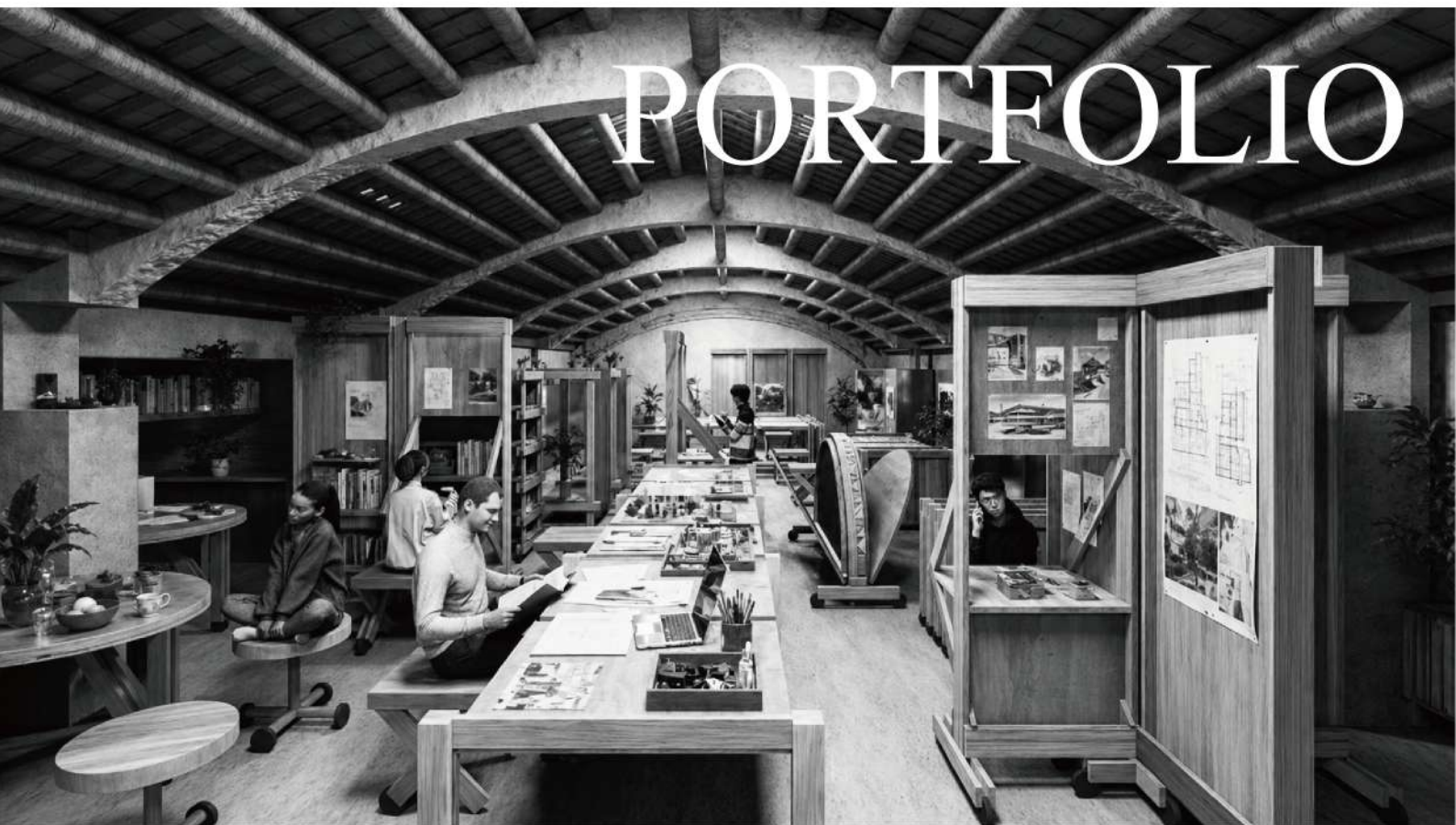


PORTFOLIO OF WANG CHURUI

MSAAD, GSAPP, Columbia University

Advanced Architectural Design
And
Game, Reuse, Ecology



PORTFOLIO

WANG CHURUI'S PORTFOLIO
GSAPP MSAAD
COLUMBIA UNIVERSITY

SELECTED WORKS

2025-2026



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01 FIRE AS RENEWAL AND CELEBRATION

Time: 2025 Summer

Location: Bronx, New York, America

Instructor: Nerea Calvillo

Type: Collaborative Work, Spatial Planning

Teammates: Hoemin Kim, Panchenchen Feng





AERIAL VIEW OF PELHAM BAY PARK



AERIAL VIEW OF ORCHARD BEACH



Situated between Hunter Island and City Island sits Orchard Beach. It began as a low-lying marsh on Pelham Bay that the city bought for parkland in 1887.

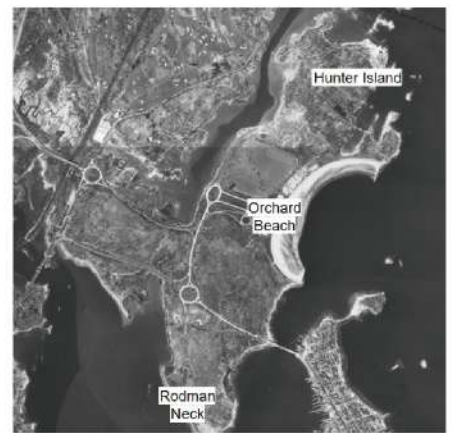
LOCATION



BEFORE LANDFILL



AFTER LANDFILL



In the 1930s, Commissioner Robert joined the two islands with landfill. Four million cubic yards of sand was imported from Sandy Hook and the Rockaways.

LANDFILL



In fact, the landfill goes beyond Orchard Beach and extends to nearby islands.

GREEN COVERING THE LANDFILL



Which have been covered with vegetation to blend in with its surroundings.

REMAINING MARSHLANDS



Leaving behind only parts of the original marshland.

DEMOLISHING OF STRUCTURES



The new beach was enclosed with granite seawalls, and the shantytown bungalows along the shore were removed.

THE BRONX RIVERA



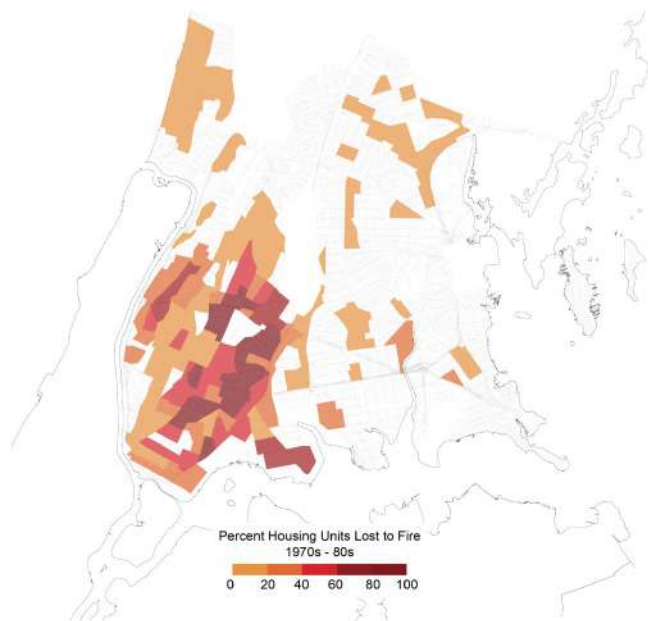
Throughout the years, it became a popular weekend and holiday destination for newly arrived Puerto Rican families.

INTEGRATED PUBLIC SPACE



It became a raging success, the so-called "Riviera of New York City" attracted over 50,000 visitors the first weekend it was open.

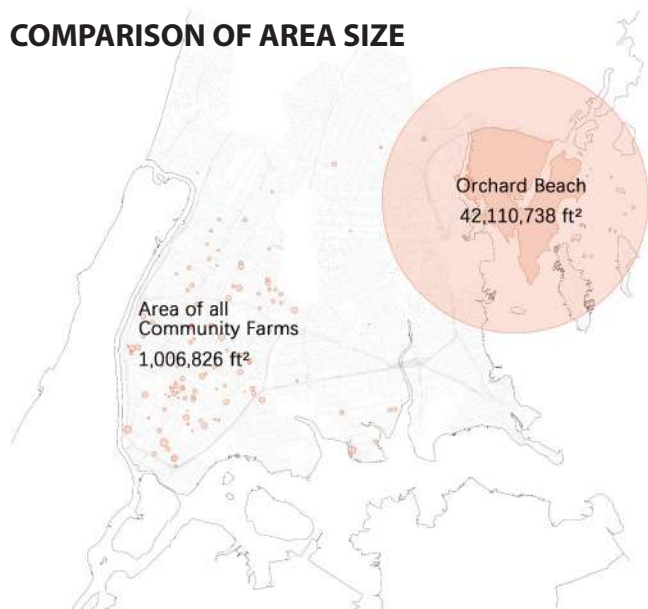
HOUSING UNITS LOST TO THE FIRES



FARM FOR FOOD JUSTICE IN BRONX



COMPARISON OF AREA SIZE



PART 1



THE WHITE FLIGHT

During the 1960s, affordable San Juan-to-New York flights and the demand for factory labor brought waves of Puerto Ricans to the Bronx.

At the same time, highways and FHA-backed mortgages enabled white residents to move to the suburbs, rapidly shifting the Bronx's demographic makeup.

While the Puerto Ricans bought their music and culture, the neighbourhood they lived in became ravaged by arson.

Fires set by landlords and fuelled by city disinvestment erased thousands of Puerto Rican and Black homes and branded the borough as "The Bronx is Burning".

PART 2



BURNT BUILDINGS

So, for decades, Puerto Rican communities in New York—particularly in the Bronx—have faced systemic neglect, displacement, and environmental injustice.

COMMUNITY FARMS

One of their biggest challenges that they are facing today is food insecurity, which has often been the highest in New York City. While the Bronx hosts several community farms, their acreage is modest, unable to overcome food injustice.

PART 3



DECLINE

Orchard beach also declined. New York's fiscal crisis slashed park maintenance and many parts of the park began to crumble.

FLOODING

Whilst areas like the Parking Lot have experienced flooding during mild rainstorms, raising serious concerns about its suitability.

HUNTER ISLAND



Hunter Island was contiguous to Orchard Beach.



In 1804, John Hunter purchased the island for \$40,000, transforming it with a grand garden and mansion, which later fell into disrepair and demolished.



The island is connected to Twin Island by a landfill and is situated within an intertidal zone. Most of the trees were planted after the landfill's creation.

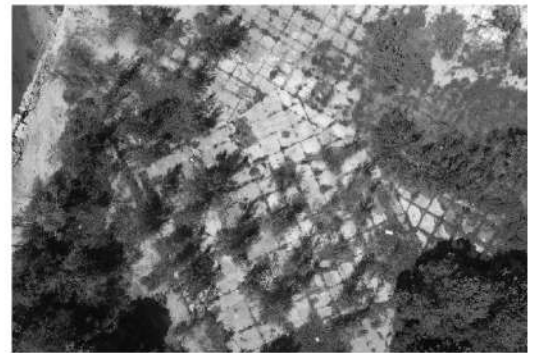
DAVIDS ISLAND



Davids Island was home to Fort Slocum.



It was a key U.S. Army post from the 19th to mid-20th century. Soon after closing in 1965, 55 African animals were quarantined on the island before being sent to U.S. zoos.



By the early 2000s, the island was in disrepair. The city spent \$26 million to demolish all remaining structures, and access has been forbidden since then.

HART ISLAND



Hart Island became a burial site during the 1980s and 1990s.



Since 1869 more than a million unclaimed New Yorkers—many of them are Caribbean migrants and patients who have died of AIDS—have been buried.

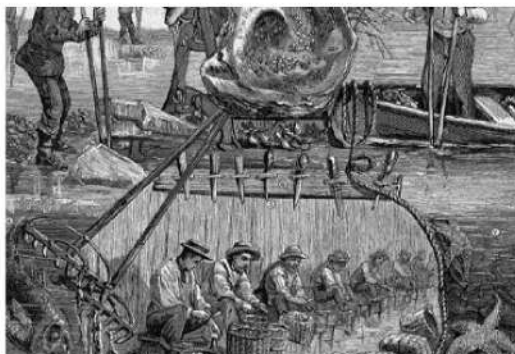


Their passing is largely unknown by the wider public, in part because access to the island is still restricted.

CITY ISLAND



Unlike the isolated Hart Island, City Island was well connected.



The Island was originally used by Native Lenape as a seasonal fishing ground, which became a hub for oyster harvesting in the early 19th century.

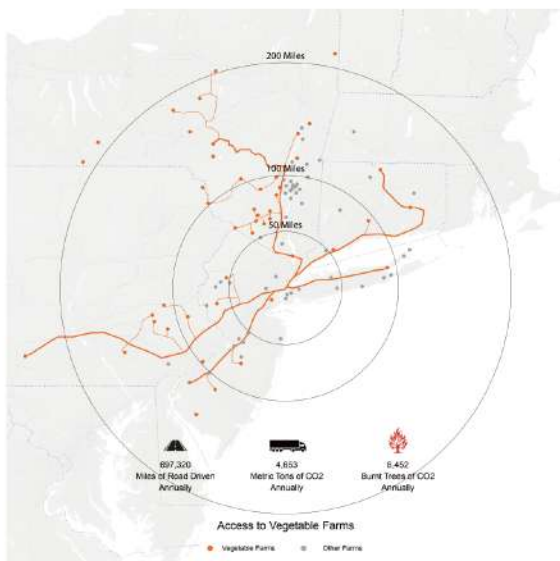


It later turned into a vibrant boating community, producing naval craft, like the America's Cup yachts.



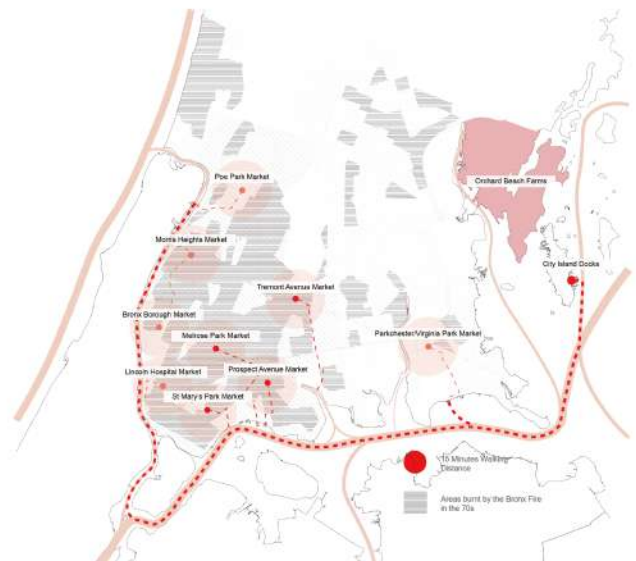
Considering the social and ecological abandonment of Orchard Beach and its archipelago, but at the same time the special identity and governance of each of its islands, could we think about them as a small experiment of island federation? Following Tao Leigh Goffe, could we imagine a 'climate federation of decentralized island futures', with difference, sovereignty and redistribution at the centre? For instance, instead of trying to restore Orchard Beach, what if we give the land to the Puerto Rican and other South Bronx communities? What if we provide the conditions for cultivation?

HIGH COST AND ENVIRONMENTAL IMPACT



Most vegetable farms sit 50-100 miles outside the city, driving up transport costs and carbon emissions. Turning Orchard Beach's forest into farmland could grow as much food as thirty distant farms, but with less than half the truck emissions, lowering pollution, and improving local food access.

RECLAIMING FOOD SOURCES IN THE BRONX



Rather than depending on truck transport, our plan taps on Pelham Bay's working waterways. Barges will ferry Orchard Beach produce from City Island directly to GrowNYC Greenmarkets, widening affordable food access for South Bronx communities displaced by the fires of the 1970s.

FIRE CONTROL TECHNIQUES



SLASH AND BURN FOR FOOD



FIRE CONTROL TECHNIQUES

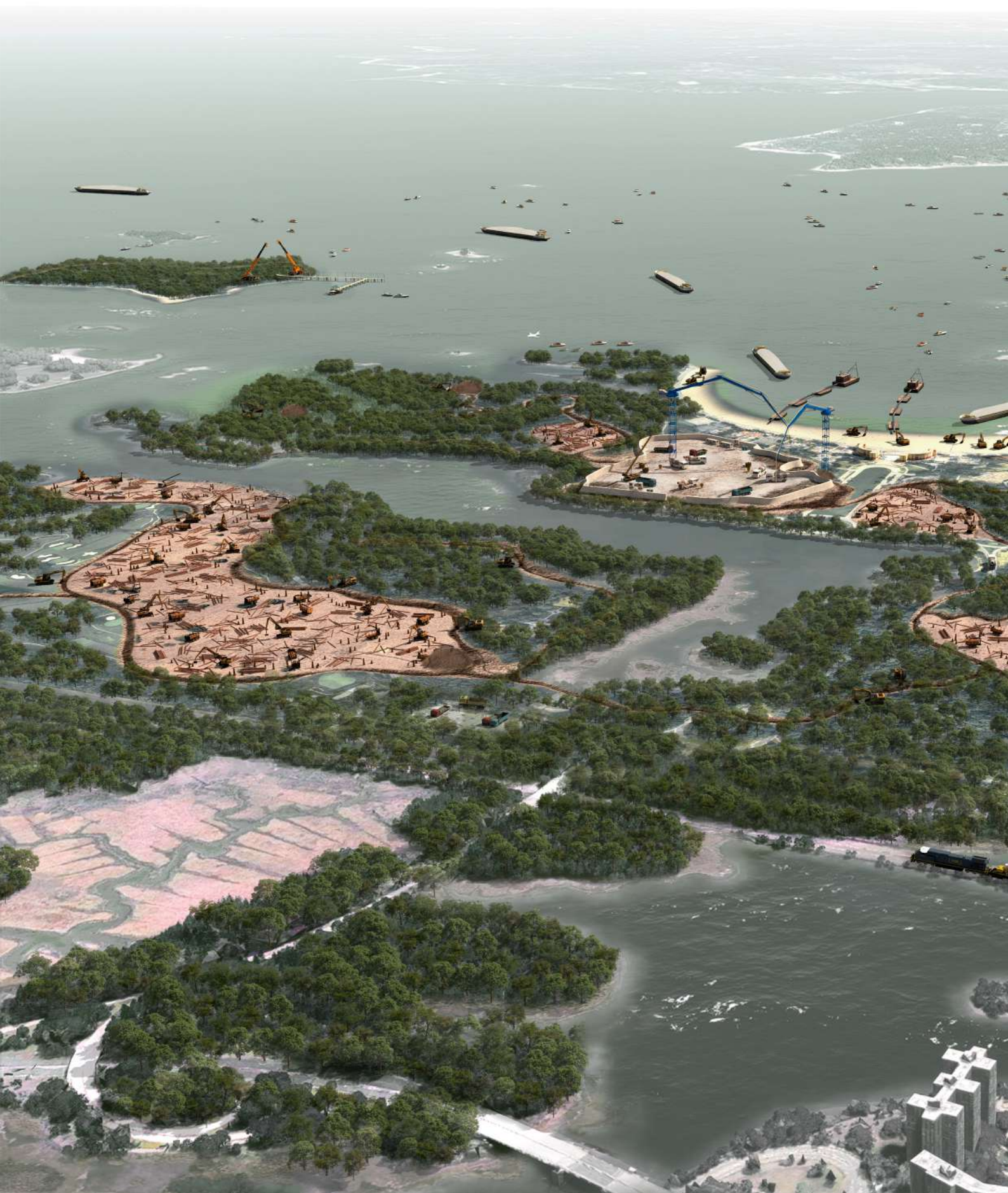


We propose to use fire—once a symbol of their destruction—as a tool to expand on shared space on food, culture, and celebration for a community long denied both land and legacy. We propose to reappropriate the slash-and-burn technique—once an instrument of colonial exploitation—to turn the existing forest into cultivation land. Learning from Native American pile burning techniques along with modern methods like Wet-line canals to stop flame spread.





