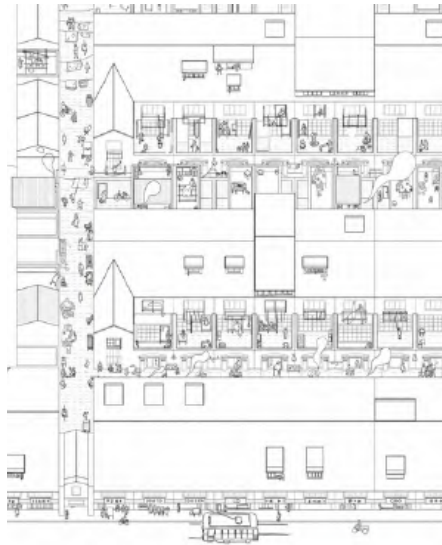


CRISTINA SU

PORTFOLIO 2020 - 2026



MASTER OF ARCHITECTURE

CONTENTS

0 1	STAGING DOMESTICITY Housing as Urban Performance in Harlem Fall 2024 Academic Work
0 2	WILD / WILLED Ecological and Urban Rehabilitation at Liberty State Park Spring 2025 Academic Work
0 3	THE CELESTIAL ARCHIVE A Melting Archive of Stars: Outposts & Civic Archive Networks Fall 2025 Academic Work
0 4	SACRED REIMAGINED A Mobile Spiritual Space in Harlem Fall 2023 Academic Work
0 5	TERRACOTTA THE BALLOON Structural Analysis on Terracotta Rainscreen Spring 2024 Academic Work
0 6	DAMAGE CONTROL Looking into Boston Marathon Spring 2024 Academic Work
0 7	BRINE ANCHORED AUTONOMY Repurposing Industrial Residues for Indigeneous Resilience Spring 2026 Academic Work

0 1

STAGING DOMESTICITY

Housing as Urban Performance in Harlem

Academic Project | Harlem, New York

Fall 2024: Studio III, GSAPP Columbia

Professor: Eric Bunge

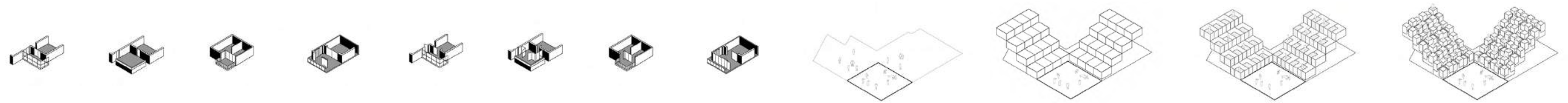
Collaboration: Rui Ma

Role: Modelling | Render | Section Drawing | Physical Model | Concept

Situated in Harlem, this residential project serves as a dynamic living theater, showcasing behind-the-scenes artistry such as costume design, set construction, and lighting preparation. A stepped form provides private balconies for residents, overlooking a vibrant central outdoor stage that doubles as a communal gathering area. Key features include a central corridor connecting 127th and 128th Streets, enhancing public interaction, and a multi-functional staircase entrance on Convent Avenue designed as a small auditorium for informal gatherings. The design transforms daily life into a communal performance, enriching Harlem’s cultural fabric.

Physical Model 1' = 1/4" | Terrace Rhythm



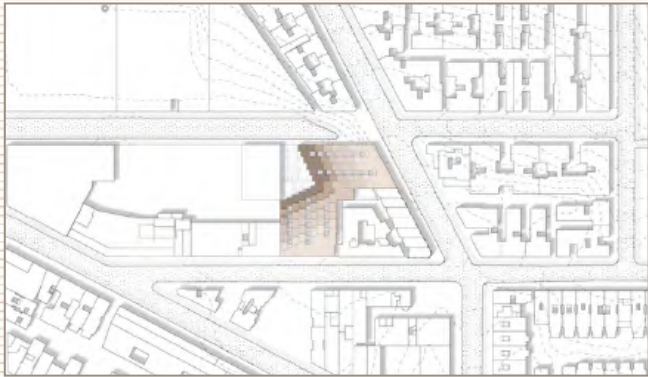


Balcony Studies | Extension of Living Spaces

Concept Diagram



Axon: Domestic Stage | Day & Night



Site Plan | 128th Harlem



Exterior Rendering | Public Interior Revealed



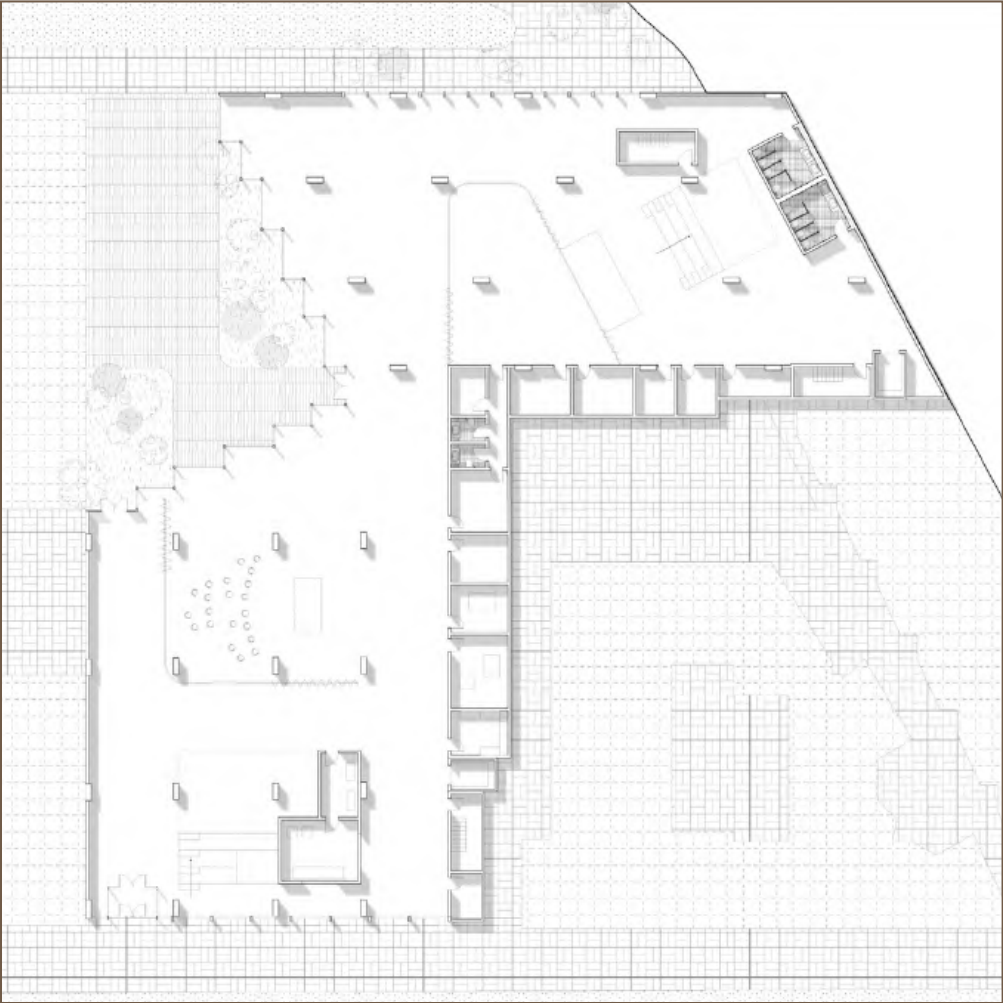
Interior Rendering | Public Stage



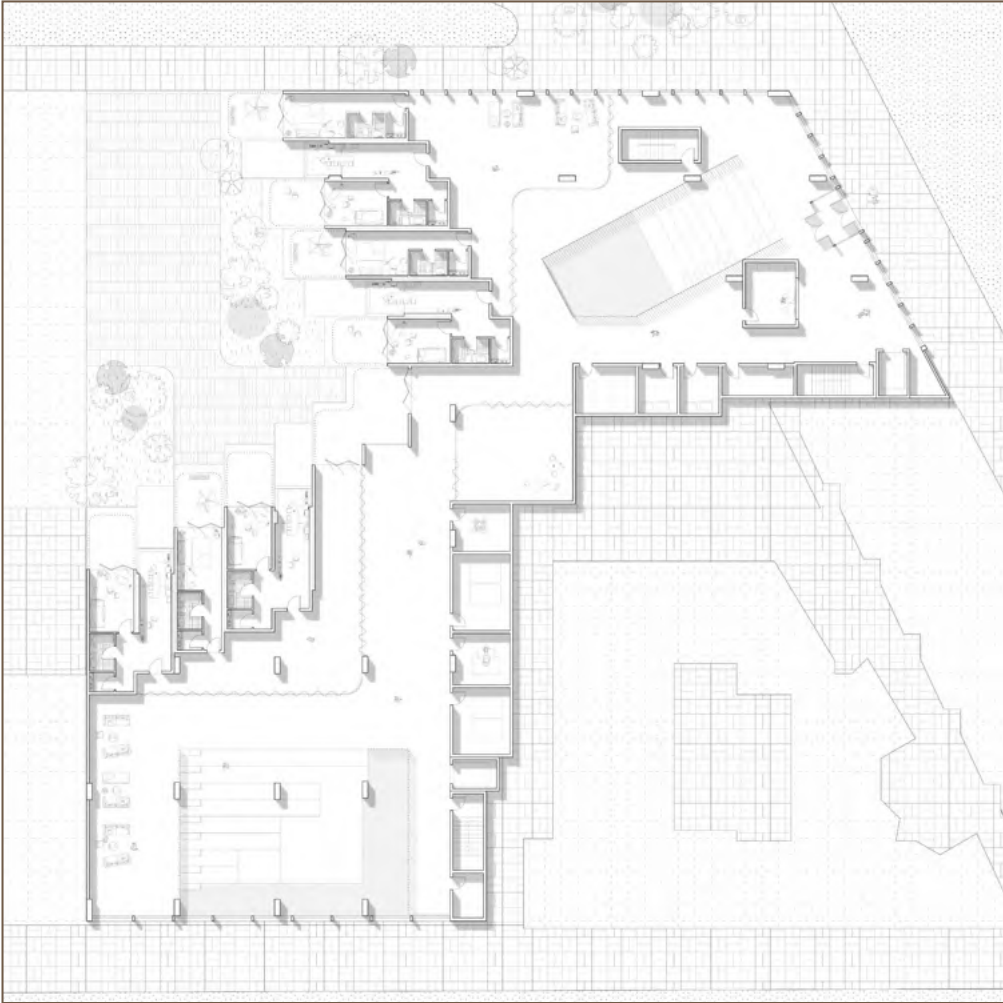
Interior Rendering | Living Space



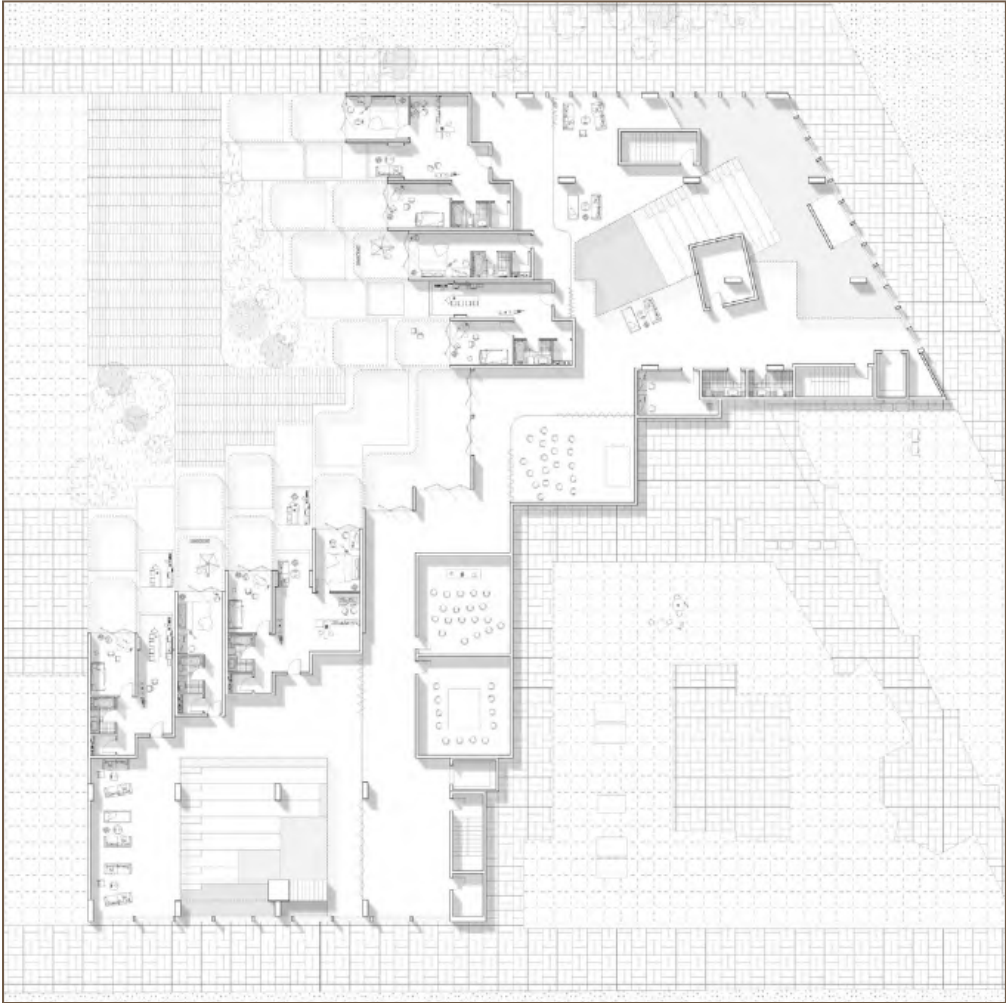
Section Perspective | Public & Private Spaces



Ground Floor Plan



Second Floor Plan



Third Floor Plan



Section Perspective | Close Up

0 2

WILD / WILLED

Ecological and Urban Rehabilitation at Liberty State Park

Academic Project | Central Railroad Terminal, New Jersey

Spring 2025: Studio IV, GSAPP Columbia

Professor: Mimi Hoang

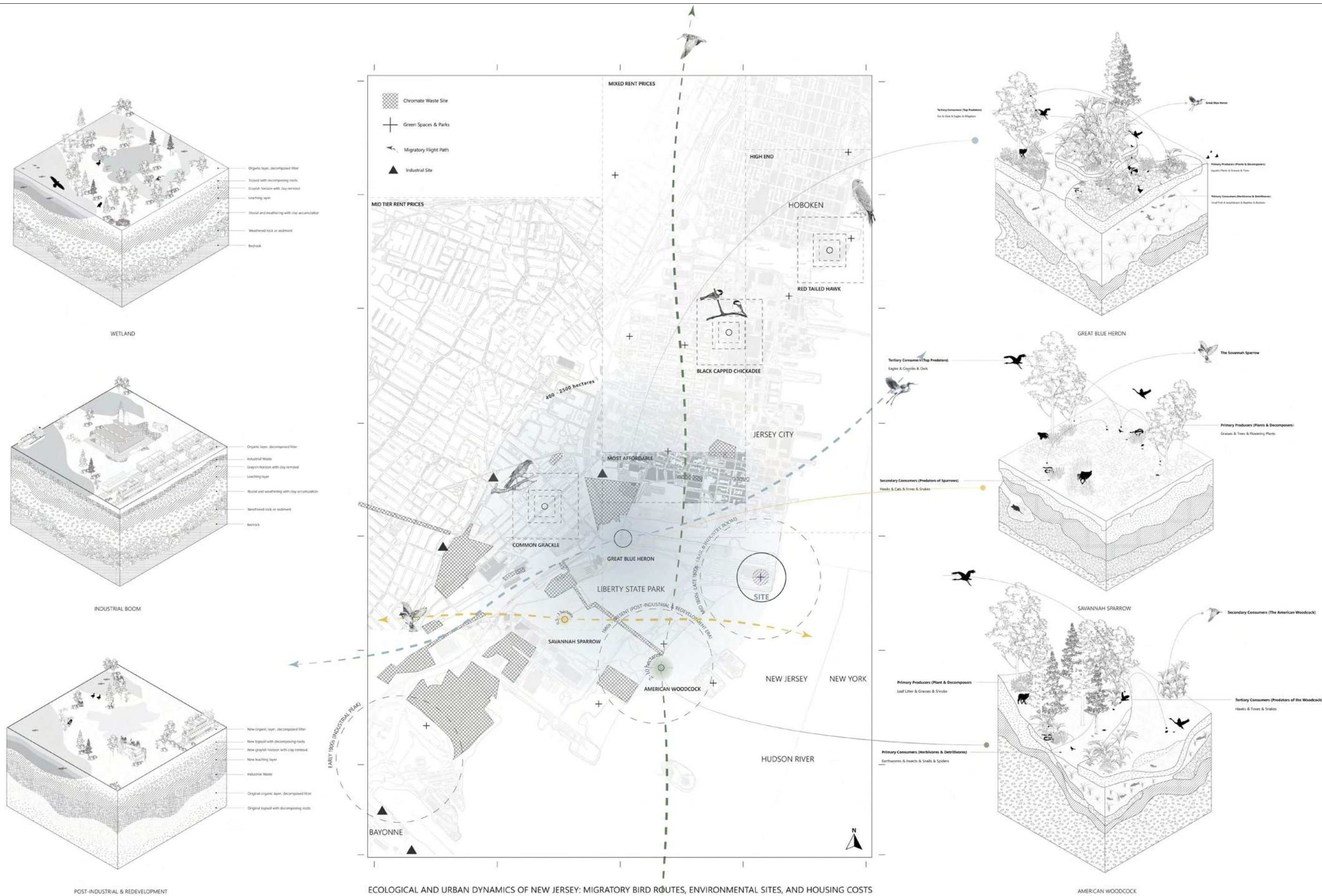
Collaboration: Rui Ma

Role: Modelling | Render | Section Drawing | Physical Model | Concept

The project transforms Liberty State Park Terminal into a bird rehabilitation and education center, merging ecological renewal with community engagement. It reorganizes the site into distinct wetland and forest zones, integrating bird habitats seamlessly with human spaces through layered architectural interactions. Features include a translucent aviary, green roofs for habitat recovery, discreet bird blinds for observation, and elevated visitor pathways. The design fosters environmental resilience, addressing urban vulnerabilities while promoting environmental justice, where bird conservation becomes integral to community revitalization.

Physical Model 1'=1/8" | Section of a Ridge

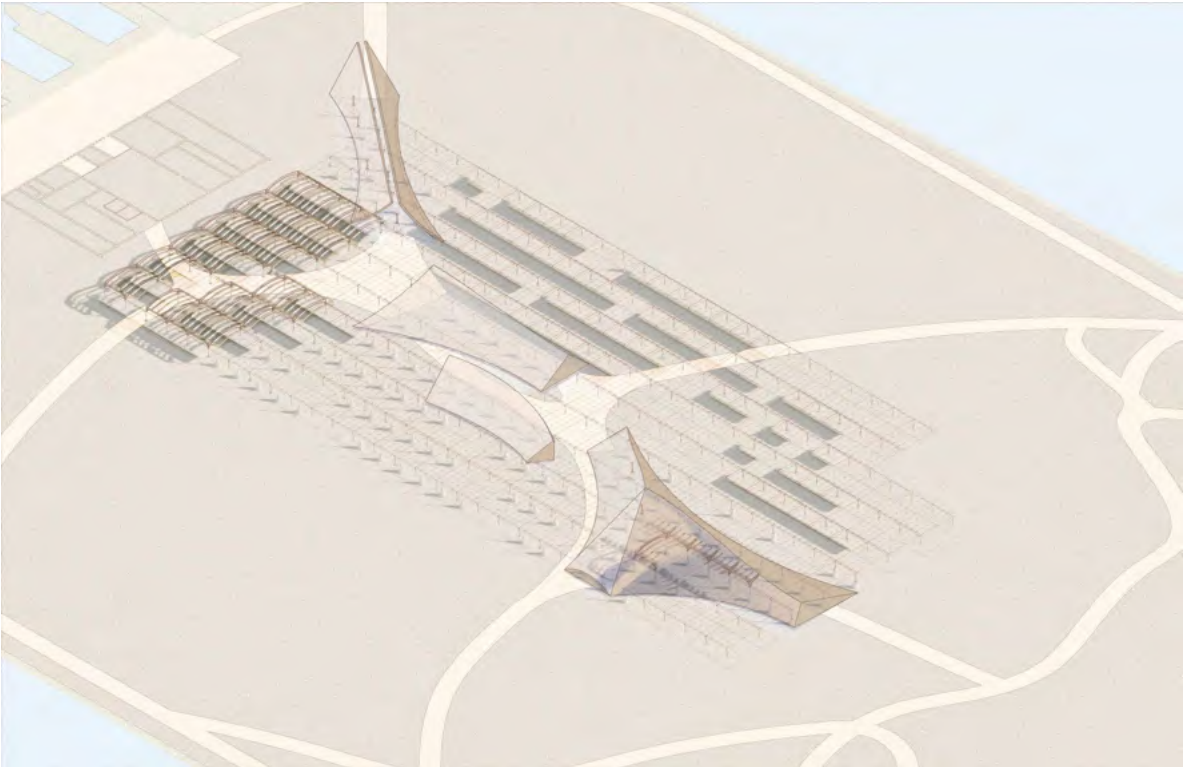




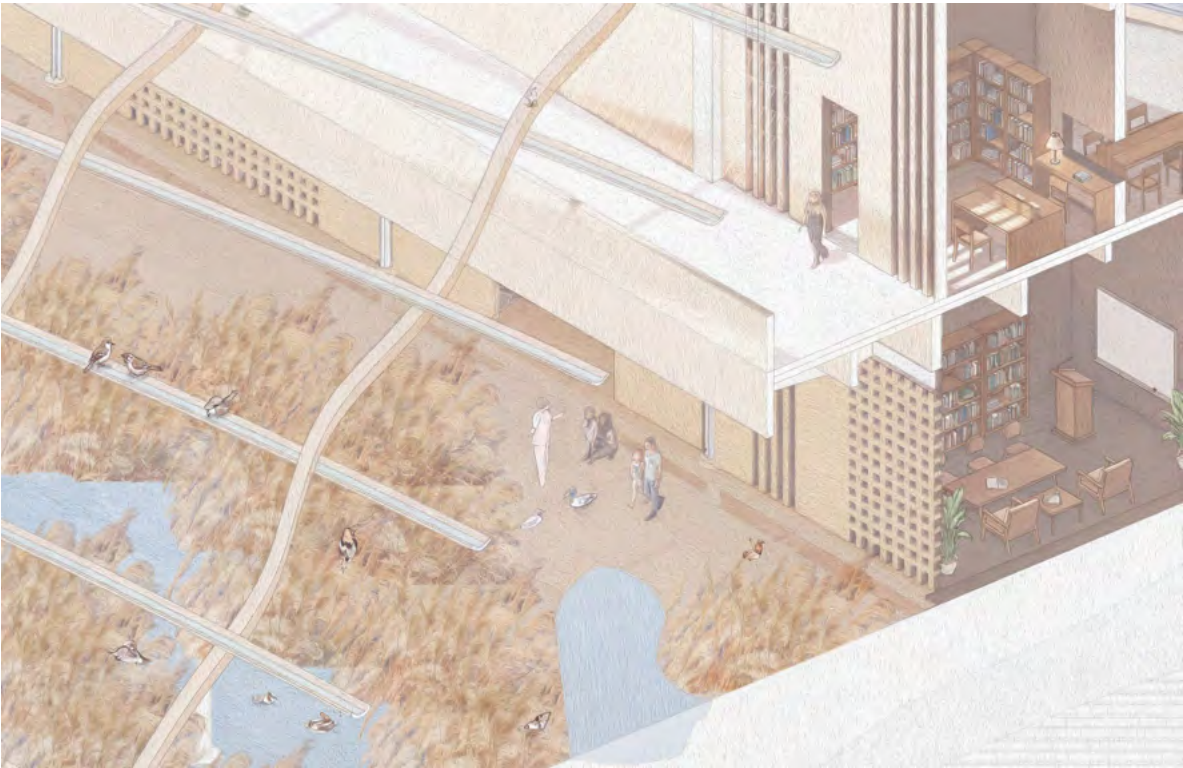
Map Analysis | Site Context: Ecology, Housing, and Infrastructure



