

# PORTFOLIO

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M.S. Advanced Architectural Design

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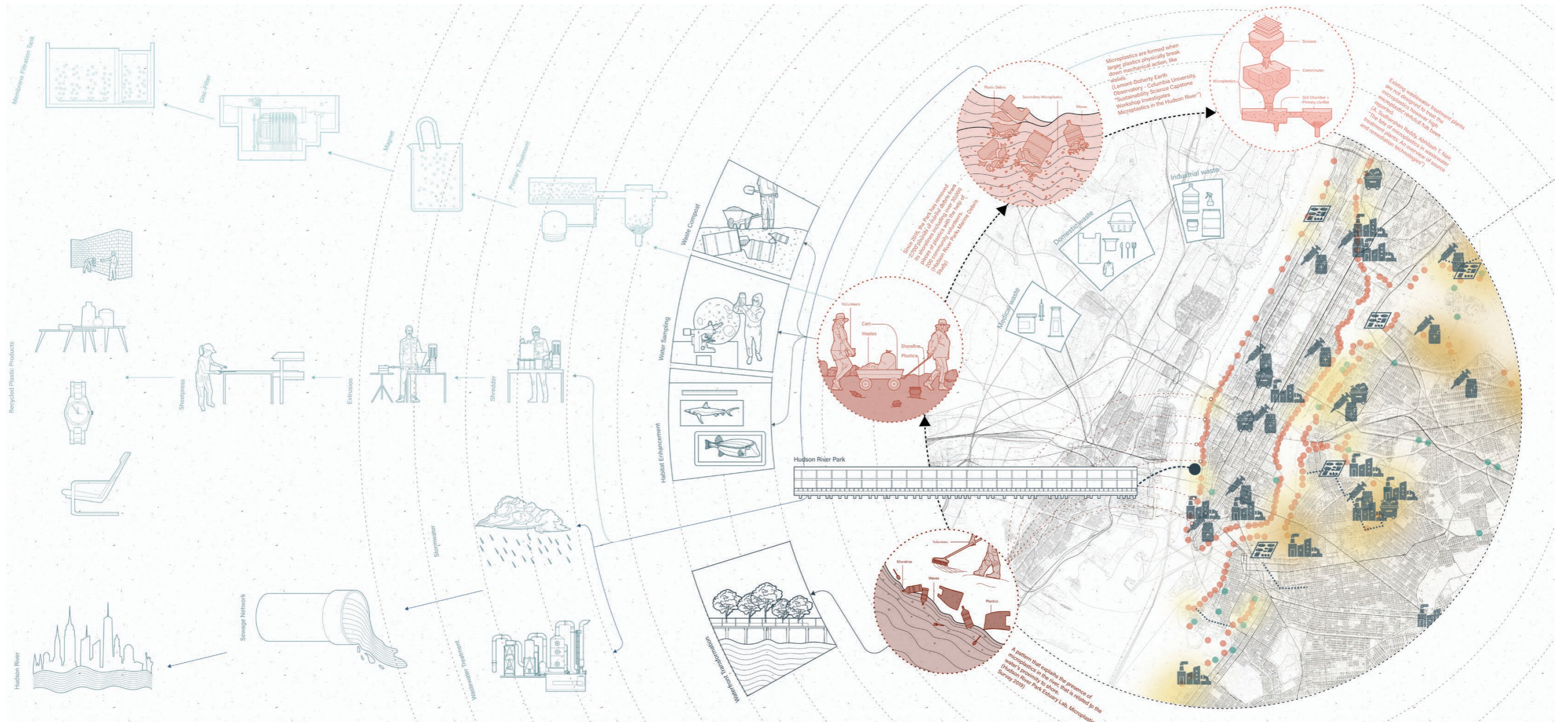
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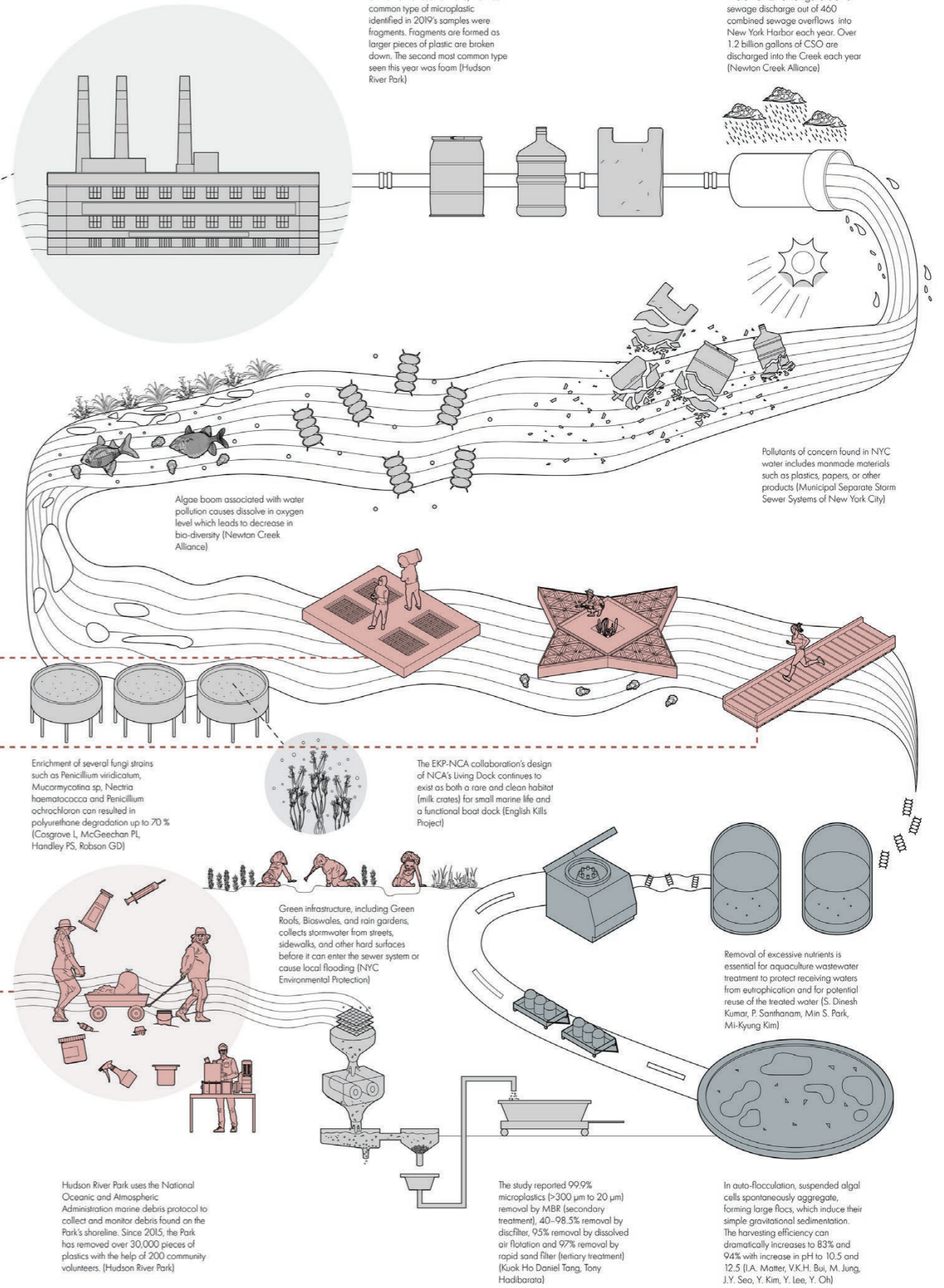


Summer 2023 | East Williamsburg, Brooklyn, NY  
 Instructor: Uriel Fogué  
 Advanced Arch Design Studio

Instead of proposing a new recyclable plastic industry that replaces the original plastic supply chain, the project aims to provide a series of logistical infrastructures to support the collectives that are already operating in New York City, targeting the existing plastic and microplastic pollution problem. The project looks explicitly at East Williamsburg where the plastic production industries are concentrated and the highest level of sewage overflow is happening. As plastic recycling attempts in the US have fallen short, the project aims to redesign our relationships with plastics through a time-based network adaptation. A series of micro-scale interventions, which are adapted from larger-scale microplastic treatment technologies, will be introduced at a community level intervening at every microplastic to water entry point. By maximizing the growth of microorganisms and increasing contact points between microorganisms and microplastic, the microplastic bio-degradation process can be accelerated and a cleaner and safer community can be foreseeable.

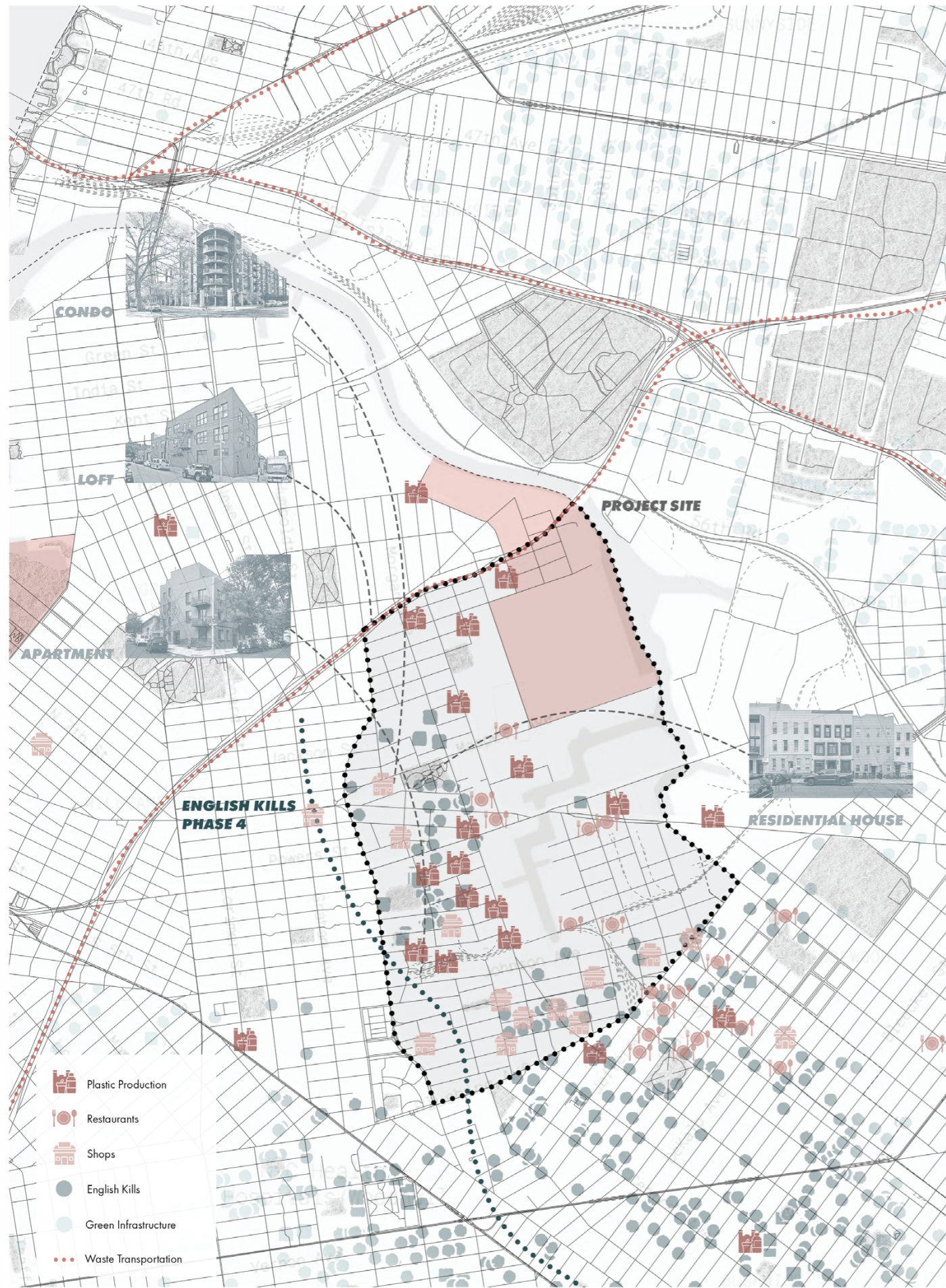
# UNVEILING THE MICROPLASTIC MACROCOSM

INHABITING A PLASTICENE EPOCH



Framework- The End of Gaia: Architecture to Inhabit a Plasticene Epoch  
 Title- Unveiling the Microplastic Macrocosm  
 Subtitle- System of Infrastructures to Support the Existing Activist Communities in Brooklyn

FROM THE PERSPECTIVE OF ACTIVISTS  
 SHARON KANG



Framework- The End of Gaia: Architecture to Inhabit a Plasticene Epoch  
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**STAGE 1:** Establish Permeable Surfaces along the shoreline with high sewage overflow

