

ARCHITECTURAL PORTFOLIO

ANNIE AN

GSAPP M.ARCH + MS.HP WORK

2022-2026

C O N T E N T S



GEOGRAPHIES OF
THE URBAN NIGHT

M.ARCH Core I



URBAN FARMING AS
SENSORY THERAPY

M.ARCH Core II



122 APARTMENTS IN
NYC

M.ARCH Core III



DETERRITORIALIZED
SANCTUARY

M.ARCH ADV IV



THE EMBASSY:
PRINTING HOUSE

M.ARCH ADV V



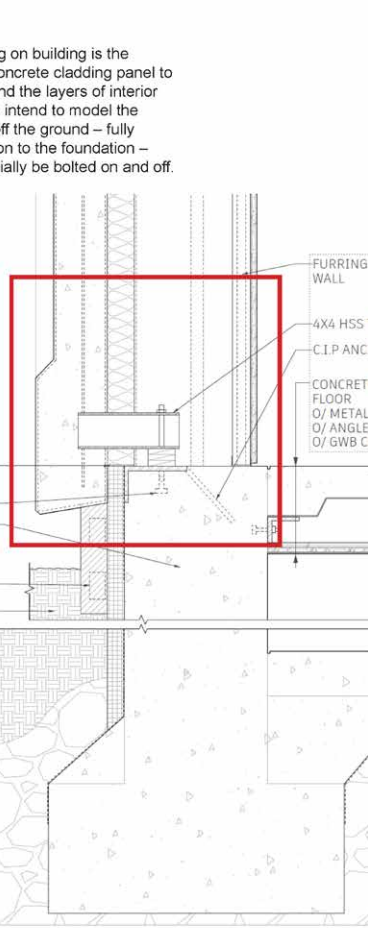
OYSTER SHELL
WASTE FOR COASTAL
ADAPTATION

M.ARCH ADV VI



1:1 SCALE
CONSTRUCTION

Spring 2026



PRE-CAST FACADE D
HELTER SHELTER

TECH III, IV, V



FUJIAN TU LOU

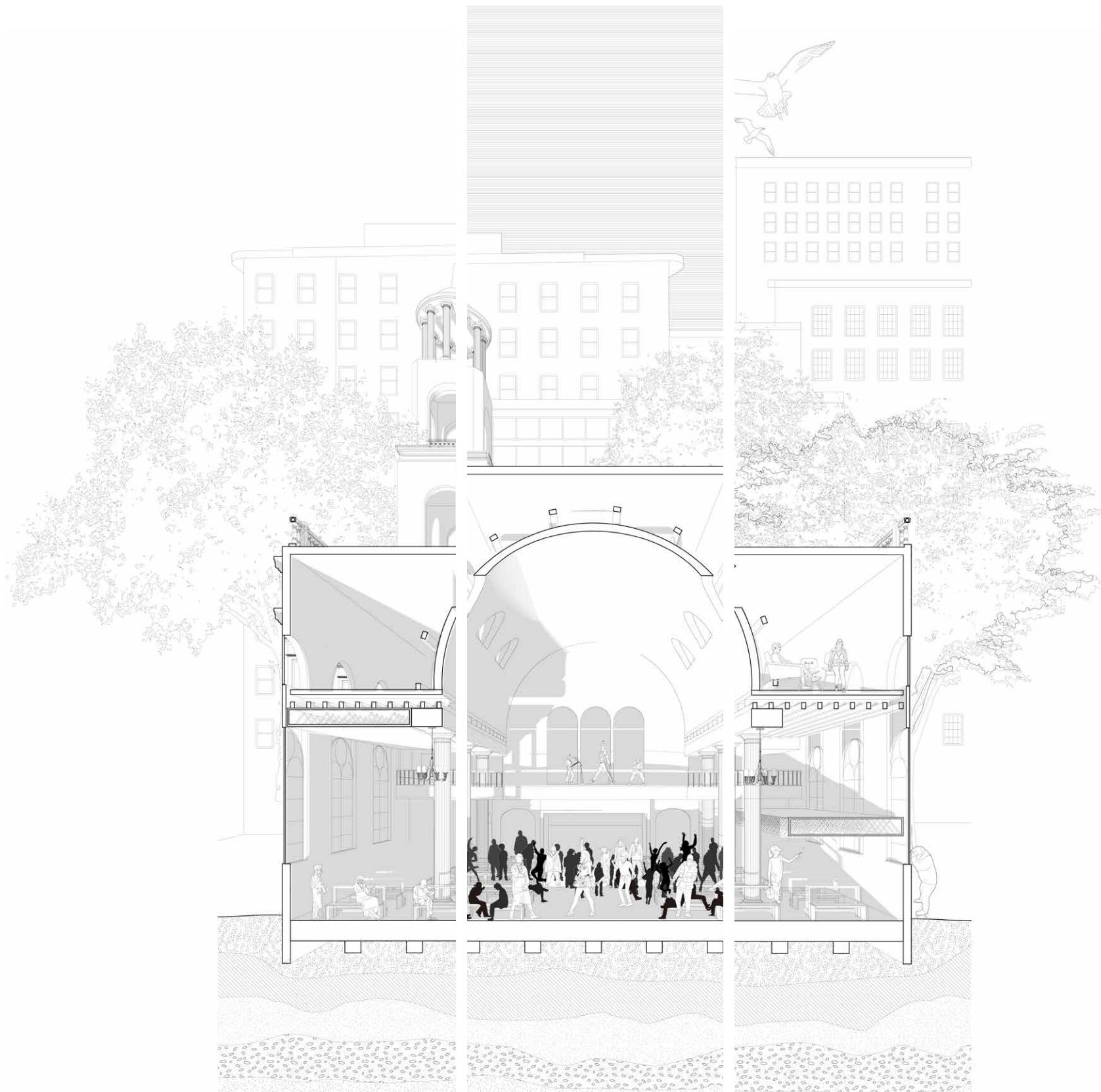
ADR I



ARCHITECTURAL
GILDING IN GILDED
AGE AMERICA

MS.HP THESIS

* ALL DRAWINGS CONTRIBUTED BY PROJECT PARTNER WILL BE INDICATED IN IMAGE CAPTION



01

GEOGRAPHIES OF THE URBAN NIGHT

YEAR: CORE I FALL 2023 | TYPE: INDIVIDUAL |

INSTRUCTOR : KEVIN HAI PHAM

INVESTIGATION OF URBAN HETEROTOPIA

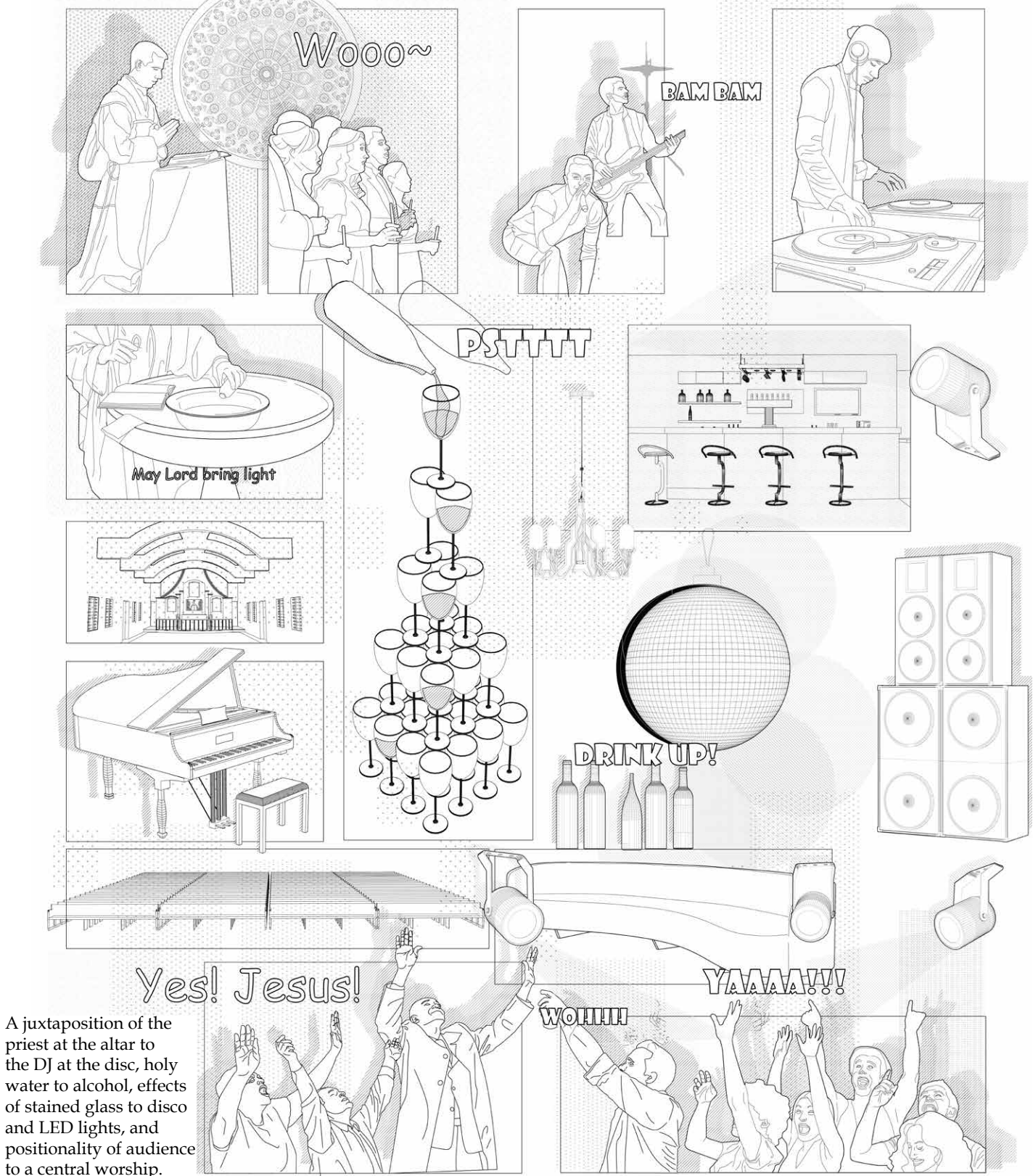
"Thus we arrive at the following definition: A religion is a unified system of beliefs and practices relative to sacred things, that is to say, things set apart and forbidden – beliefs and practices which unite into one single moral community called a Church, all those who adhere to them."

- Emile Durkheim

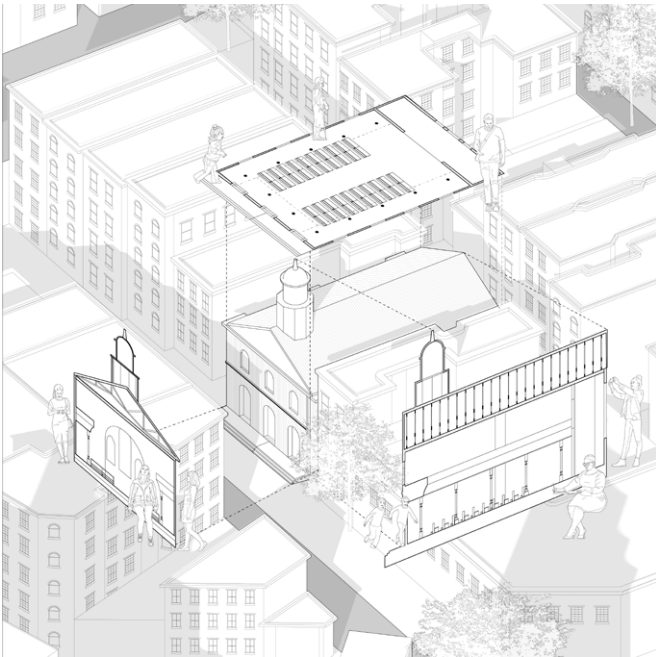
Nightlife spaces are a form of escape from the mundane --where people can explore other modes of being. These spaces often encourage and challenge what the respective society considers "normal" during the day. My design juxtaposes the two environments in which the sacred and illicit activities occur – the church and the nightclub. The collective consciousness of society used to be religion as a common belief, as society becomes more secular, this collective consciousness becomes more diluted – but many do find common worship in the even more abstract feeling obtained from being in nightclubs and the phenomenological experience evoked.

The design proposes a network of adapted churches - the refunctionalization of peripheral urban structures as night time escape spots. Through simple intervening methods, the ease of conversion between two seemingly different programs is demonstrated.

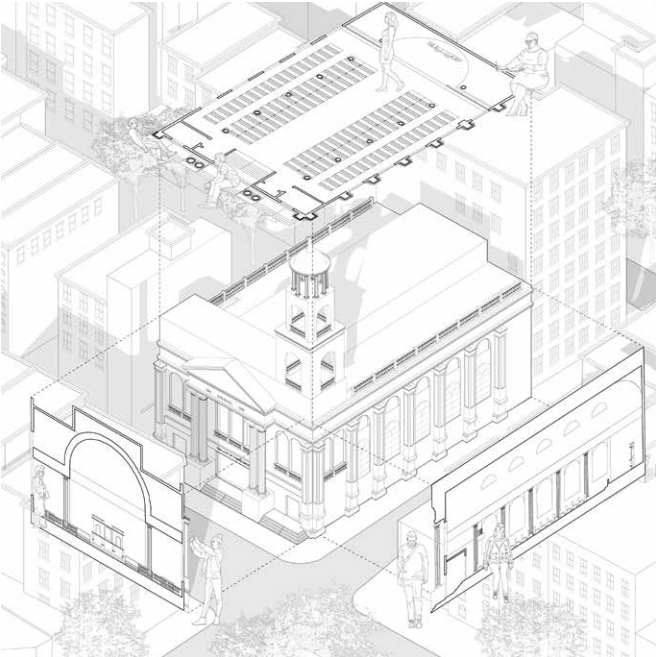
PART 1: SPATIAL AND FUNCTIONAL COMPARISON BETWEEN CHURCH AND NIGHTCLUB



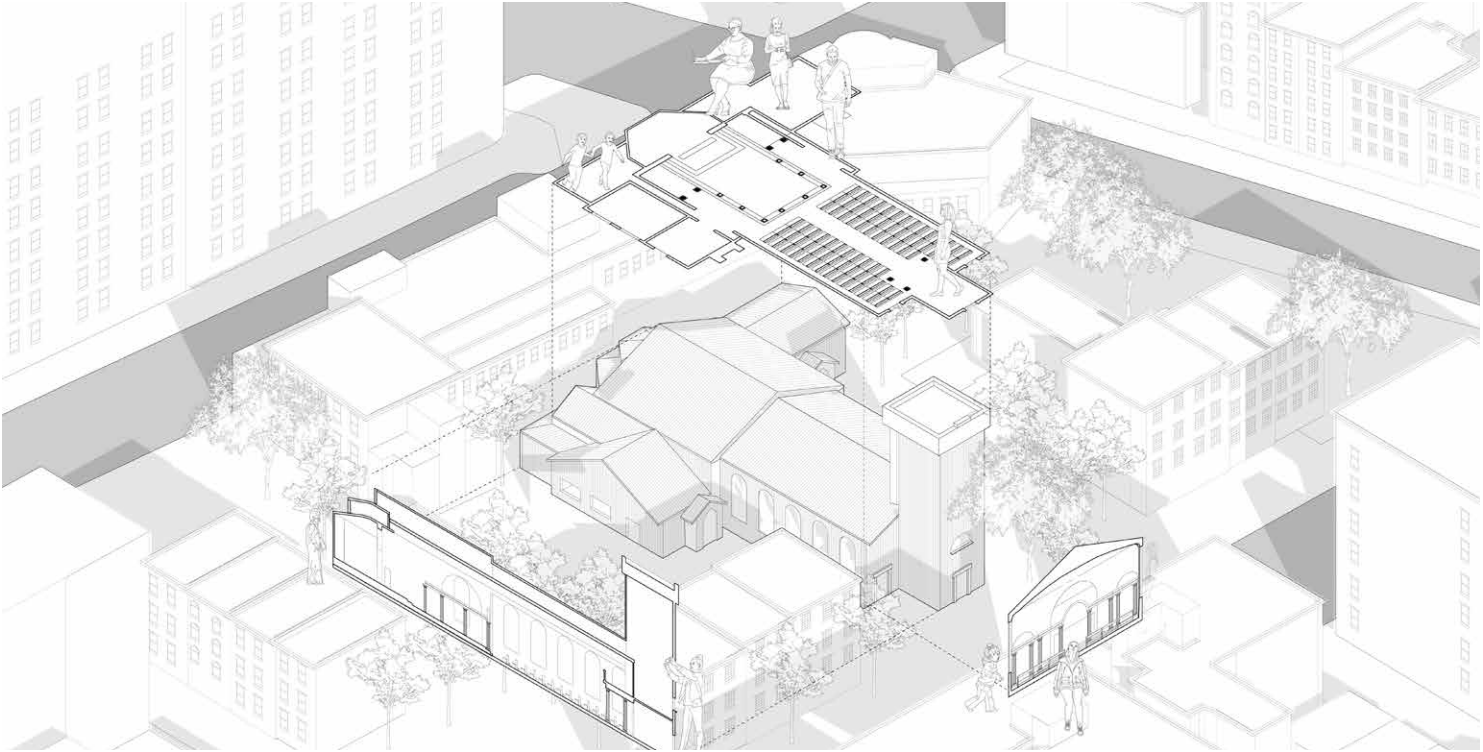
A juxtaposition of the priest at the altar to the DJ at the disc, holy water to alcohol, effects of stained glass to disco and LED lights, and positionality of audience to a central worship.



St. John's Lutheran
81 Christopher Street, NYC



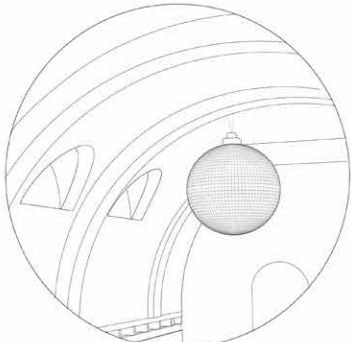
Our Lady of Pompeii Church
25 Carmine Street, NYC



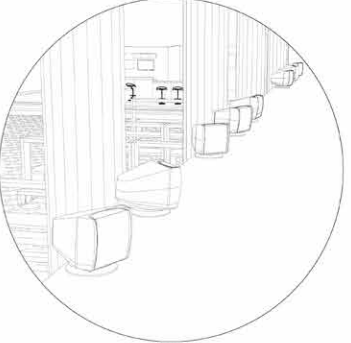
St. Luke in the Field Church
487 Hudson St, NYC

PART 2: DESIGN STRATEGY

PERSISTING OBJECTS



DISCO BALL



LIGHTS



MURAL

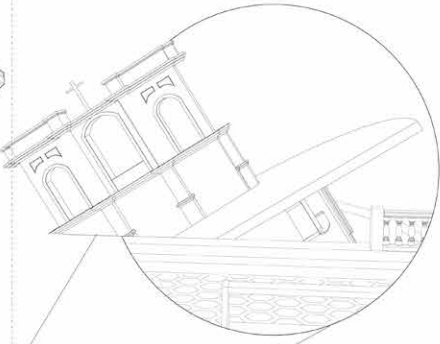


FIGURES OF JESUS

DESIGN STRATEGIES



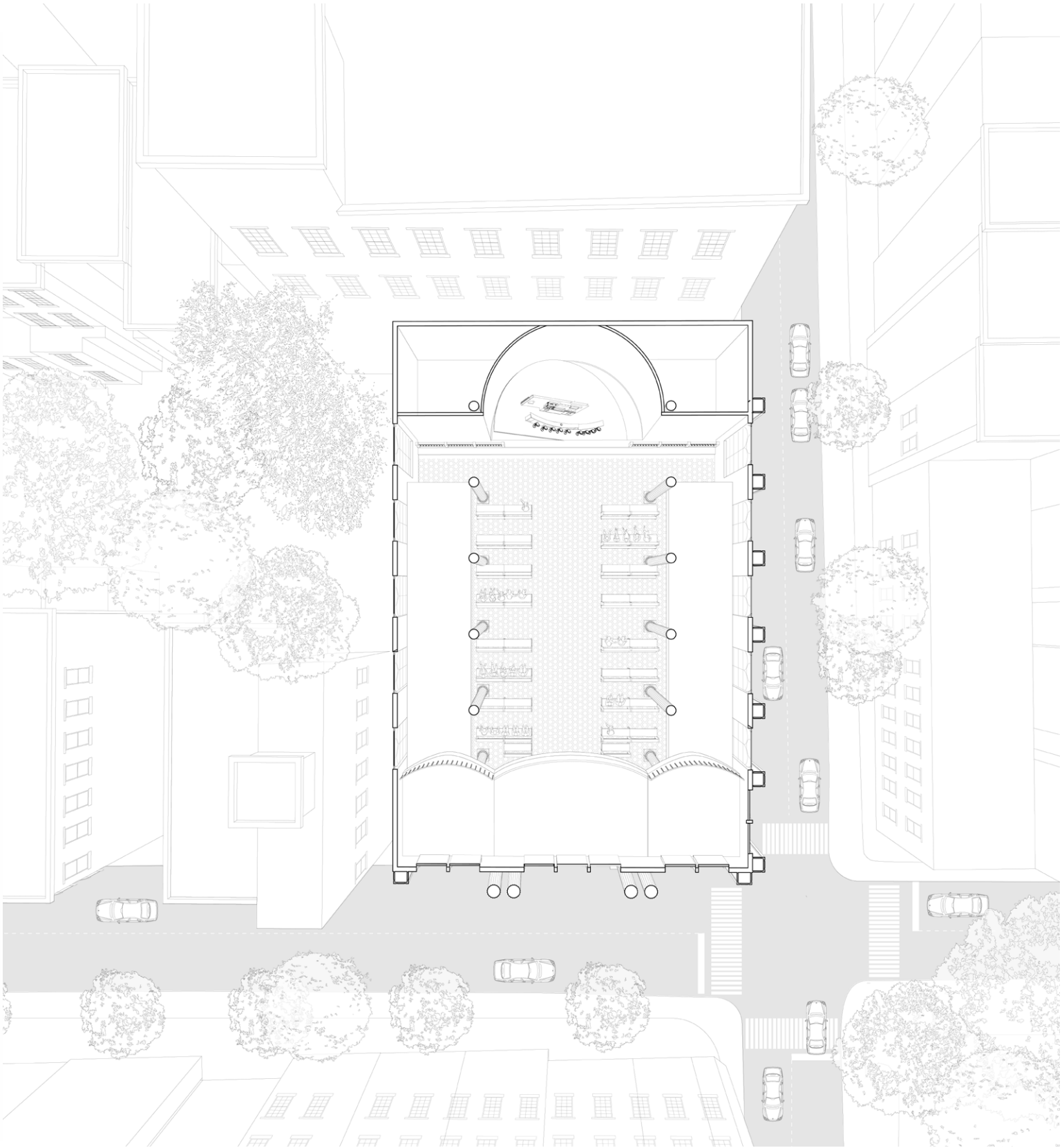
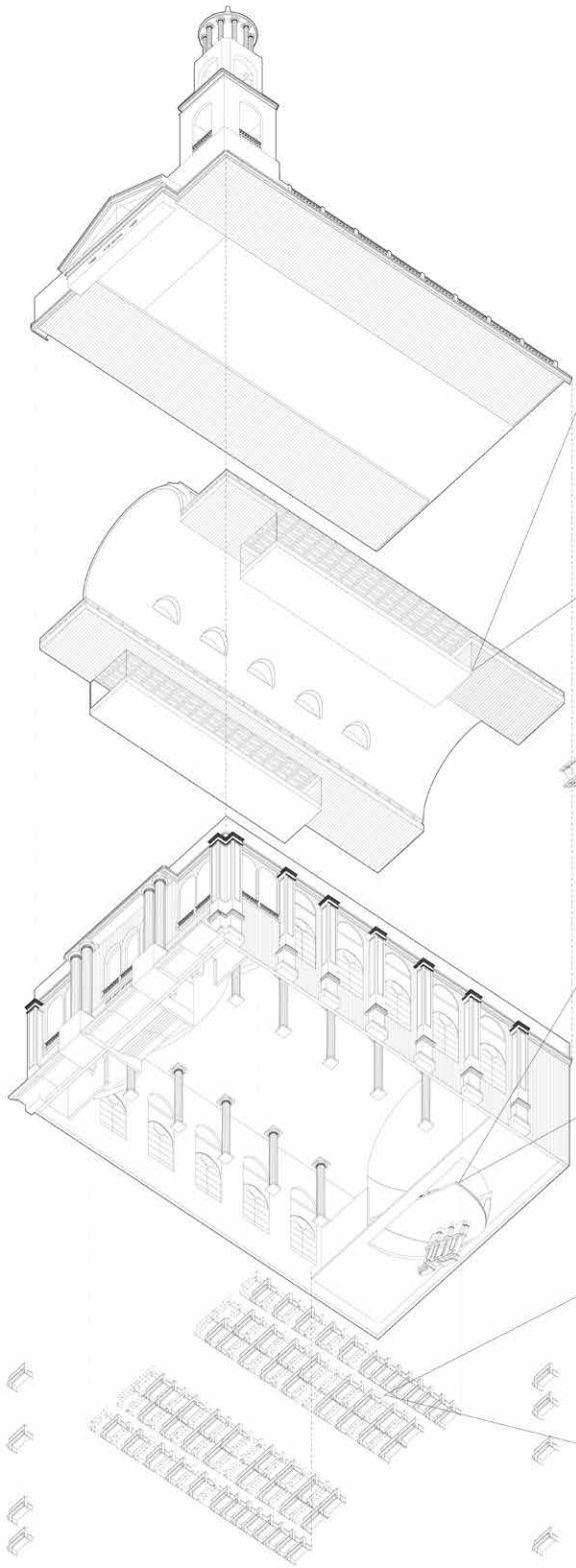
SUSPENSION



ROTATE



REMOVAL







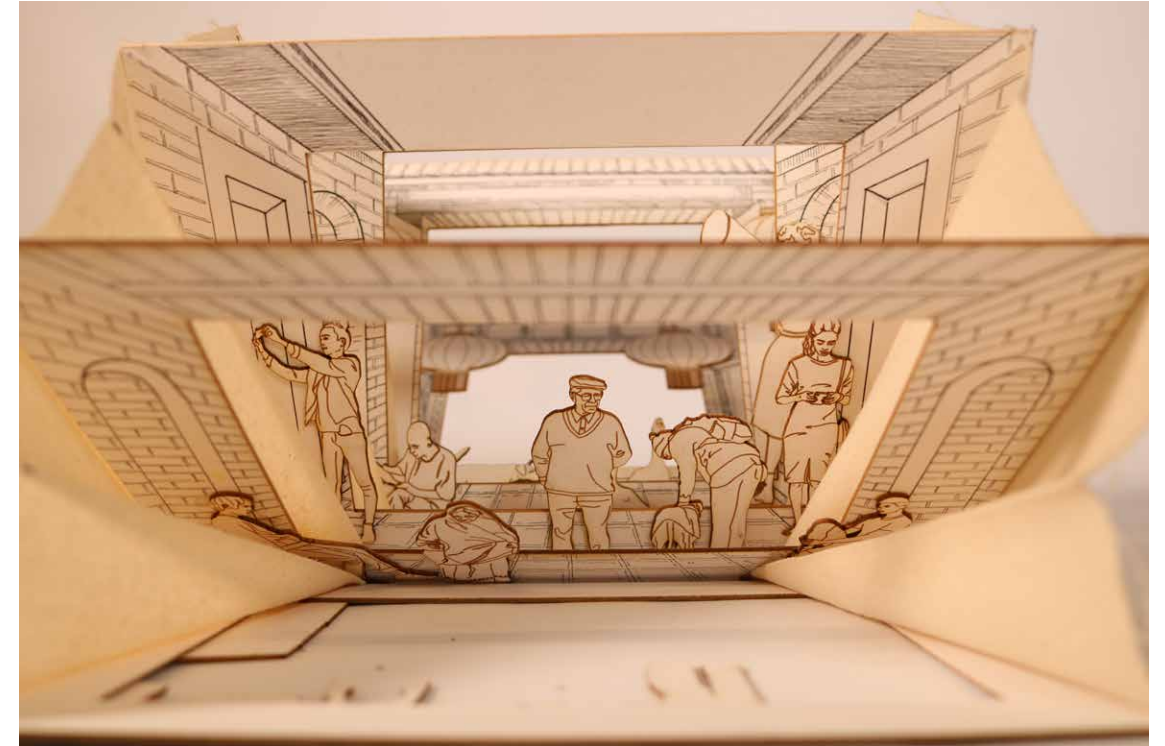
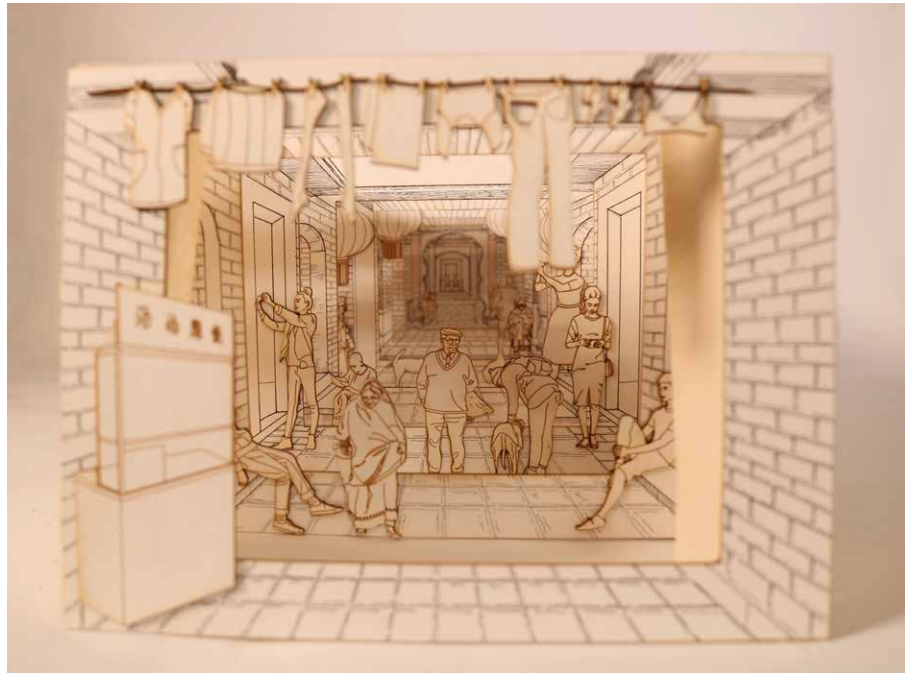
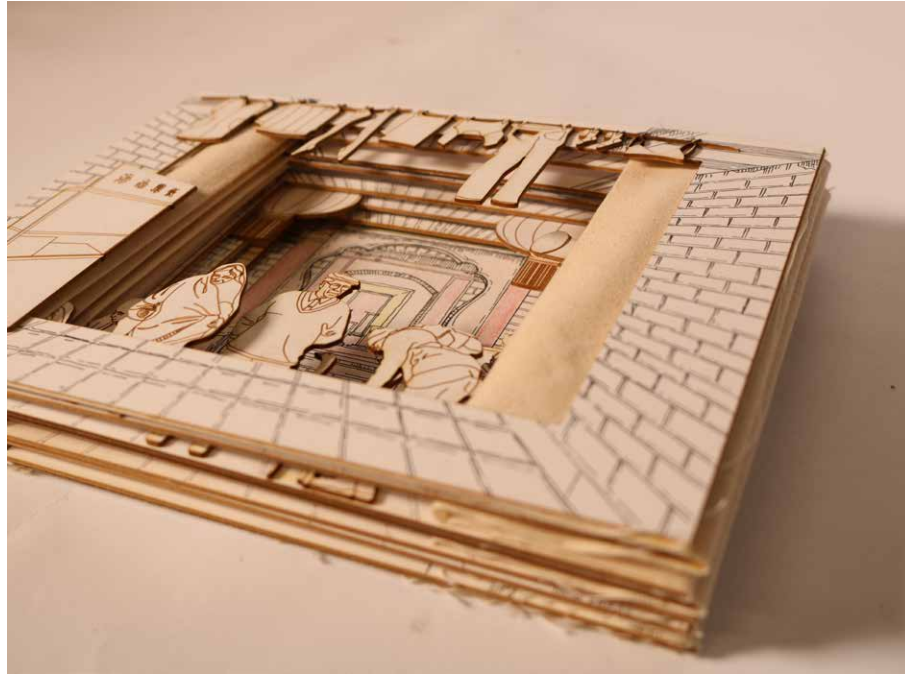


02

FU JIAN TU LOU

YEAR: ADR I FALL 2023 | TYPE: INDIVIDUAL |
INSTRUCTOR: ZACHARY WHITE

The typology of Tu Lou in Fu Jian, China dates back to the 12th century, built by the Hakka and Minnan communities. These fortified structures were designed to house entire clans within a single enclosed complex. Constructed from rammed earth, timber, and stone, tulou are known for their circular or rectangular forms, thick defensive walls, and highly organized communal interiors centered around an open courtyard. Beyond their architectural ingenuity, the tulou reflect social systems based on collective living, kinship, and regional adaptation to the mountainous landscape. The model represents the centralized axis that is characteristic of these circular forms - where the main entrance, subsequent hallways, and eventually the ancestral hall can be found along this important linear circulation.



