

Portfolio

My approach to design is rooted in the belief that architecture is not just about constructing buildings but about shaping experiences, cultivating relationships, and engaging broader systems of place. I am drawn to the layered interactions between people, land, and memory—where architecture becomes a vessel for continuity and transformation.

Whether working through the adaptive reuse of existing structures or the careful calibration of new development, I see architecture as a medium that connects the built environment with the social, economic, and ecological forces that sustain it. I aim to create spaces that are resilient, inclusive, and attuned to their surroundings, where design serves both individual well-being and collective growth. Architecture is not a passive setting, but an active presence in the life of a place.

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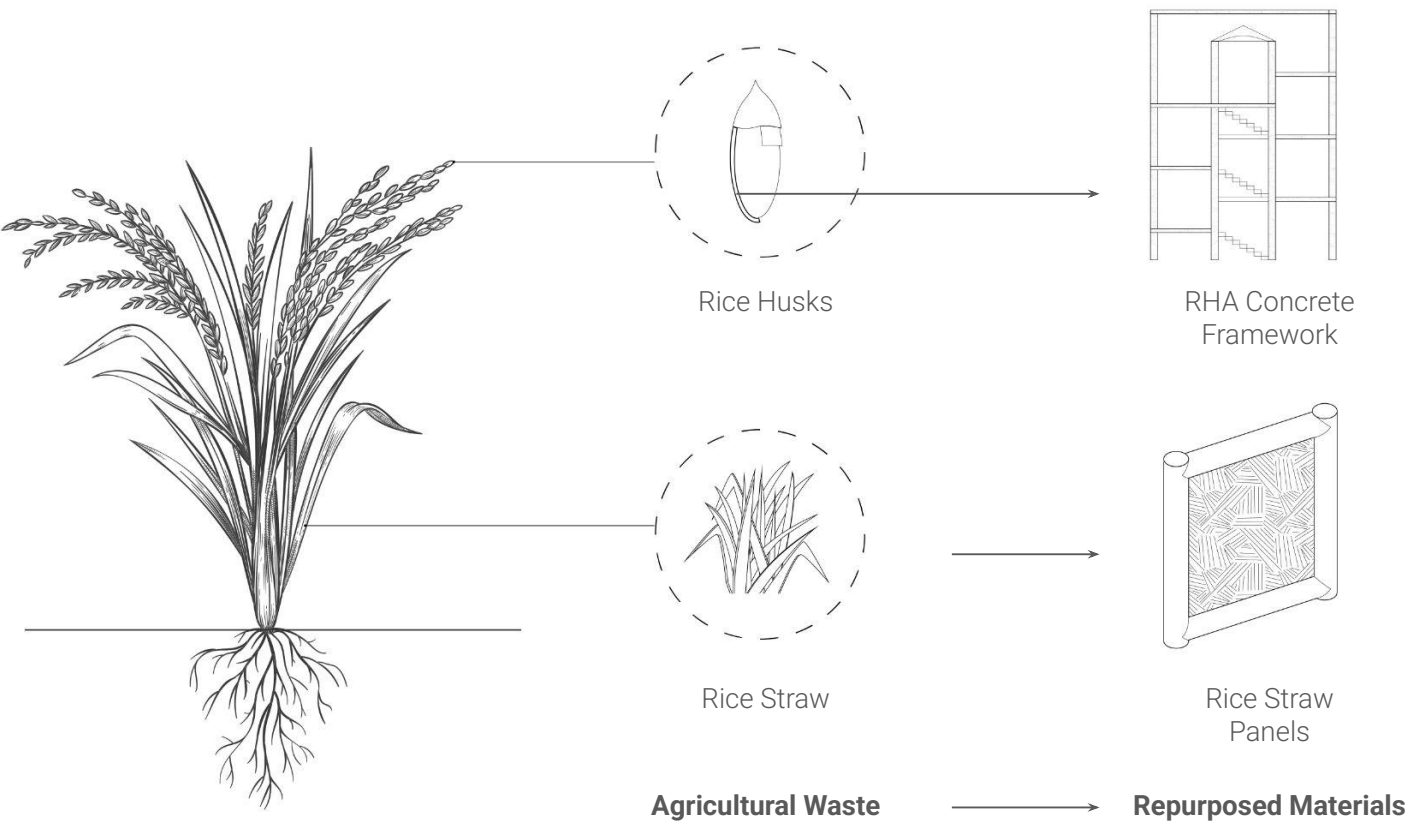
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ReHarvest Tower

Location: Punjab, India
Professor: David Benjamin
Collaborator: Claire Navin
Role: Architectural co-design

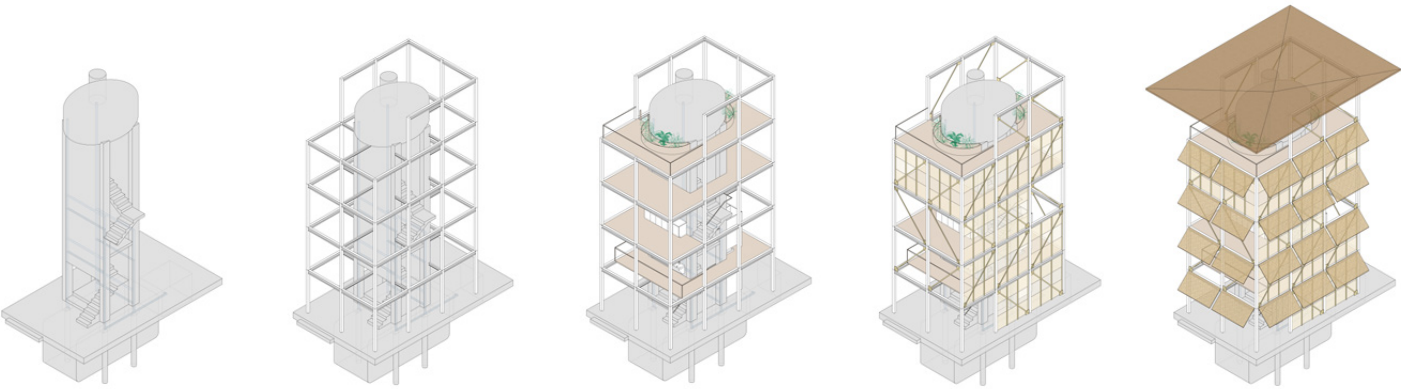
ReHarvest Tower is a rural infrastructure prototype that integrates water harvesting, agricultural waste reuse, and seasonal migrant housing into a single architectural system. Located in Punjab, India, the project responds to environmental and social challenges created by the rice-wheat crop rotation cycle, which dominates the region. This cycle, intensified during the Green Revolution in the 1960s, has led to severe groundwater depletion and widespread burning of rice stubble due to limited time between harvests.

To reduce reliance on groundwater, the tower collects rainwater through an inverted roof that channels water into an elevated tank. Gravity drives the water down through the building to serve domestic functions such as cooking, sanitation, and washing. After use, greywater is filtered and stored in a large underground cistern, which supplies water for irrigation and extends the farming cycle by about ten days. This extension gives farmers time to compost and reuse straw rather than burn it.

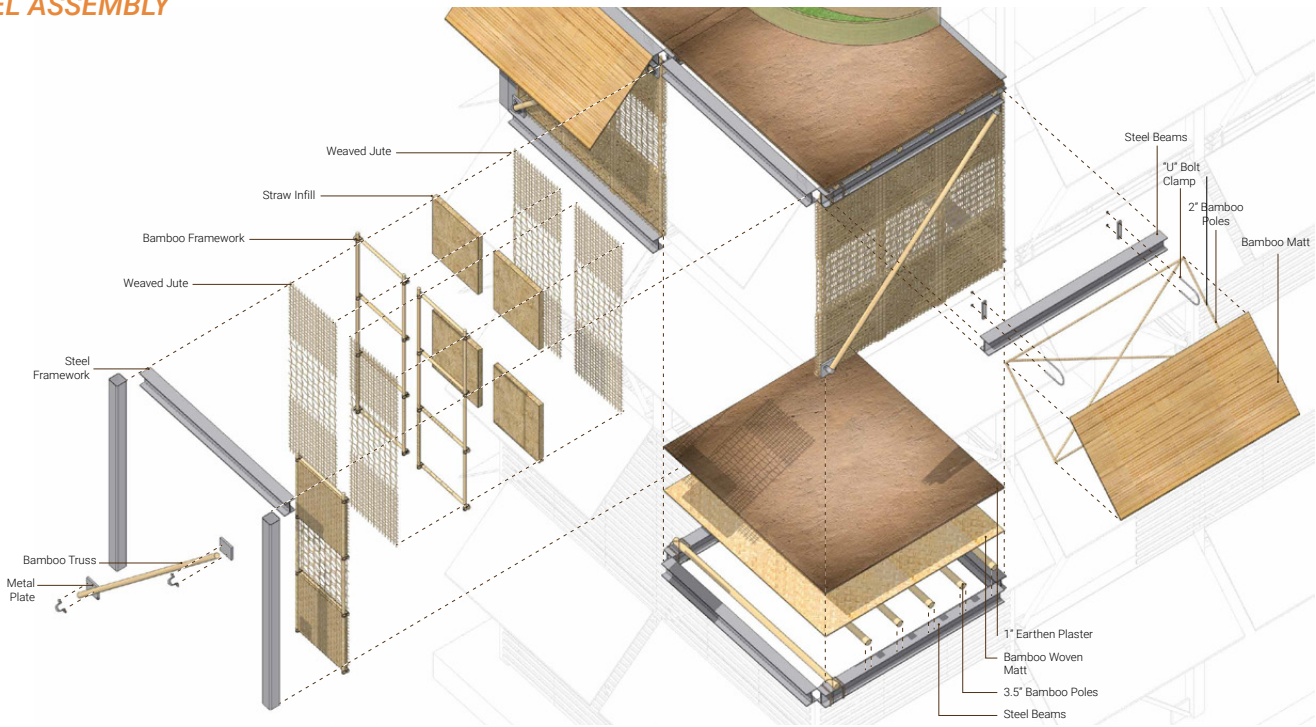
The structure uses materials derived from agricultural waste. Rice husks are burned at controlled temperatures to produce rice husk ash, which replaces 25 percent of cement in concrete, reducing emissions and improving durability. Rice straw is compressed into modular wall panels framed with bamboo and wrapped in jute. These panels are breathable, compostable, and replaceable on a yearly basis.

The tower is organized around water flow, with housing for up to twelve workers on the upper floors. The steel frame allows for modular panel insertion and seasonal adaptation. ReHarvest Tower transforms a single-purpose water tower into an ecological machine that aligns construction with the temporal and material rhythms of farming. By aligning architecture with the rhythms of farming, ReHarvest Tower transforms waste into structure, time into delay, and infrastructure into ecosystem.