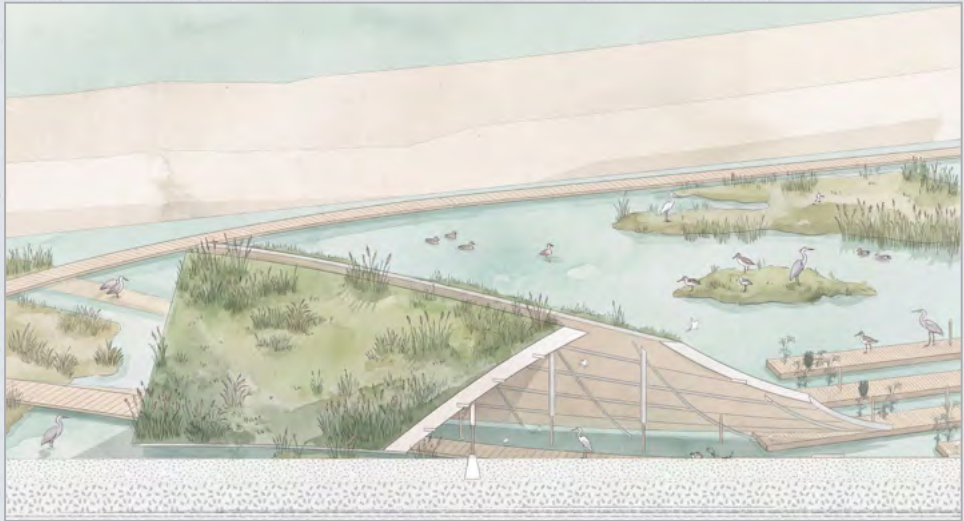
Plan | Layered Coexistence: Wetland & Woodland



Site Axonometric | Ridge System: Visitor Center, Rehab, Pavilion



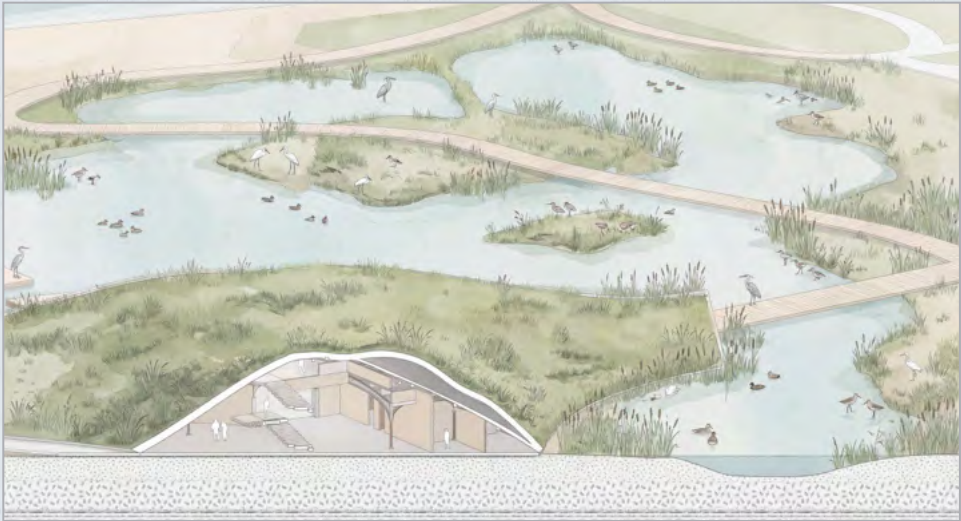
Section Axonometric | Human/Bird Coexistence Across Programs



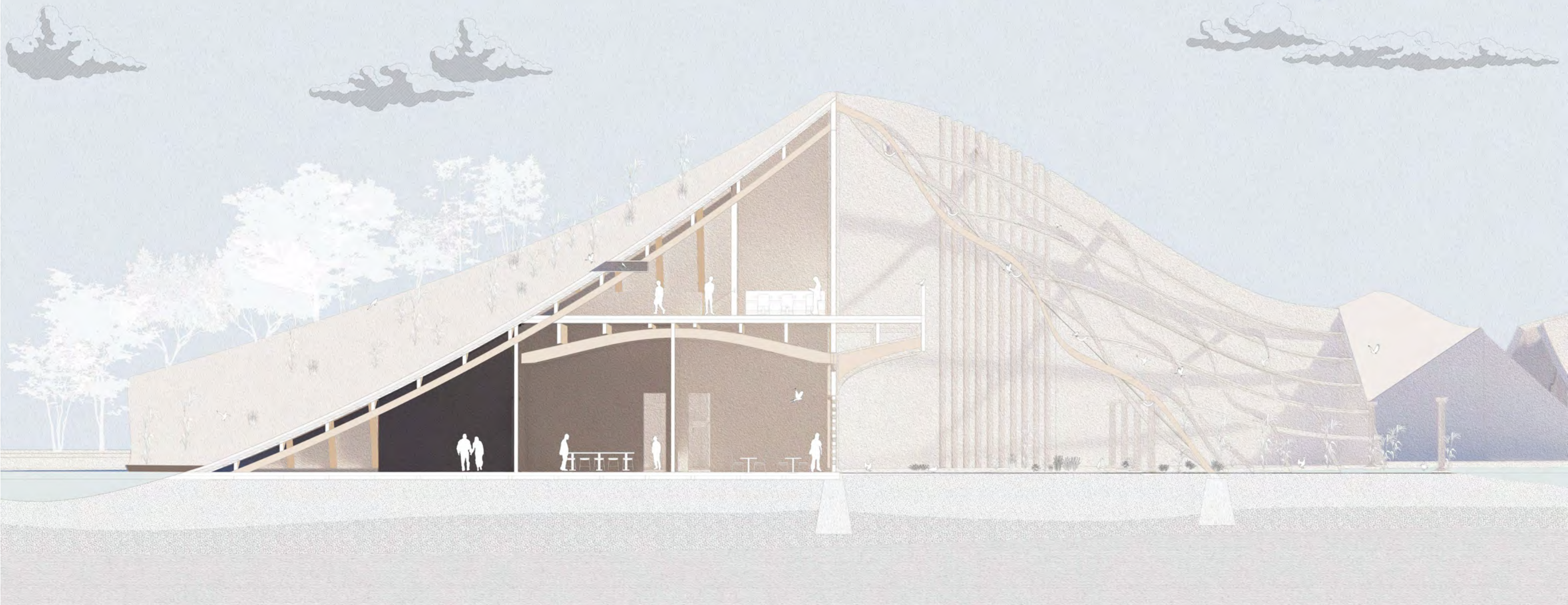
Long Section Perspective | Pavilion



Long Section Perspective | Visitor's Center



Long Section Perspective | Bird Rehab & Visitor's Center



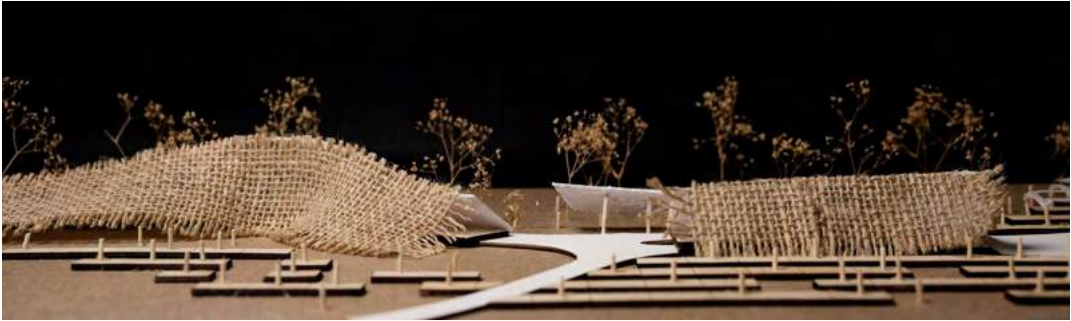
Section Perspective | Landscape Green Roof & Interior



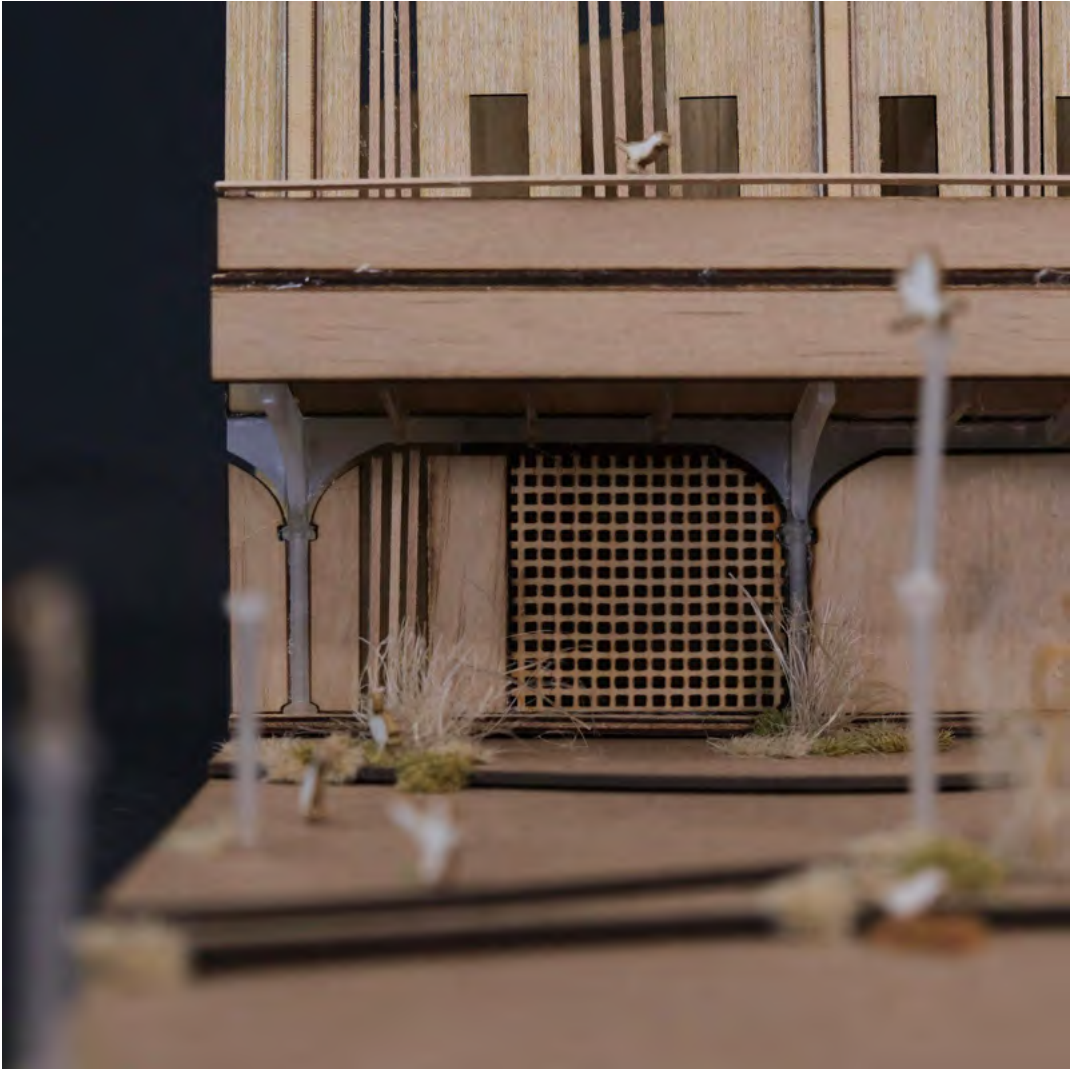
Physical Model 1' = 1/8" | Aviary Enclosure & Ridge Frame



Physical Model 1' = 1/8" | Green Roof as Landscape Extension



Physical Model 1' = 1/32" | Landscape Edge & Original Structure Removal



Physical Model 1' = 1/8" | Ground Threshold & Blind

Physical model studies test the project's "landform" roof and habitat interface at 1/8" scale. The sectional cut reveals how the ridge structure supports an enclosed aviary volume and sheltered program below, while the green roof extends the landscape to create a controlled feeding and nesting surface. Detail views highlight the layered façade, structural rhythm, and thresholds where visitors observe without disturbing avian activity.

0 3

THE CELESTIAL ARCHIVE

A Melting Archive of Stars: Outposts&Civic Archive Network

Academic Project | The Arctic Circle

Fall 2025: Studio V, GSAPP Columbia

Professor: Leslie Gill

Collaboration: Rui Ma

Role: Modelling | Render | Plan Drawing | Physical Model | Concept

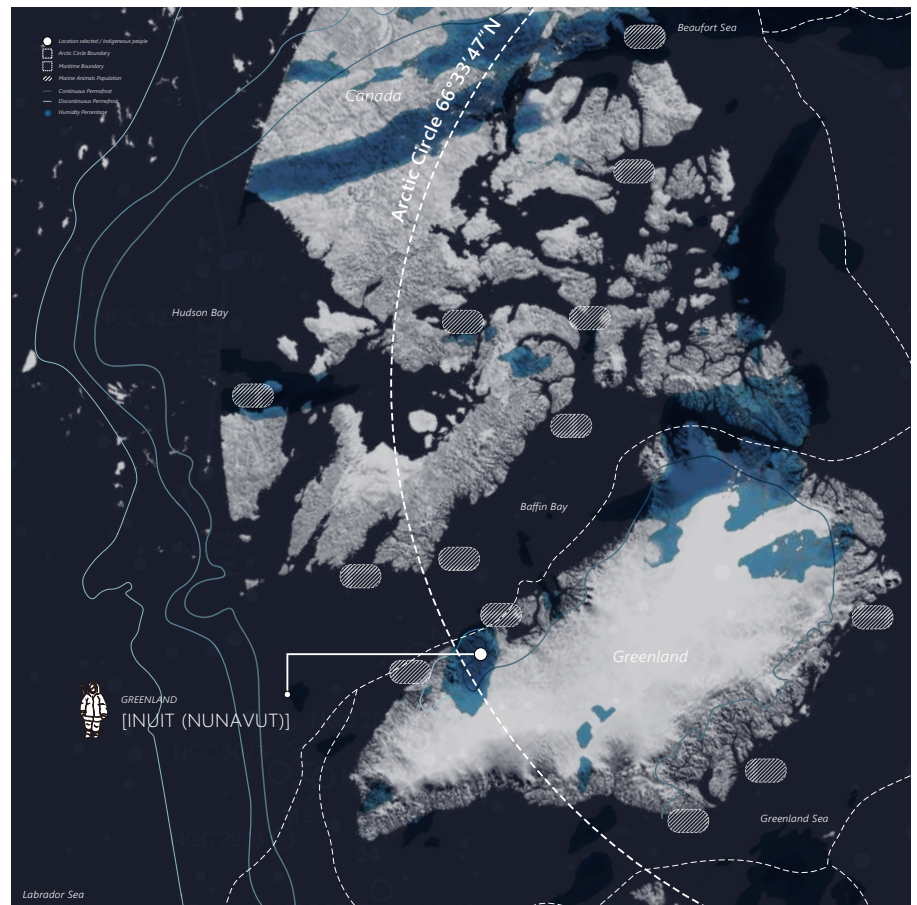
The Celestial Archive proposes a decentralized architectural network for environmental documentation. This system is physically realized through a set of remote Arctic Outposts and a central Civic Archive in Tromsø. The Outposts are designed as prototypical micro-architectures, strategically placed along seasonal routes to function as sensitive instruments and shelters, primarily recording the diminishing visibility of stars as an indicator of environmental change while offering essential warmth and rest. The Civic Archive then serves as the project’s central hub, calibrating these raw environmental datasets and curating them alongside community contributions, such as star photographs, place-names, and oral histories, to create a shared, publicly accessible record of the changing Arctic environment.

Render | Interior Hub of the Archive, Tromso, Norway

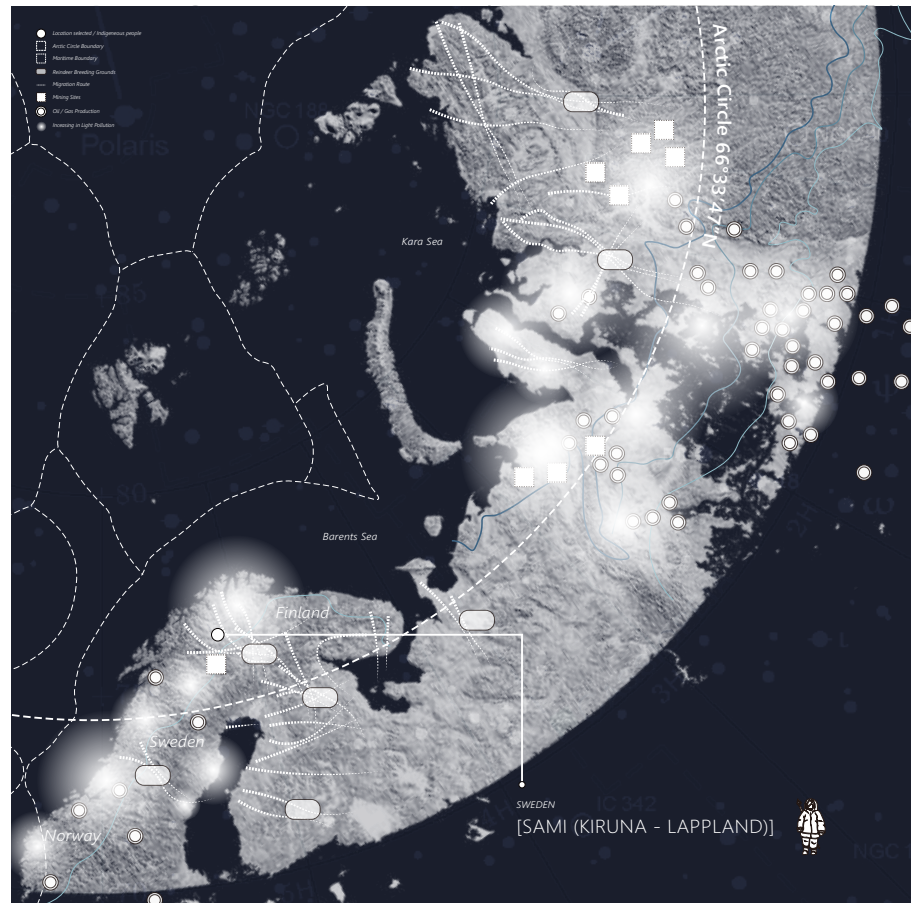




Arctic Research Map | Site Selected | Outpost & Archive



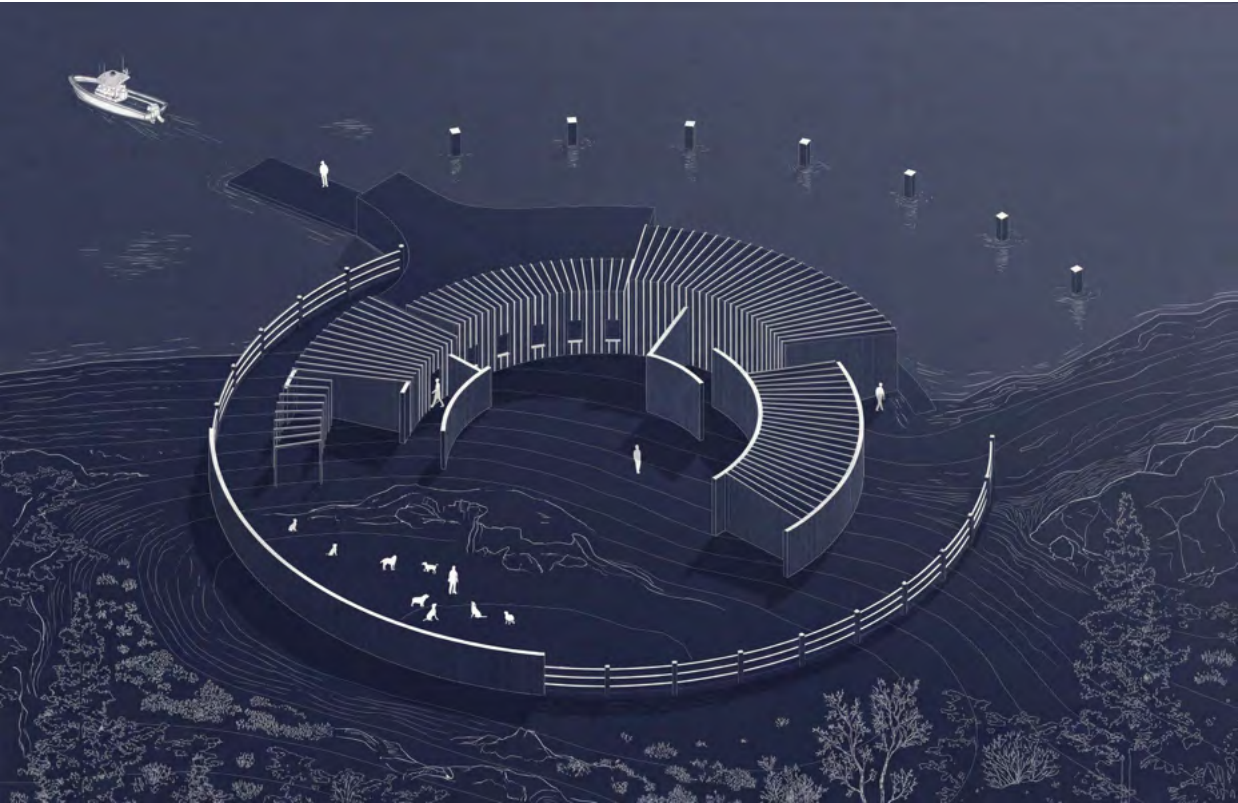
Highest Humidity Analysis | West Greenland | Inuit



Light Pollution Analysis | Kiruna, Sweden | Sami



1st Outpost Plan | West Greenland | Highest Humidity



1st Outpost Axonometric | West Greenland | Highest Humidity

1st Outpost Site: West Greenland

West Greenland has high coastal humidity and frequent fog. These conditions shape travel and navigation along the shoreline. Inuit seasonal camps support hunting and fishing, and winter routes often follow sea ice where the night sky helps with direction.

Fog and humidity scatter starlight and cut visibility, making night travel riskier. The Outpost works as both a research station to monitor atmospheric humidity and a shelter for the local community during extreme weather. It also supports seasonal life with practical needs like short term catch storage, boat mooring, and space for dog sled use.



1st Outpost Axo | West Greenland



1st Outpost Public Interior | West Greenland



1st Outpost Exterior | West Greenland



Physical Model Section 1'=1/4" | Section Structural Facade



2nd Outpost Plan | Kiruna, Sweden | Highest Light Pollution



2nd Outpost Axonometric | Kiruna, Sweden | Highest Light Pollution

2nd Outpost Site: Kiruna, Sweden

Mining growth and relocation in Kiruna are increasing light pollution. This change affects the Sámi reindeer migration between forests and mountains. Brighter skies can disturb herd behavior, slowing movement and changing timing.

The Outpost sits on a known migration corridor about 40 km from Kiruna. It has two roles. It monitors sky brightness and how skyglow spreads. Its crescent form blocks wind and creates a sheltered dark court that can also hold reindeer for short stops.

It also supports Sámi herders as a rest and resupply place during migration. The Outpost records herders' observations such as ice breakup and star visibility to track long term environmental change.