THE CONSTRUCTION OF FARM INFRASTRUCTURE



We propose to re-appropriate the slash-and-burn technique—once an instrument of colonial exploitation— to turn the existing forest into cultivation land. Learning from Native American pile burning techniques along with modern methods like Wet-line canals to stop flame spread. We need to build the needed safety structures to control the burn. The routinely flooded parking lot will be engineered into a reservoir, complemented by a canal system that contains burns and irrigate the fields. The sand that Robert Moses imported to Orchard Beach will be returned to Rockaway Beach.



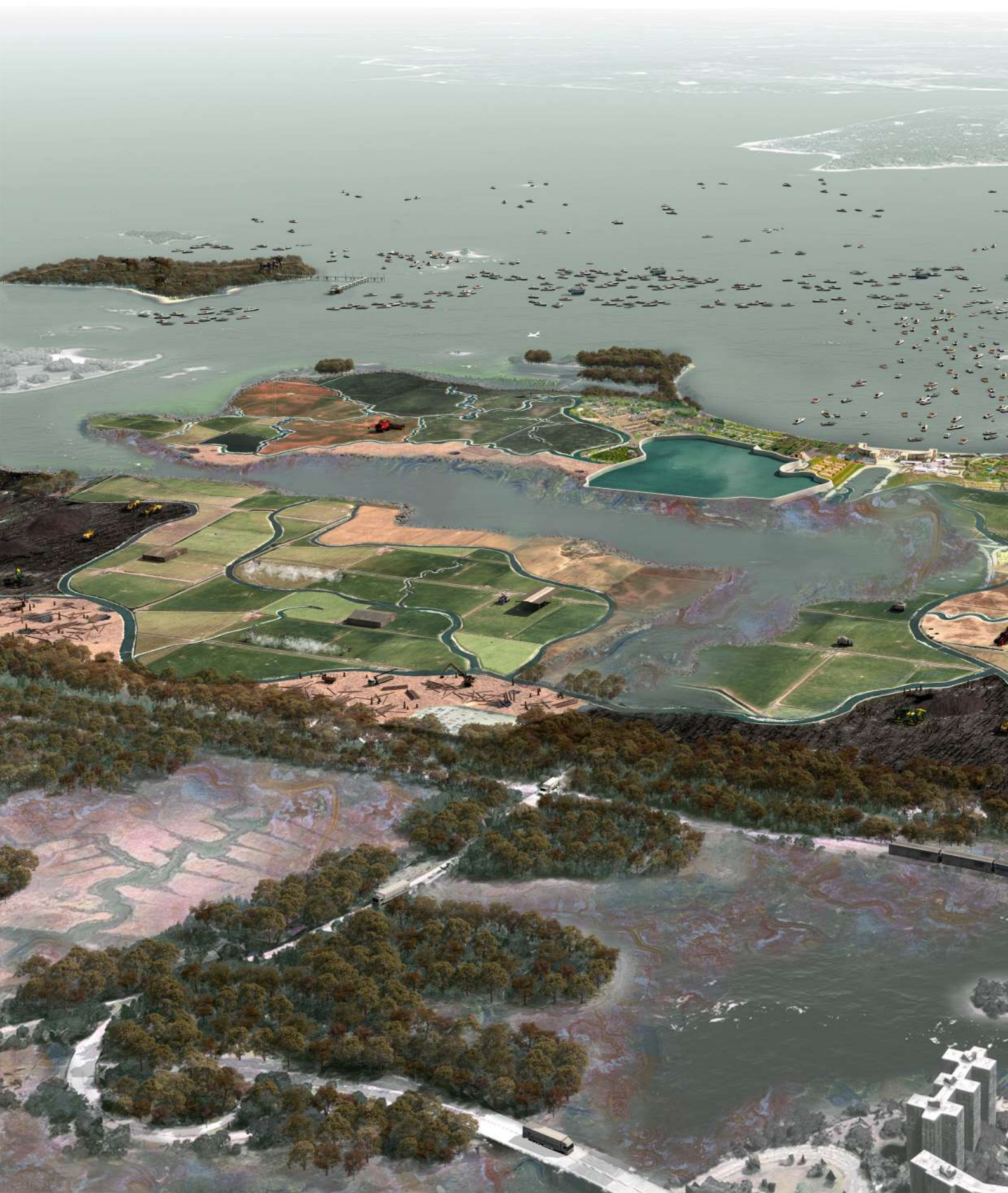
THE SLASH AND BURN PROCESS



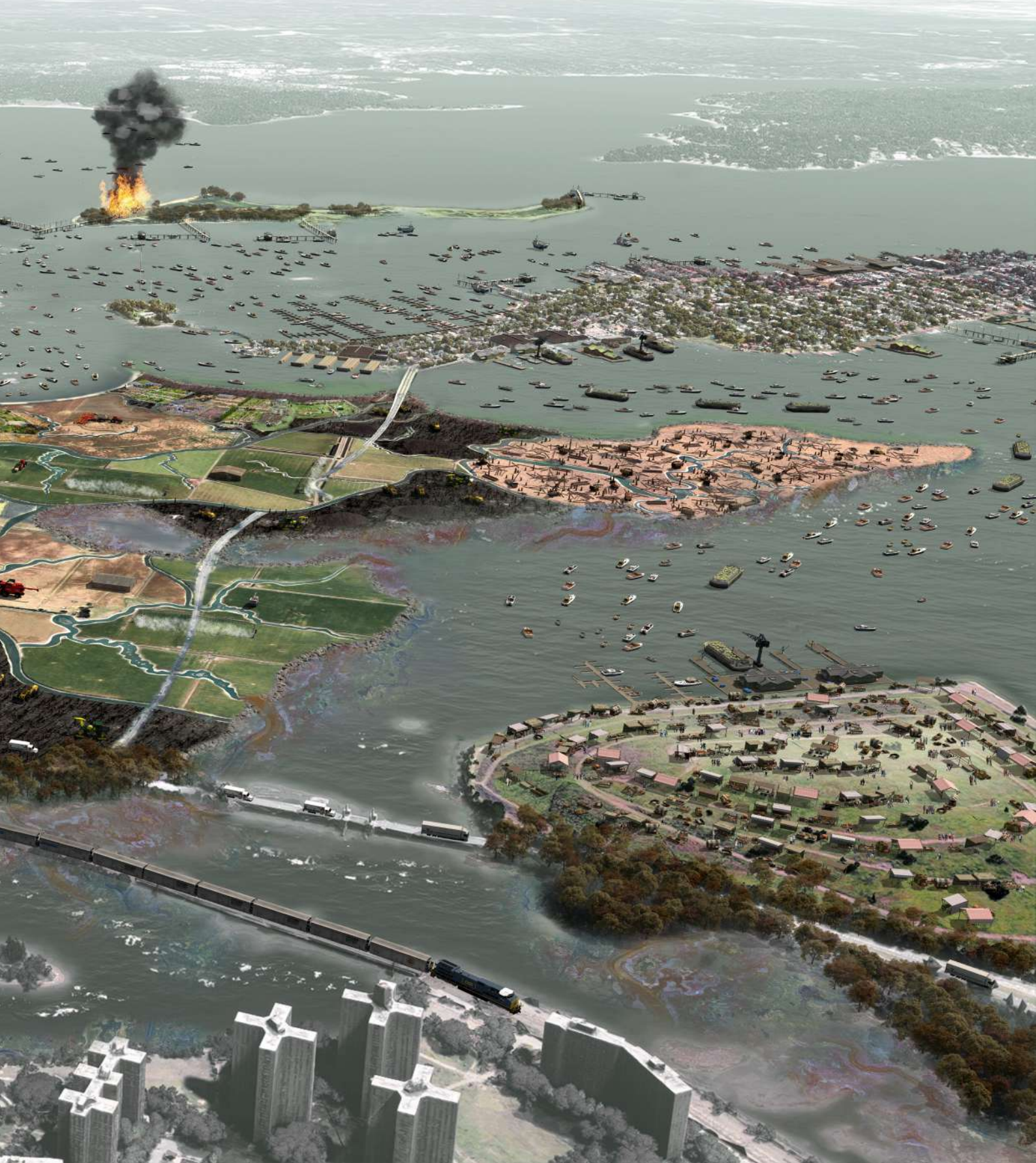
By 2075, with the reservoir and canal network completed, the slash-and-burn can start on plots smaller than the 2 percent of the site to curb smoke and carbon emissions. While the resulting ash will enrich the soil. Community farms will invite residents to join the local food network. And areas along the promenade will expand the existing salsa spaces for the locals. Wildlife previously relocated from Davids Island to the Bronx Zoo will be repatriated to their original habitat, and new docks at City Island will restore maritime links to the mainland. Long-restricted sites such as Hart Island—where countless immigrants and AIDS victims lie in anonymity—will open for public remembrance on holidays and festivities.



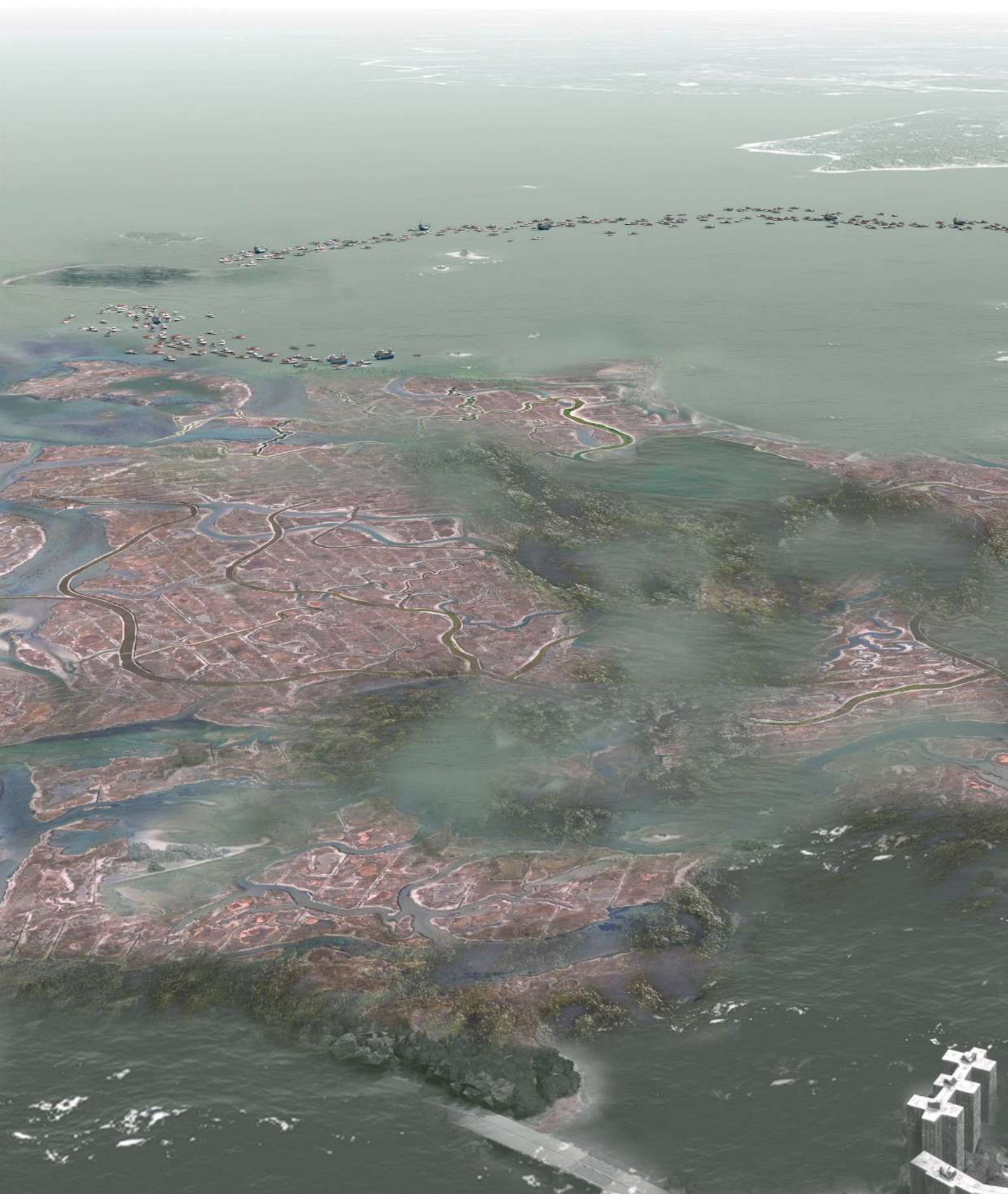
FARMING AND THE CELEBRATION OF THE DEAD



By 2100, decades of carefully managed slash-and-burn cultivation will turn Orchard Beach into fertile farmlands. Following a ten-year rotation with four consecutive growing seasons, and six years of fallow to rebuild biomass and soil nutrients. To distribute the produce, the project partners with GrowNYC—the city's leading food-access nonprofit. The former landfill at Pelham Bay will be used as an open-air food market. Beyond its role in slash-and-burn agriculture, the beach fire also serves as a cultural rite that honors Puerto Rican ancestry. Echoing the Noche de San Juan—when flames symbolize purification, protection, and the banishment of evil spirits. The ceremony could take place on Hart Island each year to commemorate the departed while uniting the community in a shared act of remembrance and renewal.



MICROBIAL - INDUCED SWAMPS



In the coming decades, Salt water will back-fill the canals, creating sheltered basins where microorganisms thrive. As water levels keep rising, Orchard Beach and its surroundings will slowly transform into a swamp shaped by microbial life. The Boats that were there before will finally be able to connect all the archipelagos, creating an island federation. Centuries later, when people no longer occupy this coast, the swamp will become home to the bay's thriving wildlife. Changing the ecological state of the archipelago. Every now and then, a ritual honouring the islands' confederation might take place.







02 TRANSFORMABLE CO-HOUSE

Time: 2026 Spring

Location: Kaiping, Guangdong, China

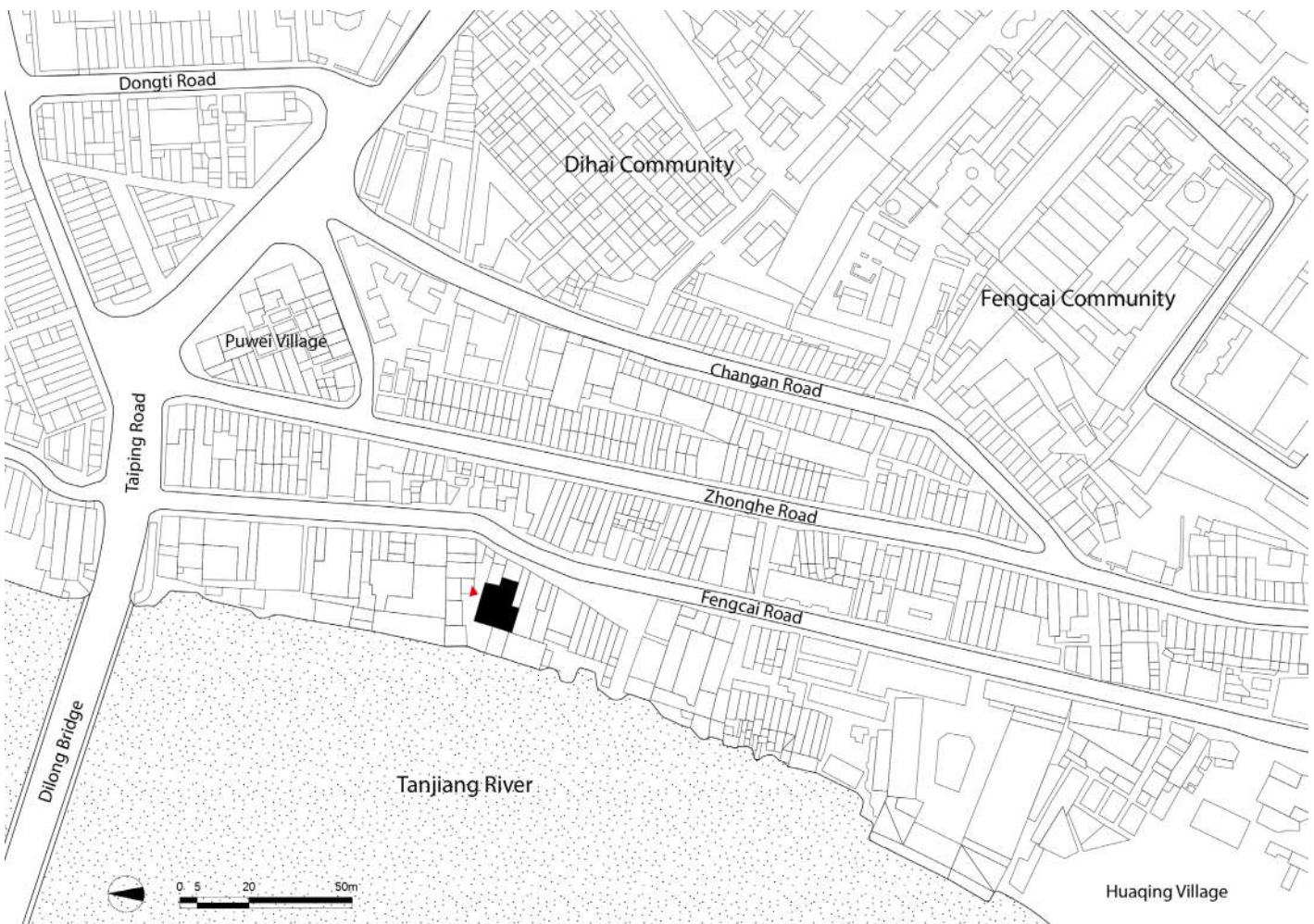
Instructor: Emily G. Ruopp, Phu Hoang, Harold Fallon