Through this central axis, it is the perspective in which the vibrancy of the life within this centuries old communal living typology can be identified and glimpsed at.

03

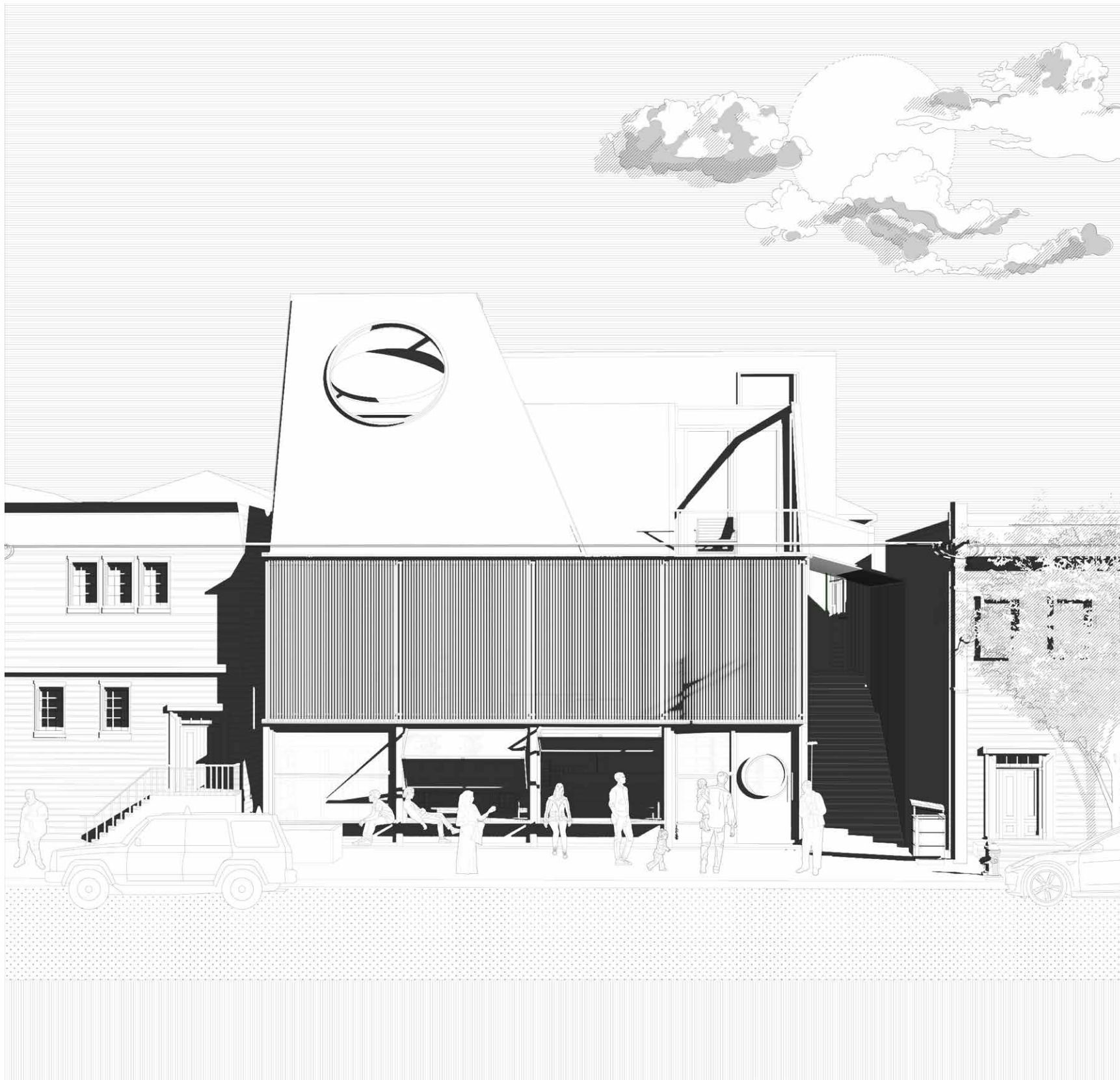
URBAN FARMING AS SENSORY THERAPY

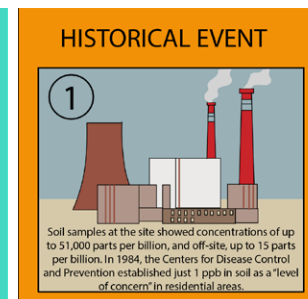
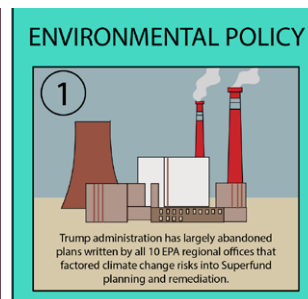
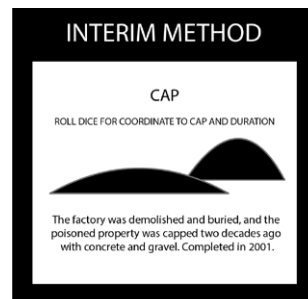
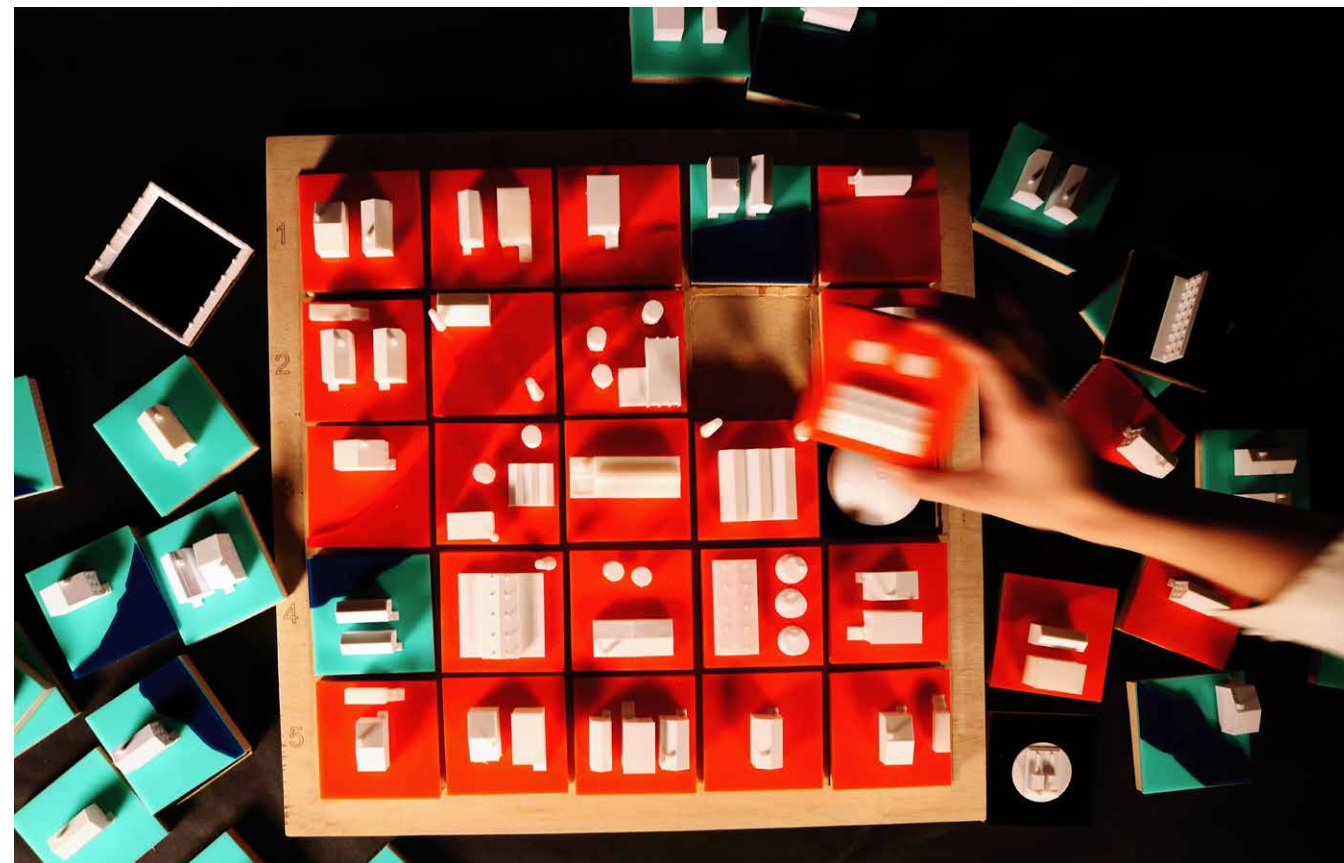
YEAR: CORE II SPRING 2024 | TYPE: INDIVIDUAL |
INSTRUCTOR : JOSH UHL

DAMAGE CONTROL IN NEWARK

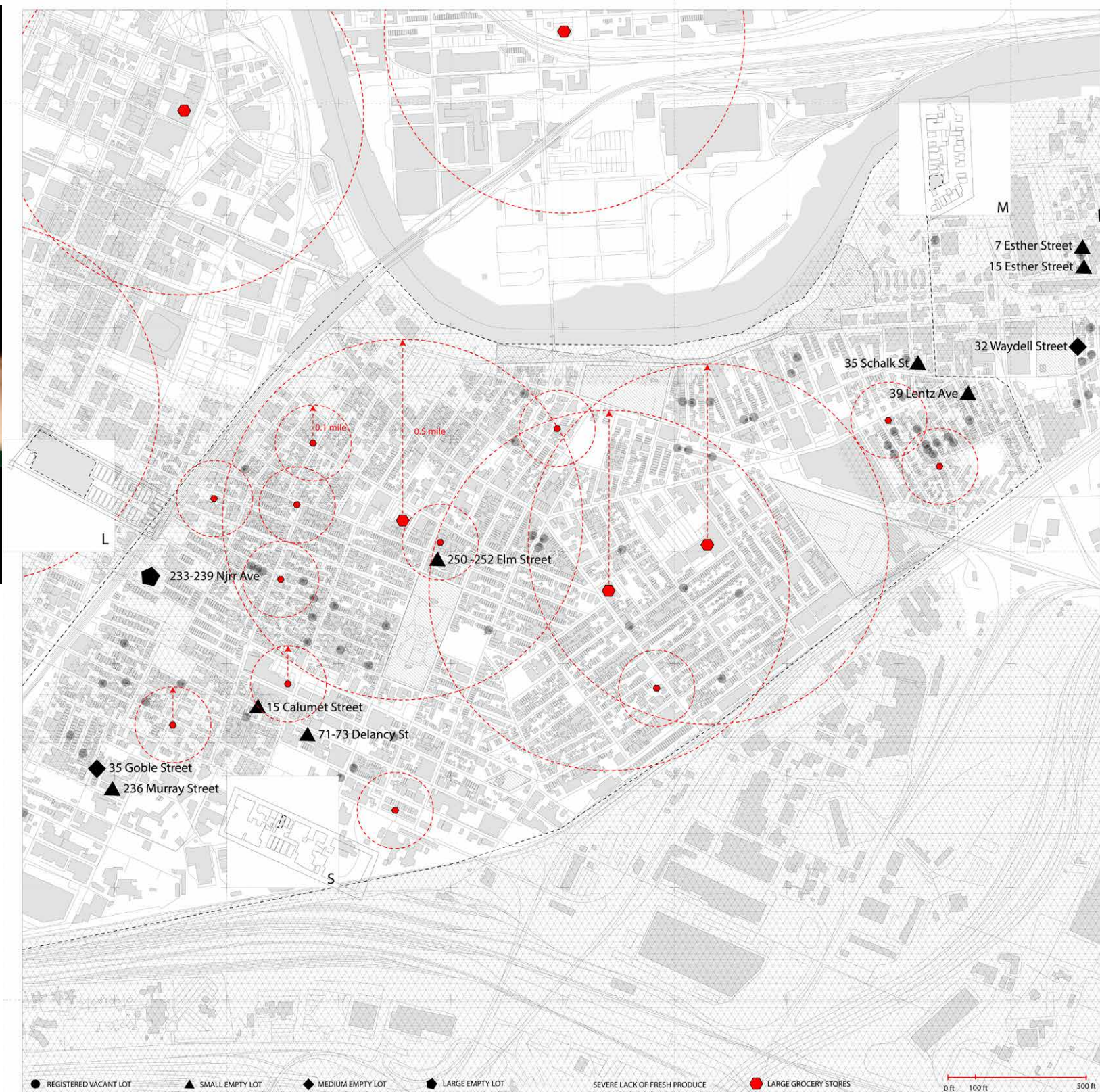
"Newark faces significant pollution challenges that severely impact residents' physical health, contributing to higher rates of respiratory illnesses, developmental disorders, and other chronic health conditions."

Currently, new sublime territories of toxic landscapes define the environments we reside in, certain communities living in close proximity are powerless over these conditions. As a direct result of poor environmental conditions in Ironbound, Newark, 1 in 20 children is diagnosed with autism. This issue is addressed by creating a network of vertical farms managed by young adults with autism, which also serve as therapeutic spaces with a focus on sensory design. Gardening, a form of horticultural therapy, provides a healthy environment through repetitive activities and offers employment opportunities for autistic youth. Given the long-term nature of superfund cleanups, the number of autistic children requiring diagnosis and support facilities will continue to grow. These vertical farms will not only provide therapy and employment but also produce fresh food for the community, improving access to healthy options. This proposal aims to create a positive impact on the neighborhood by supporting autistic youth and contributing valuable resources to the community.





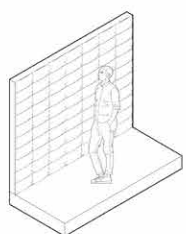
In the form of a board game, this physical model depicts the power struggle of residents of the Ironbound living next to the Diamond Alkali superfund cleanup site. The goal of the game is to clean up the contaminated tiles, in orange. Two players play in cooperation to win against the board game itself. The duration expressed in the model is not necessarily linear progression but the struggle one experienced in time. When one plays the game and is pushed back and forth between switching of the tiles, it emulates the experience of being pushed back and forth in reality between lines of forces and the never ending struggle for those powerless to change the damaged landscapes that is their home.



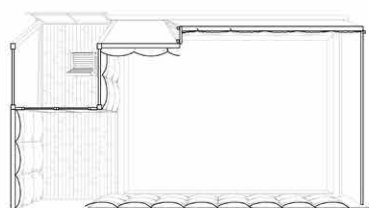
PART 2: SENSORY STUDY + PLANT NEEDS

The spectrum for autism ranges greatly, the design hopes to provide safe spaces for all based on different sensory needs

1. TACTILE ROOM



Padded walls + Earth filled space



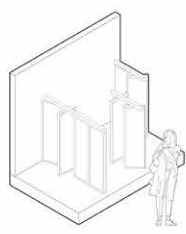
Soil provides rich tactile and olfactory experiences



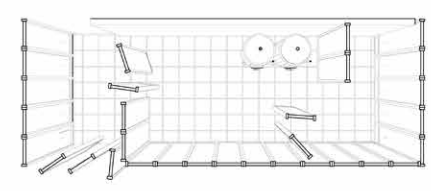
Deep rooted plants



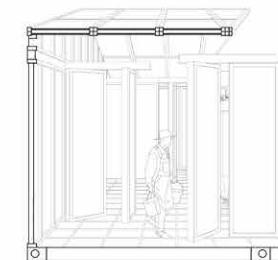
2. VISUAL ROOM



Rotating Panels



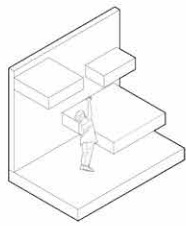
Gives flexibility to spaces; user can tailor to their needs



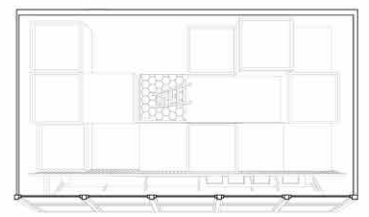
Green algae growth



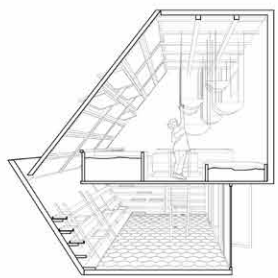
3. KINESTHETIC ROOM



Elevated heights



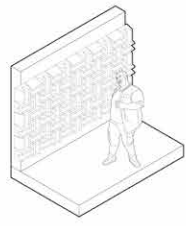
for users who likes to stretch their bodies



