

**C O M -
M O N S**

RACHEL CHEN

architecture portfolio | selected work 2022-2023

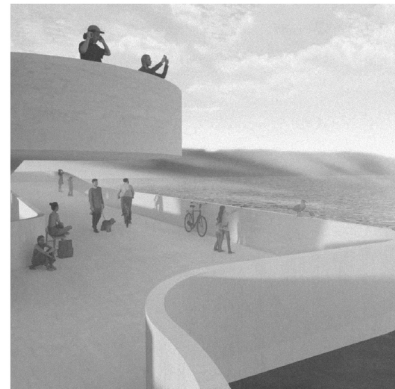
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AFFORDABLE HOUSING

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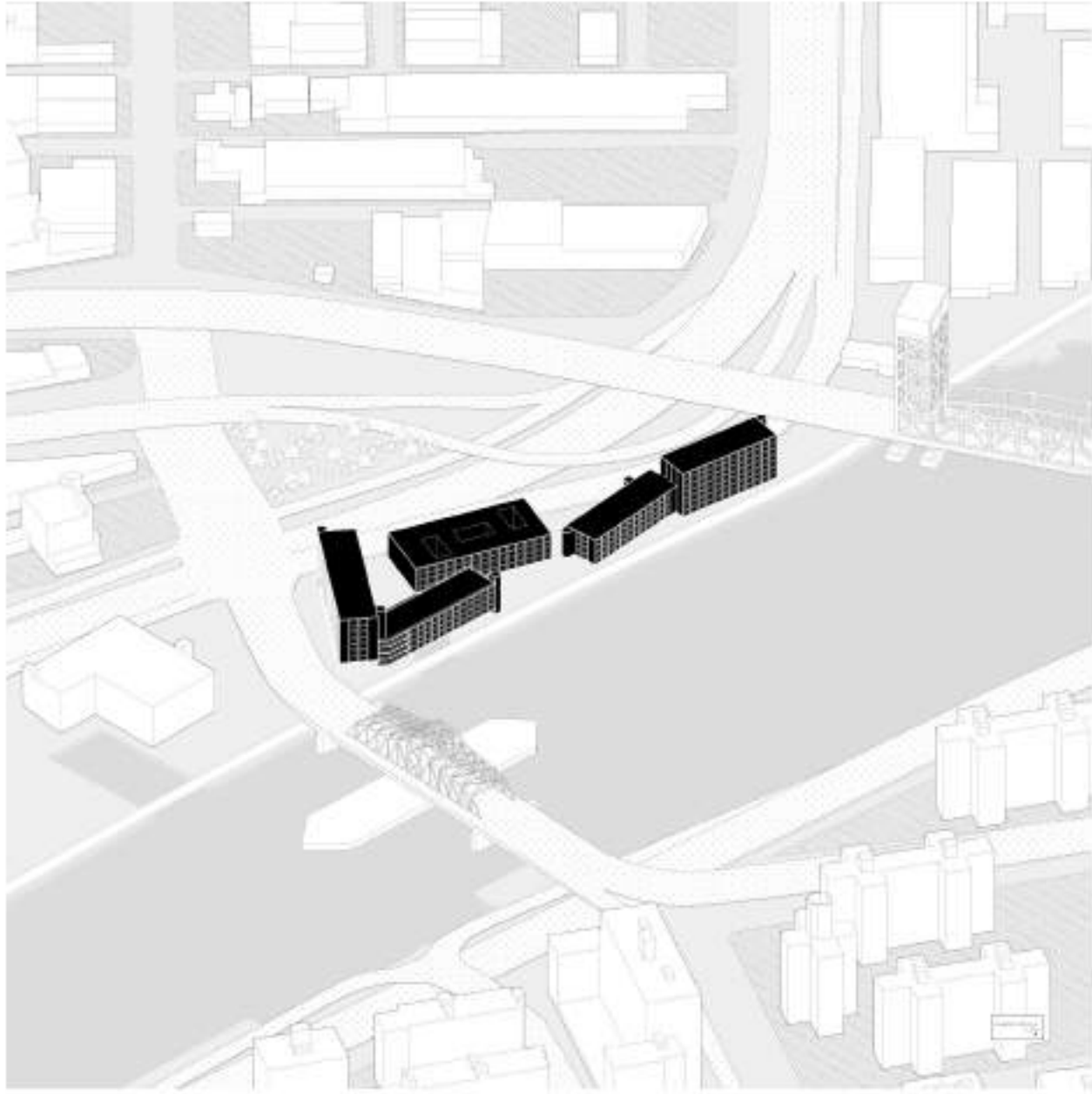
01
ROOMS FOR COMMONS
AFFORDABLE HOUSING