Type: Individual Work, Artist's Studio

SITE ANALYSIS



SITE ANALYSIS



SITE ANALYSIS



SURROUNDING CONTEXT



SURROUNDING CONTEXT



NORTH ELEVATION



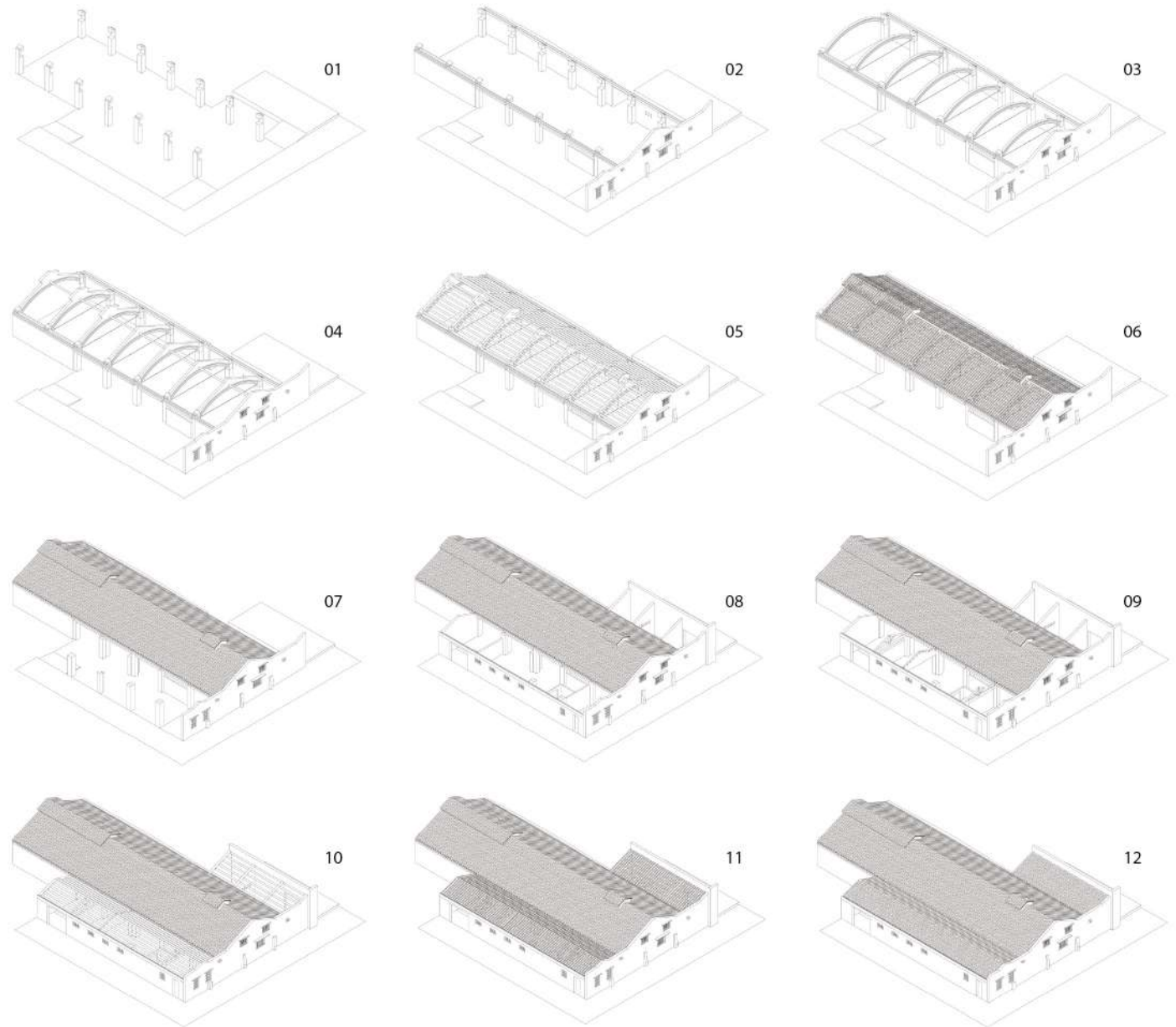
WEST ELEVATION



INTERIOR SPACE OF THE EXISTING BUILDING



CONSTRUCTION STEPS OF THE EXISTING BUILDING



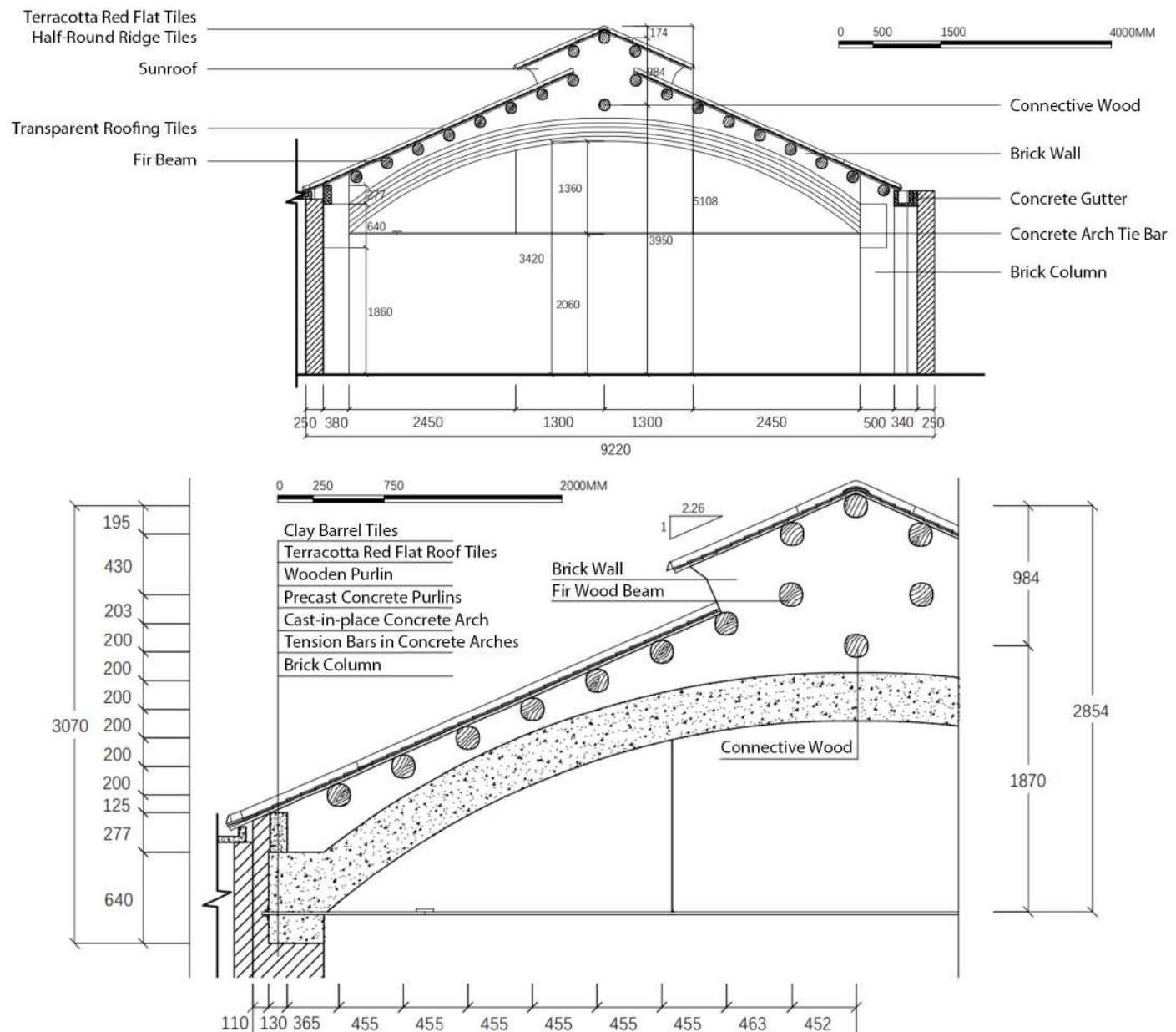
DETAILS OF THE EXISTING BUILDING



DETAILS OF THE EXISTING BUILDING

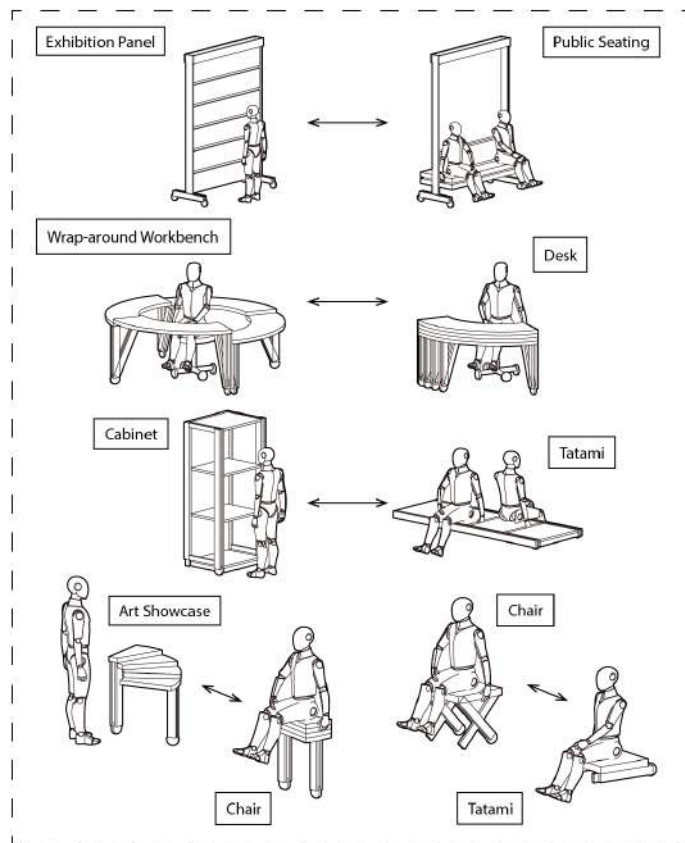


DETAILS OF THE EXISTING BUILDING

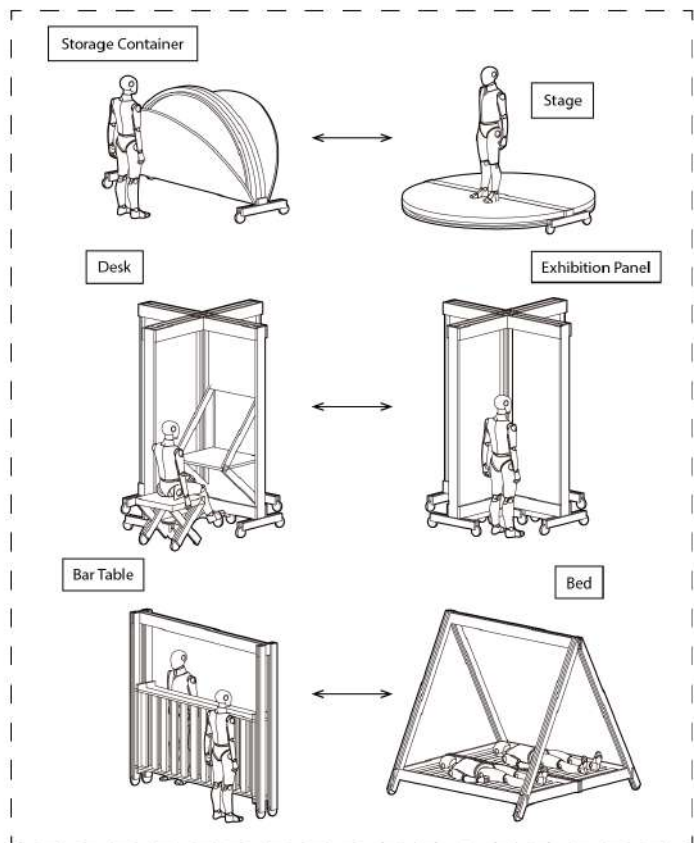


TRANSFORMABLE FURNITURE

FOLDED



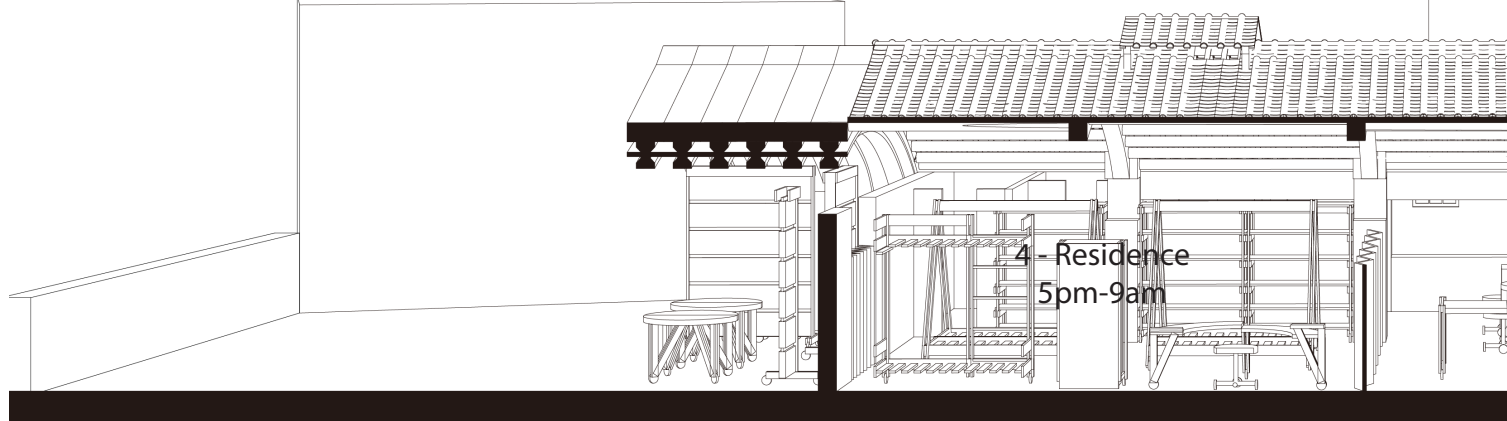
ROTATED



SECTION (WEEKEND)

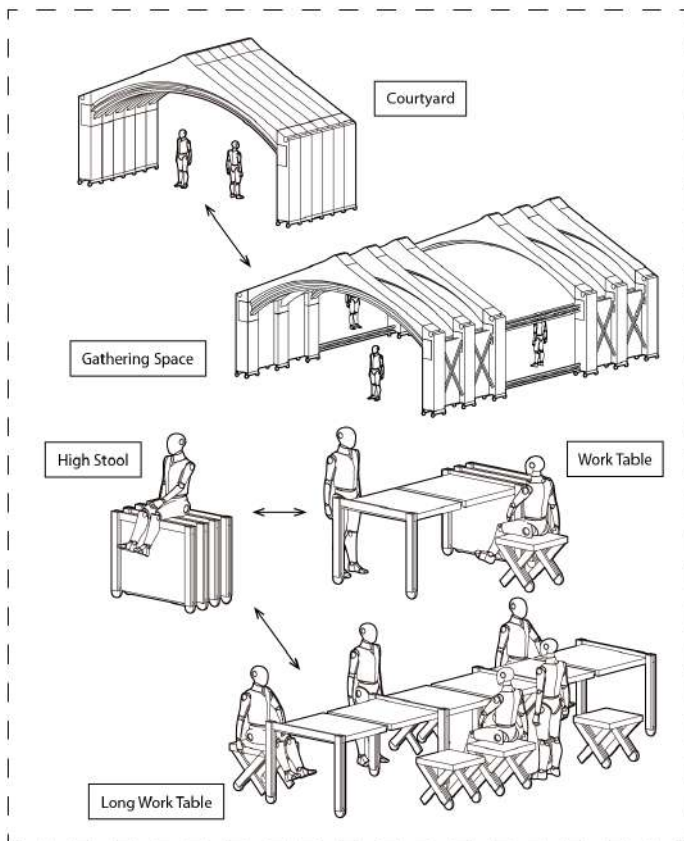


SECTION (WEEKDAYS)

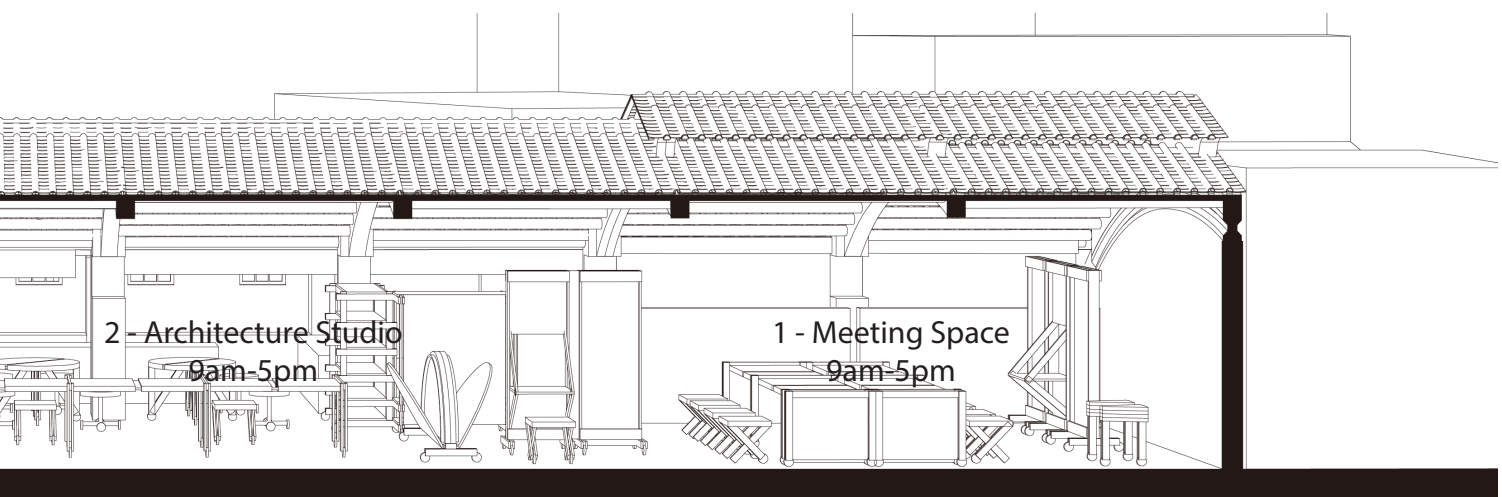
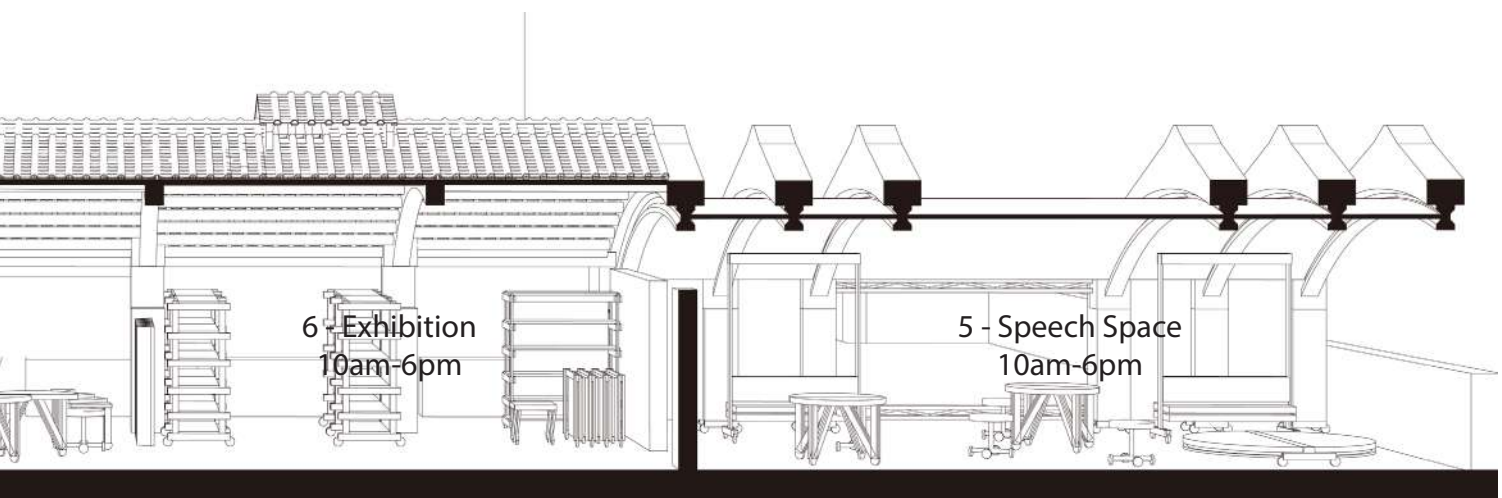
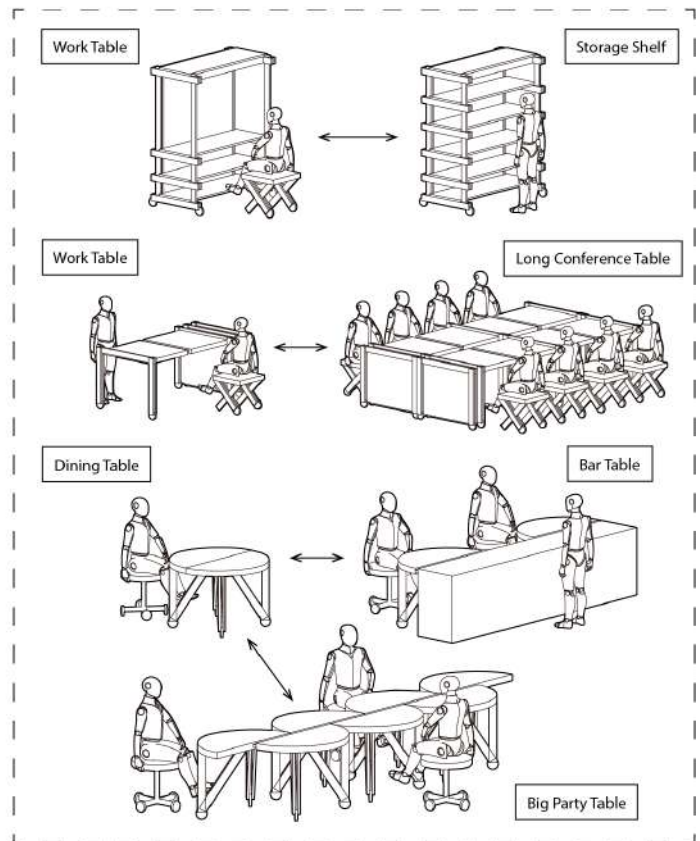