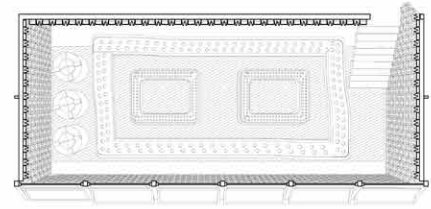
Shallow rooted plants



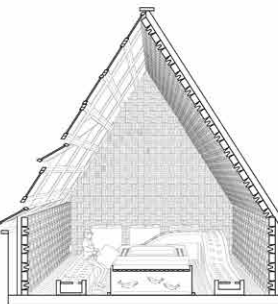
4. AUDITORY ROOM



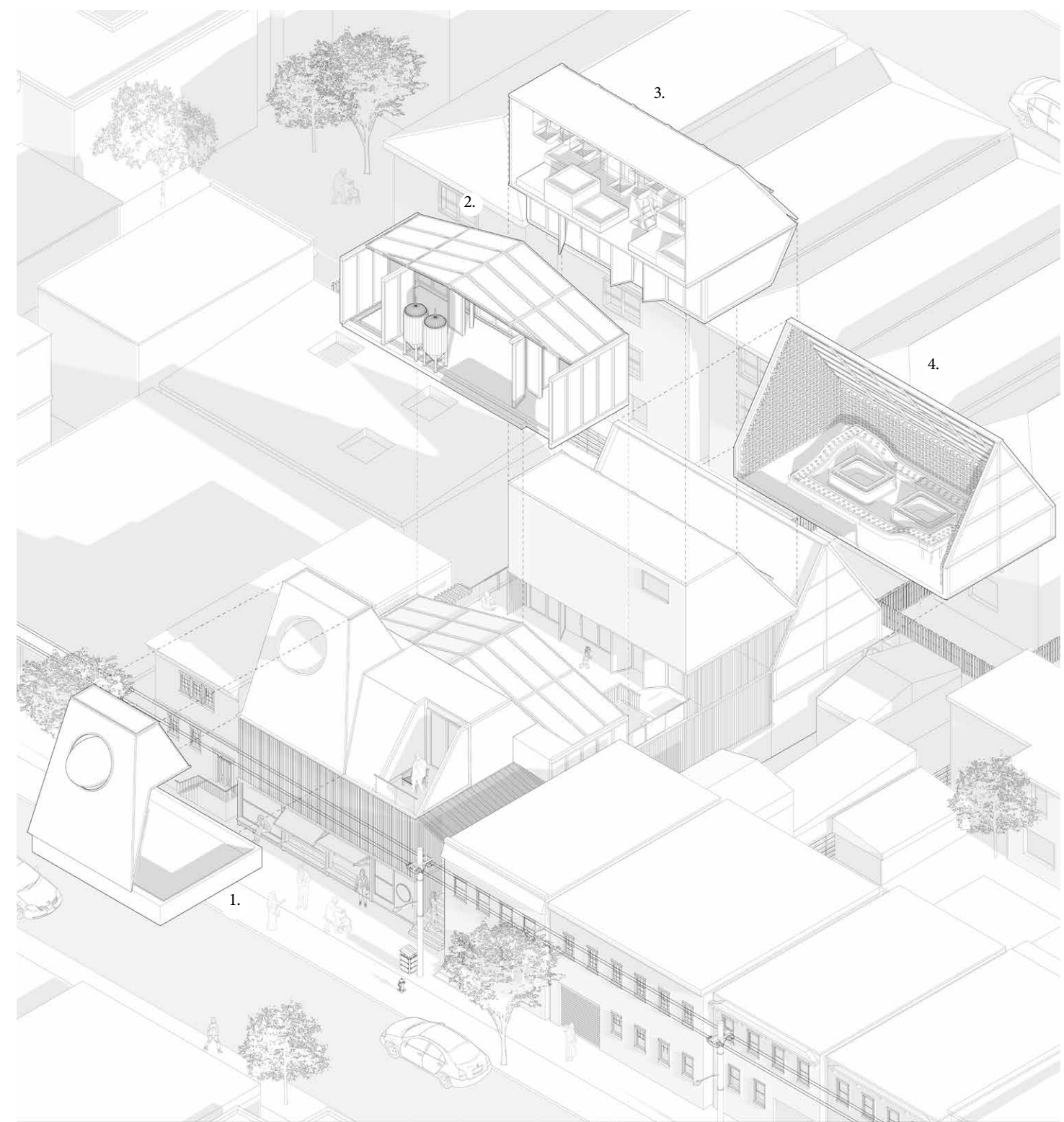
Anechoic Chamber



Absorb sound reflections and block external noise



Herbs + leafy greens





TACTILE ROOM



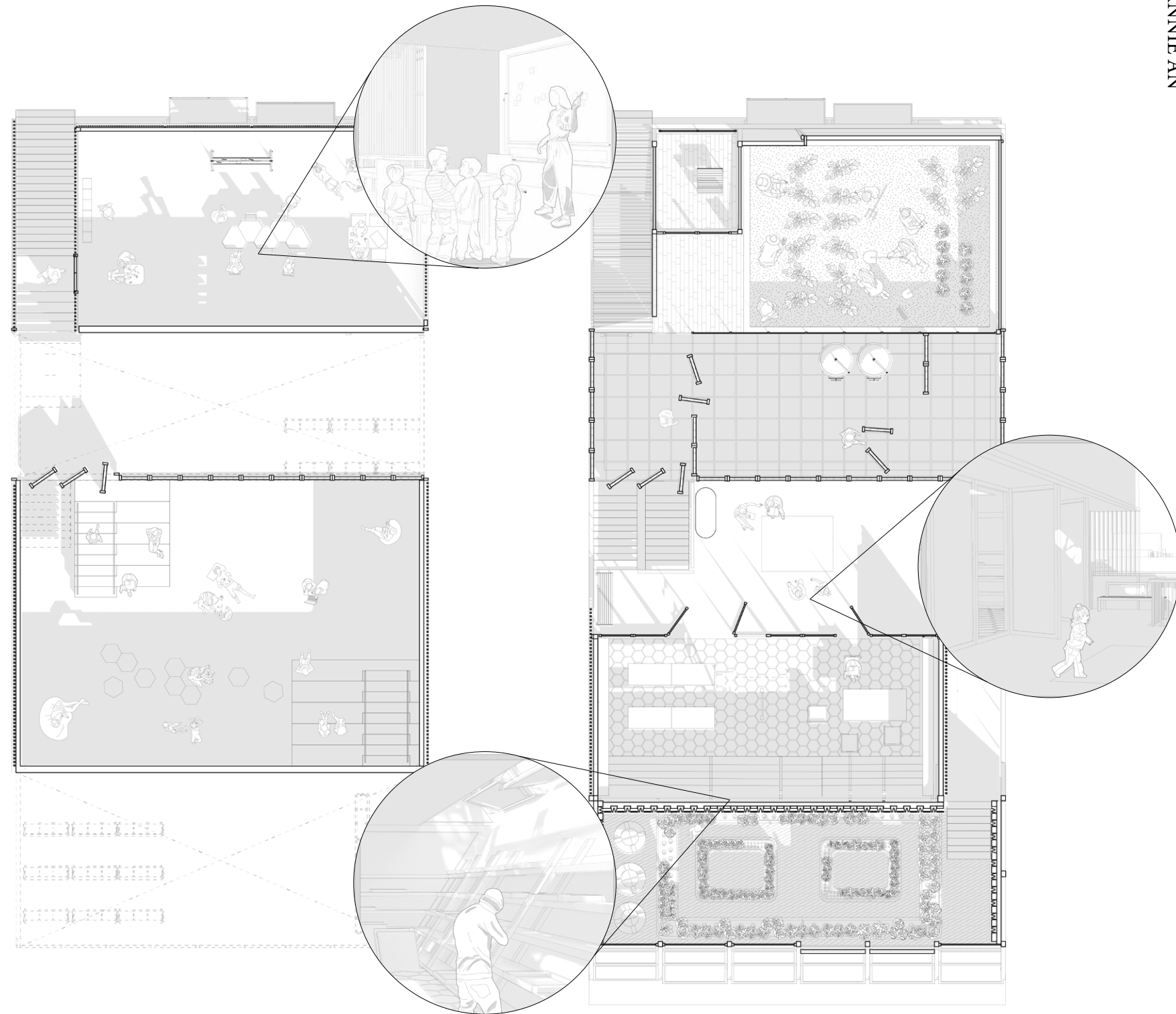
VISUAL ROOM

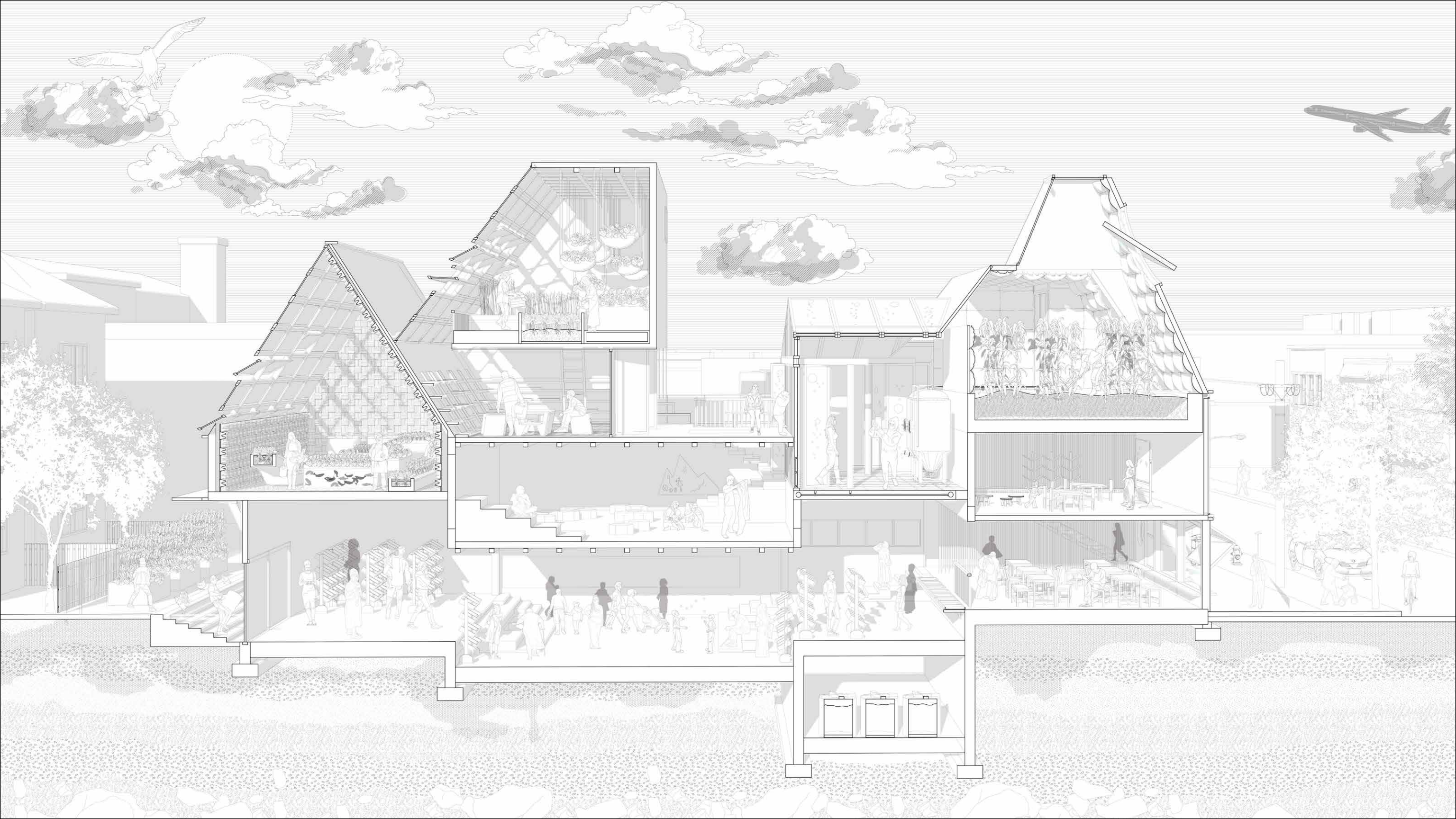


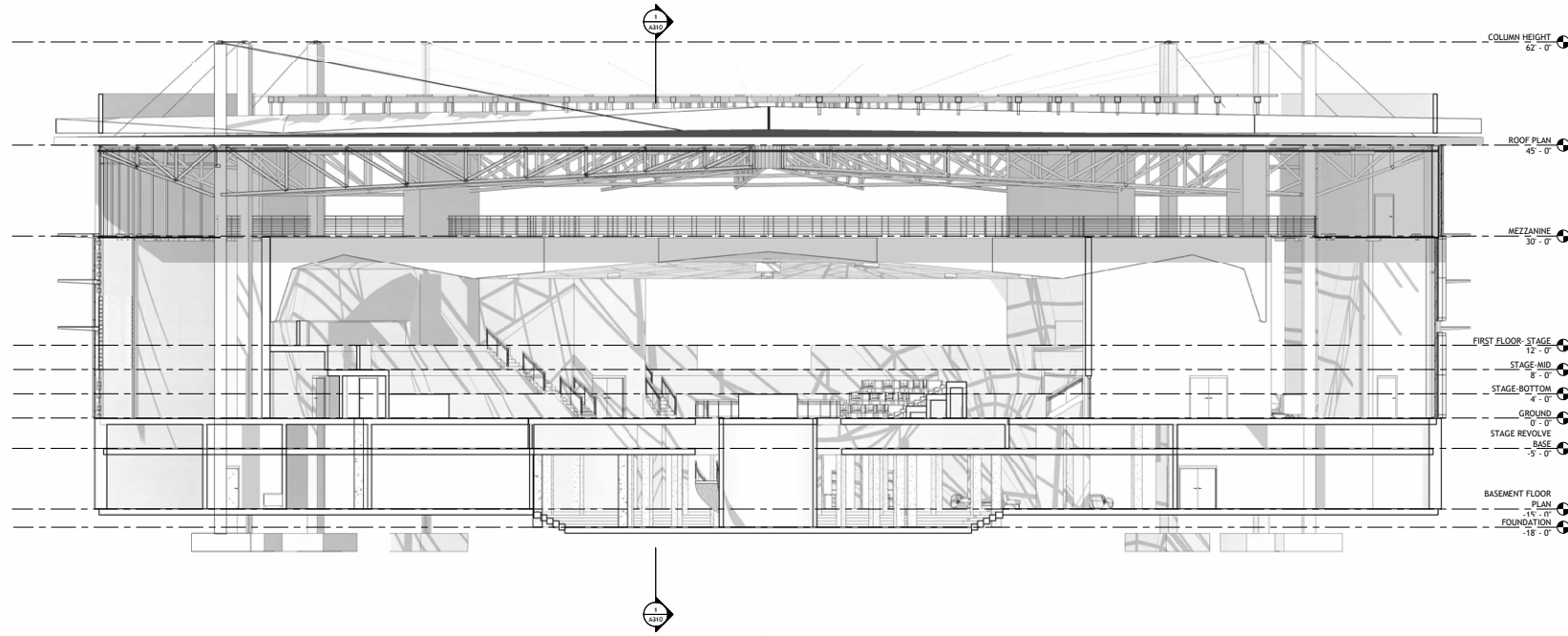
KINESTHETIC ROOM



AUDITORY ROOM



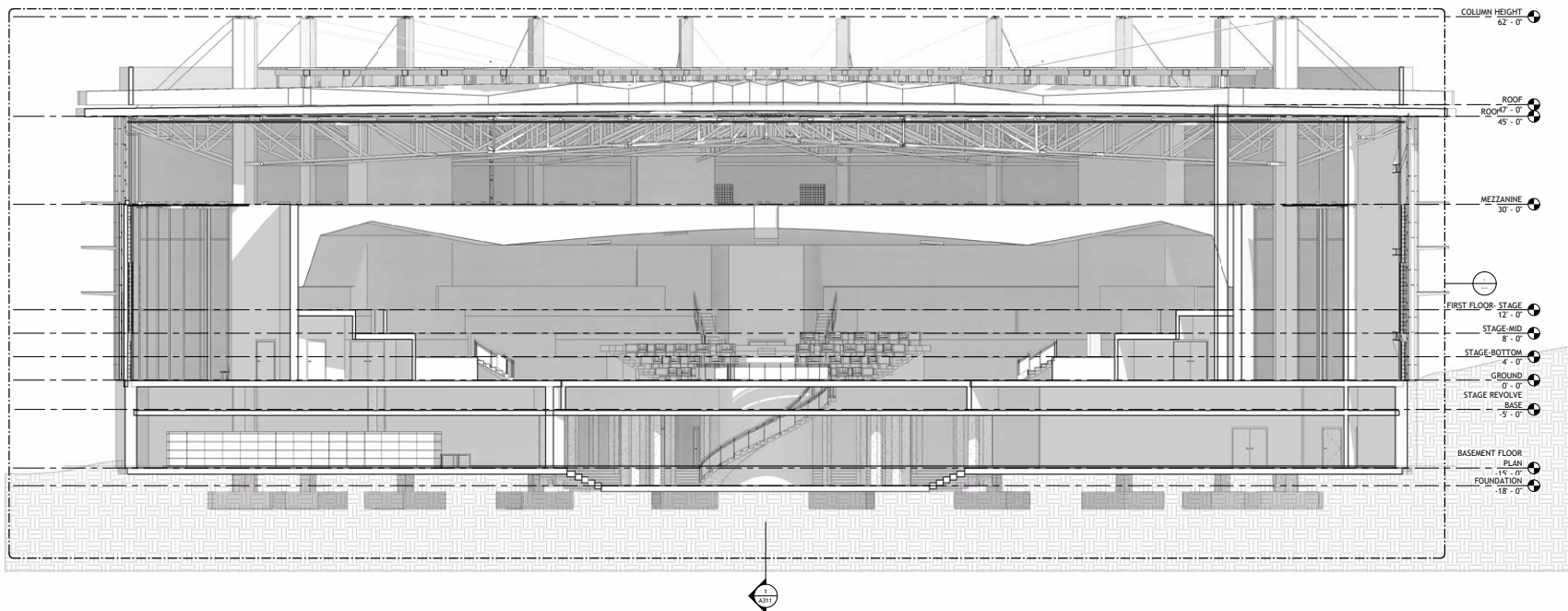




04 HELTER SHELTER

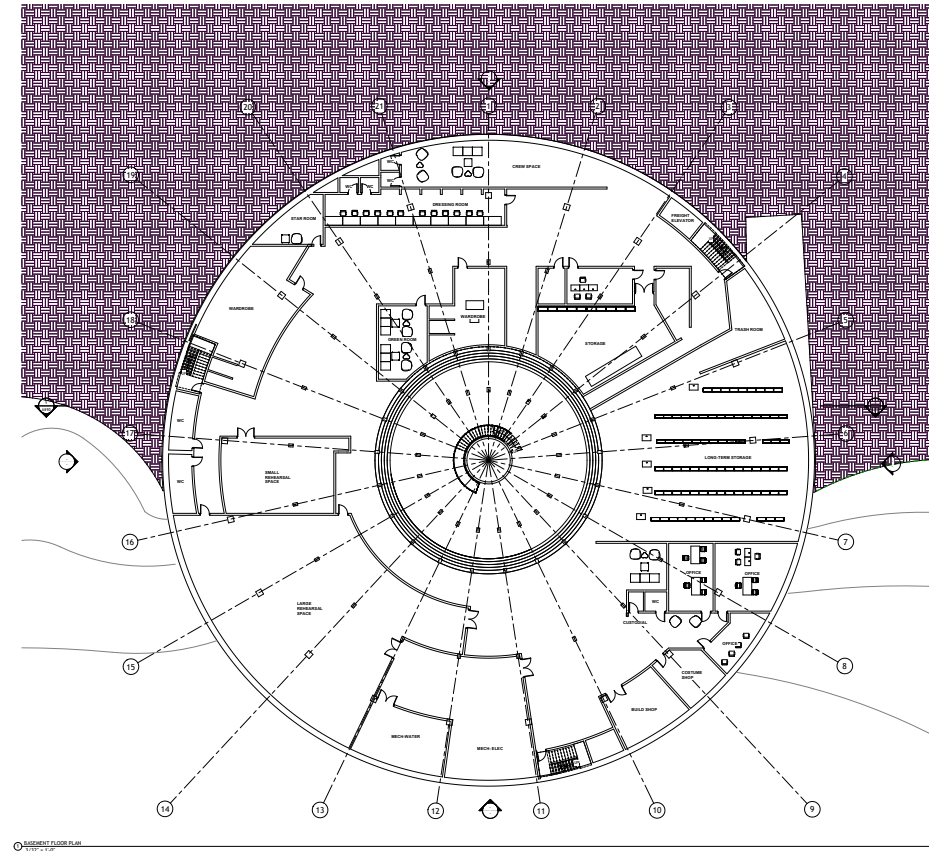
YEAR: 2024 | TYPE: GROUP (5) | INSTRUCTOR : BERARDO MATALUCCI

TECH III, IV, V

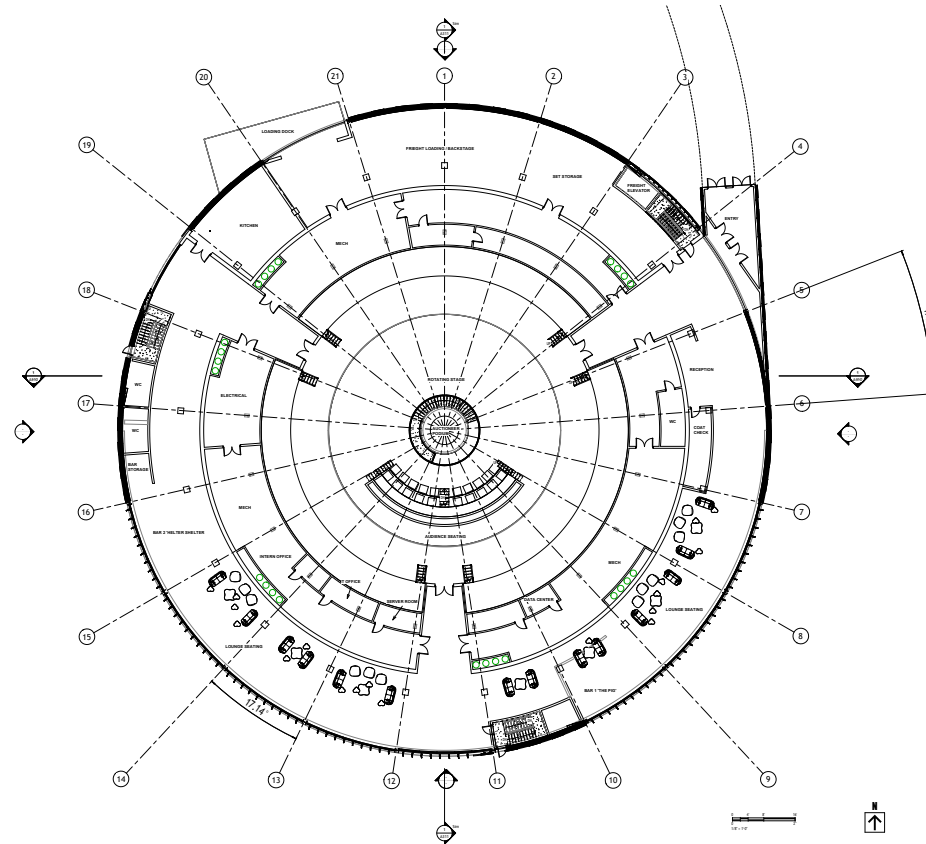


Section 1
1/8" = 1'-0"

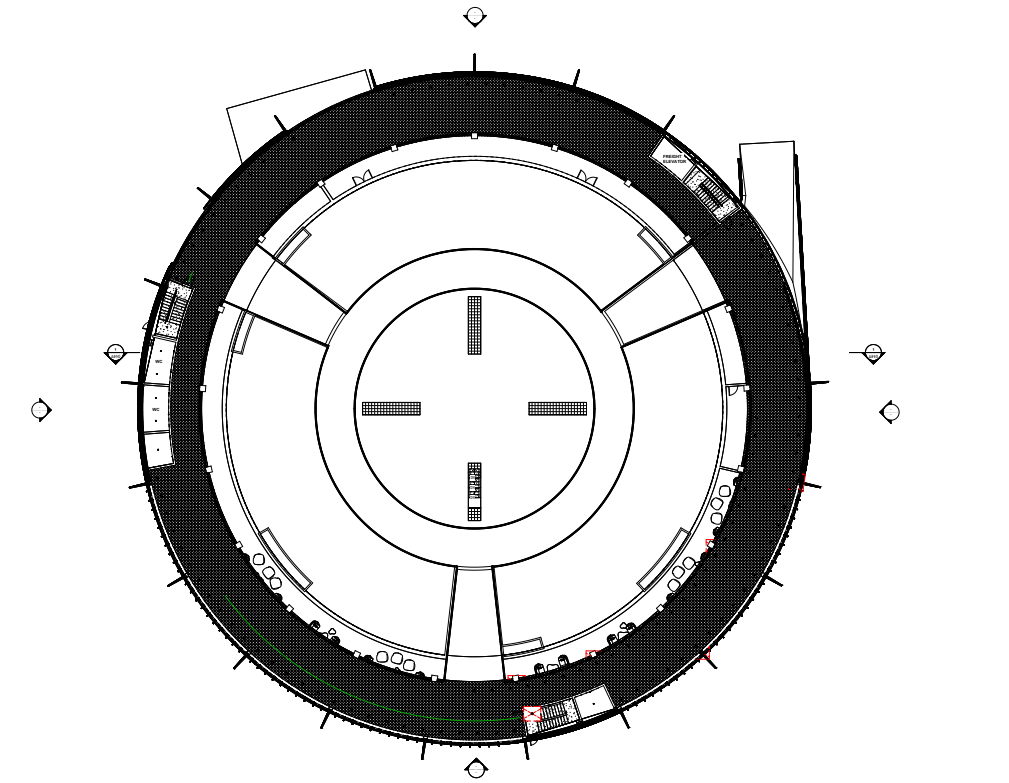
The Helter Shelter is a theatre and auction house for the rich and nefarious of Los Angeles. The theatre stages reenactments of the notorious Manson Family murders of the late 1960s, and subsequent auctioning off of the artifacts from each murder. A knife, a blood spattered tie-died tshirt, a lock of blond hair. The following looks at the structural feasibility of the architecture, the project group worked to create a finished sheet-set comprising of full revit documentaion, enclosure details, sustainability diagrams, life-safety diagrams, material carbon emission analysis, and a close-up study of 1:1 construction for one particular moment of connection.



BASEMENT FLOOR



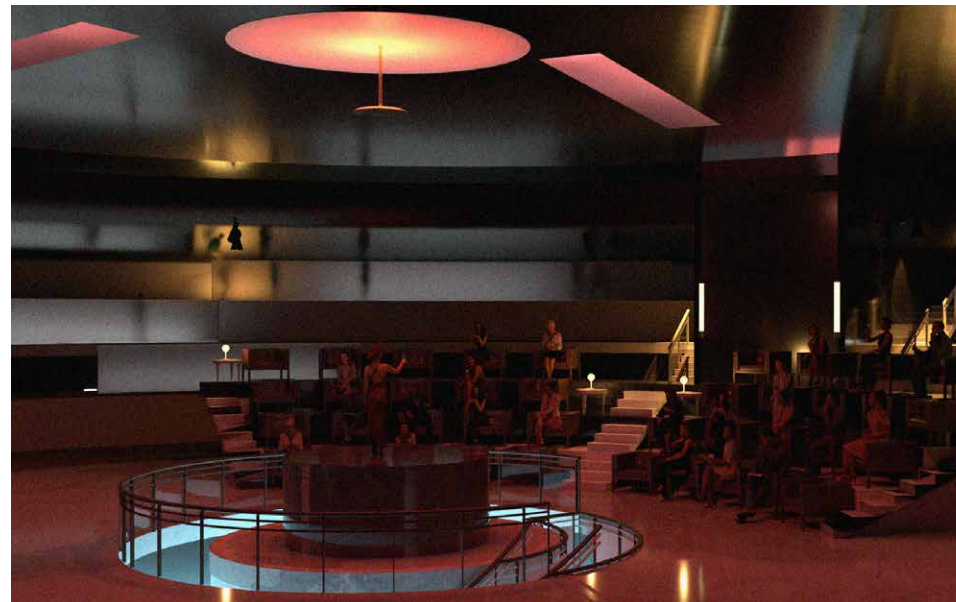
GROUND FLOOR



MEZZANINE



INTERIOR RENDER: BAR



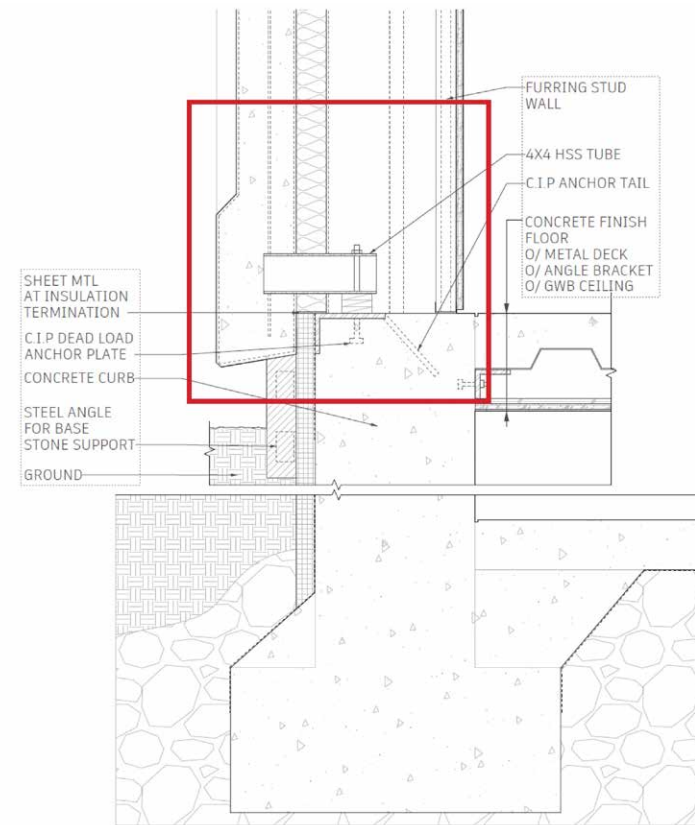
INTERIOR RENDER: AUCTION SPACE



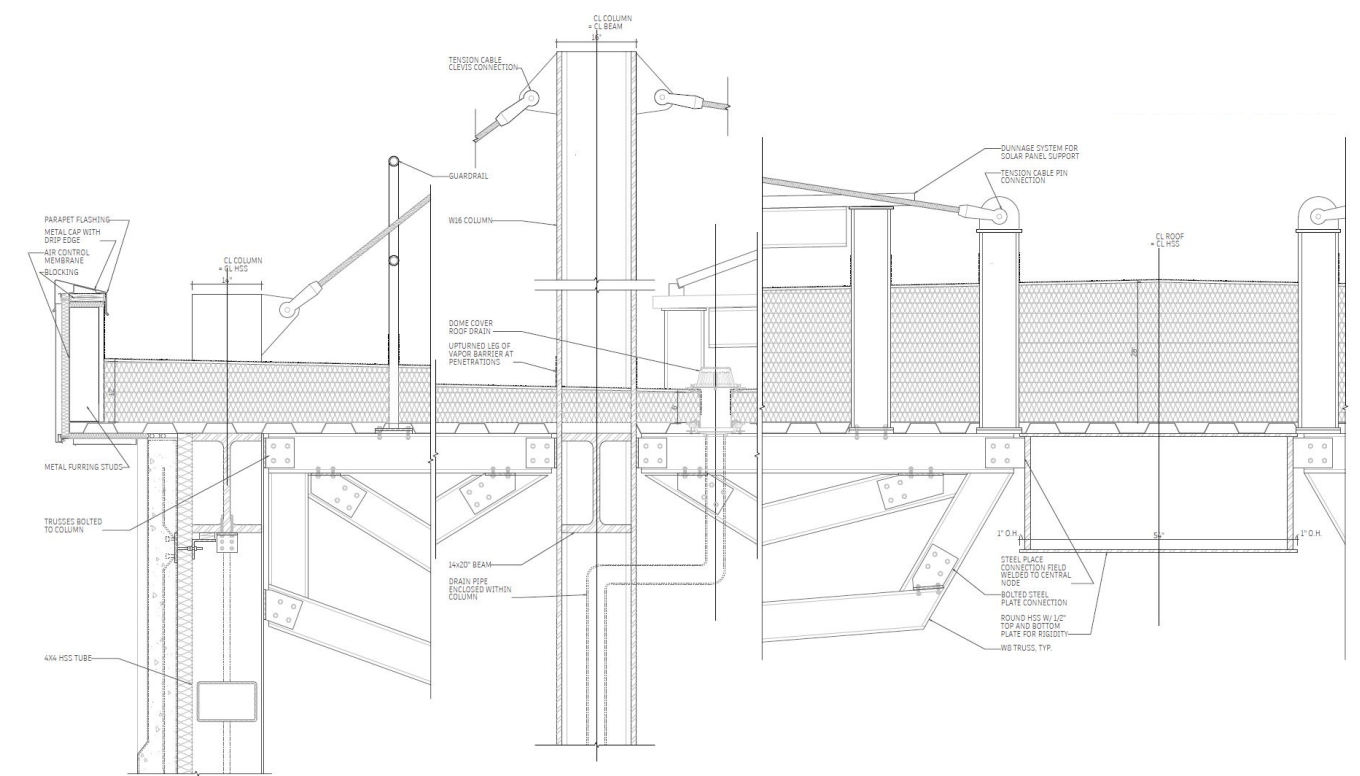
EXTERIOR RENDER



1:1 MODEL OF CONSTRUCTION DETAIL



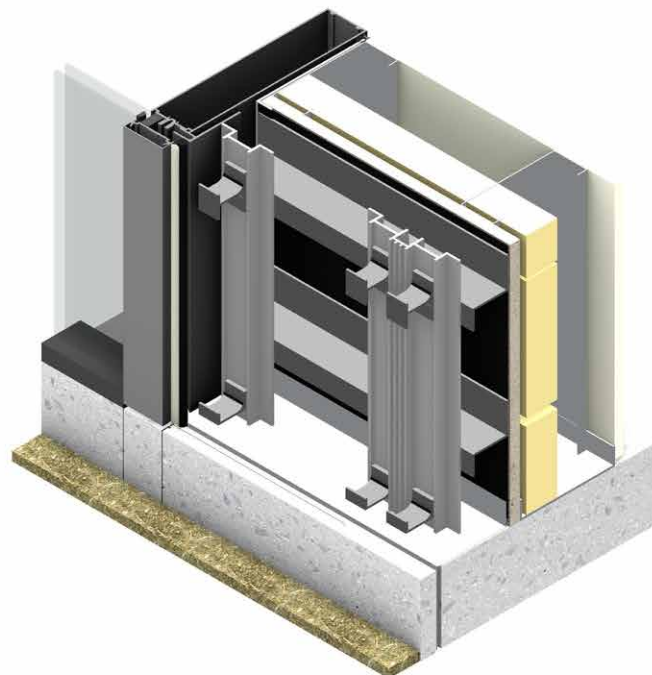
SELECTED MOMENT FOR 1:1 MODELING
(FOUNDATION, GLAZING, WALL)



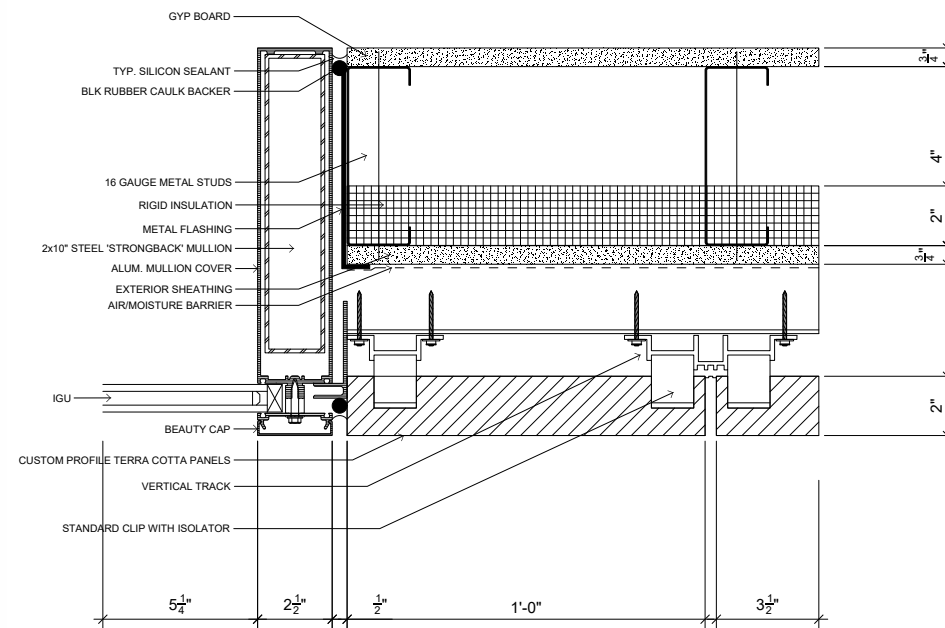
TRUSS TO ENCLOSURE

MAIN COLUMN RING

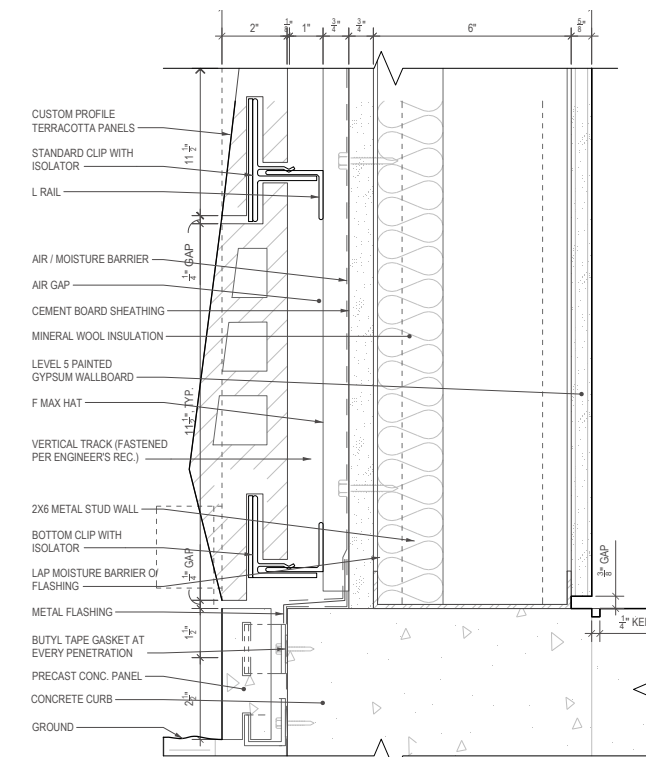
CENTER ROOF NODE



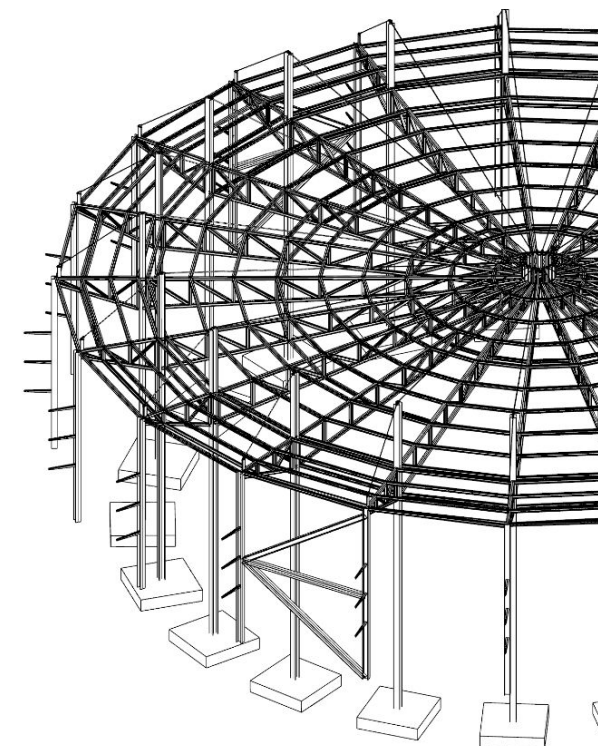
RENDER OF DETAIL: CUSTOMIZED CLIPS FOR
HANGING TERRACOTTA



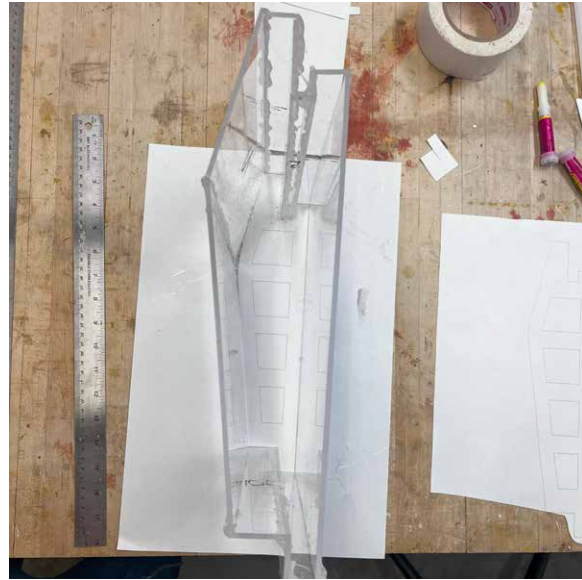
PLAN VIEW



SECTION VIEW



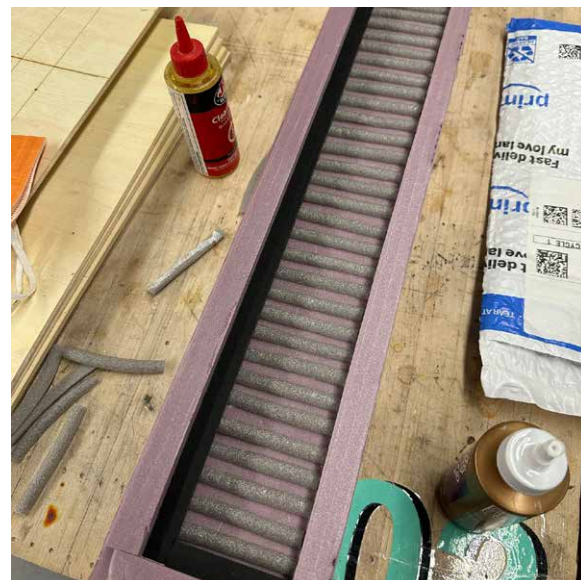
OVERAL STRUCTURAL LOGIC FOR THEATRE



MOLD FOR CASTING “FACADE PIECE”