CORE ARCHITECTURE STUDIO III
PAIRED GROUP PROJECT
INSTRUCTOR: CHRISTOPHER LEONG
BRONX, NEW YORK CITY, NY
FALL 2022

Community living is shaped by two spatial conditions: being alone and being together. Within this housing framework, individual space is minimized, while the collective space is increased and entangled into the fabric of the co-operative, it becomes a site for domestic labor to be exposed and shared by the collective. It encourages interpersonal relationships through varied scales of sharing, allowing residents to negotiate and achieve their desired balance between intimacy and privacy. Housing design should return to a more collaborative building practice and question the roles of private property, private space, and private ownership.



HARLEM RIVER SIDE, BRONX, ISOMETRIC SITE PLAN



MASSING MODEL | WEST ELEVATION



GROUND FLOOR PLAN

- 1. Lobby
- 1a. Package Room
- 1b. Mailroom
- 1c. Office
- 1d. B.O.H.
- 2. Bike Storage
- 3. Gym
- 4. Senior Center
- 5. Cafe
- 6. Woodshop
- 7. Medical Center
- 8. Kids Play
- 9. Restaurant
- 10. Market



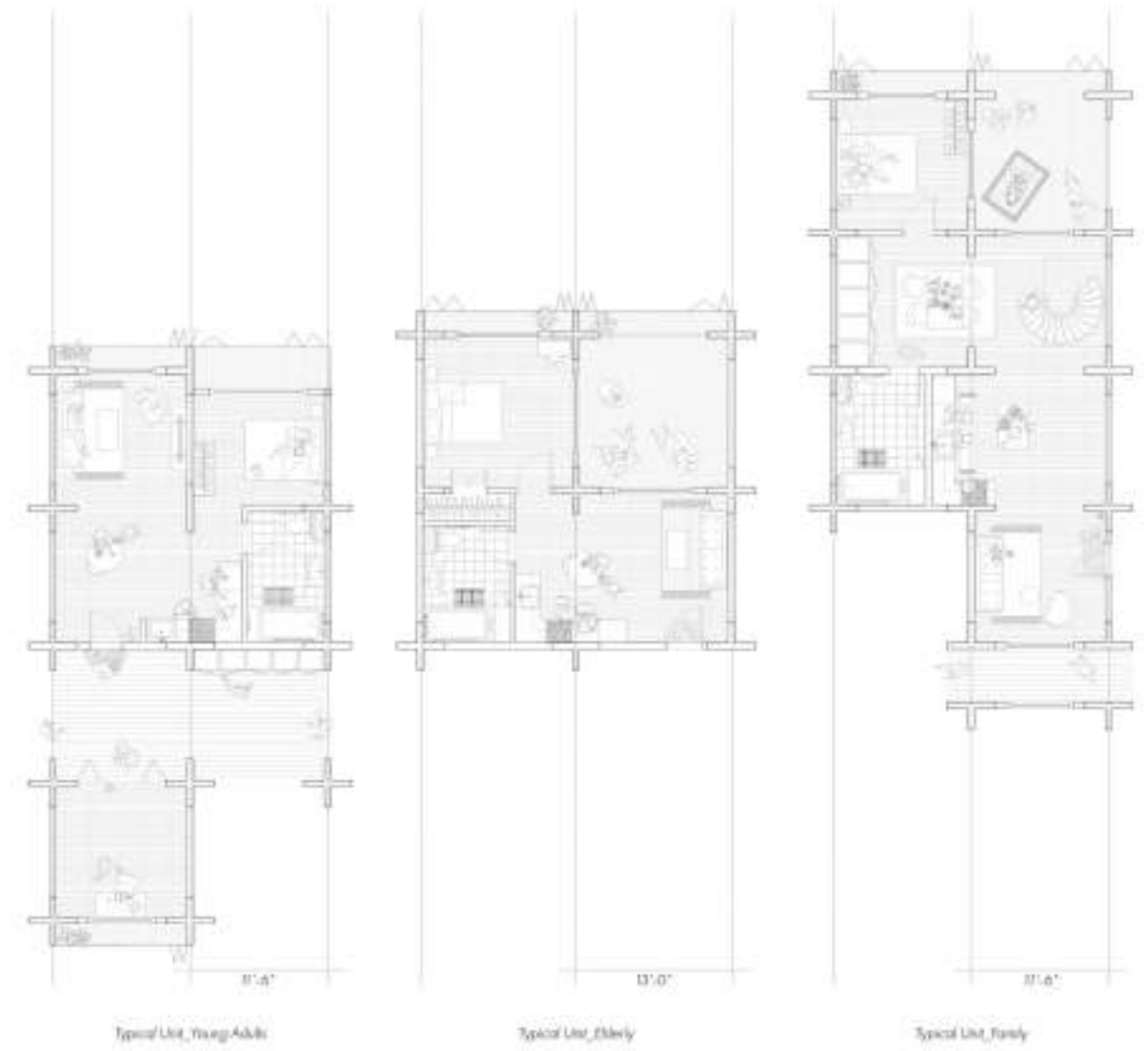