TRANSFORMABLE FURNITURE

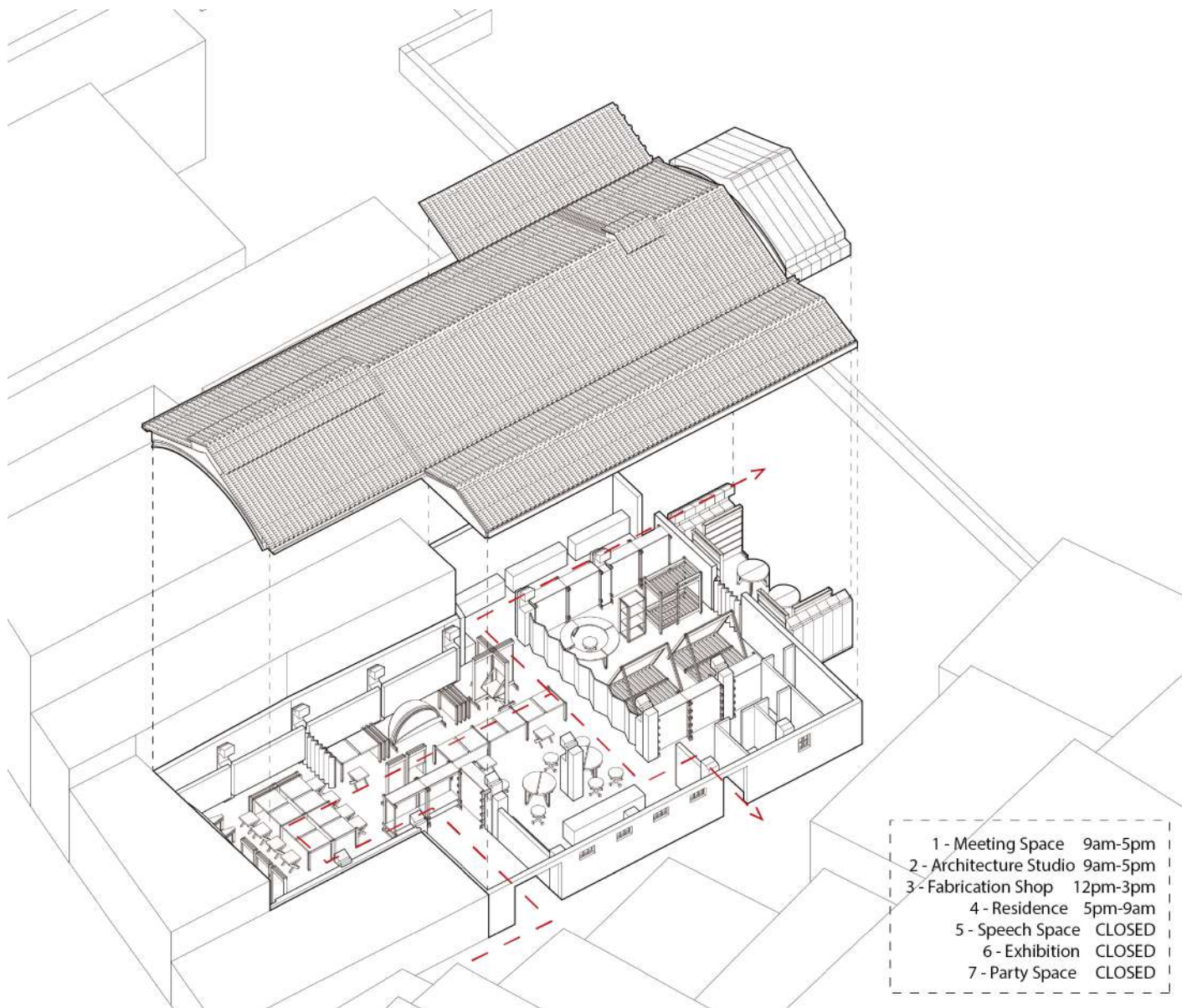
EXTENDED



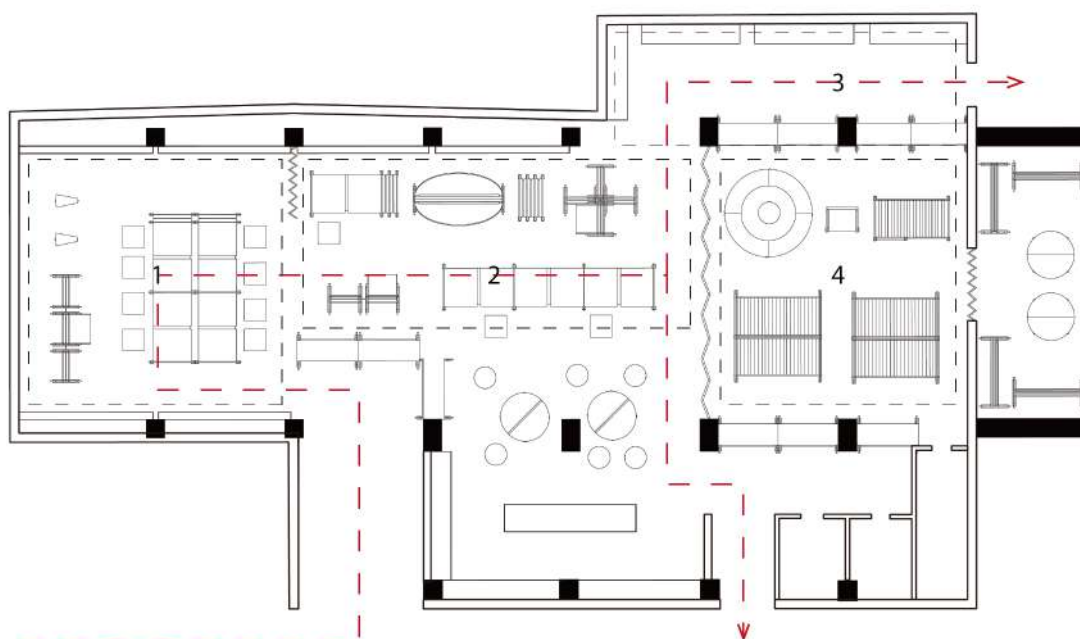
COMBINED



AXONOMETRY (WEEKDAYS)



PLAN (WEEKDAYS)



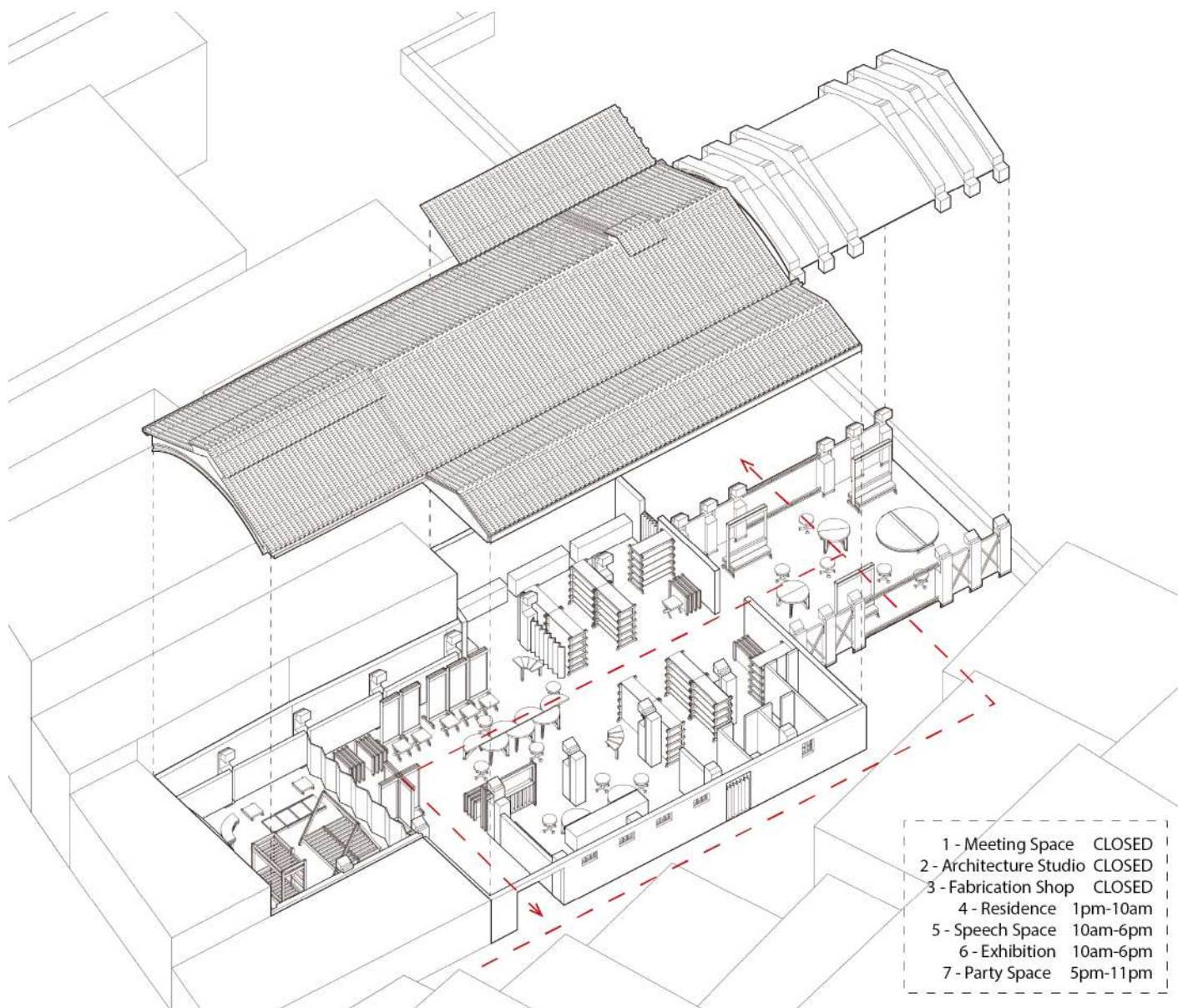
ARCHITECTURE STUDIO (WEEKDAYS)



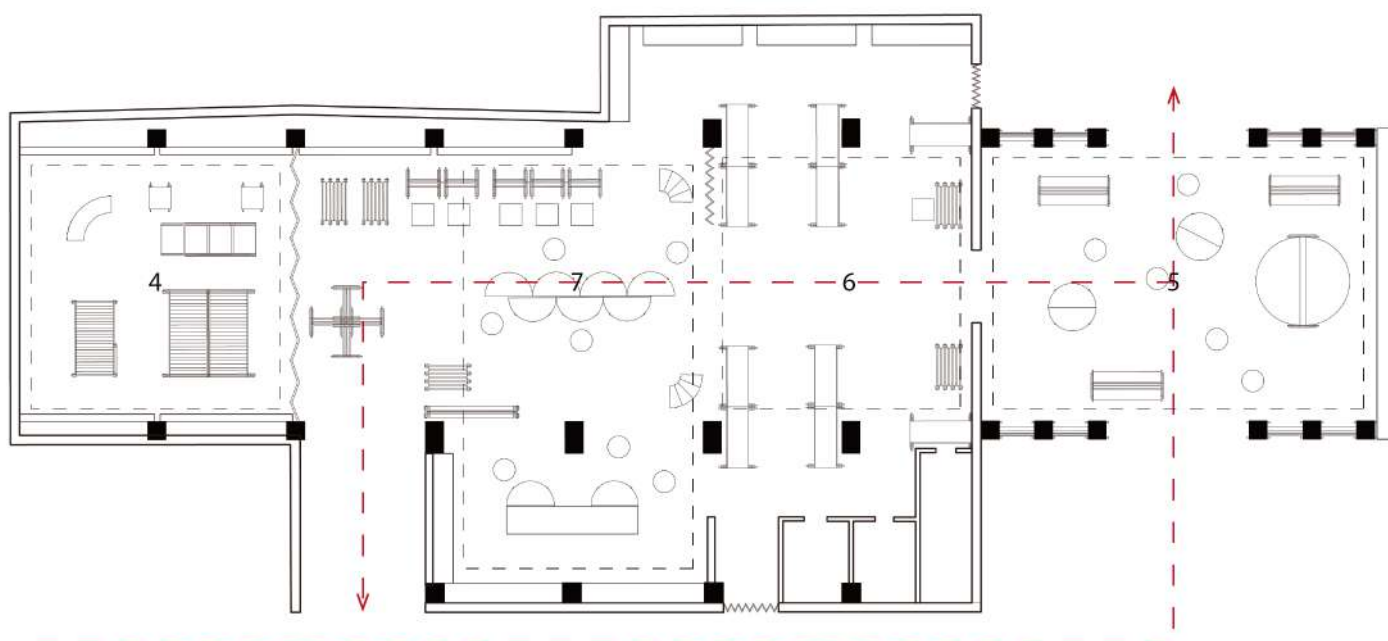
RESIDENCE (WEEKDAYS)



AXONOMETRY (WEEKEND)



PLAN (WEEKEND)



PARTY SPACE (WEEKEND)



SPEECH SPACE (WEEKEND)





03 SEASONAL COMMEMORATION

Time: 2026 Spring

Location: Guancora, El Salvador

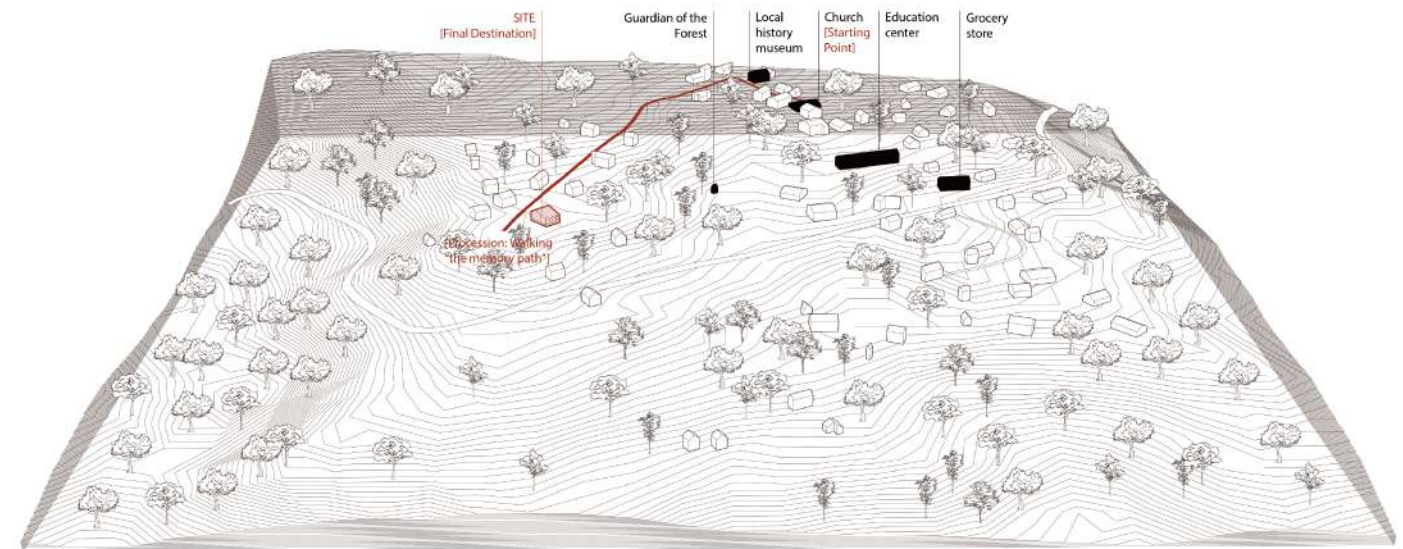
Instructor: Emily G. Ruopp, Harold Fallon, Phu Hoang

Type: Collaborative Work, Commemorative Space

Teammates: Chris Smith



SITE ANALYSIS



Local history museum



Education center



SITE



Guardian of the Forest

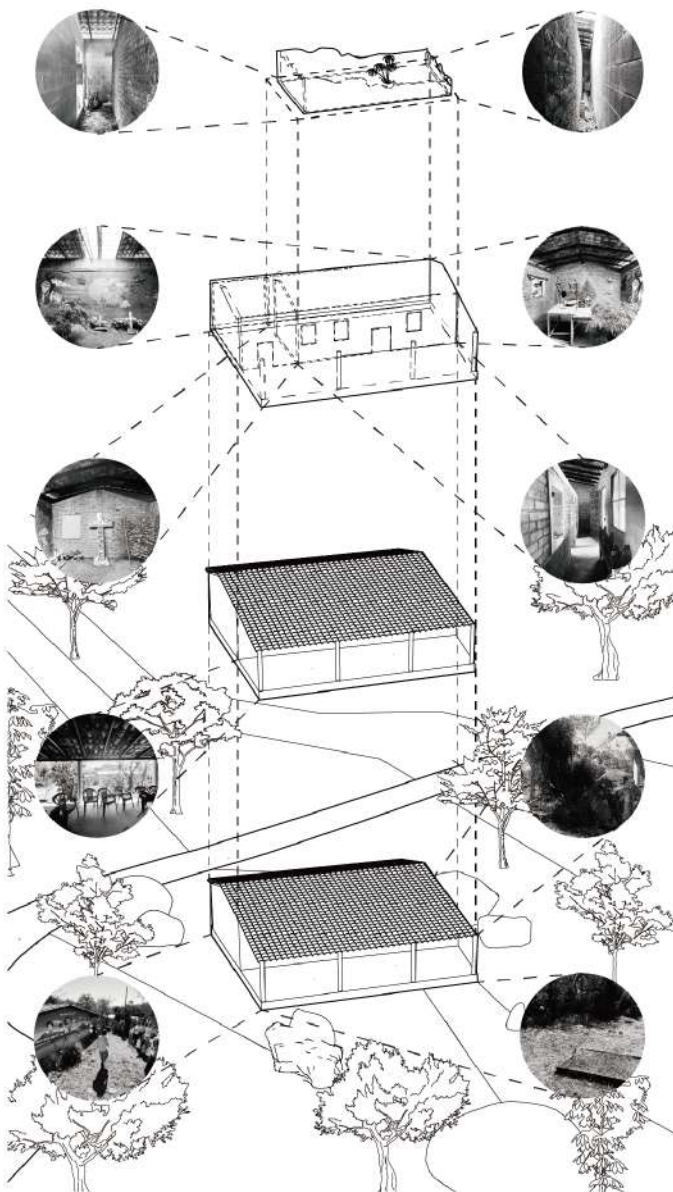


Church



Grocery store

EXISTING BUILDING



LOCAL ACTIVITIES AND RITUALS



Upon arriving at the site, the community engages in cultural activities such as music, theater, or dance. The gathering includes songs and culminates in a mass in memory of the victims.