CONCRETE POURING FOR “FOOTING”



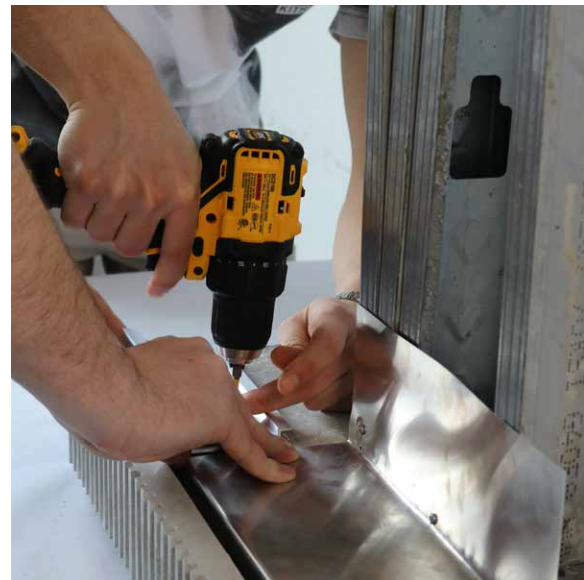
MOLD FOR CASTING “FACADE PIECE”



FINAL PRODUCT - SECTION VIEW



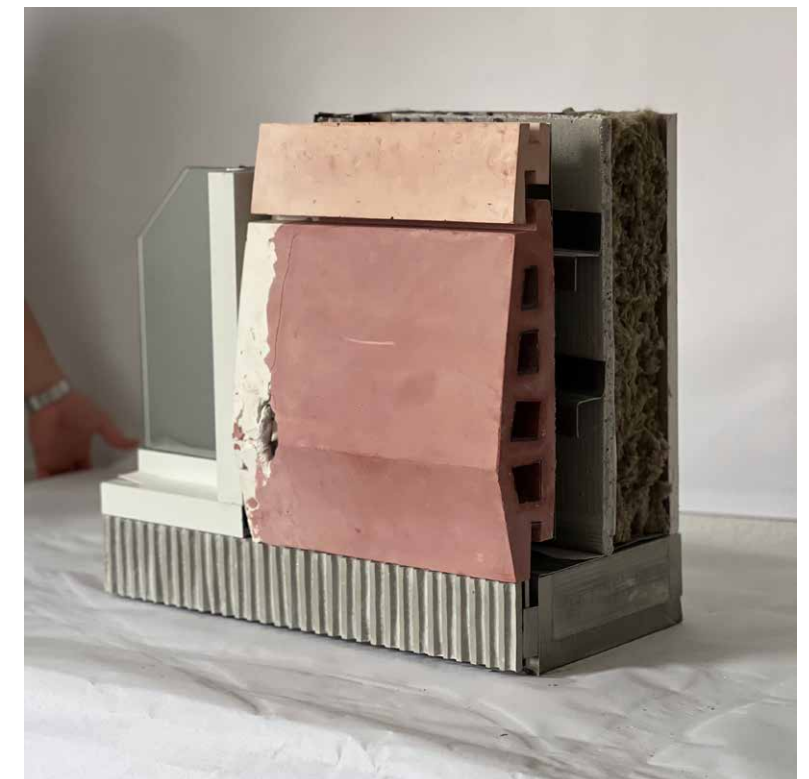
INSTALLING “BRACKETS” TO HANG FACADE



SCREWING IN FLASHING



SLIDING ON WINDOW PIECE



FINAL PRODUCT

05

122 APARTMENTS IN NEW YORK

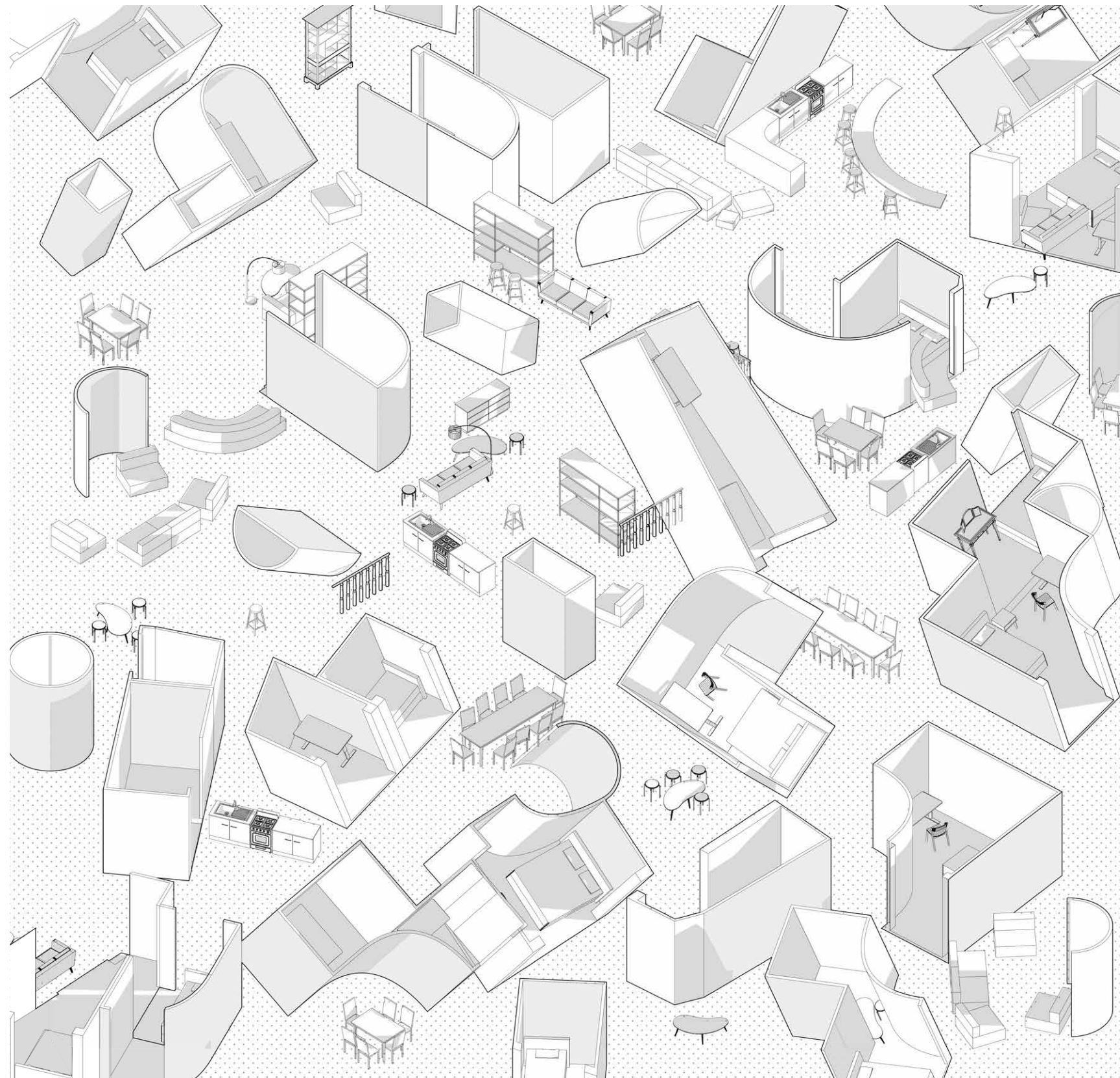
YEAR: CORE III FALL 2024 | TYPE: GROUP (W/BENJAMIN SPEARS) |
INSTRUCTOR : ERIC BUNGE

SEMESTER LONG - AFFORDABLE HOUSING

"The modern house had its origin in three fictions: the house as a place of rest, as if work could be separated from life; the house as private property within everyone's reach, as if when considering it a commodity it would not be determined by market-driven dynamics; and the house as a sanctuary for the nuclear family, as if there were no other forms of coexistence, and the private and the public were two independent fractions[...]"

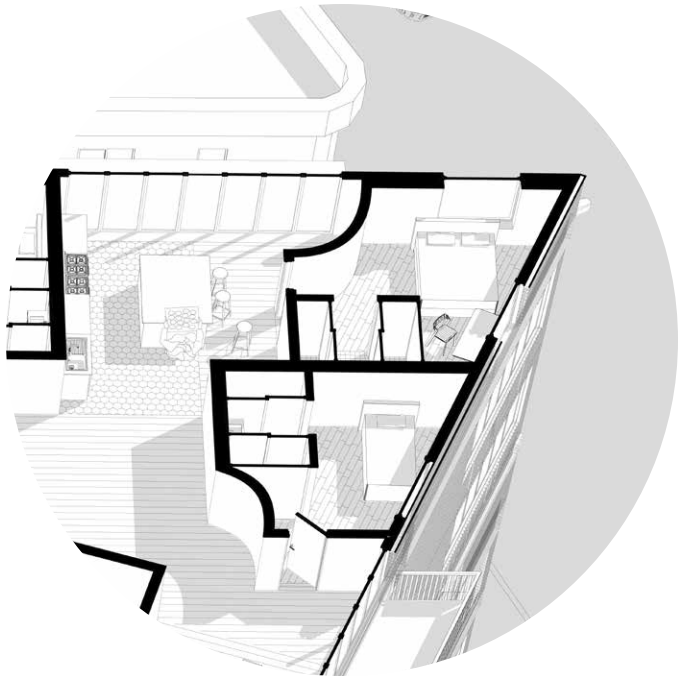
~Fernanda Canales

The shift from domestic to public life is stark, scaling from daily interactions with two people to an entire city like Manhattan. Abstract relationships to strangers at this city-scale cannot meaningfully define a domestic condition. Instead, we envision community as a gradual, overlapping network: sharing a kitchen with 3-4 people, hosting dinner for 16 floor-mates, and connecting with 70 residents through building-wide events. Abstract relationships to strangers at this city-scale cannot meaningfully define a domestic condition. Housing as an additive, multiscale weaving of communities on a given site rather than the division of a number of individuals apart from each other. Armature at the element, building, and neighborhood scale become 3 different scales of community; the room, the group of rooms, the city block. A whole floor of the building is at once your own space, but not only your space. The idea of the unit is interrogated and disassembled – it is a bed, but also a room, a floor, the whole building, the entire neighborhood.

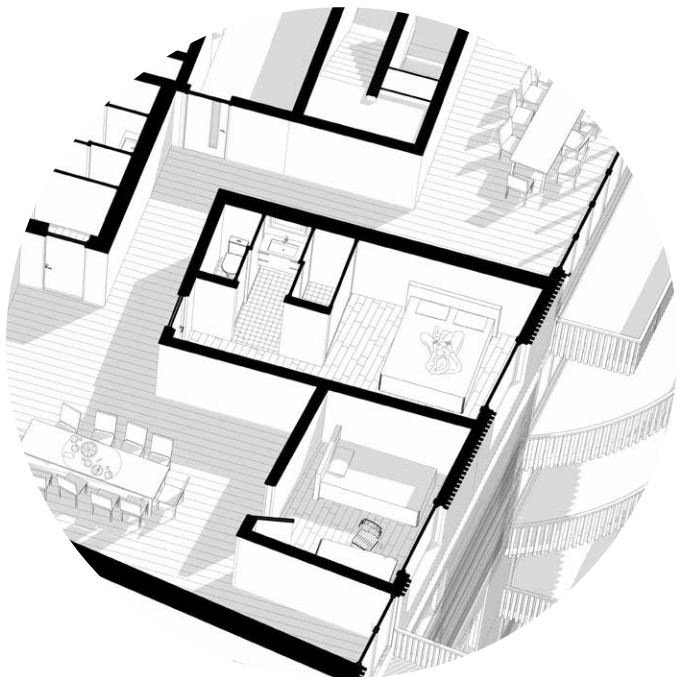


CONCEPT EXPLORATION DIAGRAM

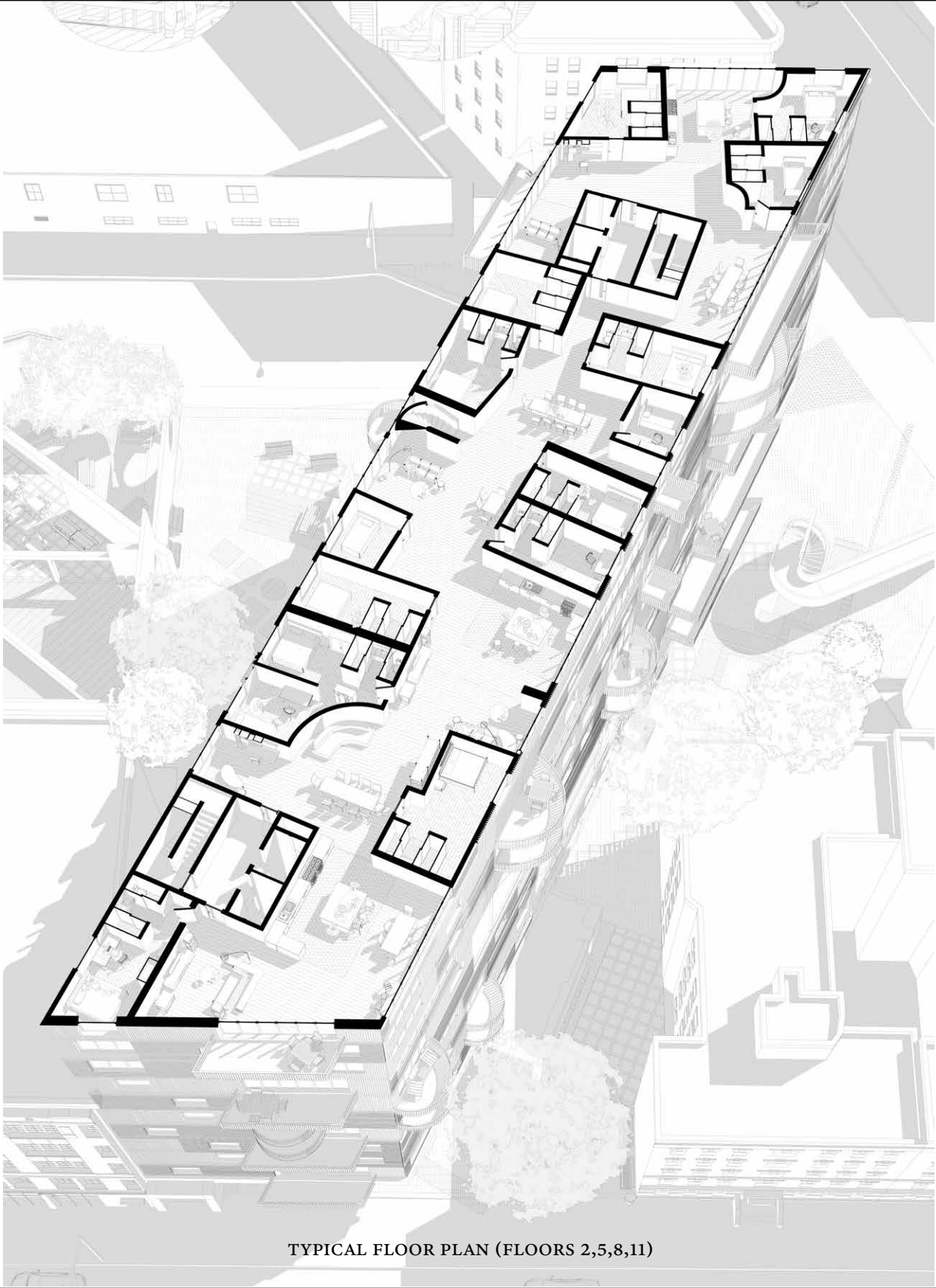
The “unit” itself becomes the armature that enlarges to include the entire building. Every piece, every function scattered throughout the mass is an extension of the typical “unit”.



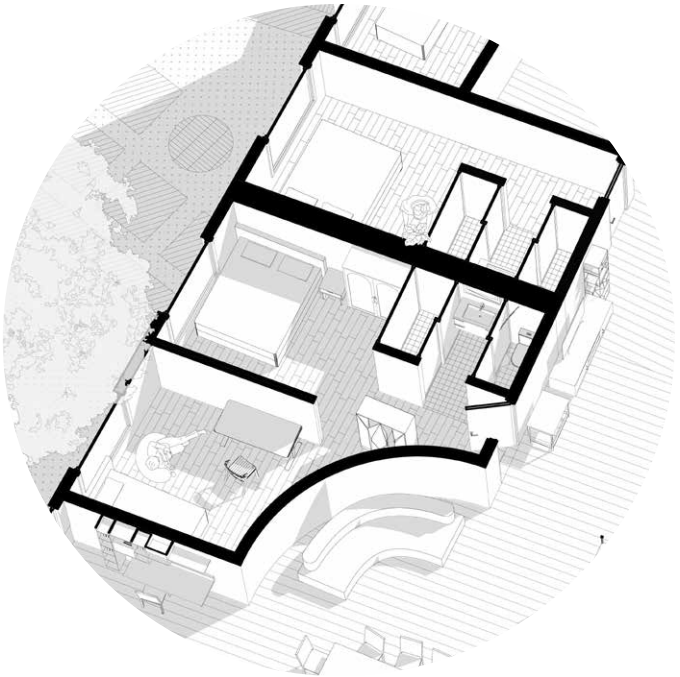
1. Variation in room sizes and shapes to accomocate different residents and also sculpt shared spaces



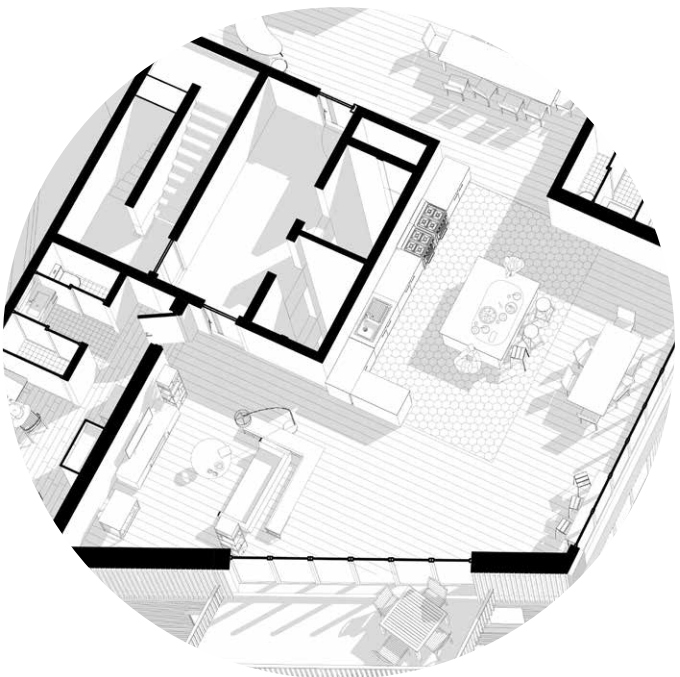
2. Accomodating children's room next door; residents can choose to "take over" more rooms as needed



TYPICAL FLOOR PLAN (FLOORS 2,5,8,11)



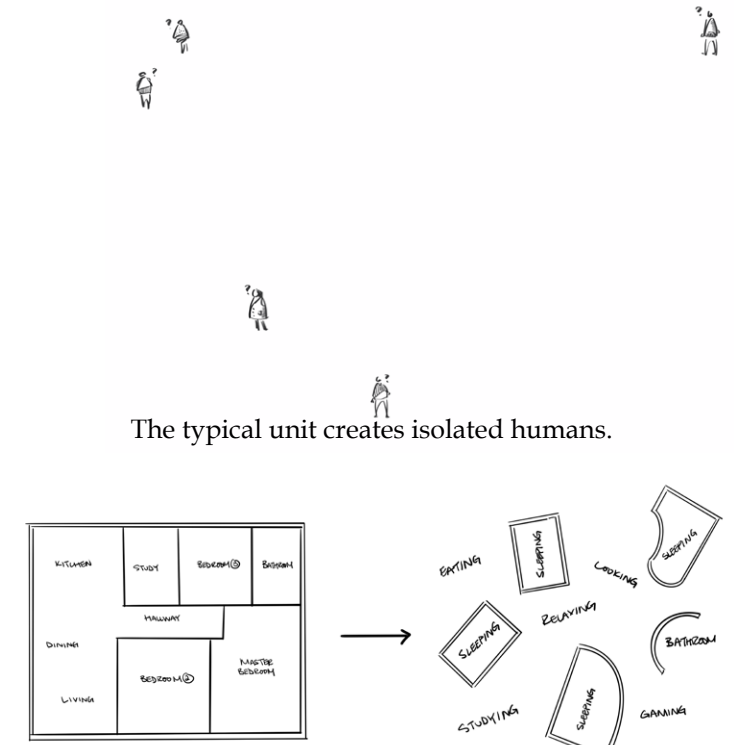
3. Two beds in the same "unit" for residents with proximity needs



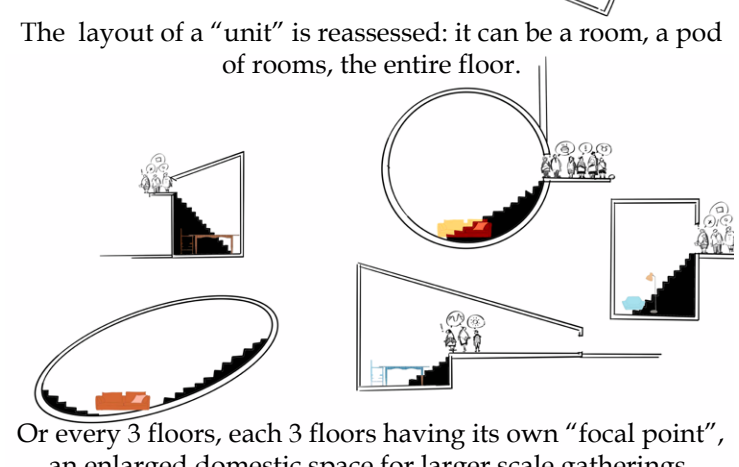
4. Shared living spaces (domestic functions) repeated through delineated "zones", further emphasizing the next scale of community.

PART 2: VOIDS AS ARMATURE

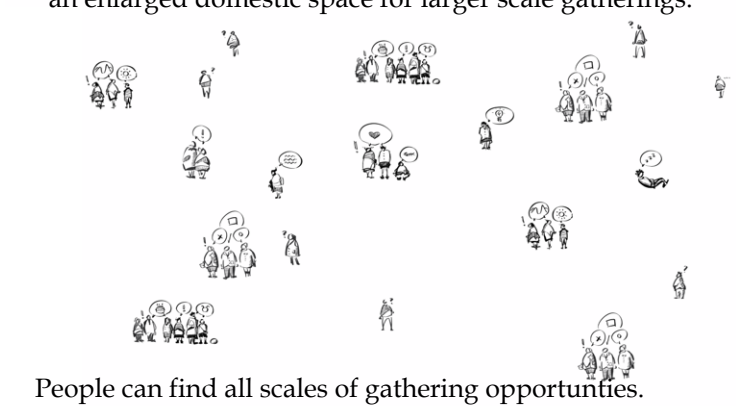
The typical unit creates isolated humans.



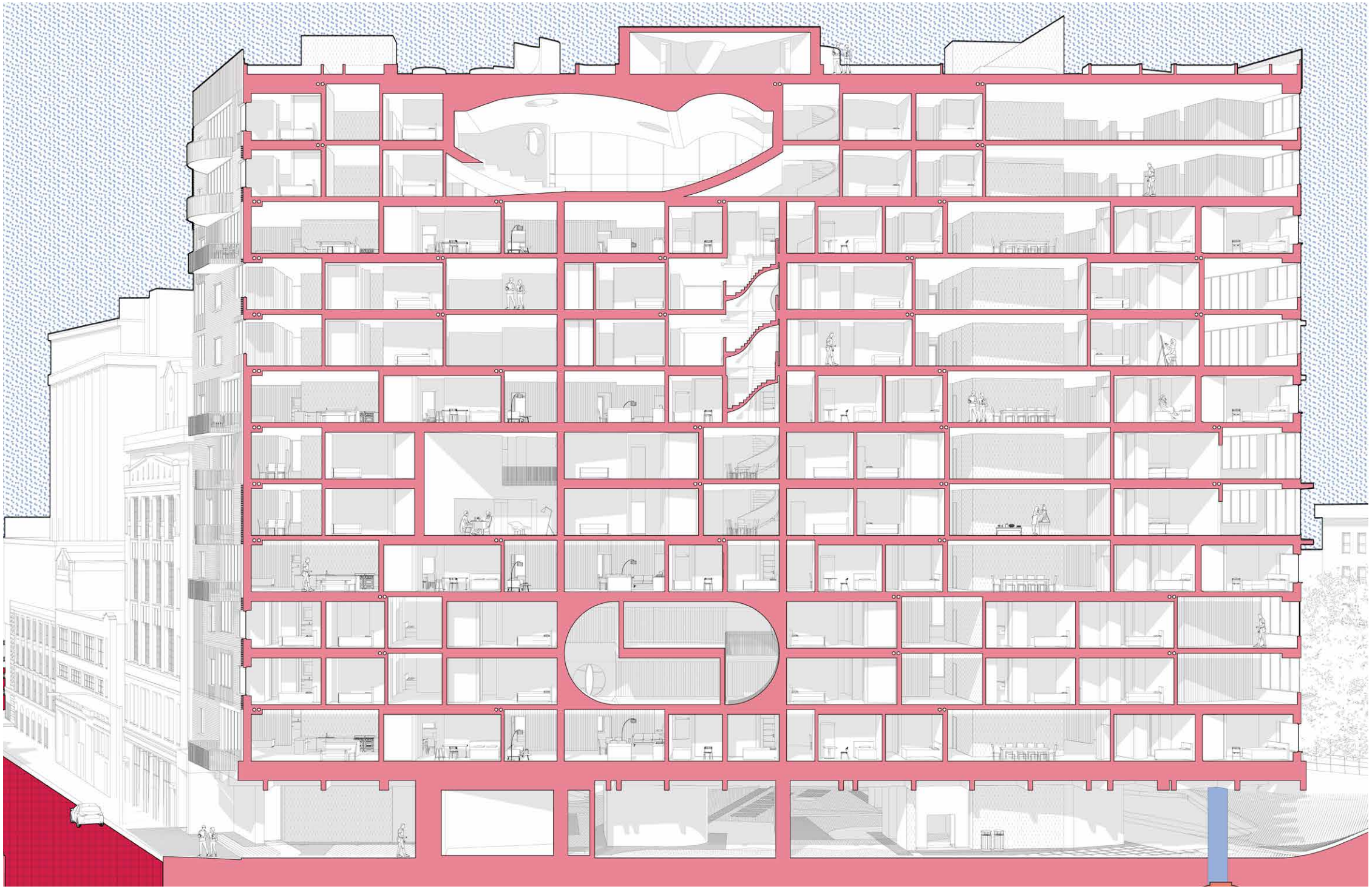
The layout of a "unit" is reassessed: it can be a room, a pod of rooms, the entire floor.



Or every 3 floors, each 3 floors having its own "focal point", an enlarged domestic space for larger scale gatherings.



People can find all scales of gathering opportunities.