2nd Outpost Exterior Corridor | Kiruna, Sweden



2nd Outpost Exterior | Kiruna, Sweden



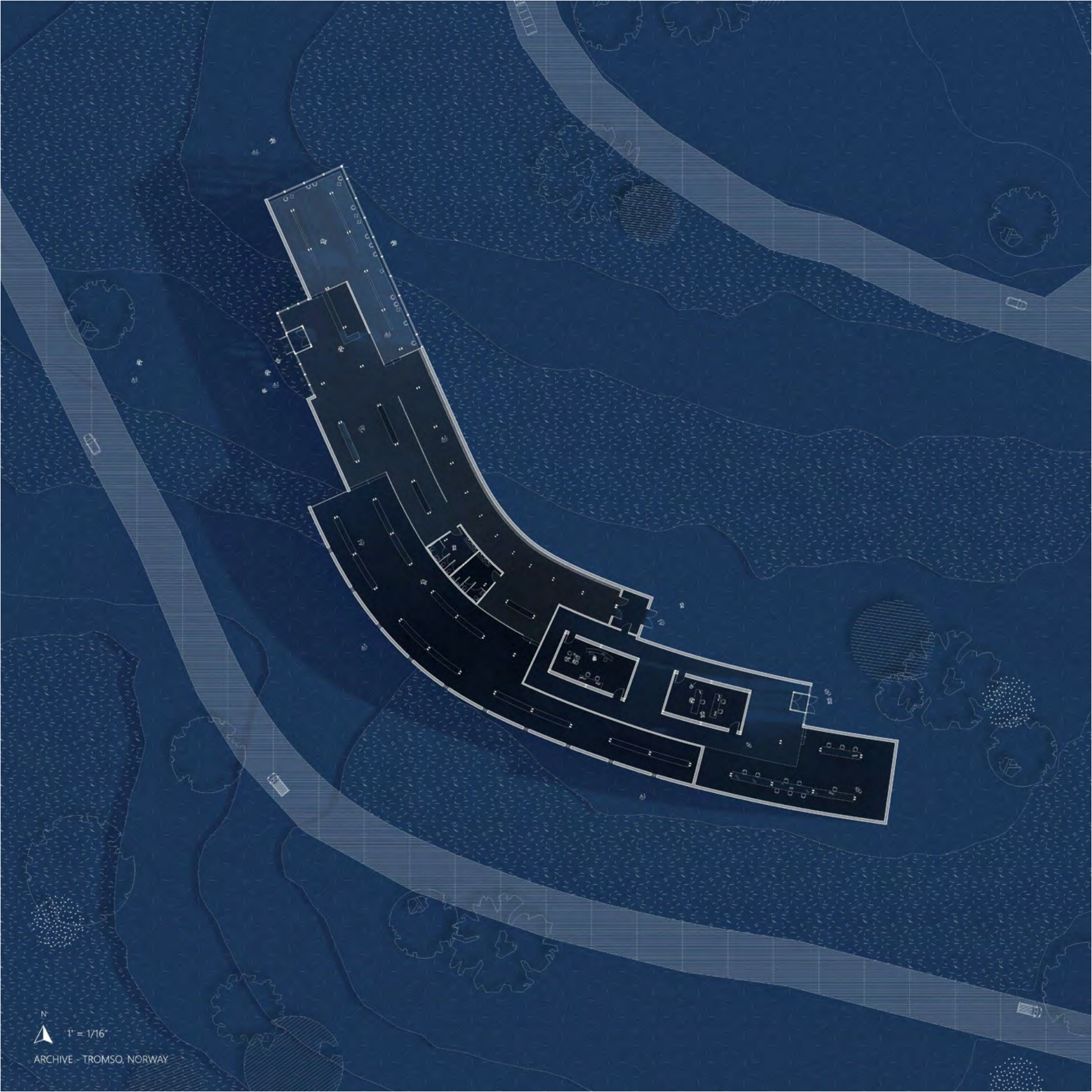
2nd Outpost Axo | Kiruna, Sweden



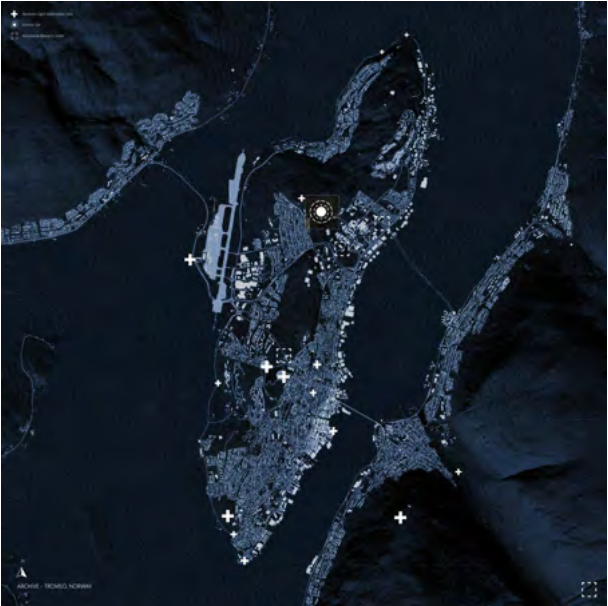
2nd Outpost Interior | Kiruna, Sweden



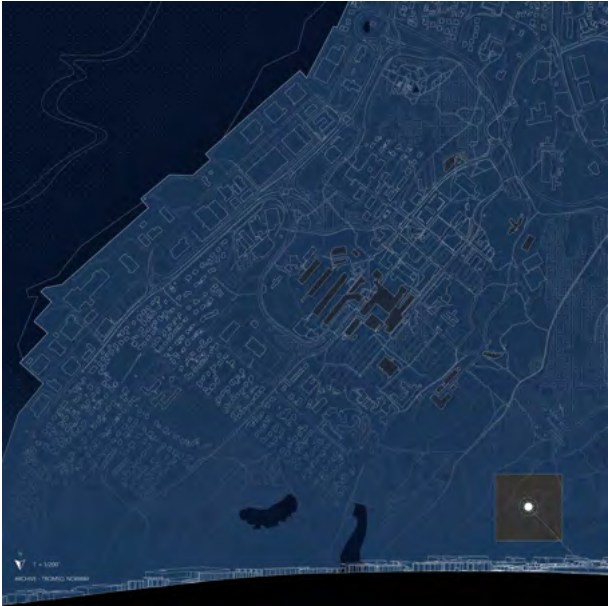
Physical Model Structural 1'=1/16" | Frame Structure



Archive Plan | Tromsø



Archive Observatories Analysis Map | Tromsø

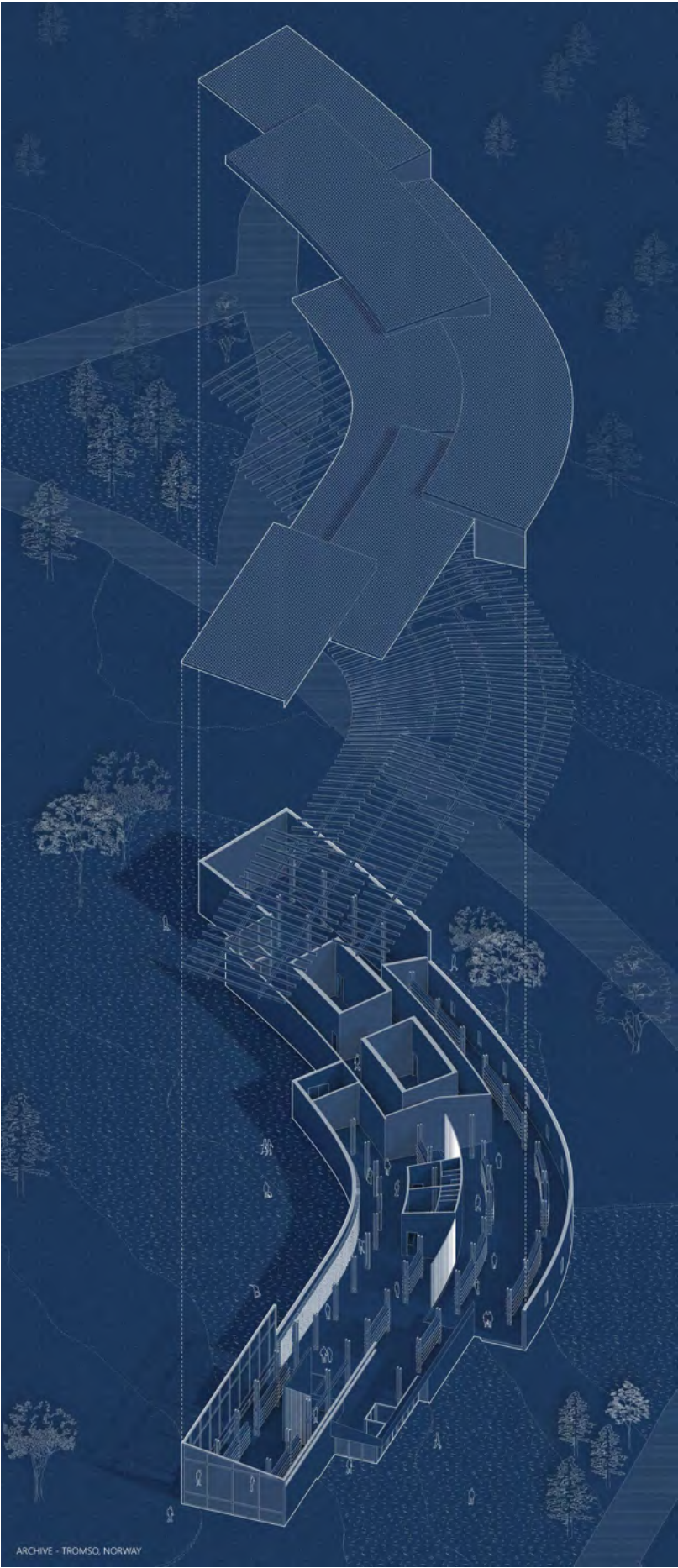


Archive Site Map | Education Hubs Research

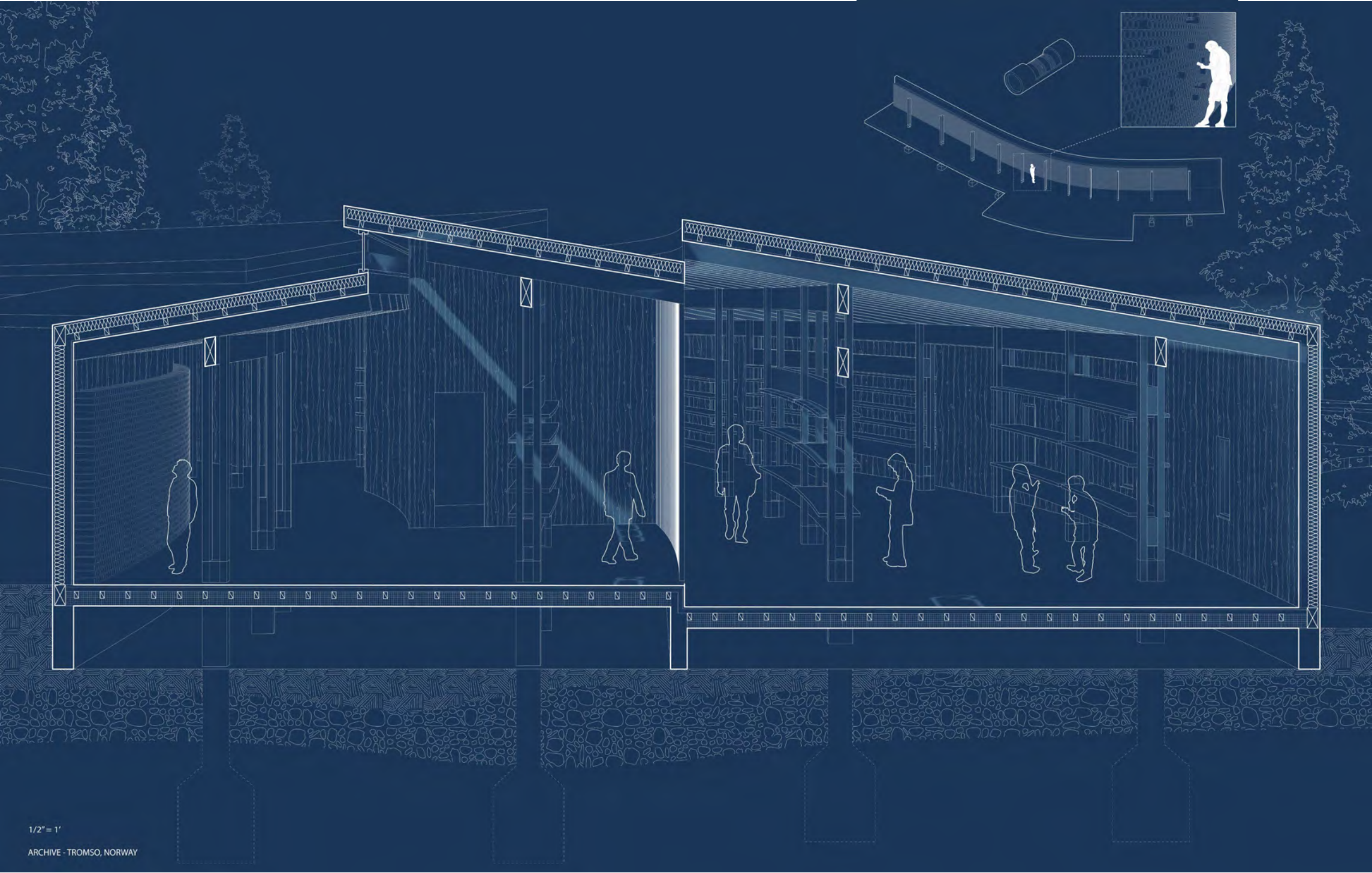
Archive Site: Tromsø, Norway

The Civic Archive is located in Tromsø, a northern hub chosen for its established public and scientific audience, clear sightlines, and predictable darkness. The Archive serves as both the network's calibration node and civic interface. It receives, calibrates, and curates the environmental data and migration evidence collected from the remote Outposts.

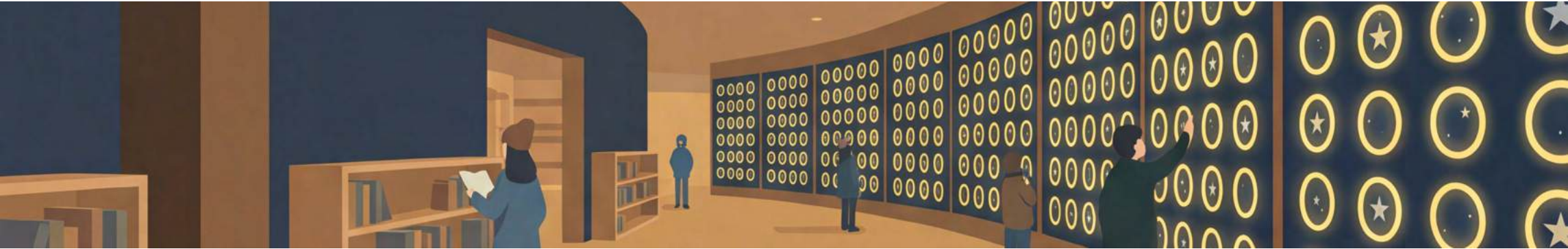
Critically, the building publicly pairs this scientific input, like skyglow and humidity measurements, with local knowledge from Arctic communities, including Sámi and Inuit traditions. Through dedicated rooms, reindeer migration stories, place-names, songs, and community observations are integrated with the data, creating a holistic and shared record of the changing Arctic environment.



Archive Structural Axonometric | Tromsø



Archive Section | Capturing and Cataloging Star Records



Archive Interior | Displaying the Stellar Gallery

0 4

SACRED REIMAGINED

A Mobile Spiritual Space in Harlem

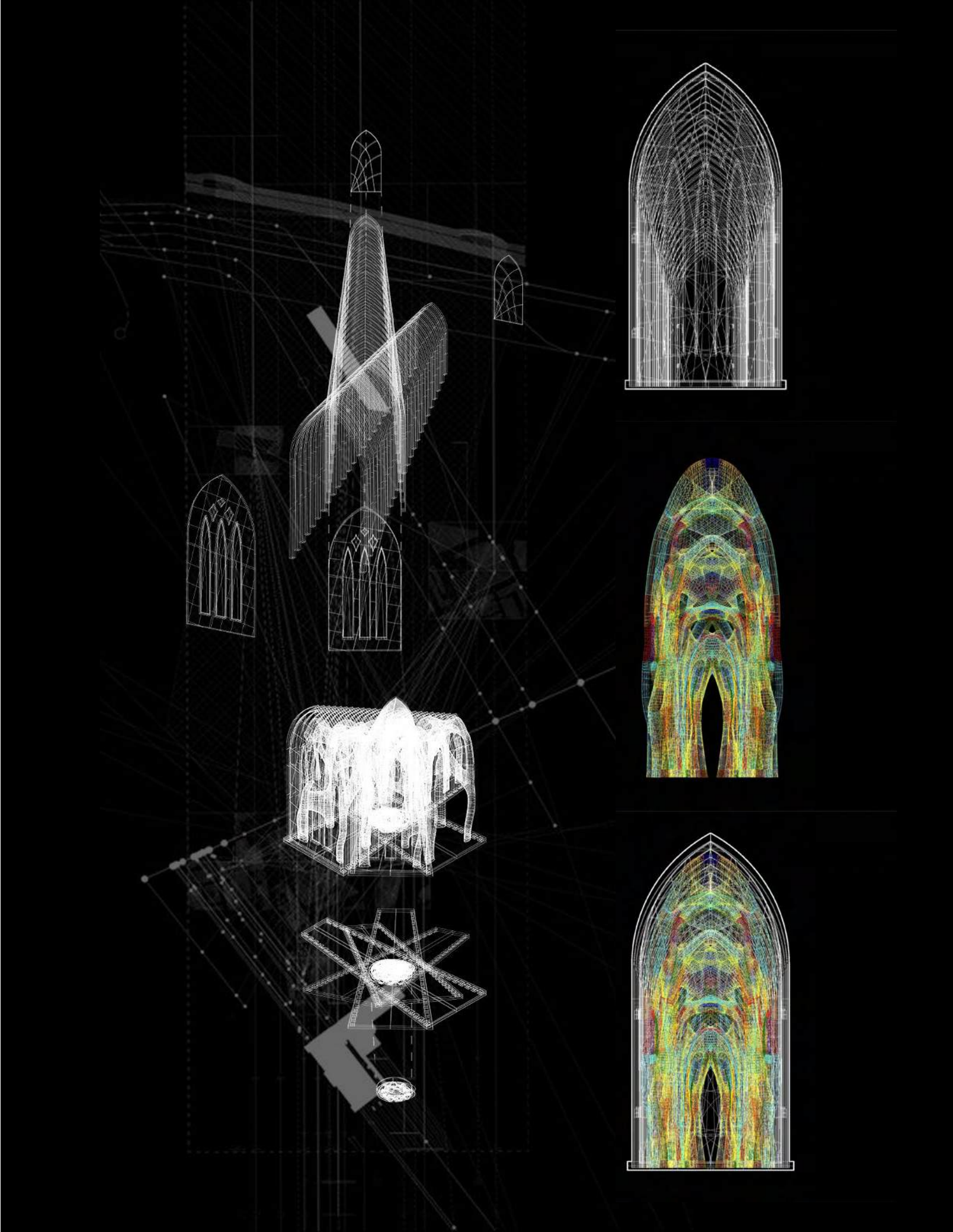
Academic Project | Harlem, New York

Fall 2025: Core I, GSAPP Columbia

Professor: Virginia Black

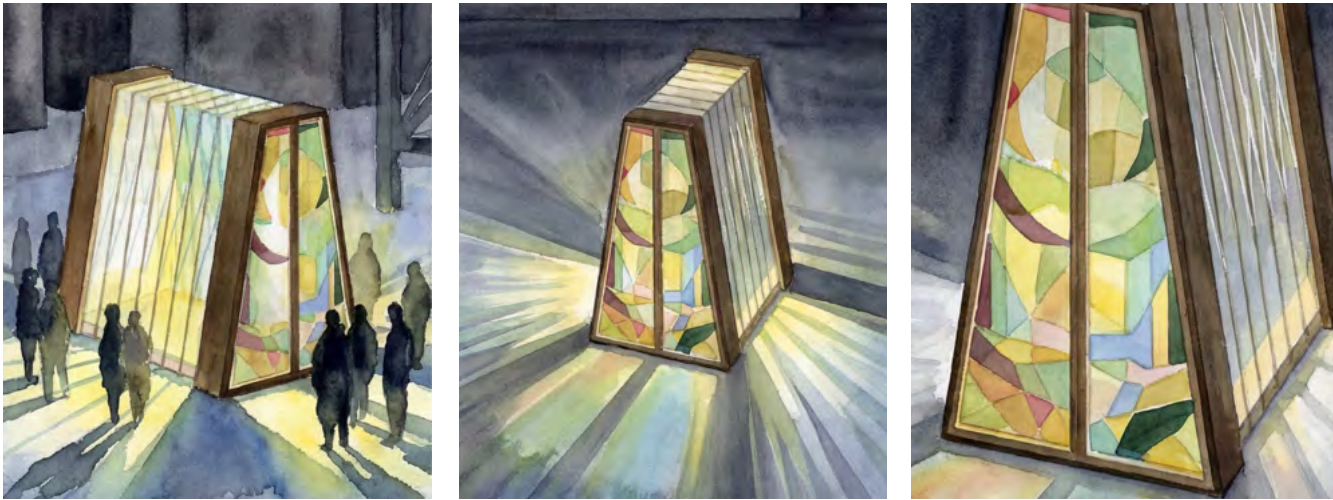
Individual Work

This project reimagines spiritual space in Harlem through a series of flexible, mobile structures inspired by sacred architecture and local rituals. Located at key sites such as the 125th Subway station bridge, Adam Clayton Powell Plaza, and Marcus Garvey Park, the interventions offer meditation spaces, amplified soundscapes, and public altars. The black, pivoting structures transform from intimate enclosures to open gathering spaces, providing accessible environments for reflection, community interaction, and spiritual expression outside traditional church settings.