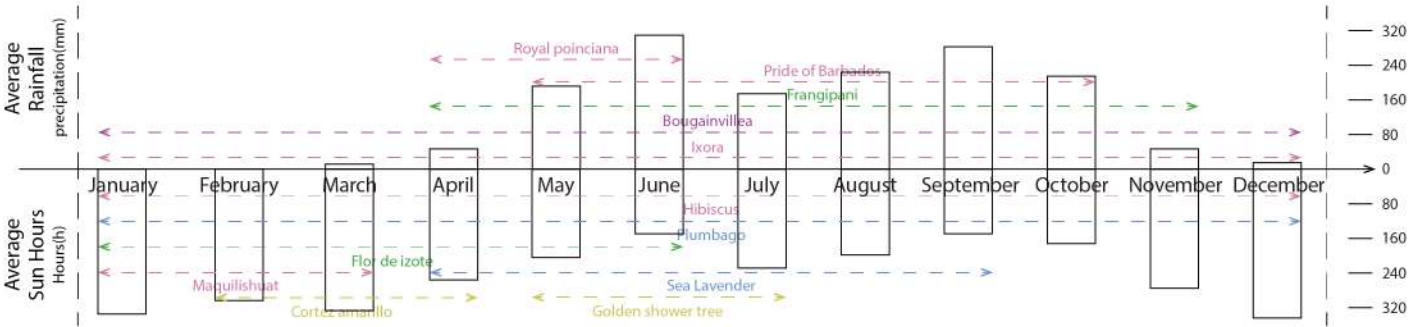
Songs: Musical interpretations, often drawing from Canciones de Testimonio and Liberation Theology, are used to "dignify the historical memory", infusing the ritual with spiritual and political resistance.

Mass: The liturgy connects the local tragedy to the broader theology of martyrdom associated with figures like Ignacio Ellacuría, after whom the community is named.



The ceremony ends with a Catholic Mass held in memory of the victims. This final moment brings the community together spiritually and connects their local tragedy to the wider history of struggle in El Salvador. By celebrating the Mass, the community honors the legacy of Ignacio Ellacuría, grounding their search for justice in faith and refusing to let their history be forgotten.

LOCAL CLIMATE



COLORS OF FLORA AS COMMEMORATIVE SYMBOLS

The use of colors was established through participatory workshops with local youth to represent the personalities and legacies of the five victims murdered on February 11, 1990. These colors are frequently used in the site's murals paper flowers for commemorations, and educational art projects.

PINK

represents Blanca, the youngest victim at only two years old; it symbolizes her innocence

PURPLE

represents Beatriz, chosen to symbolize strength, specifically focused on the strength of women

YELLOW

represents Isabel, chosen because her mother remembers her as a very joyful girl

GREEN

represents Dolores (the boy); it symbolizes hope and curiosity, reflecting his strong desire to study and keep learning

BLUE

represents Anibal, the only adult killed; it symbolizes tranquility

FLORA ANALYSIS

Royal poinciana

Bloom Period: 4Apr–6Jun
Primary Color: Red-orange
Memory of rupture; strong civic presence
Height: 10–15m; Space: 8–10m

Ixora

Bloom Period: Year-round
Primary Color: Red/Orange
Courtyard healing; intimate gathering
Height: 1–2m; Space: 1–1.5m

Maquilishuat

Bloom Period: 1Jan–3Mar
Primary Color: Pink
Witness canopy; annual February return marker
Height: 15–25m; Space: 8–10m

Pride of Barbados

Bloom Period: Rainy peak
Primary Color: Orange-red
Heat resilience; regenerative energy
Height: 2–4m; Space: 1.5–2m

Bougainvillea

Bloom Period: Year-round
Primary Color: Magenta/Purple
Resilient boundary; protective edge
Height: 2–6m; Space: 2–3m

Hibiscus

Bloom Period: Year-round
Primary Color: Red/Yellow/Pink
Community continuity; daily life presence
Height: 1–2m; Space: 1.5–2m

Cortez amarillo

Bloom Period: 2Feb–4Apr
Primary Color: Yellow
Dry-season bloom marking 11 February
Height: 8–15m; Space: 6–8m

Golden shower tree

Bloom Period: 5May–7Jul
Primary Color: Yellow
Seasonal renewal at onset of rains
Height: 10–20m; Space: 6–8m

Frangipani

Bloom Period: 4Apr–11Nov
Primary Color: White/Pink/Red
Fragrant continuity and tenderness
Height: 5–8m; Space: 4–5m

Flor de izote

Bloom Period: Spring–Summer
Primary Color: White
Ritual and cultural continuity
Height: 3–6m; Space: 2–3m

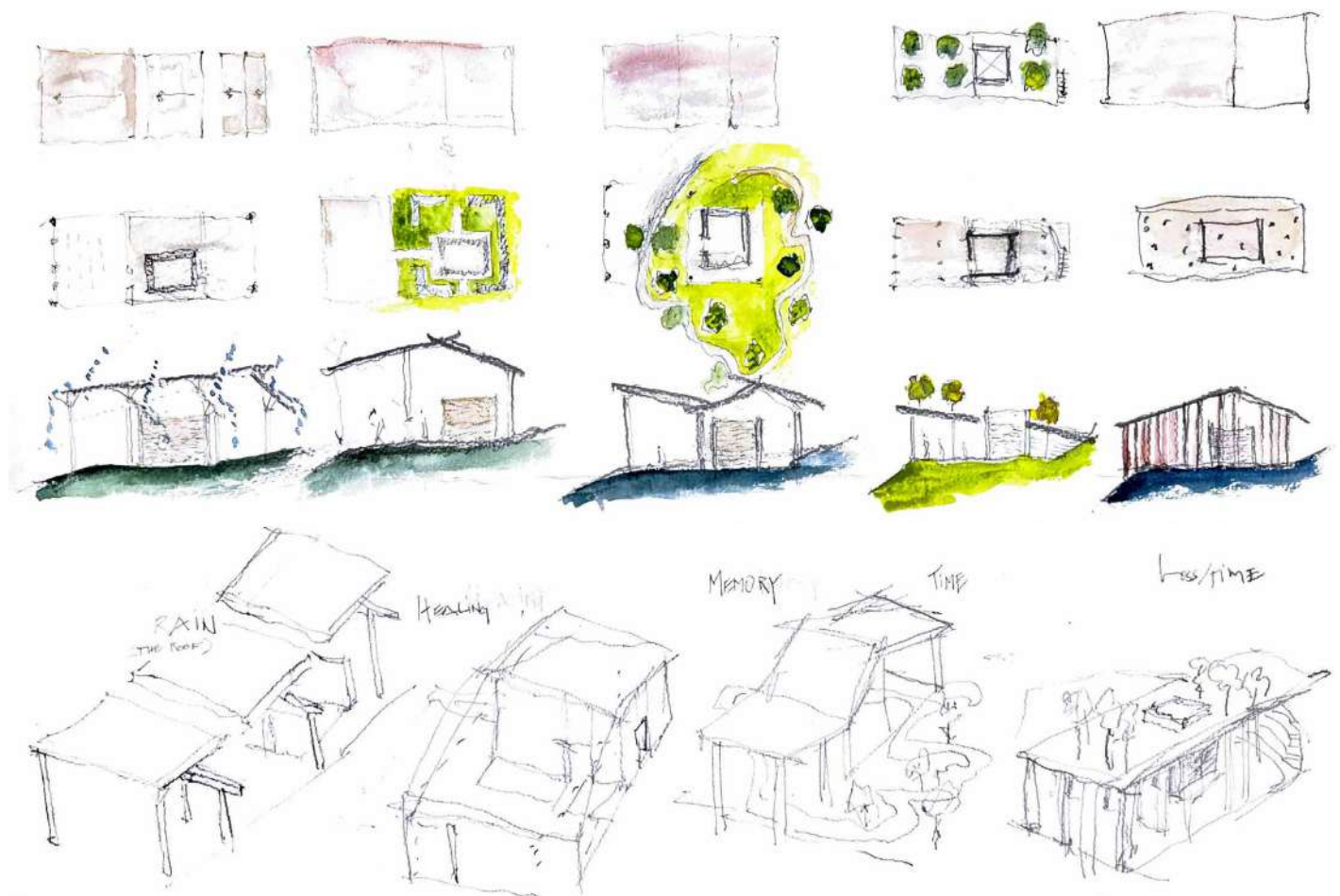
Plumbago

Bloom Period: Year-round
Primary Color: Soft sky blue
Reflection and calm; cooling presence
Height: 1–3m; Space: 1.5–2m

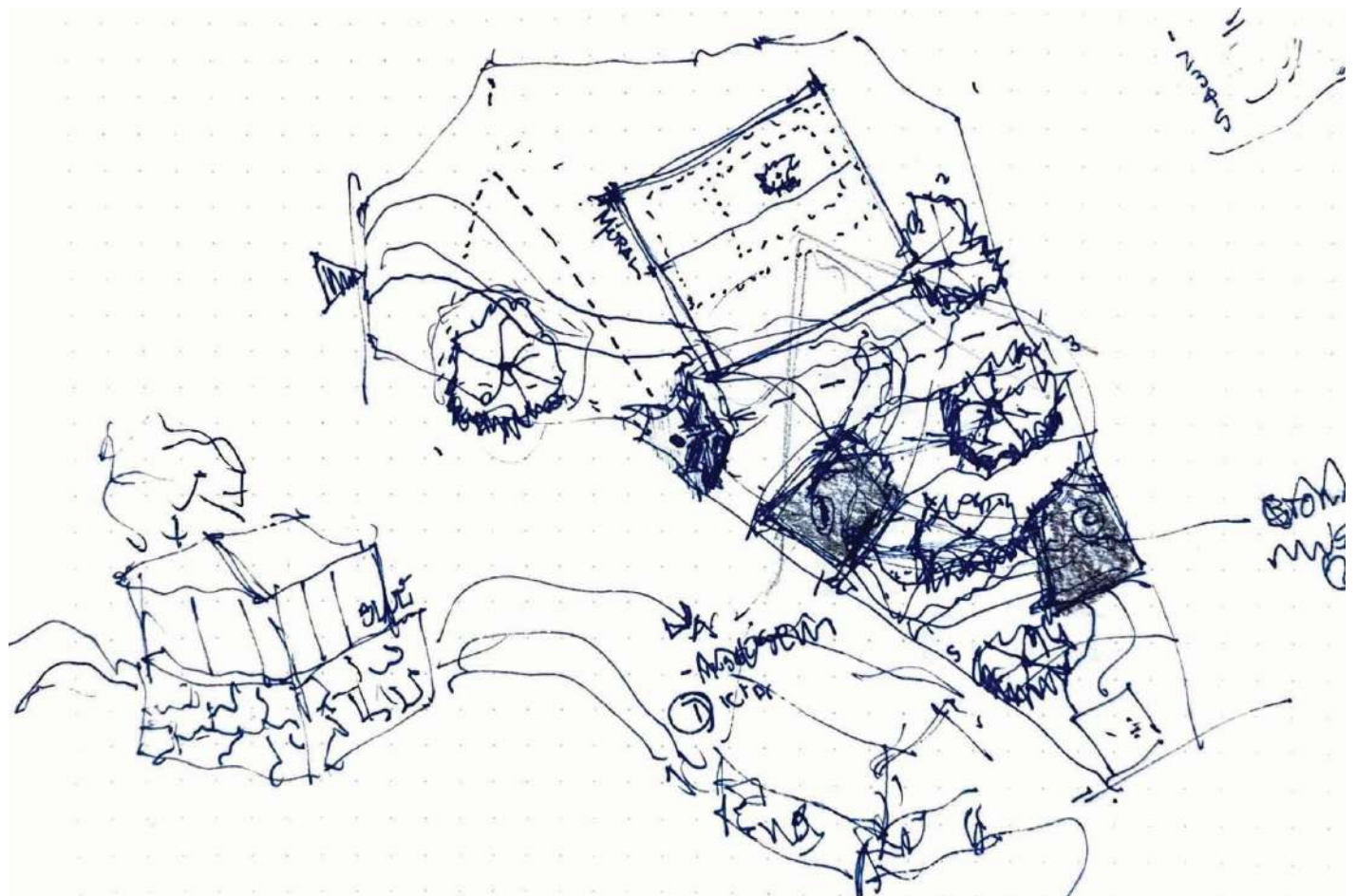
Sea Lavender

Bloom Period: Warm season peaks
Primary Color: Soft lavender-blue
Coastal resilience; contemplative ground layer
Height: 1–2m; Space: 0.4–0.6m