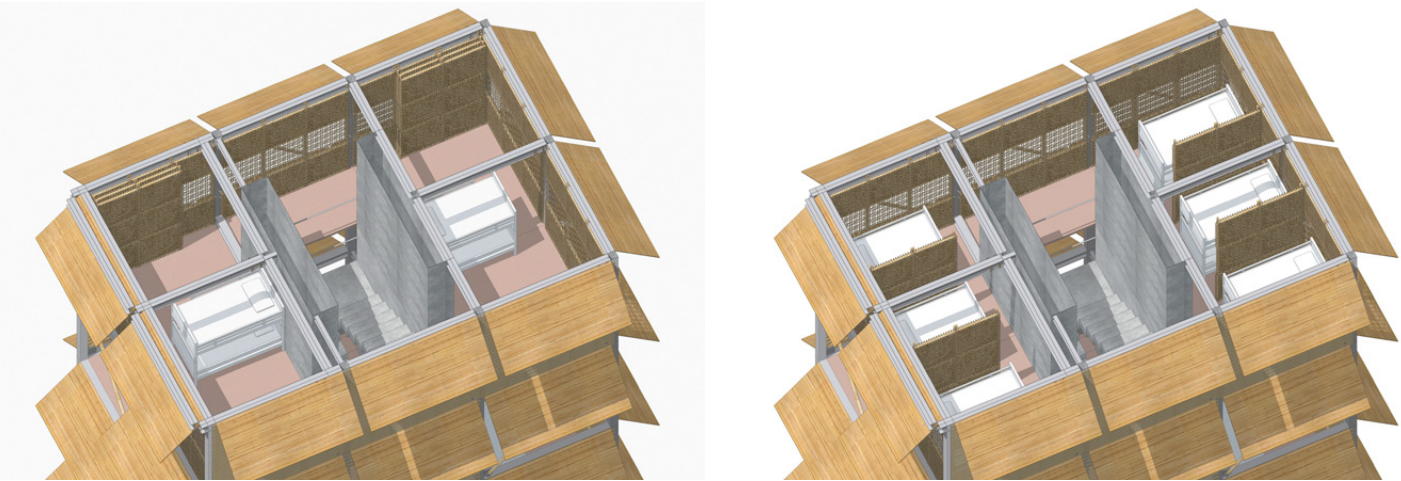
ASSEMBLY PROCESS



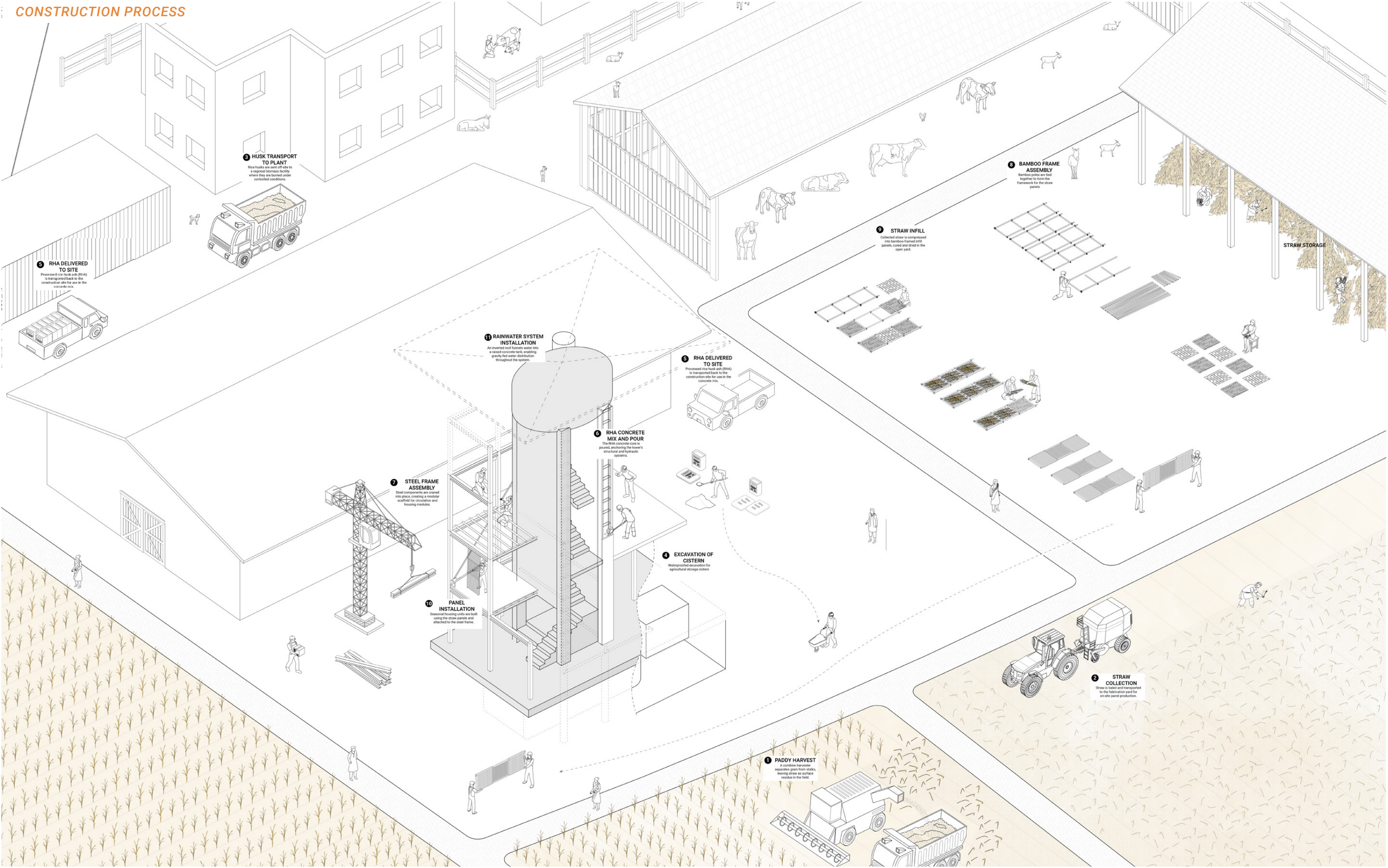
PANEL ASSEMBLY



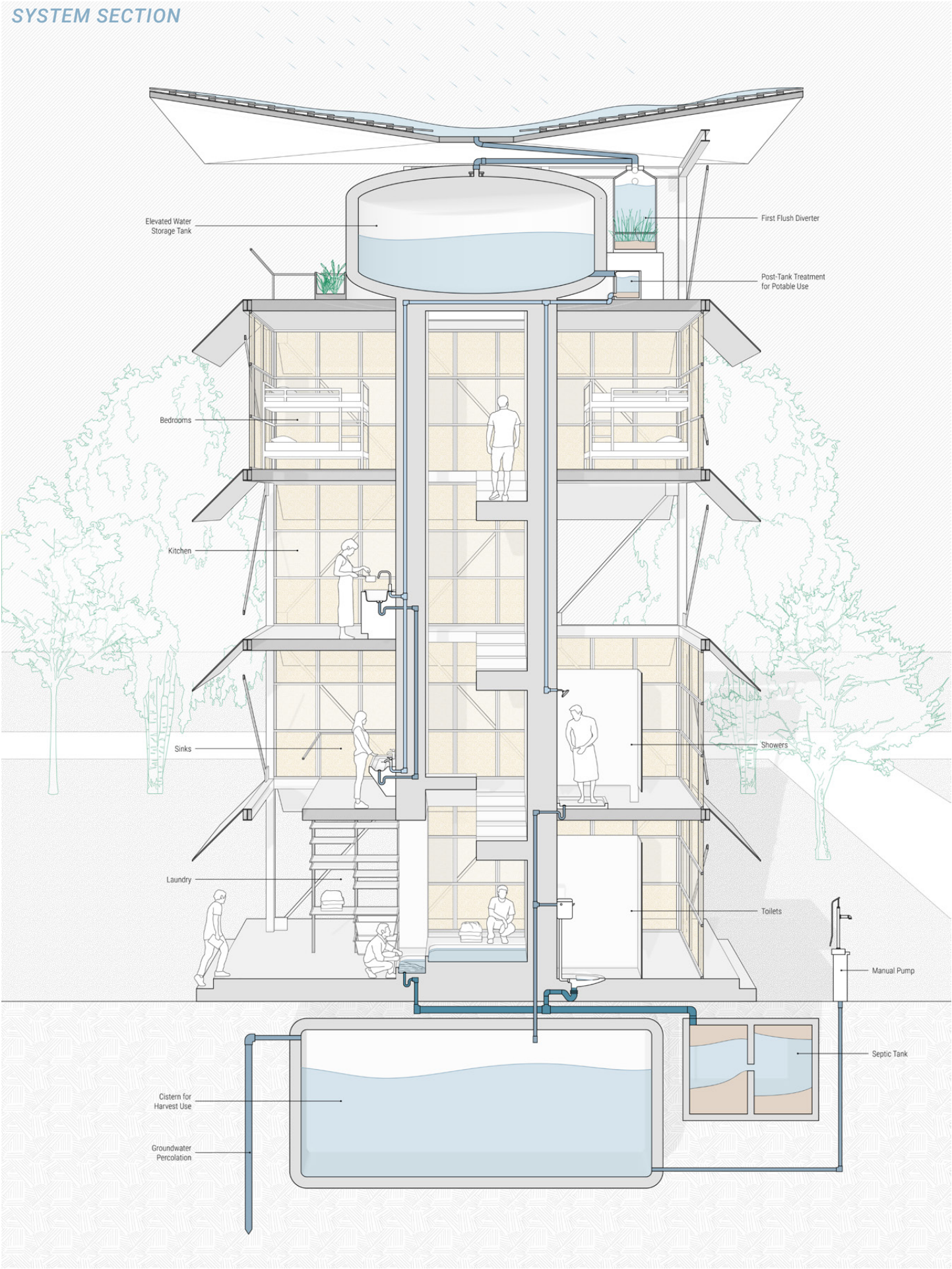
ADAPTABLE ROOMS



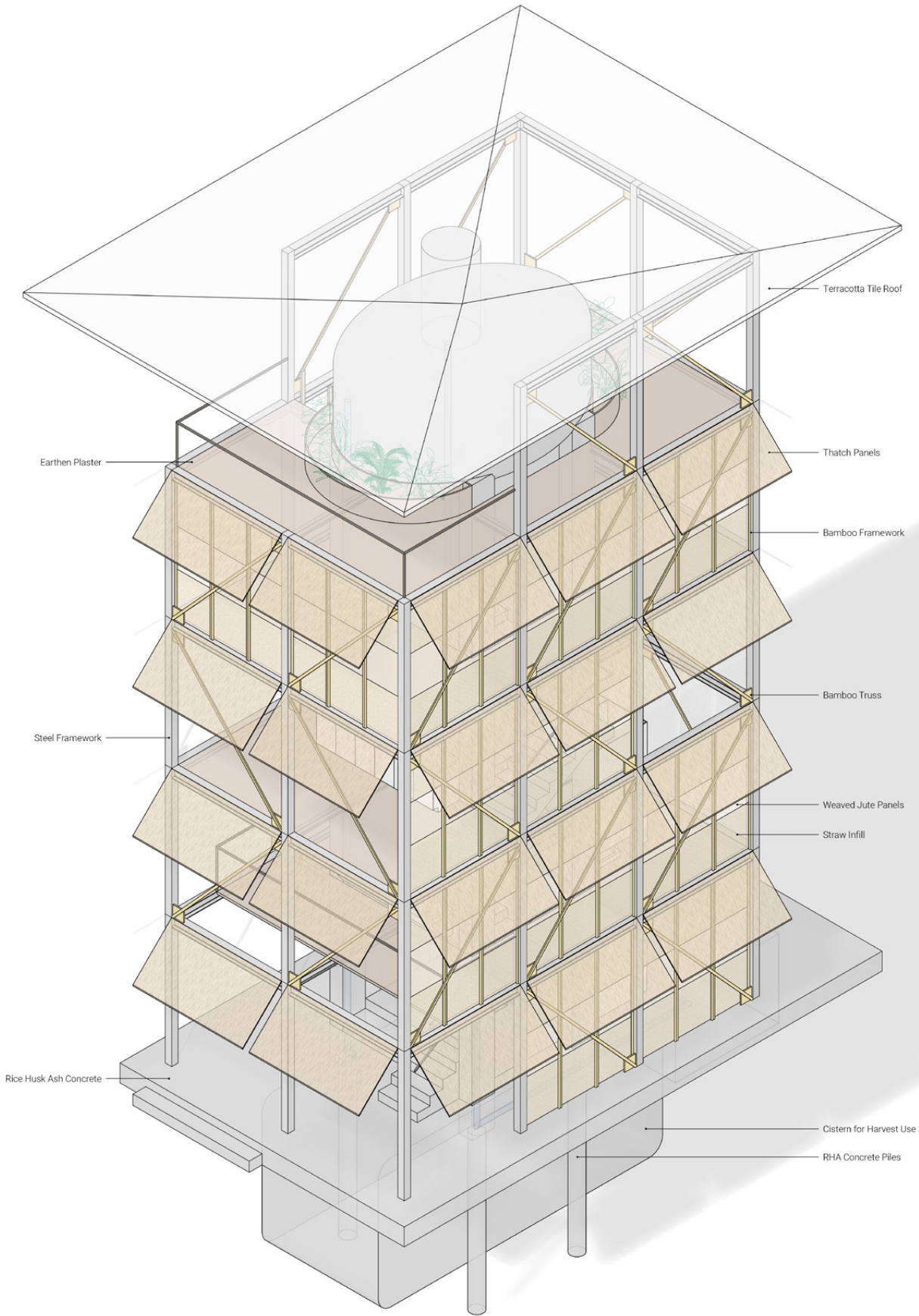
CONSTRUCTION PROCESS



SYSTEM SECTION



MATERIALS AXON





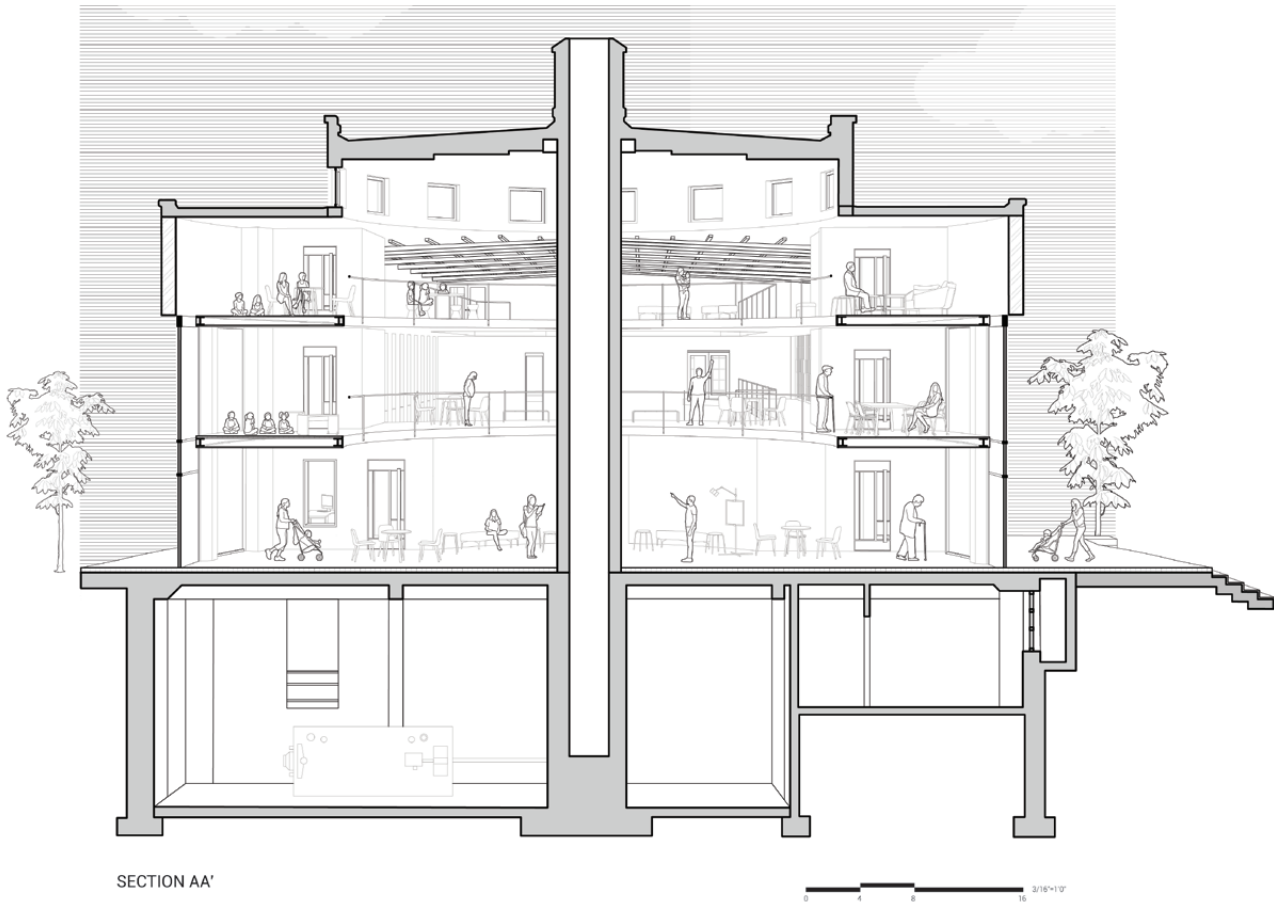
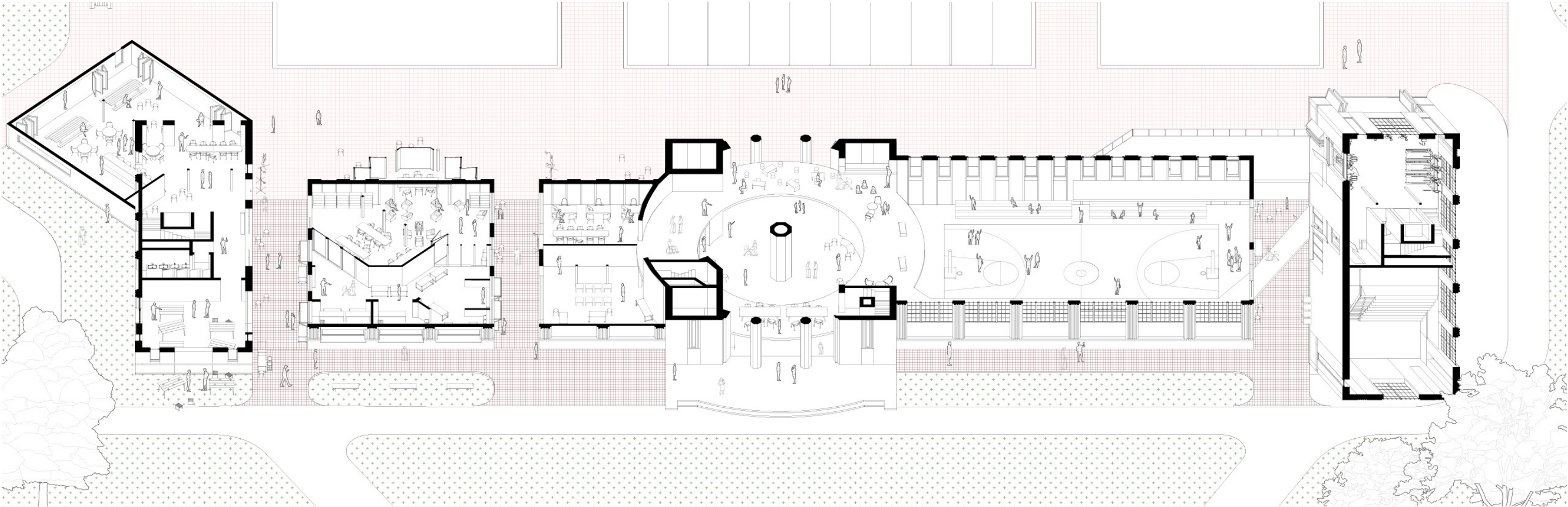
Threaded Thresholds

Location: Sunset Park
Professor: Phu Hoang
Collaborators: Khushi Saraiya, Anisa Khan
Role: Architectural co-design, Park systems and Research

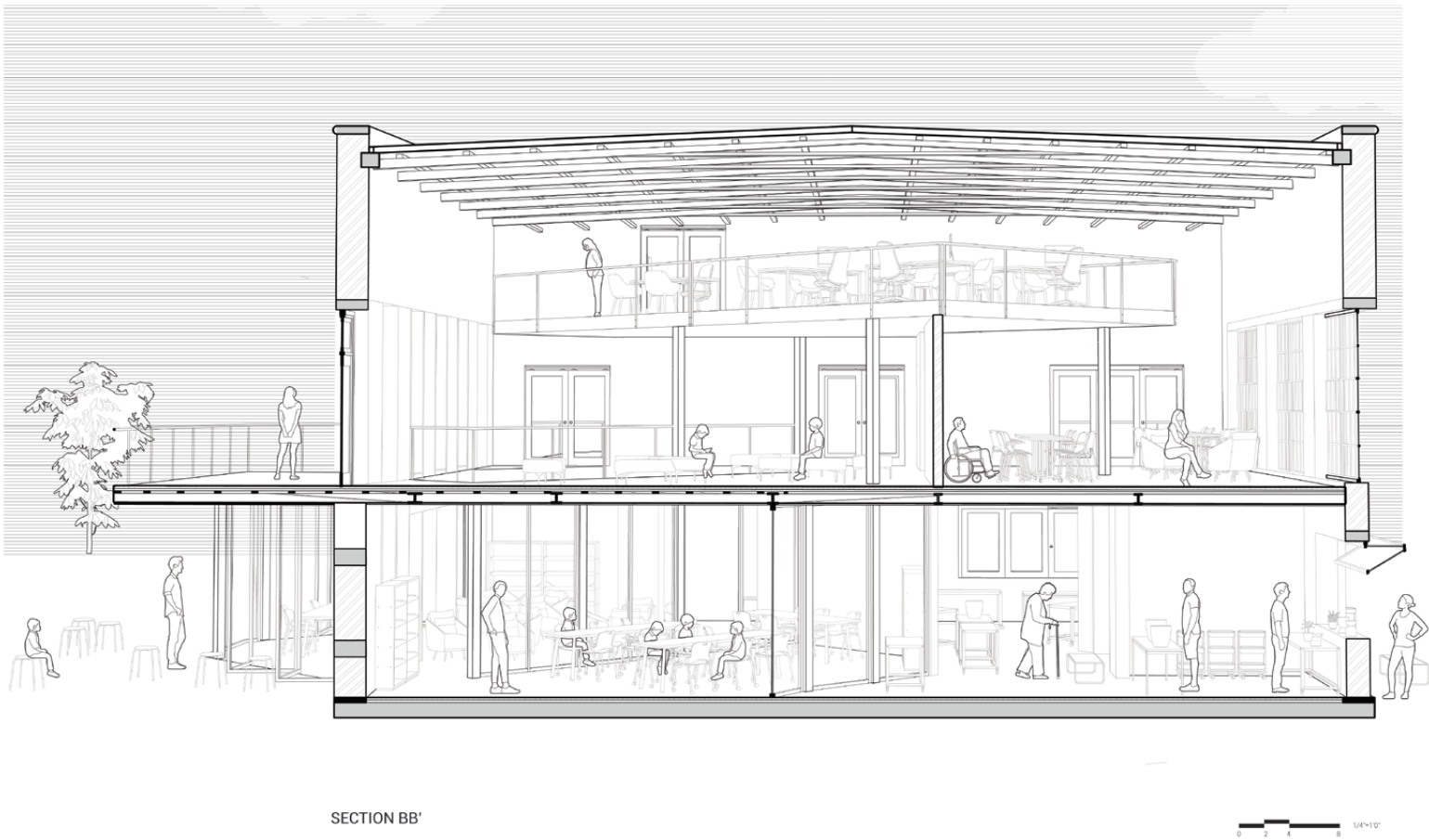
Threaded Thresholds reimagines Sunset Park’s recreation center and surrounding park as an interconnected, multigenerational hub by leveraging thresholds, both spatial and social, to foster interaction, care, and adaptability. Observing Sunset Park’s vibrant yet fragmented network of care, we saw that daycare apartments and adult daycares relied on the park. However, barriers such as fences, elevation changes, and compartmentalized programming disrupted organic connections. Inspired by the thresholds found in the neighborhood, including stoops, terraces, and balconies, we introduced cuts into the recreation center. By breaking its rigid form, we created open, visually connected spaces that encourage movement and gathering. The park was similarly restructured by regrading the land and integrating six activity axes: recreation, swimming, sports, play, gardens, and commerce. Each of these areas

includes interventions that activate informal exchange. Within the recreation center, programs such as a community kitchen, a media lab, a library, and childcare pods foster engagement across generations. The park’s redesign prioritizes accessibility by removing restrictive barriers and aligning its layout with the surrounding street grid. Seasonal adaptability further enhances the project’s flexibility, as the pool transforms into an ice-skating rink and performance space during colder months. Through climate-responsive systems such as geothermal heating, rainwater collection, and passive ventilation, the design ensures environmental sustainability while reinforcing the park’s role as a social anchor. Threaded Thresholds stitches together the park, the recreation center, and the surrounding community into a seamless and inclusive network of care.

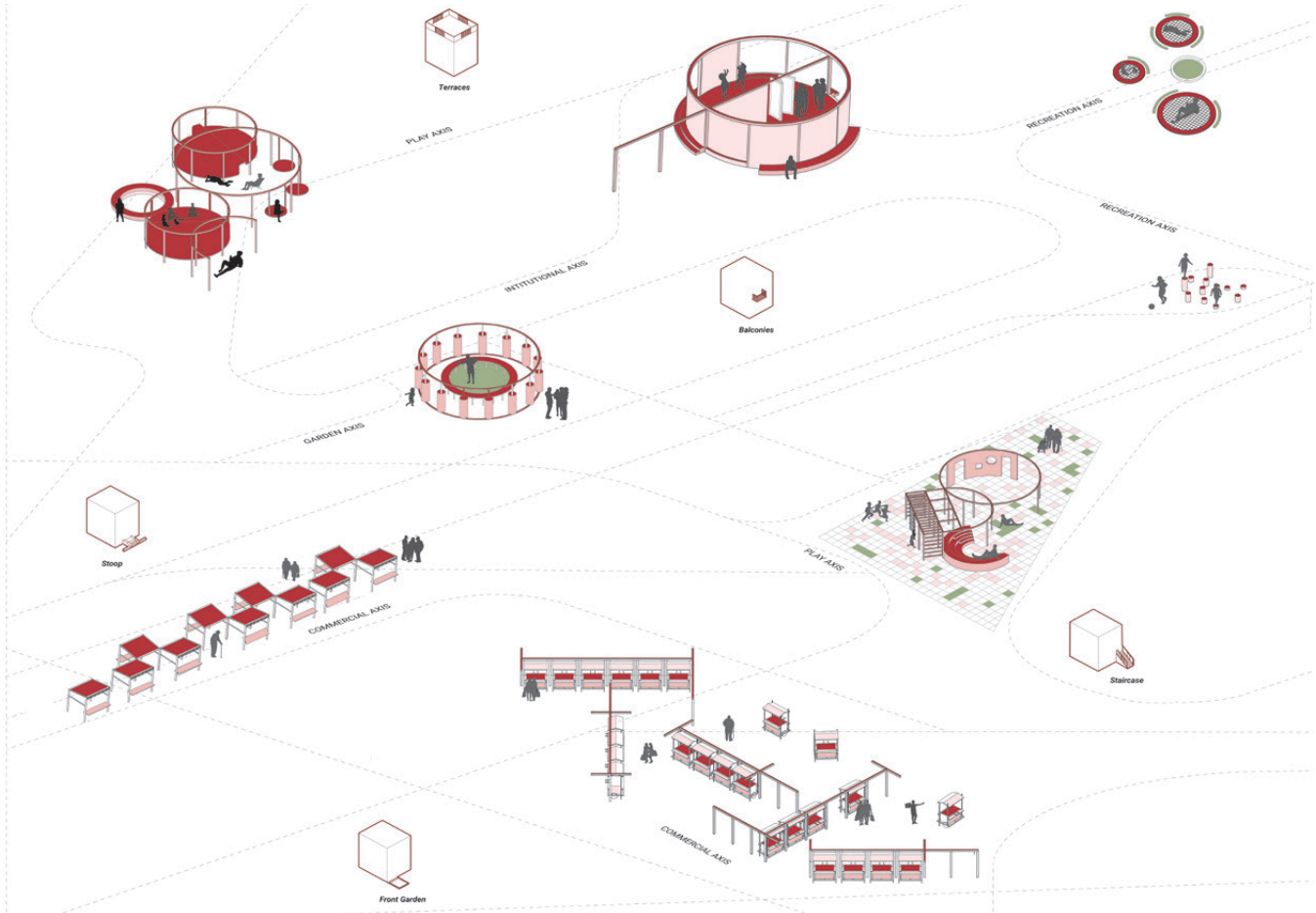
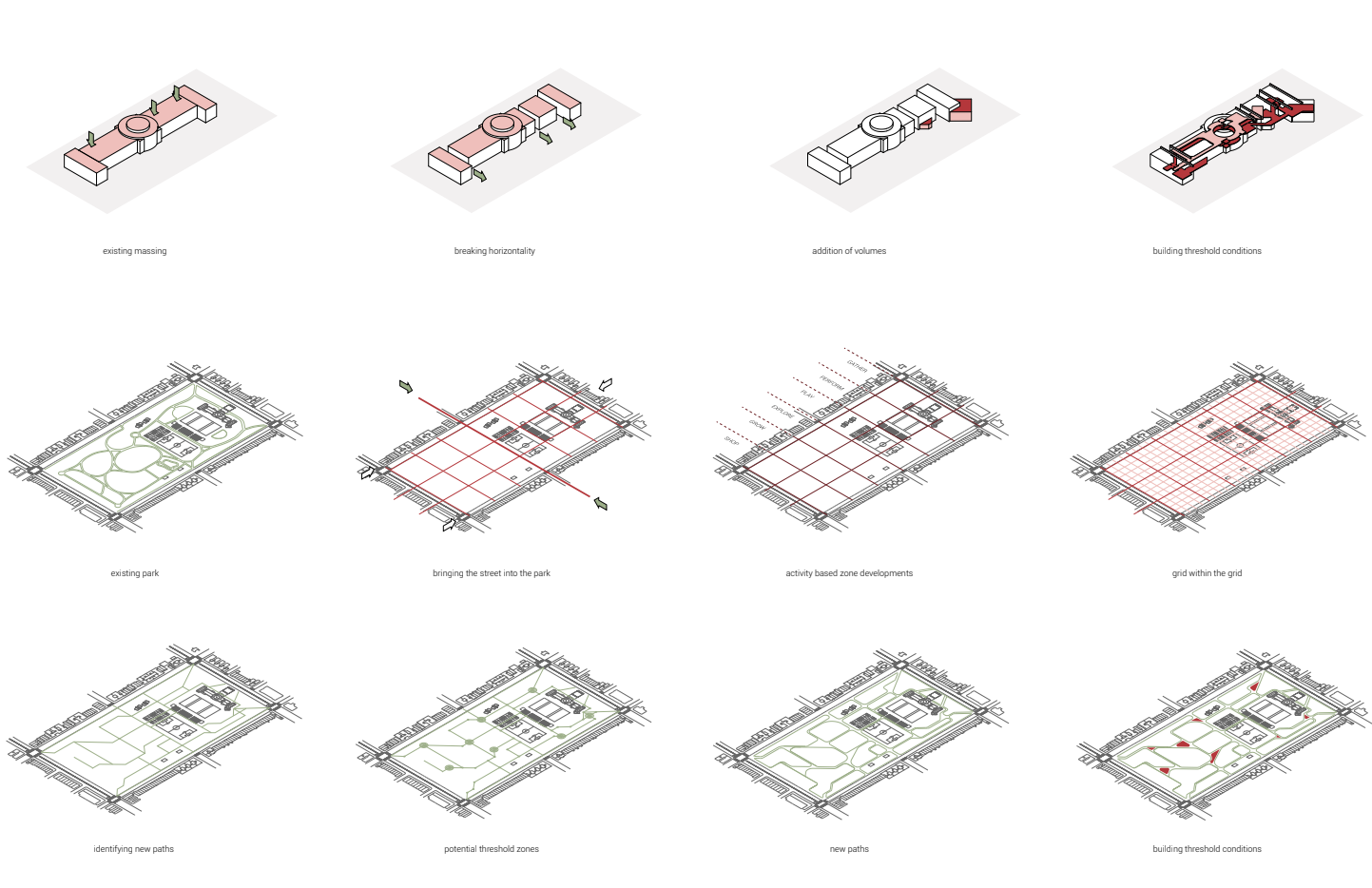