**STAGE 2:** Transport collected overflow water to treatment installations

**STAGE 3:** Filter and degrade microplastics in installations using soil based fungi (Aspergillus Terreus, Penicillium, and Bacillus)

**STAGE 1:** Identify the points with heaviest pollution along Newton Creek shoreline

**STAGE 2:** Build floating islands for bio-restoration and build on-water walkways along the shoreline

**STAGE 3:** Add microalgae filtering system to the floating islands to extract microalgae concentrated water



**STAGE 1:** Separated microalgae using sedimentation and centrifuge and collect the microalgae from Newton Creek

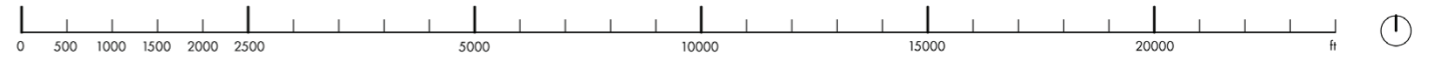
**STAGE 2:** Establish microalgae cultivation installations in adjacent open public spaces to maximize growth

**STAGE 3:** Make the microalgae installations attractive to the community, encouraging community engagement

**STAGE 1:** Transport cultivated microalgae from open public spaces to domestic and public laundry

**STAGE 2:** Add small scale filtering system to washing machines to filter out the microfibrers in laundry water

**STAGE 3:** Employ microalgae to biodegrade microplastics in a community and domestic scale



**THREE STAGED INTERVENTIONS**  
 SHARON KANG

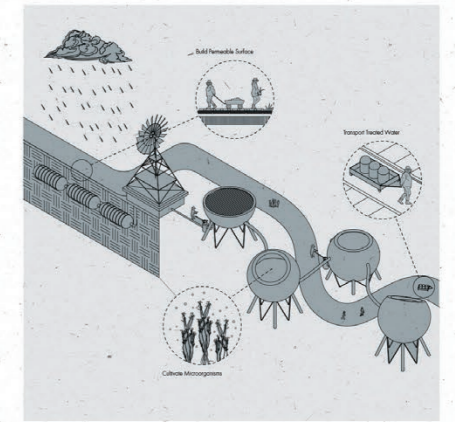
**MICRO FUNGI CULTIVATION FOR SEWAGE OVERFLOW**

**Subsurface Detection System**  
 Size: 16'4" x 12'6" x 37'1"  
 Volume: 1224.75 cubic ft  
 Holds: 9161.78 liquid gallon

**Water Pump/Filter**  
 Size: 26'5" x 18'9" x 18'6"  
 Volume: 1526.82 cubic ft  
 Holds: 11421.33 liquid gallon

**Sedimentation Tank**  
 Size: 18'9" x 18'9" x 26'6"  
 Volume: 3053.63 cubic ft  
 Holds: 22842.74 liquid gallon

**Aeration/Cultivation Tank**  
 Size: 18'9" x 18'9" x 18'6"  
 Volume: 3053.63 cubic ft  
 Holds: 22842.74 liquid gallon



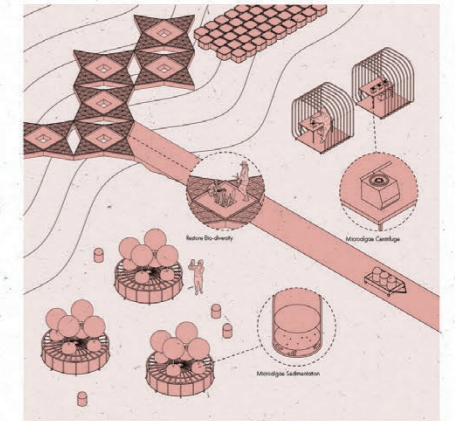
**MICROALGAE COLLECTION FOR BIO-REMEDIATION ACTIVISTS SUPPORT**

**Microalgae Collection Tubes**  
 Size: 6' x 6' x 2"  
 Area: 36 square ft  
 Holds: 17.76 liquid gallon

**Floating Walkway Microalgae Collector**  
 Size: 10' x 20'6" x 1'2"  
 Area: 205 square ft  
 Holds: 9.54 liquid gallon

**Microalgae Centrifuge Laboratory**  
 Size: 8' x 9'4" x 10'7"  
 Area: 74.64 square ft  
 Holds: 18 x 15ml tubes

**Microalgae Sedimentation Tank**  
 Size: 9'6" x 9'6" x 6'10"  
 Area: 90.25 square ft  
 Holds: 517.05 liquid gallon



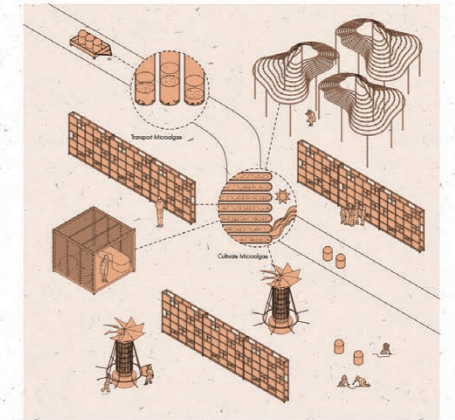
**MICROALGAE CULTIVATION FOR COMMUNITY ENGAGEMENT**

**Microalgae Cultivation Pavilion Prototype #1**  
 Size: 10' x 10' x 8'9"  
 Area: 100 square ft  
 Holds: 81.56 liquid gallon

**Microalgae Cultivation Pavilion Prototype #2**  
 Size: 18'6" x 13'6" x 10'  
 Area: 249.75 square ft  
 Holds: 14.68 liquid gallon

**Microalgae Cultivation Windmill**  
 Size: 9'6" x 9'6" x 10'8"  
 Area: 90.25 square ft  
 Holds: 4.41 liquid gallon

**Microalgae Exhibition Panel**  
 Size: 10' x 1'2" x 8'6"  
 Area: 11.7 square ft  
 Holds: 58.29 liquid gallon



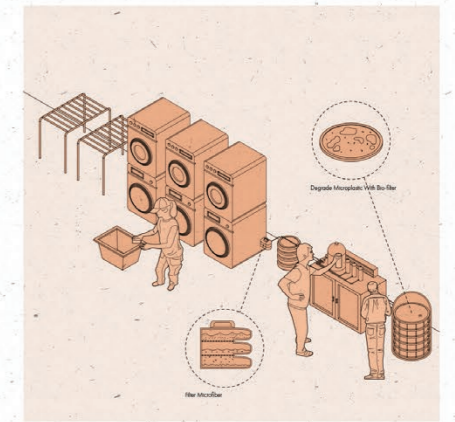
**MICROALGAE CULTIVATION FOR DOMESTIC/PUBLIC LAUNDRY**

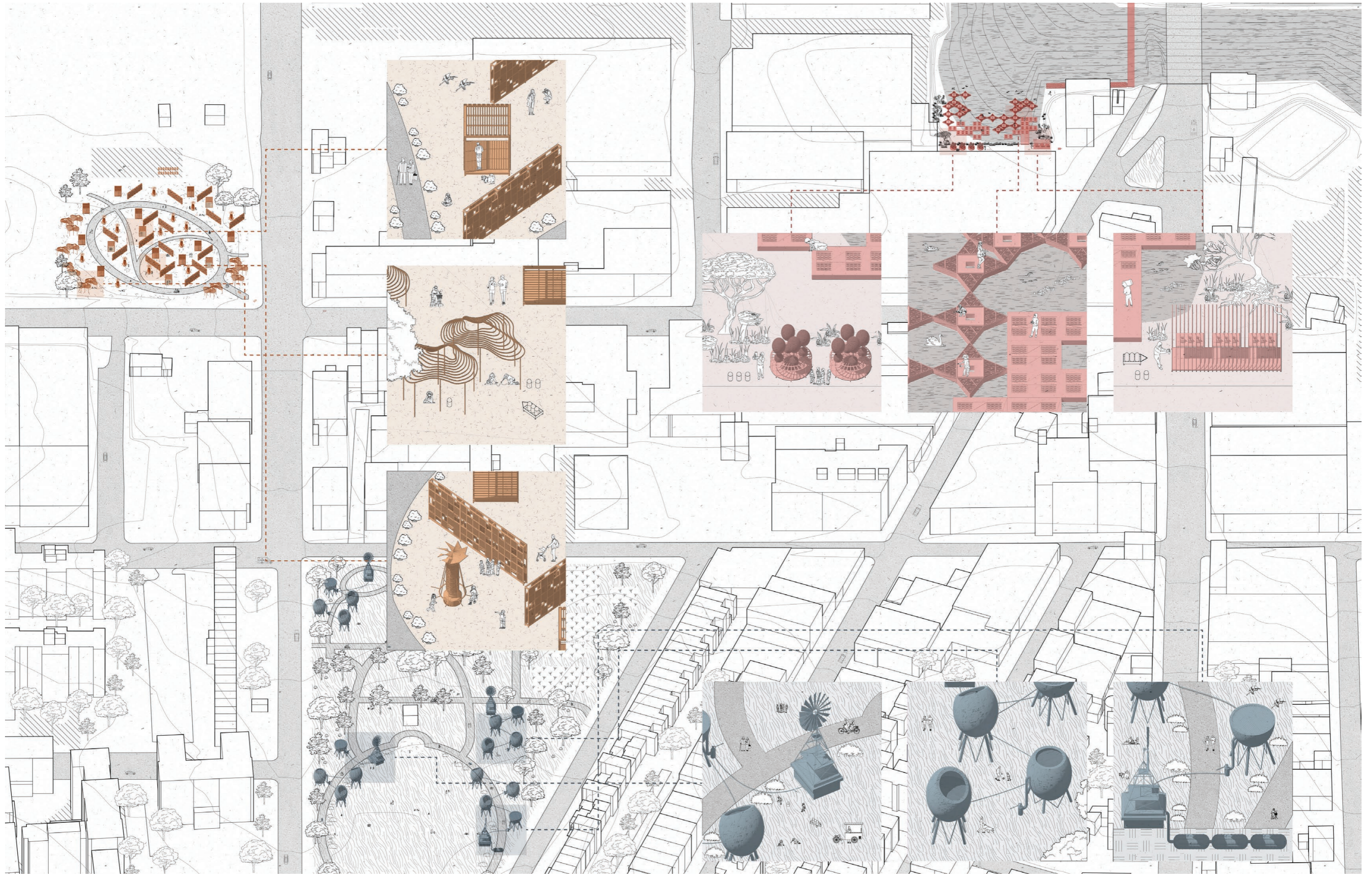
**Domestic Microalgae Cultivator**  
 Size: 3'4" x 1'9" x 17"  
 Area: 5.53 square ft  
 Holds: 13.63 liquid gallon

**Microfiber Filter**  
 Size: 6" x 4" x 5"  
 Volume: 120 cubic inches  
 Holds: 0.52 liquid gallon

**Microfiber Collector**  
 Size: 1'4" x 1'4" x 18"  
 Volume: 2.04 cubic ft  
 Holds: 22 liquid gallon

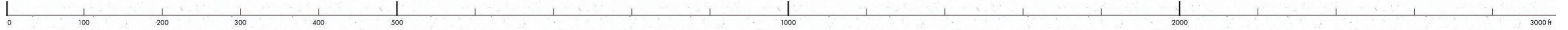
**Domestic Microplastic Biodegradation Tank**  
 Size: 2'3" x 2'3" x 4'11"  
 Area: 5.07 square ft  
 Holds: 1.32 square ft area for biodegradation





Framework- The End of Gaia: Architecture to Inhabit a Plastocene Epoch  
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SITE AXONOMETRIC DRAWING  
 SHARON KANG





Fall 2023 | Tribeca, New York, NY  
Instructor: Amina Blacksher  
Collaborator: Xinting Ma, Jinjian Chen  
Advanced Studio V

