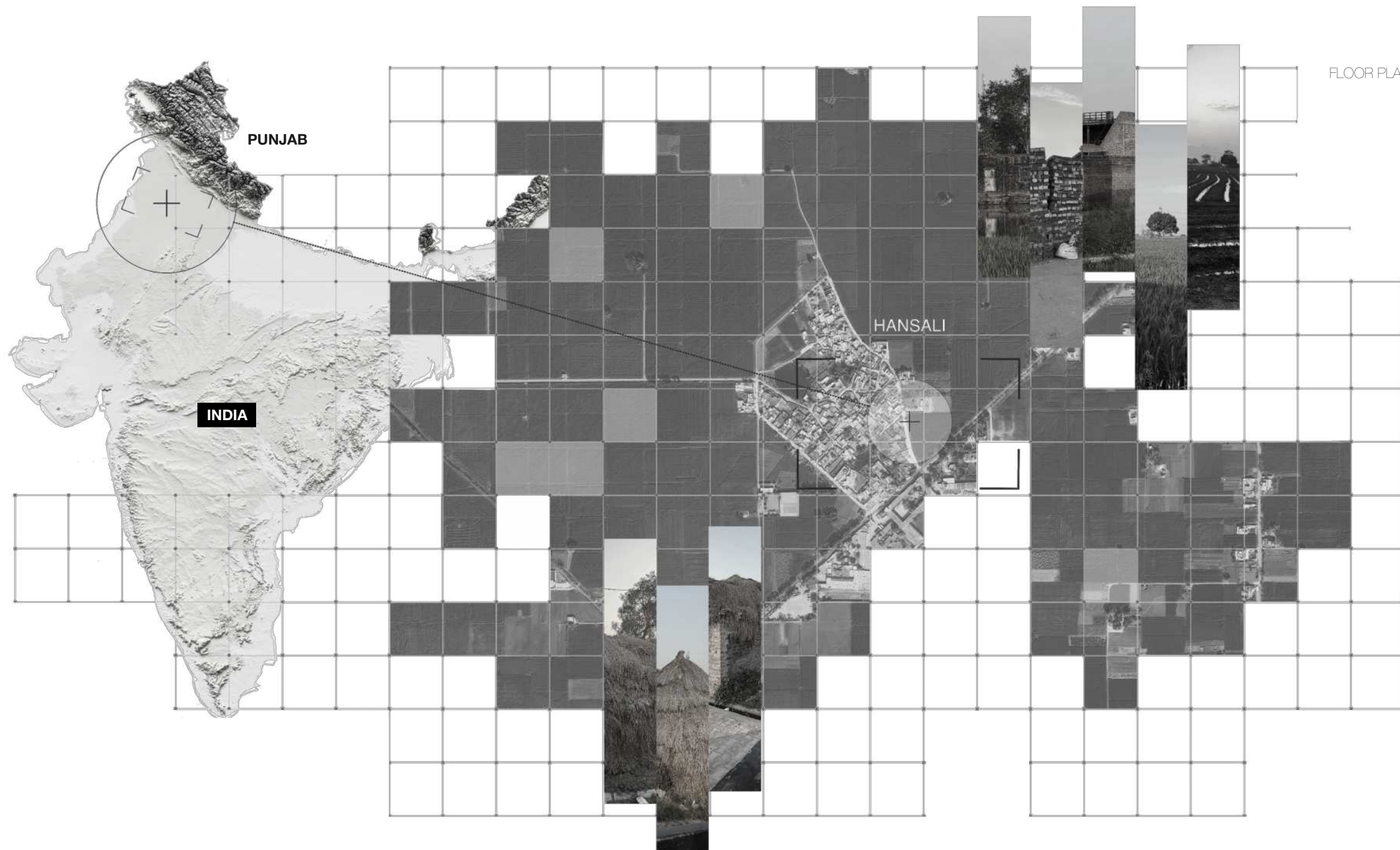
## COMPOSITE

## HAND-CRAFTED

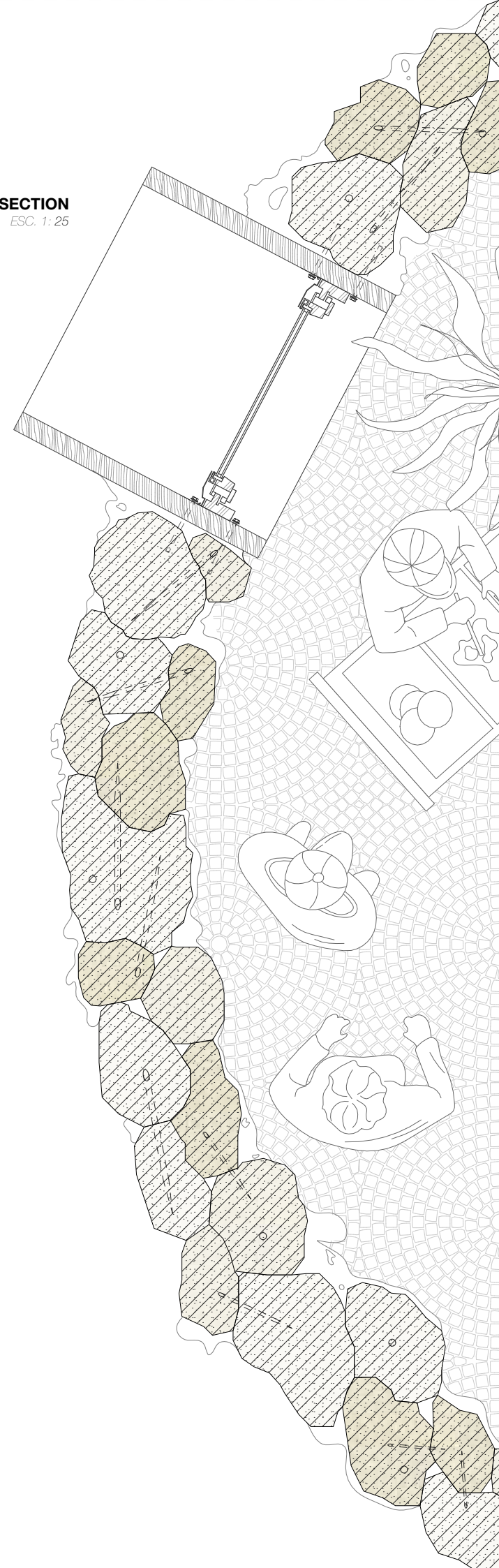
**MASS-PRODUCED**







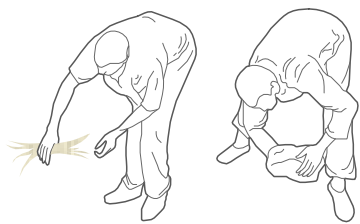
FLOOR PLAN **DETAIL SECTION**  
ESC. 1: 25



## + MATERIAL ASSEMBLY PROCESS

*Mycellum's Role in Low-Tech Construction*

### GRAB



Collecting agricultural waste becomes a simple, everyday act. With straw often found just across the street, anyone can gather it by hand and place it into a lightweight bag. No tools, no machinery, just local material and a few minutes of effort. This quick and accessible step makes use of what's already available.

### MIX



Once the bag is filled with straw, a small amount of mycelium is added directly inside. Then, water is poured in to create the right environment for growth. The mixture stays inside the bag—no special equipment needed. It's a low-tech, hands-on process that activates the transformation from waste to building material.

### DOWEL



After the bag is fully colonized and firm, it's ready to be assembled. Each bag is doweled to the next, creating stable joints without the need for adhesives or fasteners. As the mycelium continues to grow, it naturally binds the bags together, forming a solid, unified structure. Stability emerges not from force, but from connection.



An aerial architectural rendering of a village. The scene shows a cluster of buildings with flat roofs and some with small courtyards. There are several trees and green spaces interspersed among the buildings. In the foreground, there are agricultural fields with rows of crops, some of which are yellow, suggesting a harvest. A tractor is visible in one of the fields. The overall style is a detailed, isometric architectural visualization.