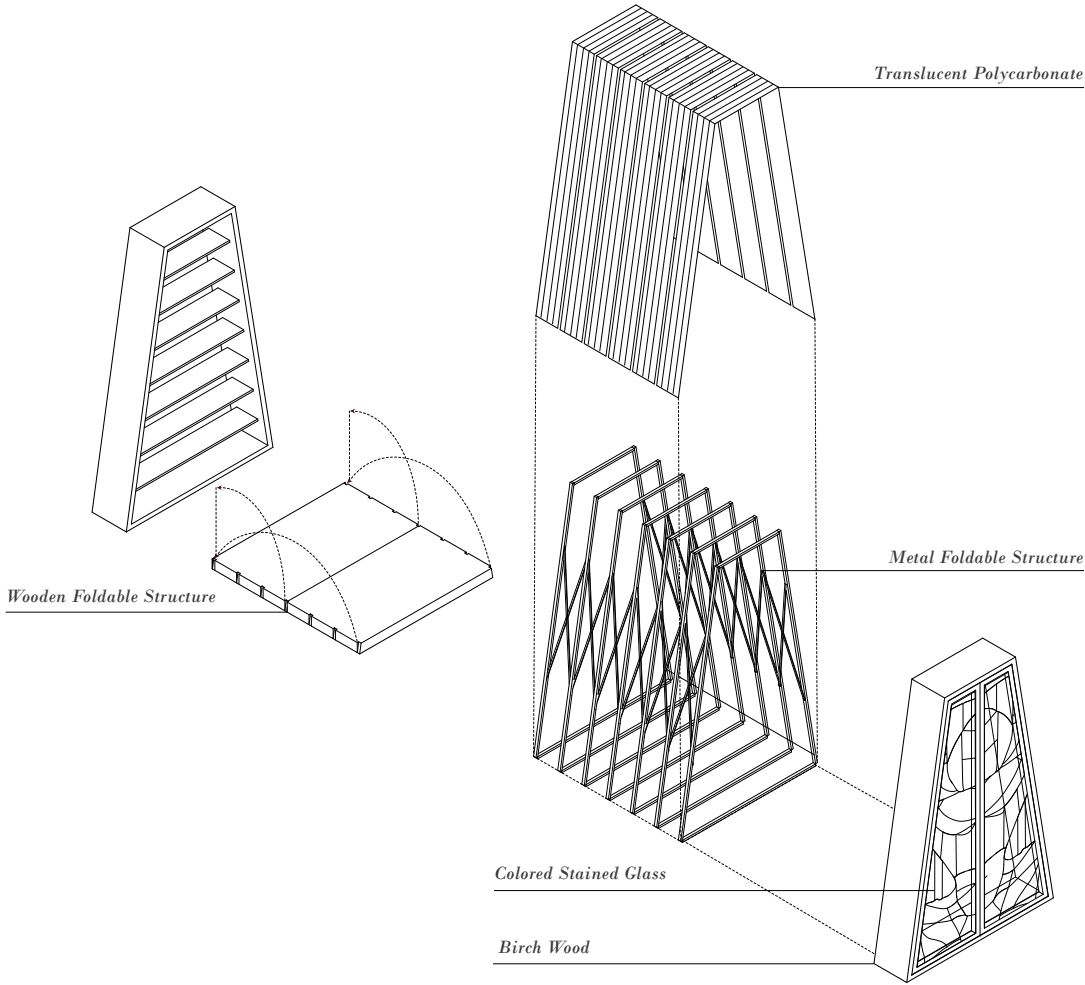




Model Mimicking the Altar | Candle Wax Residue



Watercolor Sketch | Color, Shadow, and Public Gathering



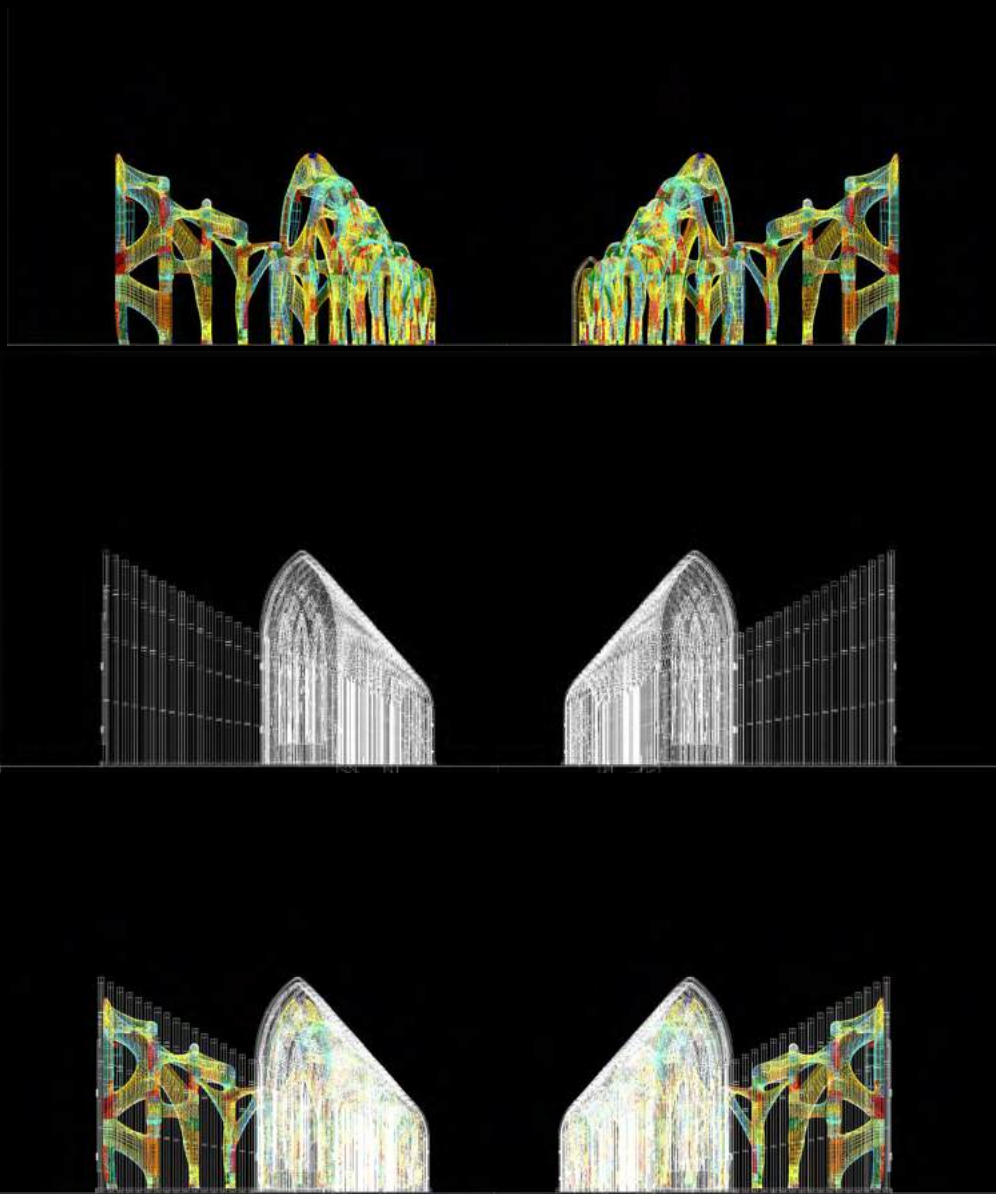
Structural Exploded Axon



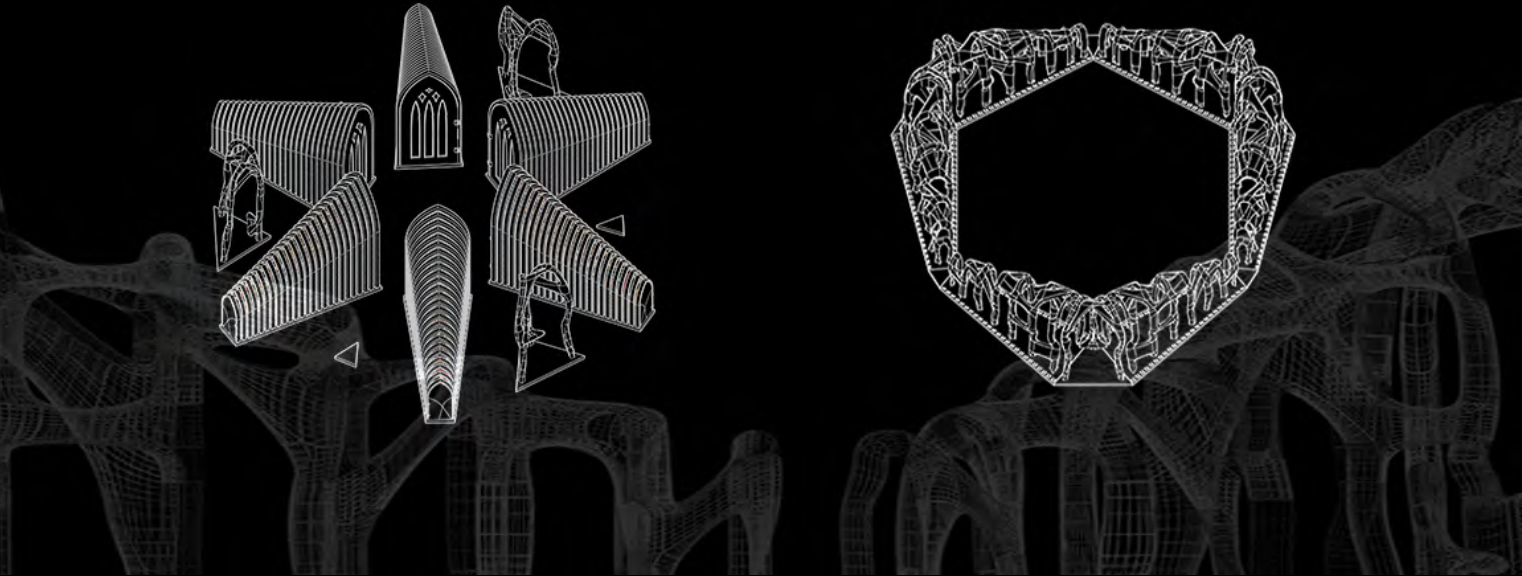
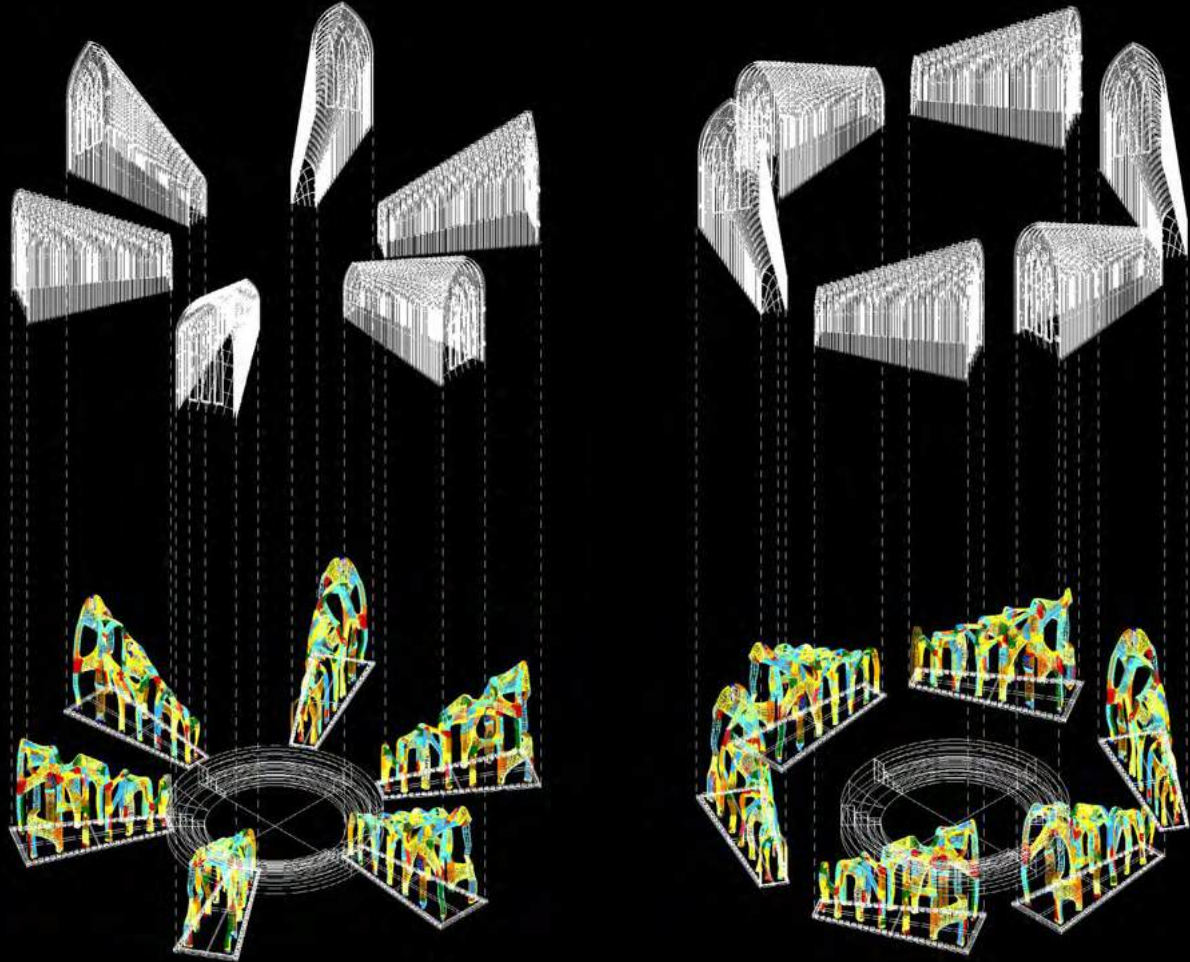
Variations | Forms & Assembly



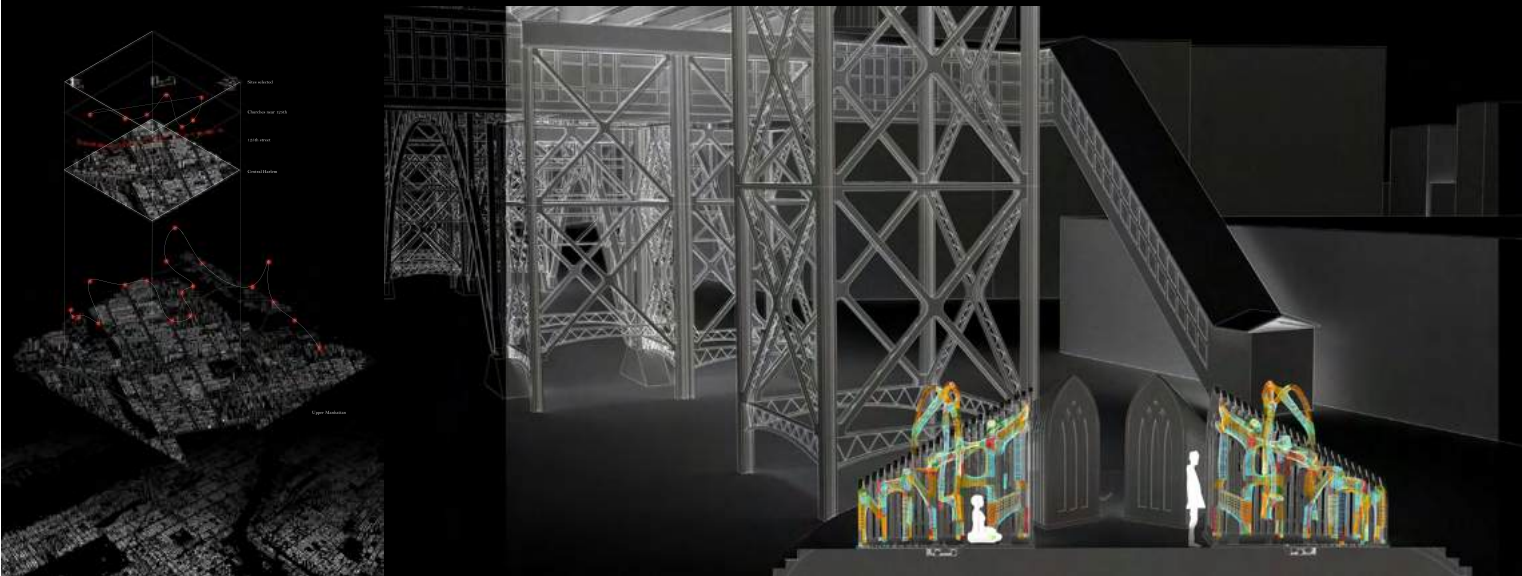
Render | Forms in Varied Scenarios



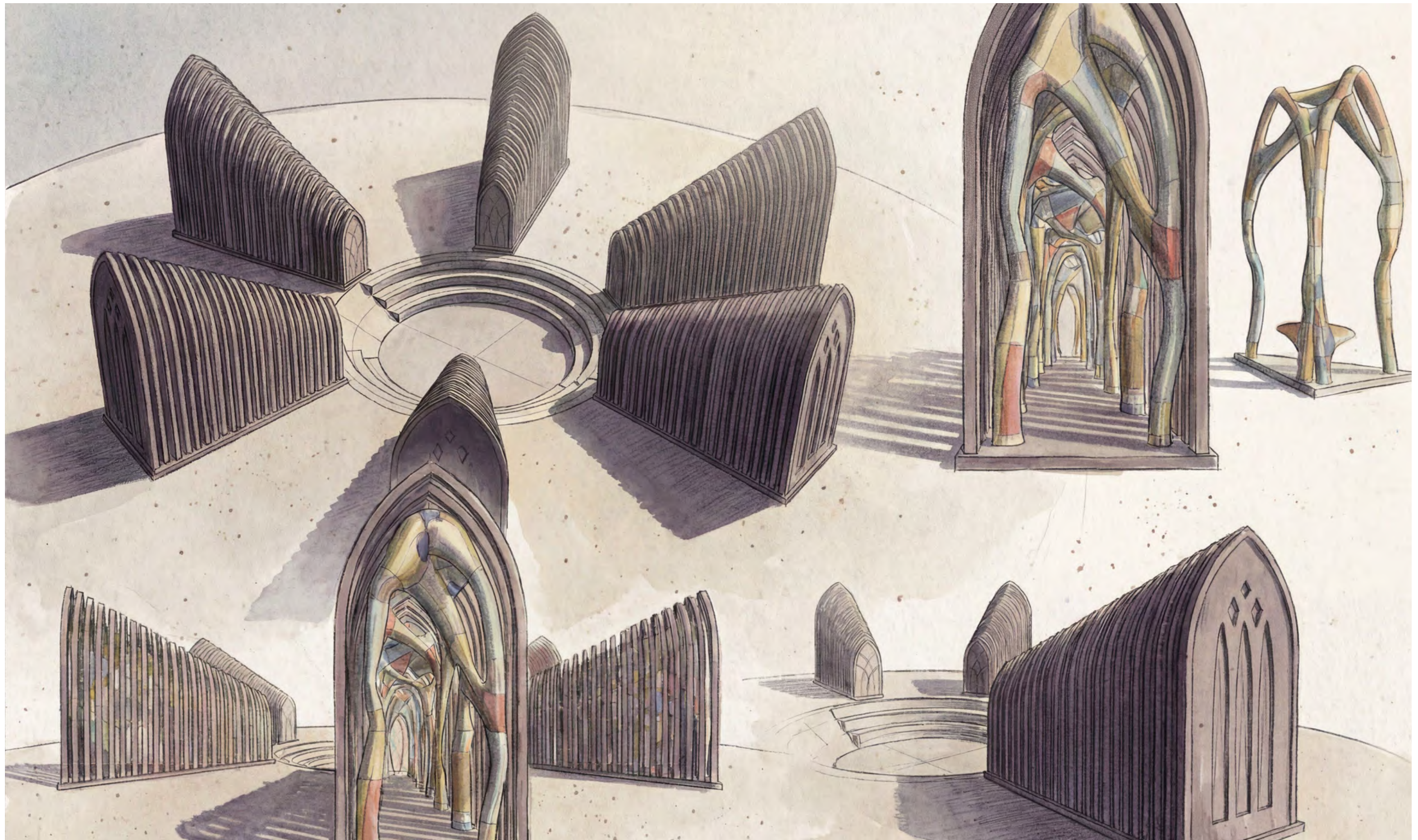
Three-Part System | Colored Glass, Structural Rib, Full Envelope



Configurable Thresholds | Dispersed Chapels and a Central Commons



Map Analysis of Harlem | Religious Site Research



Watercolor Sketch | Different Perspectives of the Form

0 5 TERRACOTTA | THE BALLOON

Structural Analysis on Terracotta Rainscreen

Academic Project | Central Park, New York

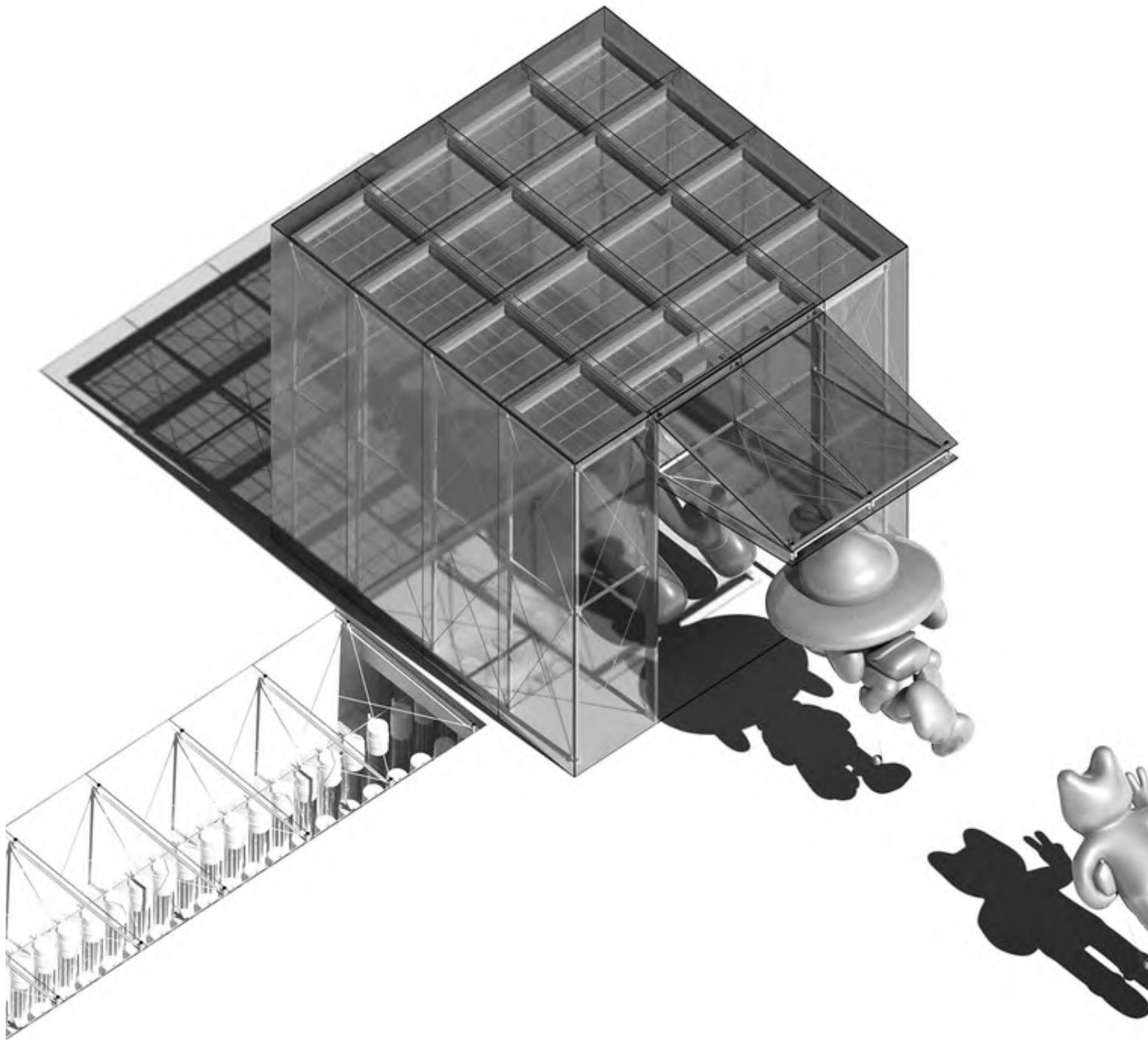
Spring 2025: Core II & Tech Structural, GSAPP Columbia

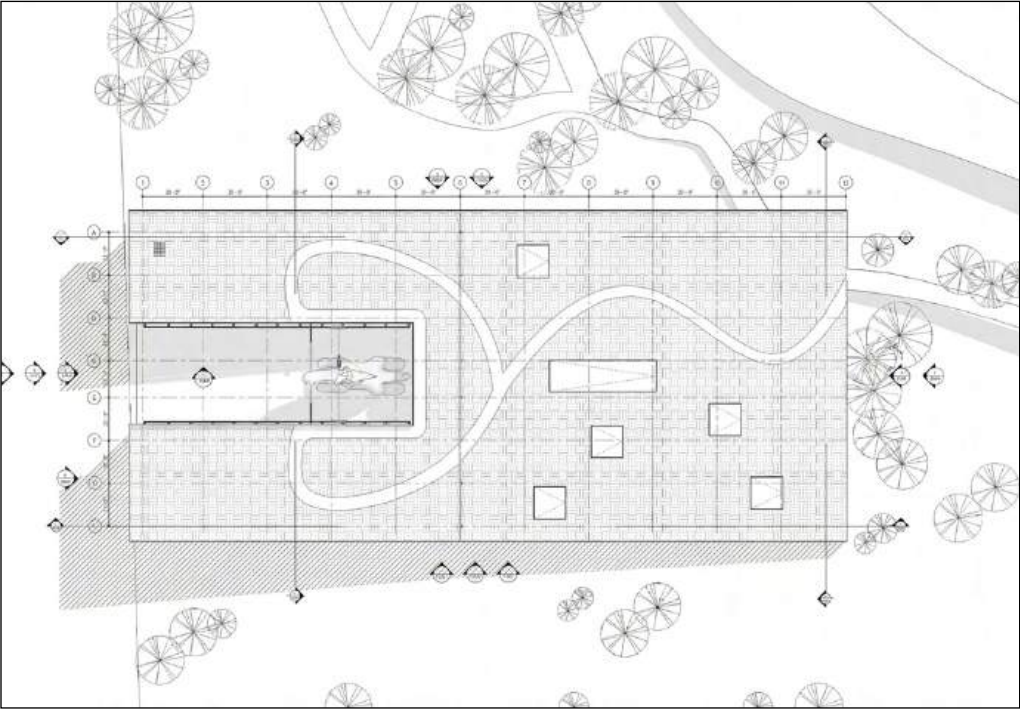
Professor: Mark Wasiuta & Engineering Instructors

Group Work

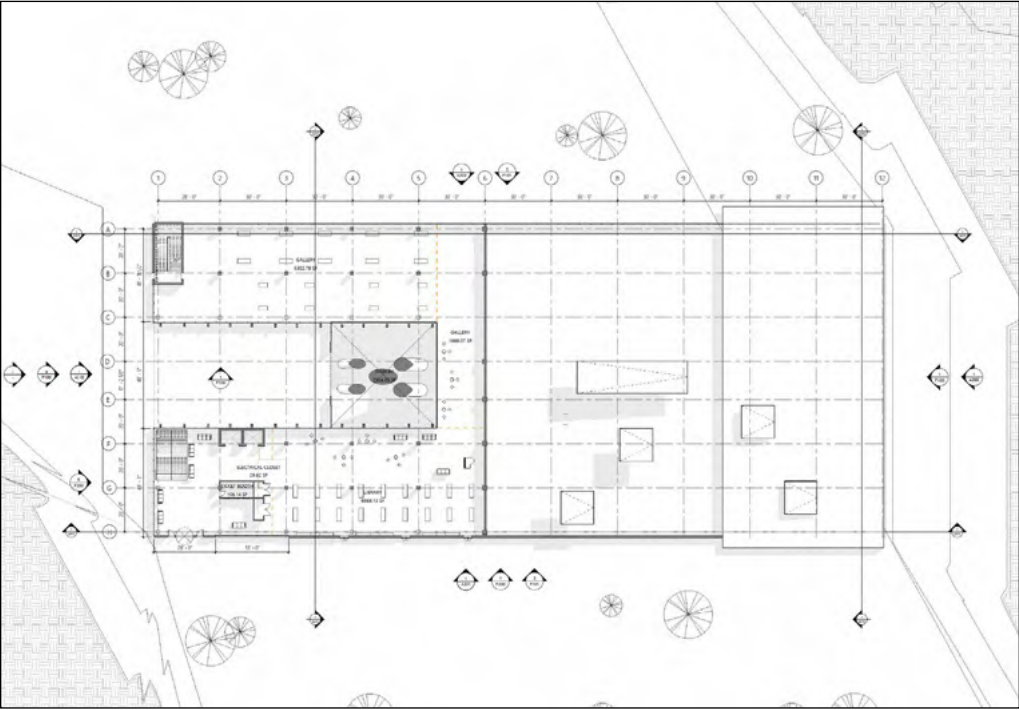
Across from the American Museum of Natural History at Central Park West and the 79th Transverse, this project extends the Macy's Thanksgiving Day Parade into Central Park. The building receives inflatables, supports deflation and handling, provides basement storage, and includes exhibition space for cultural icons. The plan organizes clear circulation for three user groups: balloon operations, service staff, and visitors. To keep the deflation platform clear and preserve park views, the building is partly submerged. Excavated soil forms a green roof that blends into the landscape.