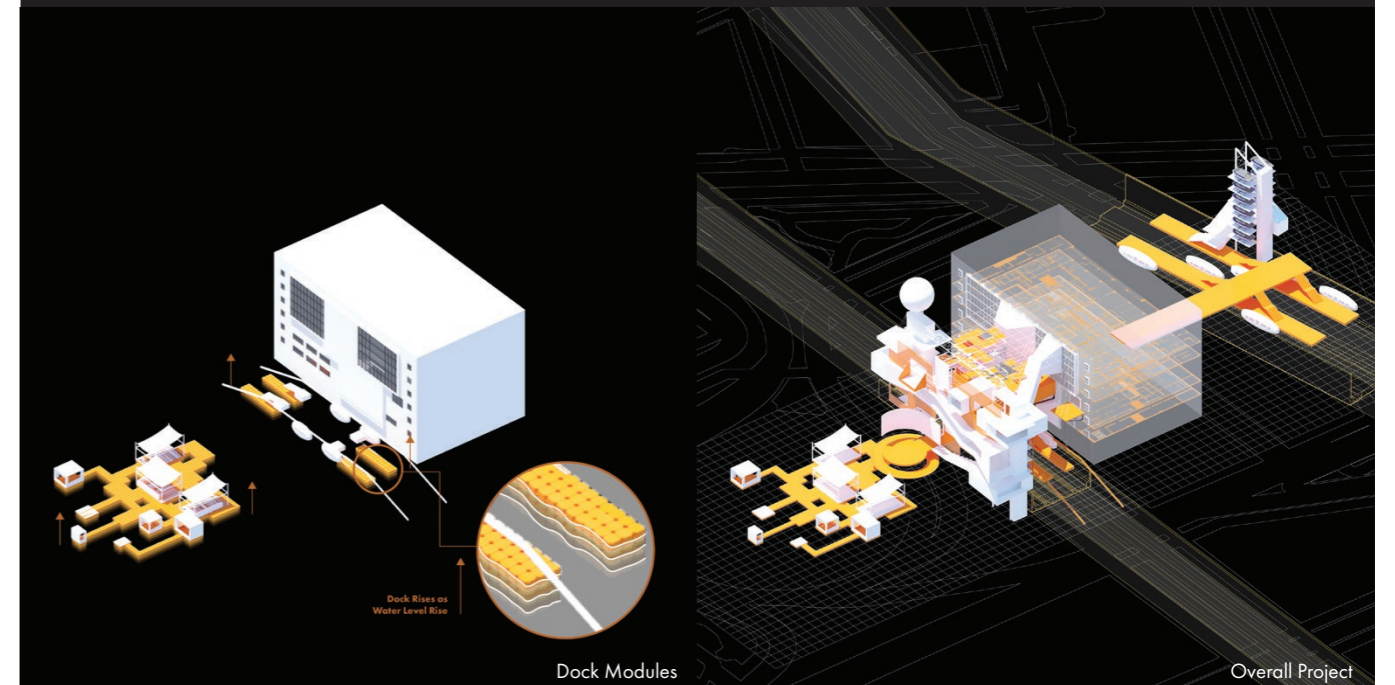
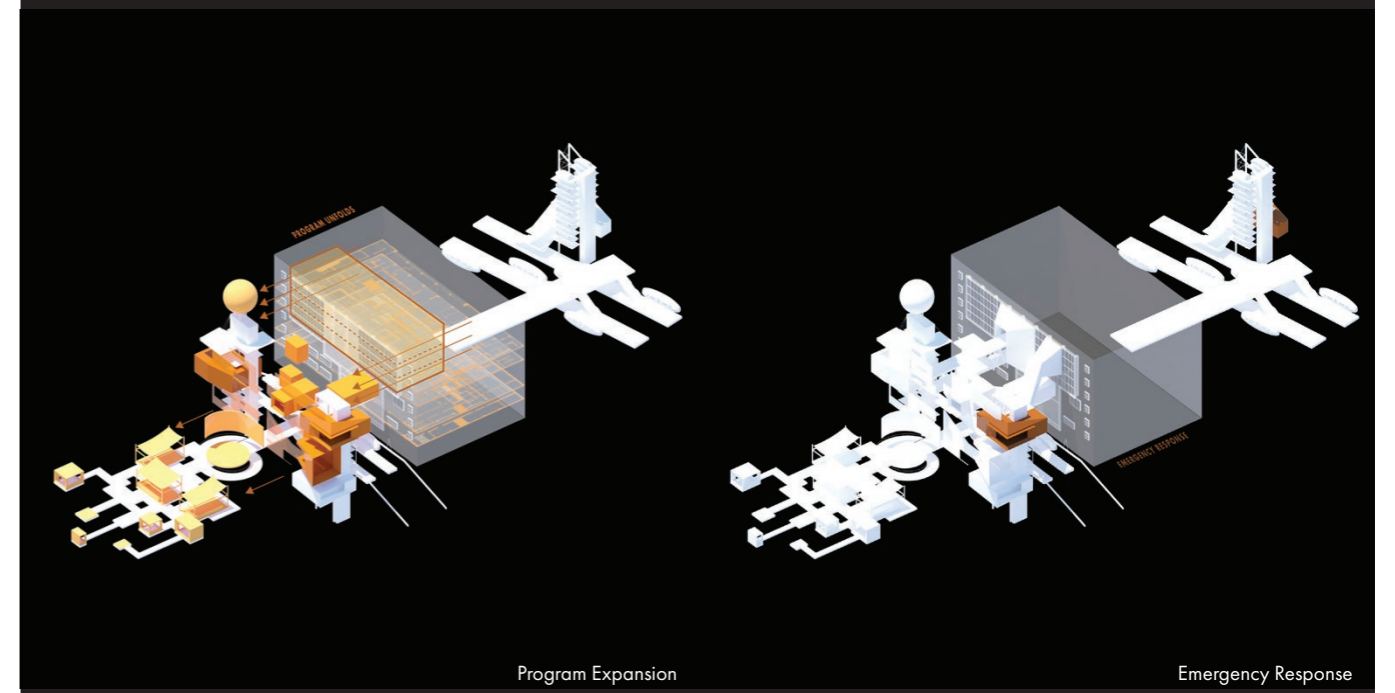
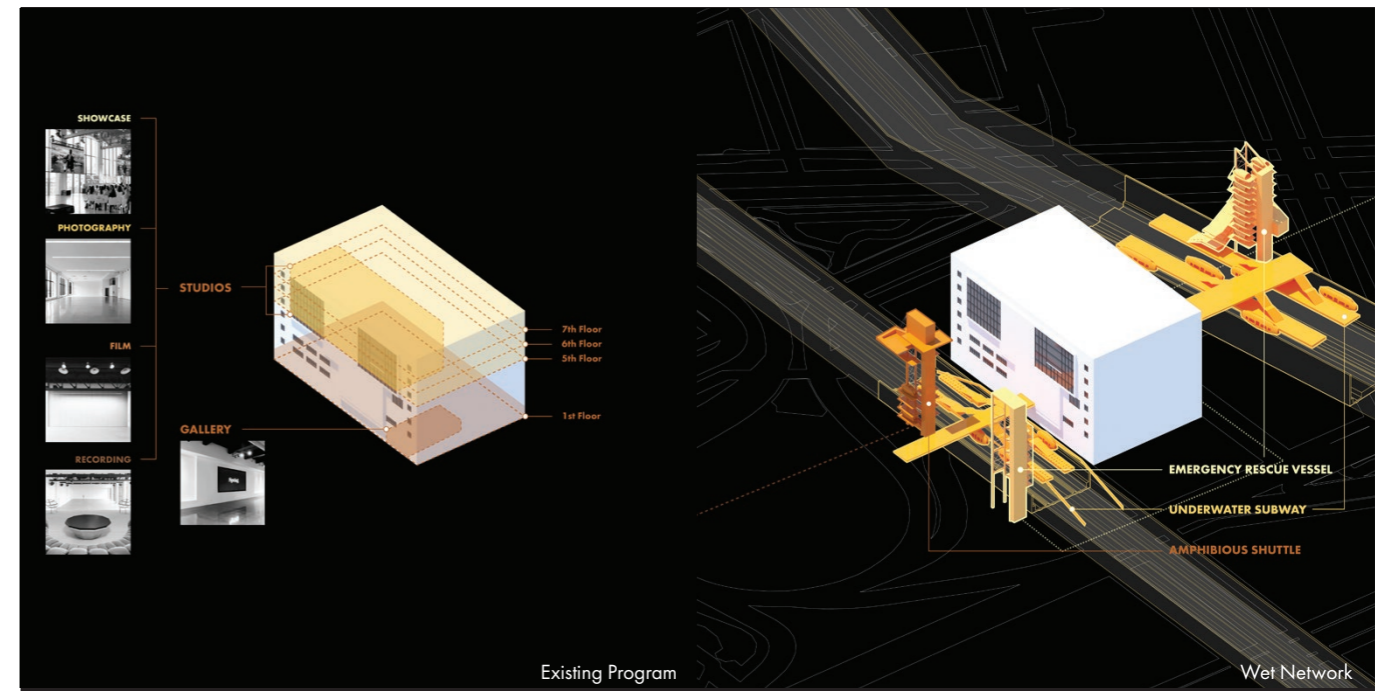
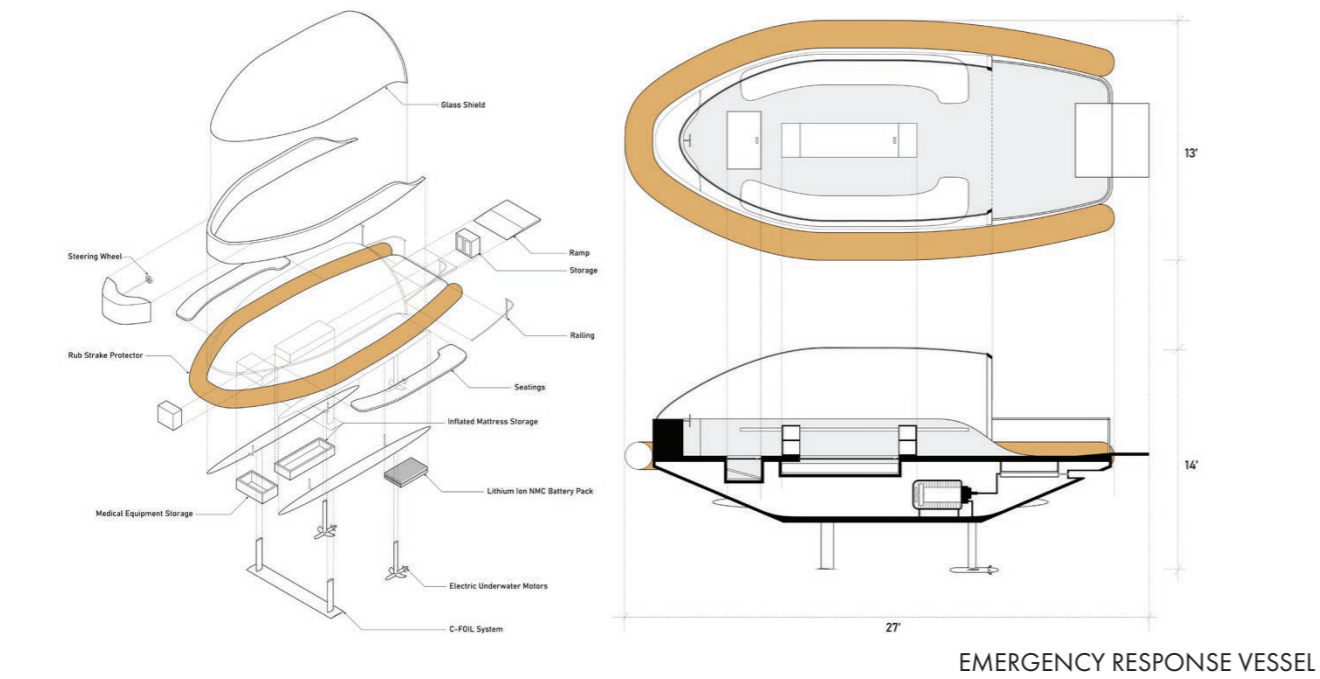
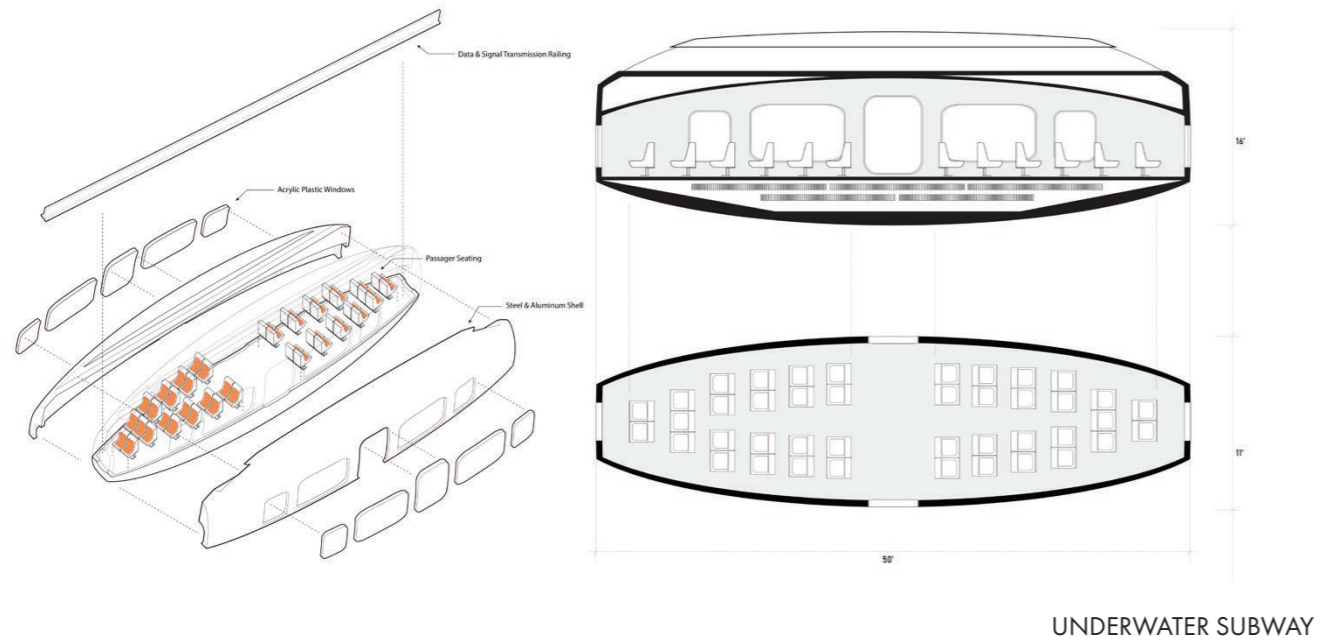
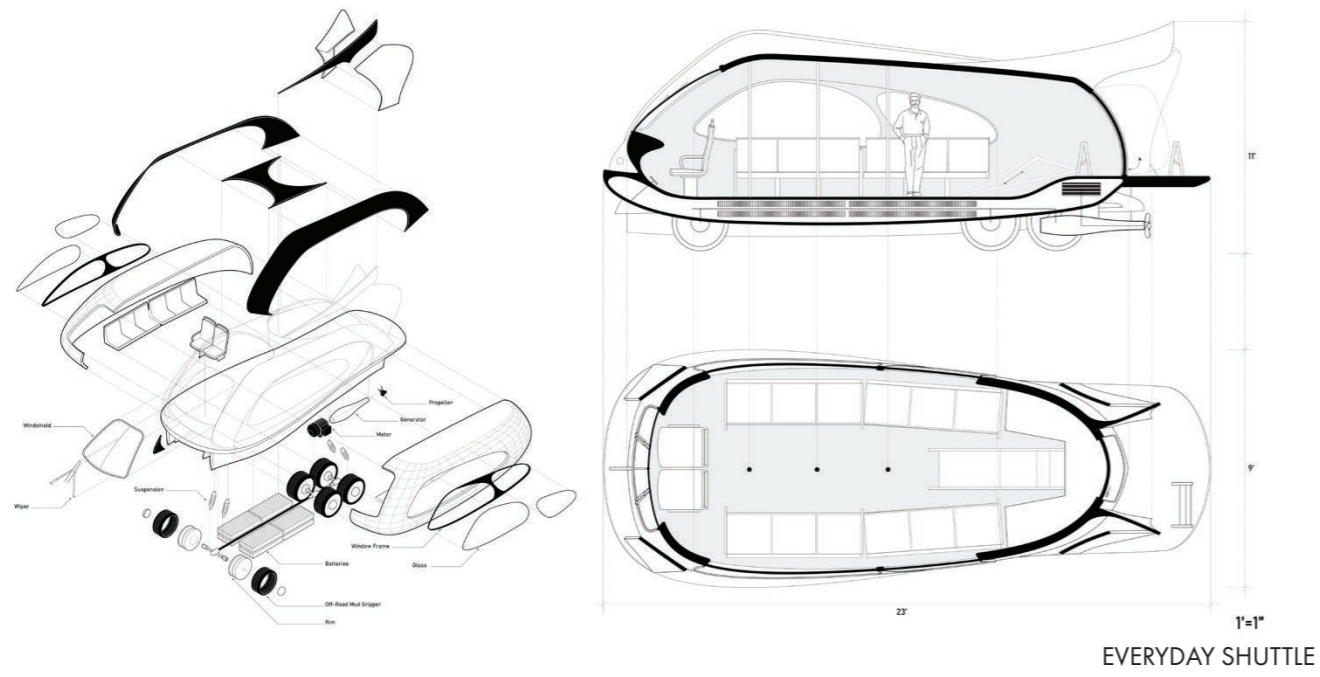
Given our growing susceptibility to extreme weather events, it is critical that we shift our perspective on flooding from a distant concern to an immediate threat. The primary goal of this initiative is to establish an adaptable wet network capable of addressing the evolving needs of diverse communities. Instead of fixating on a single time frame, the network's design will prioritize flexibility in the face of uncertainty. The ultimate objective is to ensure our ability to respond effectively to flooding, not only in the long term but also in the present and near future. The project will utilize the Spring Studio, located at the heart of Tribeca, as its prototype site. With its reputation for hosting innovative and artistic gatherings, Spring Studio serves as a hub for a wide range of communities, making it an ideal location for integrating various wet transportation solutions for a future flood-prone New York City, both in emergencies and everyday transit.