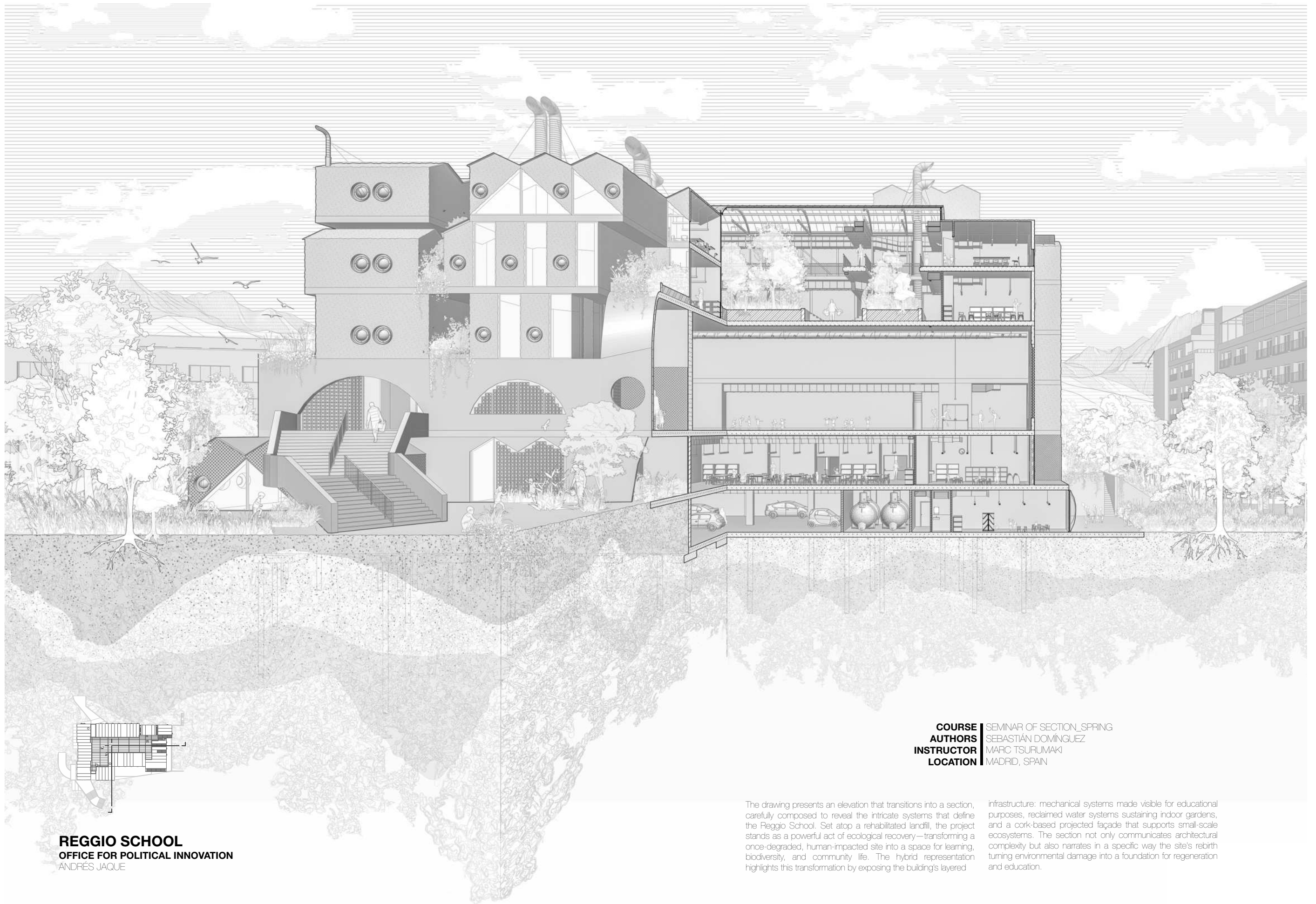
## GROWING THE VILLAGE

We envision Hansali as a living model of rural regeneration, where the village becomes a closed-loop system of material production, rooted in local knowledge and collective action. From the agricultural fields to the home, the community reclaims its resources, transforming agricultural waste into a carbon-negative building material cultivated with mycelium. This process is not outsourced; it is lived.