DESIGN APPROACHES



FINAL PROPOSAL



MURAL COURTYARD



GARDEN SQUARE



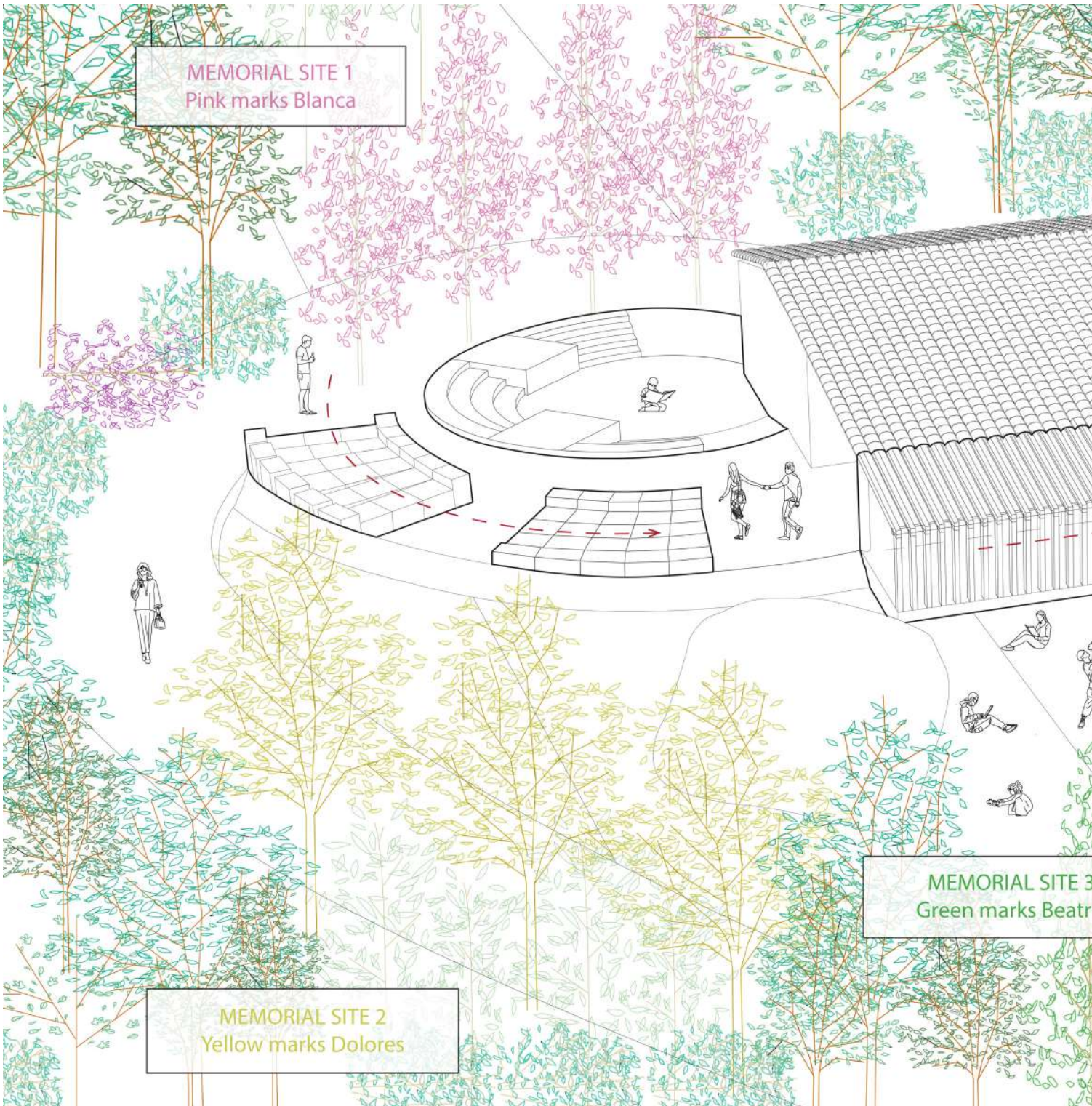
SPRING



SUMMER



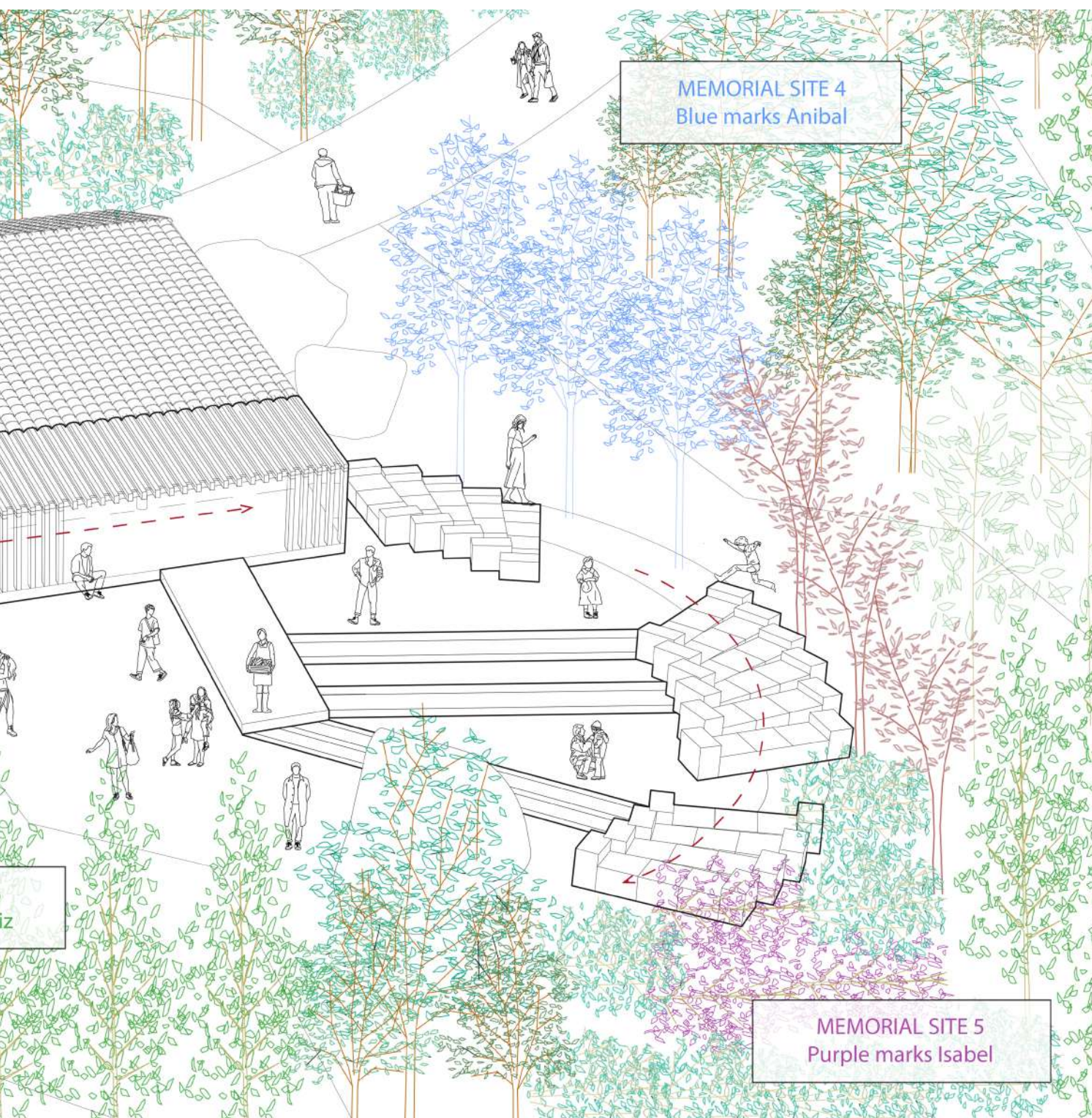
SYSTEM ANALYSIS

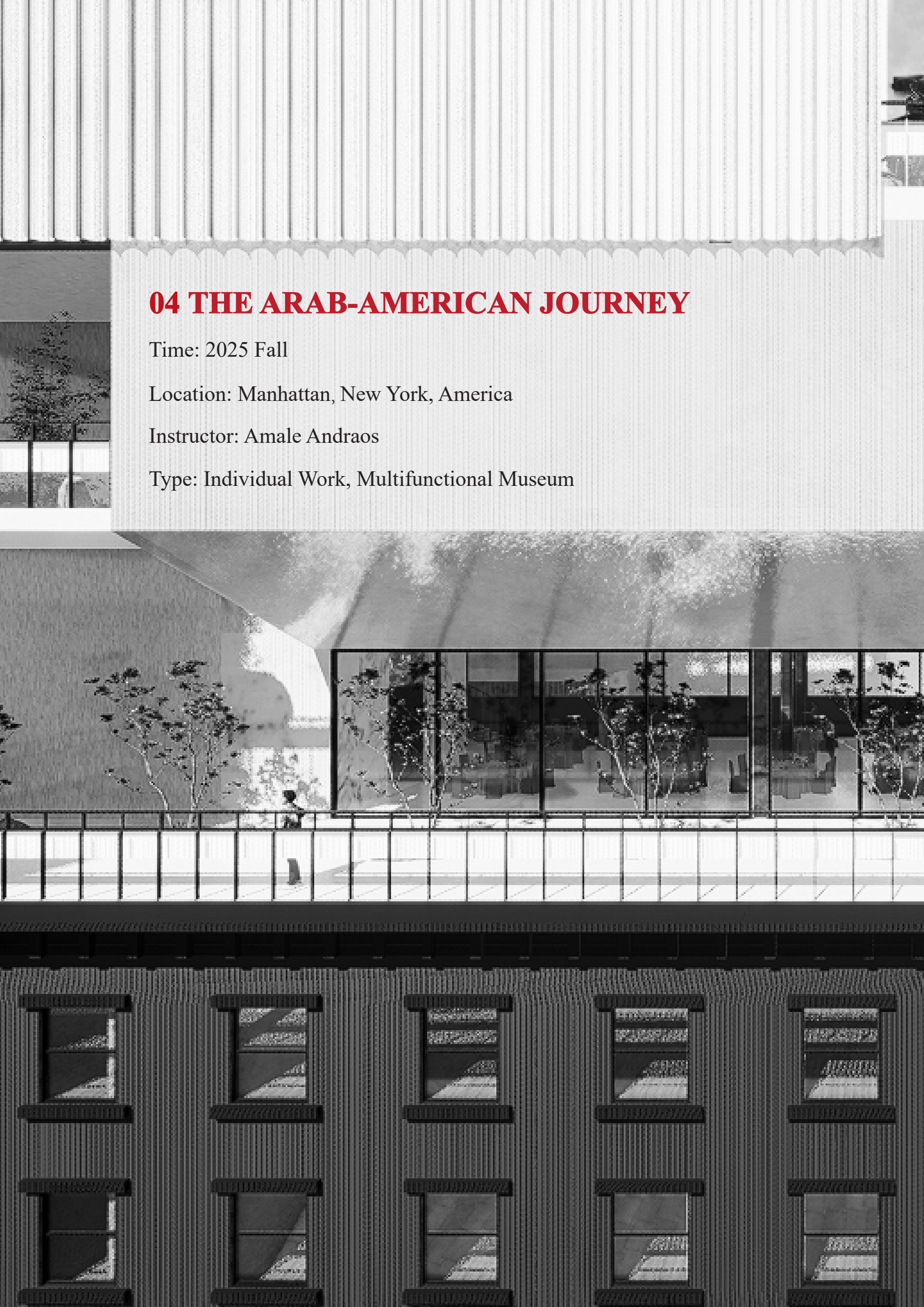


AUTUMN



WINTER



The image is a black and white architectural rendering of a building facade. The top portion of the image shows a series of vertical lines, possibly representing a curtain wall or a series of columns. Below this, a large glass window is visible, showing an interior space with a staircase and some furniture. To the left of the window, there is a balcony with a railing. The bottom portion of the image shows a series of small, square windows arranged in a grid pattern. The overall style is modern and minimalist.

04 THE ARAB-AMERICAN JOURNEY

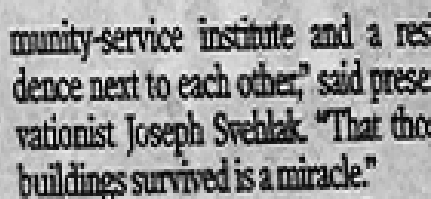
Time: 2025 Fall

Location: Manhattan, New York, America

Instructor: Amale Andraos

Type: Individual Work, Multifunctional Museum

It's near Ground Zero
talk about it



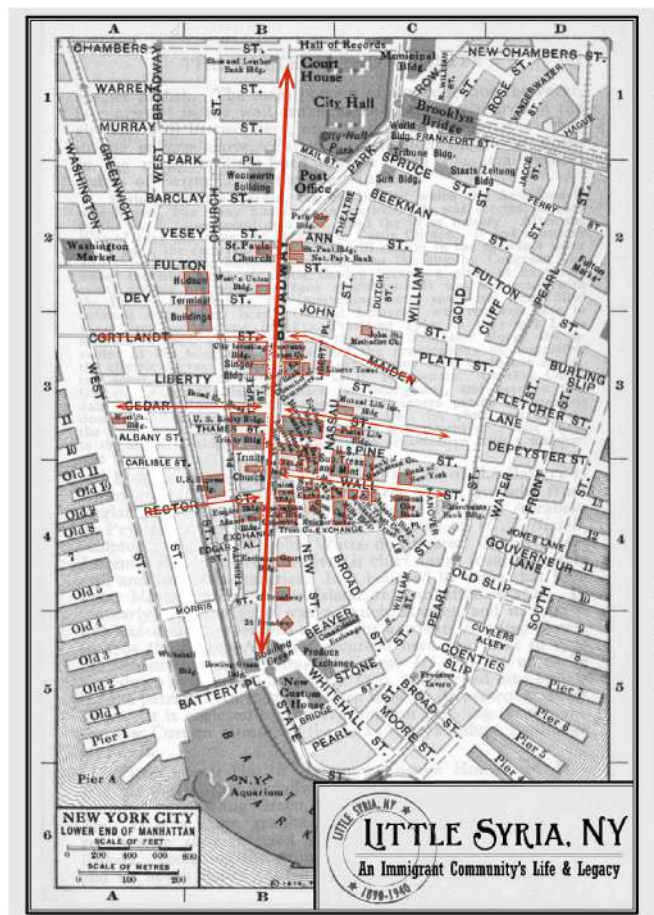
Svehlak fears the building's owner, Pink Stone Realty, will tear it down, especially since the company has plans for a 50-story high-rise on the block.

Pink Stone also owns the five-unit apartment at 109 Washington St. On the ground floor, S. is a cigar factory.

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HISTORICAL ANALYSIS



The first wave of Arab American immigrants arrived in the late 19th century and early 1900s. They established themselves in small businesses such as peddlers, retail, textiles, and imported goods.

By the mid-20th century, in addition to traditional businesses, the proportion of those in education and professions (doctors, lawyers, and scholars, among others) gradually increased.

In the 21st century, Arab Americans in New York City have become more prominently involved in politics, public affairs, and cultural expression.

Due to the Urban Redevelopment, many blocks were demolished. Today, only a few buildings on Washington Street still reflect the scale of the original. The site will consist of the still-inhabited tenement building at 109 Washington Street, the Downtown Community House as well as the Church.



History: Fabric Shop



History: Grocery Store



History: Printing Workshop



Present: Arts Center



Present: International Academy

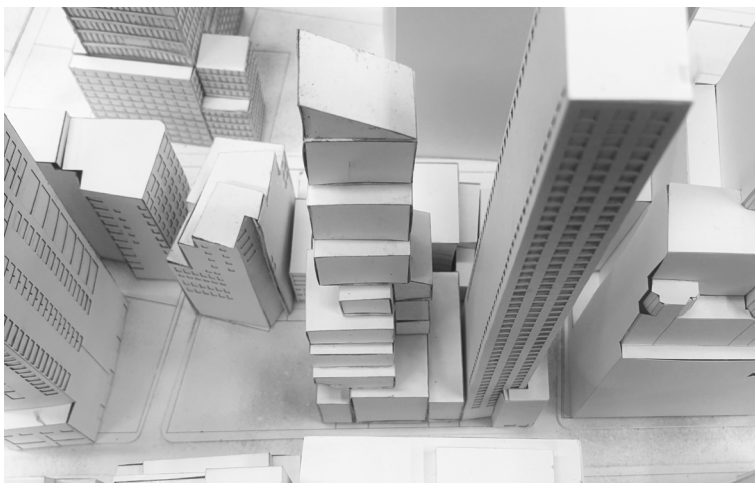
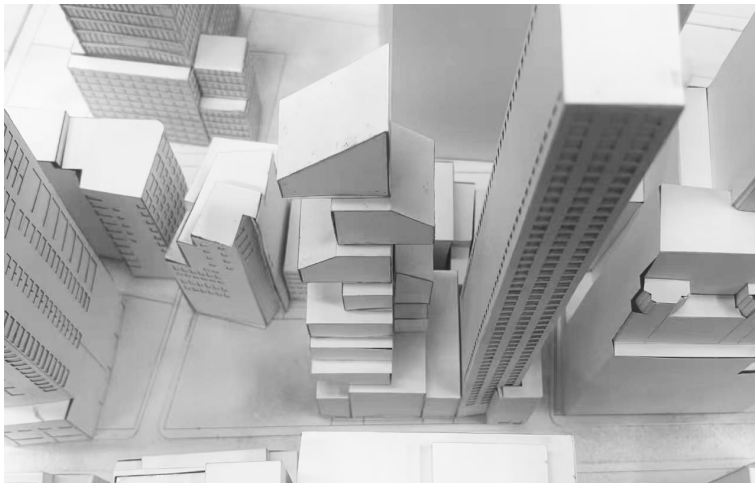
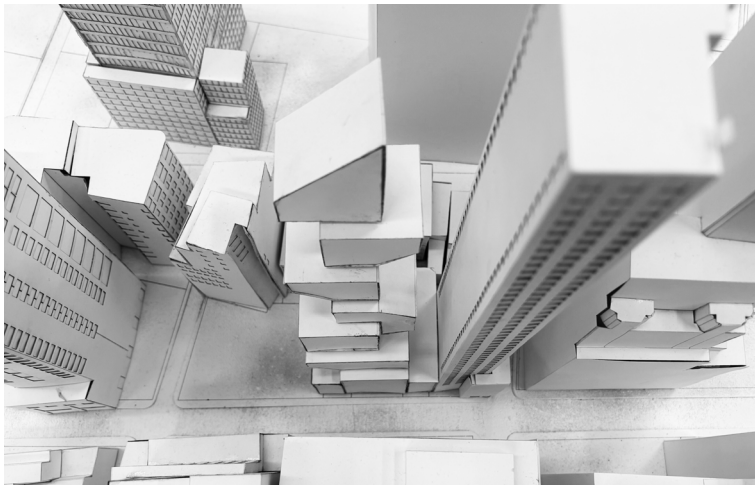
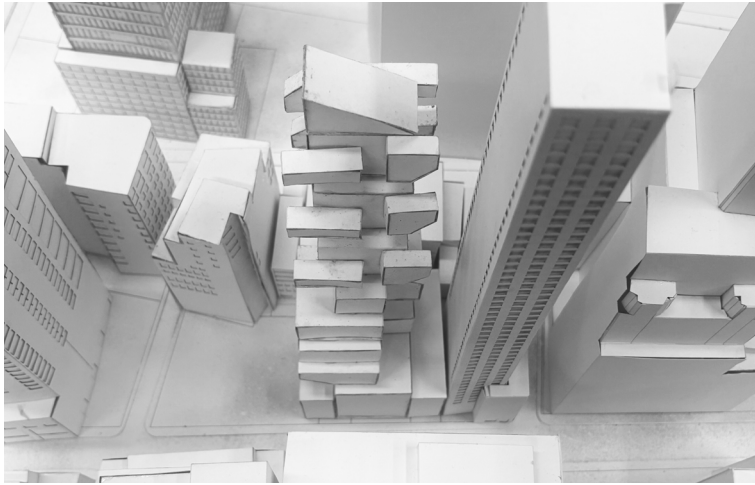


Present: Theatre

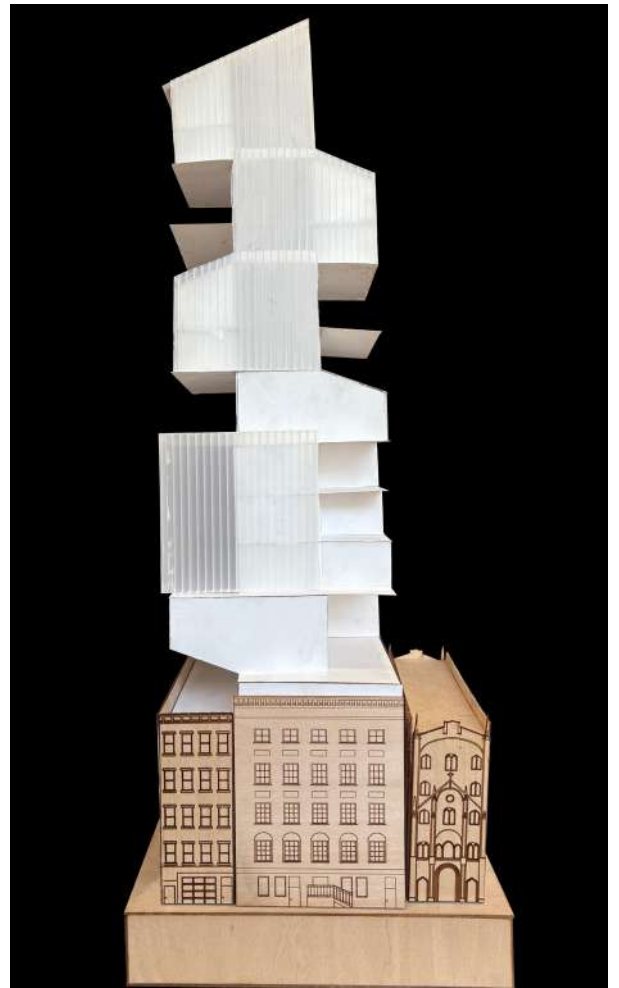
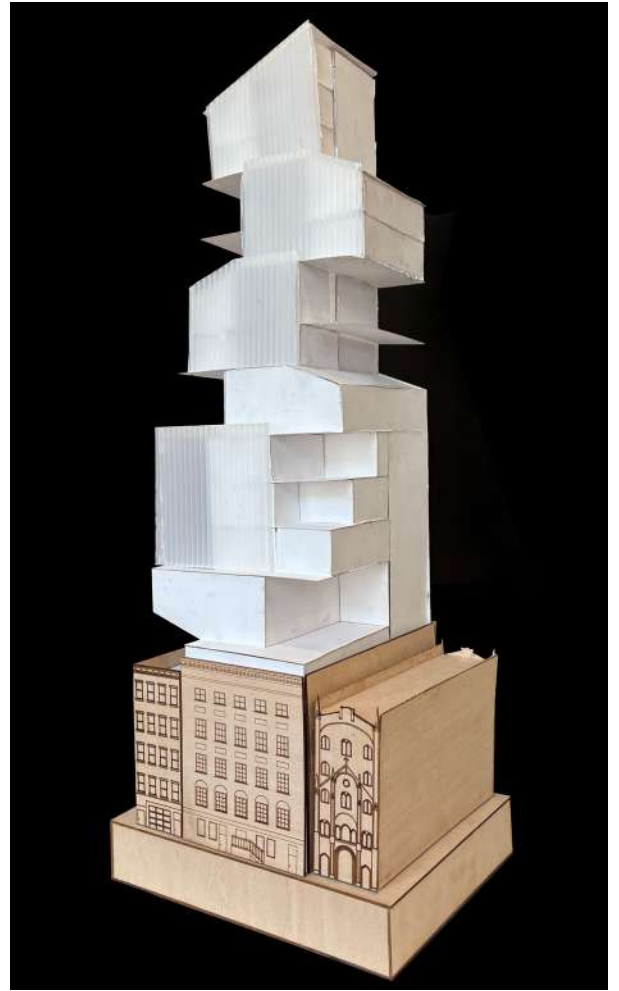
SITE ANALYSIS