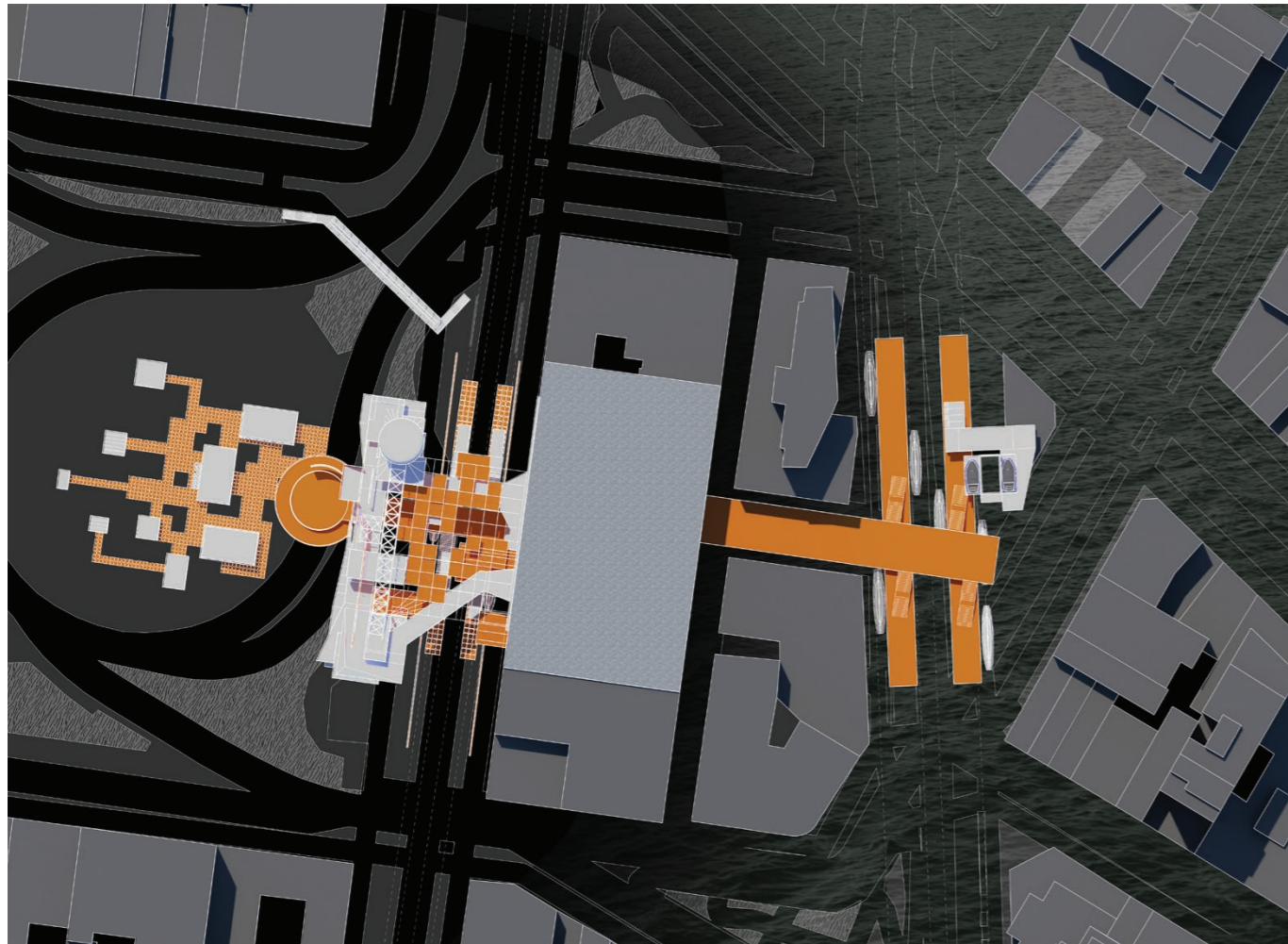
For this project, the idea development process was collaborative. My contribution focused on the development of the emergency response system, as well as the drawing of diagrams, site plan, and plans.