The façade study compares a curtain wall and a terracotta rainscreen, focusing on a key junction where they meet. We developed a detail at the curtain wall edge where terracotta cladding, structure, and waterproofing align, testing constructability and performance.

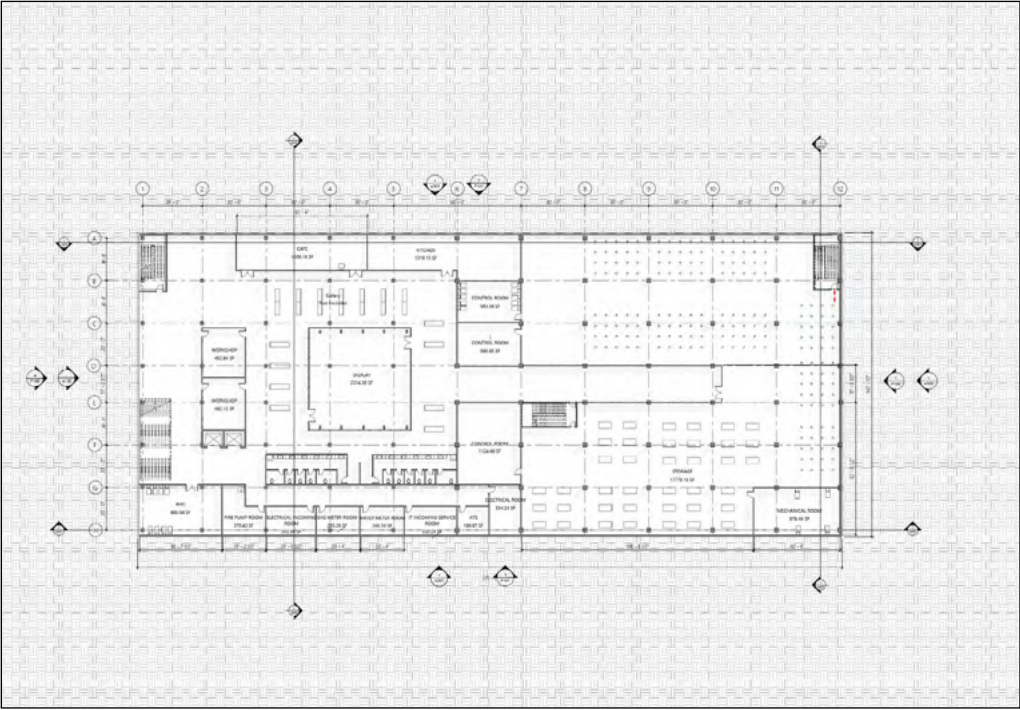




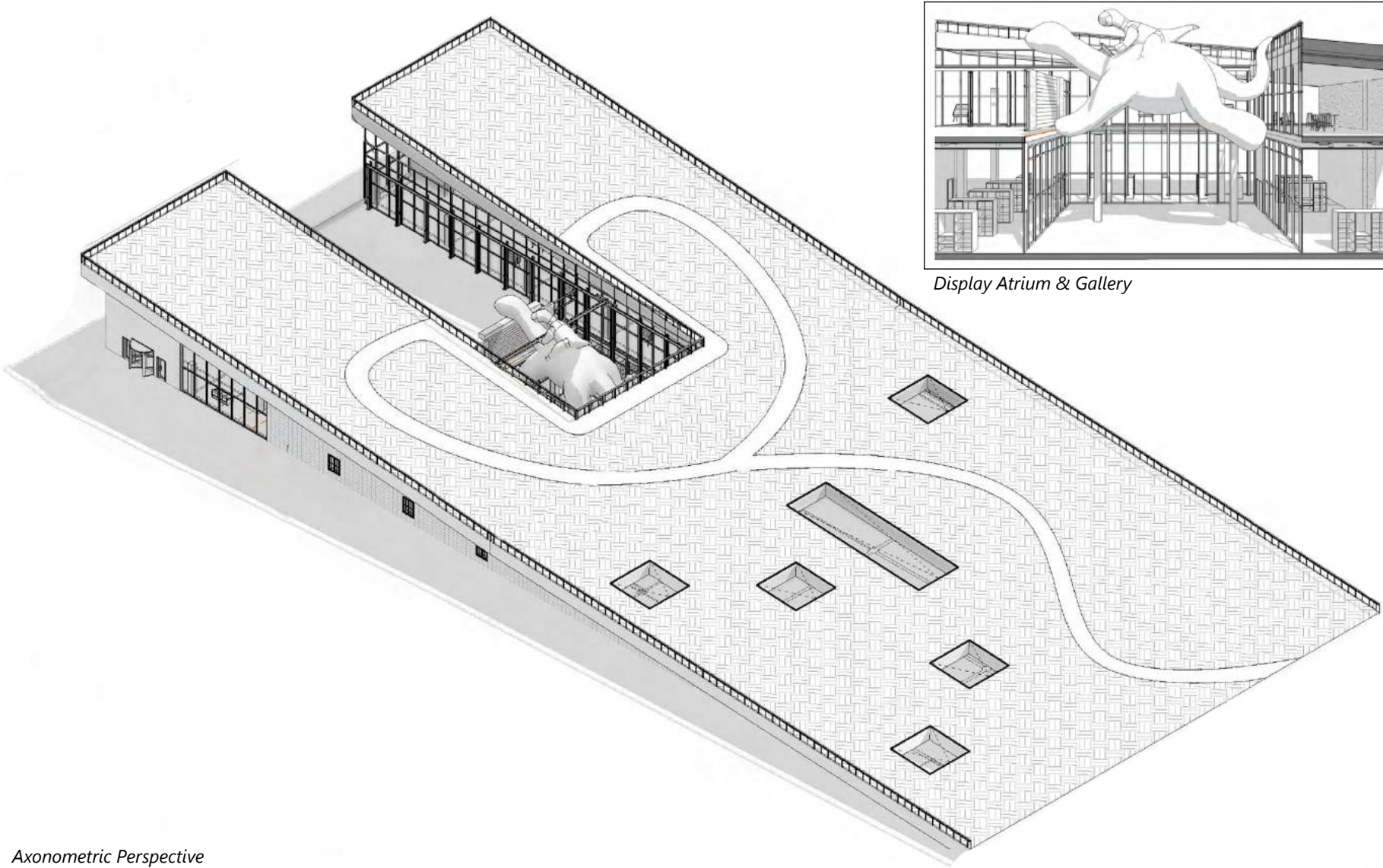
Roof Plan | Green Roof



Ground Floor Plan



Basement Floor Plan

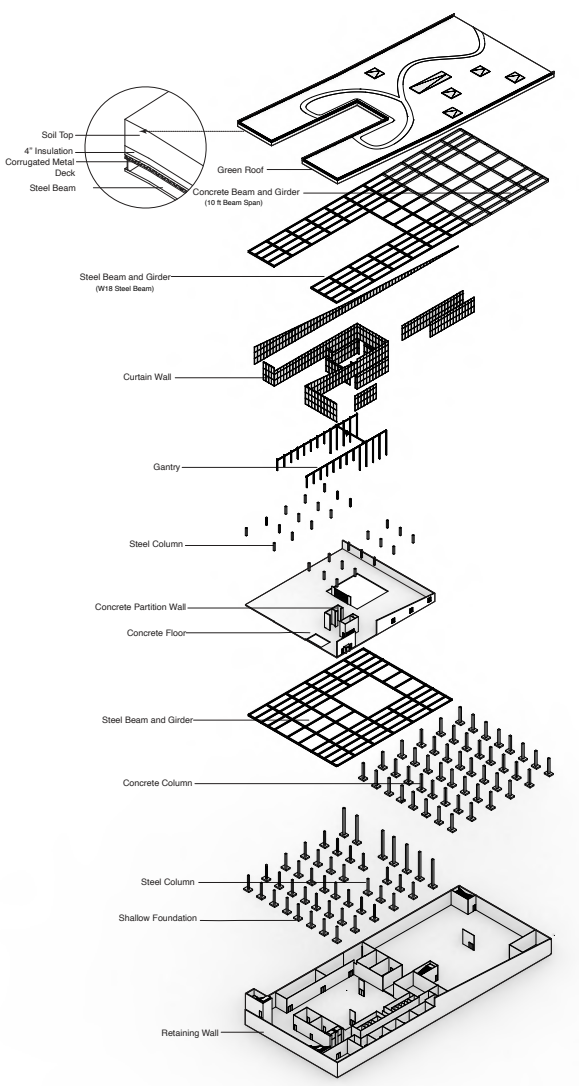


A long bar organizes back-of-house operations around a central display atrium where a full-scale balloon is suspended as a public gallery piece. The roof continues the park: the building is partially submerged and the excavated soil becomes a green roof, extending Central Park's ground plane over the structure. Plans and axons show separated visitor/service circulation, large-span structure for the atrium, and daylight brought in through roof openings.

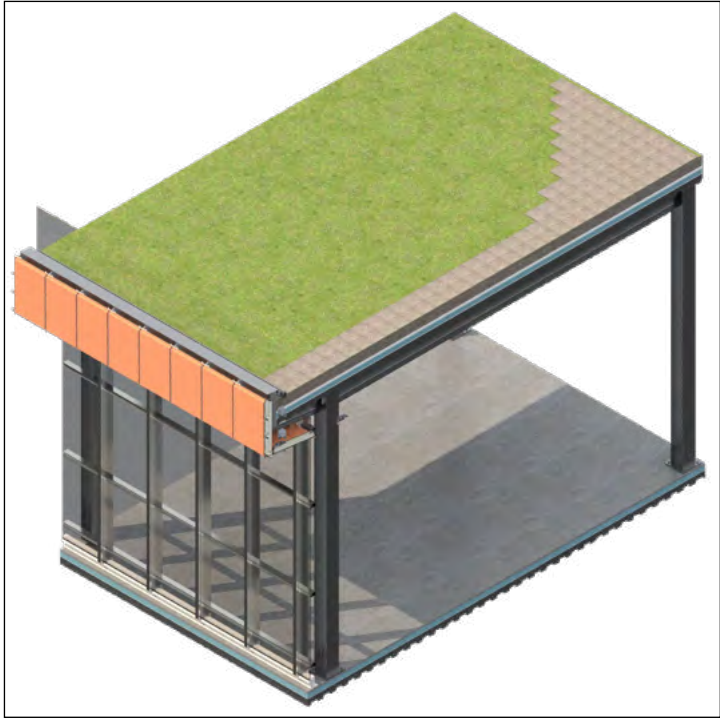
Axonometric Perspective



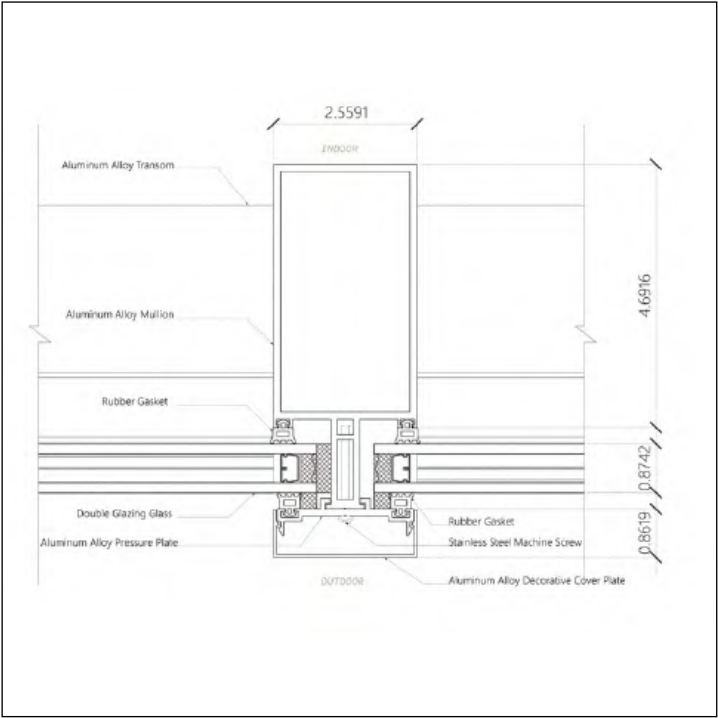
Display Atrium & Gallery



Structural Exploded Axonometric



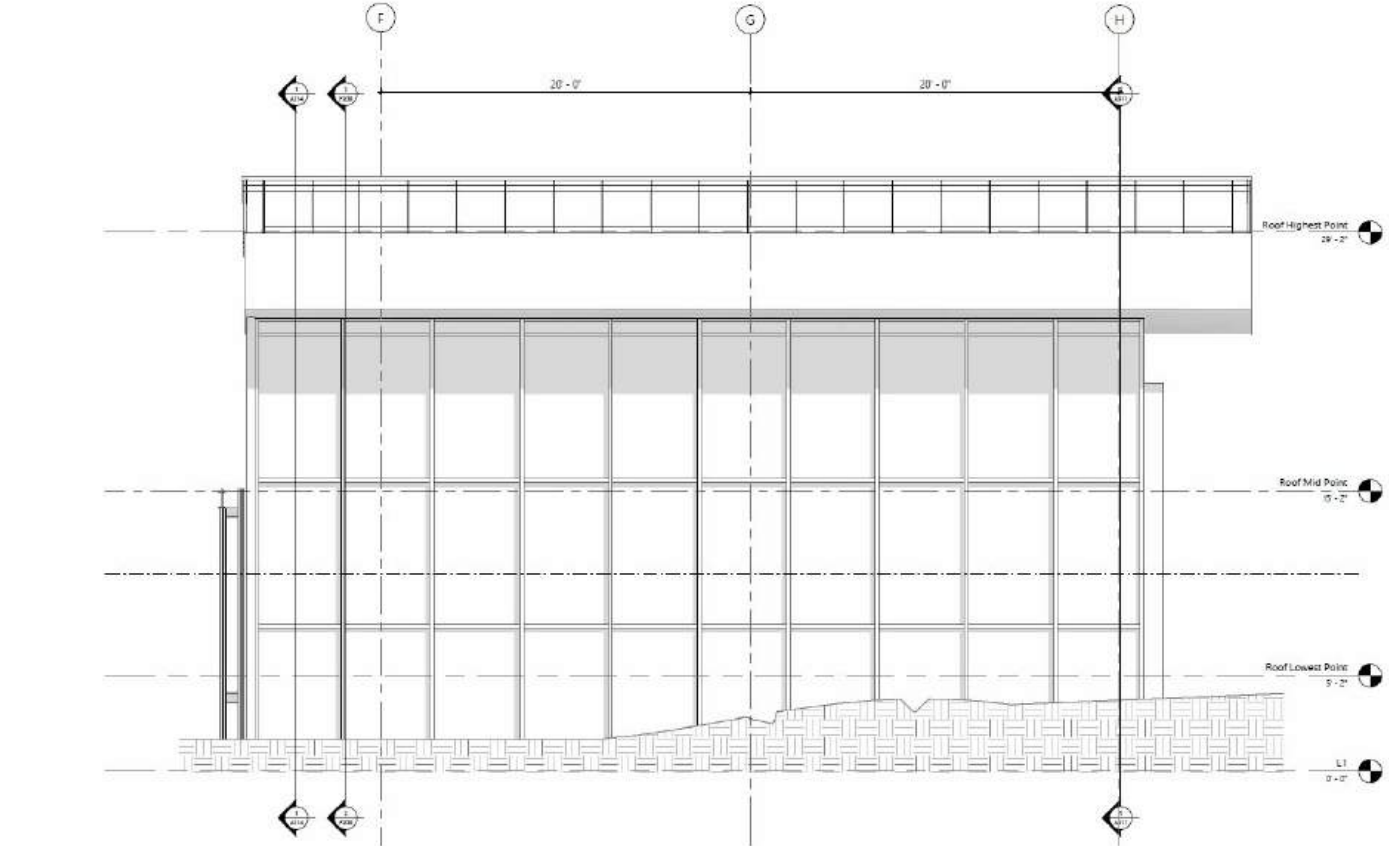
Render | Curtain Wall & Green Roof



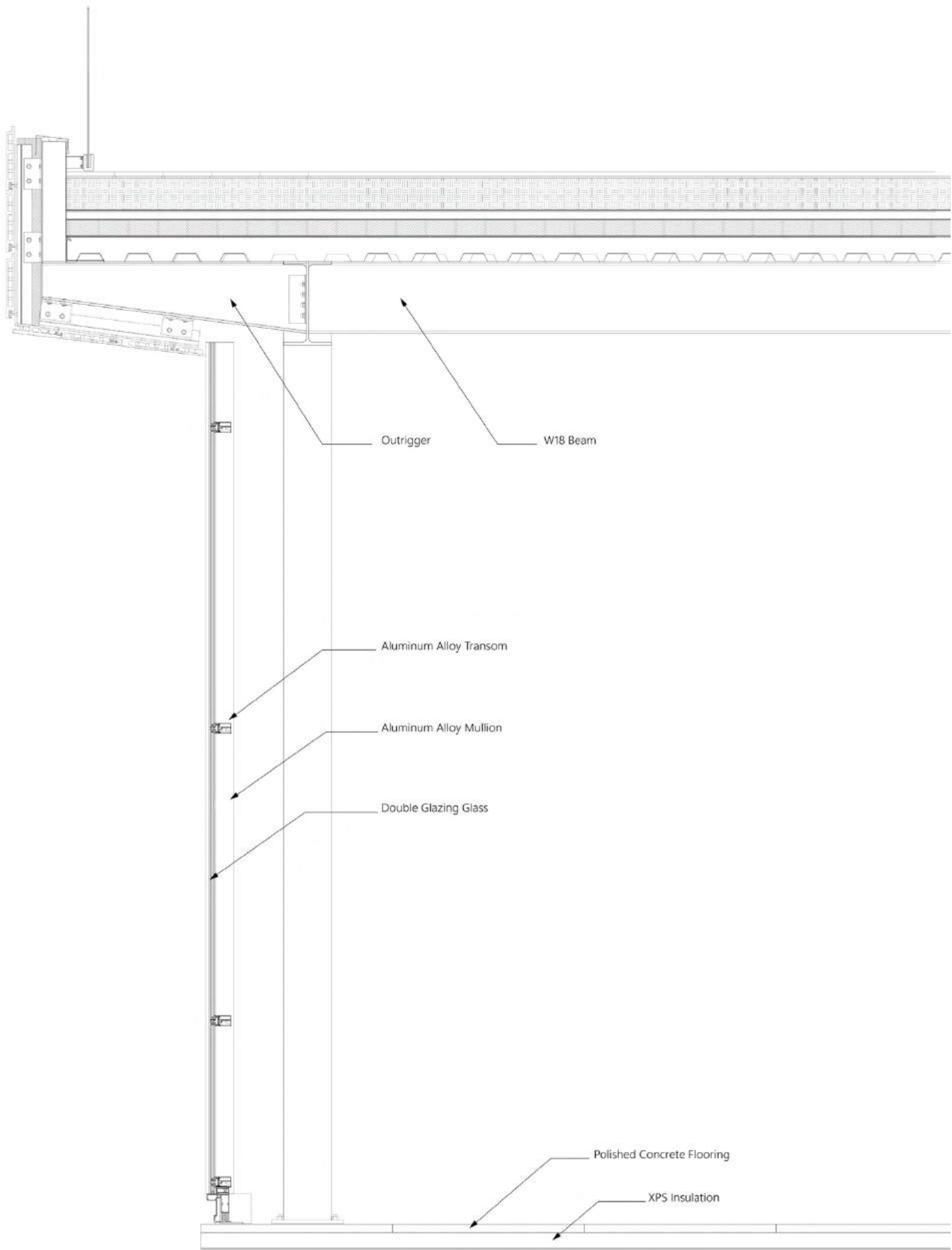
Curtainwall Detail Plan | Glazing System Detail



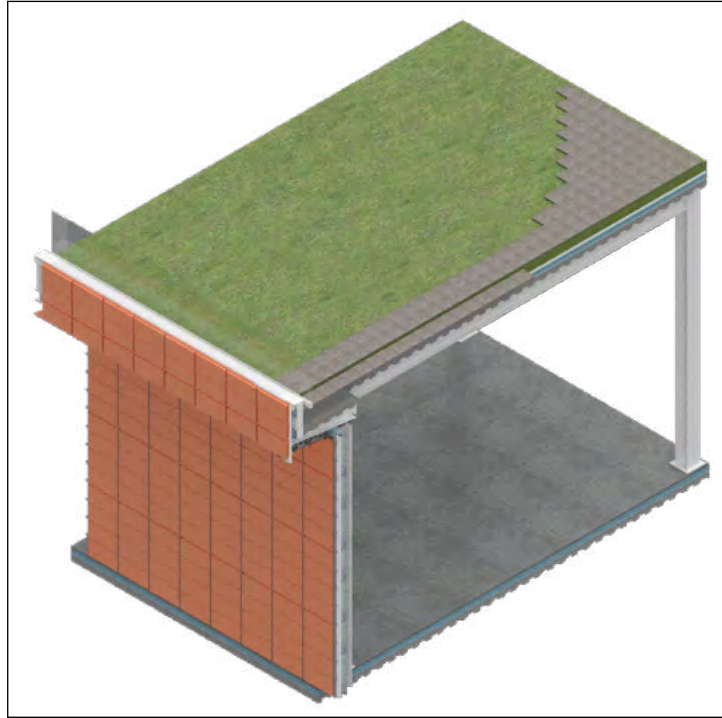
Curtainwall Plan | Glazing System Detail



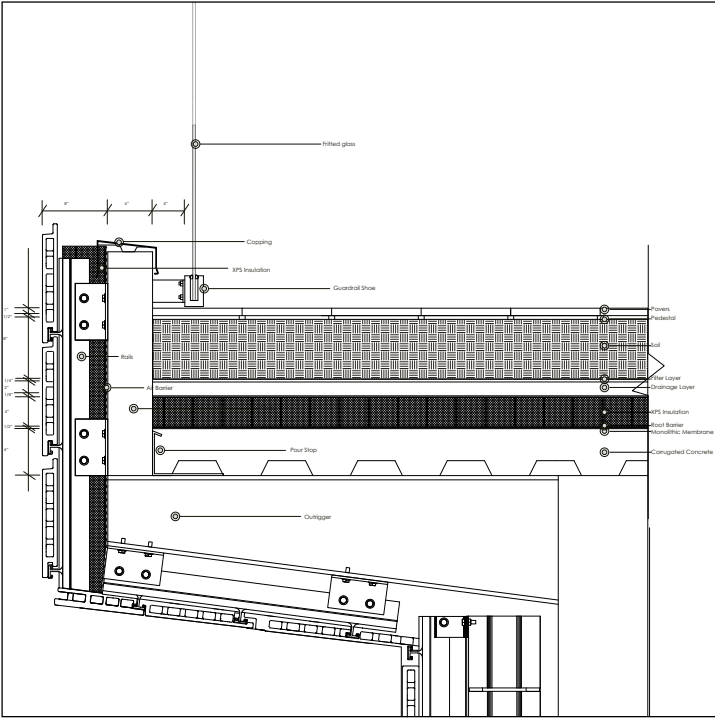
Curtainwall Facade Building Elevation



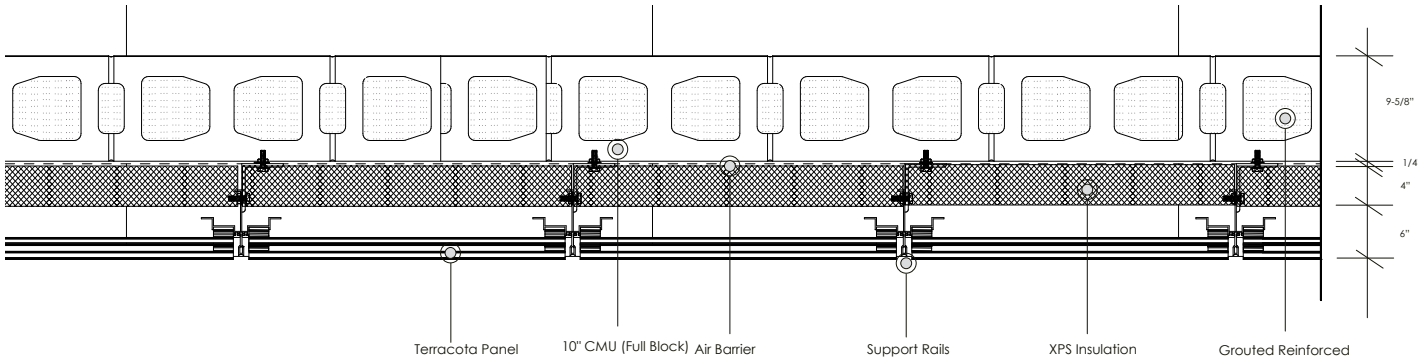
Wall Section Detail | Curtainwall Facade at Roof & Slab Edge