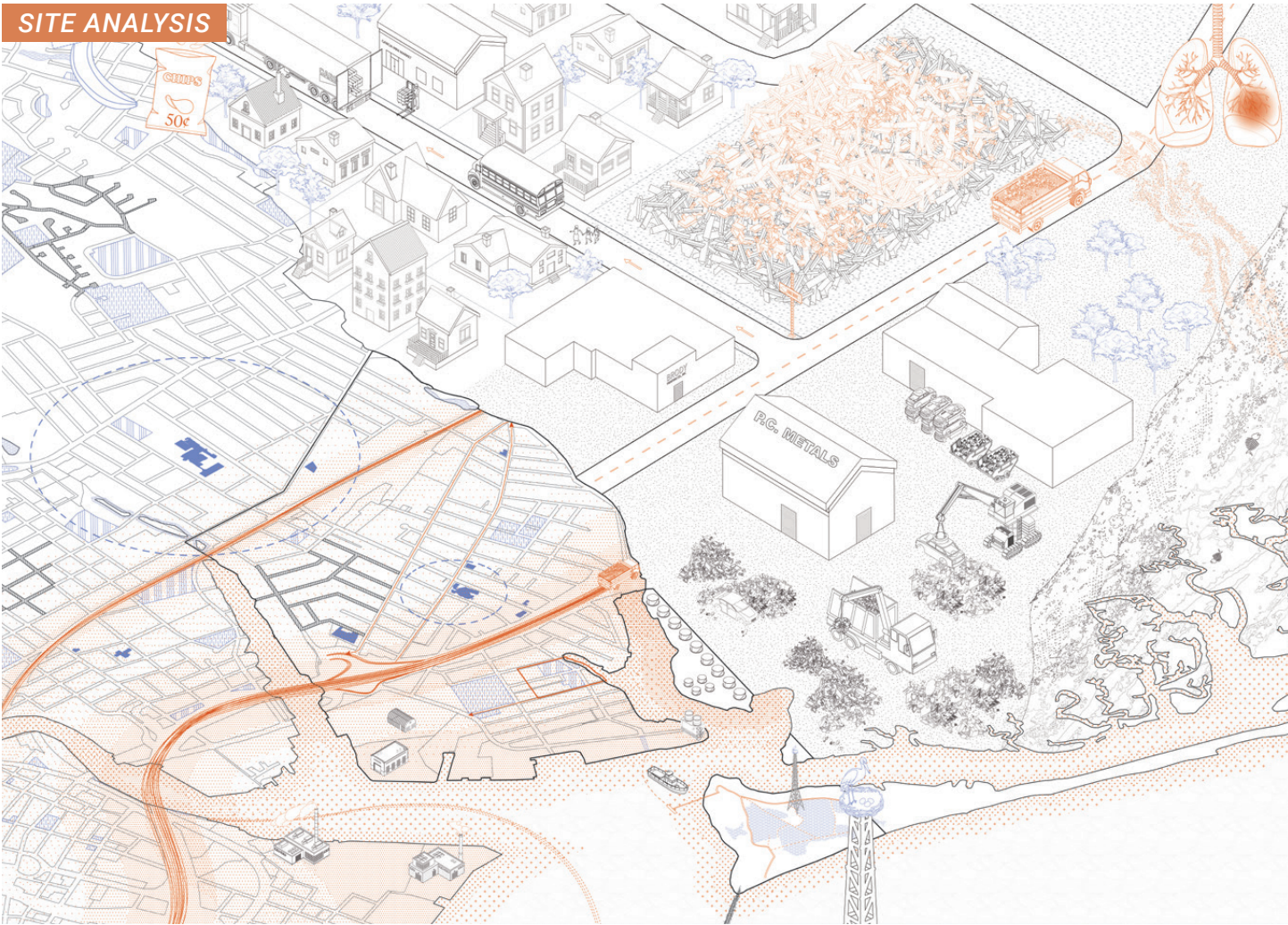
SECTION AA'



SECTION BB'



SITE ANALYSIS



Acupunctural Remediation

Engaging with an Ecological Cul-de-Sac

Location: East End Neighborhood, Bridgeport, CT

Professor: Rachely Rotem

Collaborator: Jordan Howard

Role: Architectural co-design, Tech system design and research

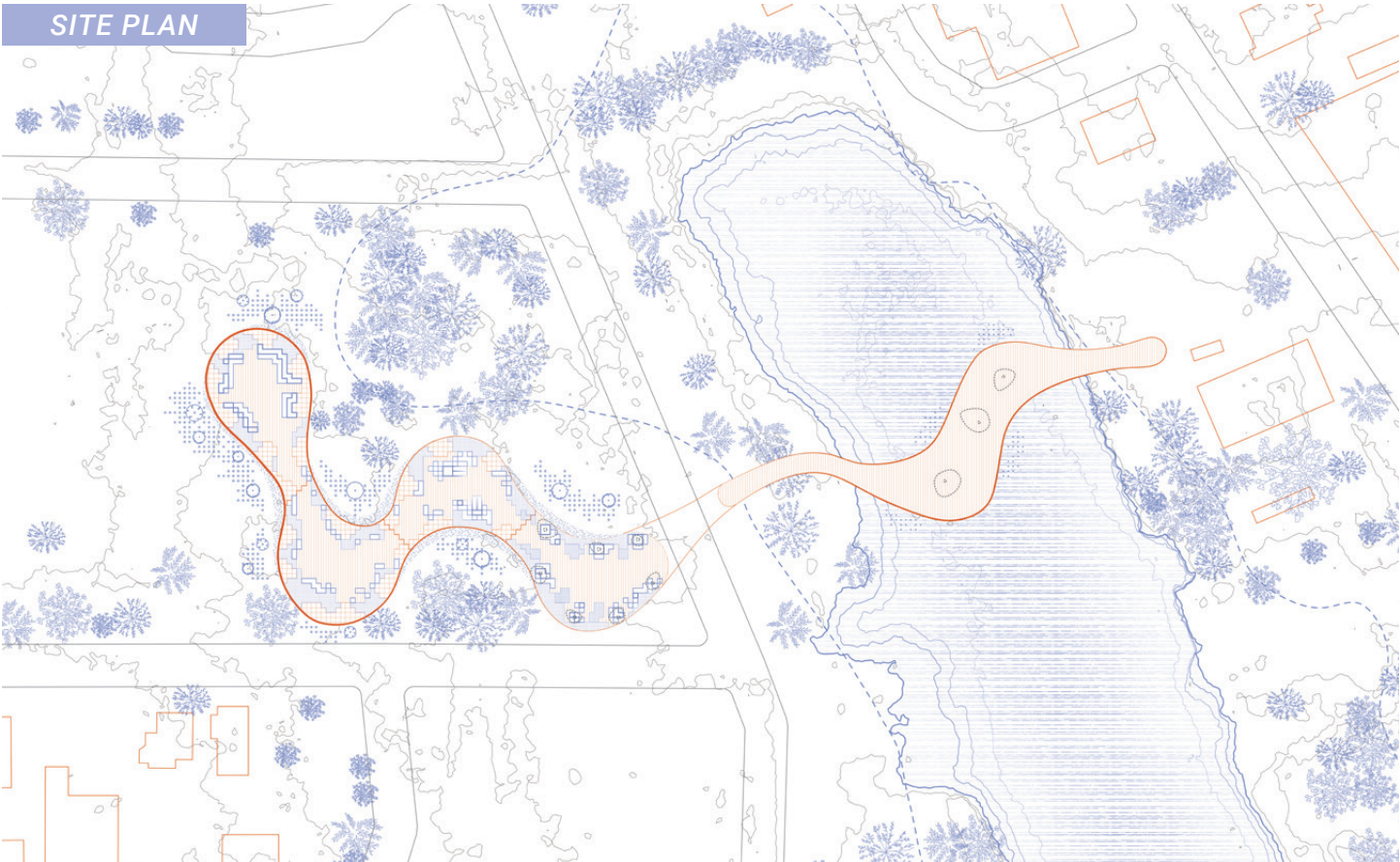
In Bridgeport’s East End and Pleasure Beach, we explore the deep-rooted issue of pollution impacting both human and non-human residents. This study originates from the historically polluted Mt. Trashmore— a significant historical marker of this pollution with a 35-foot high pile of construction debris and waste accumulated from the late 1980s to 1993. Efforts to cap the site have left unresolved concerns about underlying contamination.

Our response to these systemic issues is centered on the ecological cul-de-sac of Johnsons Creek, a nearby area prone to the uncertainty of flooding and consequent redistribution of pollutants. Here, we propose an ‘**acupunctural remediation**’ approach. Mimicking acupuncture’s healing approach, our design introduces *remedial columns* integrated within the existing landscape, inspired by the area’s natural tree patterns. These columns perform essential ecological functions: rainwater is

filtered through hydroponic systems, which support plant growth and manage and reuse stormwater; electrokinetic columns use electrical currents for soil remediation; and oxygenating columns help purify the water and encourage healthy aquatic ecosystems.

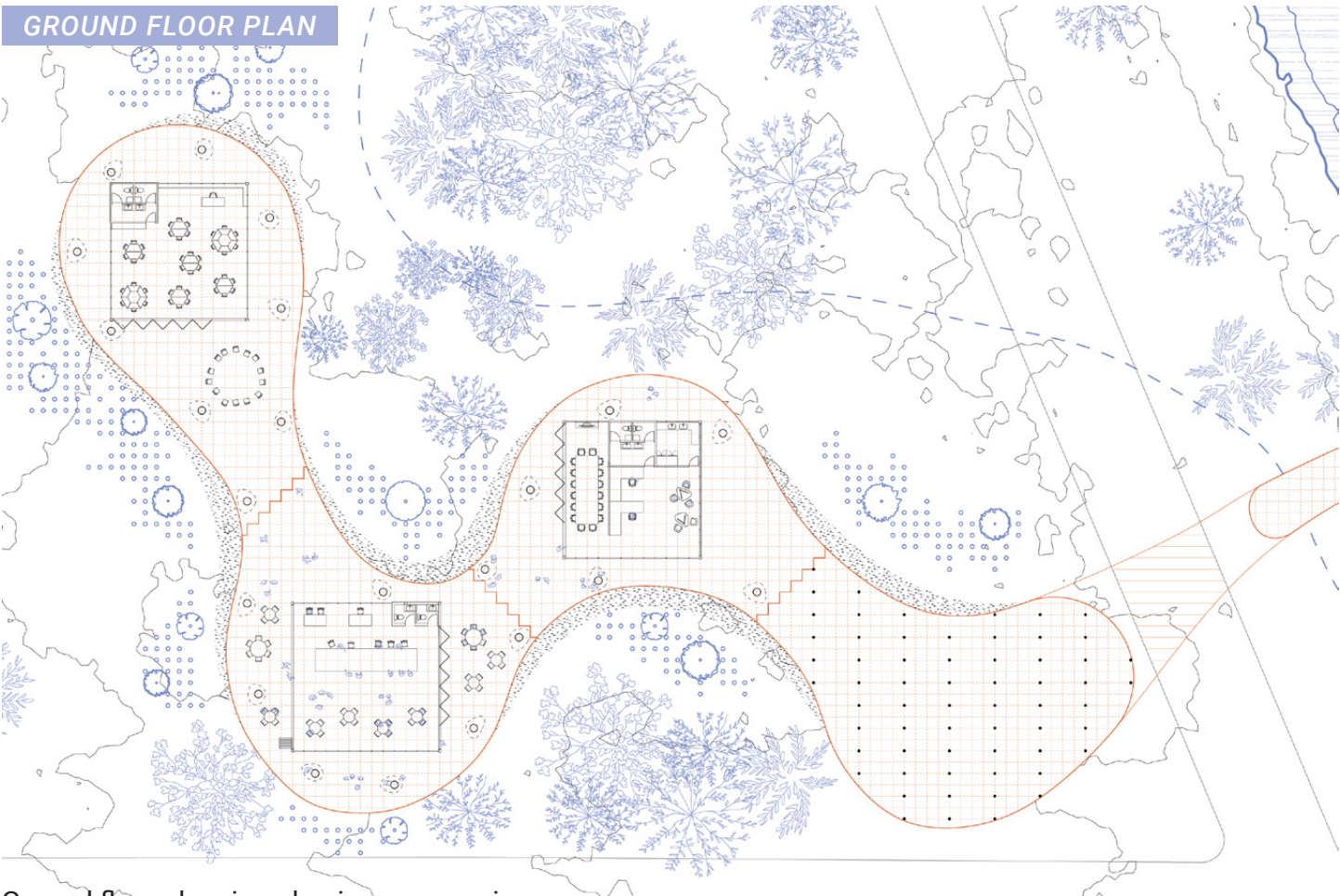
To engage the community and enhance visibility of these efforts, we integrate these structures into an archaeological grid, allowing residents to actively monitor and participate in remediation and testing. This project is divided into four phases and it begins with creating a “second ground”— an elevated playscape above the remedial columns, safe from pollutants while the ground is being cleansed. The ground floor will transition into spaces for labs, food centers, and childcare as contamination decreases. Supported by a flexible timber waffle system, the design fosters a dynamic, pixelated landscape encouraging community interaction and ecological recovery.