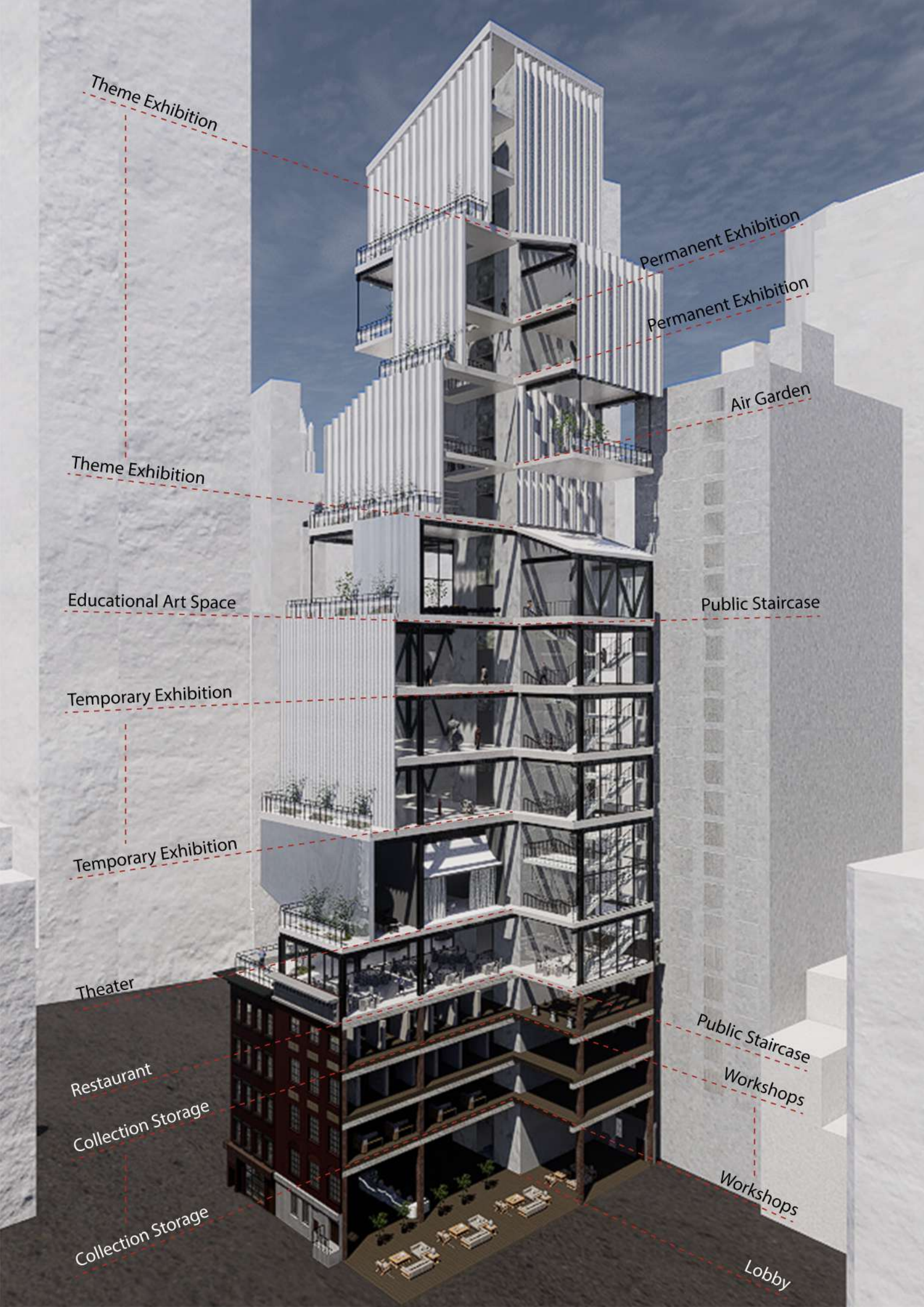


DESIGN APPROACHES



MODEL





Theme Exhibition

Permanent Exhibition

Permanent Exhibition

Air Garden

Theme Exhibition

Educational Art Space

Public Staircase

Temporary Exhibition

Temporary Exhibition

Theater

Restaurant

Collection Storage

Collection Storage

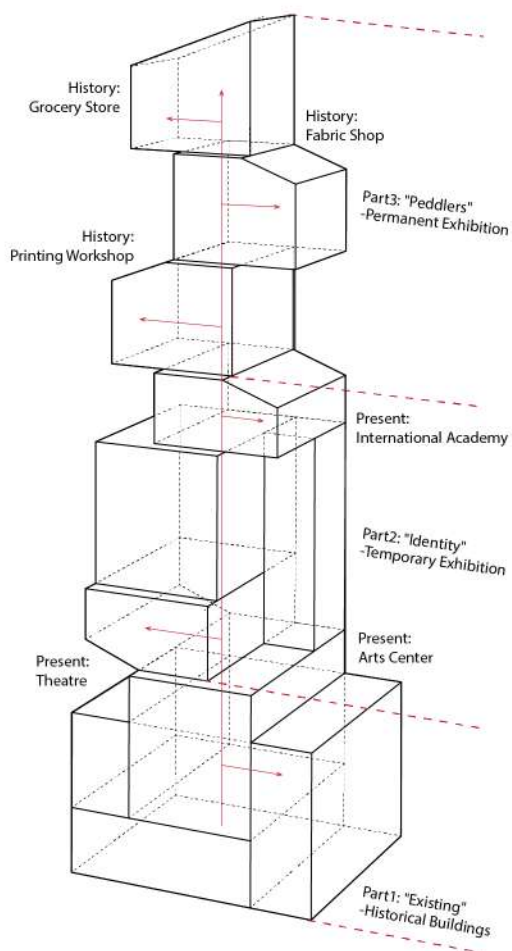
Public Staircase

Workshops

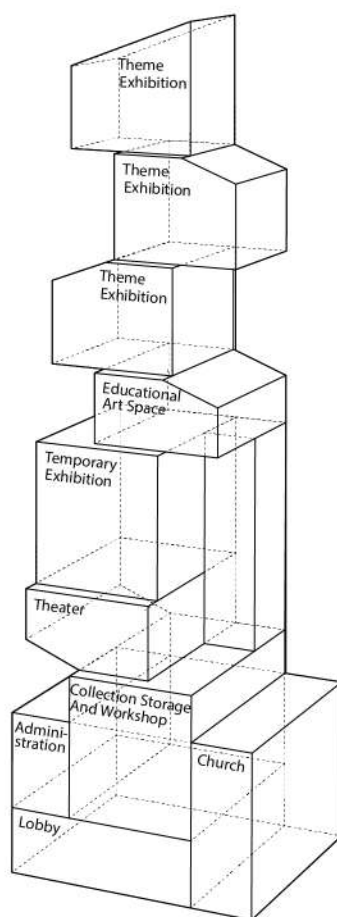
Workshops

Lobby

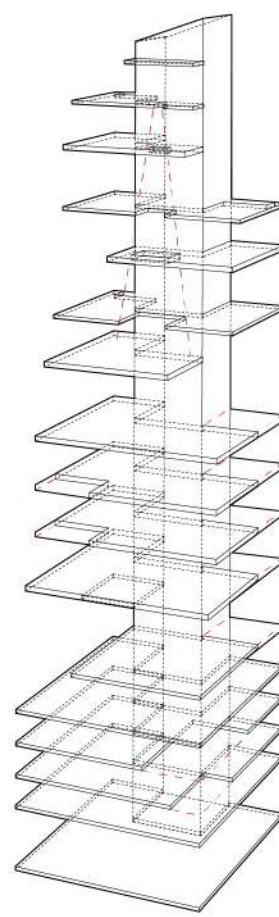
ZONING CONCEPT



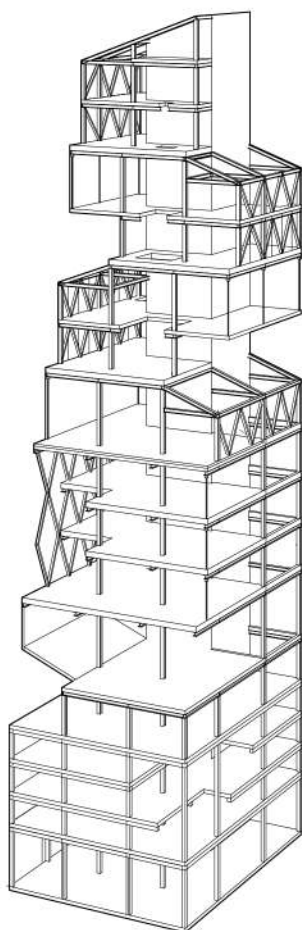
PROGRAM



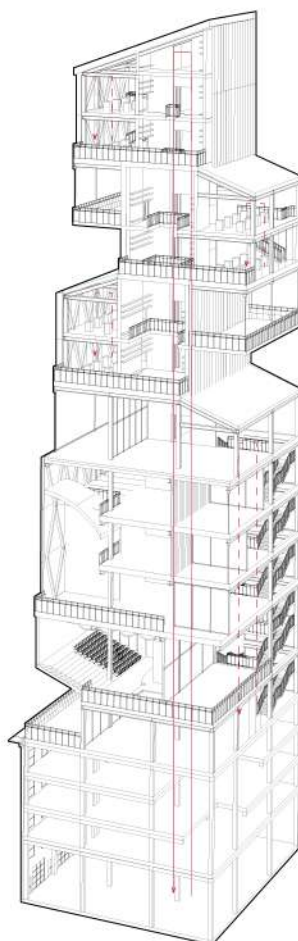
VOID SPACE



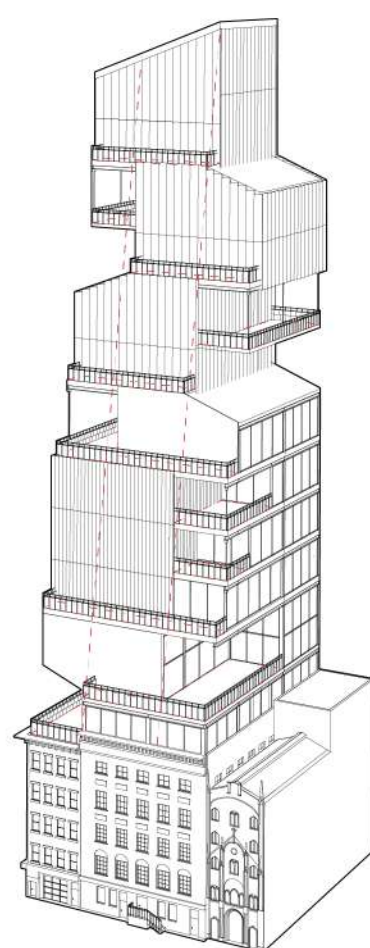
STRUCTURE



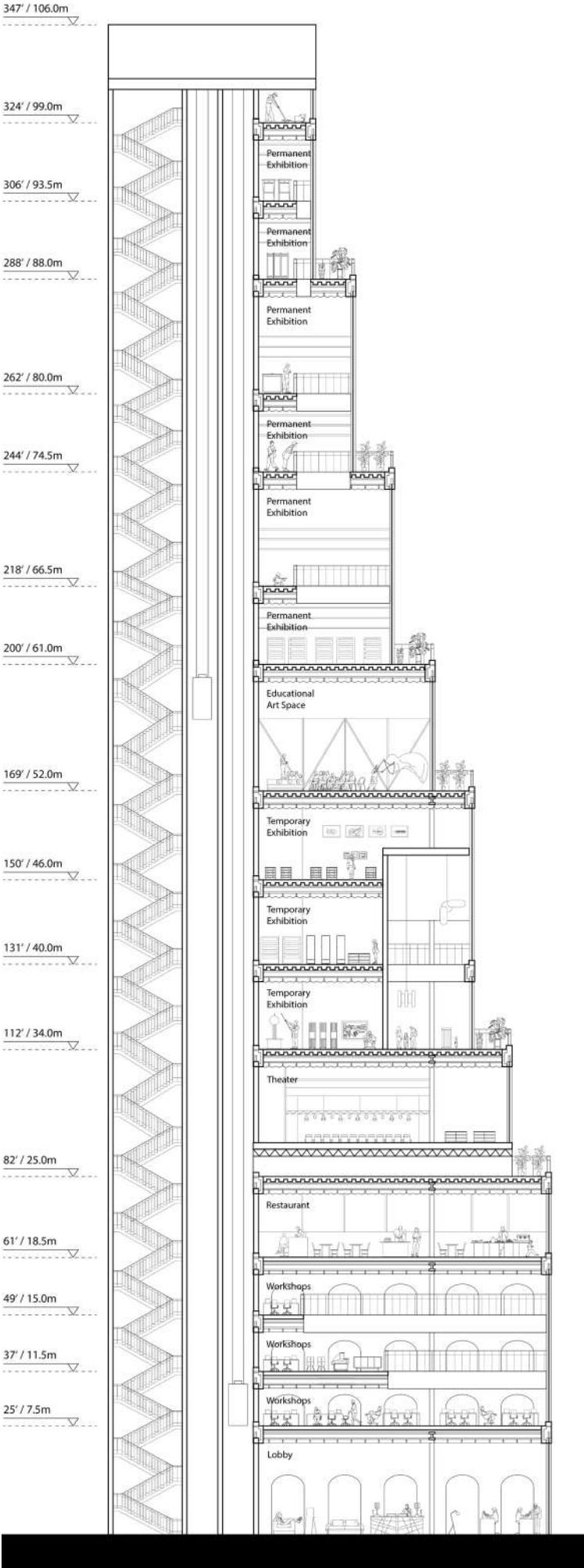
CIRCULATION



SETBACK PLATFORM



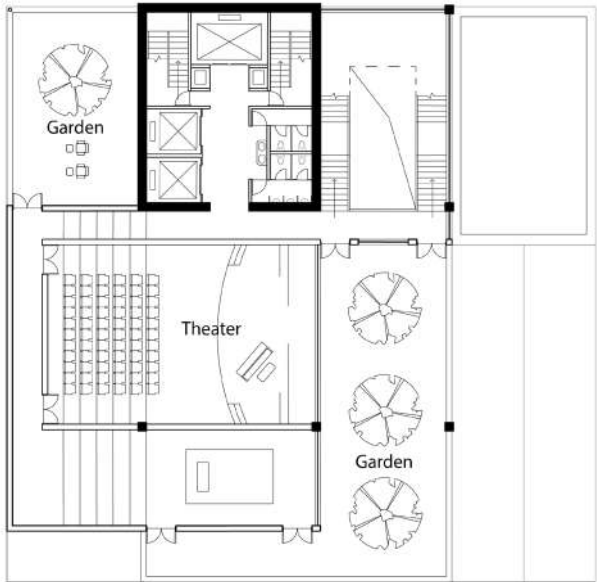
SECTION



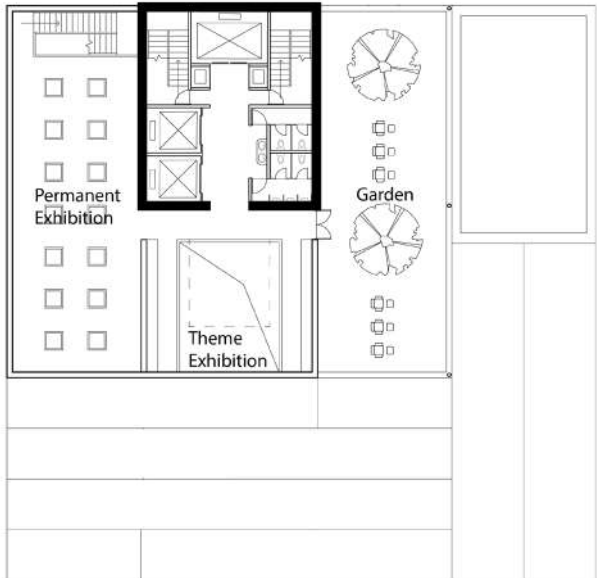
GROUND FLOOR PLAN



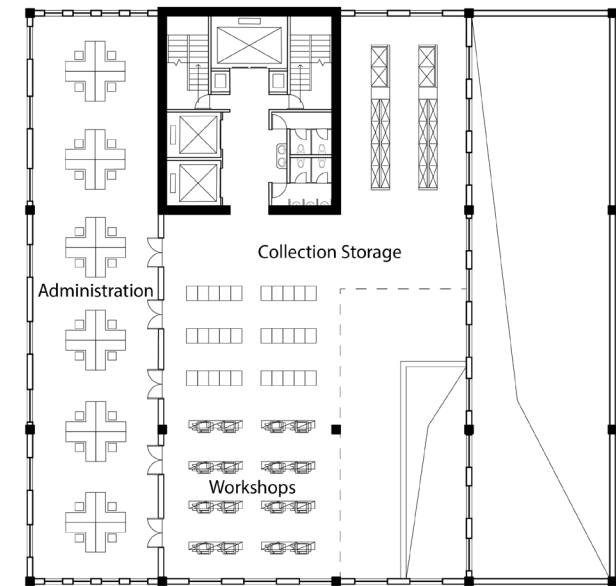
SIXTH FLOOR PLAN



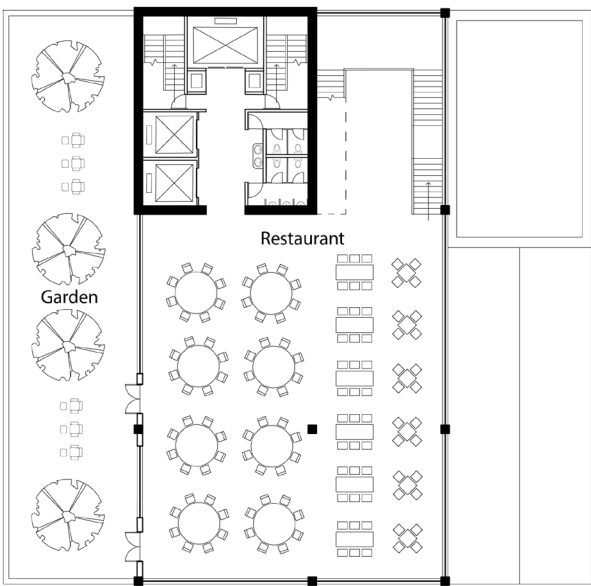
TWELFTH FLOOR PLAN



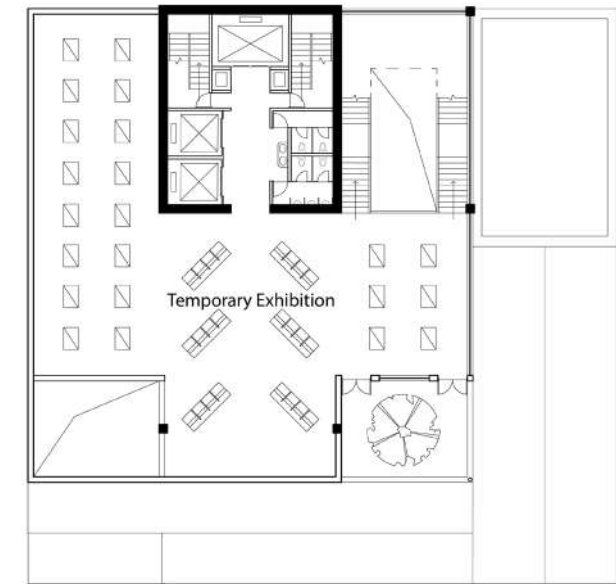
THIRD FLOOR PLAN



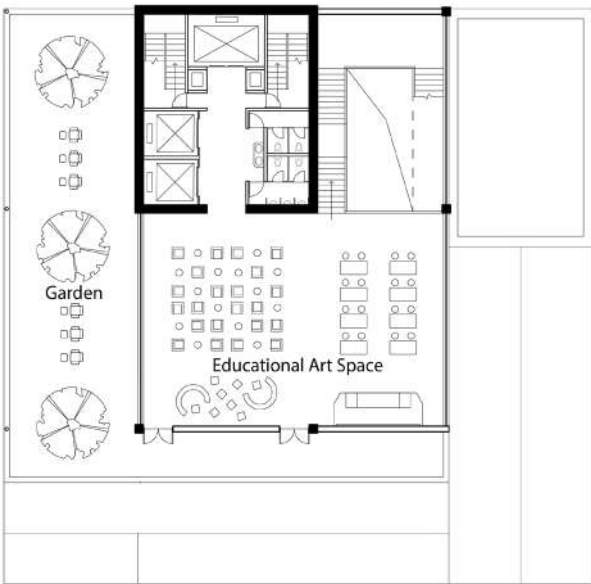
FIFTH FLOOR PLAN



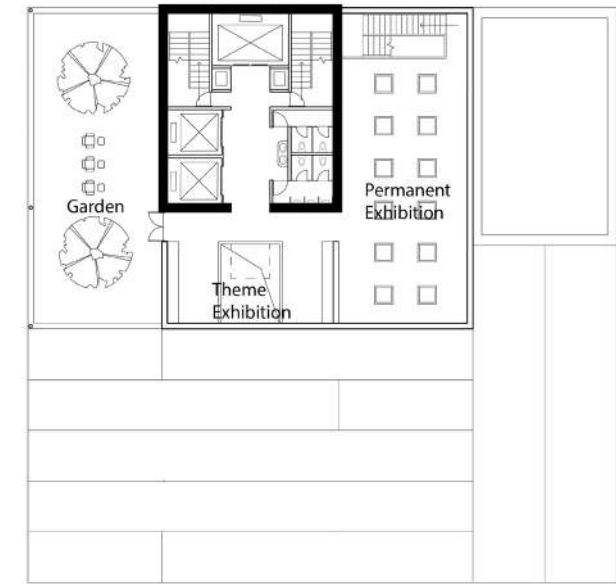
EIGHTH FLOOR PLAN



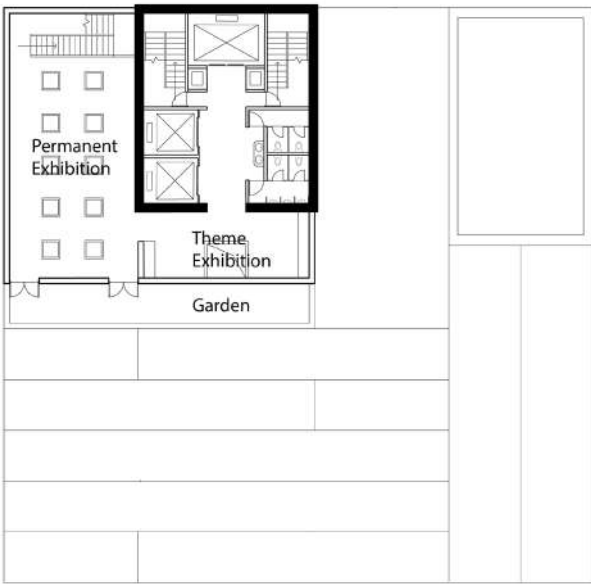
TENTH FLOOR PLAN



FOURTEENTH FLOOR PLAN



FIFTEENTH FLOOR PLAN





SECTION

347' / 106.0m

324' / 99.0m

306' / 93.5m

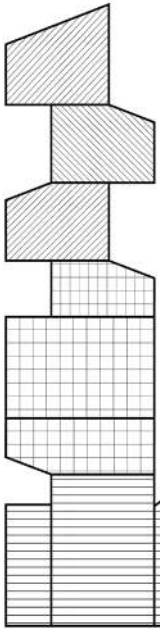
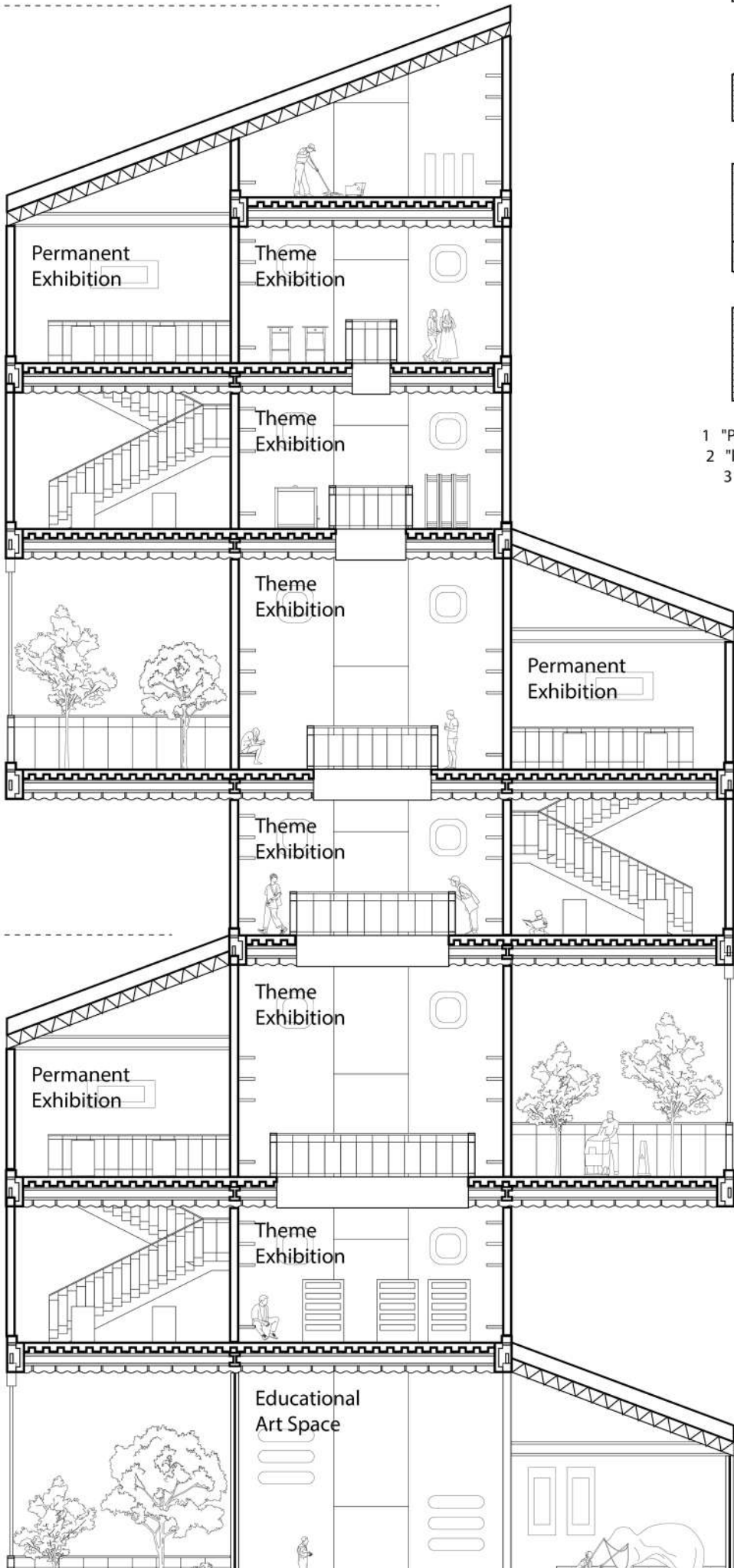
288' / 88.0m

262' / 80.0m

244' / 74.5m

218' / 66.5m

200' / 61.0m



1

2

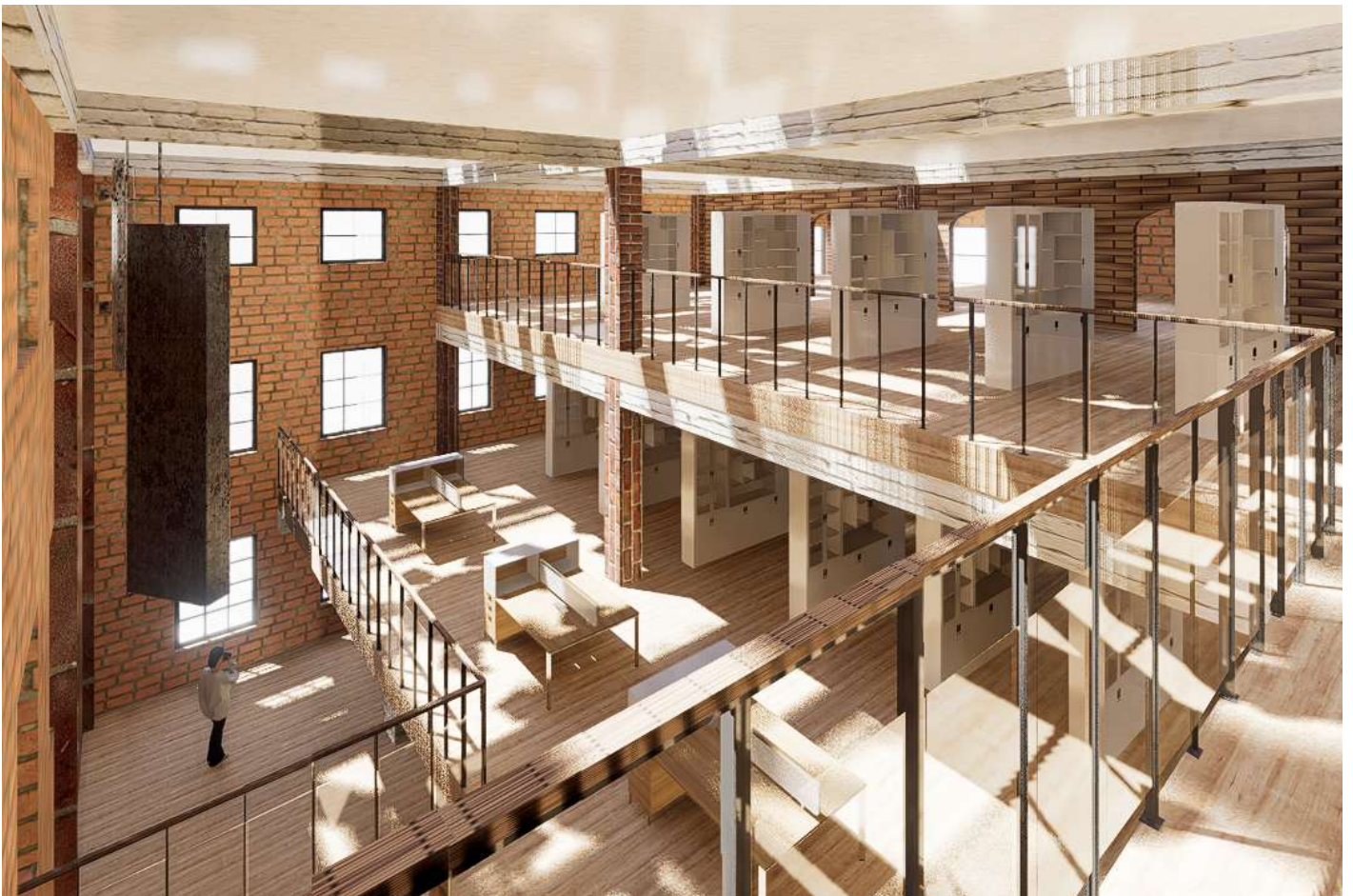
3

- 1 "Peddlers" - Permanent Exhibition
- 2 "Identity" - Temporary Exhibition
- 3 Existing Historical Buildings

NEW STAIRCASE SPACE



EXISTING WORKSHOP SPACE



169' / 52.0m

150' / 46.0m

131' / 40.0m

112' / 34.0m

82' / 25.0m

61' / 18.5m

49' / 15.0m

37' / 11.5m

25' / 7.5m