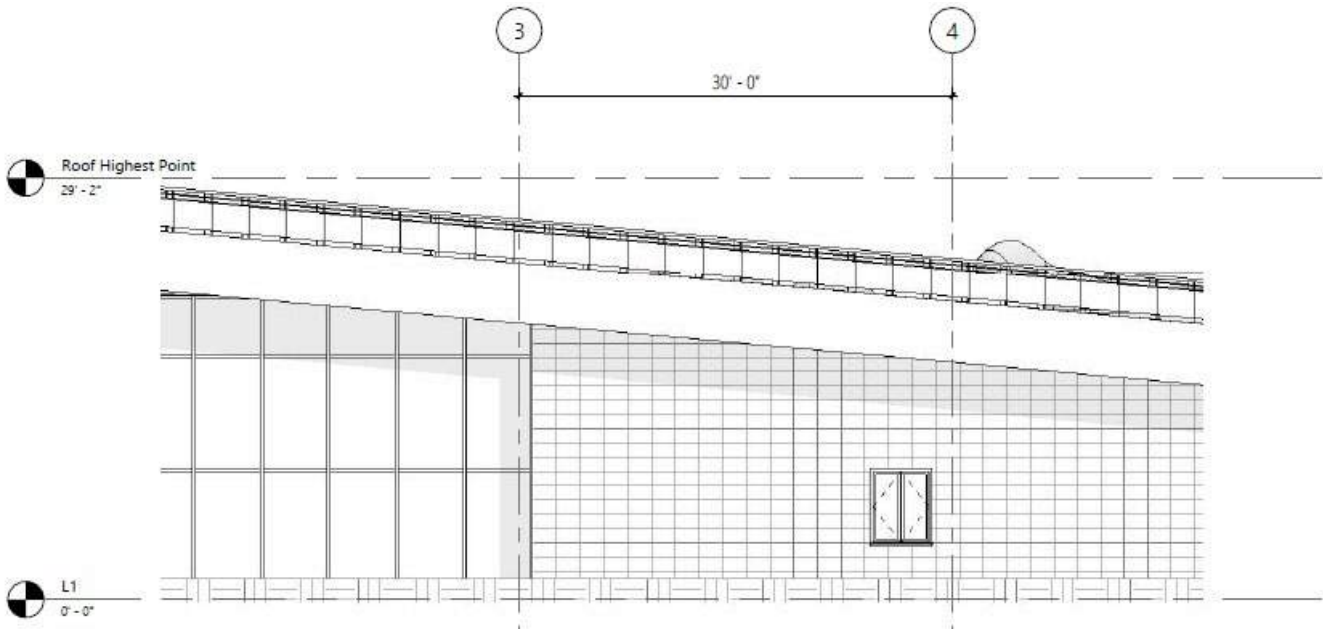
Render | Terracotta Rainscreen & Green Roof



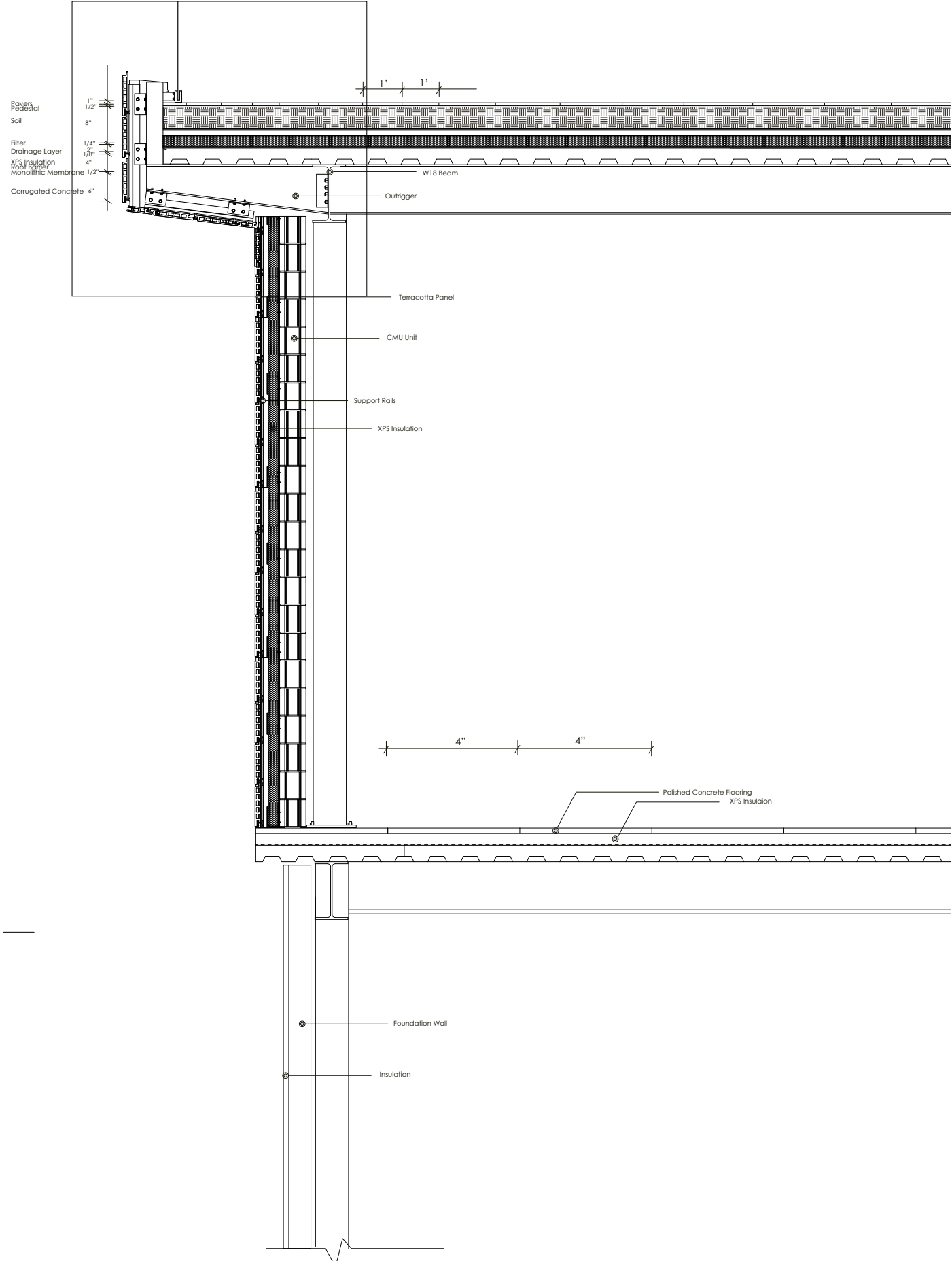
Section Detail | Roof-to-Façade



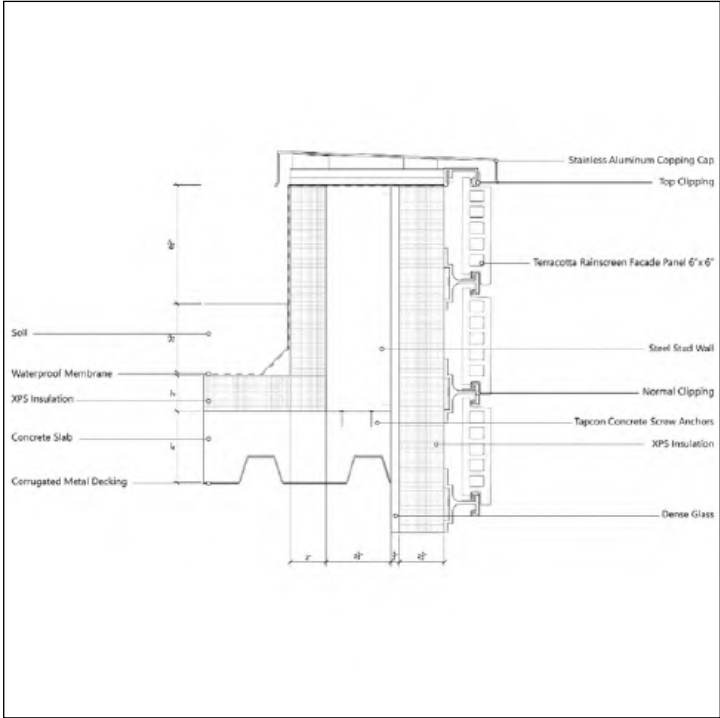
Terracotta Panel Plan



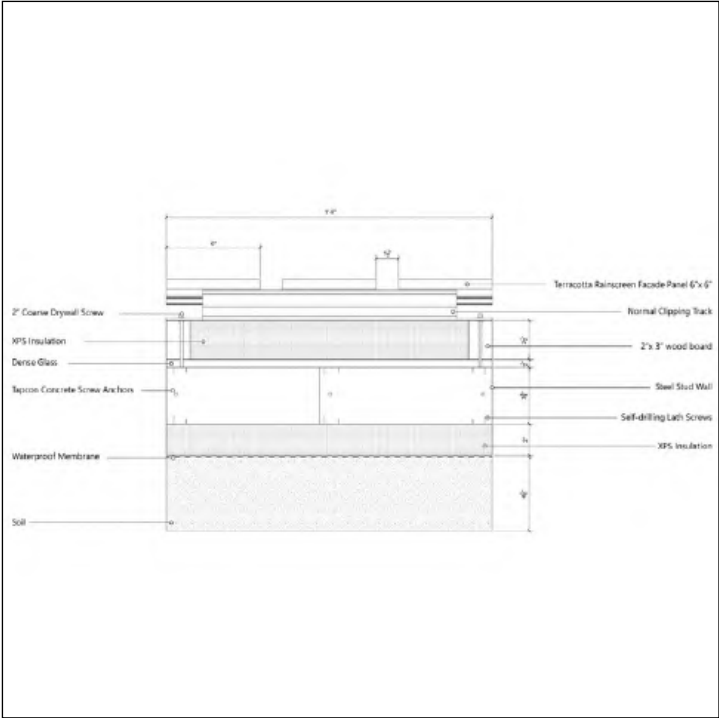
Terracotta Rainscreen Facade Building Elevation



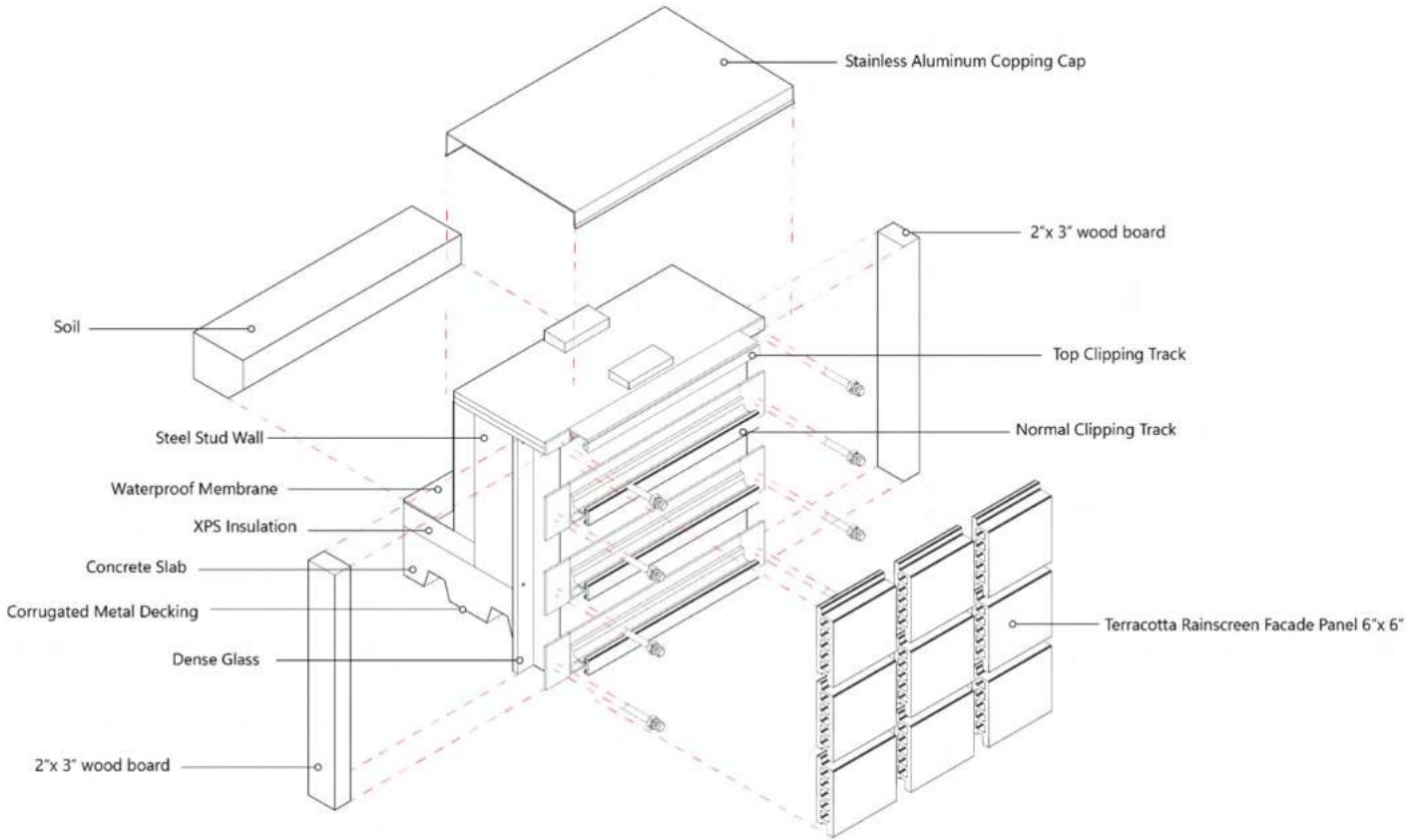
Wall Section Detail | Terracotta Rainscreen at Roof & Slab Edge



Section Detail | Terracotta Cladding



Plan Detail | Terracotta Cladding



Exploded Axon | Terracotta Cladding

A terracotta rainscreen façade from detail drawing to full-scale mock-up. Section/plan/axon diagrams map the cladding, subframe, insulation, and waterproofing, while the 1:1 prototype tests panel profiles, joints, and roof-edge flashing to confirm constructability and performance.



1:1 Physical Mock Up | Terracotta Cladding Facade | Group Work

0 6 DAMAGE CONTROL

Looking into Boston Marathon

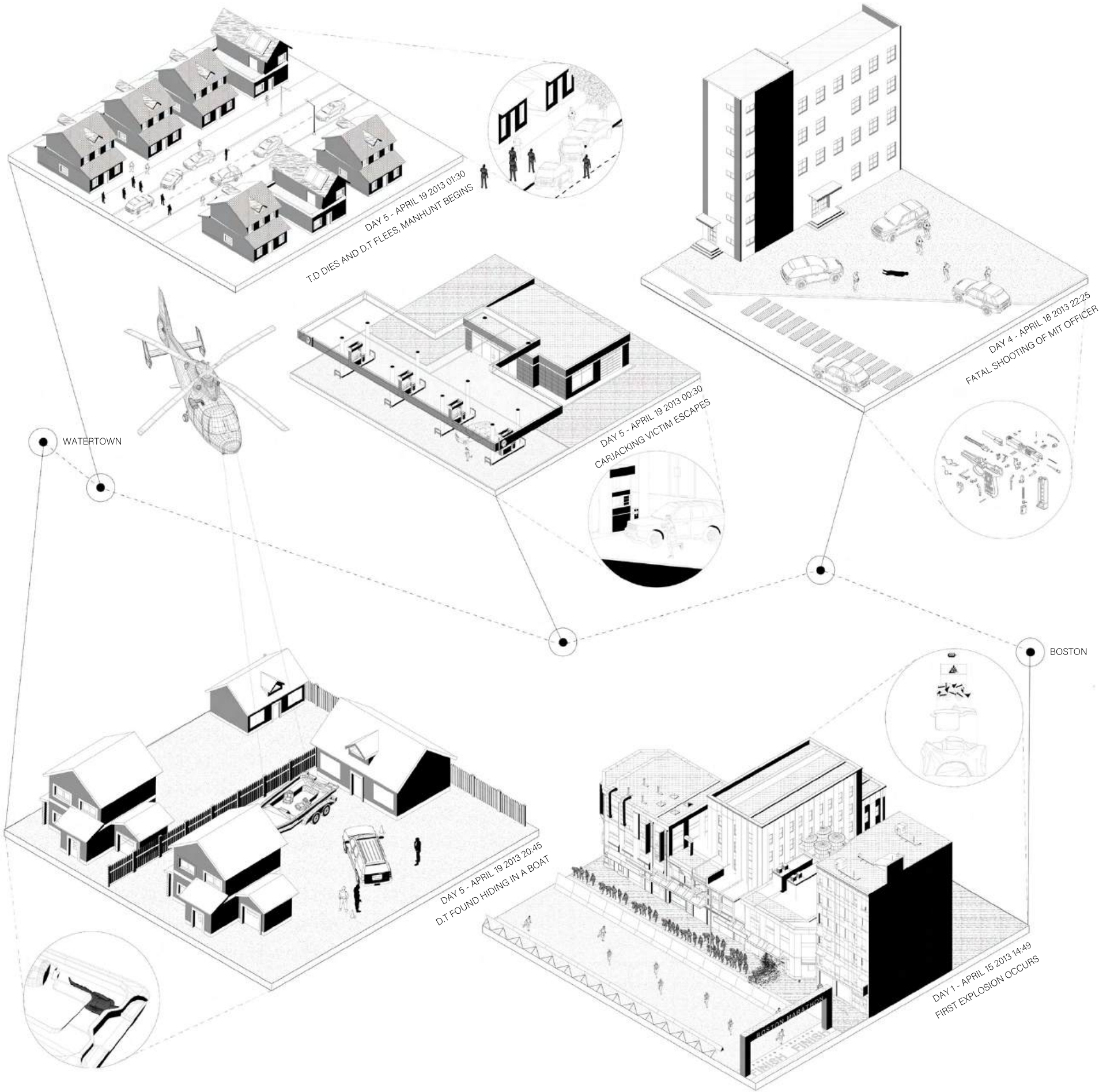
Academic Project | Boston, Massachuttes

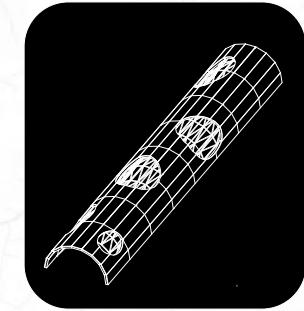
Spring 2024: Core II, GSAPP Columbia

Professor: Mark Wasiuta

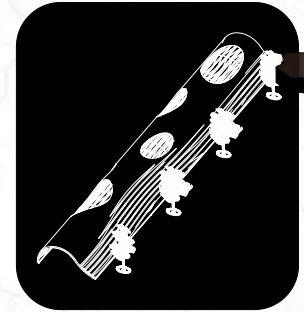
Individual Work

The project is a reimagined Boston Marathon route that integrates an elevated runway system. This system is designed to guide participants and spectators through a series of historically significant sites related to the Boston Marathon bombing and its aftermath. The goal is to create a moving memorial that educates, commemorates, and engages the community in a shared experience of resilience and remembrance.





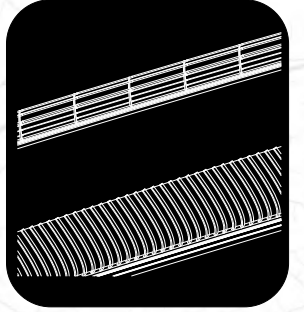
Security Checkpoint



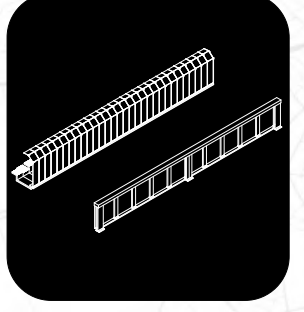
Blend in with the City



Park Tunnel



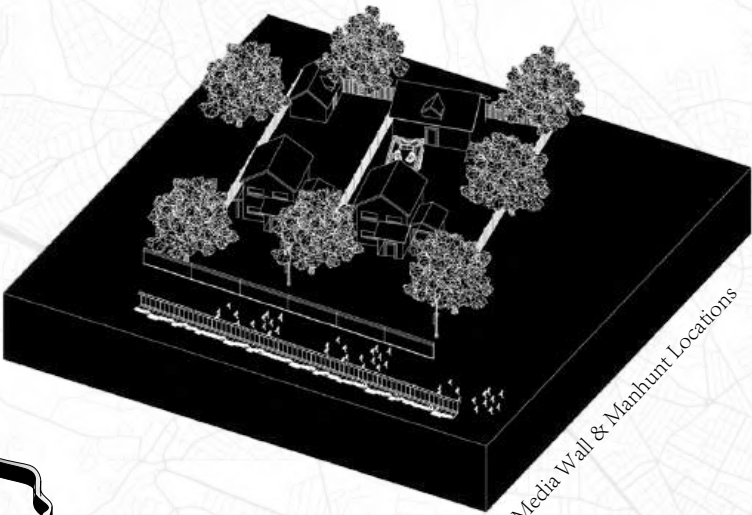
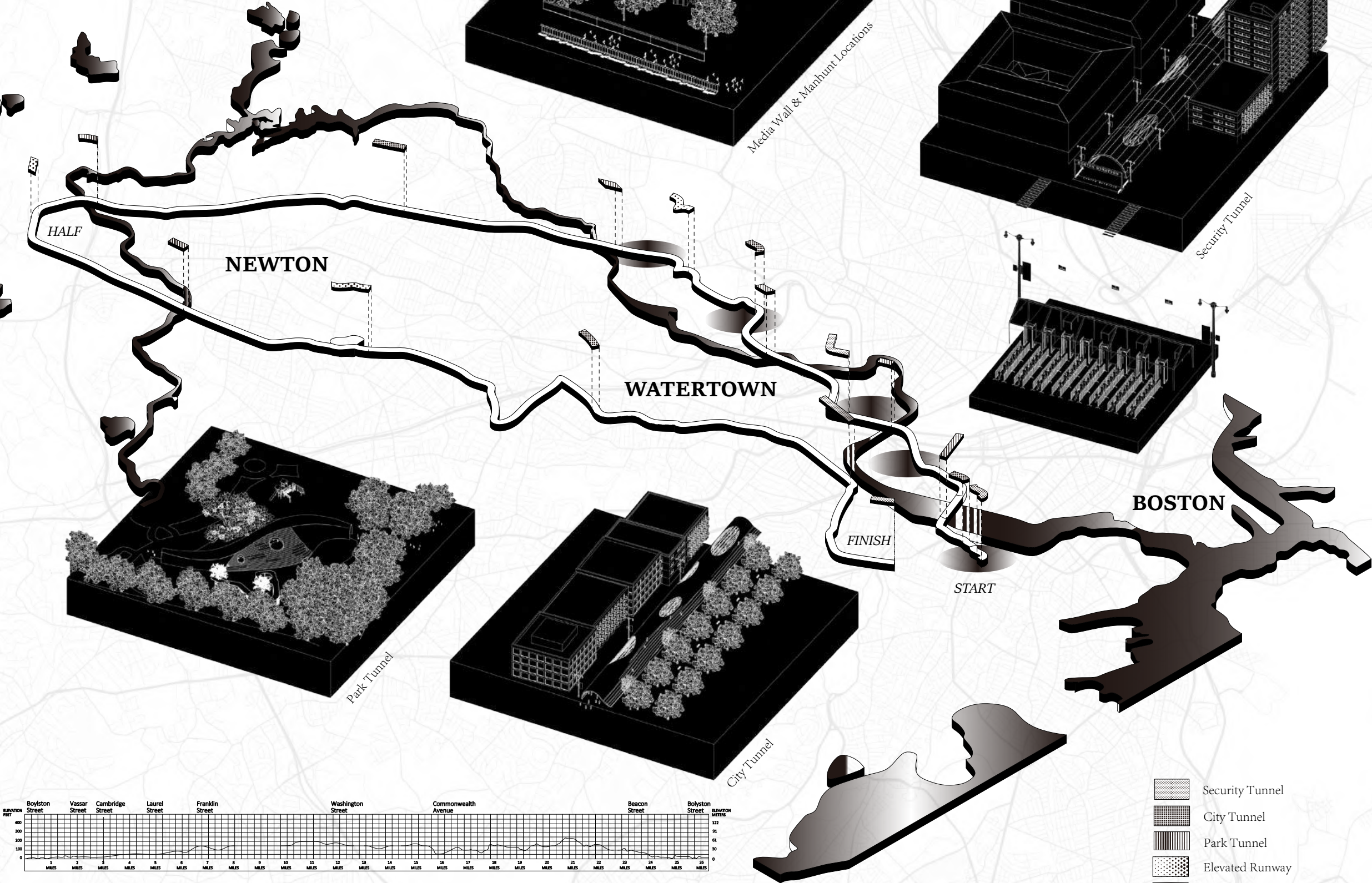
Elevated Runway on Bridge