SECTION (BY BEN SPEARS)



GROUND FLOOR PLAN



GROUND FLOOR - COMMUNAL KITCHEN

(Drawing by Ben Spears)

TYPICAL FLOOR LAYOUT RENDER



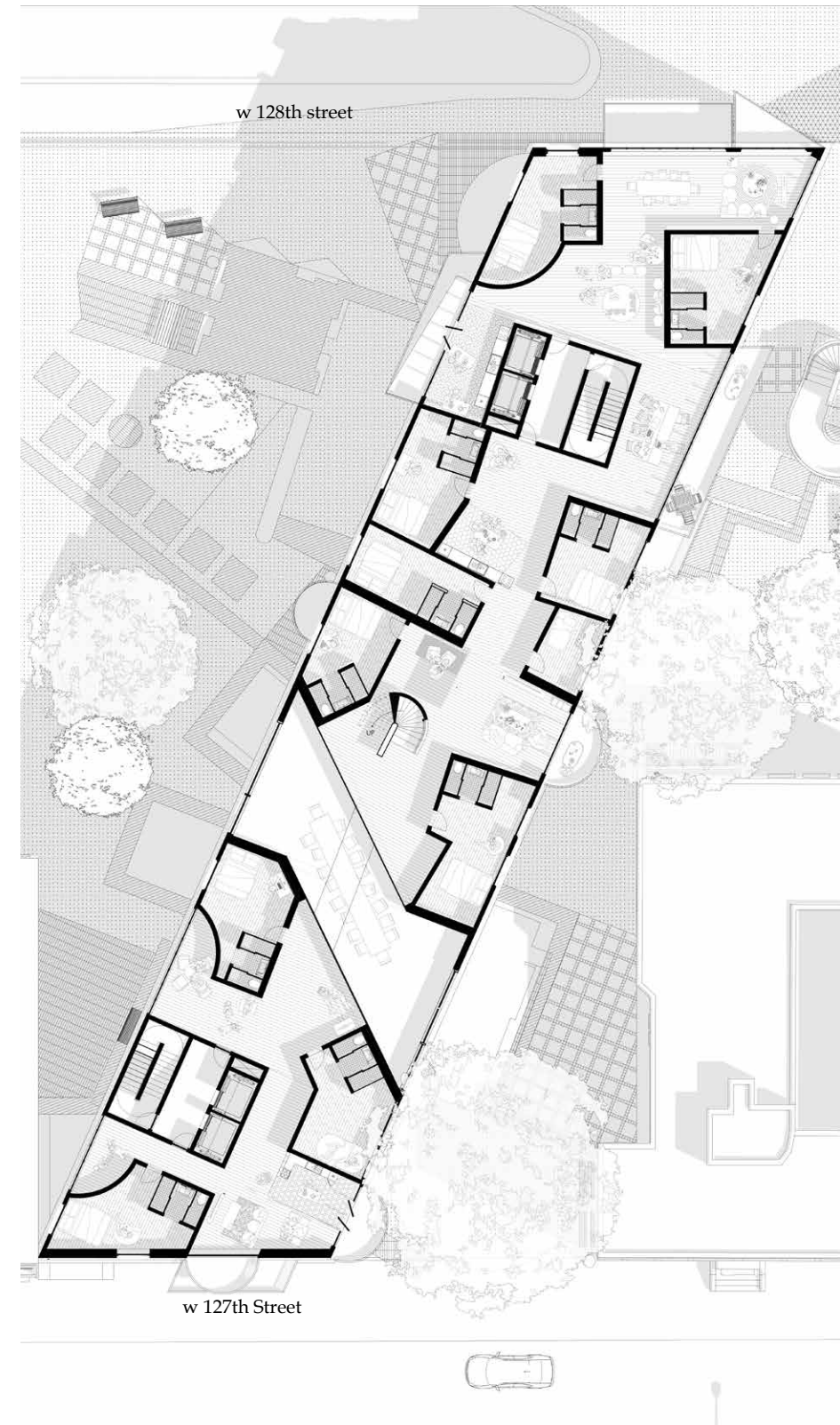
DINING VOID RENDER (W/ENSCAPE)



The design process drew from the modernist housing language, particularly Le Corbusier's Unité d'Habitation, using it as a "double" to engage in dialogue with the work. This approach evaluated what aspects were effective, what needed deviation, and which features warranted emphasis, shaping a reimagined model of living.



LEVEL 3 & 4 - BATH HOUSE VOID



LEVEL 6 & 7 - LARGE DINING VOID

CONCEPTUAL PHYSICAL MODEL OF A UNIT (FLOOR)



STREET VIEW COLLAGE (BY BEN SPEARS)



1/4" SCALE PHYSICAL MODEL



TRANSVERSE SECTION (BY BEN SPEARS)



06

DETERRITORIALIZED SANCTUARY

YEAR: ADV IV SPRING 2025 | TYPE: GROUP (W/VIRGINIA ITALIA) |
INSTRUCTOR : NAHYUN HWANG

Understanding a camp's paradoxes is to begin to comprehend our current spaces – and how they are affected by militaristic, political, and romantic extremes.

Camps as a typology touches on the contradictory relationship of sanctuary- one about care and protection, the other about exclusivity and control. They emerge as a response to crises, offering temporary solutions to exceptional conditions- providing temporary spatial relief without resolving underlying issues. Our proposal begins to extrapolate the notions of camp by deterritorializing the sanctuary and defying the technocracy of railroads and summer camp organizations. In turn creating a scout camp that exists in a constant state of flux, reliant on abandoned rail tracks yet connecting the whole of the Hudson Valley. The proposal, therefore, aims to hypothesize on the transformation of the scout camp organization as it now has access to existing and uncharted resources.

It therefore emerges in the “in-betweens” of the hudson valley’s typical destinations. Interacting with locals yet existing and deploying itself in the true wilderness of the landscapes in between privatized lands, urban clusters, exclusive retreats, sites of social and economic tensions, and normally inaccessible pursuits of knowledge.

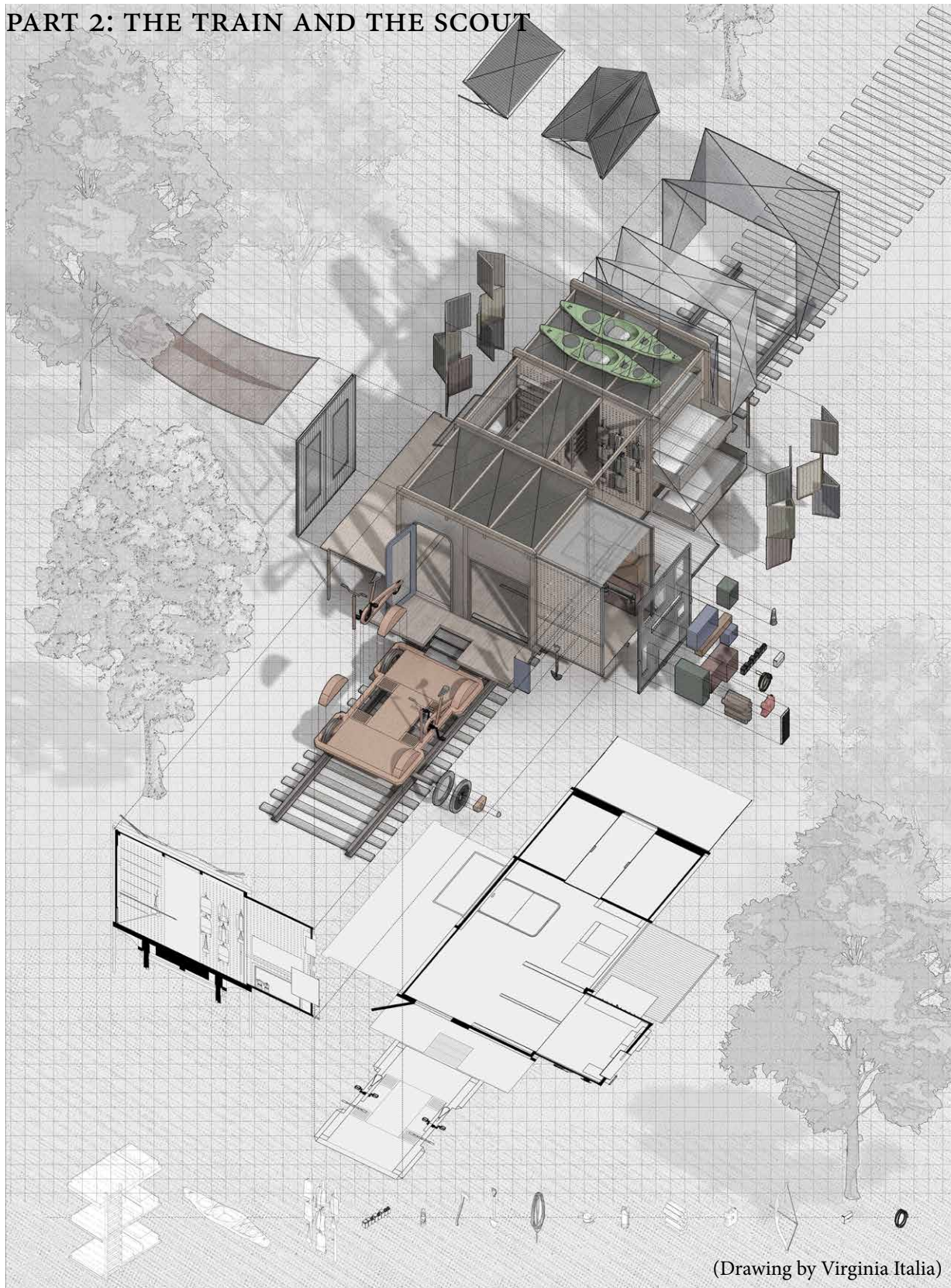
PART 1. CONTRADICTIONS IN CAMP

	Hudson Correctional Facility	Coxsackie Correctional Facility	Hudson River State Hospital
COMMUNITY			
LANDSCAPE			
BUILDING			
BODY			
BODY			
BUILDING			
LANDSCAPE			
COMMUNITY			

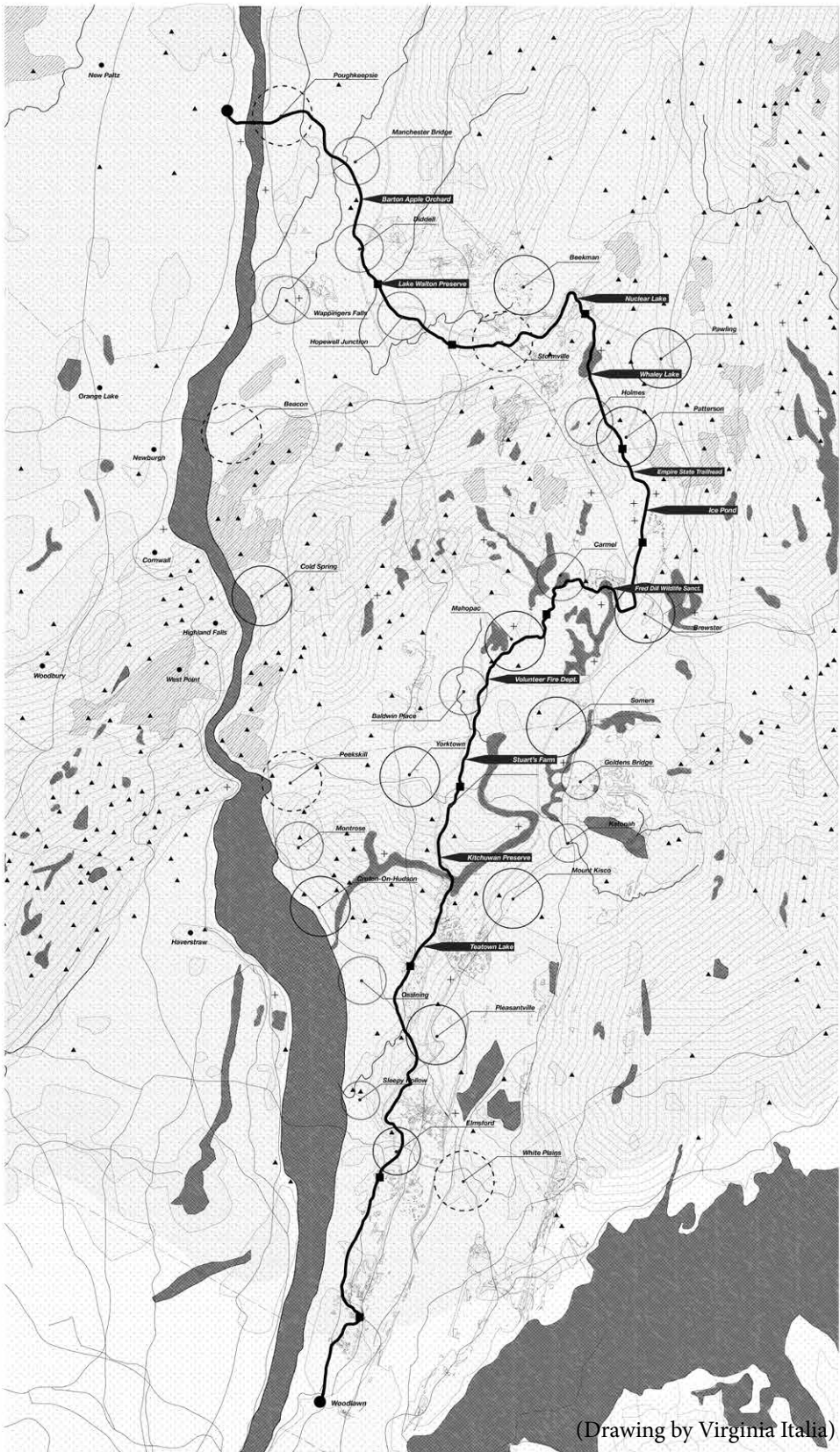
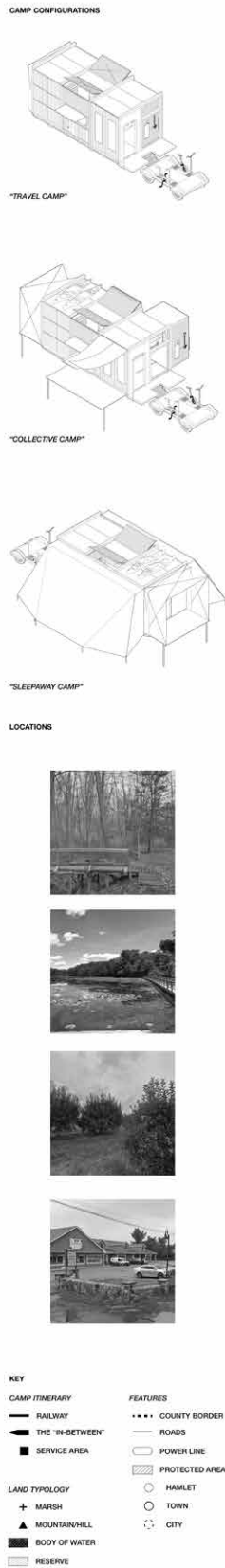
Initial research explored the variations of camps. We analyze prisons and asylums; on the other, fitness retreats, gated communities and summer camps. This comparison collapses binaries like punishment vs. pleasure or confinement vs. retreat. Voluntary isolation and forced segregation both become part of a broader architecture of control.

Another close-look focused on summer scout camps. The franchise appears naturally immersed in the forest, yet a closer look reveals its dependency on a fabricated experience: daily schedules, artificial lakes, and controlled movements territorialize vast pockets of land. While situated within the American landscape, summer camps remain confined by legislative limitations, offering a hyper-constructed image of nature that monetizes the land by stripping away what is truly natural to the Hudson Valley.

PART 2: THE TRAIN AND THE SCOUT



(Drawing by Virginia Italia)



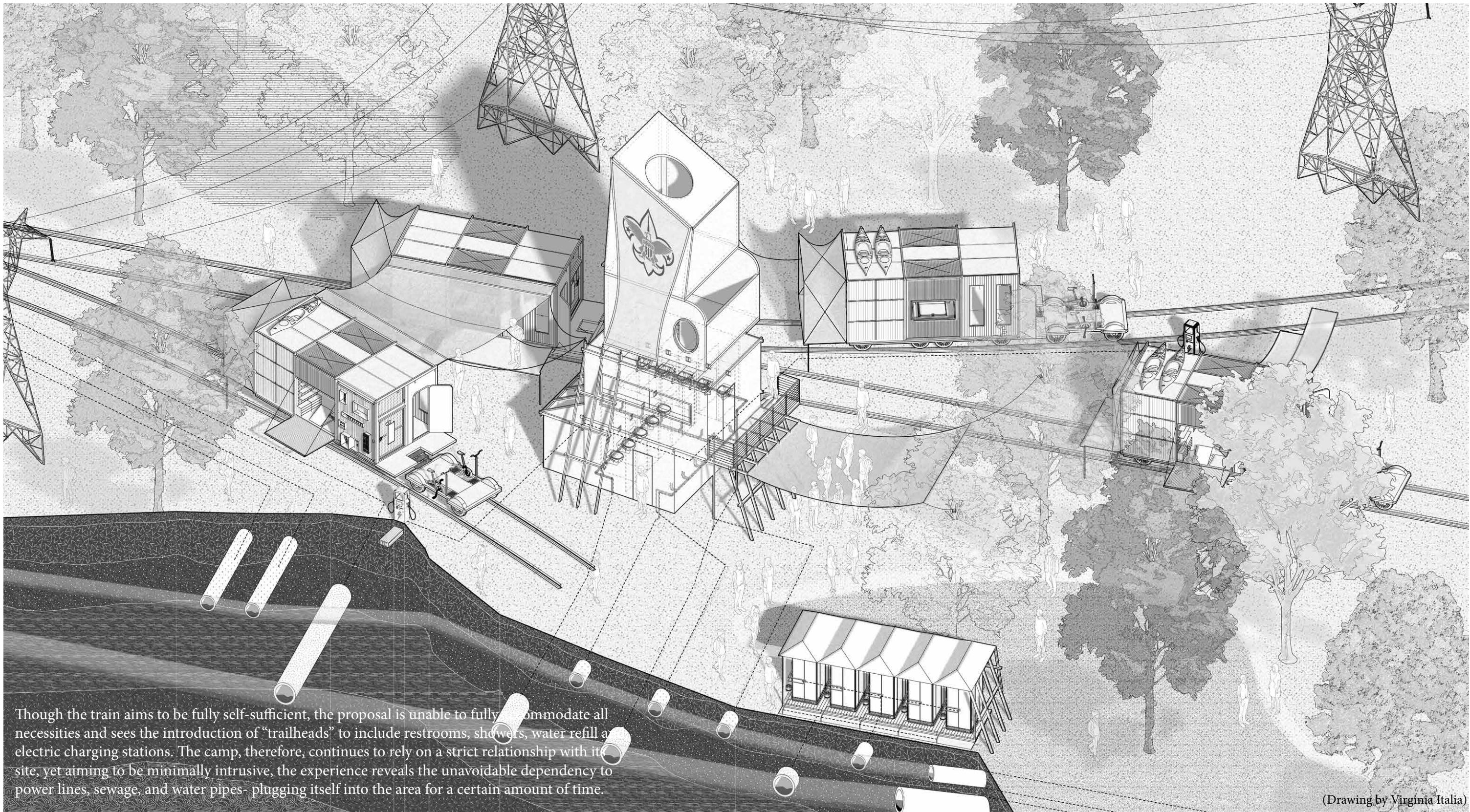
(Drawing by Virginia Italia)

Sanita also pointed us toward a broader relationship between camps, landscape, and infrastructure in the Hudson Valley. The region has long dealt with the image of quintessential Americana—idealized by Hudson River School artists, scout camps, and hyper-controlled experiences aimed at indoctrinating youth. Camps are no longer static spaces; they became linked to the pre-existing colonial railroads that helped forge a national identity, embedding ideas of progress, freedom, and opportunity into the American imagination.

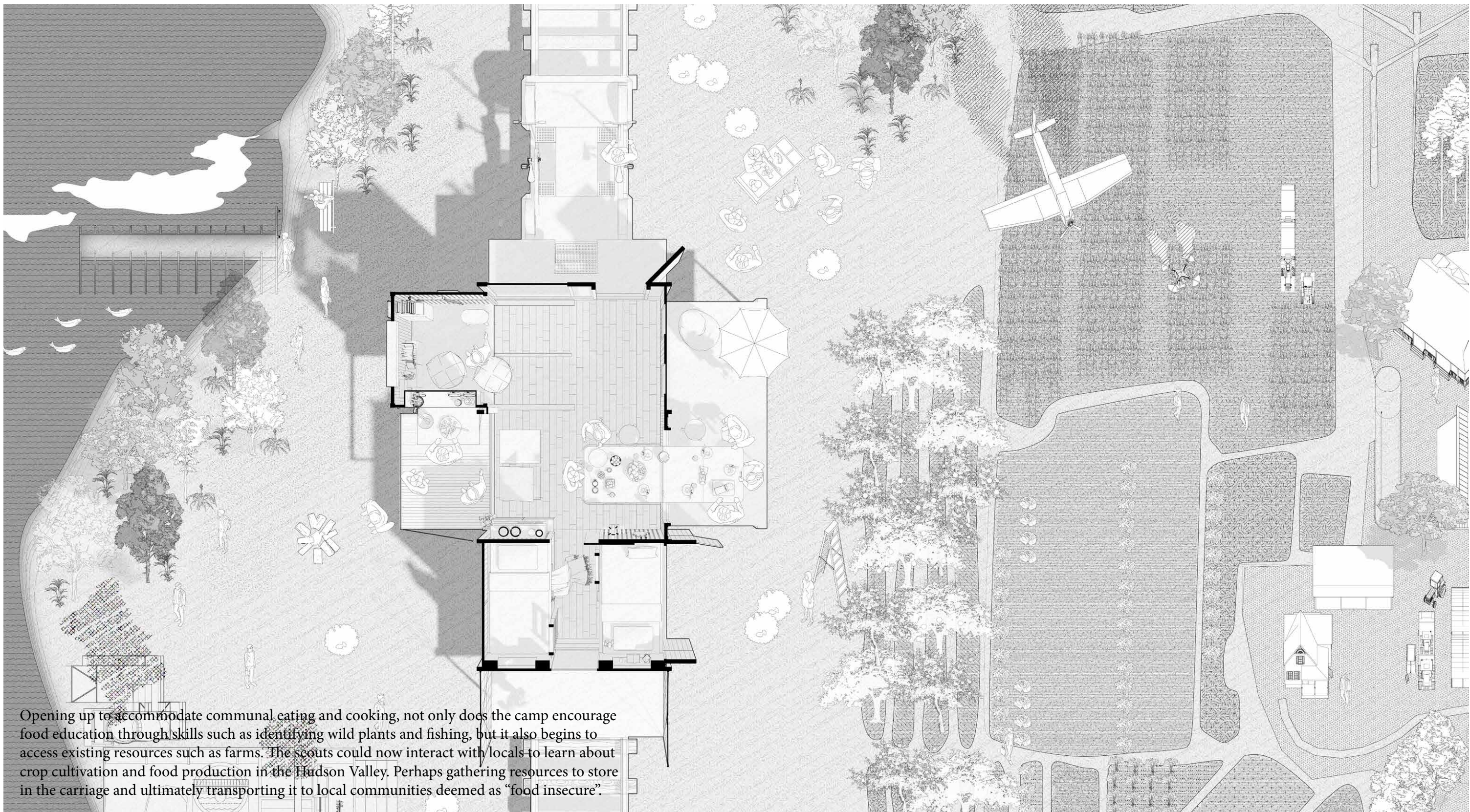
Similarly, the rise of boy and girl scout movements reinforced a nationalistic ideal, especially as the U.S. shaped a post-war identity rooted in tradition, patriotism, and civic values. Their programs and rituals helped define what it meant to be a “good American” during the Cold War era.



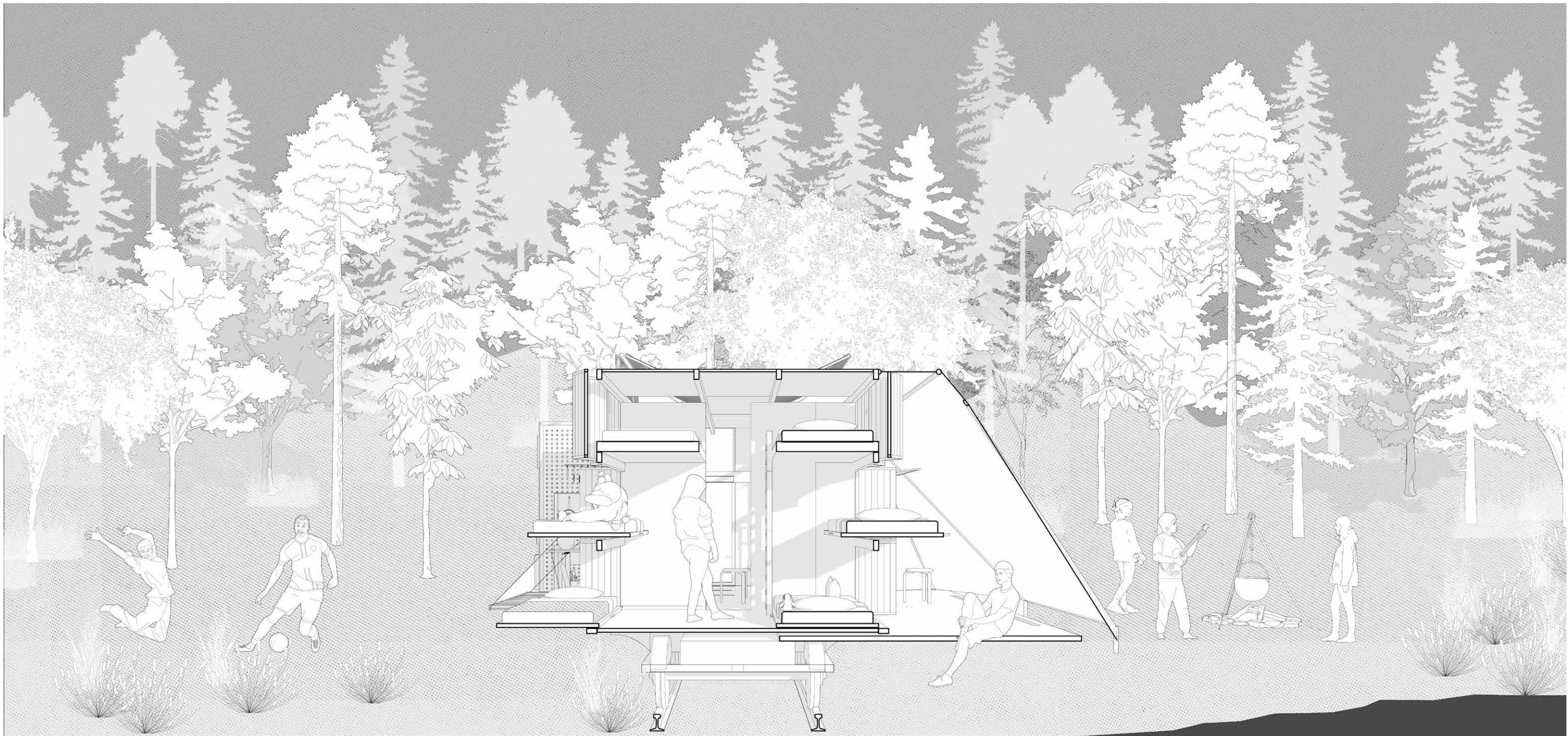
Navigating the dense forests and vertiginous hills, the kids are exposed to the prevalent existence of quarries, deforestation, and locked lands, perhaps now understanding the curated landscape of the typical scout campsite.



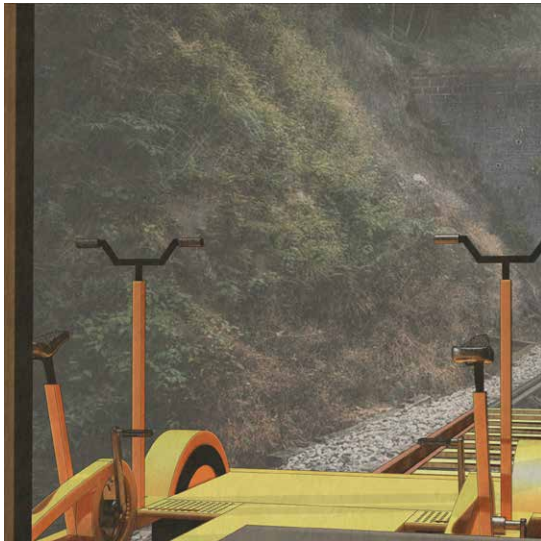
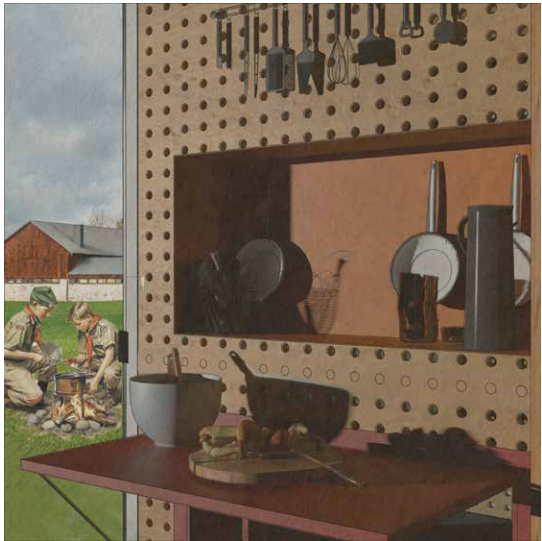
Though the train aims to be fully self-sufficient, the proposal is unable to fully accommodate all necessities and sees the introduction of “trailheads” to include restrooms, showers, water refill and electric charging stations. The camp, therefore, continues to rely on a strict relationship with its site, yet aiming to be minimally intrusive, the experience reveals the unavoidable dependency to power lines, sewage, and water pipes- plugging itself into the area for a certain amount of time.