# FLOATSCAPE

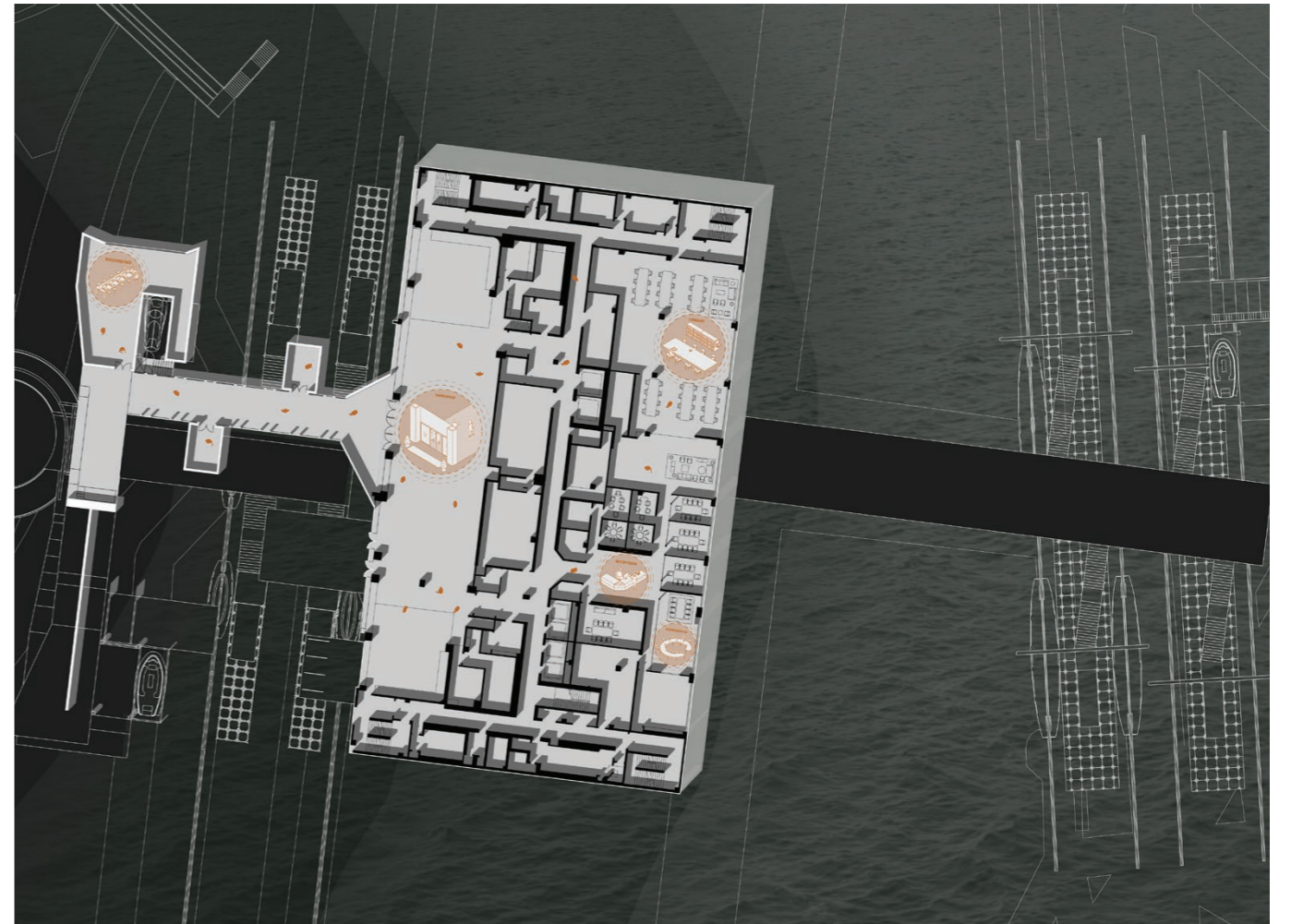
INSTITUTING A HYDRO-RESPONSIVE NETWORK



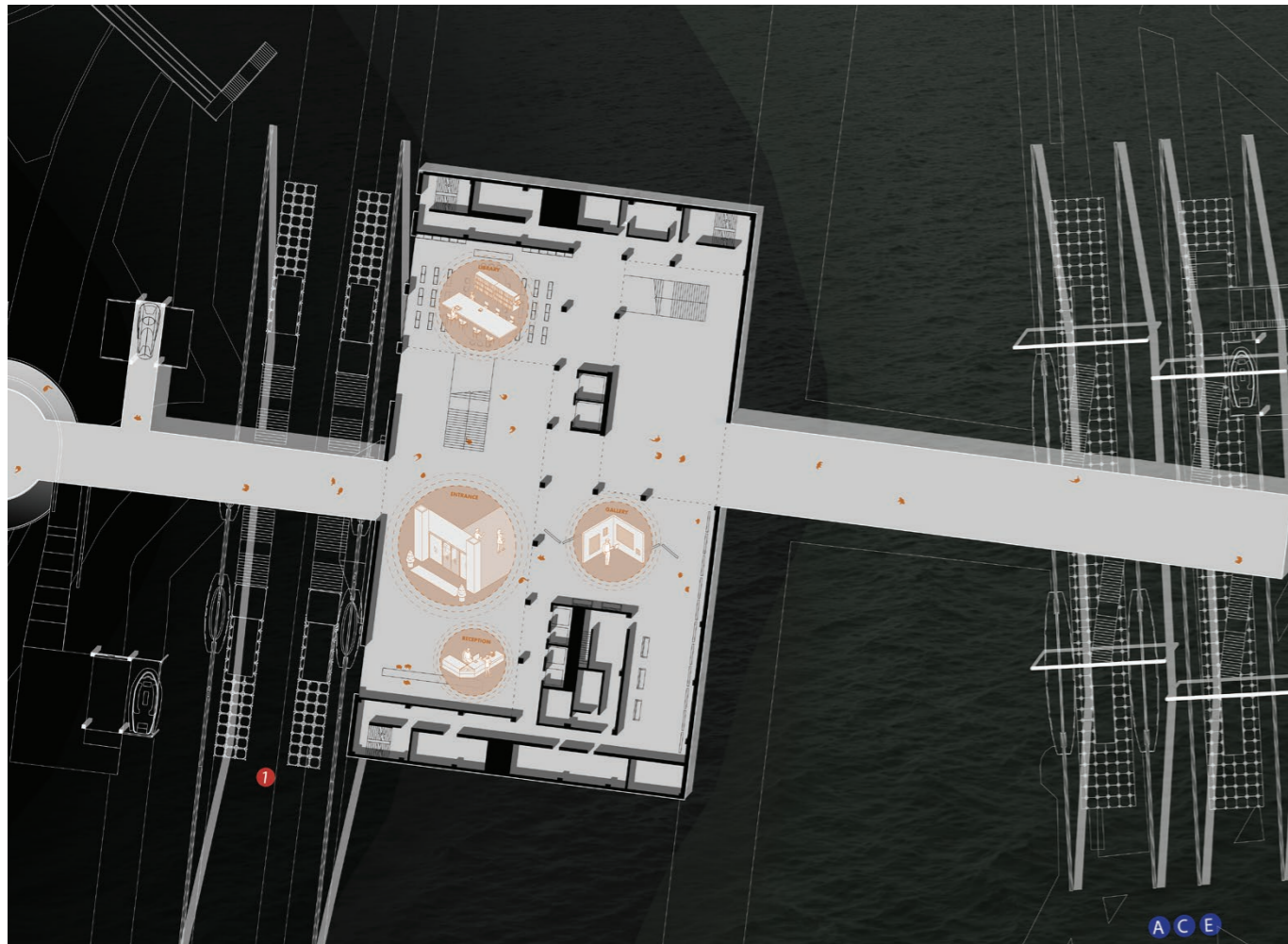




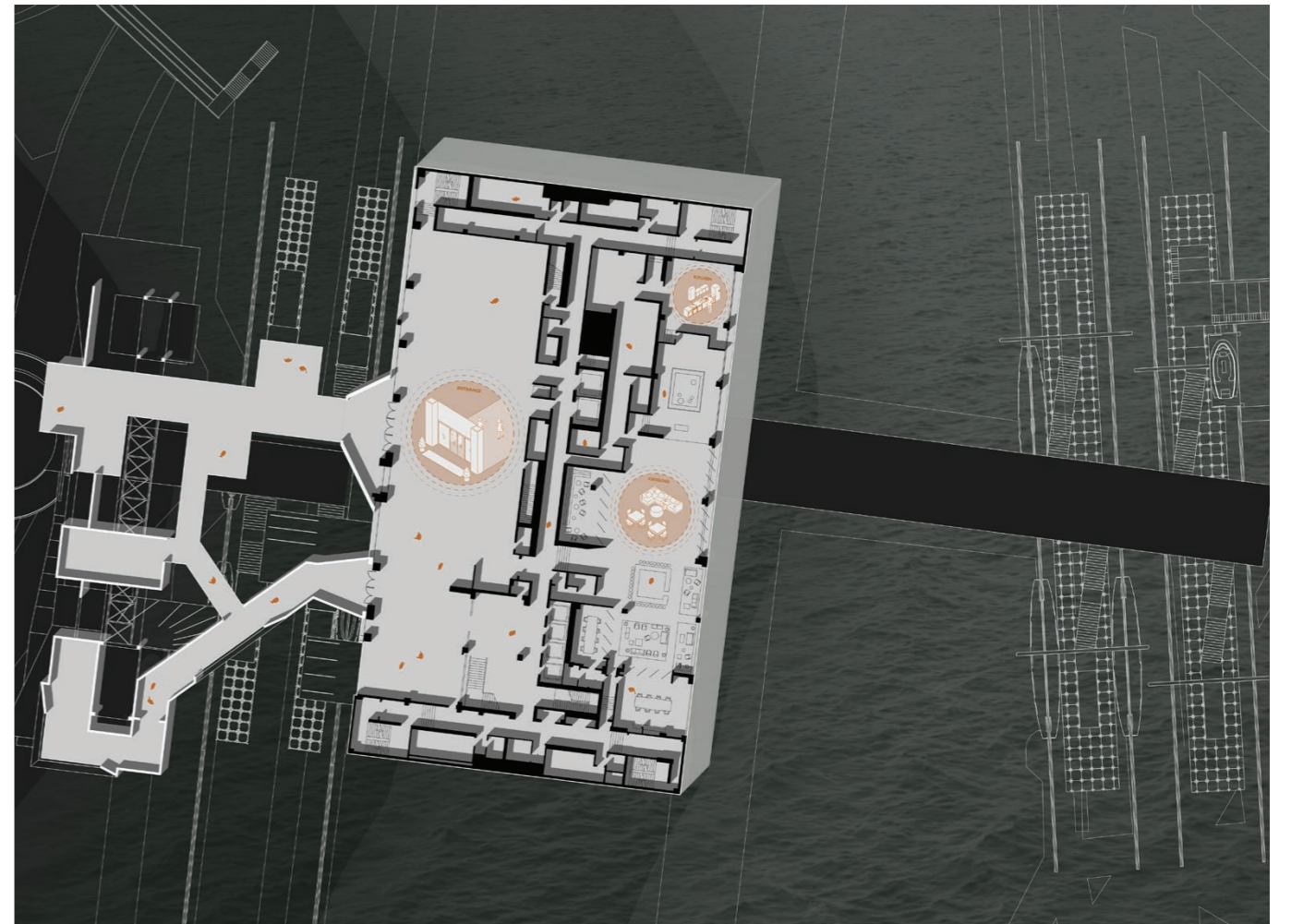
SITE PLAN



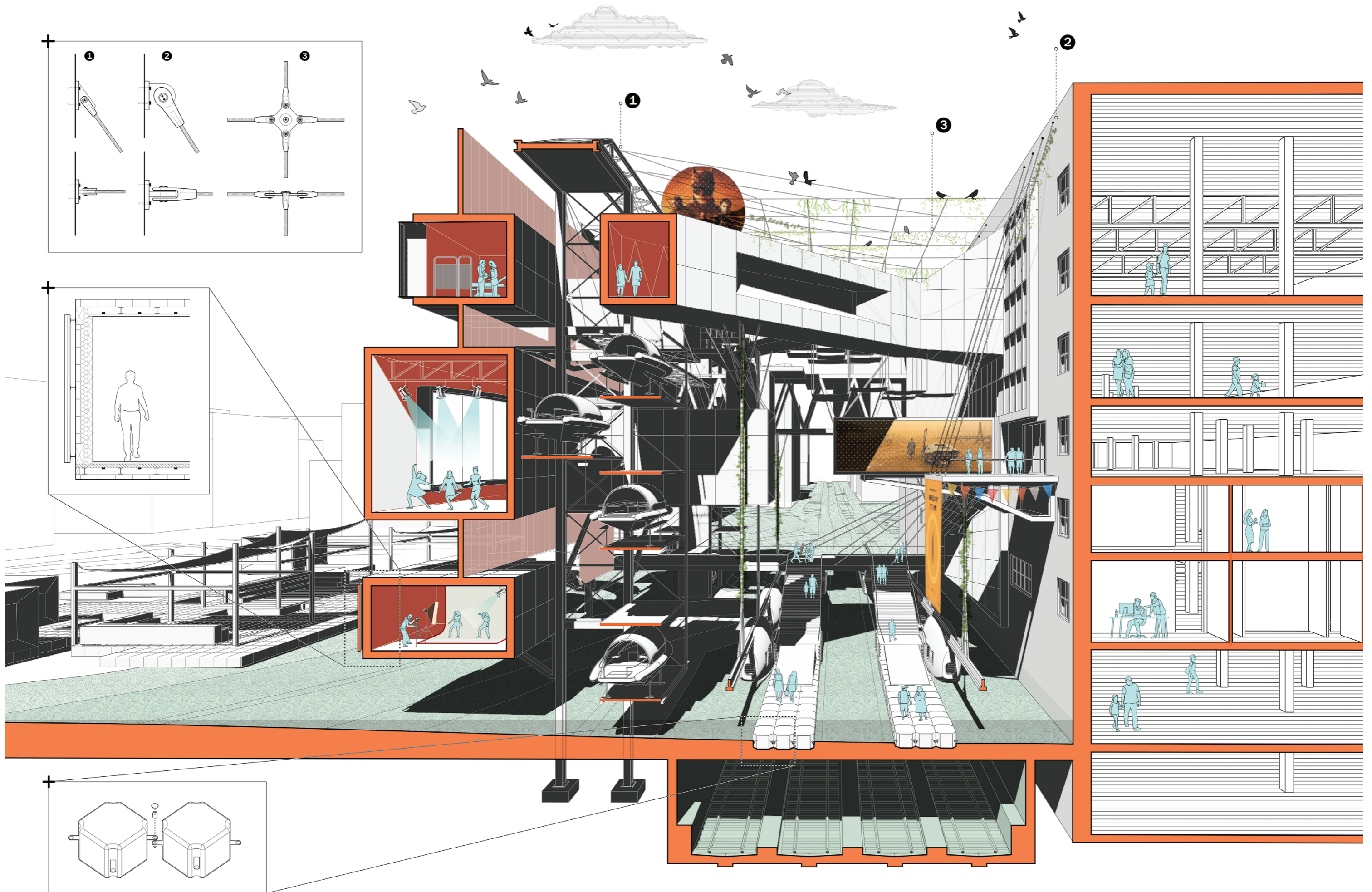
5TH FLOOR PLAN



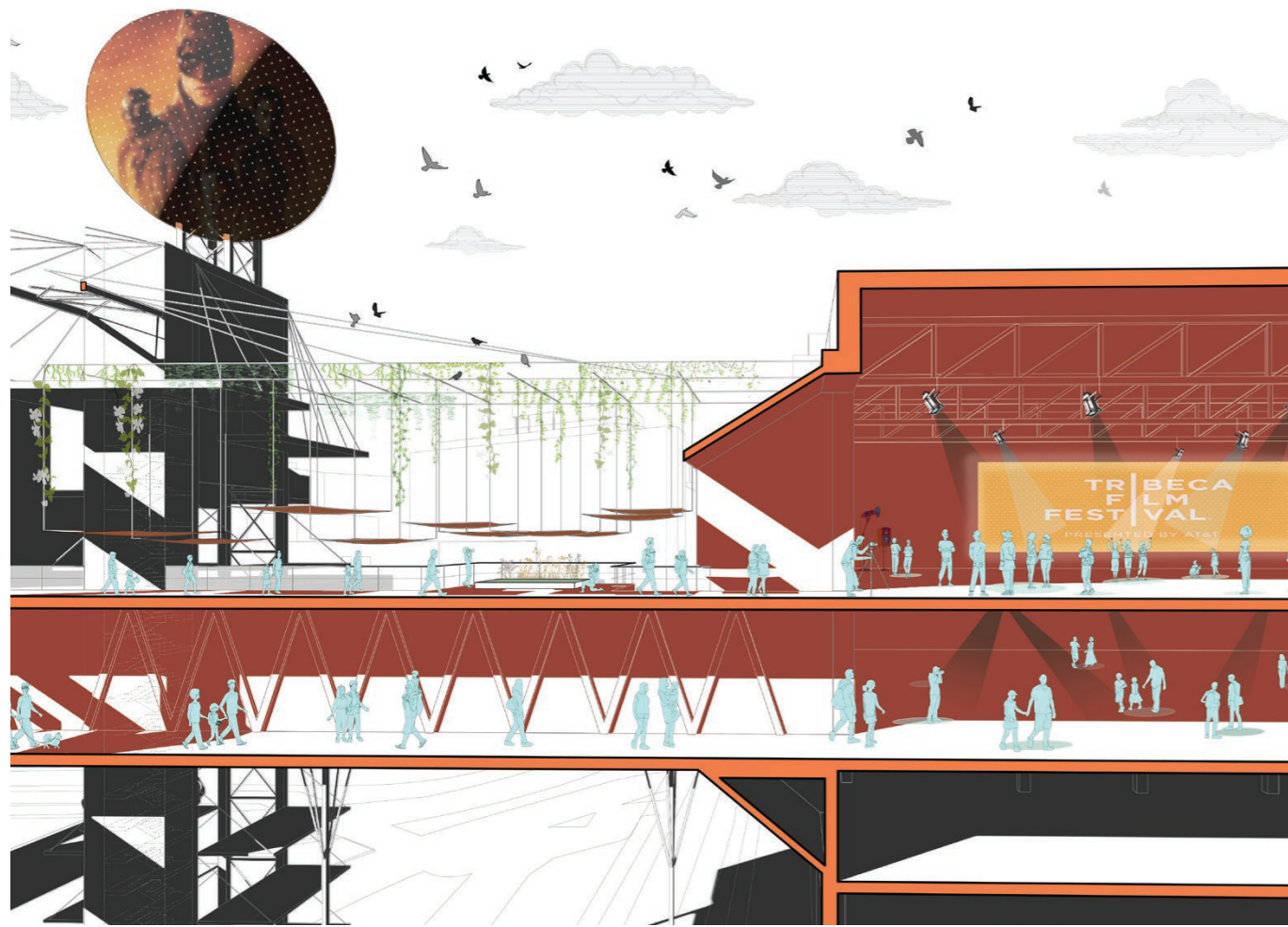
2ND FLOOR PLAN



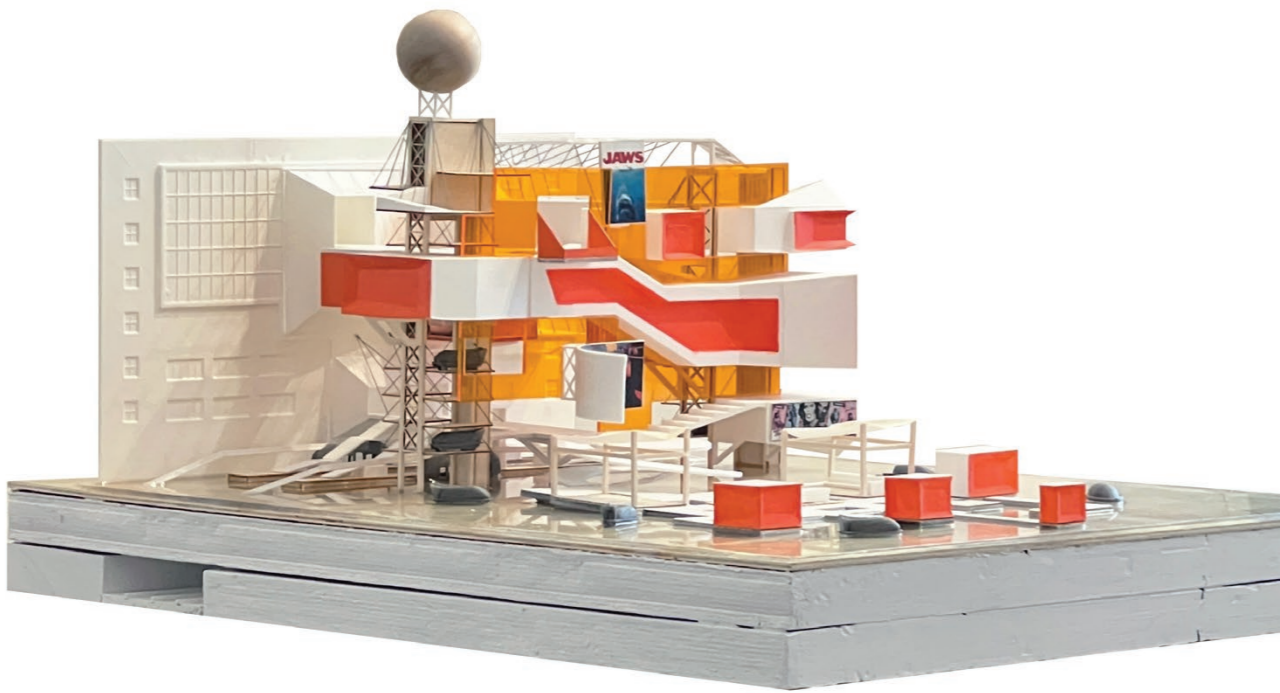
6TH FLOOR PLAN



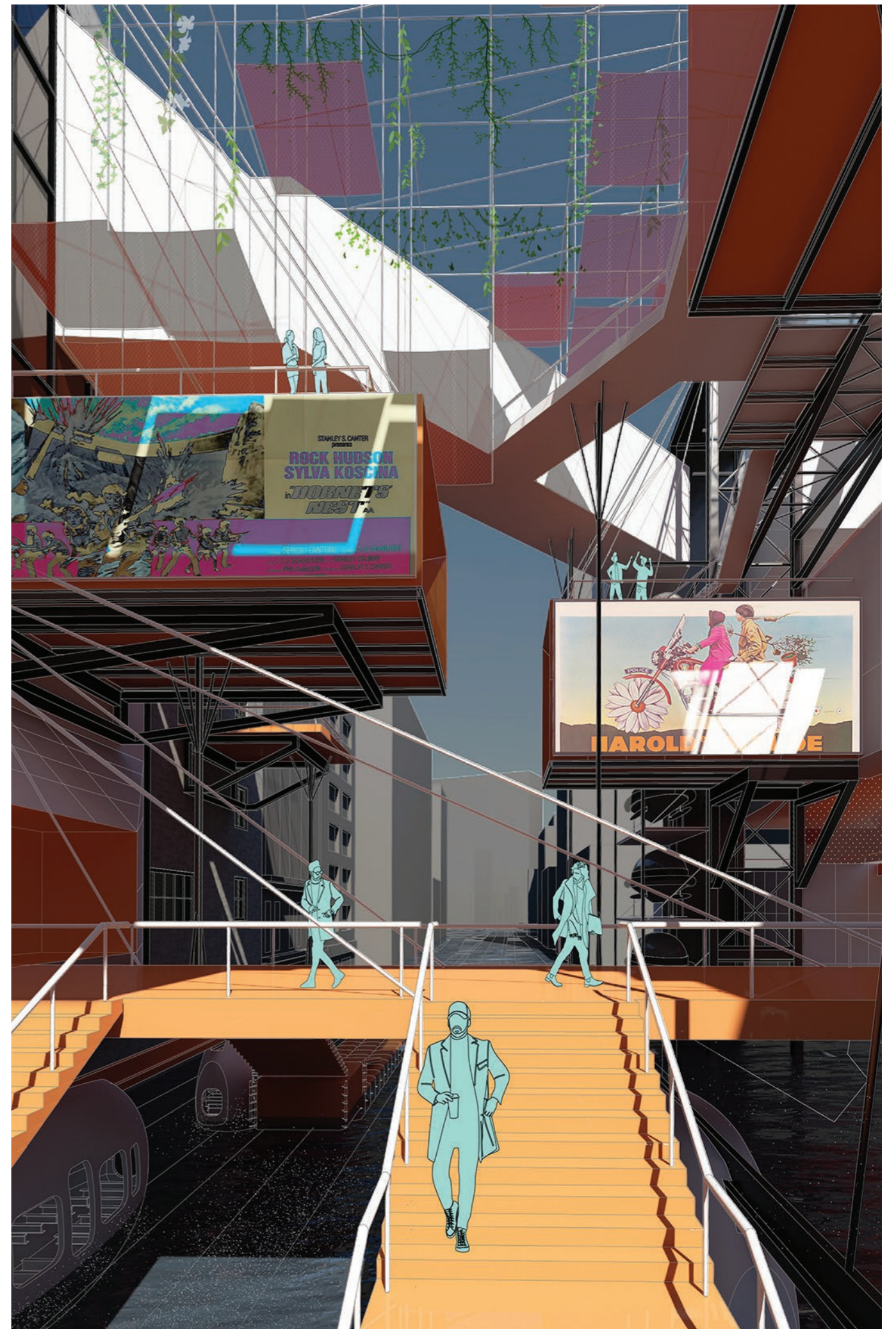
SECTIONAL PERSPECTIVE



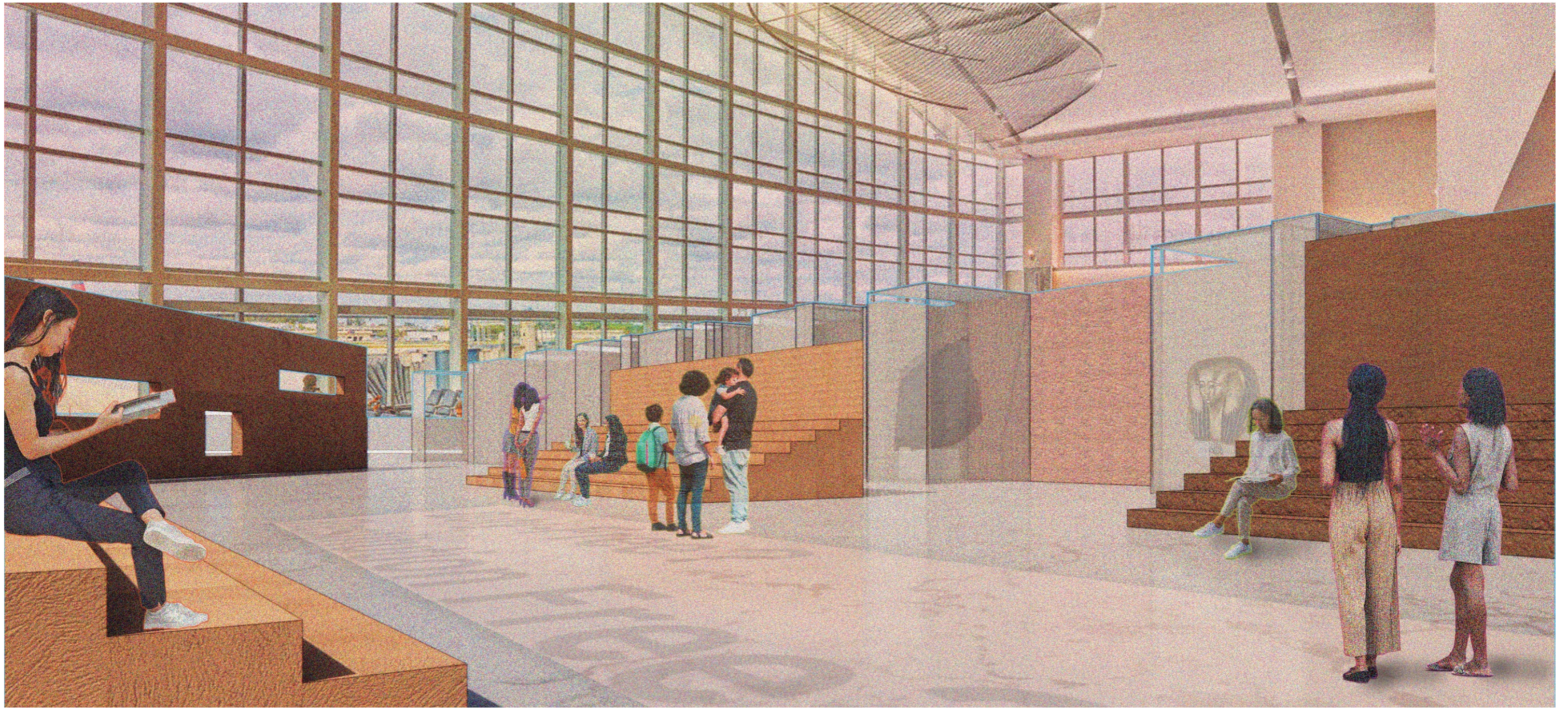
PATHWAY SECTION



PHYSICAL MODEL



RENDER



Spring 2024 | Heathrow Airport, UK  
Instructor: Emanuel Admassu  
Collaborator: Yiyang Liao  
Advanced Studio VI

The goal of this project is to reimagine the Heathrow Airport as a site for restitution, and the statue of Ramses II in the British Museum is used as the starting point of our research. We aim to create intervention structures that foster the restitution process of museum objects, diverging from traditional museums in materiality, form, and purpose. Our design aims to revolutionize the traditional hierarchy of the airport, boldly asserting the imperative of restoration while revolutionizing the visa-checking process at Heathrow Airport. These initiatives serve as manifestos challenging the conventional architectural regulations governing both Heathrow Airport and the British Museum.