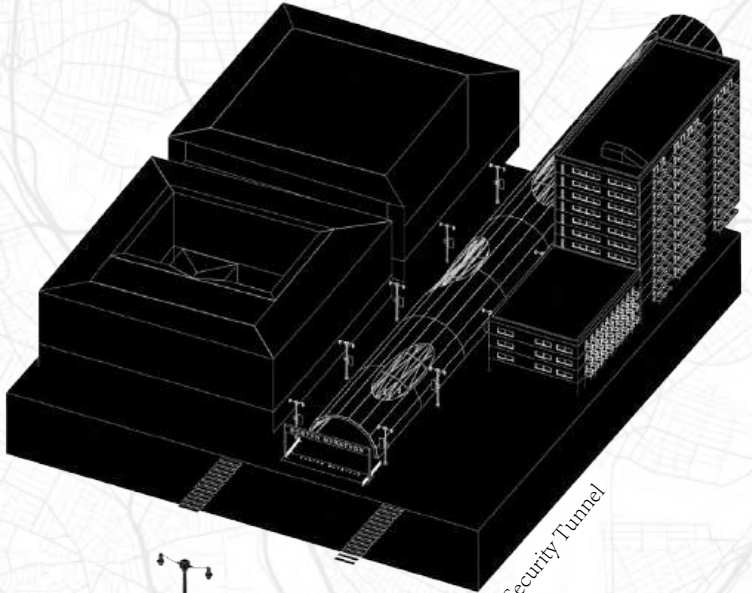
Protected Seatings & Media Wall

MARATHON CITY

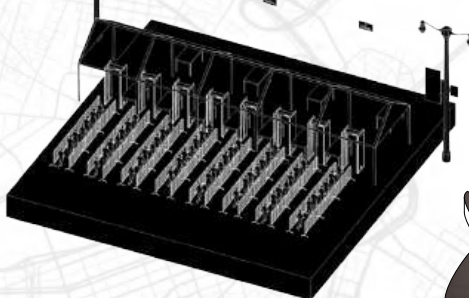
PROTECTION & COMMEMORATION



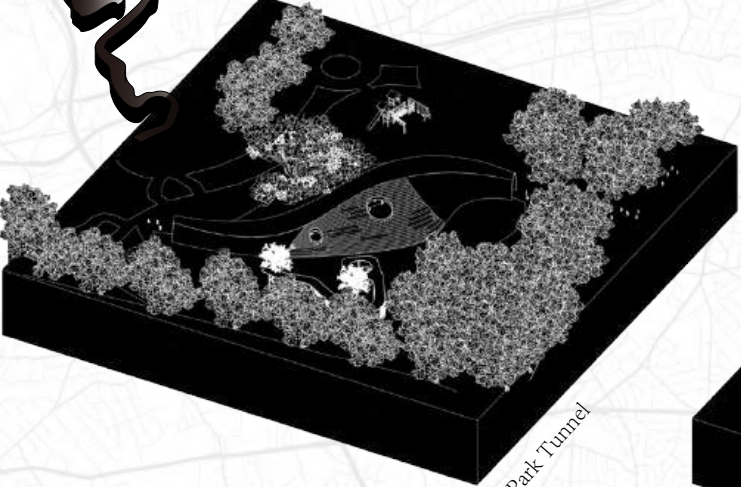
Media Wall & Manhunt Locations



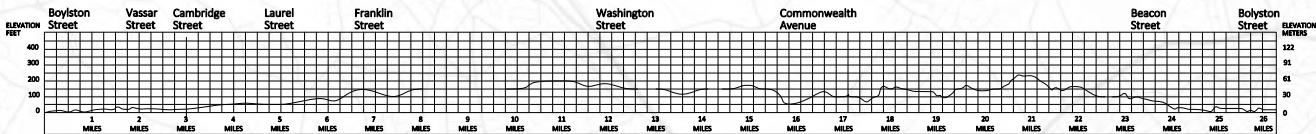
Security Tunnel



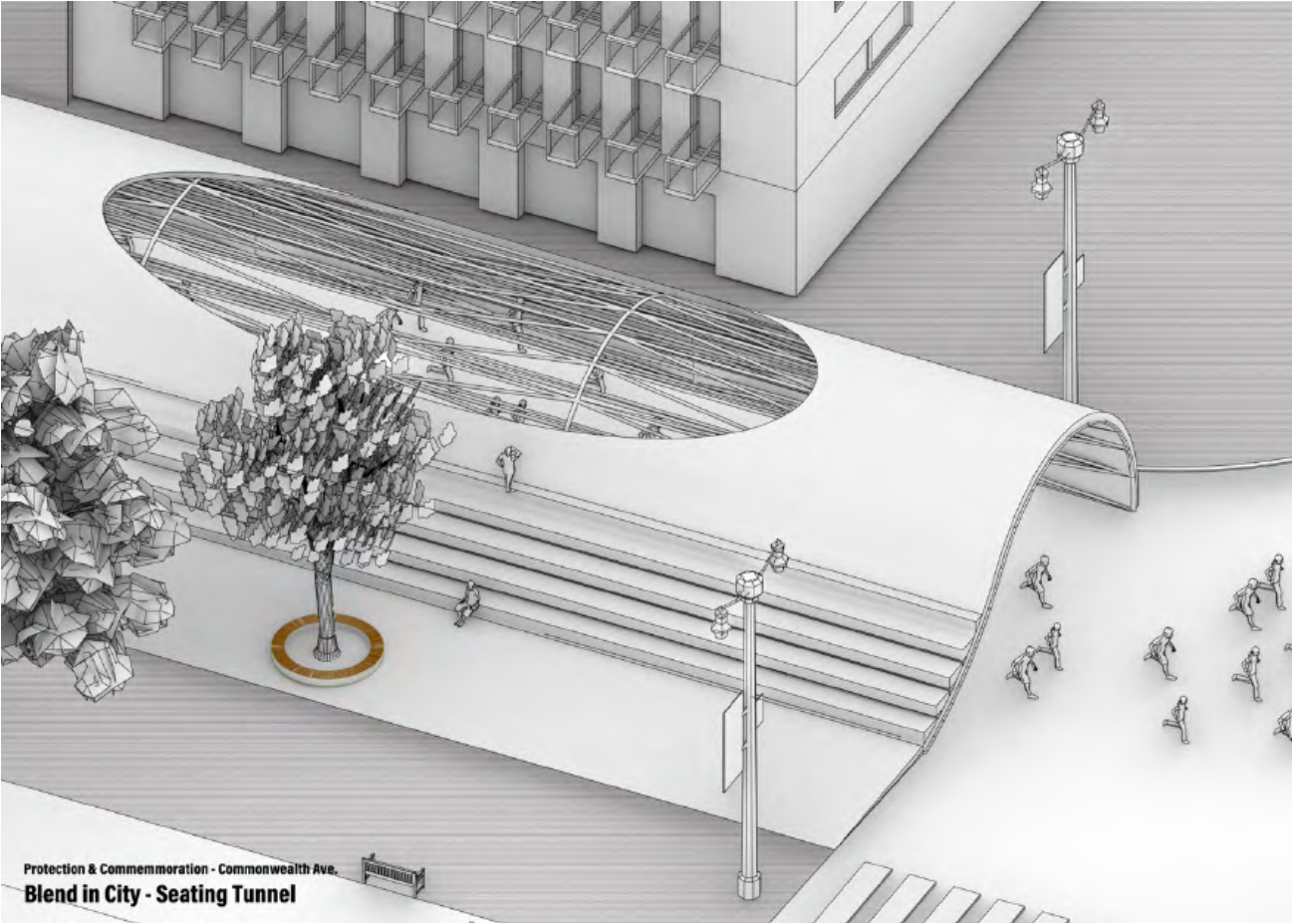
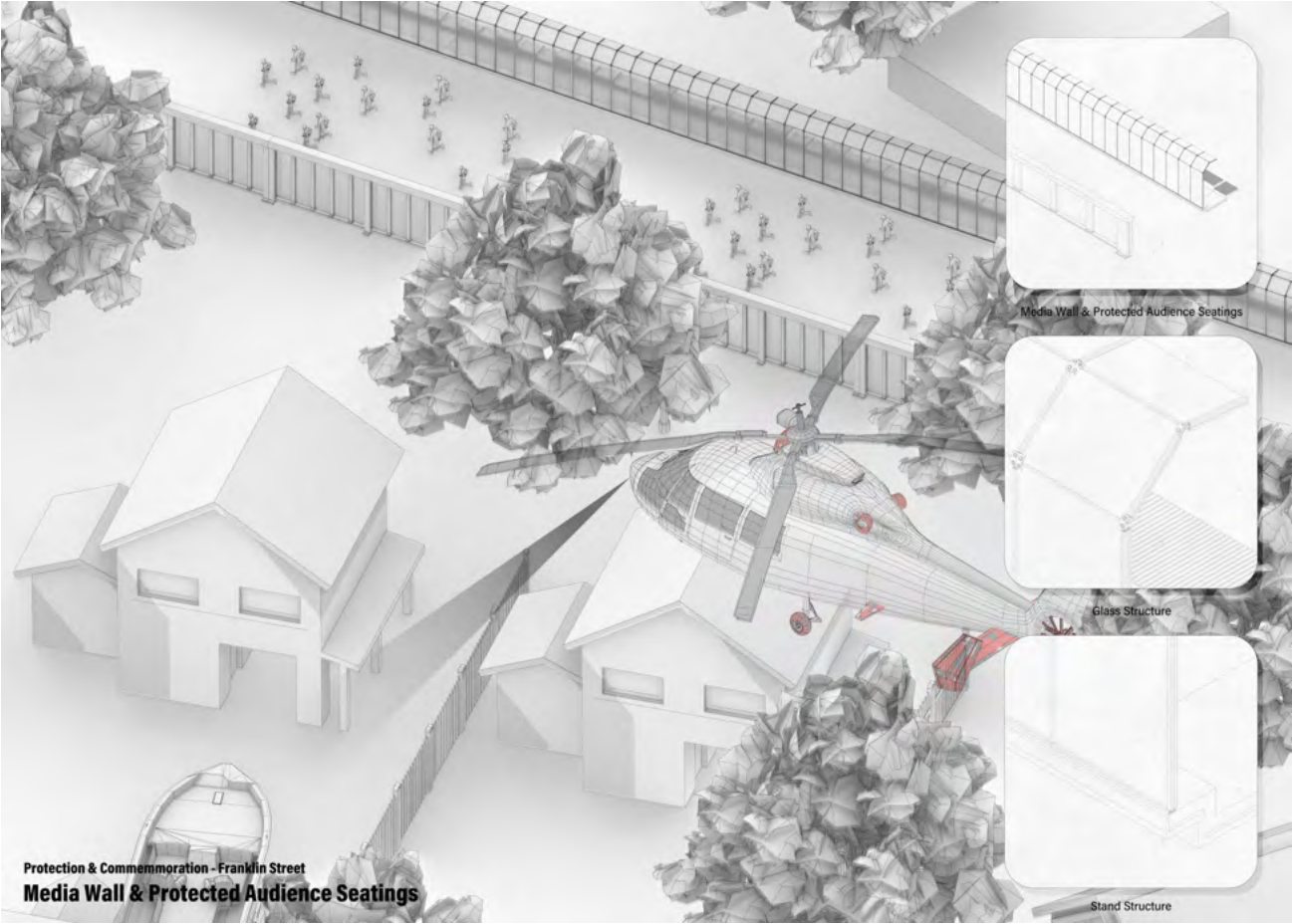
City Tunnel

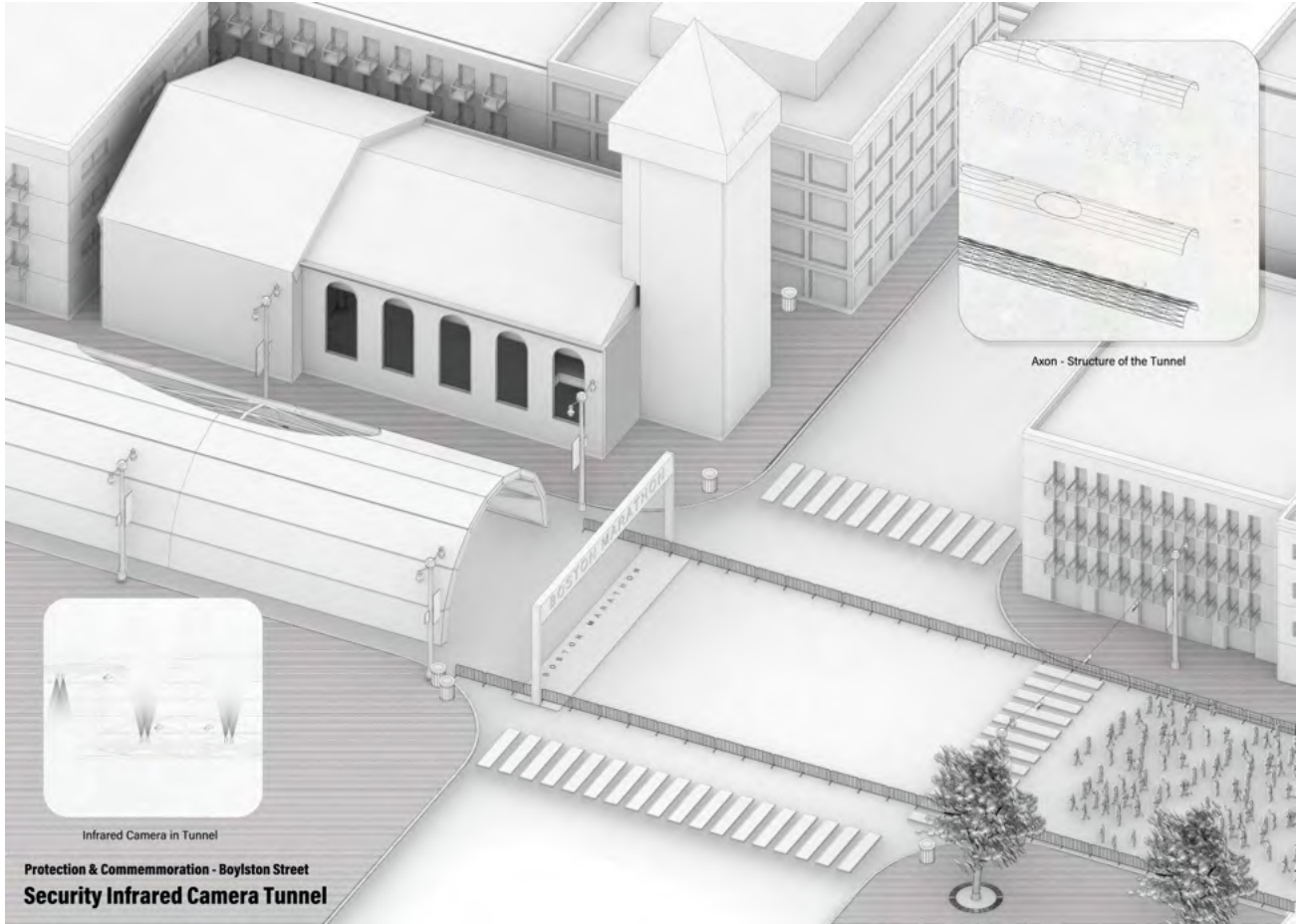
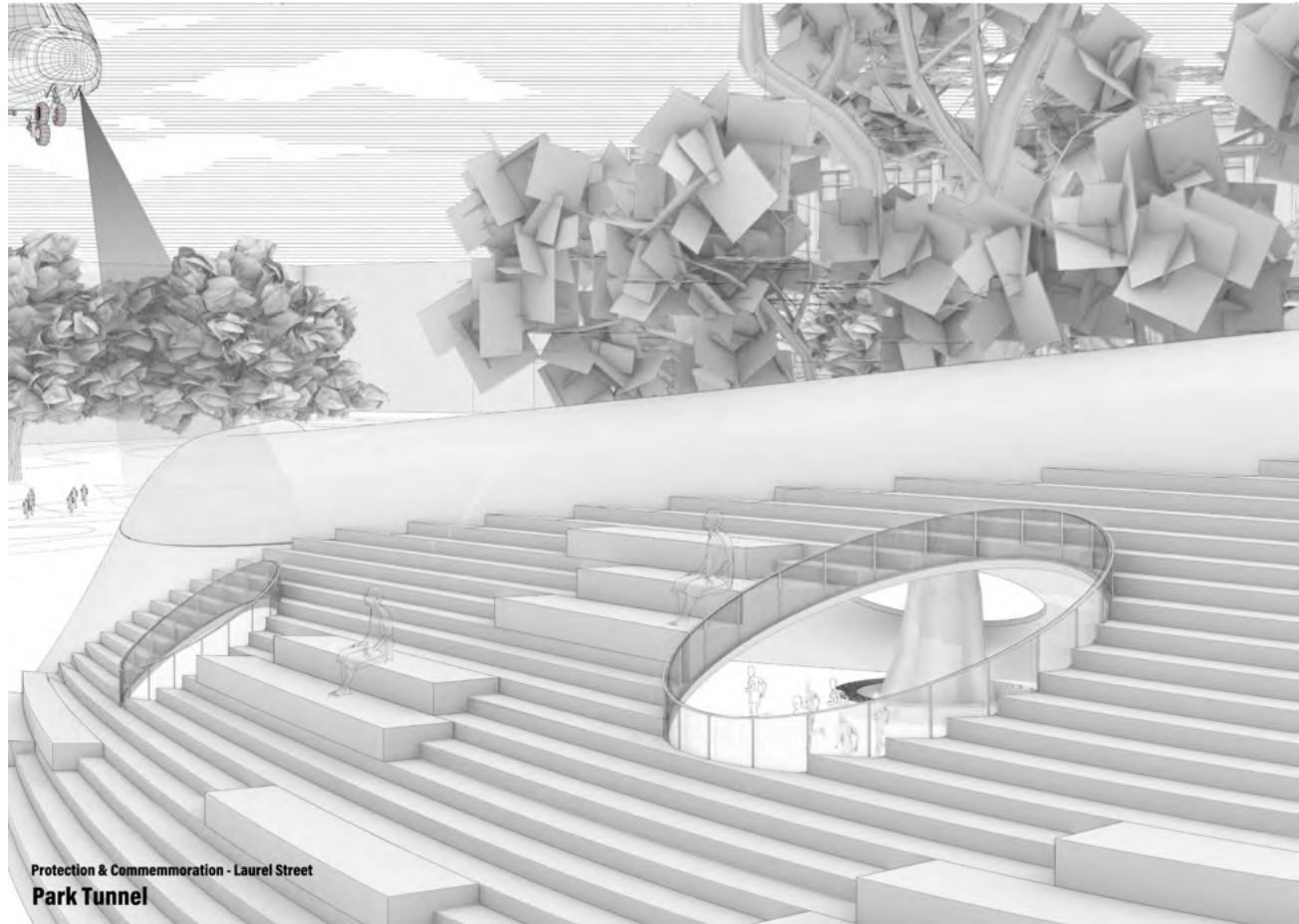


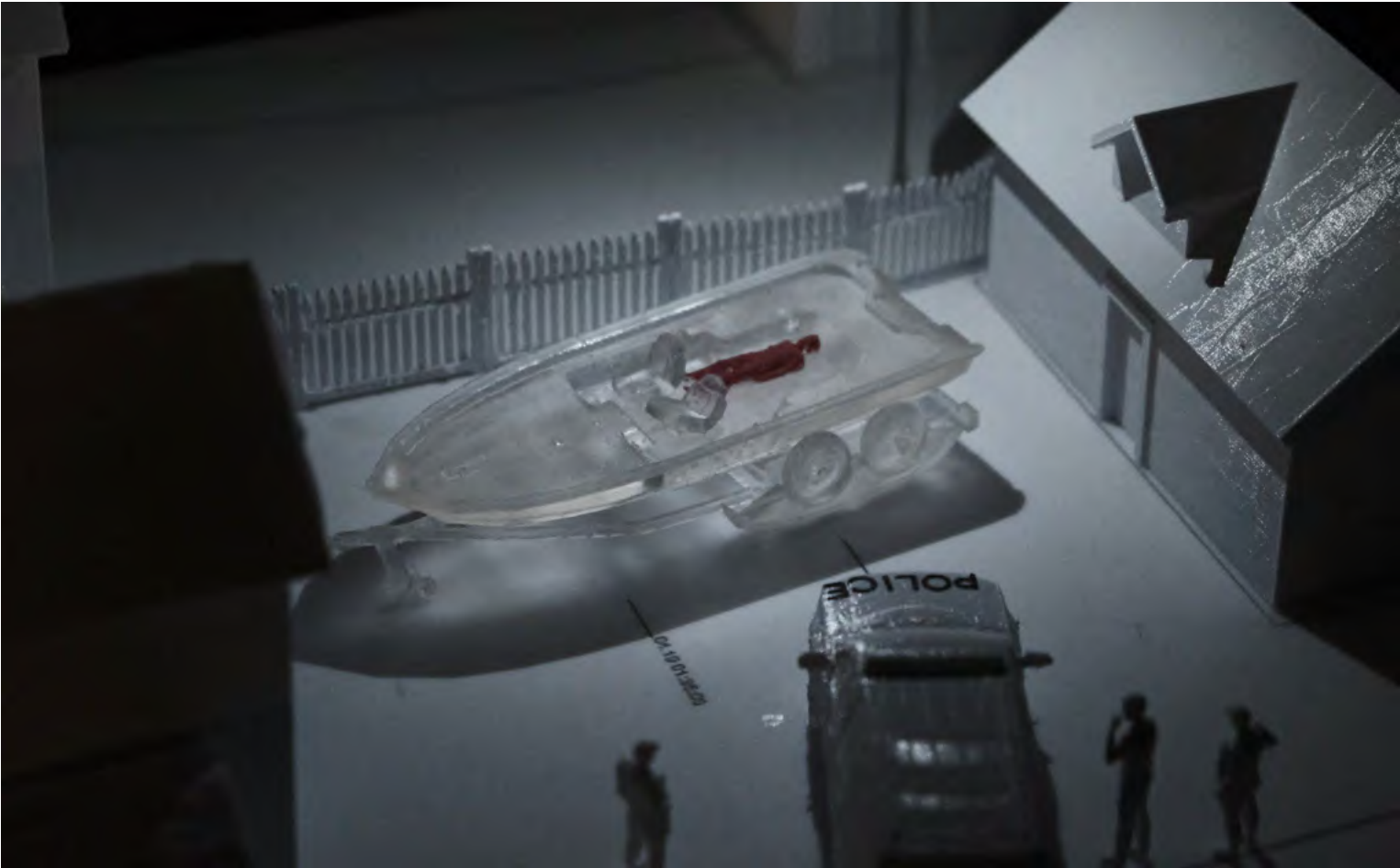
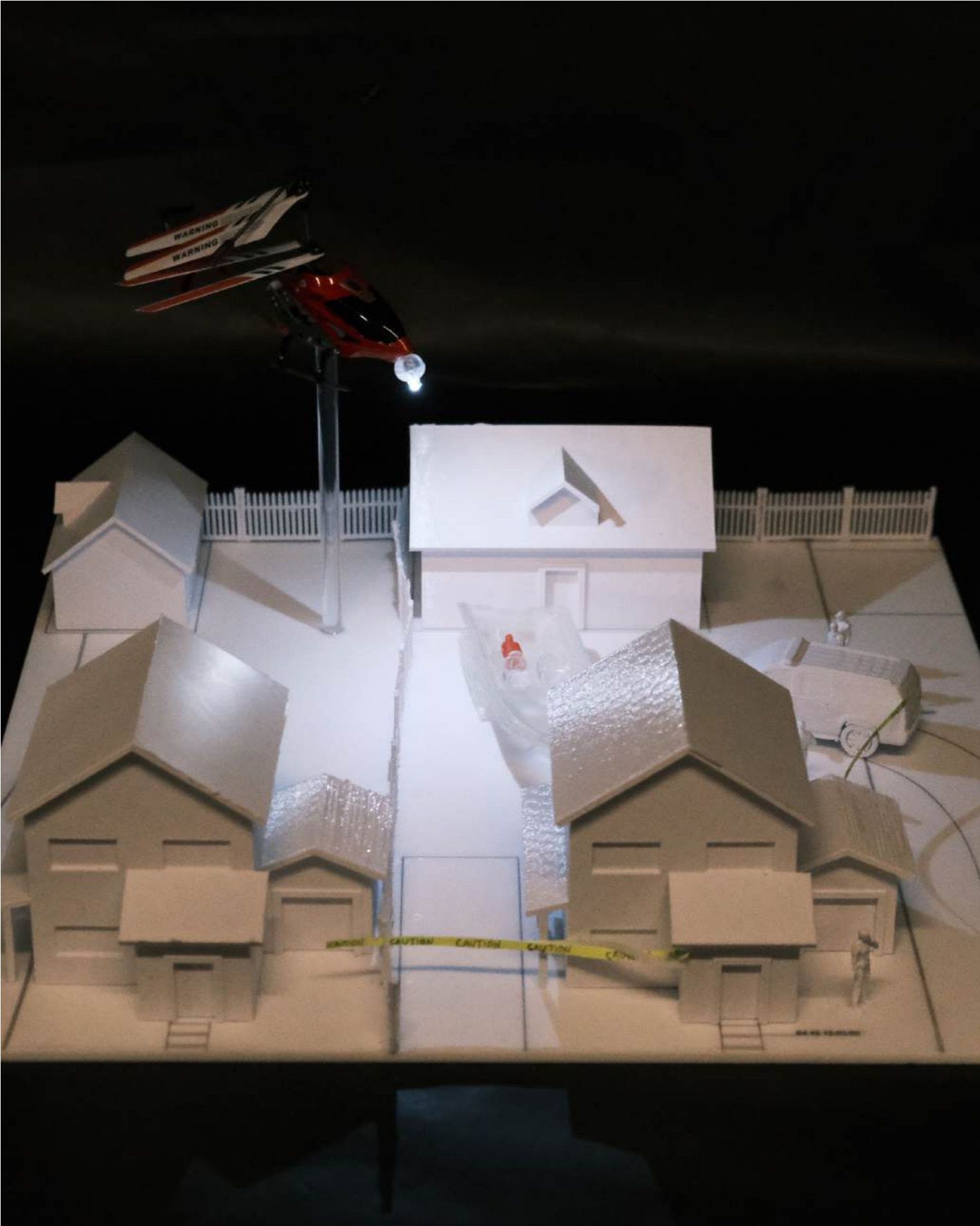
Park Tunnel