SITE PLAN



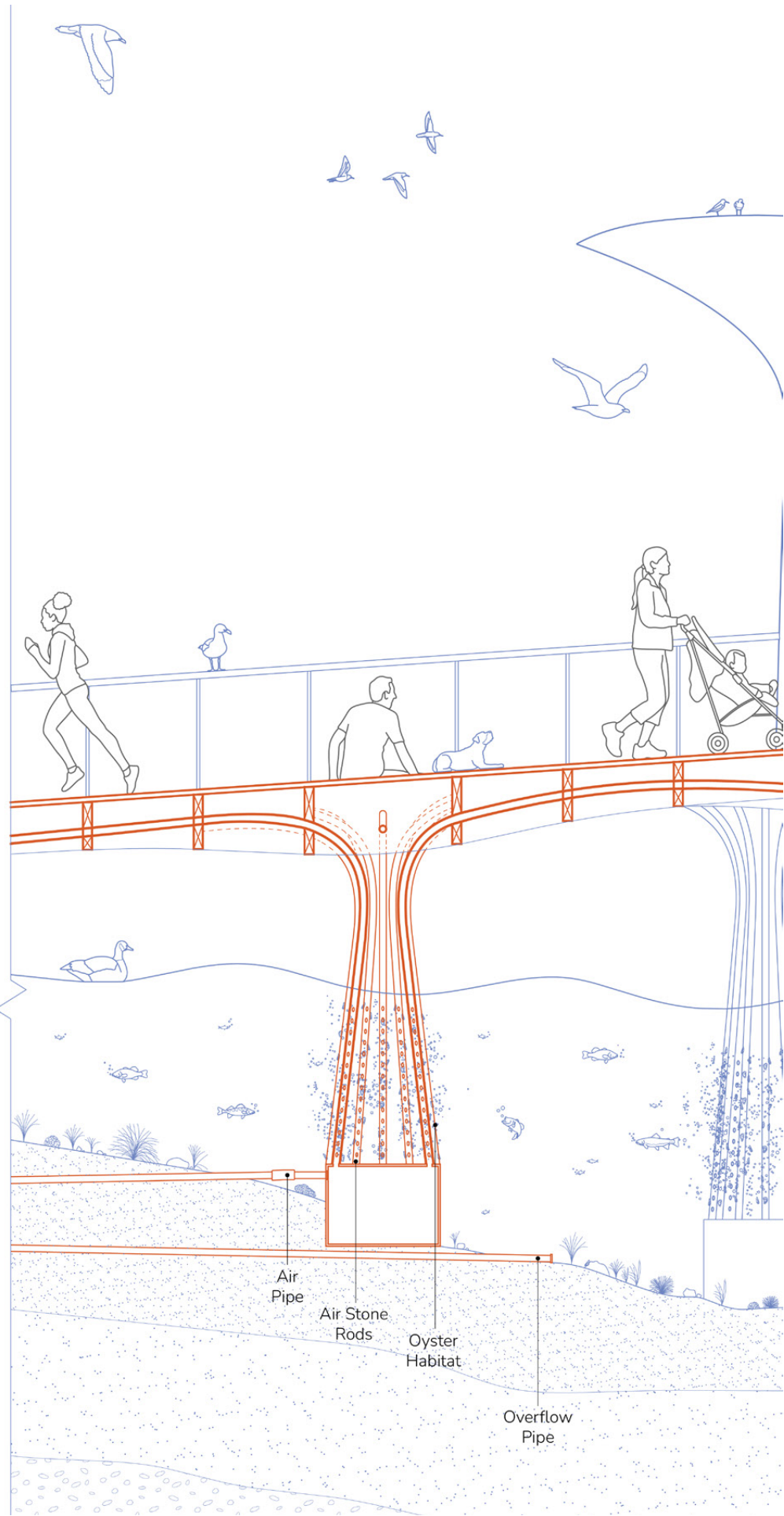
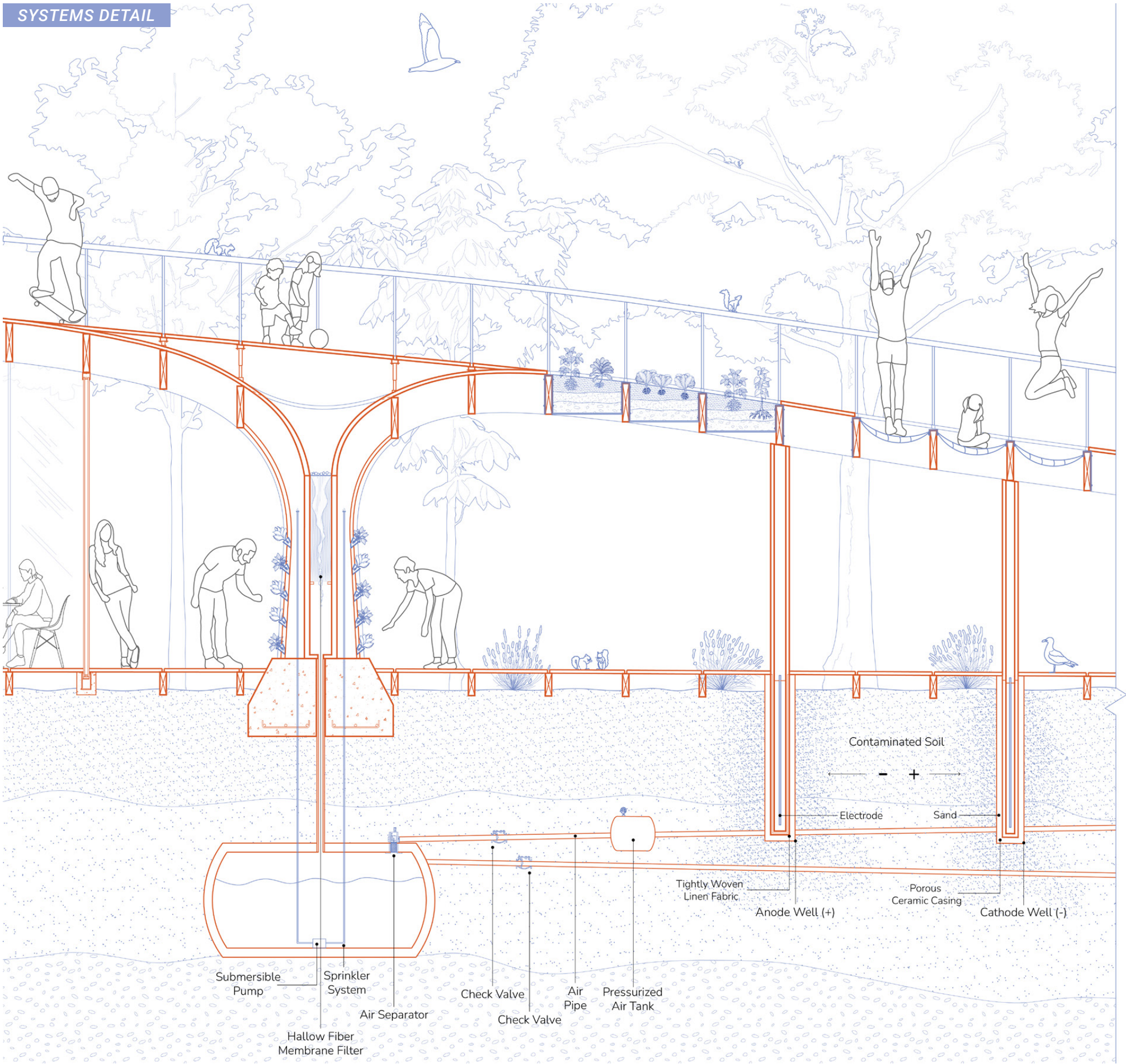
Roof plan organization: <https://shorturl.at/itx03>

GROUND FLOOR PLAN



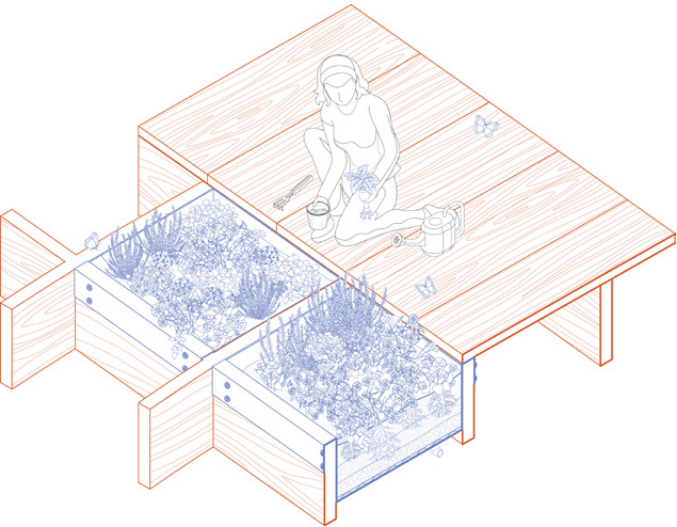
Ground floor showing phasing progression

SYSTEMS DETAIL

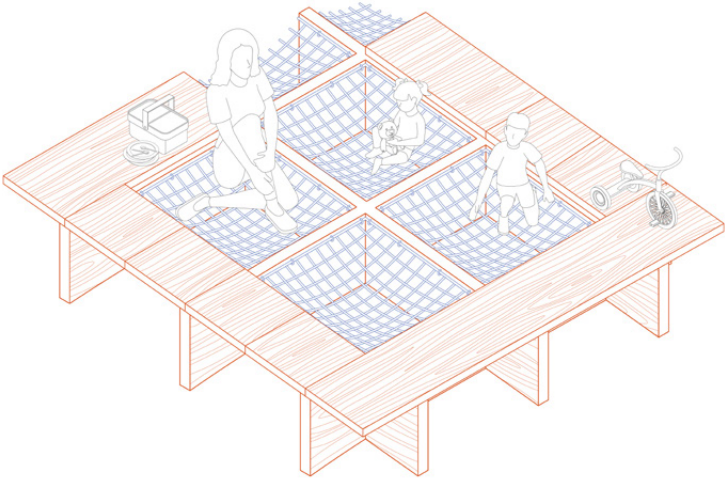


PLAY TAXONOMY

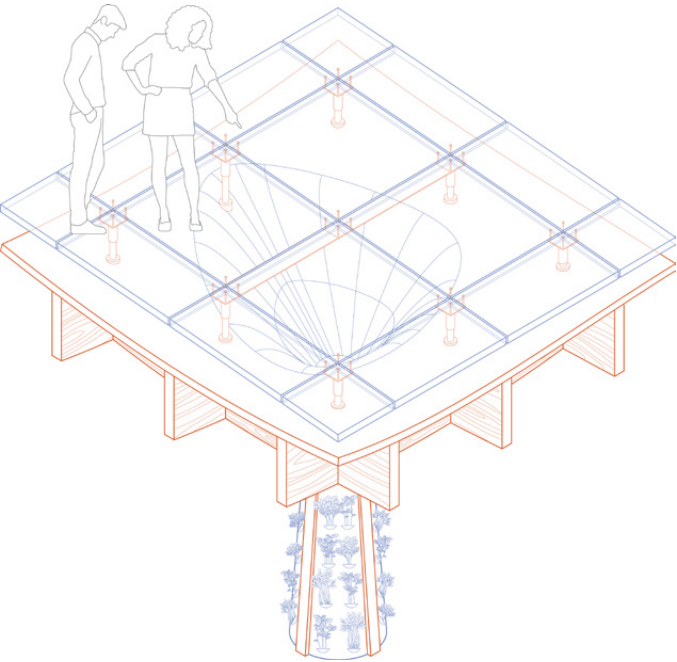
1. Integrated Planters



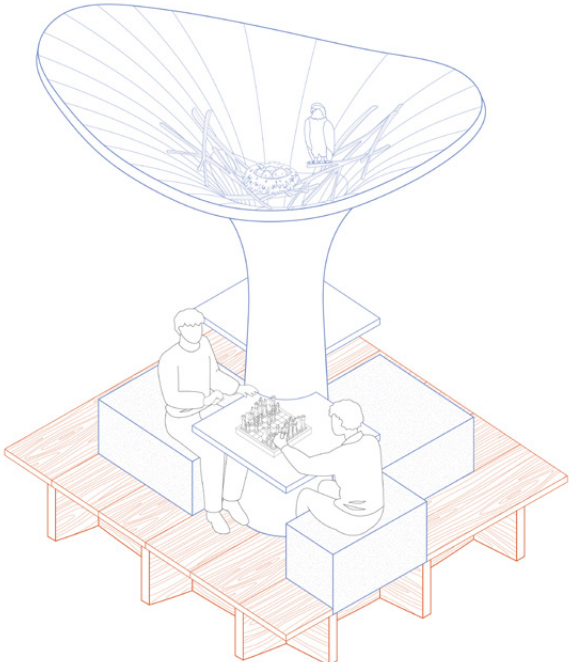
2. Flexible Mesh



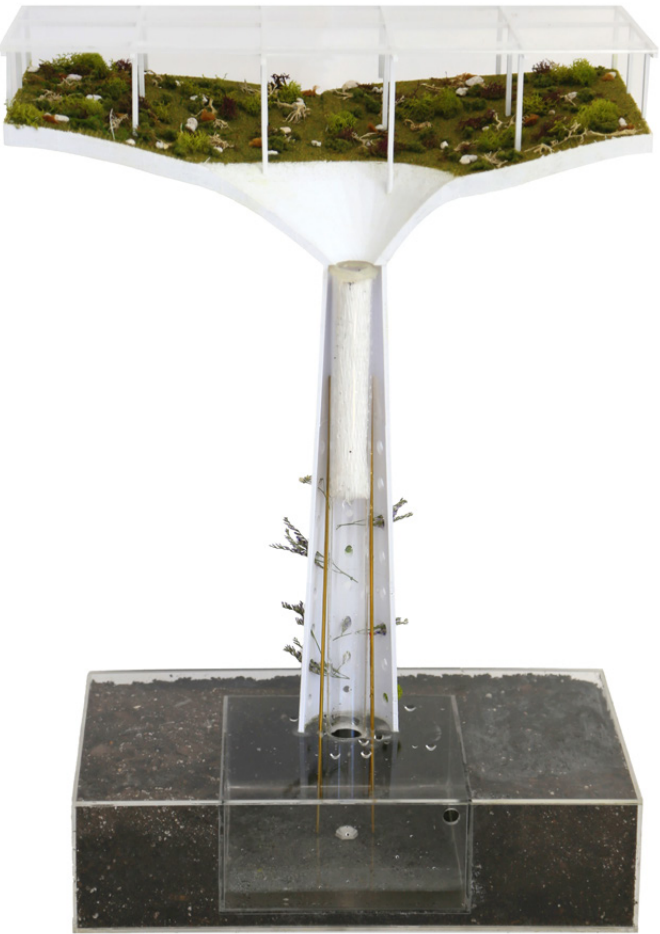
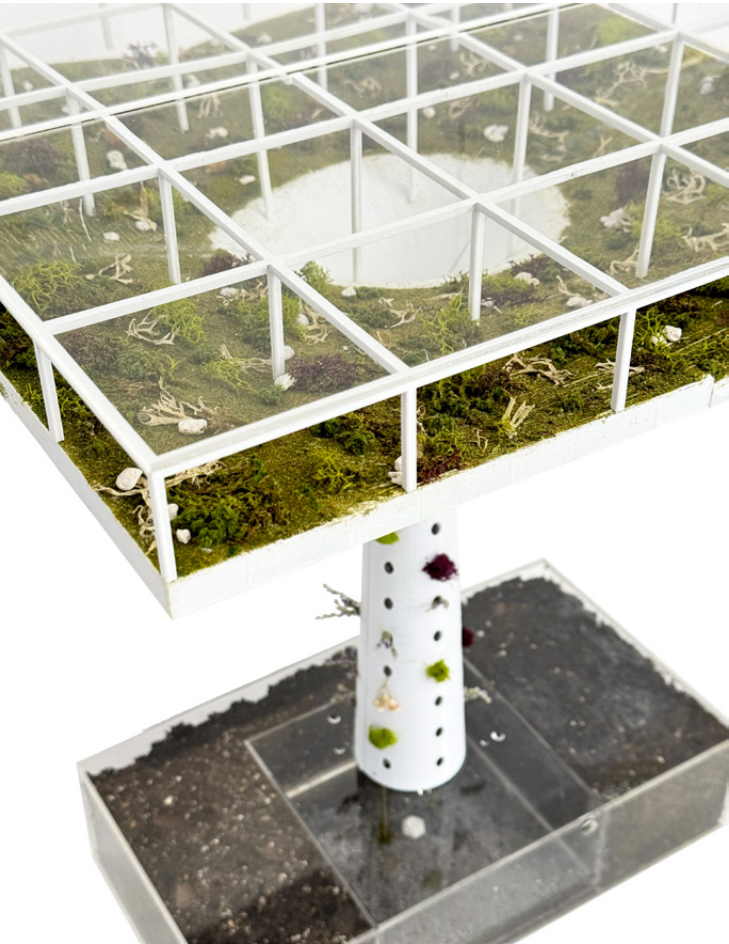
3. Glass Panels



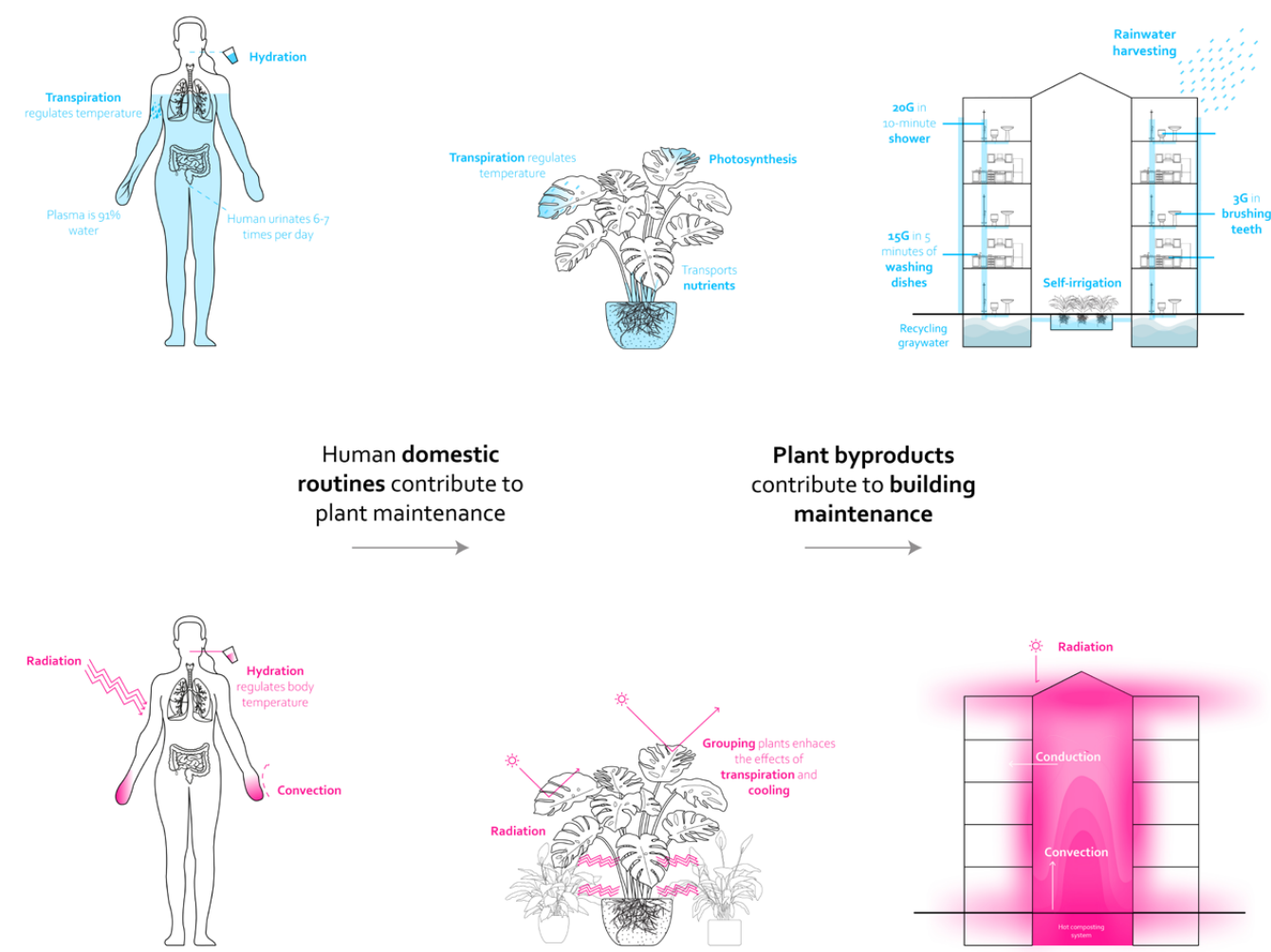
4. Shade & Seating



PHYSICAL MODEL



Physical Model: 3D printed representation of Hydroponic Column using LifeStraw® technology. GIF: <https://shorturl.at/CiQT4>



Maintaining Microclimates

Location: 454 W 128th ST, West Harlem, NYC
Professor: Lily Wong
Collaborator: Anika Tsapatsaris

*All drawings showcased done by author

What does it mean to co-live with compost? How does soil shape our domestic space? Just by going about our routines, we are active participants in a sequence of microclimate interactions that maintain our bodies, our surrounding plant ecosystems, our buildings, and our communities.

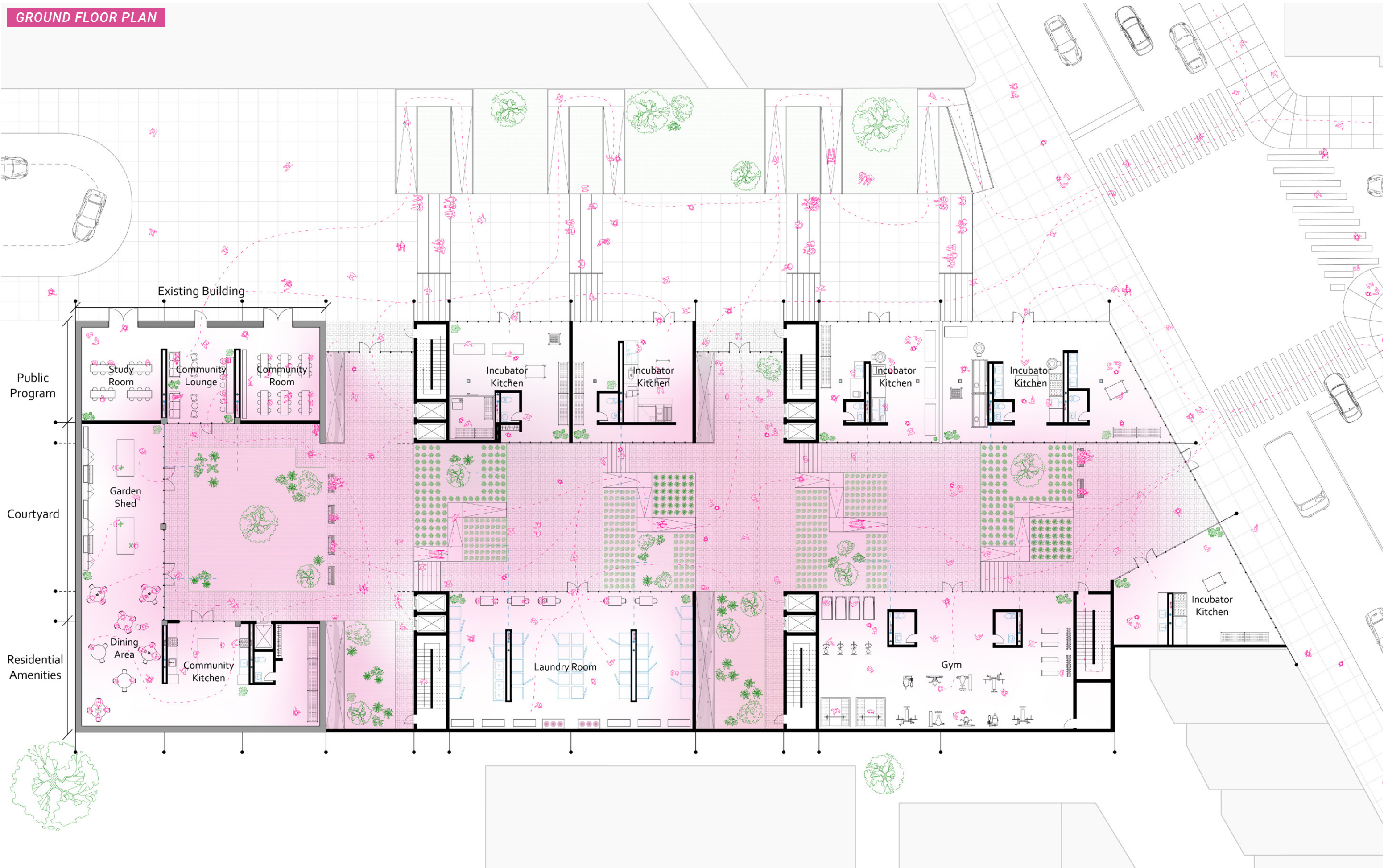
This project is situated in West Harlem, surrounded by a network of community gardens. While many of these gardens are not well-maintained, they play a crucial role in empowering local communities by enabling them to take control of their food sources. Nevertheless, this initiative raises concerns regarding the additional labor burden it imposes on these communities. But understanding just how much additional labor preserving these spaces entails led us to ask: How can we make a building that both empowers residents to maintain their own public and private spaces,

but also alleviates them of the burden of having to do all the work?