TYPICAL FLOOR PLAN



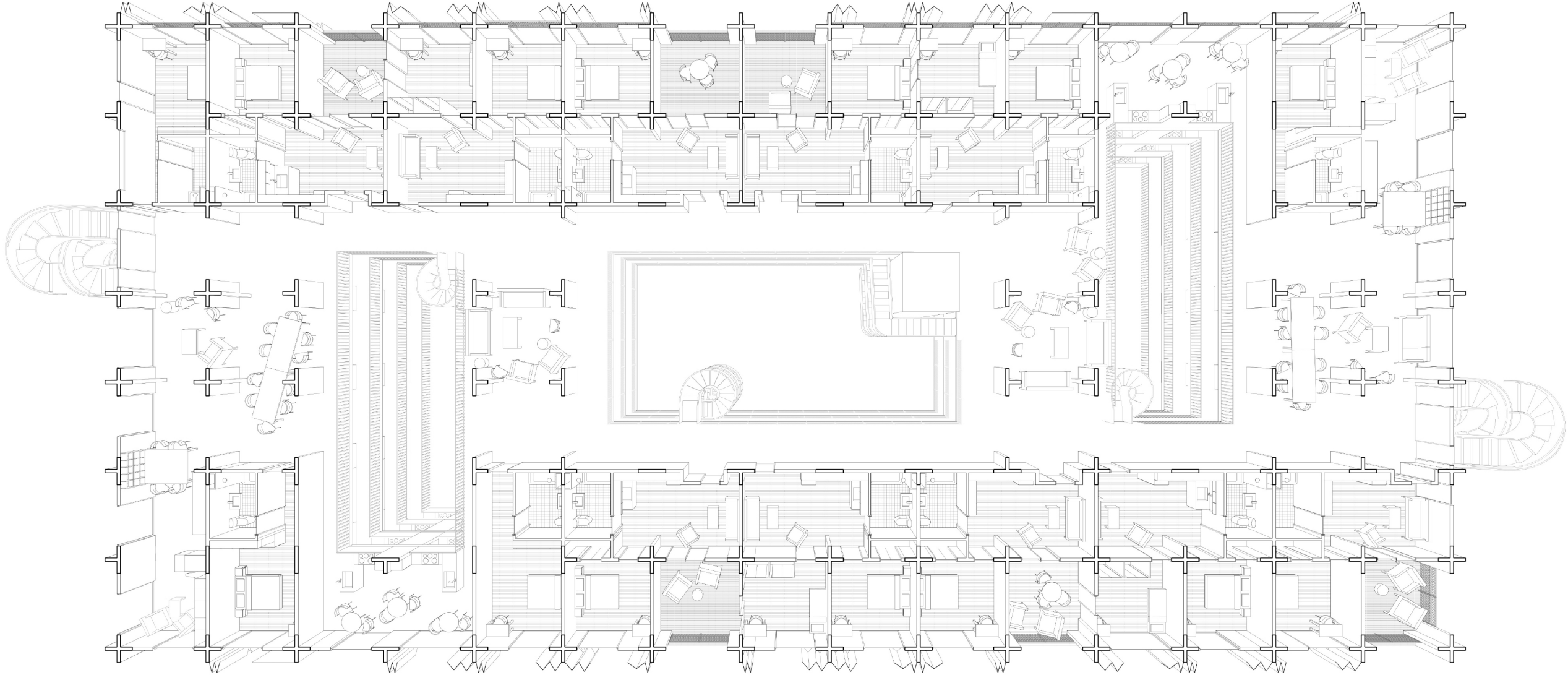
MODIFIABLE UNIT DETAILED MODEL



TYPICAL UNIT VARIATIONS



PERSPECTIVE PLAN SHOWING PRIVATE SPACE & SHARED SPACE



PERSPECTIVE SECTION THROUGH COURTYARD SHOWING ACTIVITY SPACE, UNITS & COMMUNITY DINNING AREA



INTERIOR RENDERS



FACADE & BALCONY DETAILED MODEL



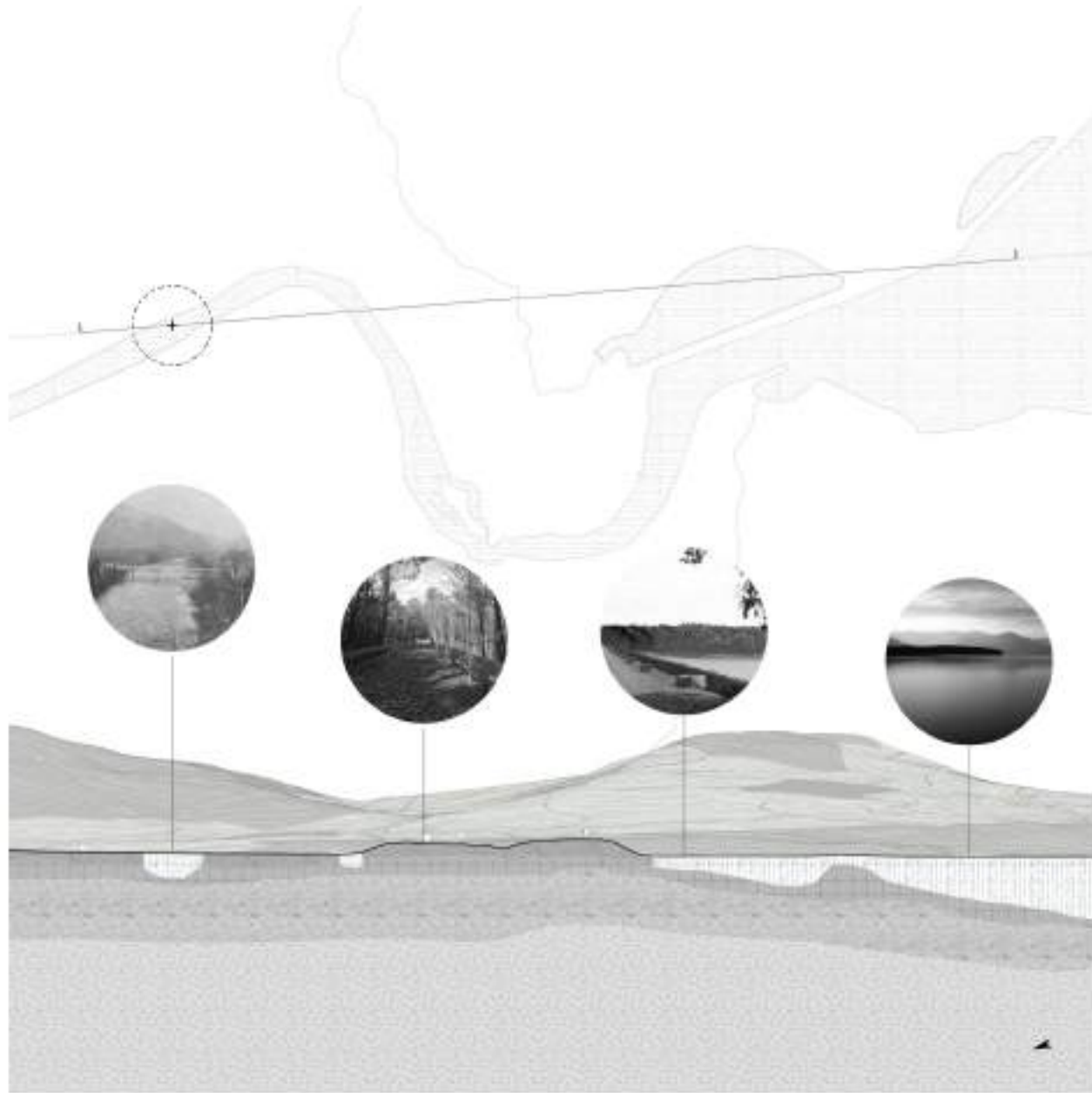
02
EARTHY AND UNEARTHLY
COMMONS FOR THE COMMUNITY

ADVANCED ARCHITECTURE STUDIO IV
PAIRED GROUP RESEARCH-BASED DESIGN PROJECT
INSTRUCTOR: ALESSANDRO ORSINI
BOICEVILLE, ULSTER COUNTY, NY
SPRING 2023