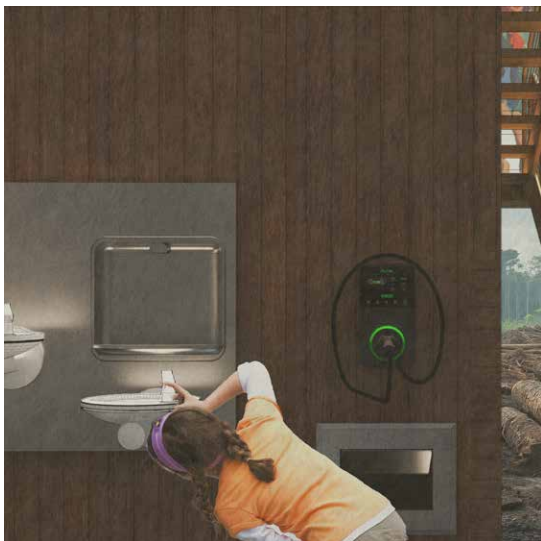
Opening up to accommodate communal eating and cooking, not only does the camp encourage food education through skills such as identifying wild plants and fishing, but it also begins to access existing resources such as farms. The scouts could now interact with locals to learn about crop cultivation and food production in the Hudson Valley. Perhaps gathering resources to store in the carriage and ultimately transporting it to local communities deemed as “food insecure”.



Lastly, at its last moment of the day, much like a usual camping condition, the carriage would deploy its tents to anchor itself onto the ground. Bunk beds reconfigure themselves to create areas for bedtime storytelling, night time conversations, and building bonfires. Embedded within whichever desired stop, the carriage aims to remain unobtrusive to the land, stopping only for the night.



DAILY SCHEDULE RENDER (W/VRAY)



The renders explore what we hypothesize to be a single day's travel, starting from the train's ability to interact with all typologies of landscapes, proceeding to meeting points and assembly areas, stopping for food foraging and outdoor cooking, and finally temporarily anchoring itself to a site for the night.



07

THE EMBASSY: PRINTING HOUSE

YEAR: ADV V FALL 2025 | TYPE: PARTNER (W/OMAR ISMAIL) |
INSTRUCTOR : JORGE OTERO PAILOS & MARK RAKATANSKY

The Embassy: Publishing and Printing House reimagines the space of the decommissioned United States embassy in Dublin as a place for communal printing practice. This proposed transformation commemorates the long history and tradition of Irish writing while also bringing this heritage into dialogue with the diplomatic documentation and typically covert activities that took place in the Embassy. Via a series of selective design interventions the existing historic condition of the building as a diplomatic structure is overlapped with forms and artifacts evocative of 19th and 20th century printing houses. Offices and shared working spaces are planned alongside a printing workshop, bookstore, library, and exhibition space. The building brings together those who create printed matter with those who consume it, all while immersed in rich Irish literature and print.



ARCHIVAL IMAGE SUNKEN
GARDEN

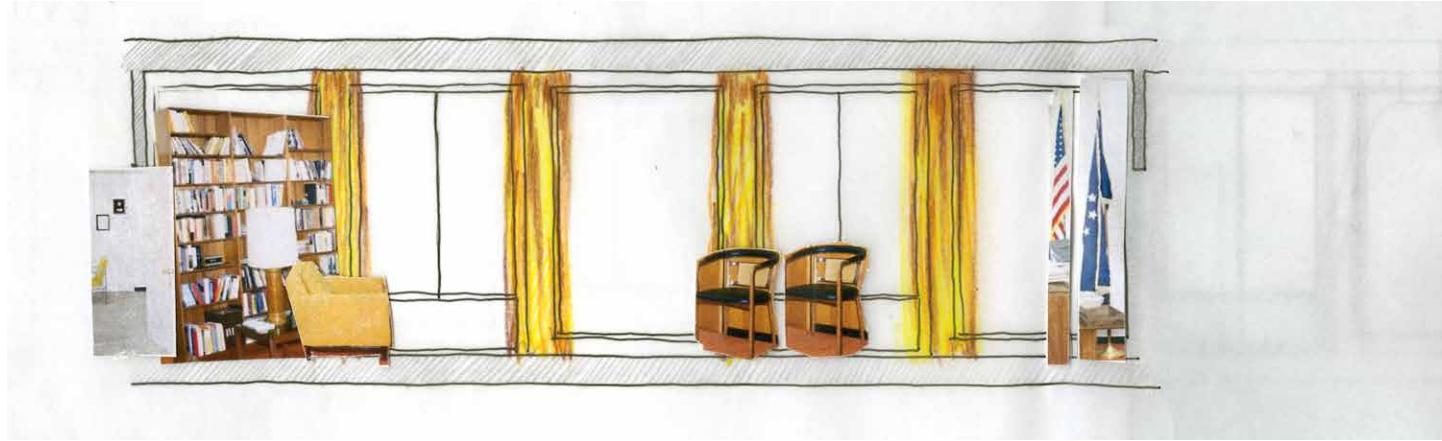


ARCHIVAL IMAGE OF
EMBASSY BALLARDS



The curtilage of the site is left mostly untouched to offer unobstructed views of the building with much of the programmed space descending below the ground and in the renewed public plaza. After the 2001 embassy bombing crisis, US embassies around the world became fenced and highly restricted, leaving the once intended public plaza untouchable.

With the decommissioning of the embassy, our proposal reintroduces the plaza as a site of public assembly and leisure gathering, marking an end to the closure and ownership of American property on Irish soil.



Our design strategy was rooted in collage explorations highlighting the existing material and spatial conditions observed in the archival photographs. We therefore developed an approach of overlapping and reframing artifacts and architectural elements: designing through perspectival views



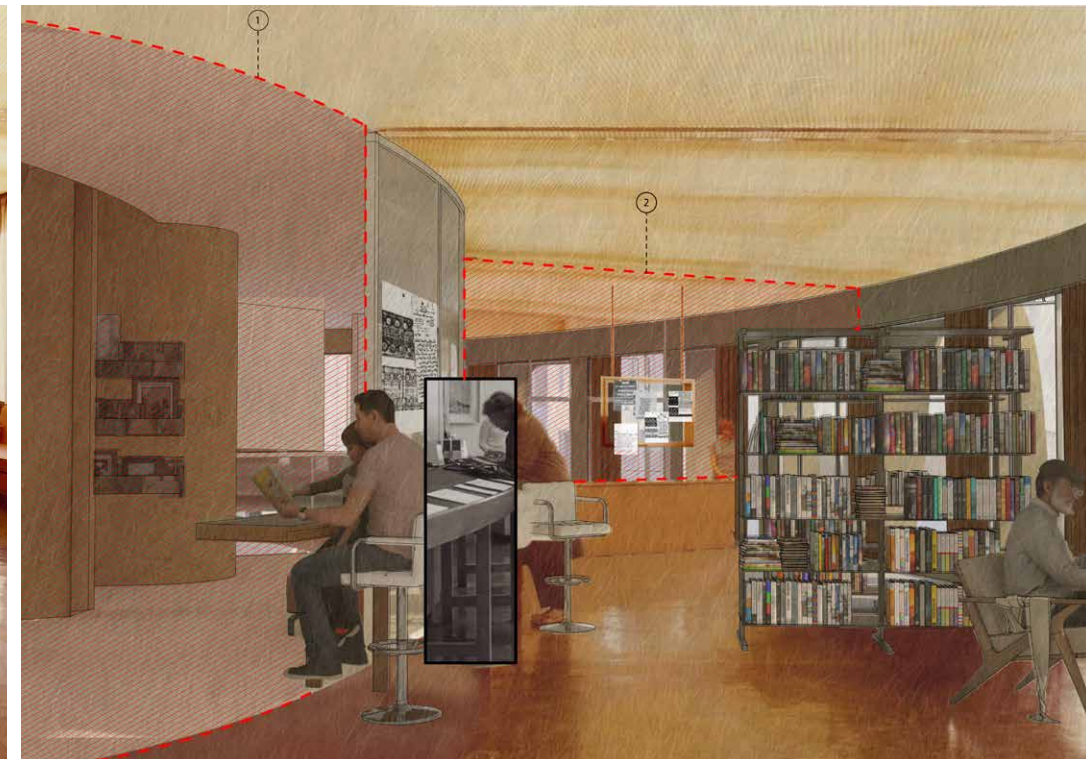
ARCHIVAL IMAGE: ORIGINAL LEVEL 3 CORRIDOR (SOURCE: BBB PRESERVATION REPORT)



RENDER: LEVEL 3 CORRIDOR REIMAGINED OPEN CONCEPT

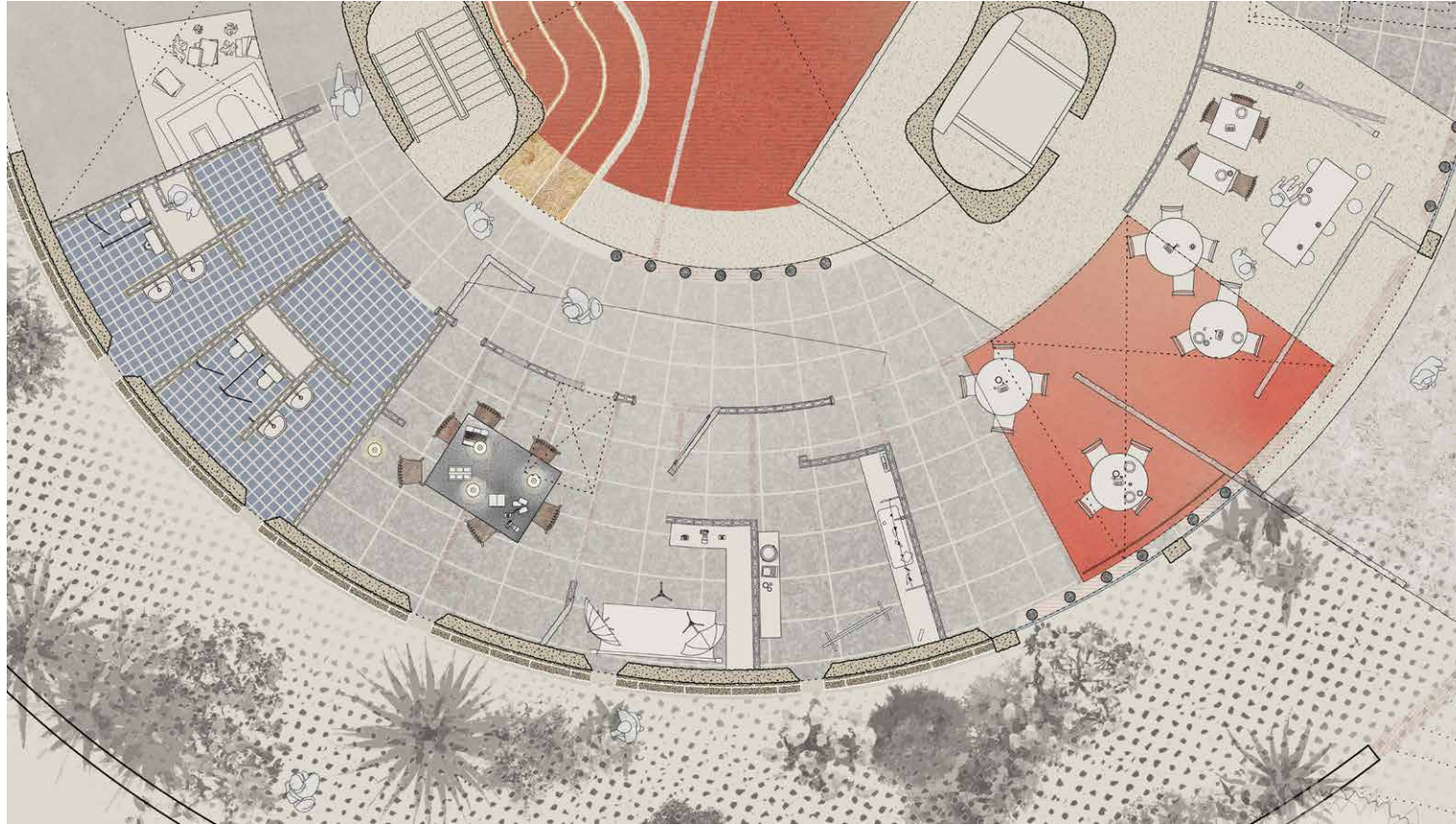


ARCHIVAL IMAGE: LEVEL 1 VISA CENTER AND WAITING ROOM, CIRCA 1970S

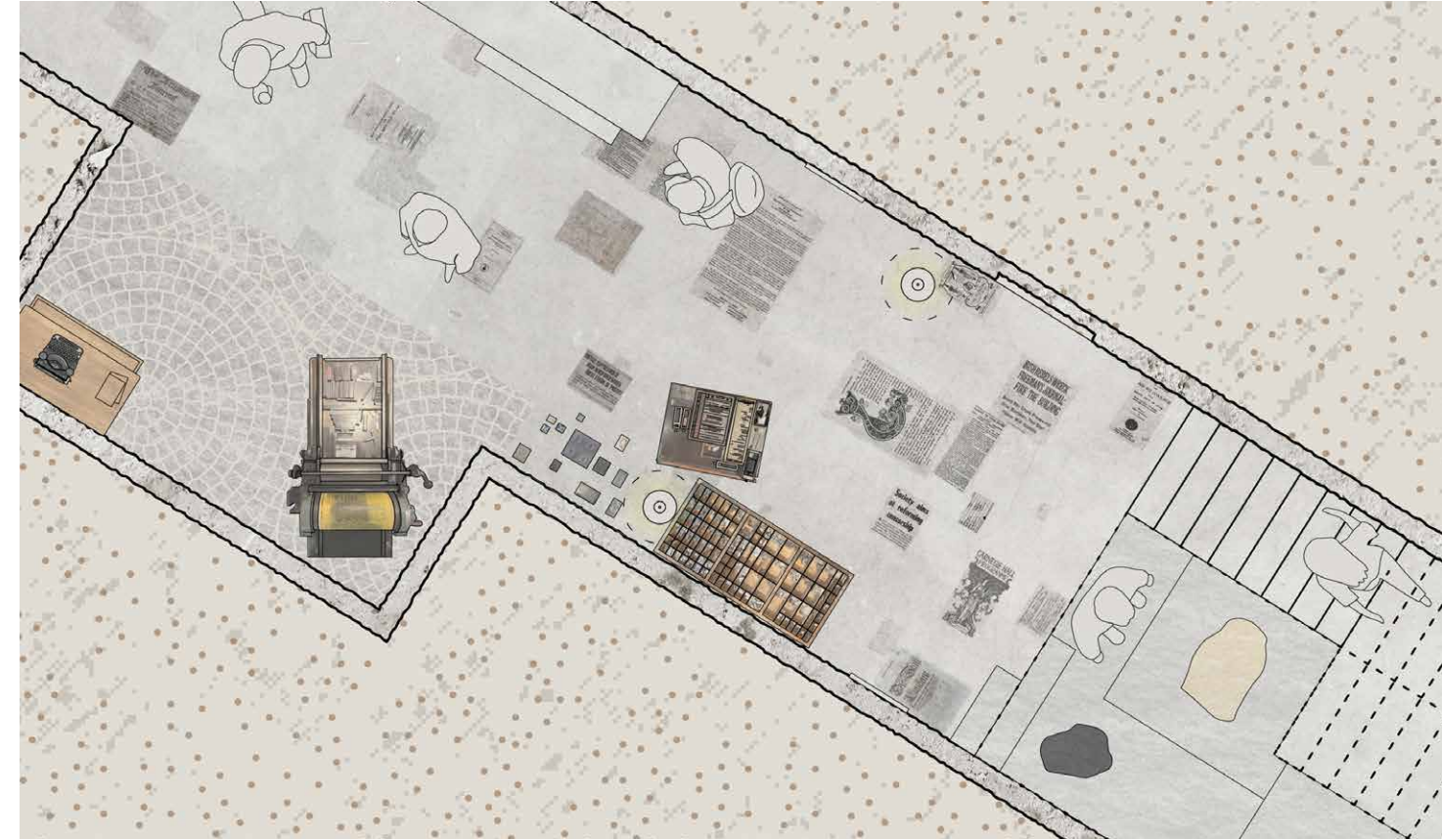


RENDER: LIBRARY AND READING ROOMS

*Red hatch indicates location of original walls/original floor plan configuration



GROUND FLOOR PLAN - CLOSE UP
(Drawing by Omar Ismail)



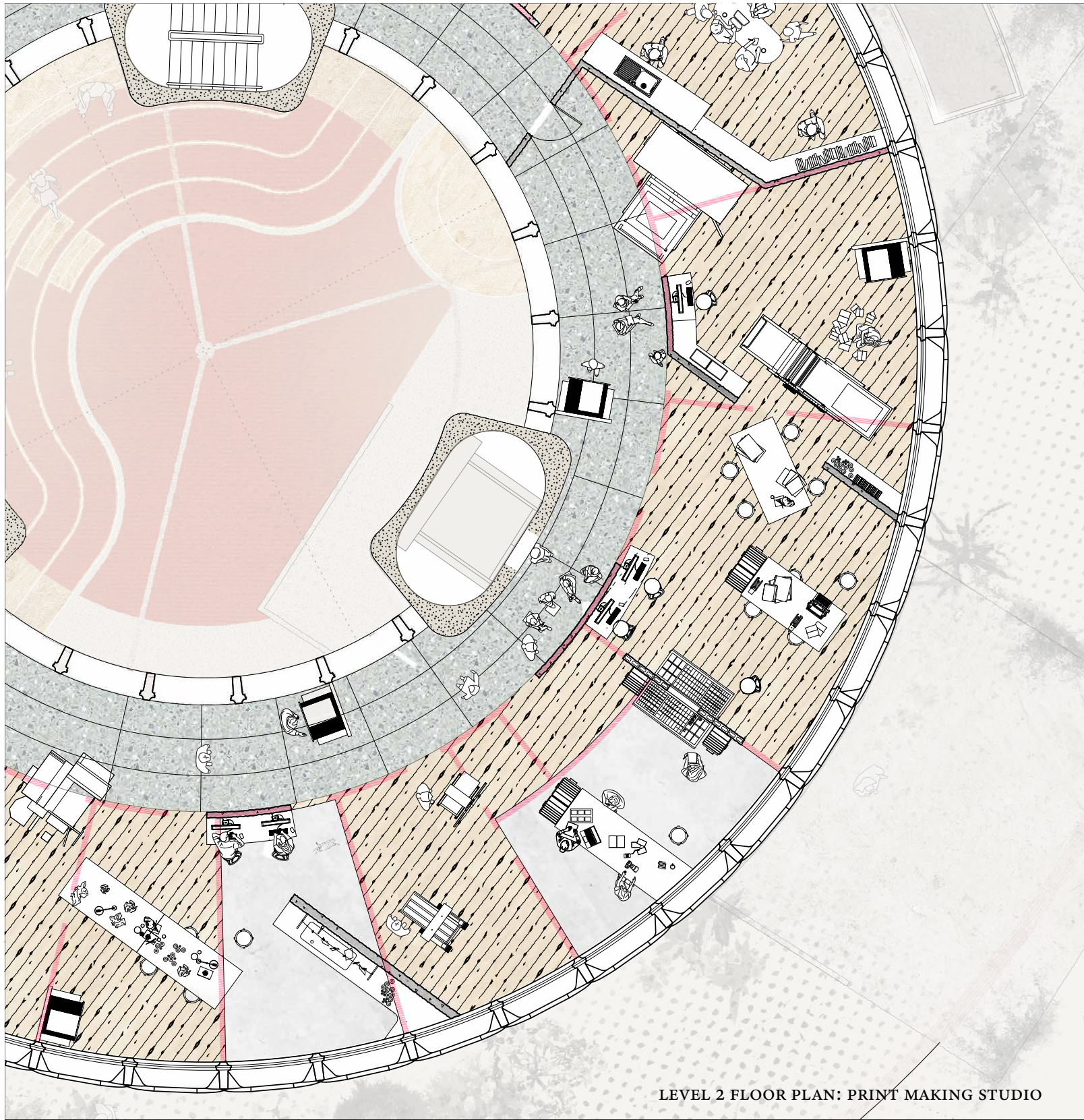
MUSEUM ENTRANCE PLAN - CLOSE UP
(Drawing by Omar Ismail)



Our overlapping design strategy selectively intervenes in and curates the embassy while always hinting at what was there before. A wall is never gone but leaves behind a rough texture where it has been demolished. A carpet is cut up and rearranged telling visitors a story of what once was. The ground floor becomes an active space for the performing of the cultural traditions and rituals documented in irish-american publications.



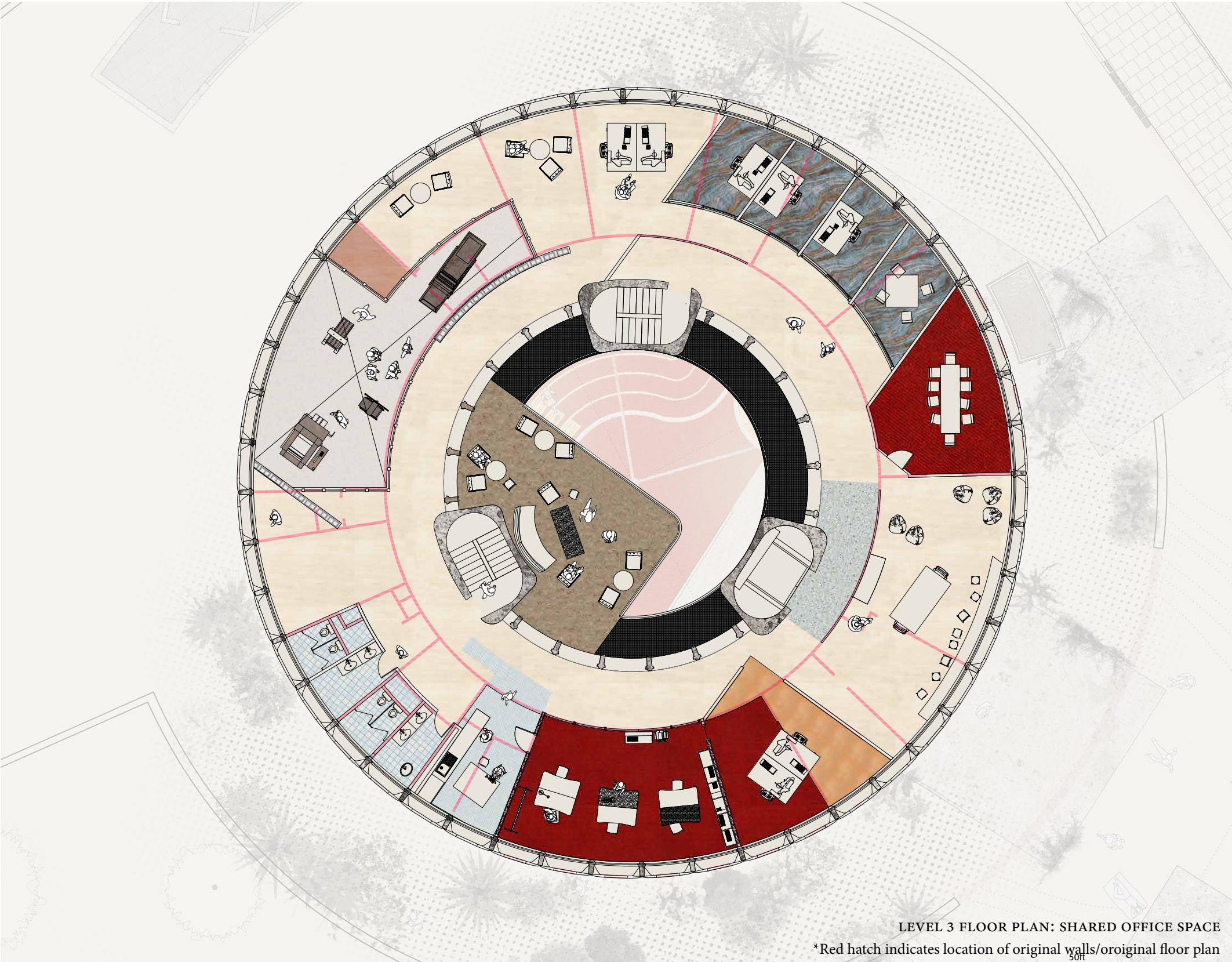
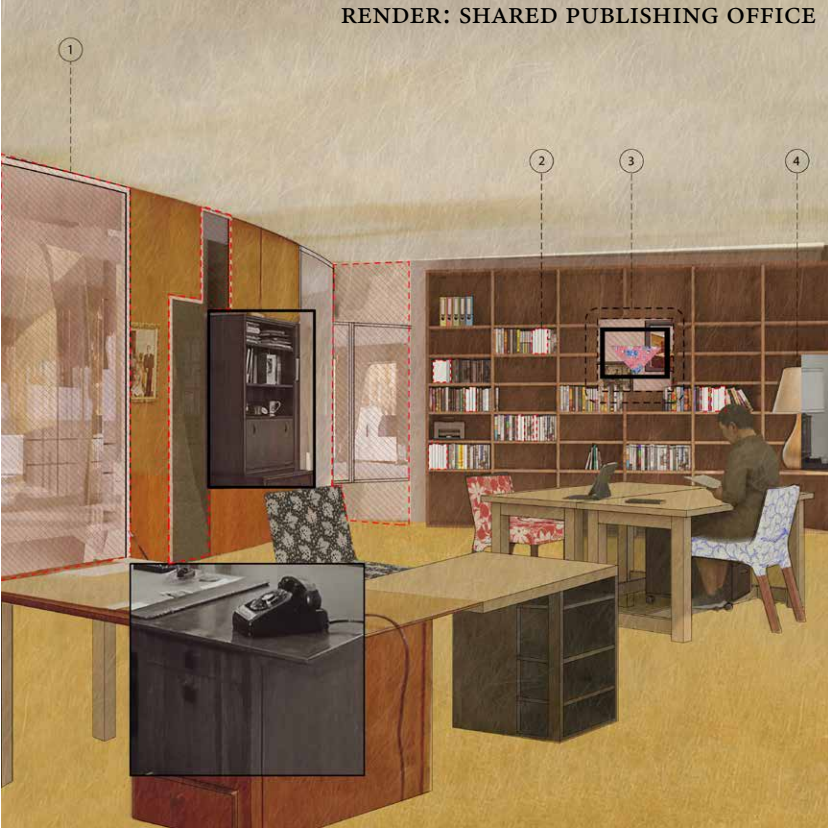
Tactile and material interactions act as signals for programmatic and formal changes made to the embassy, while Johansen suggests a dominant radial grid system, he himself breaks free from this relentless logic in specific moments with his use of parallel lines. We take this further by intersecting his radial walls with straight lines to recombine his production of space



ARCHIVAL IMAGE: AMBASSADOR'S OFFICE 1970S



RENDER: SHARED PUBLISHING OFFICE



LEVEL 3 FLOOR PLAN: SHARED OFFICE SPACE
*Red hatch indicates location of original walls/original floor plan



GROUND FLOOR ATRIUM

(Render by Omar Ismail)



LEVEL 1 LIBRARY



LEVEL 2 PRINT MAKING STUDIO



LEVEL 3 SHARED OFFICE

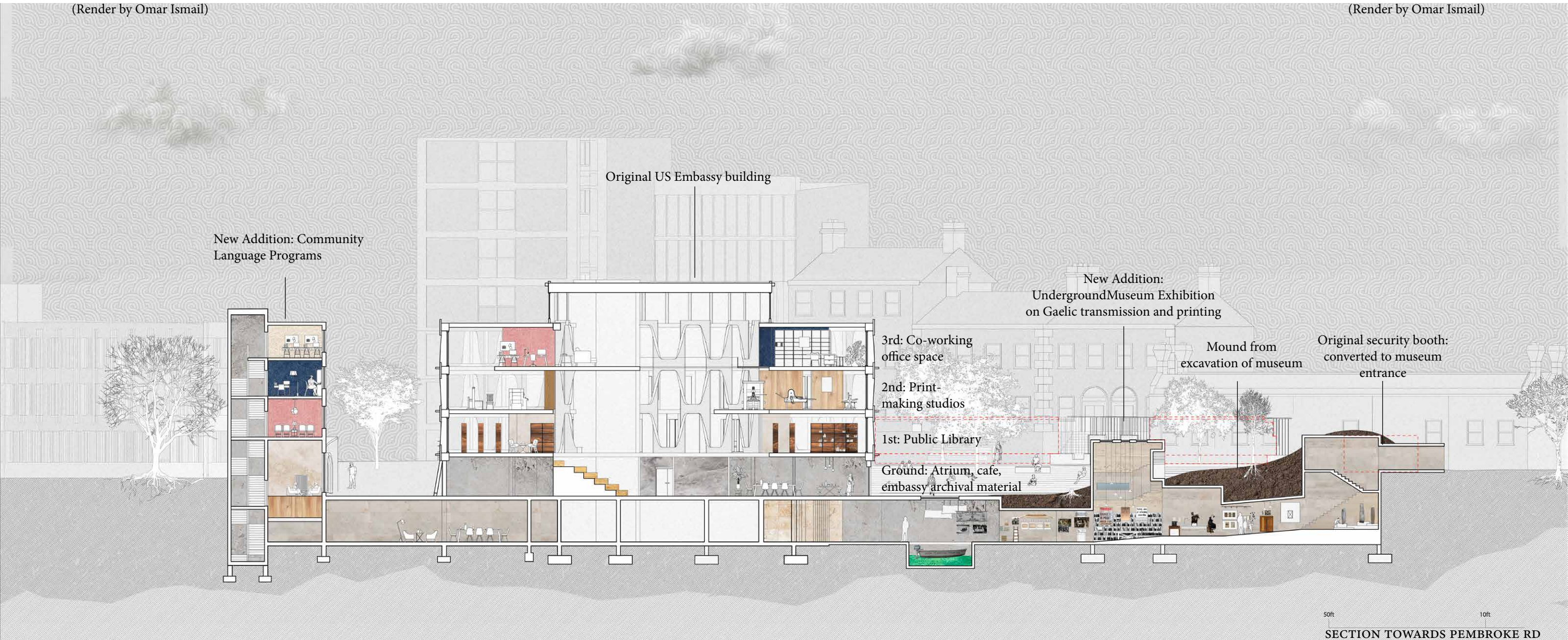


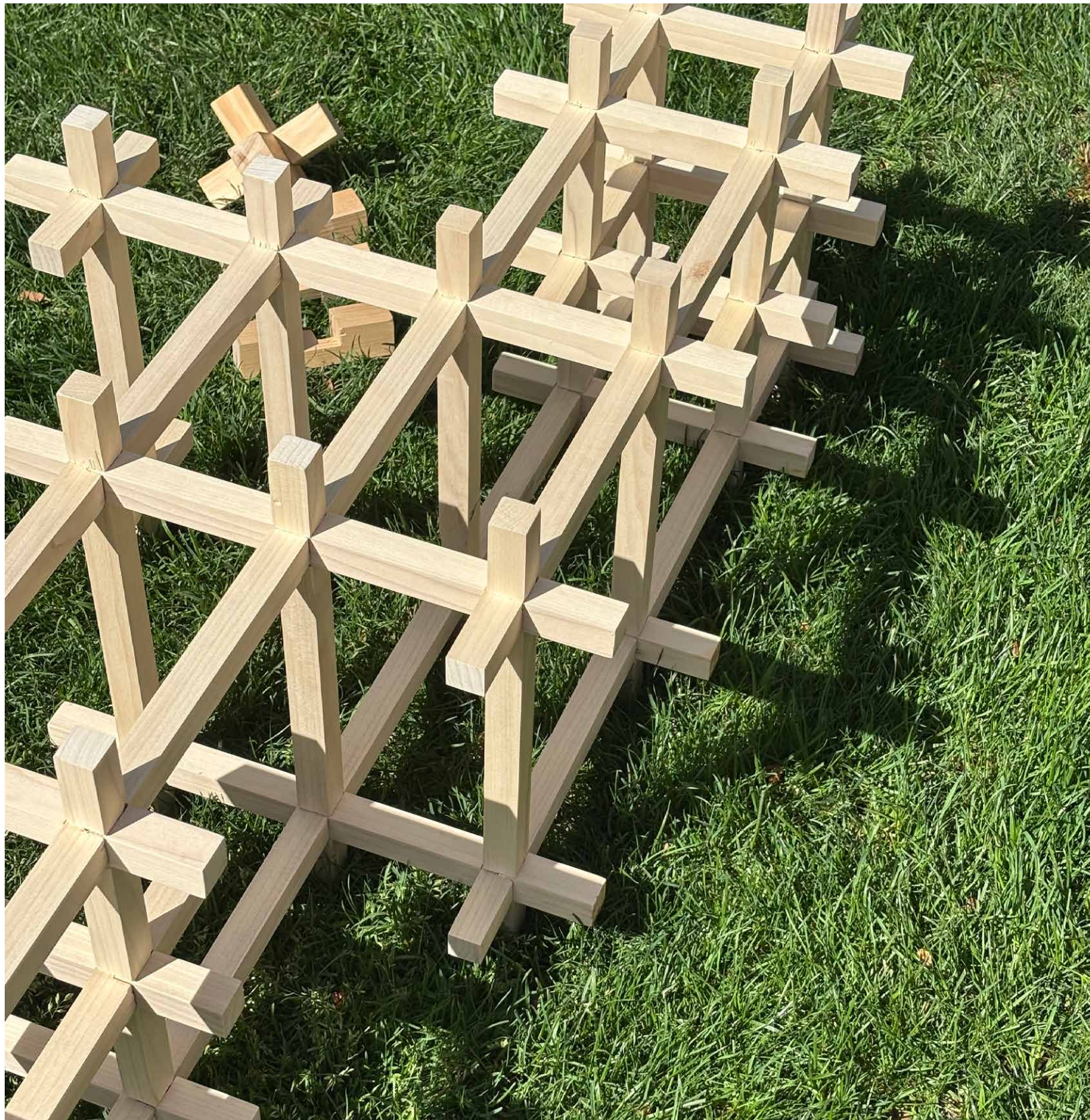
MUSEUM



NEW ENTRANCE AT ORIGINAL SECURITY BOOTH

(Render by Omar Ismail)





o8

1:1 SCALE CONSTRUCTION

YEAR: SPRING 2026 | TYPE: PARTNER (W/BENJAMIN SPEARS) |
INSTRUCTOR : ZACHARY

Inspired by joinery systems that requires no screws and nails, we wanted to create a “totem” that relied on interlocking pieces. An object that consisted of a single material and was completely dependant on each other and nothing else. Fabrication included hand cutting and many, many CNC tests through trial and error in order to achieve the desired tolerance.