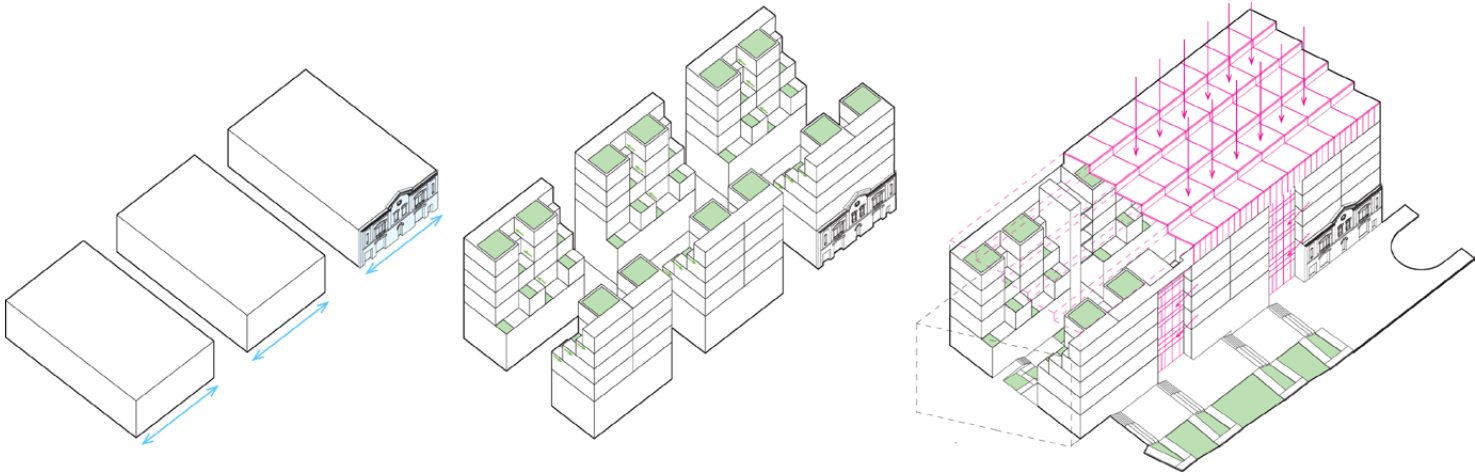
Maintaining Microclimates places compost at the core of the domestic routine, understanding the residence as a means by which communities co-produce byproducts, or "co-compost." In this project, co-composting is expressed through communal compost chutes which both serve as building waste infrastructure and create shared domestic experiences. Compost lands in a hot composting system beneath the building – a small routine act which kickstarts a larger building-scaled process: the upwards release of heat and humidity that maintains the courtyard and greenhouse space above. The building is thus understood as a living organism which plays an active role in the domestic routines of its inhabitants, for co-living is a reciprocal, symbiotic activity.



GROUND FLOOR PLAN



DESIGN STRATEGY



PROPORTION

The intervention adopts the proportion of the existing building.

TERRACES

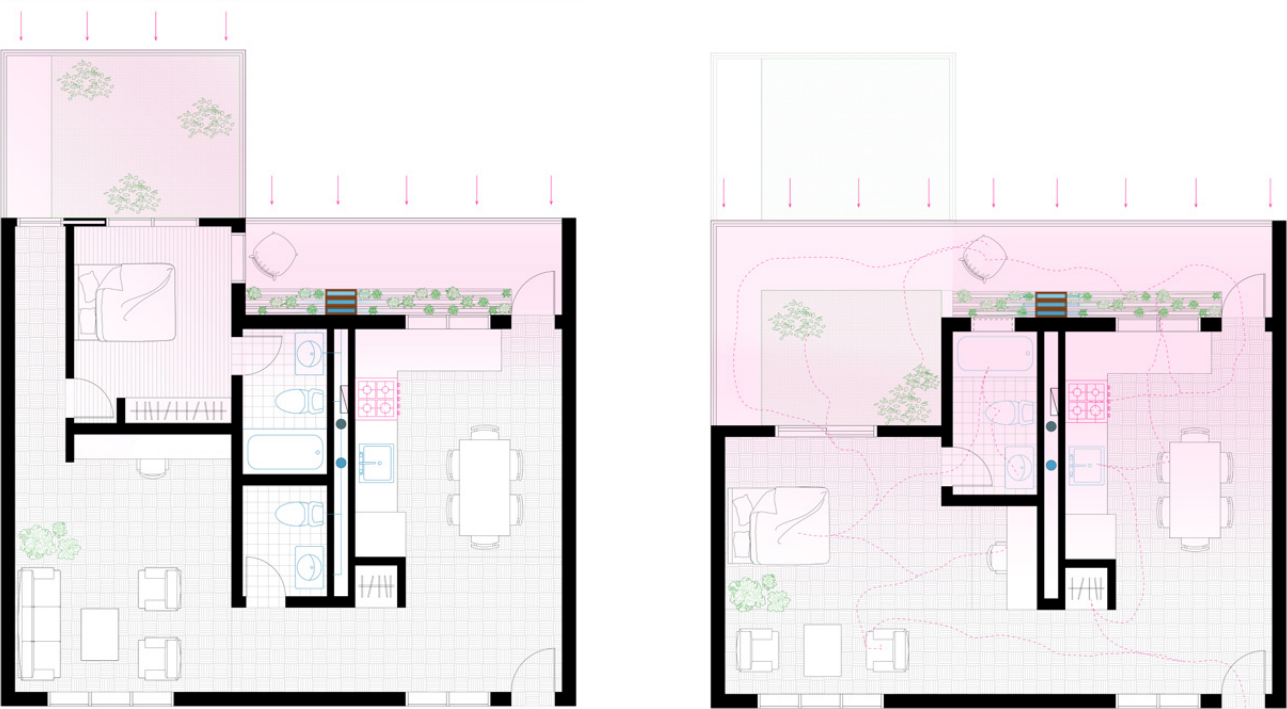
The apartments are arranged in terraced formation to enable gravity-assisted irrigation and communal engagement in inner balconies

GREENHOUSE

The buildings envelope creates a microclimate for the personal and communal growing spaces

APARTMENT PLAN

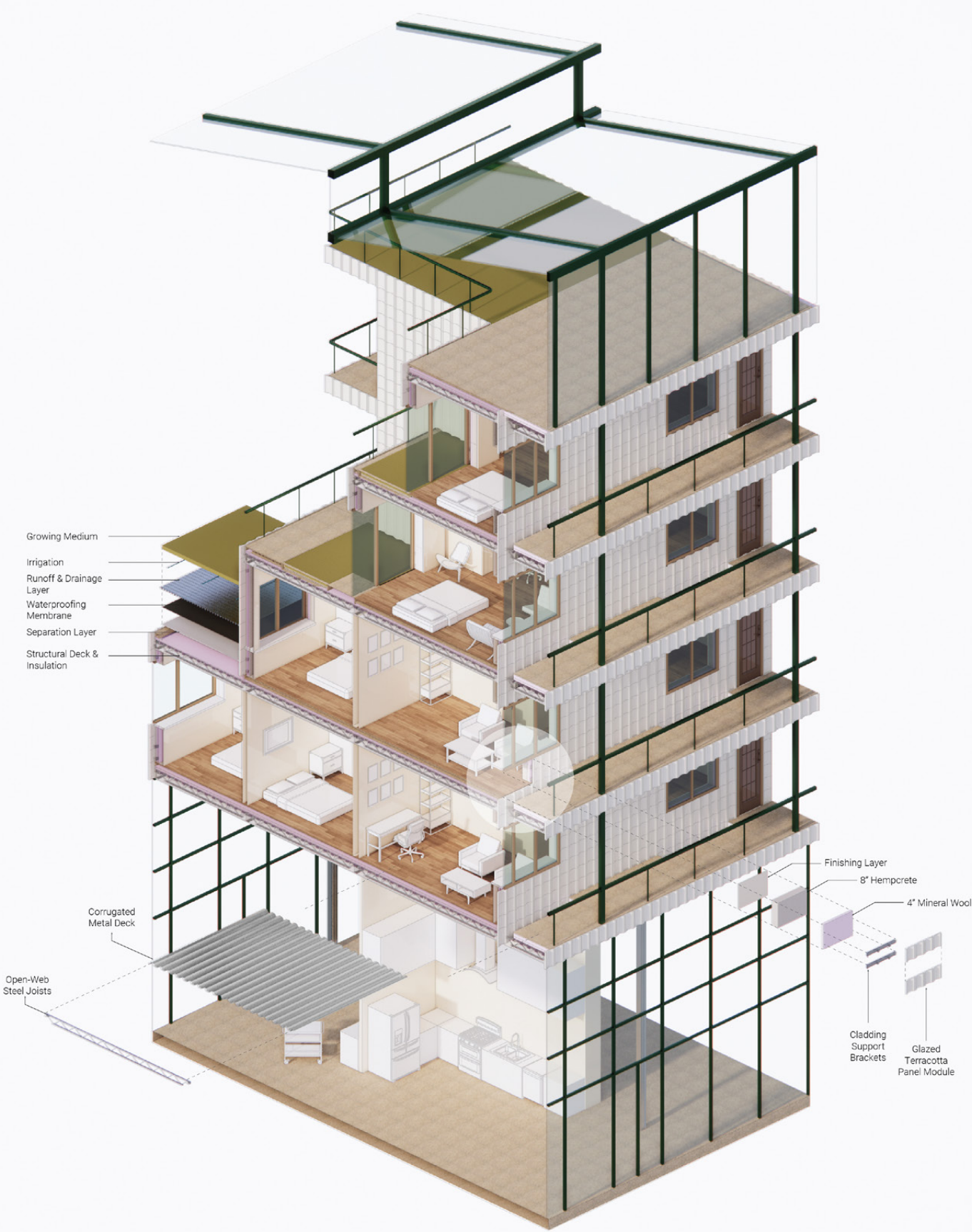
In the design of the residential units, rooms are strategically arranged around a central wall chute that houses all water pipes and a heat waste extractor. This setup ensures efficient use and recycling of water while also contributing to the optimization of the courtyard's microclimate. Additionally, all bedrooms are oriented towards the courtyard, allowing them to maximize thermal benefits from the collected heat, enhancing comfort and energy efficiency.



1 BD Apartment
785 sq ft

Studio Apartment
614 sq ft

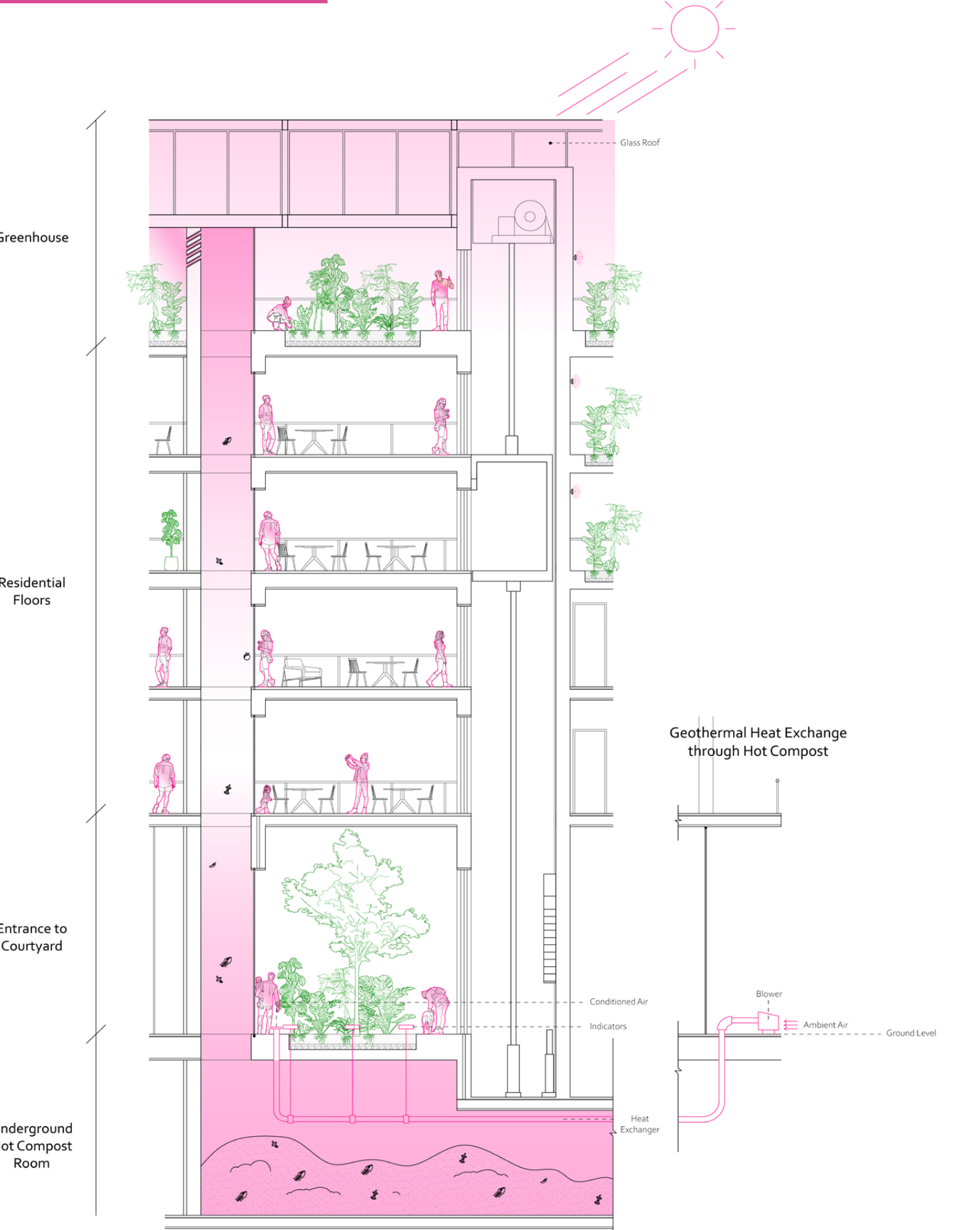
FACADE AXON DETAIL



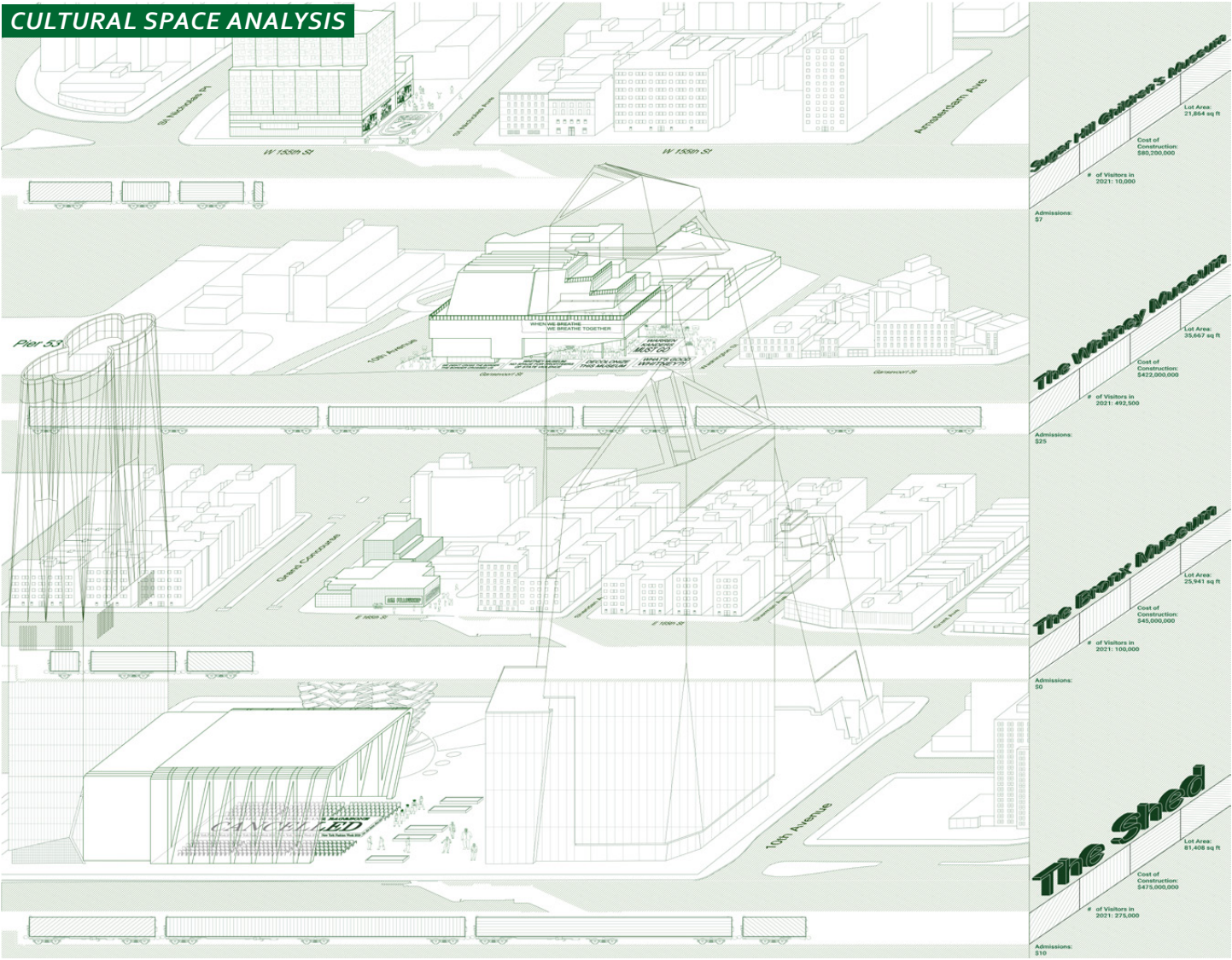
WATER SYSTEM DETAILS



HEATING SYSTEM DETAILS



CULTURAL SPACE ANALYSIS



Cultural Mobility - Cultural Permanence

Location: East River Houses, East Harlem, NYC
Professor: Esteban DeBacker

In the midst of Manhattan's urban sprawl, this intervention emerges against the backdrop of the Hudson Yards development, a project steeped in the intricacies of the EB-5 visa program. This program offers a pathway to lawful permanent residence for investors and their families when they invest between \$500,000 and \$900,000 in projects in rural or urban distressed areas with high rates of unemployment. However, the Hudson Yards, itself not a zone of distress, acquired funding through the EB-5 program by a carefully crafted gerrymander. A map was drawn to include residential areas of Mid Manhattan and the jobless expanses of Central Park and various housing projects of East Harlem. This deliberate inclusion created a facade of an area struggling with unemployment, thereby qualifying Hudson Yards for an astounding \$1.2 billion in EB-5 funding. This maneuver, while legally sound, unethically diverted resources from genuinely underserved areas like East Harlem, which actually embody the spirit of the EB-5 criteria with their needs for economic and cultural revitalization.