Villagers simply cross the street to collect waste in lightweight bags, inoculate it with fungal spores, and, together, grow the very components that shape their homes. In doing so, they don't just construct buildings; they cultivate autonomy, resilience, and a shared future.

What begins as a simple act, filling a bag becomes a tool for climate action, cultural continuity, and collective empowerment.





**REGGIO SCHOOL**  
**OFFICE FOR POLITICAL INNOVATION**  
ANDRÉS JAQUE

**COURSE** SEMINAR OF SECTION, SPRING  
**AUTHORS** SEBASTIÁN DOMÍNGUEZ  
**INSTRUCTOR** MARC TSURUMAKI  
**LOCATION** MADRID, SPAIN

The drawing presents an elevation that transitions into a section, carefully composed to reveal the intricate systems that define the Reggio School. Set atop a rehabilitated landfill, the project stands as a powerful act of ecological recovery—transforming a once-degraded, human-impacted site into a space for learning, biodiversity, and community life. The hybrid representation highlights this transformation by exposing the building's layered

infrastructure: mechanical systems made visible for educational purposes, reclaimed water systems sustaining indoor gardens, and a cork-based projected façade that supports small-scale ecosystems. The section not only communicates architectural complexity but also narrates in a specific way the site's rebirth turning environmental damage into a foundation for regeneration and education.







## Sustainable Food Practices: Balancing Environmental Value and Resource Investment

CLIMAVORE, the innovative project by Cooking Sections, moves away from traditional dietary categories and proposes a diet based on the ability of ingredients to respond to and mitigate human-induced climate events. Its approach transcends traditional dietary categories such as carnivore, omnivore, locavore, vegetarian, and vegan, promoting a diet based on ingredients that minimize climate change, such as seaweeds and filter-feeding mollusks. Through installations like CLIMAVORE: On Tidal Zones, the project not only educates consumers about these sustainable ingredients but also seeks to adapt diets to changing environmental conditions. However, despite its laudable goals, the movement faces significant challenges similar to those encountered by sustainable aquaculture, such as high infrastructure costs and the difficulty of scaling up.<sup>1</sup>

CLIMAVORE: On Tidal Zones, situated in the intertidal zone of Bayfield, explores the environmental effects of aquaculture and addresses the changing shores of Portree, Isle of Skye. Each day, during low tide, the installation emerges above the sea and functions as a dining table for humans, offering free tastings of recipes that include ocean cleaners: seaweeds, oysters, clams, and mussels. During high tide, the installation acts as an underwater oyster table. This installation was activated by Cooking Sections in collaboration with various local actors, residents, politicians, and researchers. This collaborative approach highlights the importance of involving a wide range of stakeholders to achieve a significant impact. Additionally, the project also integrated 10 local restaurants that removed farmed salmon from their menus and replaced it with a CLIMAVORE dish, demonstrating how sustainable practices can be adopted at a local level and contributing to the creation of a support network around the initiative. The long-term goal of the project is to explore food practices that address environmental regeneration and promote more responsive aquaculture in an era of human-induced environmental transformations.<sup>1</sup>

As previously mentioned, the adoption of sustainable aquaculture practices presents significant economic challenges compared to traditional aquaculture. Salmon farms and other forms of intensive aquaculture benefit from economies of scale and optimized production methods that reduce operational costs and offer more competitive prices<sup>2</sup>. In contrast, sustainable aquaculture, as promoted by CLIMAVORE, requires substantial investments in specialized infrastructure, advanced technologies for maintaining water quality, and less intensive cultivation techniques, resulting in higher production costs<sup>3</sup>.