3 TYPES OF CUTS FORM THE JOINT



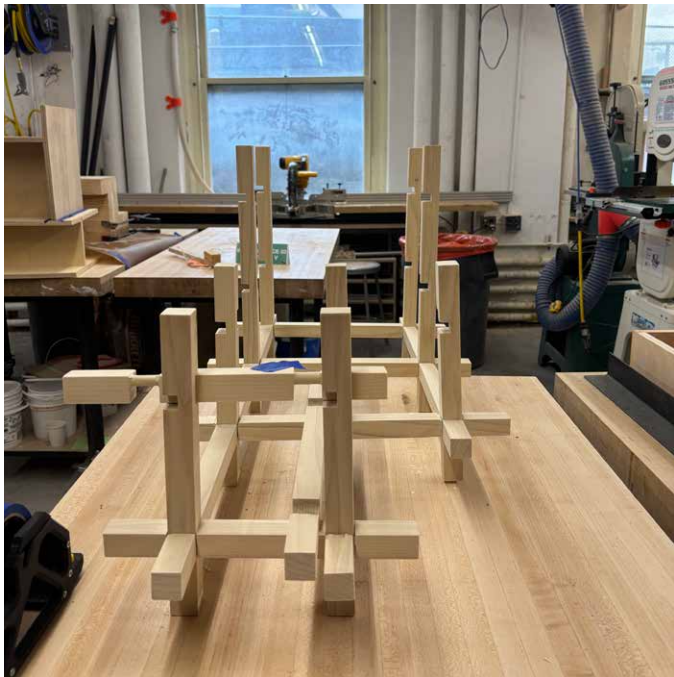
RIGHT ANGLE CUTS WERE COMPLETED ON
THE TABLE SAW



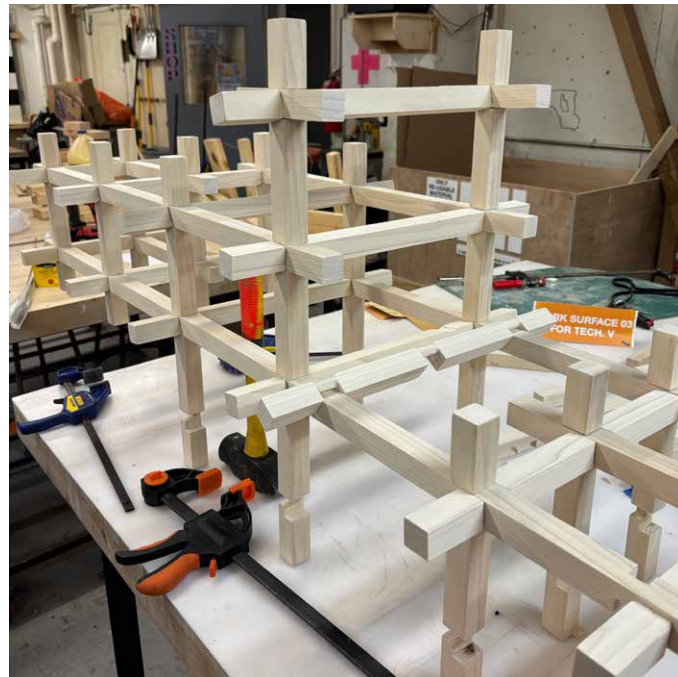
ROUNDED EGDES AND CYLINDRICAL FORMS
WERE CUT BY THE CNC



PIECES WERE SANDED DOWN FOR
TOLERANCE CONSISTANCY



ASSEMBLY INCLUDED SANDING DOWN BIT BY BIT AND
FITTING PIECES ALMOST SIMULTANEOUSLY



FINAL PRODUCT



09

ARCHITECTURAL GILDING IN GILDED AGE AMERICA

YEAR: 2025-2026 | TYPE: INDIVIDUAL | ADVISOR: NORMAN WEISS

MS.HP THESIS

What can an architectural scale gilded surface reveal beyond its brilliance? This thesis examines architectural gilding as both a technical practice and a cultural instrument within the socio-economic context of late nineteenth-century America.

Focusing on the Gold Salon of Marble House in Newport, designed by Richard Morris Hunt for the Vanderbilt family, the study investigates the unprecedented scale of gold leaf application in American domestic architectural interiors.

By offering in-situ readings of the gilded surfaces and cross-sectional sampling, the study demonstrates how gilders manipulated surface qualities to achieve specific optical and atmospheric effects ranging not only from burnished to matte finishes, but also tonal, textural, and lighting differences affecting how it is perceived by the viewer and also its influence on surrounding gilded surfaces.

GOLD SALON GILDING EXAMINATION



Conservation Staff and Columbia University Graduate Student Annie An are examining gilding techniques used to create the vibrant beauty of the Gold Salon. They are using multiple techniques including digital microscopy, ultraviolet (UV) illumination, sampling, and portable x-ray fluorescence (pXRF) to gather important information about the room's decoration.



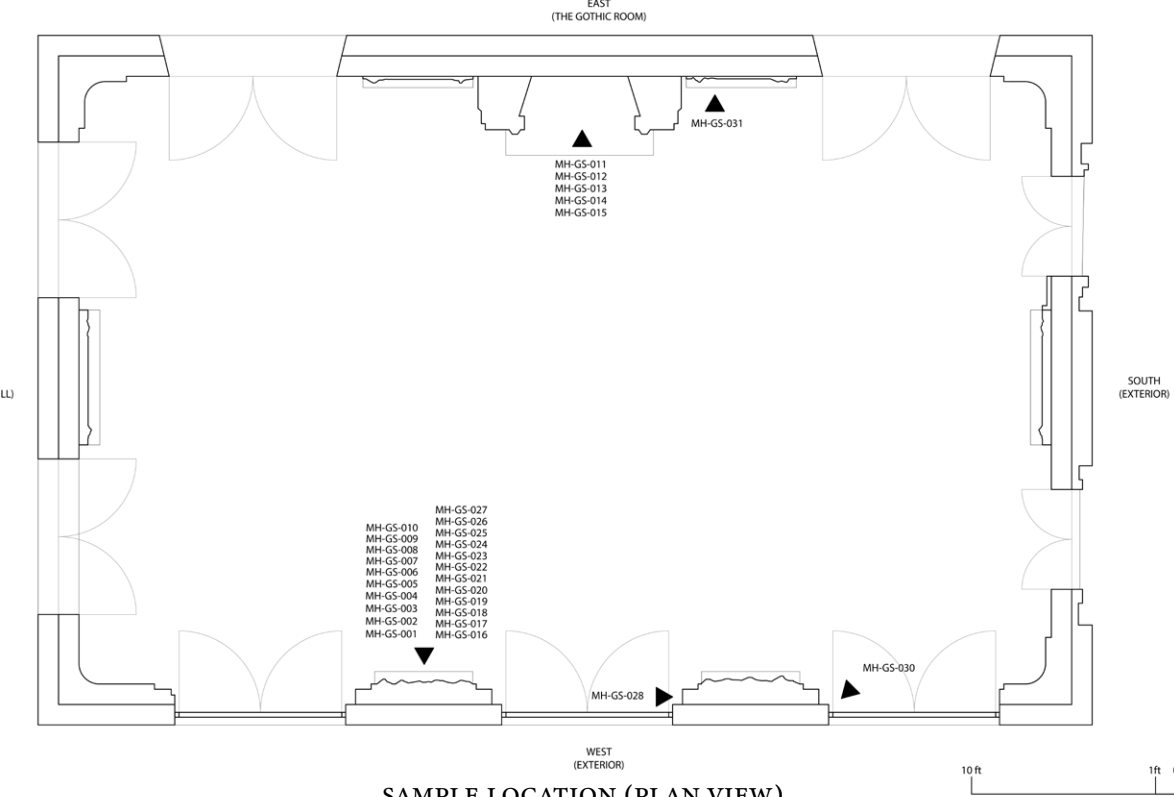
MARBLE HOUSE, NEWPORT, RHODE ISLAND



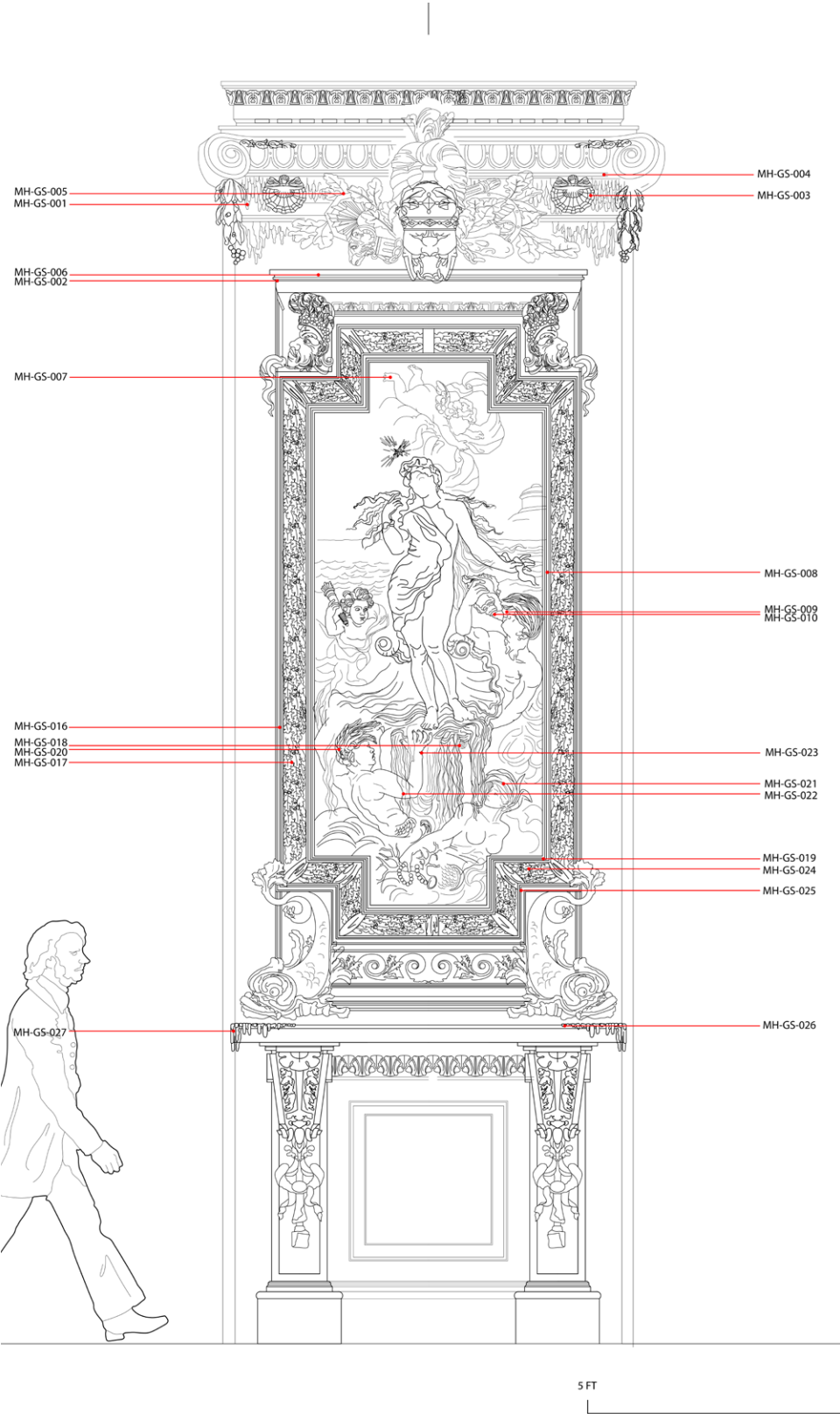
THE GOLD SALON (BALLROOM), GILDING DETAIL



THE GOLD SALON (BALLROOM), MARBLE HOUSE



SAMPLE LOCATION (PLAN VIEW)



SAMPLE LOCATION (ELEVATION OF ONE PANEL)

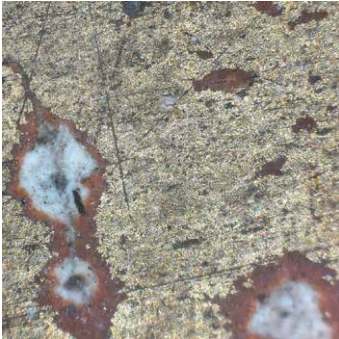
BURNISHED



In-situ photograph



In-situ photograph

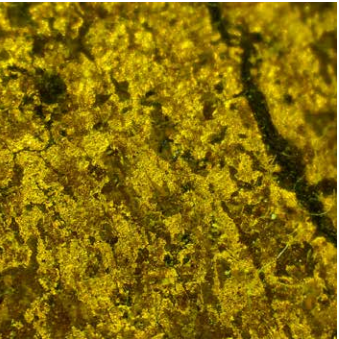


In-situ 5x microscopic surface imaging

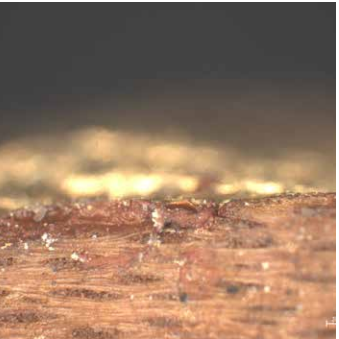
MATTE



In-situ photograph



In-situ 10x microscopic surface imaging



5x microscopic cross-section imaging

OPEN-GRAIN - FLAT



In-situ photograph



In-situ 10x microscopic surface imaging



microscopic cross-section imaging

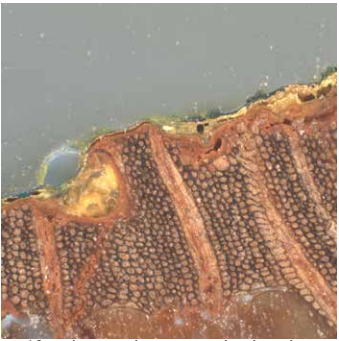
BLUE TINTED



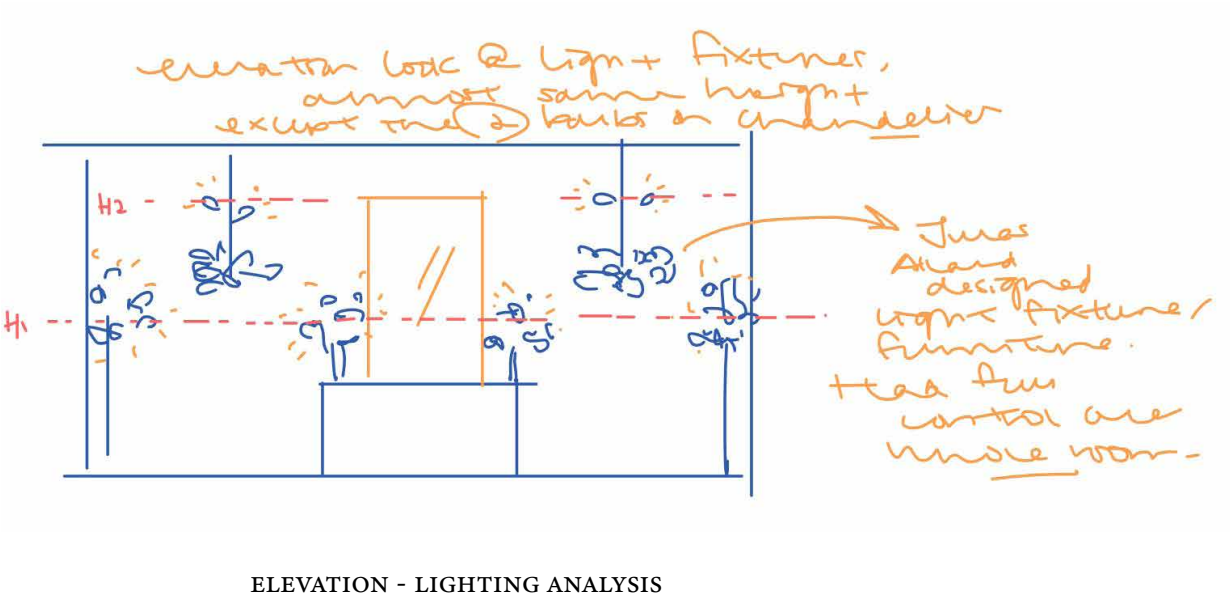
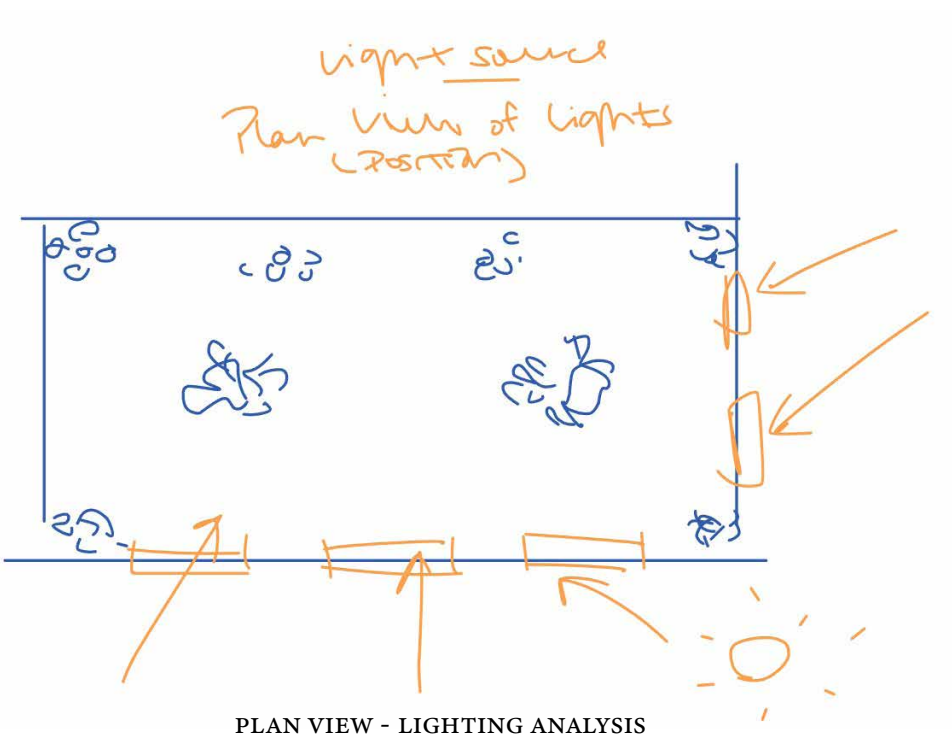
In-situ photograph

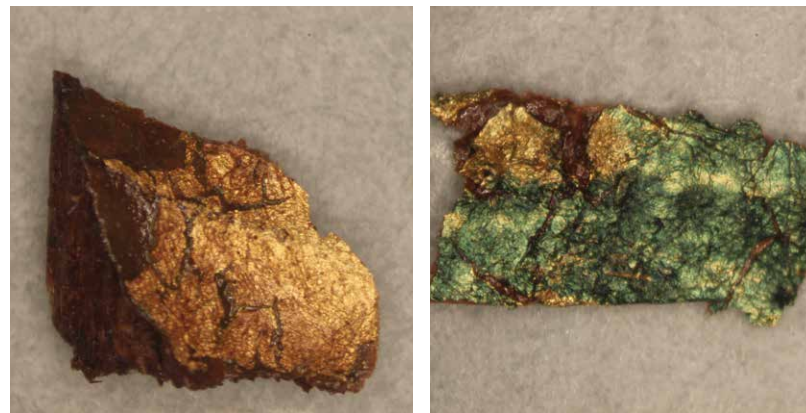


In-situ 10x microscopic surface imaging



10x microscopic cross-section imaging

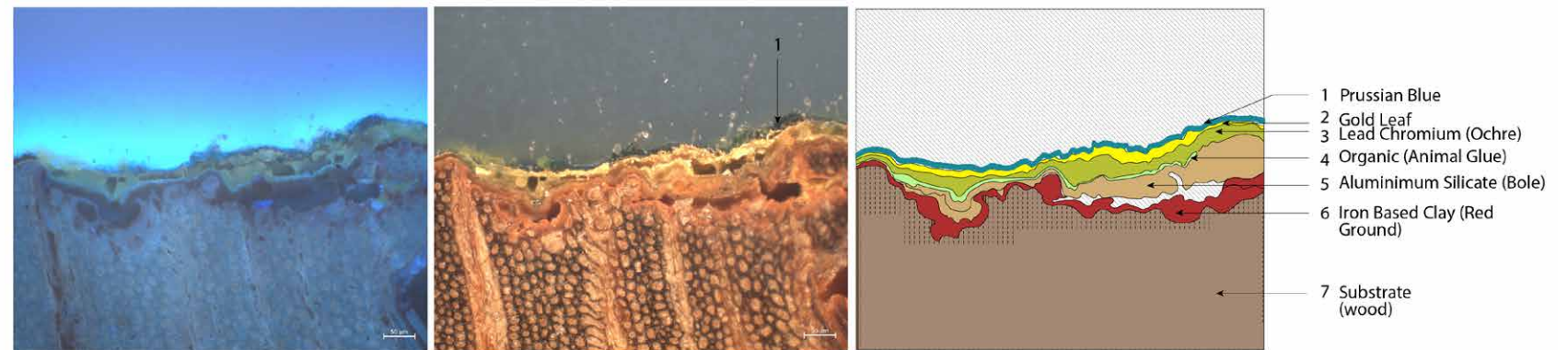
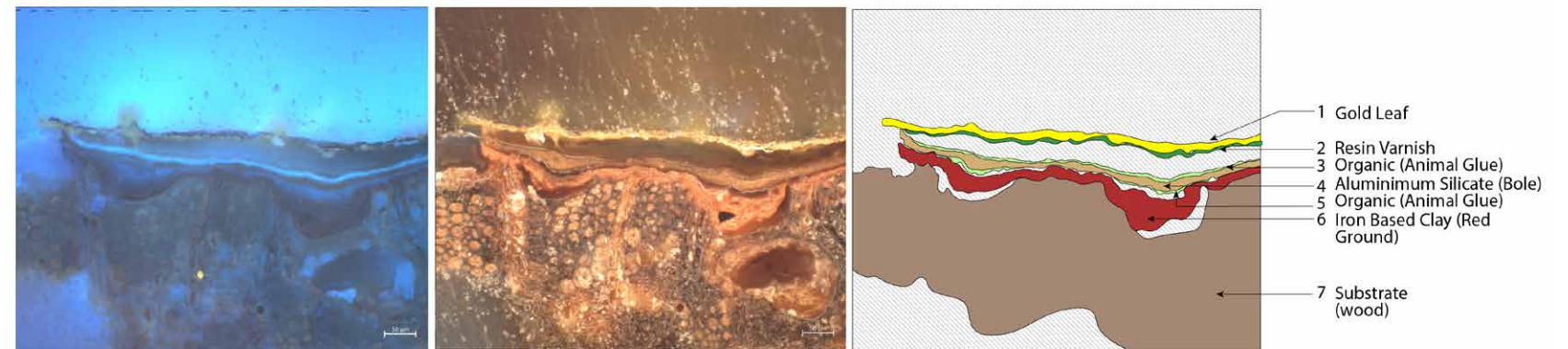
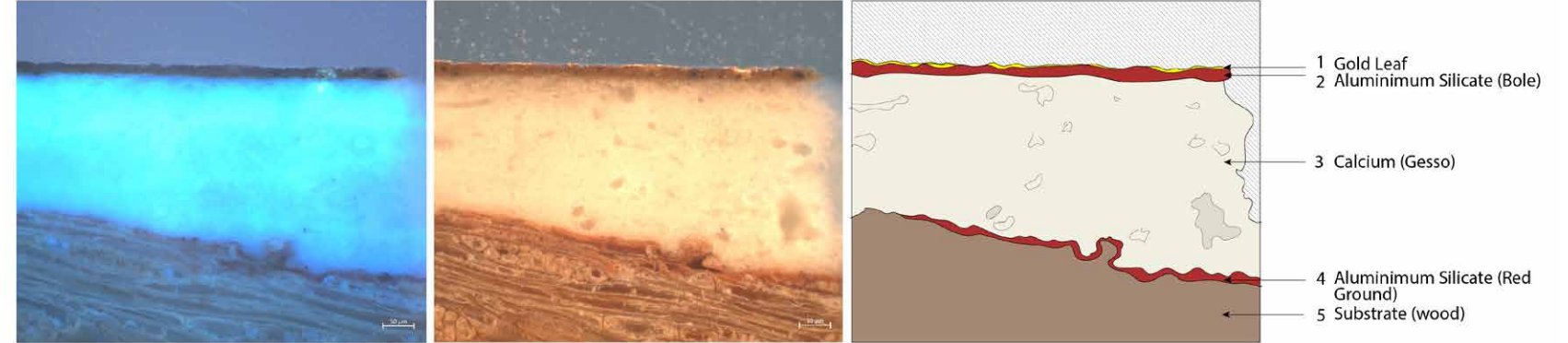




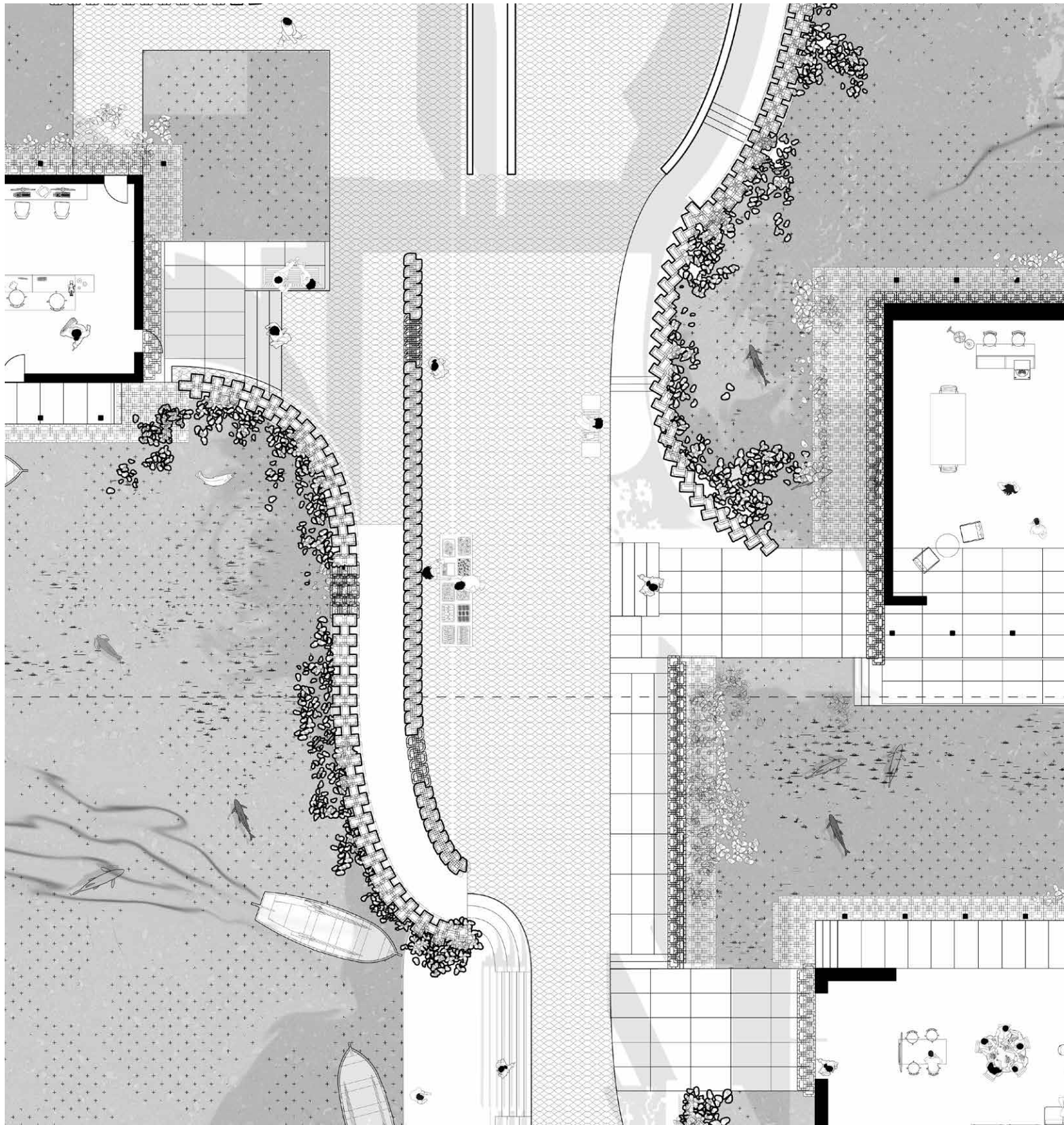
29 SAMPLES WERE COLLECTED FROM THE GOLD SALON

“This ultimately demonstrates that architectural gilding and small-scale object gilding demand fundamentally different spatial considerations and levels of technical and perceptual sophistication, shaped by the environment in which they exist and by how the body encounters them. Space itself is a material.”