**NON-VISA**  
REDEFINING RESTITUTION FREE FROM NATIONALISM





Cultural Restitution  
April 2023  
Jamaica's attempts to recover Taino carvings lack key provenance information

## EXISTING RESTITUTION

Objects have been acquired in a variety of ways. Some objects are subject to questions about, or requests for, return to other countries. Statements on the most frequent requests and information on the current status of the discussions can be found below.



## SOUVENIR

Browse our range of fascinating and highly-detailed replicas, many of which are exclusive to the British Museum. From ornaments inspired by the ancient Egyptian god Anubis to hand-made recreations of the armour of Saxon Britain, from the Rosetta Stone to the Lewis Chessmen, discover extraordinary replicas, ornaments, busts and bronzes of all sizes to add a touch of history



## TOURIST

The British Museum was the UK's most-visited attraction for the first time since before the Covid pandemic. The Association of Leading Visitor Attractions (ALVA) showed there were 5,820,860 visits to the central London museum in 2023, a 42% increase on 2022.



## ARCHIVE STORAGE

The British Museum collection totals at least 8 million objects. Roughly 80,000 objects are on public display at the British Museum in Bloomsbury at any one time.

## BRITISH MUSEUM



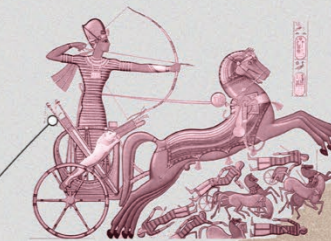
PARIS

PARIS ETHNOLOGICAL MUSEUM



## VISA

In 1975, Maurice Bucaille said that the mummy was threatened by fungus and needed urgent treatment to prevent total decay. French laws dictated that entry and transportation through the country required a valid passport. To comply with local laws, the Egyptian government issued a passport to the Pharaoh.



## LOCAL PERCEPTION

Ramses II, commonly known as "Ramses the Great," is one of the most famous pharaohs of Egypt. He was known to the ancient Egyptians as Userma'atre'setepenre, which means "Keeper of Harmony and Balance, Strong in Right, Elect of Ra." Ramses II is viewed as a great warrior, fighting many battles.



## NEPOLEAN

Napoleon's men tried but failed to dig and remove it to France during his 1798 expedition there. It was during this attempt that the hole on the right of the torso (just above Ramses's right nipple) is said to have been made.



BARON DOMINIQUE VIVANT DENON



## ETCHING

During Napoleon's expedition to Egypt, Baron Dominique Vivant Denon produced numerous etchings depicting Egypt, which contributed to a distorted narrative and perception of Egypt that persists to this day on a global scale.



## RAMESSEUM

The Ramesseum is the memorial temple (or mortuary temple) of Pharaoh Ramses II ("Ramses the Great", also spelled "Ramses" and "Rameses")

GIOVANNI BELZONI



## STATUE OF RAMESSES II

The British Consul General Henry Salt hired the adventurer Giovanni Belzoni in Cairo in 1815 for this purpose. Using his hydraulics and engineering skills, it was pulled on wooden rollers by ropes to the bank of the Nile opposite Luxor by hundreds of workmen.

LUXOR

## RAMESSES II





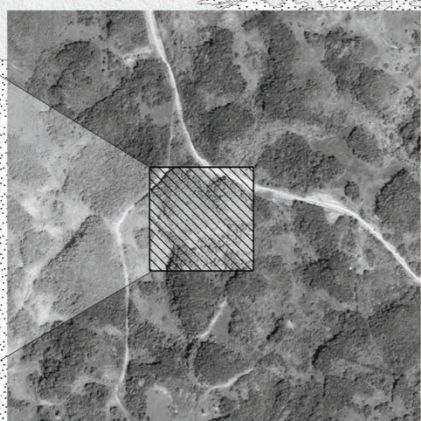
Jamaican Taino



Ru Ware



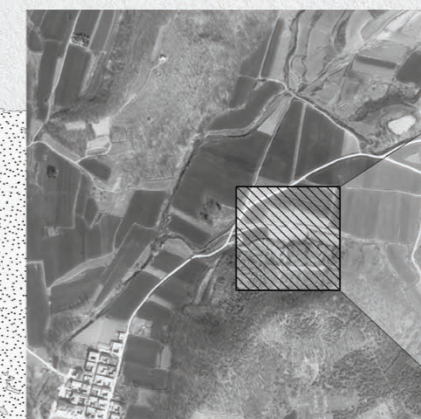
Carron Hill Clay



Carpenters Mountains, Jamaica



Henutmehyt Canopic Jar



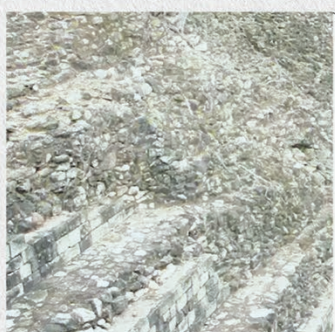
Qingliang Temple, Baofeng, China



Montmorillonite Clay



Sand



Volcanic Tuff



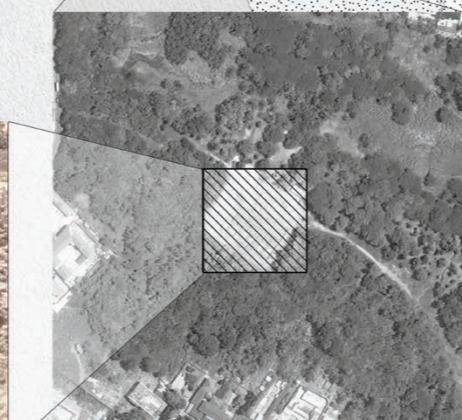
Copan Ruinas, Honduras



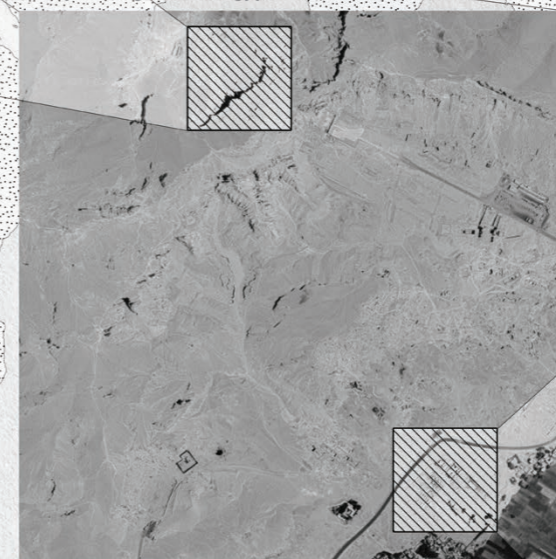
Mayan Stone Alter



Urban Soil



Manhyia Palace, Kumasi, Ghana



Ramesseum, Luxor, Egypt



Sand



Valley of Kings, Luxor, Egypt

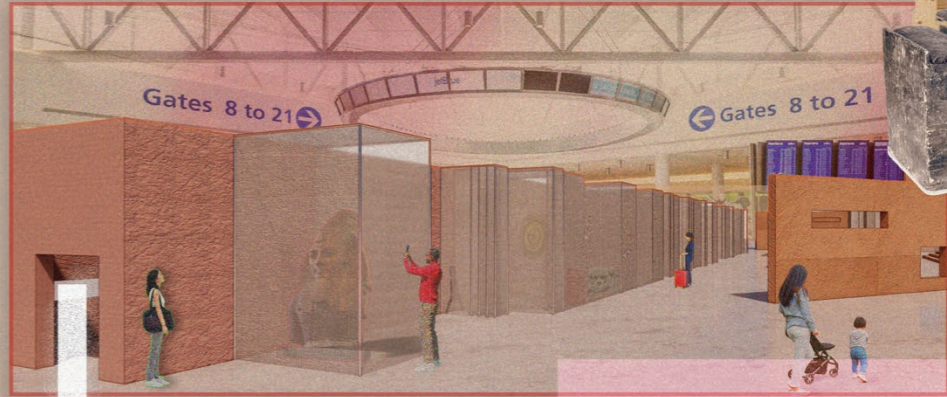
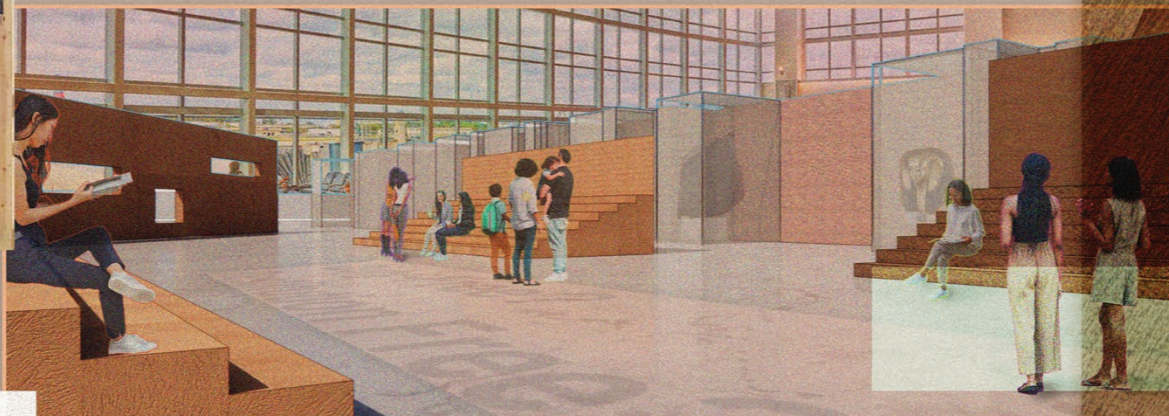
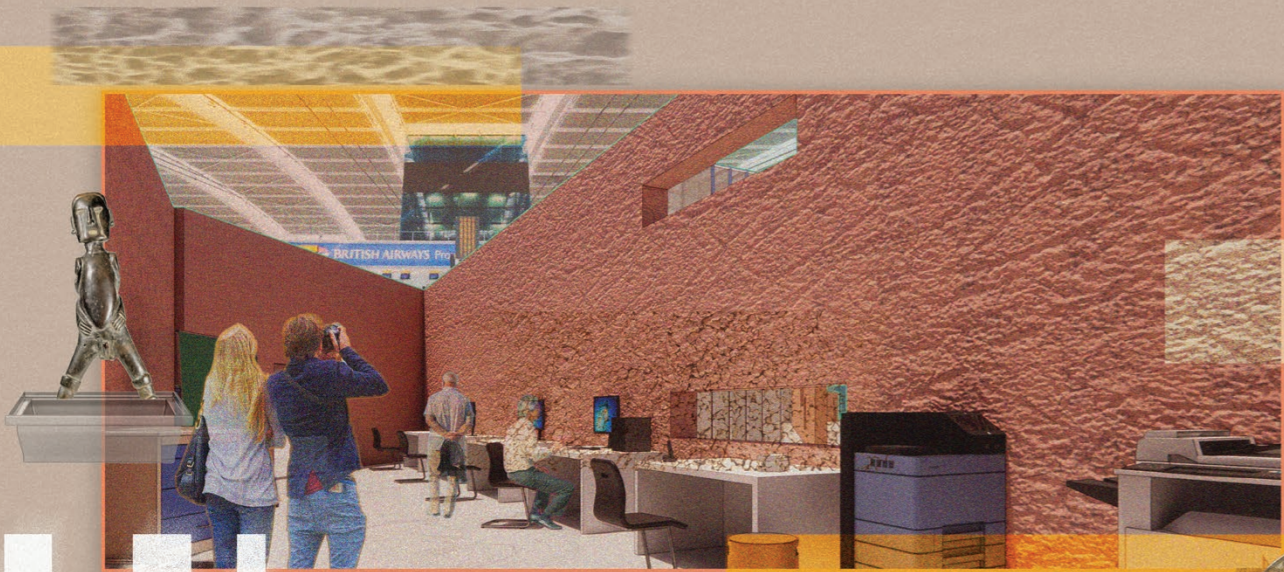