Despite the long-term ecological benefits that sustainable aquaculture can offer, such as improved water quality and biodiversity, its yields may be lower and prices higher, limiting its market competitiveness<sup>4</sup>. To overcome these economic barriers, government support and subsidies are crucial. These incentives can help bridge the cost gap between traditional and sustainable aquaculture, making sustainable products more accessible to consumers<sup>5</sup>. However, the effectiveness and availability of these subsidies vary by region and local policies, adding a layer of complexity to the widespread implementation of sustainable practices<sup>3</sup>.

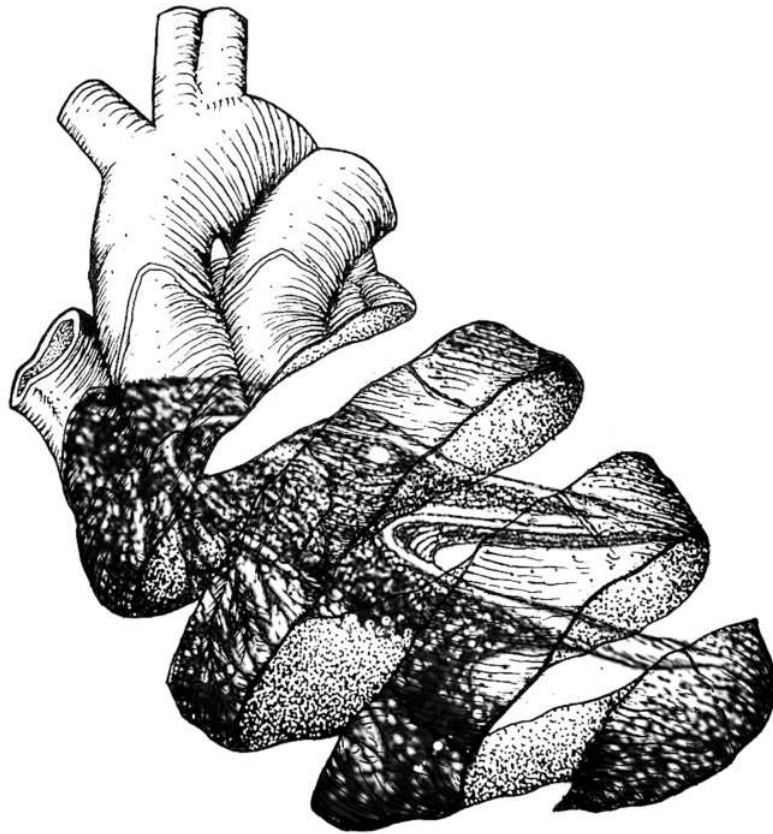
Understanding the economic aspects of organic and conventional aquaculture is crucial, as they influence not only consumer purchasing decisions but also local economies and global markets. Aquaculture practices, guided by the principles of CLIMAVORE, emphasize sustainability and environmental responsibility<sup>6</sup>. These practices adapt to farmers' perspectives, resource availability, and market demands, seeking to increase yields sustainably without compromising water resources<sup>7</sup>. It's about finding a balance: prioritizing our health, recognizing our environmental responsibilities, and being aware of our economic realities, considering that food has inherent value as nutrition and cultural significance, as well as being commercially viable. After all, the food we choose isn't just about sustenance; it's a statement of our values, beliefs, and hopes for the future.