- Exerpt from thesis



3 SAMPLES WERE SELECTED FOR ADDITIONAL TESTING

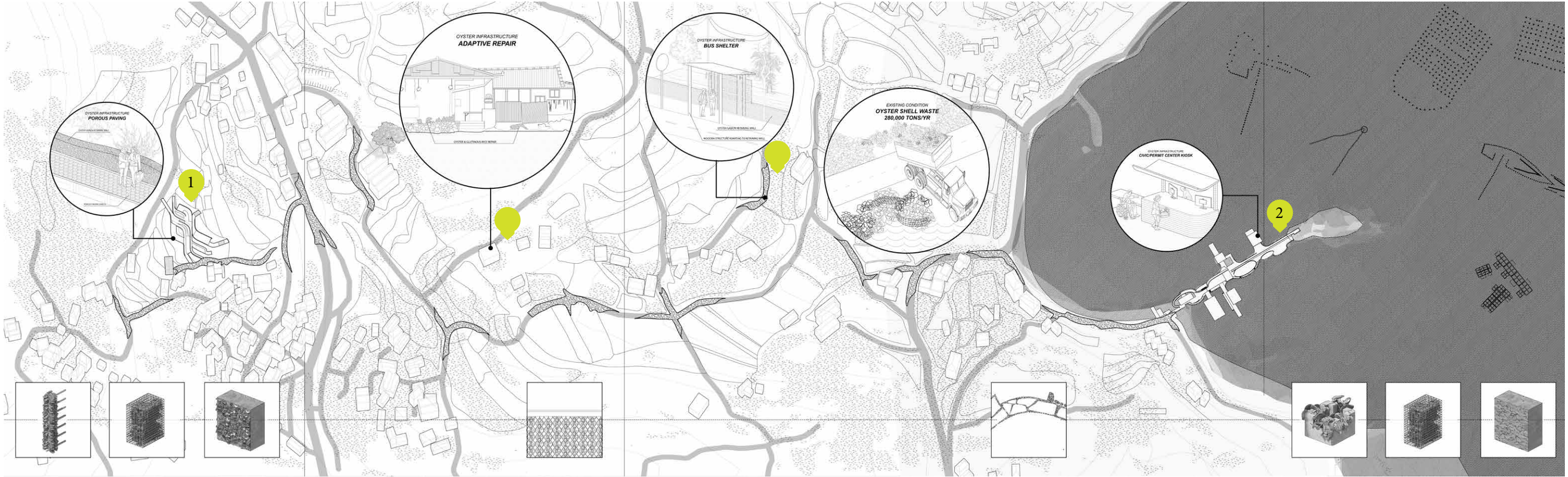


09

BETWEEN LAND TO SEA: OYSTER SHELL WASTE FOR COASTAL ADAPTATION

YEAR: ADV VI SPRING 2026 | TYPE: PARTNER (W/LIBERTY CHAPMAN) |
INSTRUCTOR : MARC TSURUMAKI

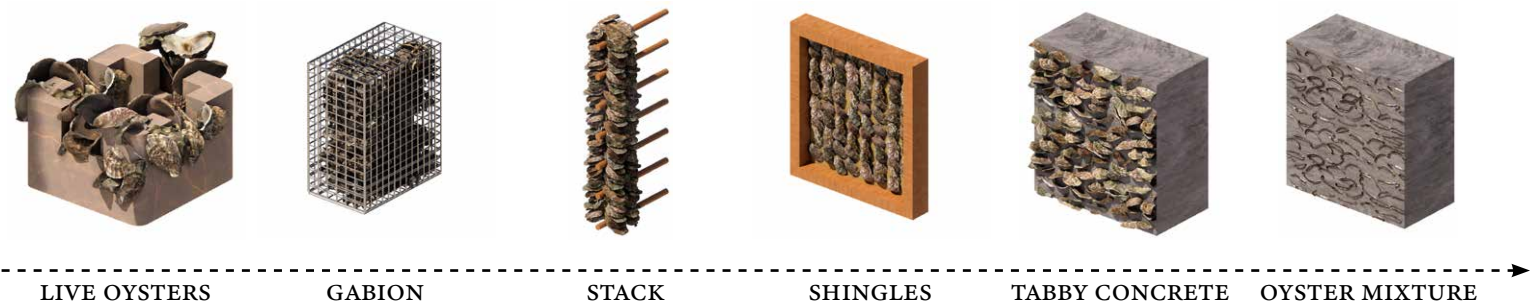
The oyster shell waste stream originates from the aquaculture industry, where approximately 30% of oysters may be lost during harvest, leaving their shells to accumulate along shorelines. We began our material investigations centered on oyster shells and glutinous rice, framed as material excess in regions where aquaculture and agriculture act as the main driving economic force. Our proposal focuses on two designs in each respective type of space - the agriculture and the aquaculture landscape, with the incorporation of our oyster material as a key component integrated throughout the site as a set of architectural frameworks for adaptation to future change. It also proposes a connection of oyster material along the paths between the two as a connective tissue, through phases of porous paving, repair for existing buildings and reimagined bus shelters, these interventions of different scales set a larger framework in the use of oysters and oyster shells as building material in rural coastal cities.



Known for its farming terraces, and coastal culture. The region of Namhae island struggles with depopulation, many rice paddy farmers who are over the age of 65 find it increasingly difficult to maintain these landscapes.

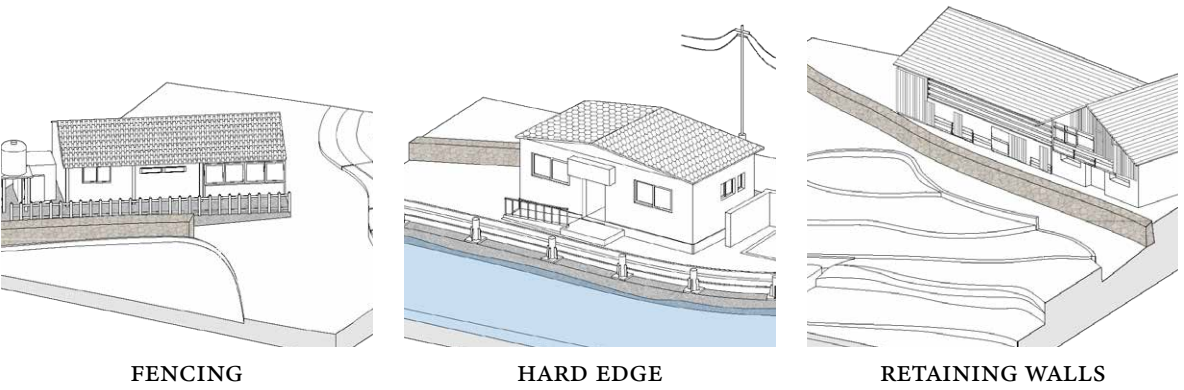
The site has a variety of conditions. In the sea thrives aquafarming; immediately adjacent to the water are flat rice paddies and garlic fields. On the mountainous areas are rice terraces. Interwoven throughout these zones are residential spaces. Mediating this landscape are retaining walls and other forms of boundaries set in place to both divide and regulate these different spatial organizations.

GRADIENT SCALE OF OYSTER AND OYSTER SHELL USE



We experimented with a gradient scale of oyster shell uses and construction methods , ranging from small aggregates to whole oysters, to the use of living oyster reefs. They change from more natural to more processed.

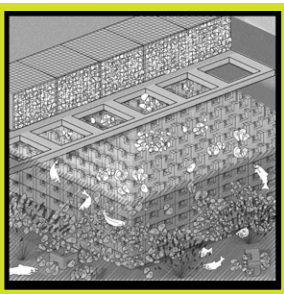
EXISTING BOUNDARIES MEDIATING SITE (DRAWN BY LIBERTY CHAPMAN)



RICE TERRACE

The oyster gabions act as retaining walls for the rice paddies that transform into small structures. The porosity of certain structures change for programs. Gabion walls are double layered with enclosed spaces to create areas of respite for farmers to gather.

The materiality of the oyster gabion retaining walls and porous oyster paving designed to support the existing rice paddies, allows for our intervention to adapt to the terrace landscape.



Shaded structures serve as a place for people and rice paddy species to coexist. While material research and ecology labs that support these adaptations, are partially porous for an informal material laboratory.



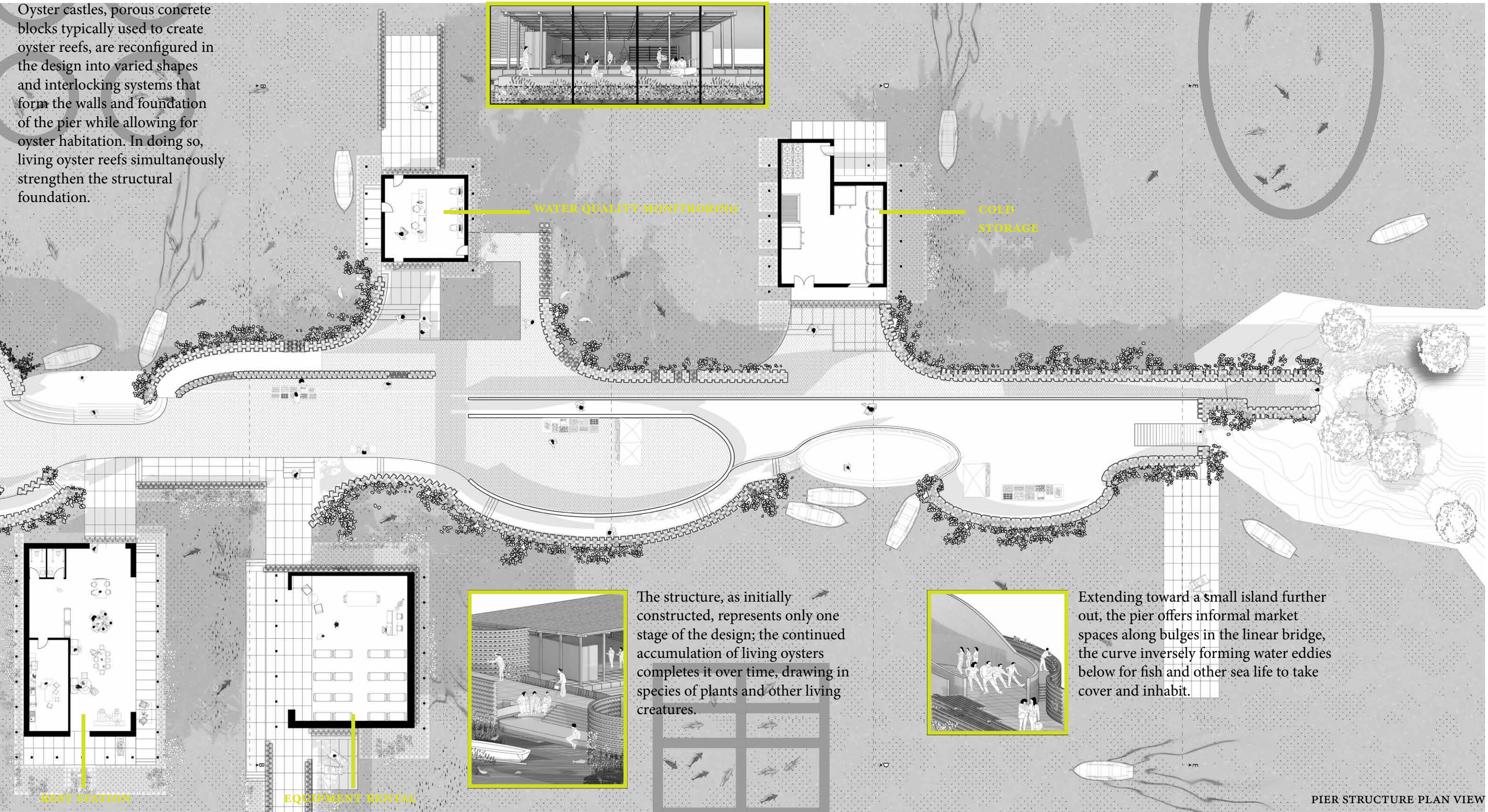
RICE TERRACE STRUCTURE PLAN (DRAWING BY LIBERTY CHAPMAN)

PIER

The pier sits on an intermediate edge between land and water. Due to changing tidal conditions, the site shifts between conditions of mudflats and being fully activated by rising water levels. Focusing on porosity and water drainage, the design system primarily uses oyster castles and oyster gabions.

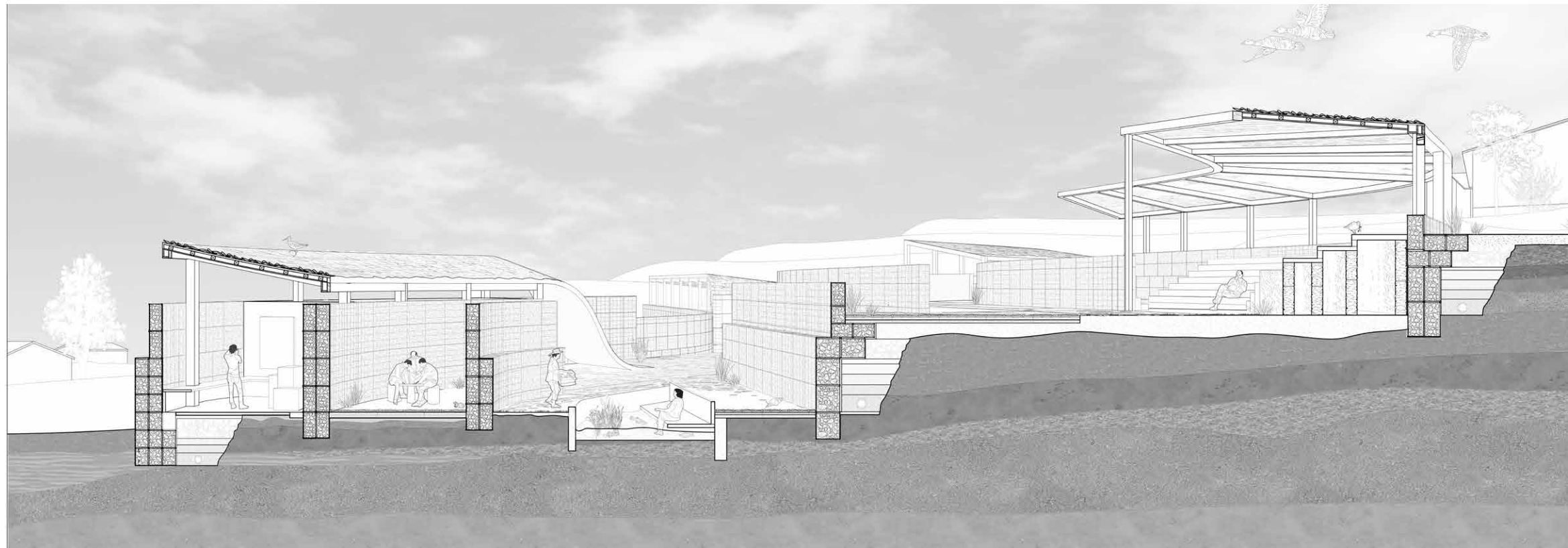
PERMIT APPLICATION

Oyster castles, porous concrete blocks typically used to create oyster reefs, are reconfigured in the design into varied shapes and interlocking systems that form the walls and foundation of the pier while allowing for oyster habitation. In doing so, living oyster reefs simultaneously strengthen the structural foundation.



The structure, as initially constructed, represents only one stage of the design; the continued accumulation of living oysters completes it over time, drawing in species of plants and other living creatures.

Extending toward a small island further out, the pier offers informal market spaces along bulges in the linear bridge, the curve inversely forming water eddies below for fish and other sea life to take cover and inhabit.

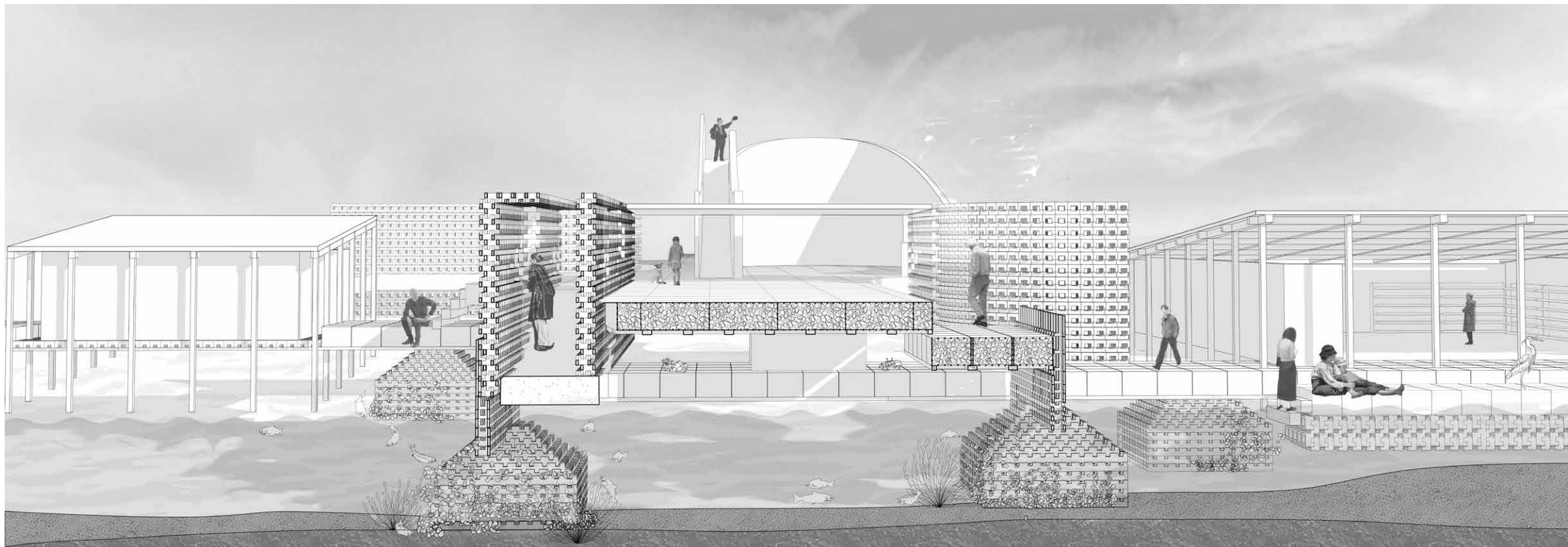


RICE TERRACE STRUCTURE
SECTION(DRAWING BY LIBERTY CHAPMAN)

Gabion walls are embedded throughout the existing rice paddy conditions.

The porous paving features a framework of oysters set into the ground allowing for vegetation to grow through layers of open graded bedding coarse and uncompacted soil.

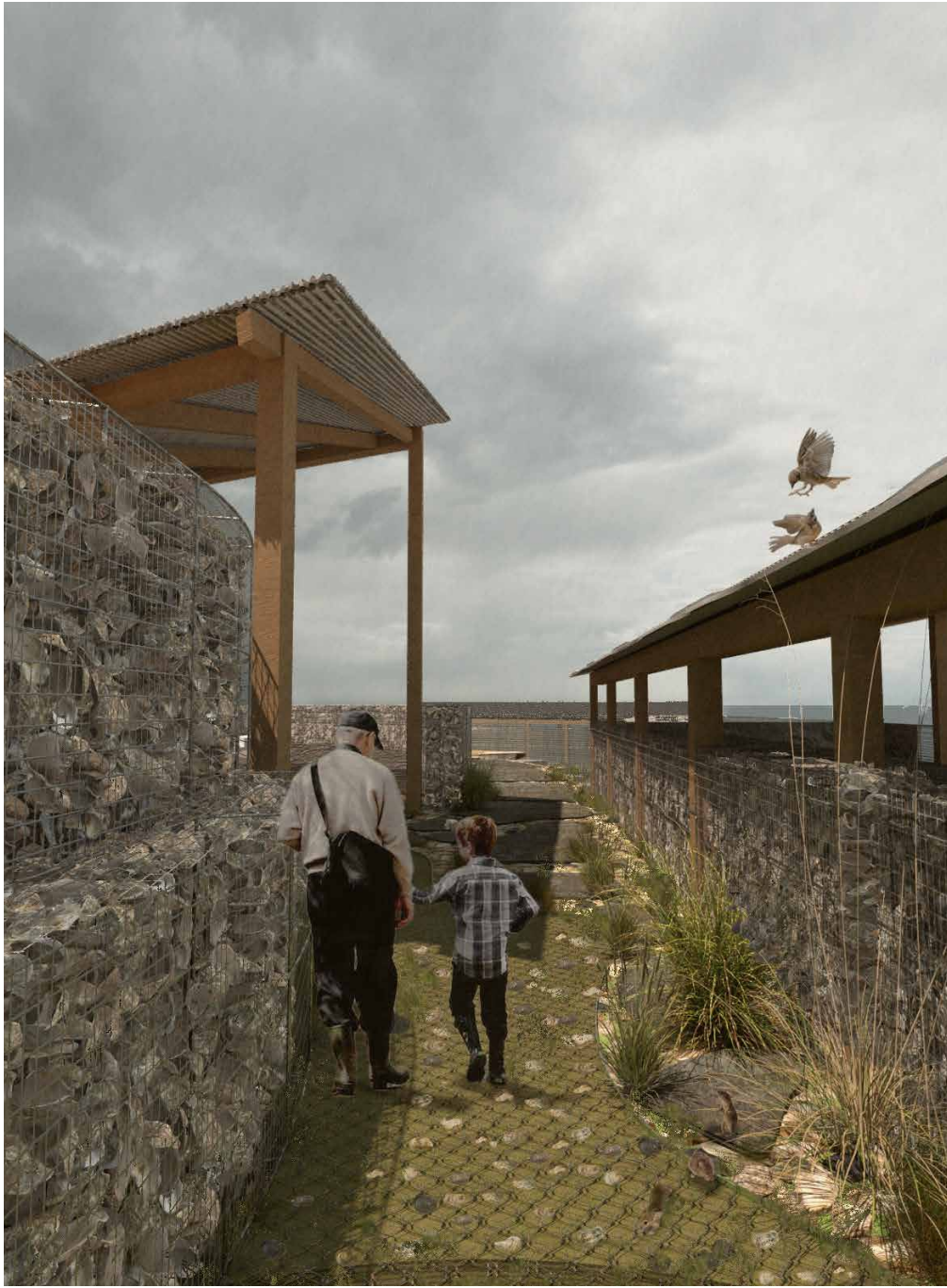
Interstitial spaces between the gabion retaining walls become places for multispecies interaction of human, flora, fauna.



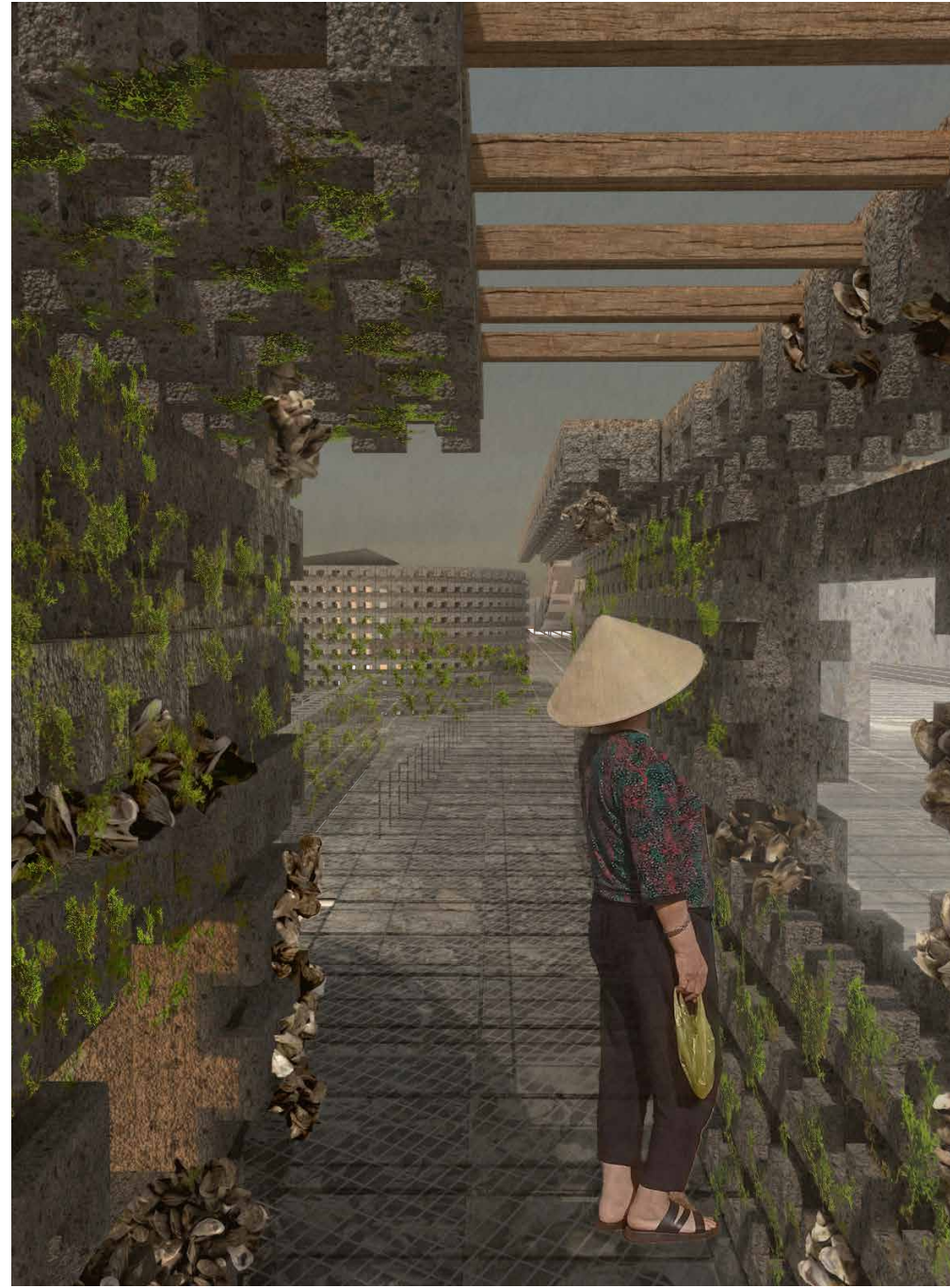
PIER STRUCTURE SECTION

The structure, as initially constructed, represents only one stage of the design; the continued accumulation of living oysters completes it over time, drawing in species of plants and other living creatures.

The ground undulates in some moments and rises in others, allowing water, sea life, and humans to intersect at changing tides.



RICE STRUCTURE PATHWAY RENDER
(DRAWING BY LIBERTY CHAPMAN)



PIER STRUCTURE PATHWAY RENDER