- Security Tunnel
- City Tunnel
- Park Tunnel
- Elevated Runway
- Media Wall & Manhunt Locations







BRINE ANCHORED AUTONOMY
Repurposing Industrial Residues for Indigenous Resilience

Academic Project | Red Sea, Saudi Arabia

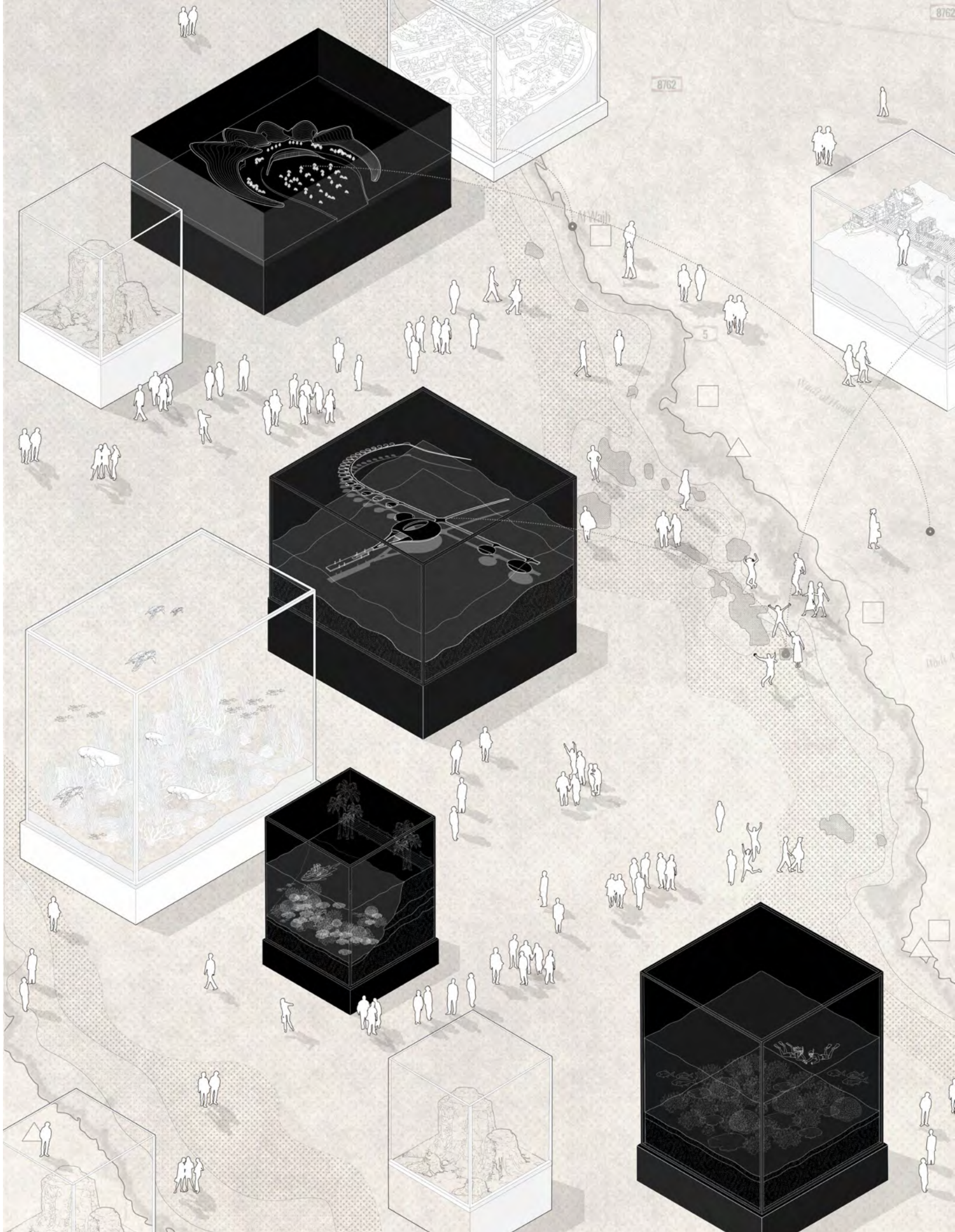
Spring 2026: ADV VI, GSAPP Columbia

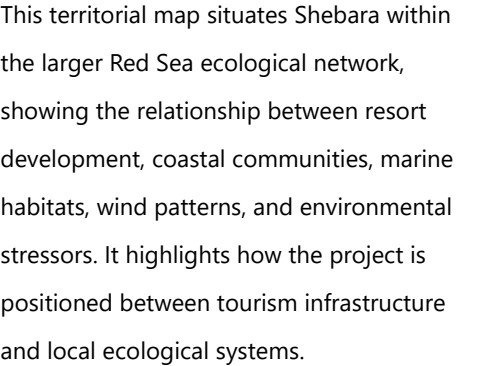
Professor: Mireia Luzarraga

Group Work: Rui Ma

Brine Anchored Autonomy responds to Shebara Resort on Saudi Arabia’s Red Sea coast by questioning the hidden waste systems behind “regenerative tourism.” Instead of treating brine, heat, algae, halophytes, and dead seagrass as waste, the project turns them into resources.

The proposal uses a seven-block ecological purification system to transform desalination brine into salt, biomass, animal feed, seagrass-based materials, and cleaner water. It also connects this process to local Indigenous labor, housing, and coastal repair, creating an infrastructure that supports both the lagoon ecology and nearby communities.

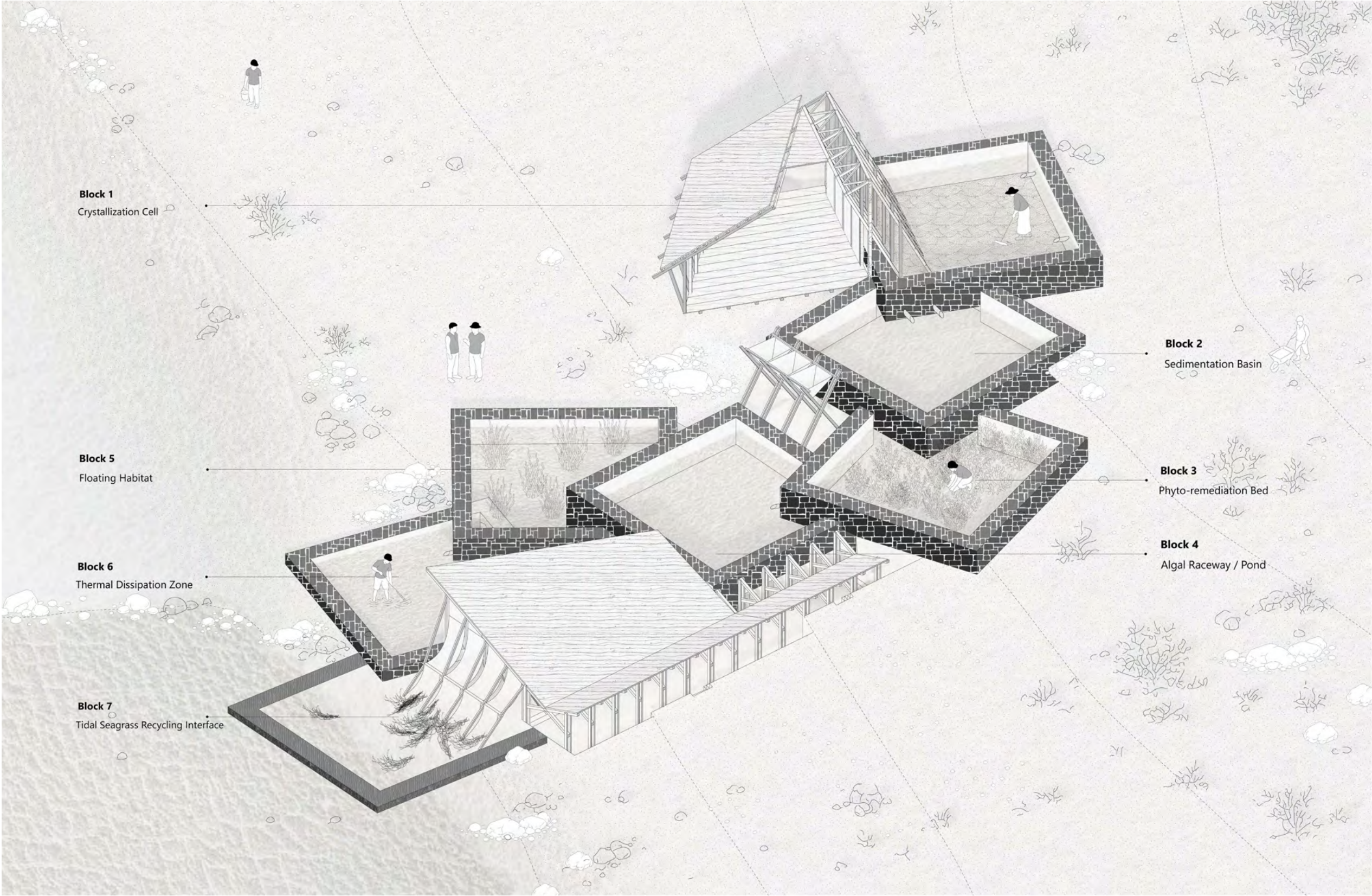




Map Analysis

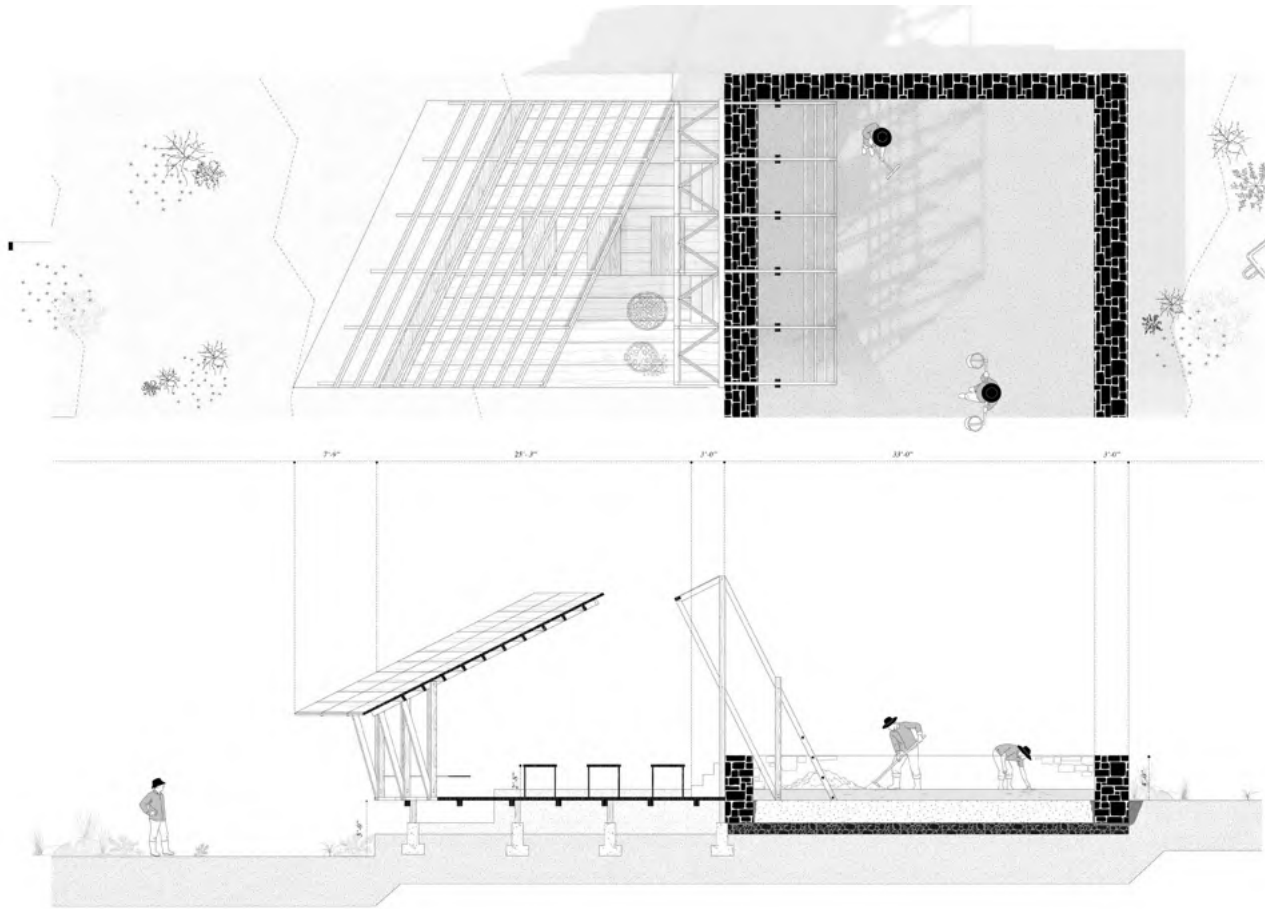


Rendering of the three stages



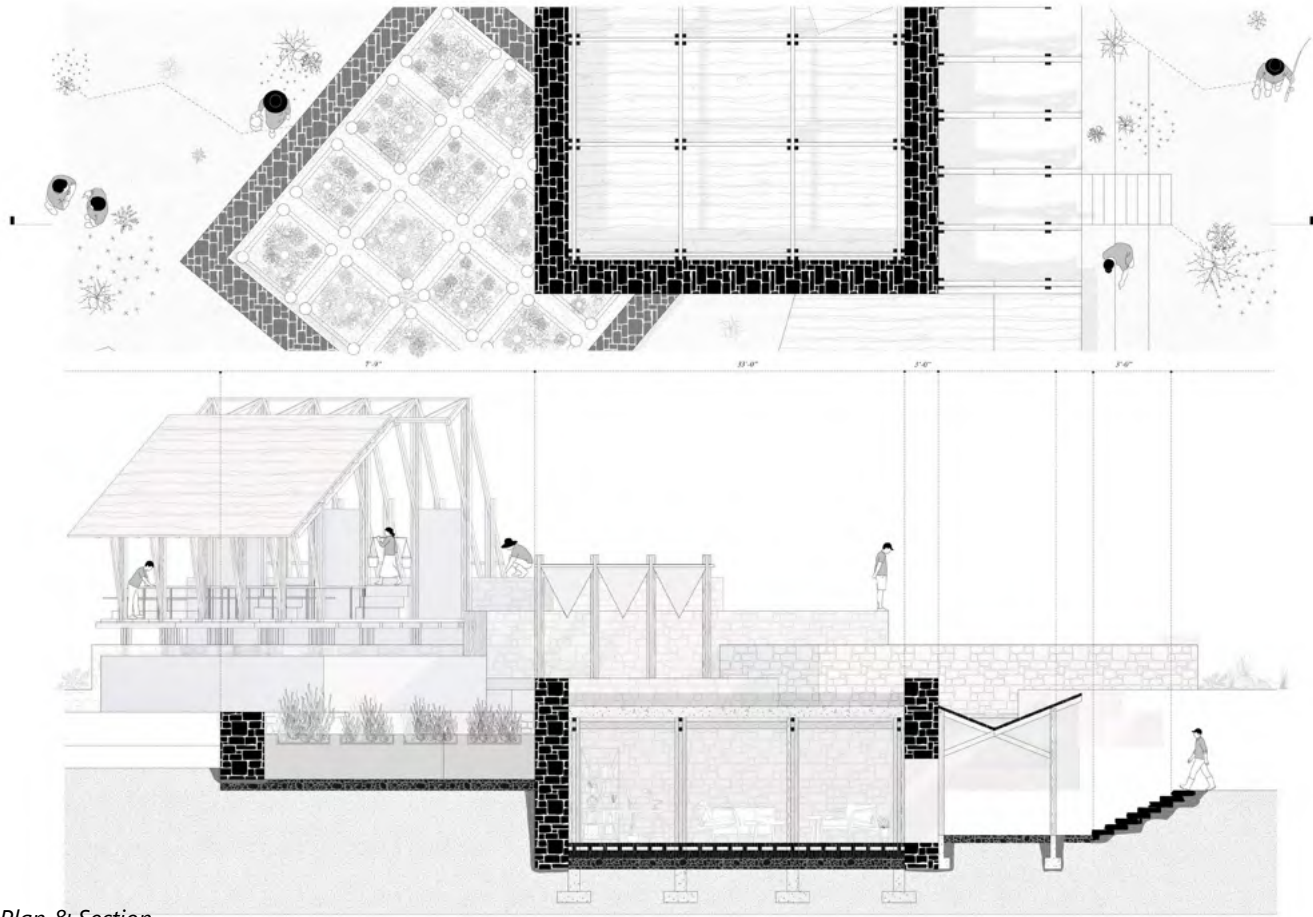
Axon Brine Process
The brine process slows down desalination waste instead of releasing it directly into the sea. It moves through evaporation, salt crystallization, sedimentation, plant filtration, algae polishing, floating habitat treatment, and seagrass recycling, gradually turning highly saline waste into salt, biomass, reusable material, and cleaner water.

PHASE 1
Crystallization Cell

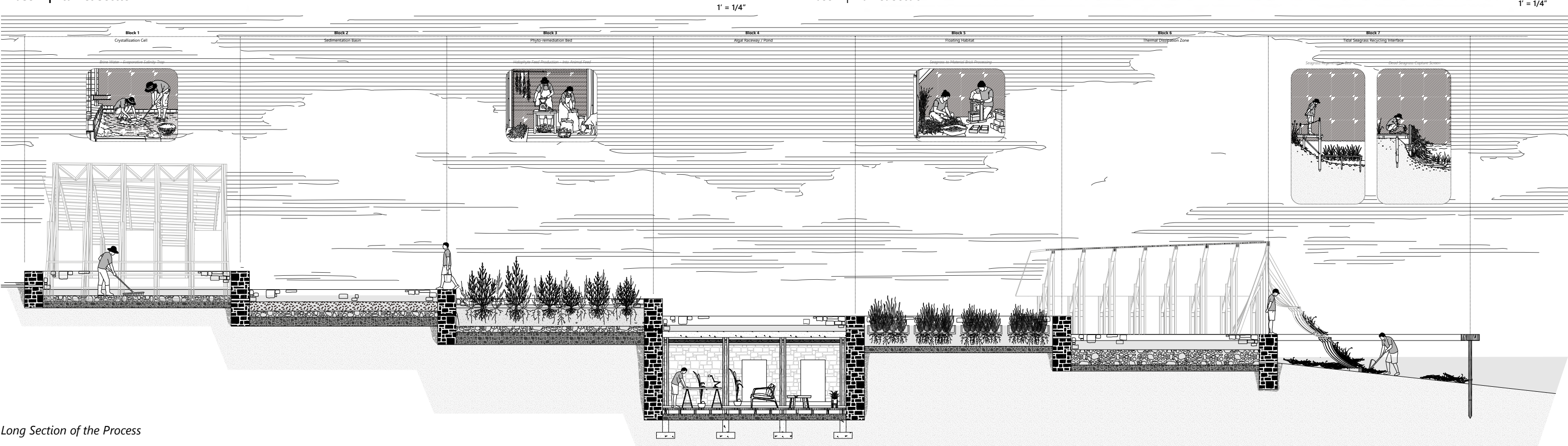


Phase 1 | Plan & Section

PHASE 4
Algal Raceway

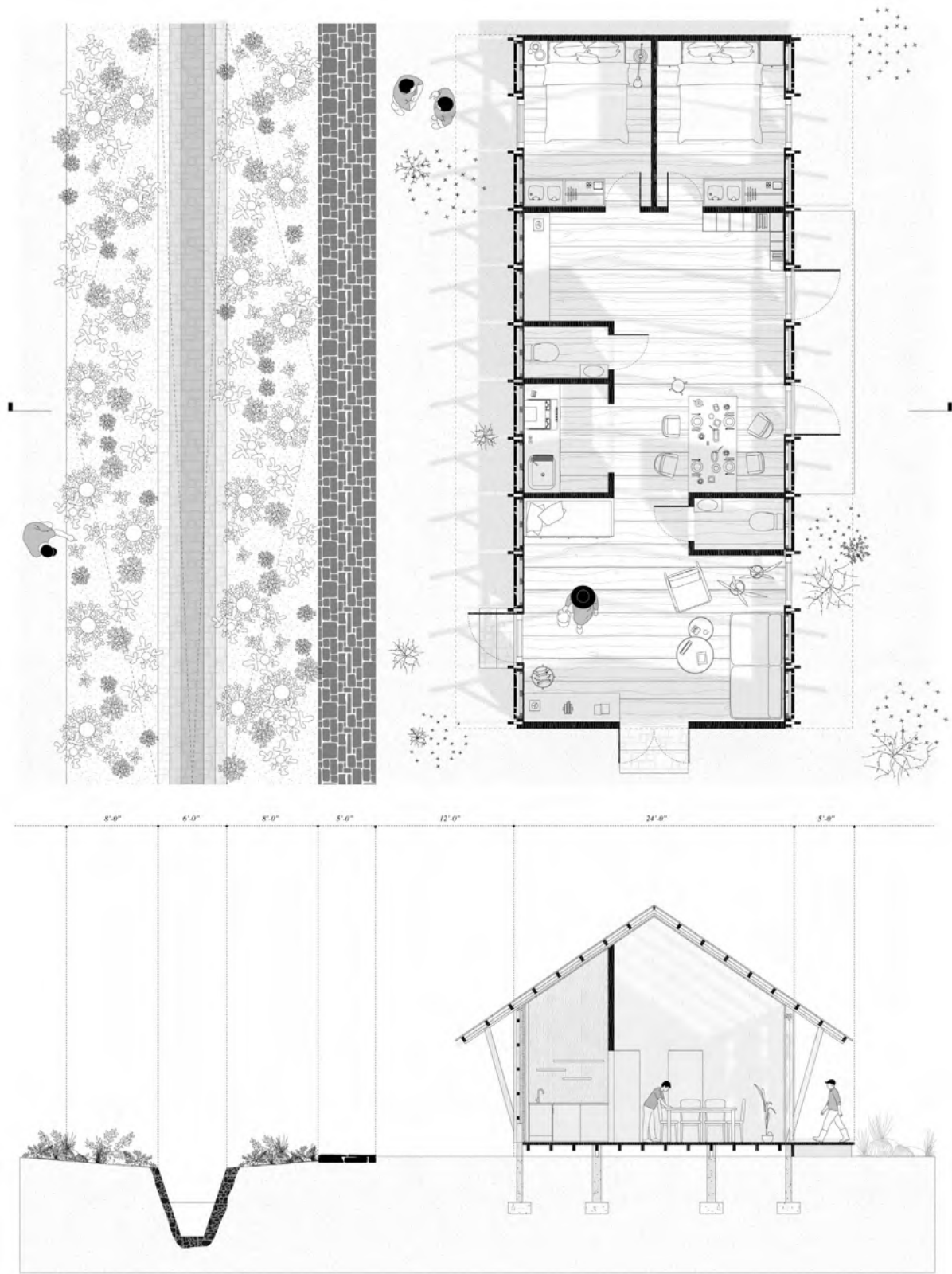


Phase 4 | Plan & Section



Long Section of the Process

RESIDENTIAL
Plan and Section



RESIDENTIAL
Exploded Axon