- John Bostock, "Aquaculture: Global Status and Trends | Philosophical Transactions of the Royal Society B: Biological Sciences," The Royal Society Publishing, September 27, 2010, <https://royalsocietypublishing.org/doi/10.1098/rstb.2010.0170>.
- Fao, "The State of World Fisheries and Aquaculture 2022," Knowledge Repository, January 1, 1970, <https://openknowledge.fao.org/items/11a4abd8-4e09-4bef-9c12-900fb4605a02>.
- M.T. Gibbs et al., "Implementation Barriers to Establishing a Sustainable Coastal Aquaculture Sector," Marine Policy, May 16, 2008, [https://www.sciencedirect.com/science/article/pii/S0308597X08000791?casa\\_token=x5m0\\_ZcsqaAAAAA%3AsaJ8jHHzz8NcafBaCL9SDFzYm34qp44xPW4whG80DdnO\\_AYLd6\\_Y5VM7nv75-N9afbiMIWD](https://www.sciencedirect.com/science/article/pii/S0308597X08000791?casa_token=x5m0_ZcsqaAAAAA%3AsaJ8jHHzz8NcafBaCL9SDFzYm34qp44xPW4whG80DdnO_AYLd6_Y5VM7nv75-N9afbiMIWD).
- European Commission, "Aquaculture Policy," Oceans and fisheries, 2021, [https://oceans-and-fisheries.ec.europa.eu/policy/aquaculture-policy\\_en#:~:text=Through%20the%20strategic%20guidelines%20for,Deal%20and%20the%20Farm%20to.](https://oceans-and-fisheries.ec.europa.eu/policy/aquaculture-policy_en#:~:text=Through%20the%20strategic%20guidelines%20for,Deal%20and%20the%20Farm%20to.)
- May Rosenthal Sloan, "On Cooking Sections," *Afterall: A Journal of Art, Context and Enquiry* 49 (March 2020): 83–90, <https://doi.org/10.1086/709637>.
- Durham, Timothy C., and Tamás Mizik. "Comparative Economics of Conventional, Organic, and Alternative Agricultural Production Systems." MDPI, April 25, 2021. <https://www.mdpi.com/2227-7099/9/2/64#sec3dot2dot3economics-09-00064>



**Fig. 1,2** CLIMAVORE: On Tidal Zones. Cooking Sections, 2017-ongoing. Isle of Skye. Aerial Photo: Nick Middleton. Courtesy of Cooking Sections.



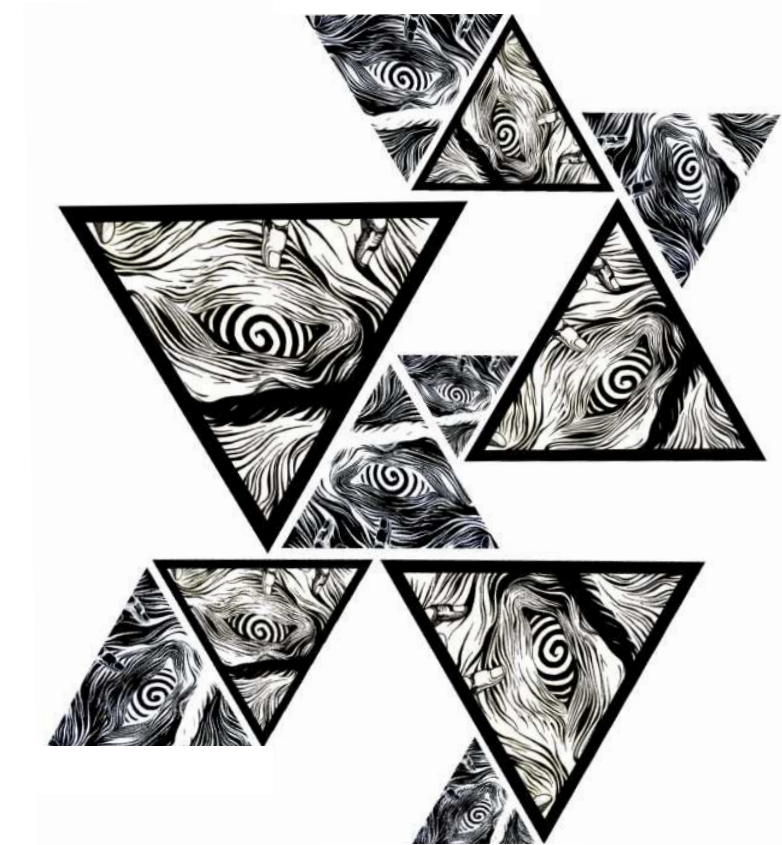


Human existence is marked by a paradox: we crave stability, yet we are immersed in a constant flow of change. Everything that seems solid eventually transforms, unraveling into fragments that give way to new forms. This dynamism not only defines our identity but also shapes our relationships with the environment and other living beings.