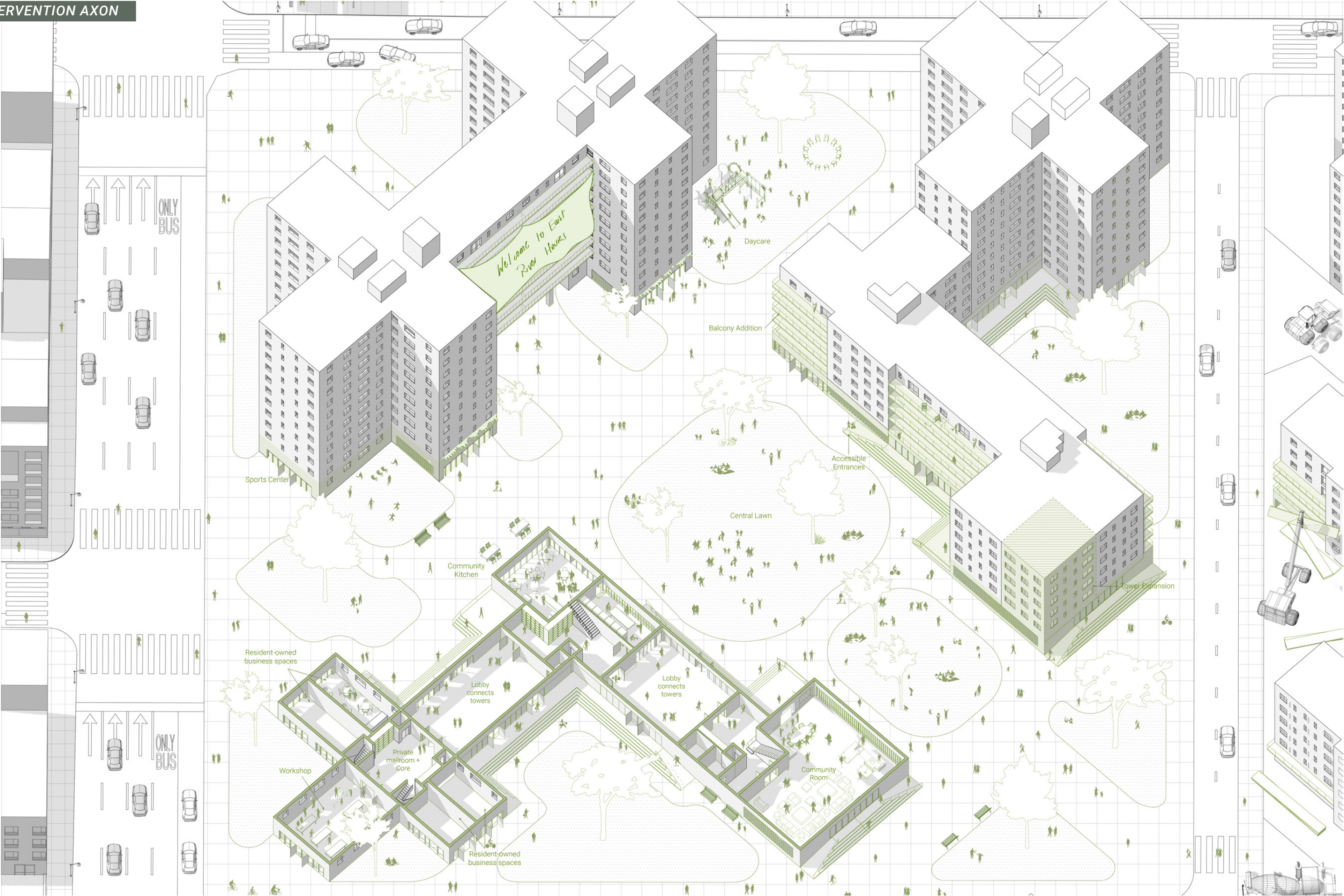
The project acknowledges the current challenges at

East River Houses: limited accessibility, isolated towers, and a lack of inviting communal spaces. These issues have led to a disconnect not only within the complex itself but also with the surrounding urban landscape. The intervention aims to transform the East River Houses by threading the complex with new life. The ground floor evolves from a mere entry point into a vibrant communal nexus. An accessible lobby acts as a catalyst for interaction, bridging the gap between residents and the wider urban context. This space is integrated with facilities like a community kitchen, a lounge area, workshop spaces, and a podcast room that are strategically placed to create a gradient of public to semi-public to private spaces. The architectural strategy extends beyond the ground level. The towers, each offering unique programs, are conceptualized to form a cohesive network within the complex, enhancing the sense of community. This network is further enriched by the addition of new communal and private balconies on the upper floors. These spaces are designed to not only link residents to each other but also to integrate them with the surrounding urban landscape.



Physical Model: Watercolor painted brick wall, mixture of rockite and acrylic paint for green "concrete" wall. GIF: <https://shorturl.at/asAEQ>

INTERVENTION AXON



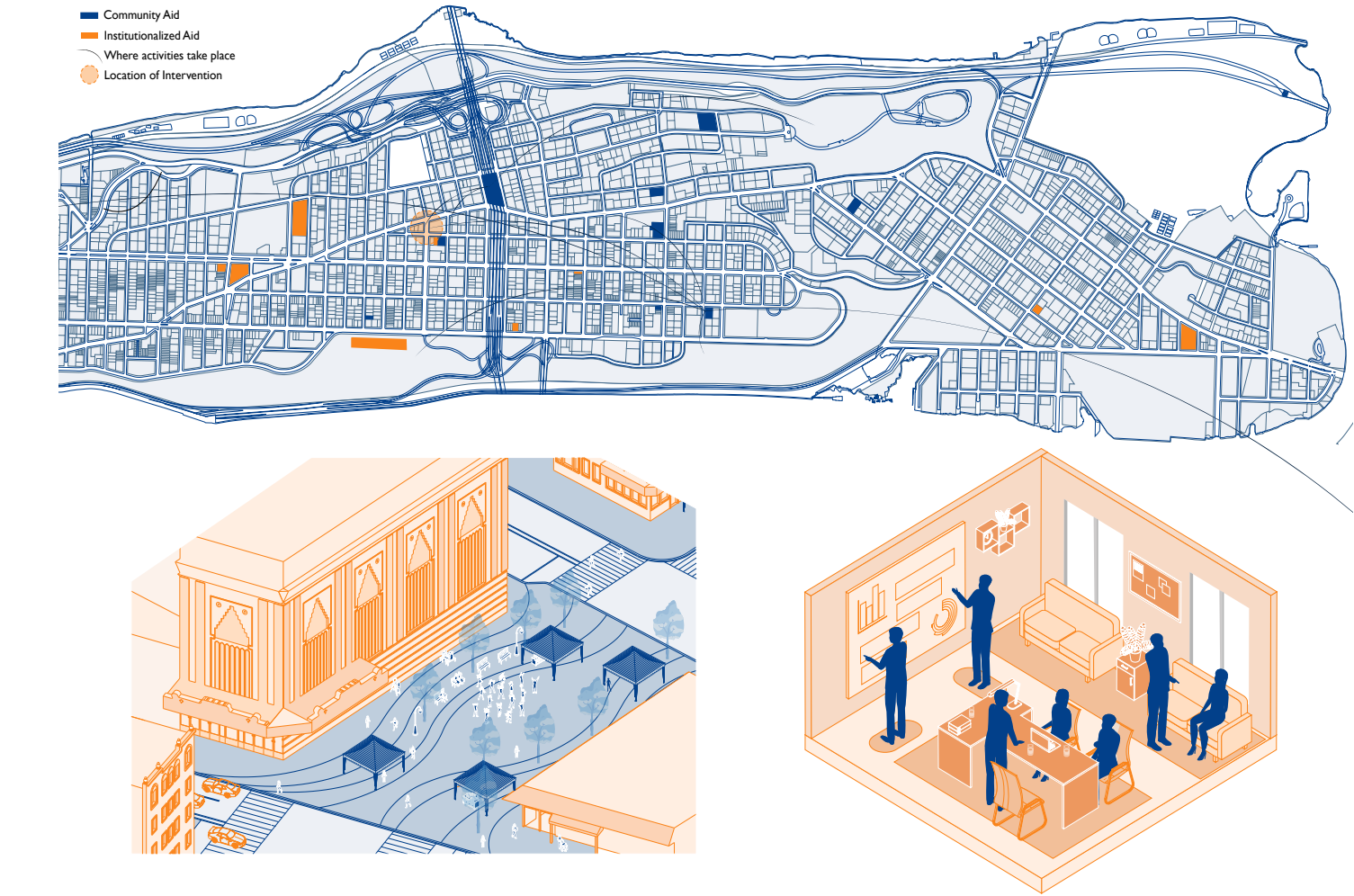
PROJECT VIEWS



View from inside the lobby



View from main lawn



The Fluctuating Boundary

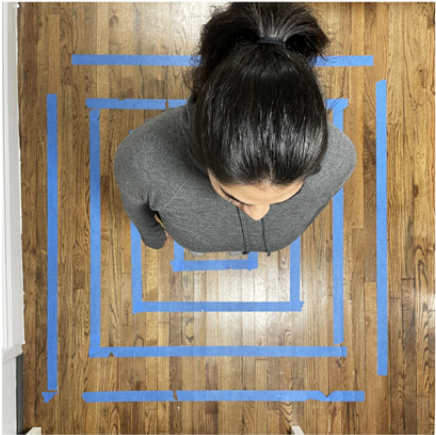
Location: Plaza de las Americas, Washington Heights, NYC
Professors: Patti Anahory

For this studio, I examined the cultural dynamics of Washington Heights and Inwood by studying the role of institutions and community-based organizations. I found that institution-based organizations primarily focused on promoting economic activities, while community-based organizations focused on expanding culture through activities such as food, conversation, music, and dance. I chose to focus on dance, specifically Zumba, as an example of how a cultural activity can become commodified and become part of the economic fabric of the United States. Zumba, which is a combination of various culturally-developed dances, has begun to be reclaimed by community groups and returned to its cultural roots. I chose to continue my project by analyzing La Plaza de las Americas as it is a space that hosts community-based dance events in front of the United Palace theater. Through studying the space, I saw the tension between the cultural and commodified dance represented in the space and proposed an intervention that aims to reclaim

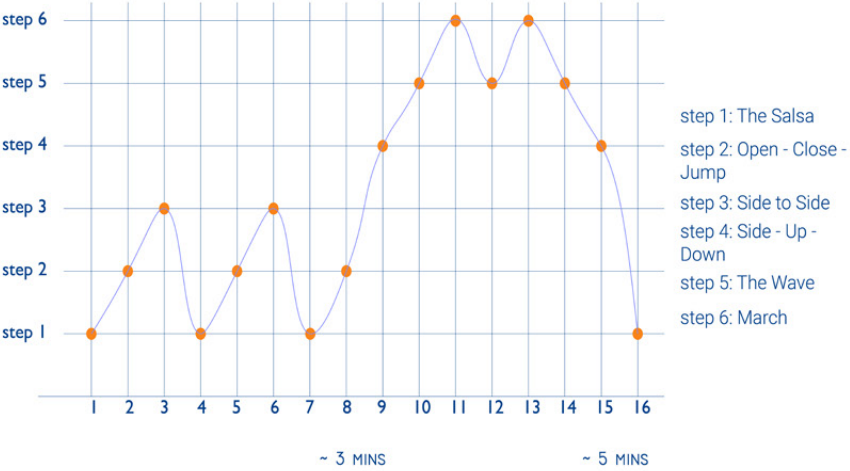
the United Palace for the community at large by making it more closely integrated with the culturally-motivated outer plaza and alleviating the economic incentives driving the commodification of the local culture. My plan includes making the United Palace's wall ,that borders the plaza, semi-porous and centering the Palace's entries and exits on the plaza, creating a semi-public space, replicating an existing inner balcony on the upper level of the structure, creating a vertical stage with the plaza at its center, and allowing local vendors to use the now-porous lobby to expand their footprint.

ZUMBA ANALYSIS

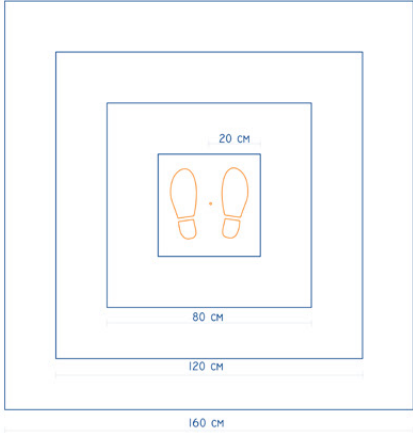
Top View



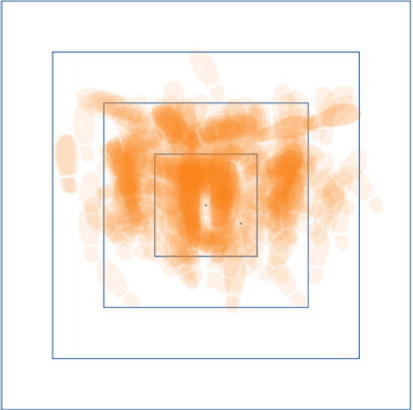
Order of Steps



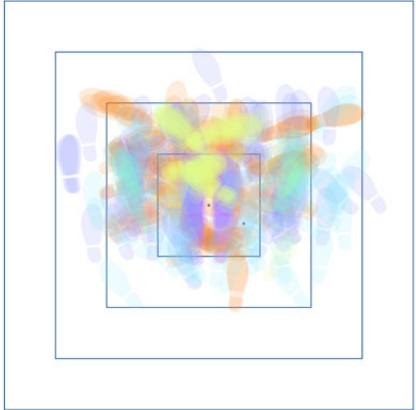
Metrics



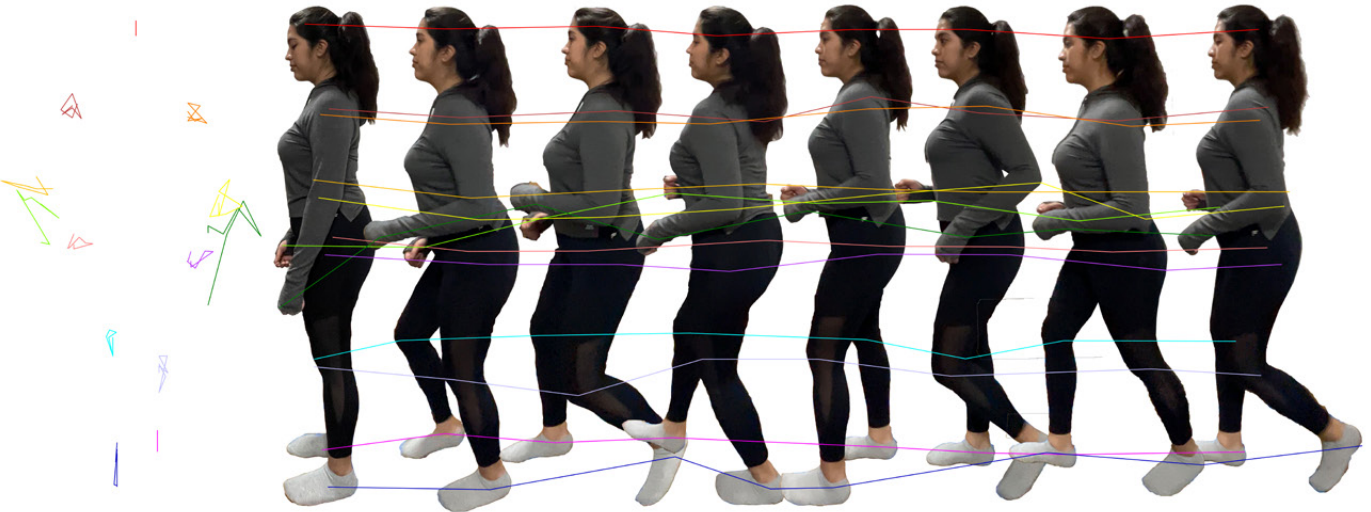
Overview of Dance



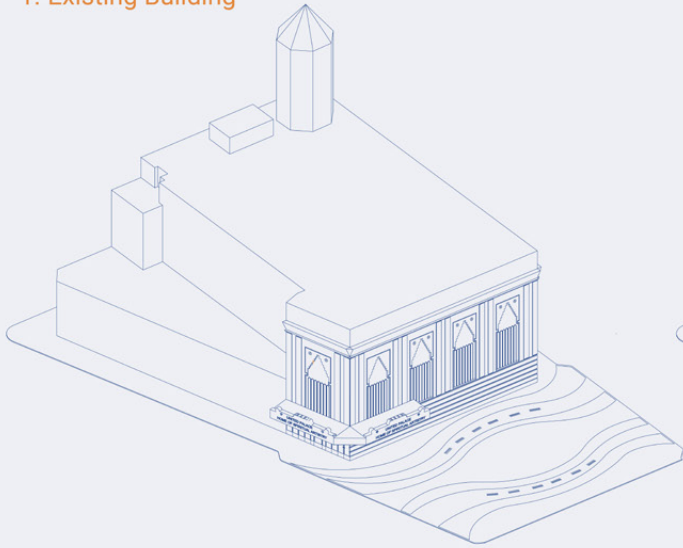
By Different Steps



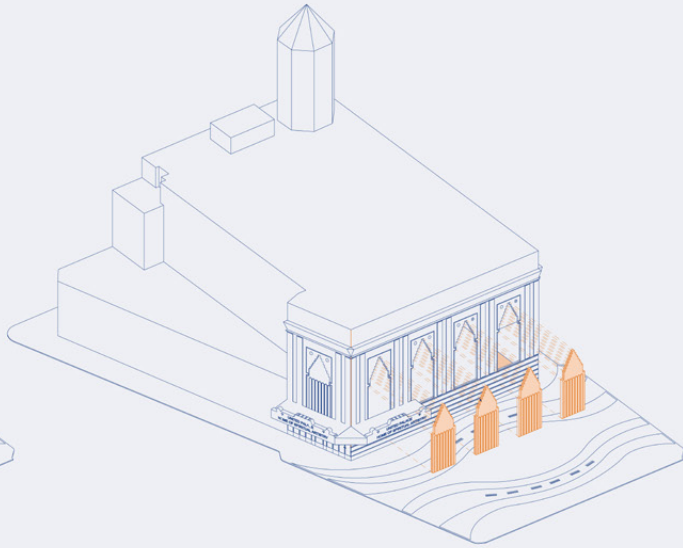
Sequence of Step 1 - Joint Movement



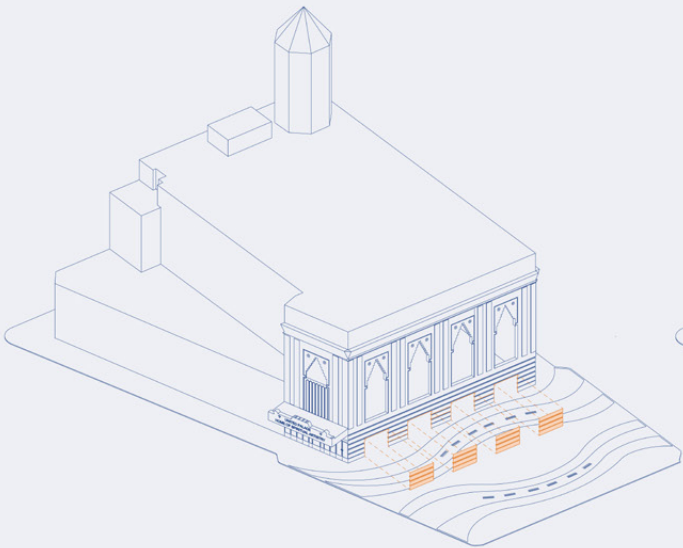
1. Existing Building



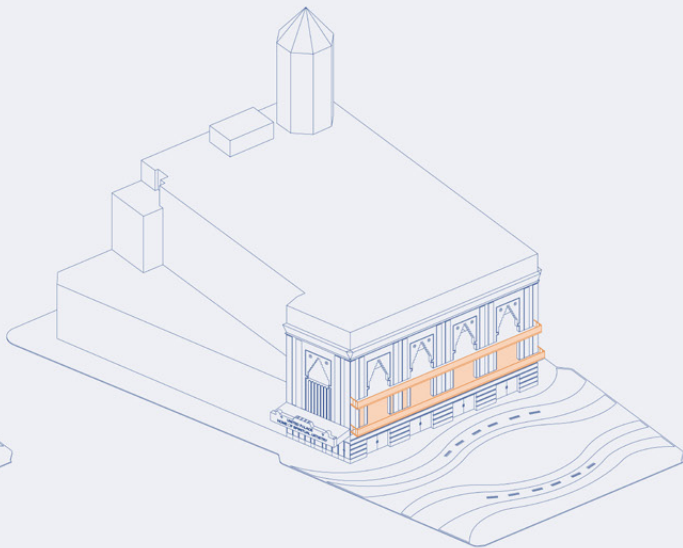
2. Perforation



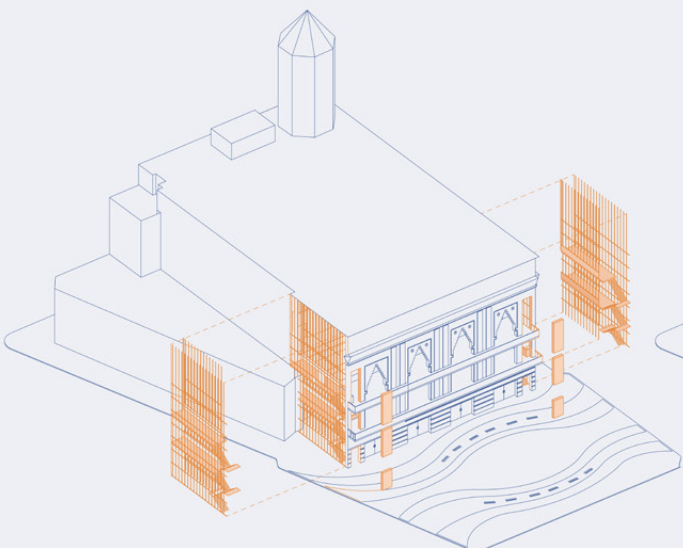
3. Entrance through Plaza de las Americas