Temporary
Exhibition

Theater

Restaurant

Administration

Collection Storage

Workshops

Administration

Collection Storage

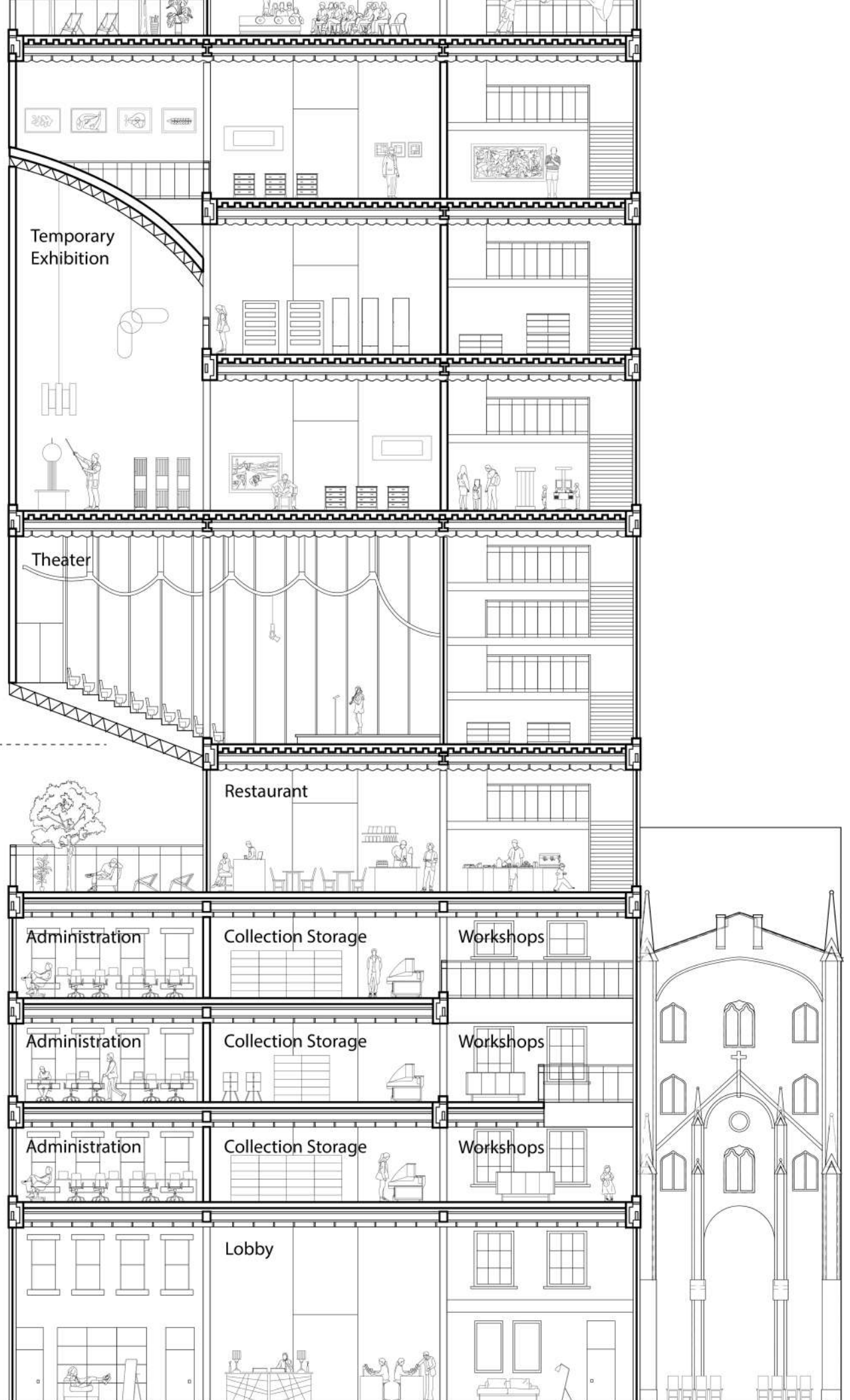
Workshops

Administration

Collection Storage

Workshops

Lobby







05 ENDLESS CAVES

Time: 2025 Fall

Location: Virtual Space

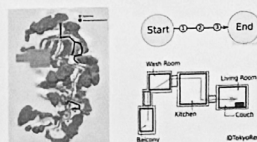
Instructor: Amelyn Ng

Type: Individual Work, Game Design

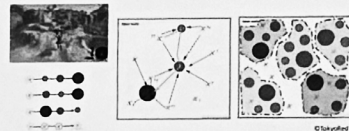
FINAL EXHIBITION



Linear level games: Final mission accomplished



Open-world games: More freedom



Research: Emissaries - Ian Cheng

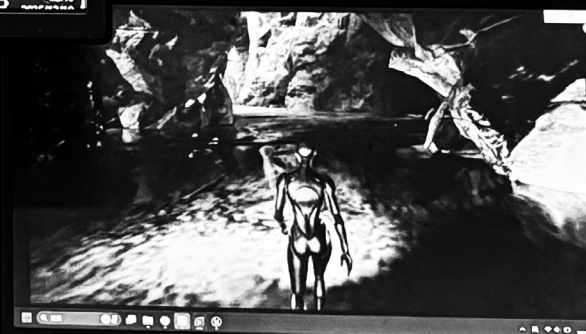


Research: Mesocosm - Marina Zurkow



Based on the game *Soul: Cave*, "The Endless Caves" is an AI algorithmic design showcasing a futuristic robot's exploration of ancient human cave ruins. Given the linear experience of a single cave with only a beginning and an end, I aimed to break the monotonous narrative by constantly introducing new, evolving caves. In the design, each cave is unique, offering diverse path choices at different nodes. Each new cave scene is determined by a probabilistic equation in chatgpt: yet, it all revolves around a central figure.

This is a series of animated landscapes that evolve and change over time based on software-driven data input, such as varying the scale of rocks, the position and intensity of light, the moisture of the ground, the density of vegetation, and so on. They are generated individually by AI code, and their arrangement is dynamic—not cyclical or preset—but determined by real-time constraints. Its duration is long, constantly recombining itself by determining order, density, and relationships. It is cyclical, without beginning or end.



CODING

2.1. Data structure for chunks

[illegible]

PART 1



PART 2



PART 3



PART 4