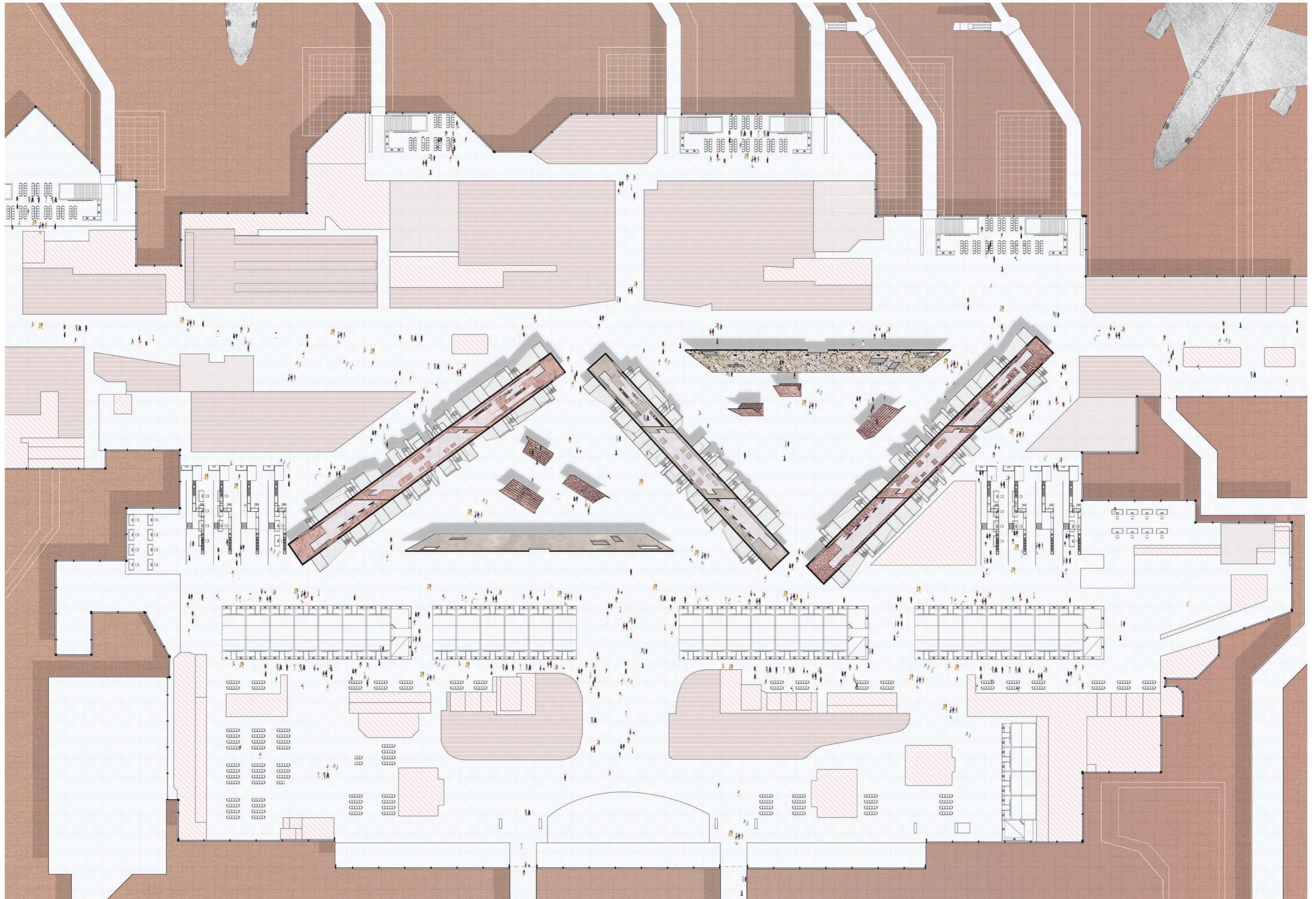
The Younger Memnon



Silver-Gilt Dish









CONTEXTURAL MODEL



MATERIAL MODEL



SITE MODEL

The site we are working with is Heathrow Airport in London, and we are using the statue of Ramses II in the British Museum as the starting point of our research. Our goal is to create intervention structures that foster the restitution process of museum objects, diverging from traditional museums in materiality, form, and purpose.

This action of distributing selected information by Napoleon's troops, and nowadays by the British Museum, to build a Western-centric 'official narrative' is what we want to critique and what we want to counteract.

# NON-VISA

Our research revealed a pattern: the acquisition process of this object, and how it influenced the Western perception of exotic cultures, mirrors that of numerous artifacts in the British Museum. In 1798, during Napoleon's expedition to Egypt, one of his troop members, Baron Dominique Vivant Denon, produced numerous etchings depicting Egypt, which contributed to a distorted narrative and perception of Egypt that persists to this day on a global scale. If you look into the information page for the ancient city Thebes on the British Museum website, what can be found is that the page is very much structured around tourism rather than culture and artifacts.

The drawing not only emphasizes the geographical segregation of the top and bottom of the Ramses II statue but also illustrates the different ways in which the narrative of the statue and the culture were perceived in the two different locations. The right side of the image shows the current location of the bottom half of Ramses with all its original context, while the left side displays the layout of the British Museum along with the museum's official narrative. It is crucial to point out that the British Museum disregarded the cultural and environmental context while exhibiting and only provided selective information in their narrative of the statue and the ancient city of Thebes.

This image focuses on the argument we extracted from the research of the object; it illustrates how the information we see is through a curated lens, not just for Egyptian culture and artifacts but for many other cultures as well.

We are trying to show travelers the difficulties objects are facing a waiting restitution by showing them the shared amount of objects behind a semi-transparent canvas. However, as the travelers were able to submerge themselves in the mass amount of objects; they were not shown the actual object given that our goal is not to craft a new "official" narrative for the objects. The function of the structure only focuses on fostering restitution and showcasing the process to viewers.

Using these four materials, we constructed our restitution intervention spaces. By examining the typical journey of museum objects through airports, we identified key programs that will be emphasized in the restitution process: security checks for objects, storage facilities for objects, courtrooms for object ownership debates, and offices handling object restitution paperwork. These programs are housed in distinct forms and materials (the aforementioned rammed earth, casted sand, volcanic tuff), adopting a visual identity that contrasts with the transparent glass boxes of a traditional museum. Our project essentially aims to transform the airport into a space for museum objects' value restitution.

GLASS  
YVES  
OIL  
SAND  
VOLCANIC  
LCA  
NIC  
-TUR

The program shows visitors of moments taken from those programs and all shows that intersecting objects of travelers in the airport. The visualization style takes precedent in artist Dudu Lamola who uses collages to explore the relationship between fragmentation and speculative reconstruction in order to challenge a hegemonic, Western perception of reality.

Objects have been acquired in a variety of ways. Some objects are subject to questions about their return to other countries. Statements on the most frequent requests and information on the current status of the discussions can be found below.

In the floor plan, our objective is to integrate our intervention structure into Heathrow Airport's original, highly modernist architecture. Our aim is to enhance the spatial organization, cleanliness, and clarity of movement within the space. The restitution structure incorporates materials sourced from the surrounding landscape, lending authenticity to the restituted projects. Designed as semi-enclosed, it offers a glimpse of the restitution process through a discreet window, allowing observers to engage with the project while maintaining a controlled environment.

## YOUNGER MEMNON HENUTMEHYT CANOPIC JAR SILVER-GILT DISH

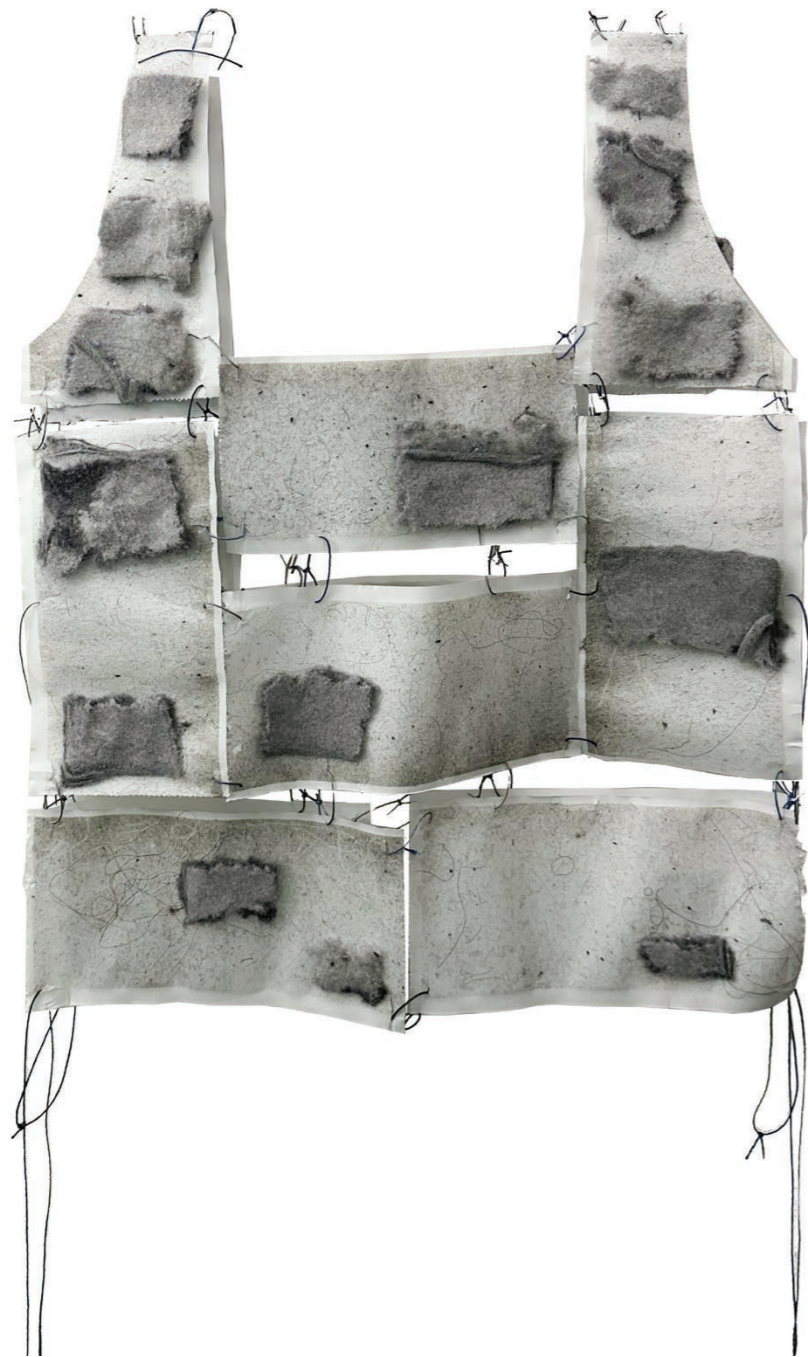
The restitution structures serve three distinct functions: artifact security, temporary storage, and debate/discussion rooms. Our objective is to explore various configurations, whether combining all three functions into a unified structure or creating separate structures at different scales.

## JAMAICAN TAINO MAYAN STONE ALTER

## RU WARE

Statistics of 2021	
19.4 million passengers annually	
Average of 128,178 passengers daily	
Terminal 4 attributed to 14% of total passengers	
87.6% of our passengers were international (17.0 million)	
12.4% of passengers who were domestic (2.4 million).	
Travelling for leisure 62% (12.0 million)	
Travelling for business 28% (7.4 million).	

INSTALLATION



Spring 2024  
Instructor: Michael Wang  
Metabolic Materialities

Our Anthropocene era has often been dubbed the Plasticene, as microfiber—a type of microplastic—has become an integral part of our ecosystem, permeating our water systems primarily through laundry wastewater. Microfiber is produced through the breakdown of polyester and nylon fabric, which are made of synthetic fibers. Despite the color appearance of the polyester clothing that we are used to, the production of such material can be traced back to the excavation of petroleum.

This project's essence lies in comprehending the unavoidable presence of microfiber in our daily surroundings. It seeks to utilize waste fibers collected from this room and laundry residue to craft everyday clothing, thus closing the material cycle. Additionally, it also explores the tension between our vibrant attire and the waste it generates, evoking a feeling of unease.

# UPCYCLED

BETWEEN THE ANIMATE AND THE INANIMATE