4. Balconies (Vertical Theatre)



5. Vertical Circulation



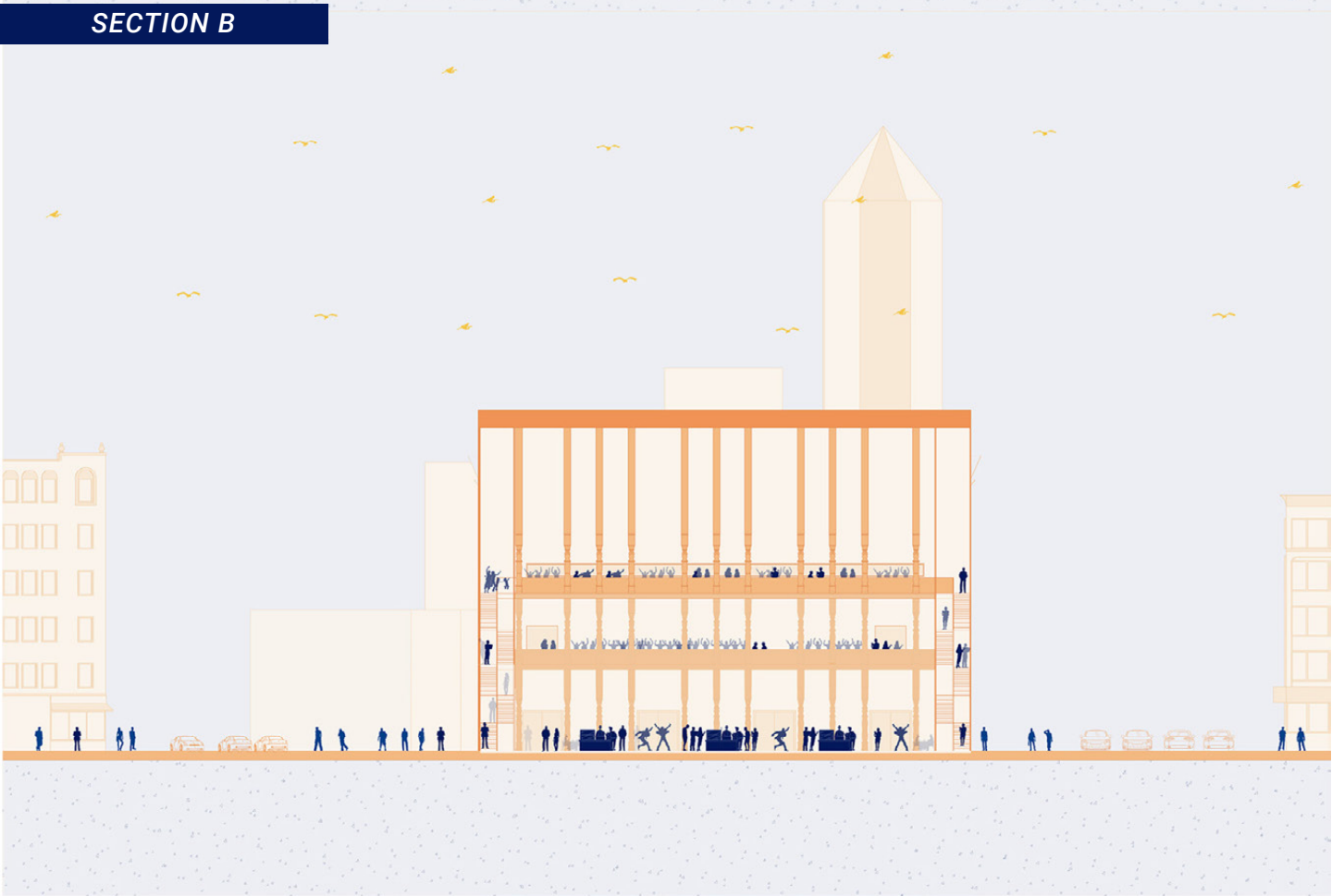
6. Final Intervention

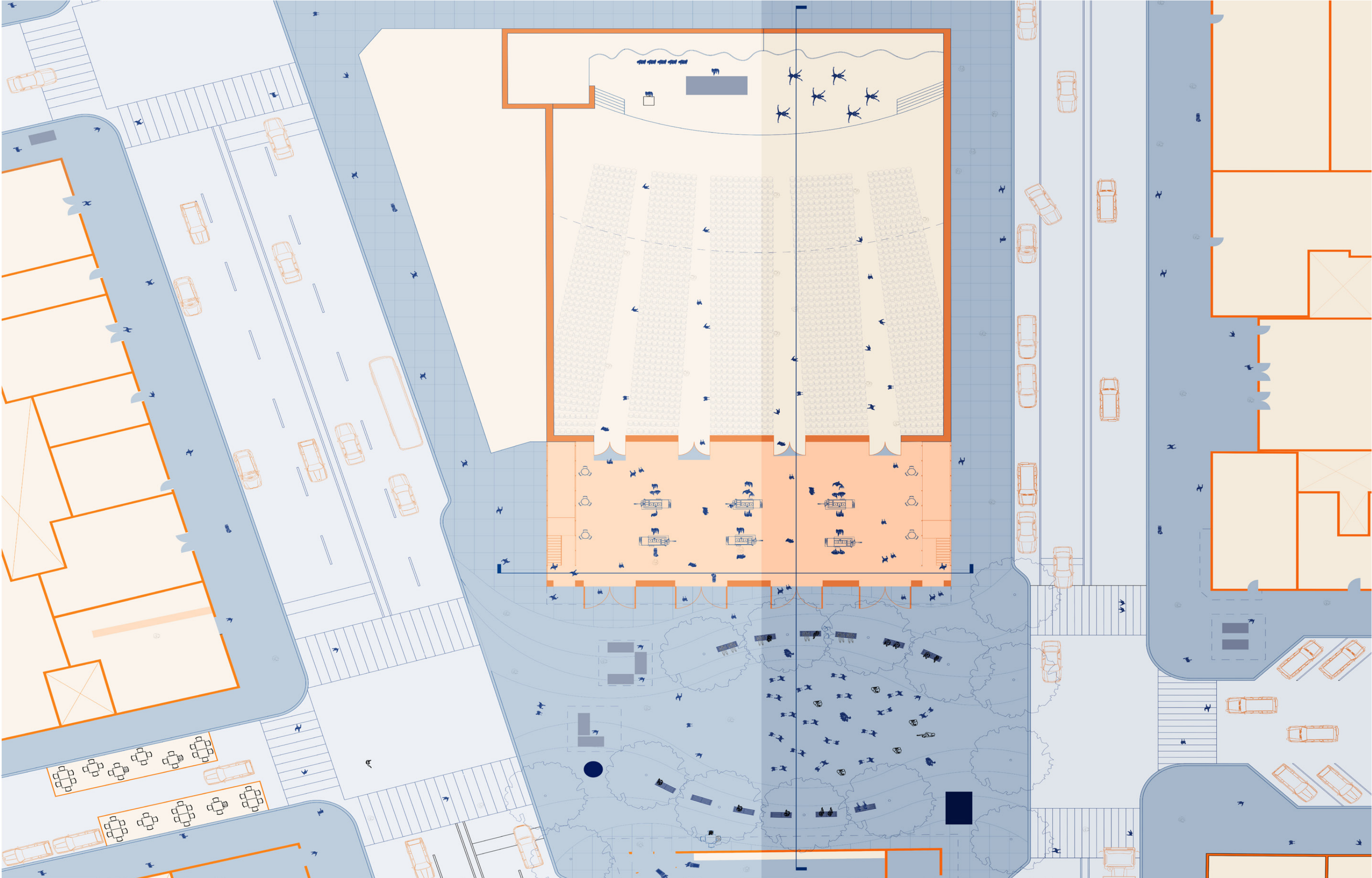


SECTION A



SECTION B







Protest Urbanism

Location: Newark, New Jersey

Professors: Travis Allen, Ayumi Sugiyama, Michael Esposito, Aaron Davis

Collaborators: Jordan Howard, Bryce Emerson, Claire Navin

Project Architectural Design: Jordan Howard

This urban development project, centered on Dr. Martin Luther King Jr. Blvd in Newark, repurposes a historically contentious street into a pedestrian sanctuary, reinforcing its role as a platform for communal expression. The design incorporates the phrase “Abolish White Supremacy, All Black Lives Matter” from previous Black Lives Matter protests into the new streetscape, now reimagined as a walkway and seating area. In Tech IV: Integrating Building Systems, we focused on the seamless integration of structural, facade, mechanical, and architectural systems to support this community-focused initiative.

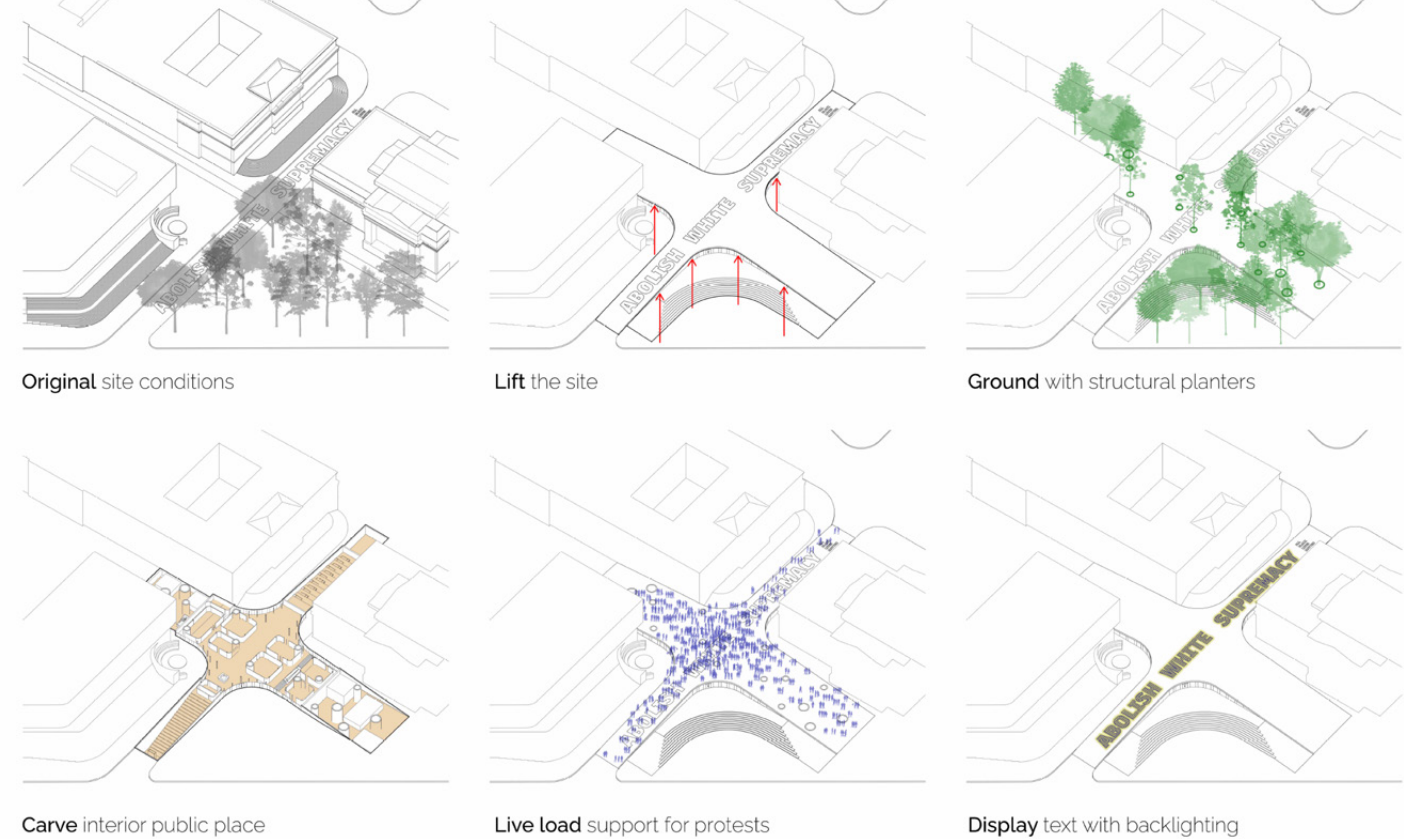
The project’s structural design includes a robust concrete slab supported by multifunctional columns that not only sustain the structure but also enhance the urban tree canopy and serve as planters. An occupiable green roof plays a dual role, managing stormwater and creating a communal space. It captures rainwater effectively, which is then used both for the building’s water needs and to feed a geo-exchange

system that provides efficient heating. Architecturally, the introduction of curved glass facades significantly increases visibility and connectivity, fostering an inviting and open atmosphere that encourages community interaction.

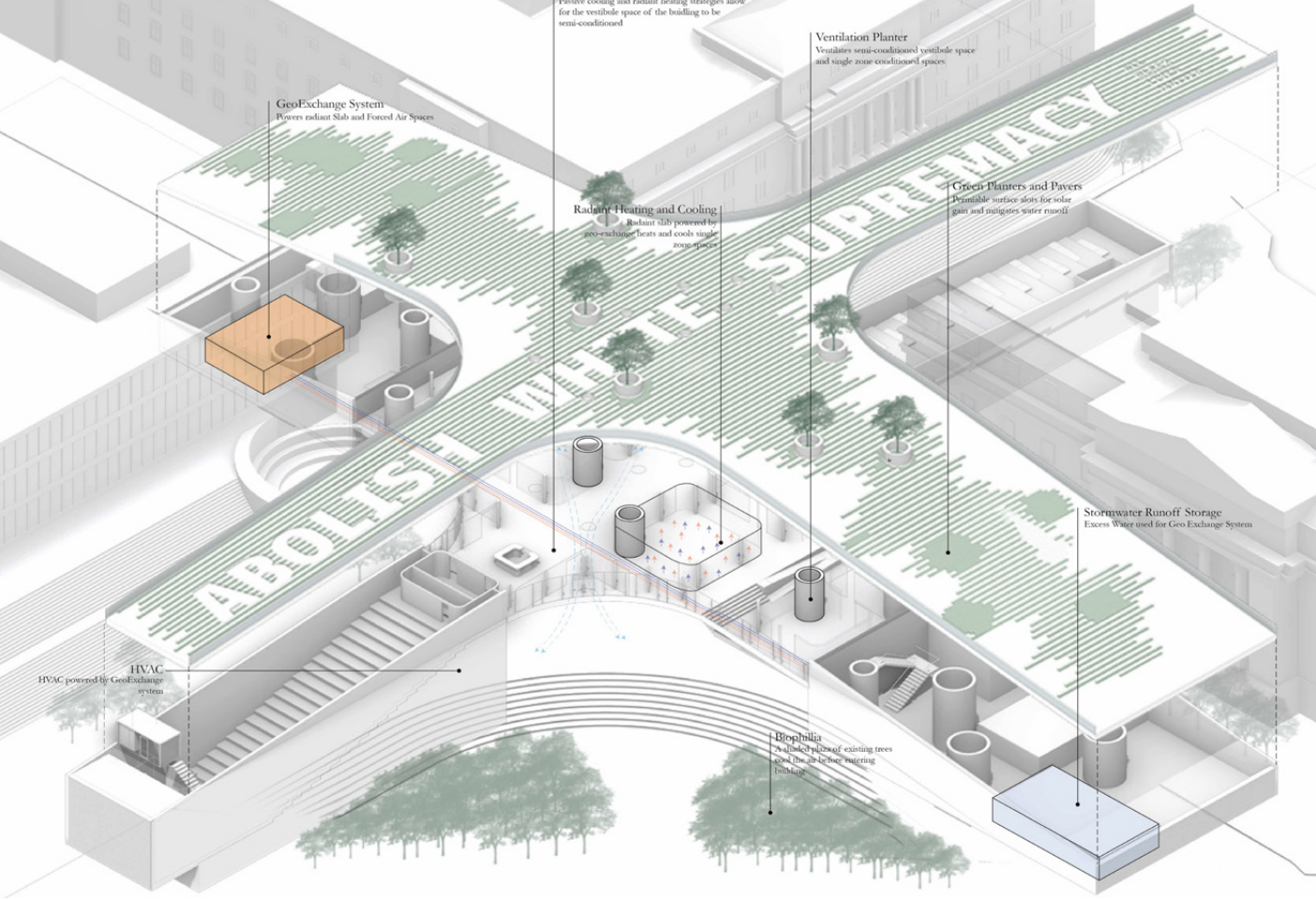
On the mechanical front, the project employs PV backlit panels that illuminate the impactful BLM lettering, ensuring night-time visibility and adding a sustainable element to the streetscape. Additionally, the careful placement of shaded plazas and a semi-conditioned glass vestibule optimizes the building’s microclimate. This strategic design significantly reduces the load on HVAC systems, enhancing overall energy efficiency.

By integrating these systems, the project not only meets environmental goals but also serves as a beacon of community resilience and solidarity, reinforcing the urban landscape’s role in promoting societal change and civic engagement.