Our awareness of this process should foster empathy—not just among ourselves but also toward other species. However, the capitalist mindset has distorted our perception of the world, reducing everything to ownership and utility. We behave as if we own the land, its resources, and even life itself, forgetting that we are merely visitors in an ecosystem that existed long before us and will continue long after we are gone.

This notion of possession distances us from nature and from our own essence, fragmenting us in a futile quest for control. We believe that accumulation guarantees permanence when, in reality, it only delays the inevitable: dissolution, transformation, and change.

Accepting transience does not mean surrendering to chaos but rather finding meaning in interconnectedness. Recognizing that we are not the center but merely a part of the intricate fabric of life allows us to act with greater responsibility. Only when we understand that what we claim to own was never truly ours can we begin to live with greater awareness and respect for the world around us.



After an incredible lecture and presentation of Sarah's work, I was undoubtedly inspired to view movement and the articulations that shape our realities in a completely new way. Inspired on that, the image, composed of triangles enclosing hypnotic eyes amidst flowing, wave-like lines, evokes a sense of constant movement and rotation. Each fragment appears to be part of a system operating under its own internal logic—like cogs in an invisible machine. Within this context, the work of artist Sarah can be seen as the creation of her own systems, where the user is not merely an observer but an active participant in the experience. Her compositions act as extensions of the body: the eyes see but are also seen, they multiply, connect, and rotate in an endless cycle.

This leads us to reflect on how we too are immersed in systems of motion in everyday life. The subway, telecommunications, social behaviors... all are dynamic structures we engage with almost automatically. Just as Sarah designs her own systems and experiences, who designs ours? Are they human creations that have evolved over time, or are they inevitable manifestations of a predetermined reality?

We move within social gears, collective decisions, and algorithms that sometimes seem to possess a will of their own. This artwork, with its hypnotic and repetitive pattern, invites us to question whether we can break free from these systems or if we are doomed to endlessly spin within them. Will we ever be able to choose with complete freedom? Perhaps the key lies in becoming aware of our position within these networks—understanding that even if we didn't create them directly, we can still reshape them. Just as Sarah creates experiences through art, we too can redesign the experiences that shape our lives.