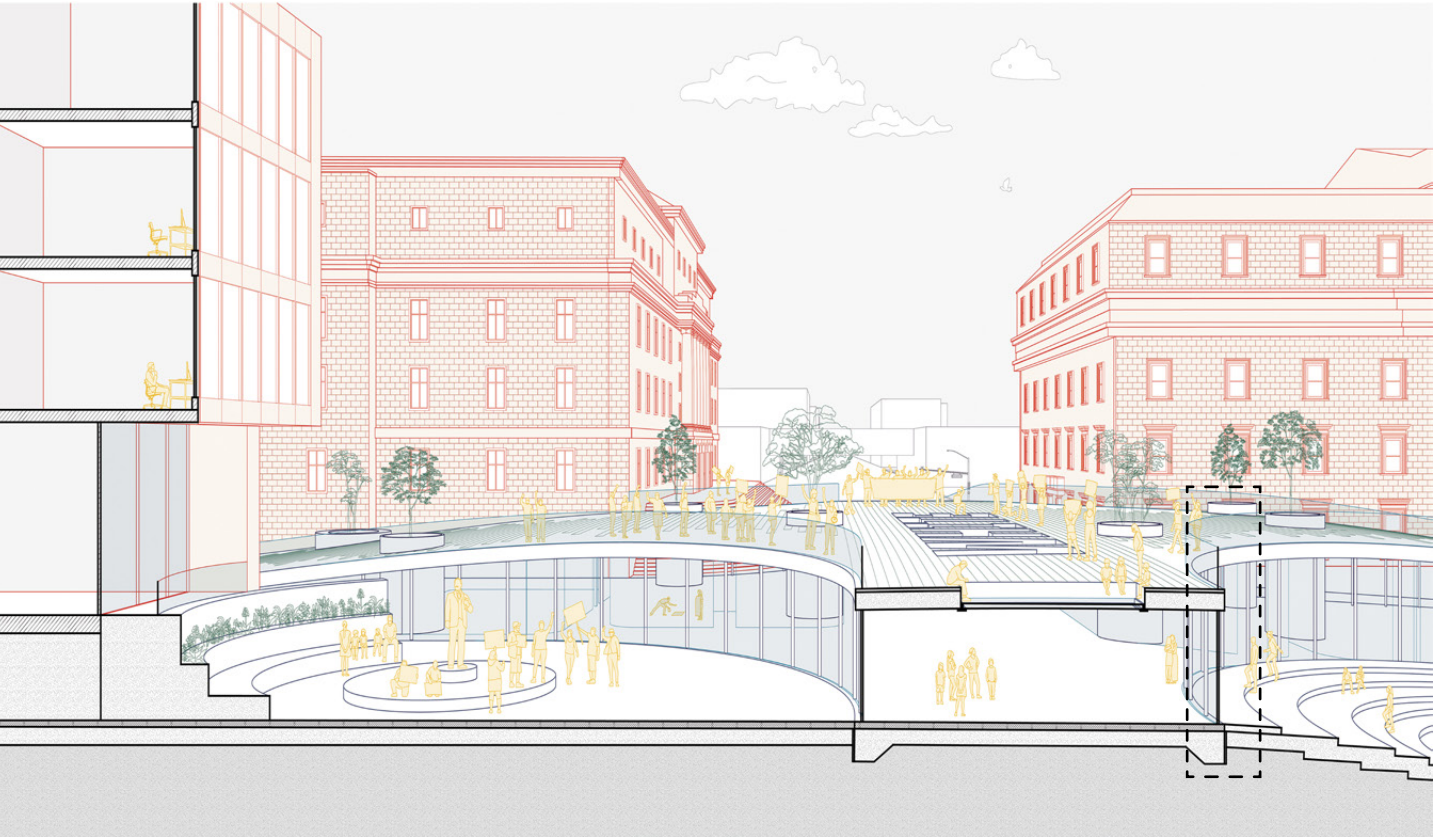
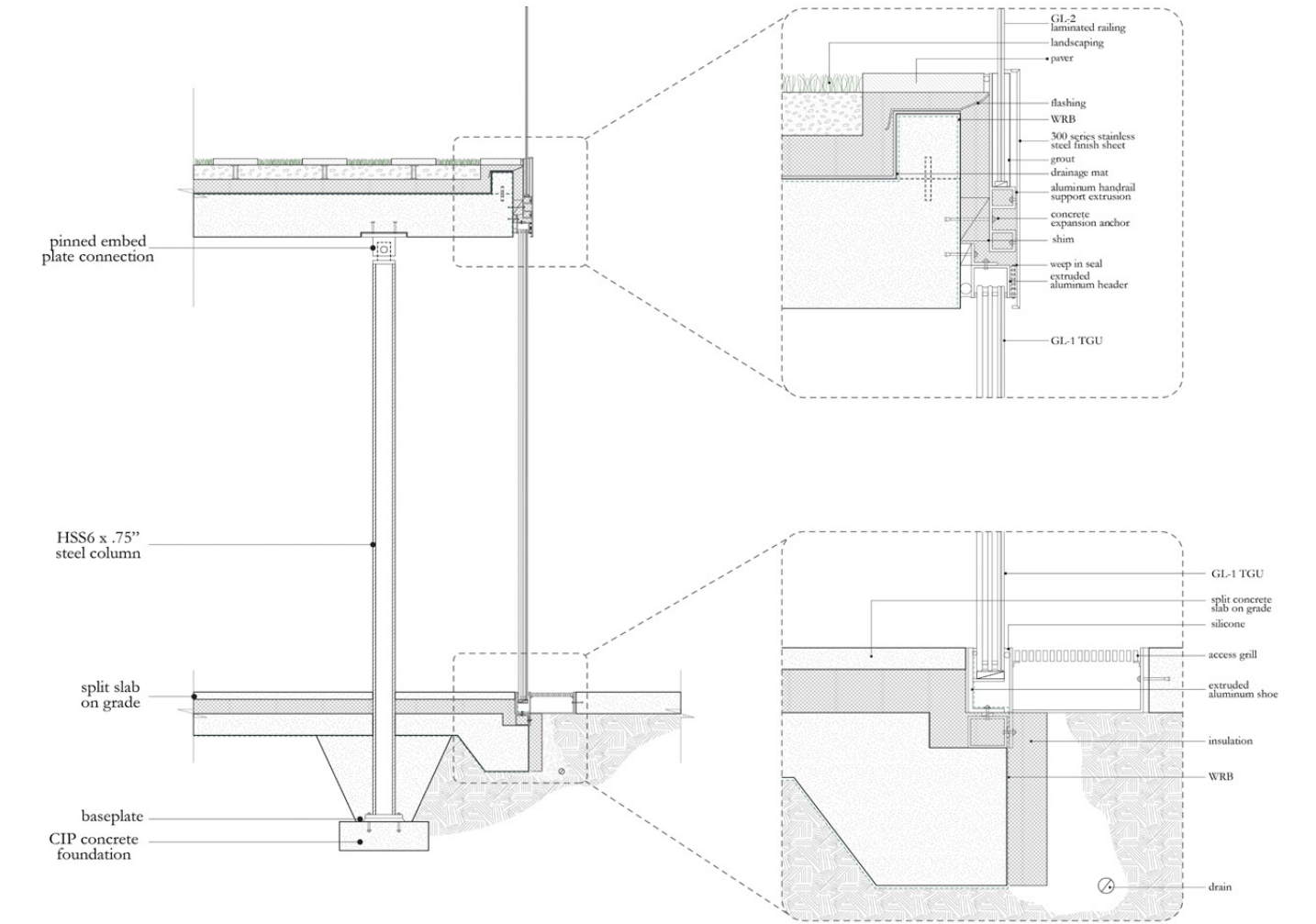
DESIGN STRATEGIES



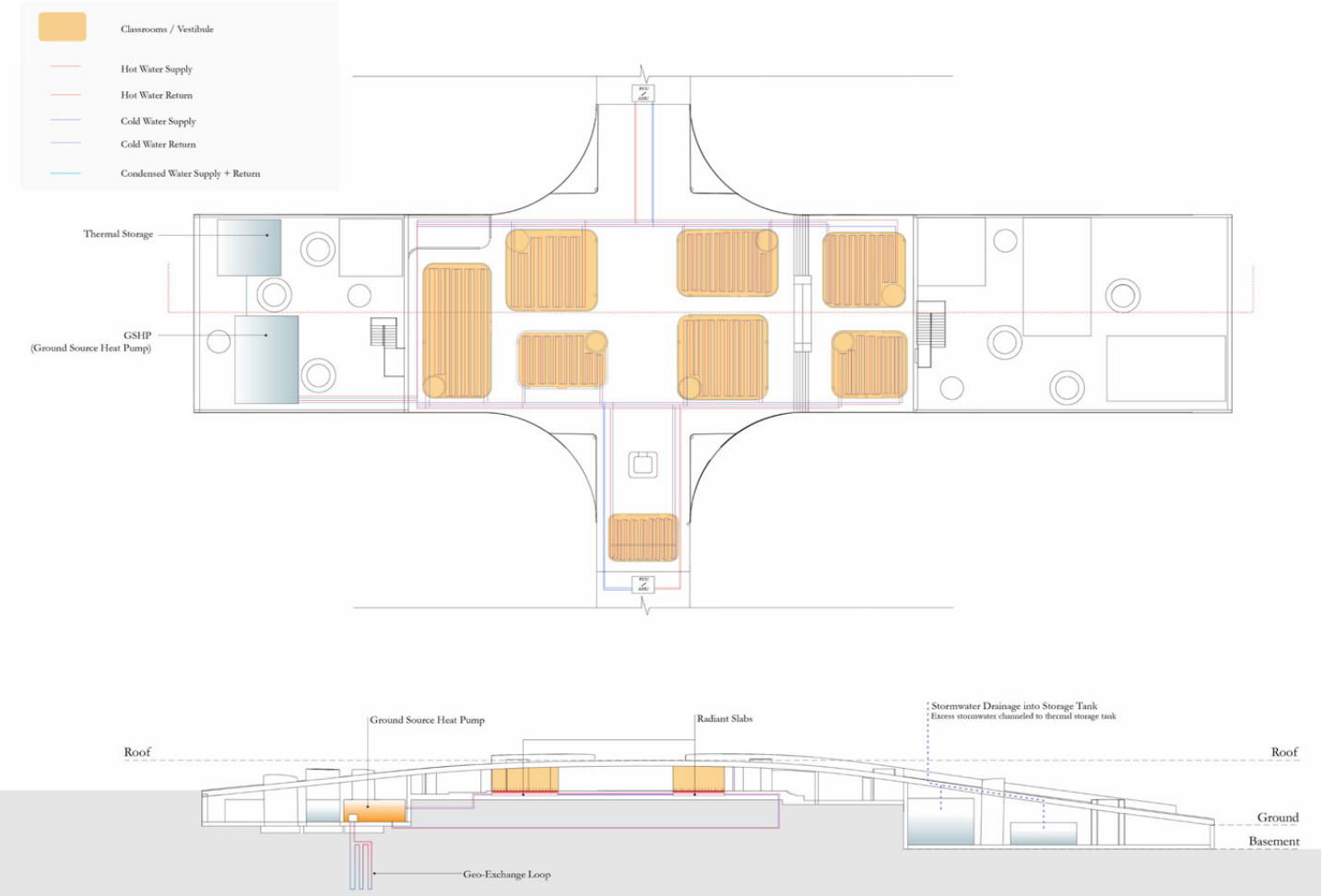
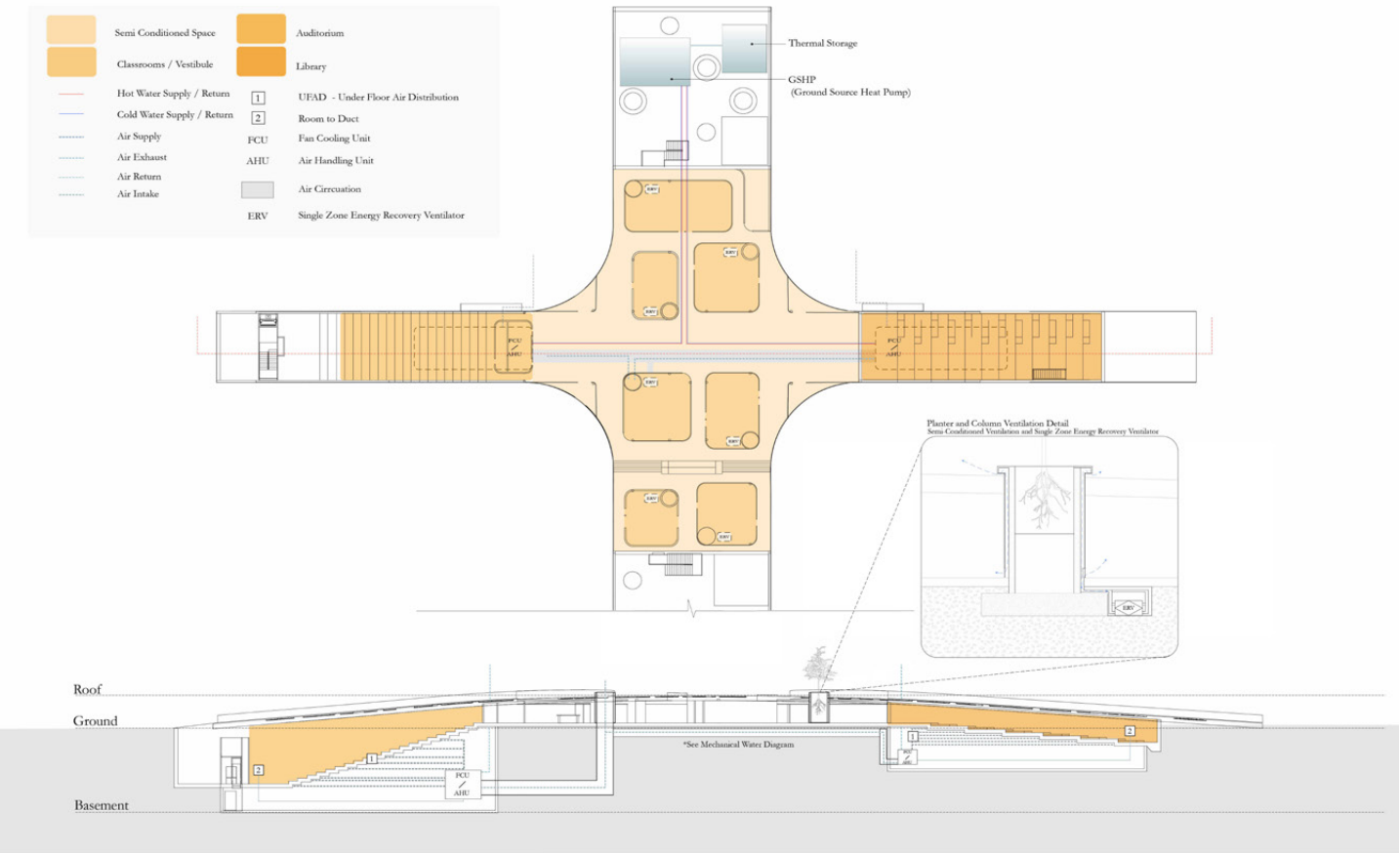
SUSTAINABILITY DIAGRAM



FACADE DETAIL & SECTION



MECHANICAL SYSTEMS (AIR & WATER)

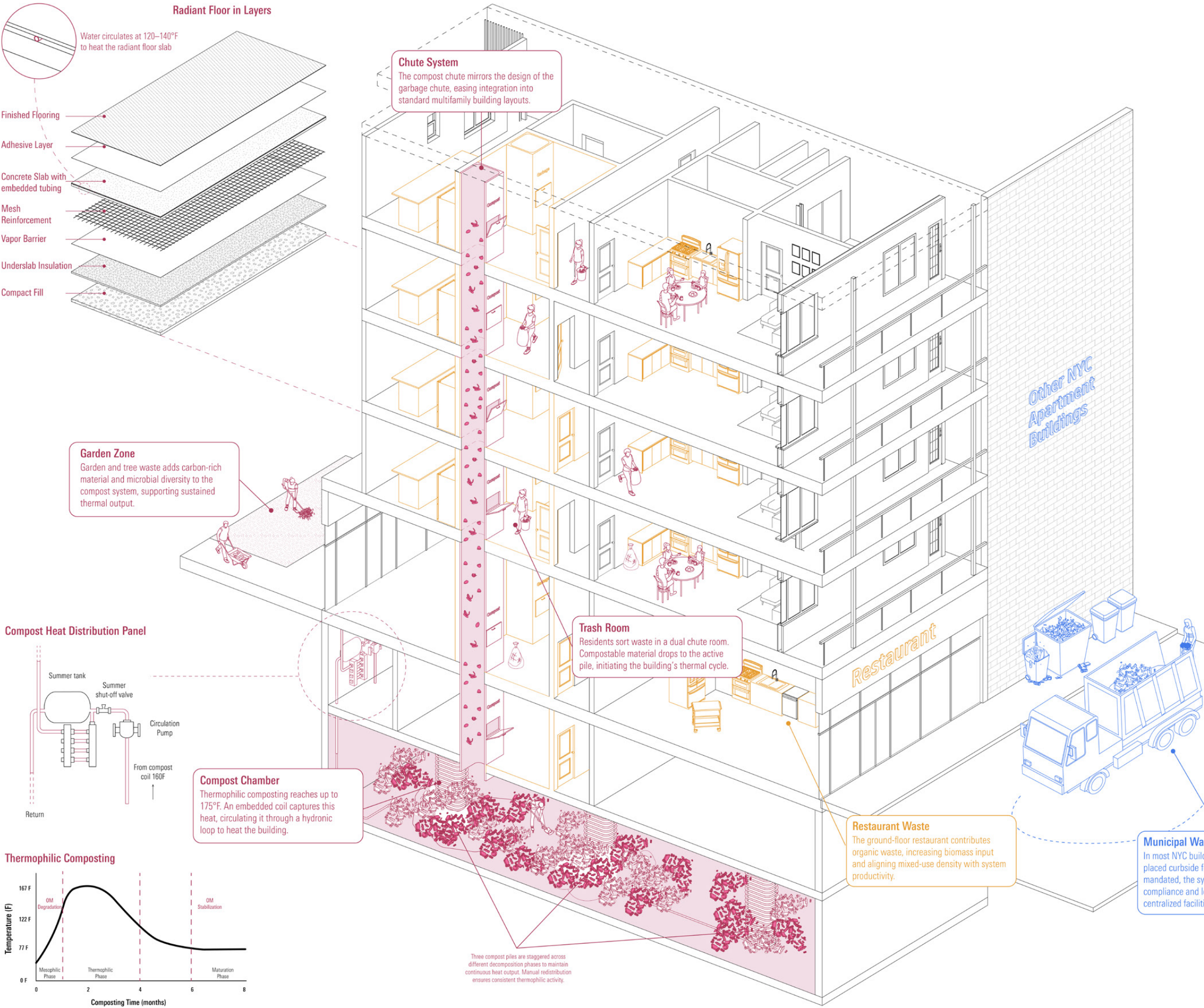


Entropic Housing

Location: New York City Housing
Professor: Michael Bell
Class: Re-scaling Housing

Entropic Housing reimagines the multifamily building as an ecological system that produces its own heat through aerobic composting. Within the context of New York City’s 2023 composting mandate and Local Law 97, the project integrates waste and energy by embedding a thermophilic composting chamber in the basement. Organic waste from residents and a ground-floor restaurant is deposited through a dedicated chute into an insulated, air-managed room. There, microbial activity generates temperatures between 140°F and 160°F. A hydronic coil captures this heat and circulates it through a closed-loop system that heats radiant floors.

In contrast to anaerobic digestion, which requires sealed chambers and produces biogas, aerobic composting is safer and more adaptable to building systems. The system is calibrated for multifamily housing, where waste generation is consistent year-round. By transforming waste into energy on-site, *Entropic Housing* reduces emissions, supports compliance with local policy, and proposes a replicable model for integrating biological processes into future urban infrastructure.



As of 2024, fewer than 10% of NYC’s compostable waste is actually composted. Limited infrastructure and high contamination rates hinder effectiveness.

- Legend**
- Compost System Actors and Activities**
Individuals or moments directly engaged with compost production, transport, and thermophilic transformation
 - Contributing Domestic and Programmatic Spaces**
Areas that generate consistent biomass inputs, supporting the compost-energy loop
 - Conventional Waste Infrastructure**
Current municipal system, externalized waste processing, and non-integrated energy cycles