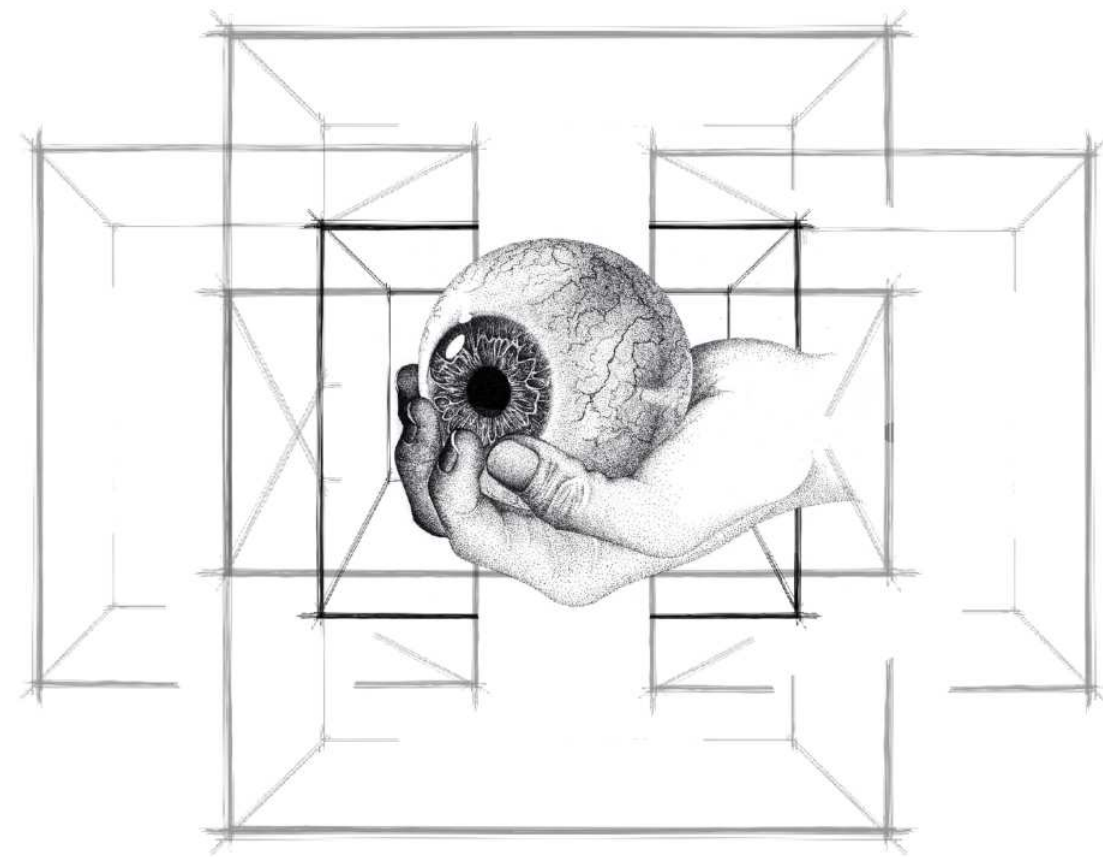


After an incredible presentation by Kambui and his approach to every challenge that his exhibitions generate, I am left with certain key insights that were repeatedly reflected and that he himself highlighted throughout his explanation of his installations and projects. *Jump in the dark, break the boundaries, try back and forth, we are not experts on ourselves, and last but not least, we are the result of the collective.*

Hearing this, I couldn't help but think about something I call "*mental ticks*": self-imposed restrictions, prejudices, fears, or rigid thought patterns that confine us within pre-established boundaries. We believe we can only see what immediate evidence, reading, or listening reveals to us, but in reality, these narrow beliefs keep us bound to a partial view of reality. We live within those limits, thinking we are seeing the full picture, when in fact, we are only looking through a lens distorted by our own limiting beliefs. Inspired by this, I revisited a drawing I made eight years ago that perfectly represents this idea, adding certain elements that can be interpreted freely—symbolizing an attempt to break barriers.

Breaking those barriers would mean recognizing that what we think we "know" is not necessarily the entirety of what exists. Just as a tick is released when it is pulled from the skin, mental limitations only dissolve when we question them and allow ourselves to look beyond the obvious—through introspection and openness to the unknown. The mind expands when it dares to explore territories beyond the familiar, challenging stagnant and fixed ideas.

By doing so, we can begin to know ourselves beyond the superficial layers of what we perceive through the senses. Beyond words, established teachings, and social conventions lies a deeper understanding of who we truly are—beings with an infinite capacity to grow, question, and reinvent ourselves. Thus, the act of removing the mental tick can symbolize a process of liberation, in which we shed imposed limitations and embrace a journey toward deeper self-knowledge, where we can gain a broader perspective and connect with our purest essence.



Olivia presented the different scenarios available for expressing her ideas in a very engaging way. Through various techniques, she has created multiple interpretations and reinterpretations of familiar or personally significant themes, taking them a step further through her unique perspective. This, to me, was the most important aspect of her work: she places a strong emphasis on the concept of perception and how it shapes each of our realities.

This image symbolizes perception as a starting point for exploring the unknown and transforming our reality. The eye, separated from the body and held in a hand, represents the fragility of what we believe we know and how our view of the world can either break or expand. The cracks in the eye suggest that perception is not absolute but rather flexible and subject to change.

The hand holding it symbolizes control and the human ability to redirect how we interpret reality. We do not merely observe the world—we also shape it through our perception. In the background, the geometric structure serves as a conceptual framework that organizes our understanding of the environment. However, its fading lines hint that this construction is not fixed; it can be redefined as we expand our vision.

Ultimately, after hearing her inspiring account and perspective, one is invited to question the limits of perception and embrace the unknown as an opportunity for growth. It reminds us that our way of seeing the world can be radically transformed if we dare to challenge the familiar, opening possibilities to venture into the unknown or irreversibly redefine what we thought we understood.