The Ashokan Reservoir community has faced historical land and space appropriations by the New York state government, leading to the loss of homes, farms, and communal spaces for the betterment of New York City's water supply. This project is dedicated to revitalizing the community through the establishment of a new commons for local residents. Leveraging the bridge that reconnects individuals separated by the man-made reservoir, the initiative aims to foster community cohesion. Providing a shared space, it offers residents the opportunity to reconnect and reconstruct their sense of place, ultimately cultivating a renewed sense of community and belonging within this historically impacted locale.

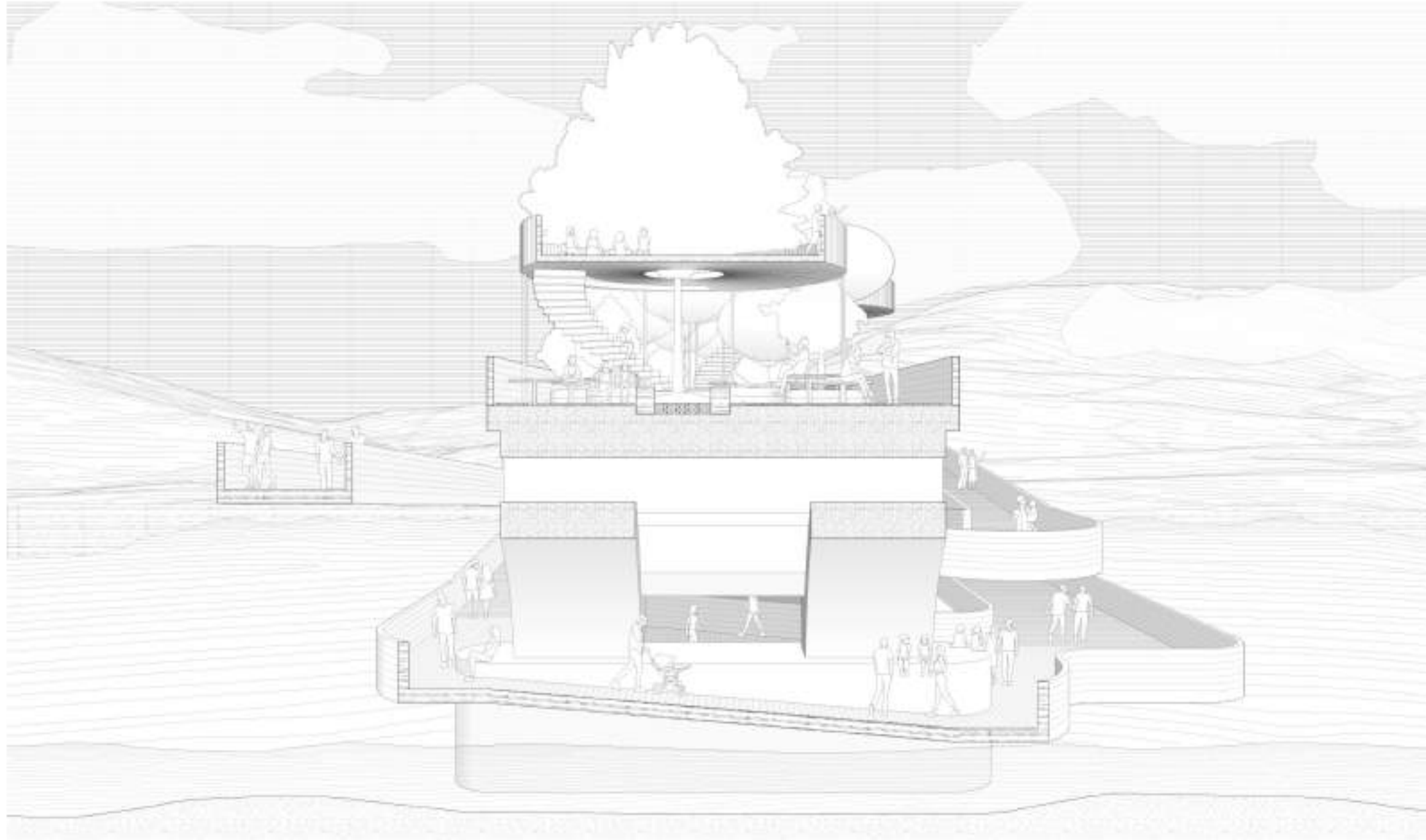


ASHOKAN RESERVOIR SITE PLAN & NORTH-SOUTH SECTION

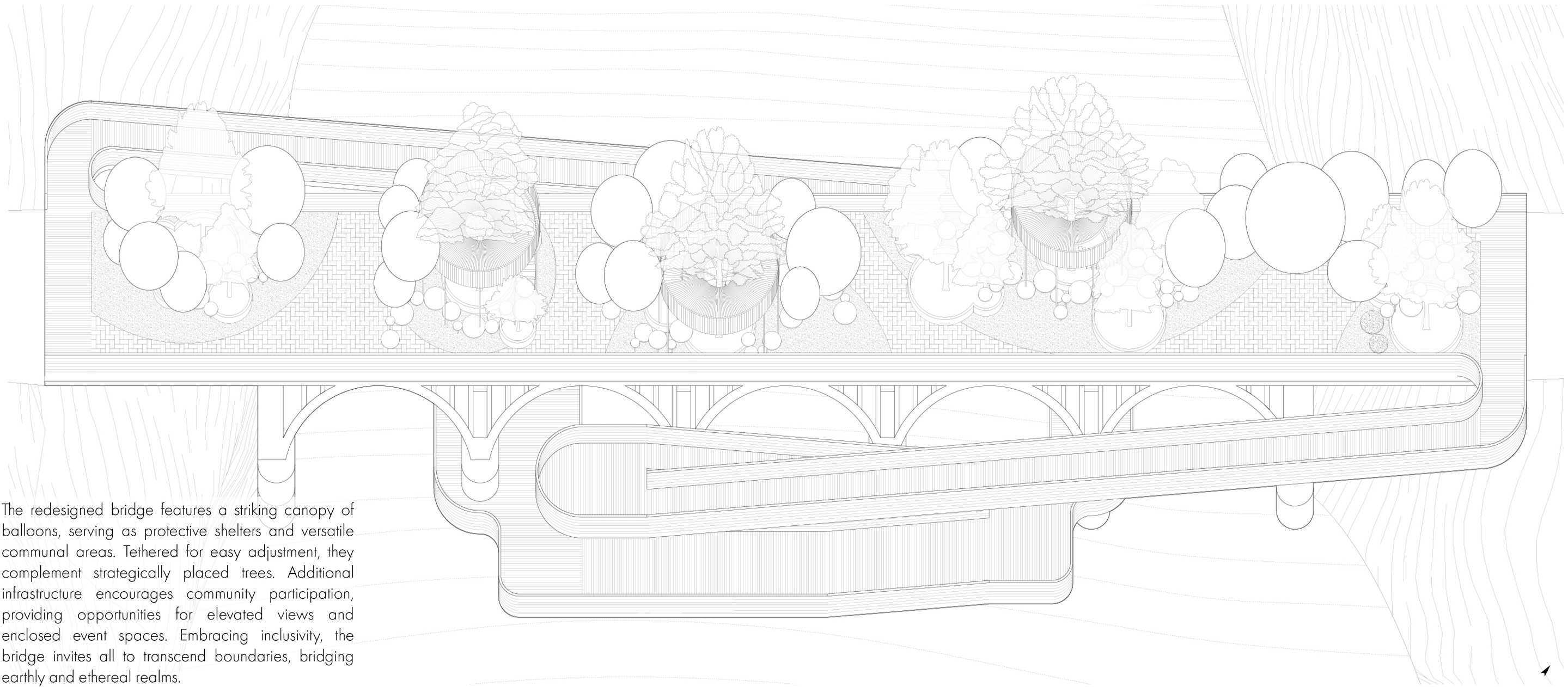


COLLAGE SHOWING THE NATIVE COMMUNITY FORCED TO LEAVE THEIR LAND FOR BUILDING THE RESERVOIR





New York City's plan to replace the southward bridge spurred a review of the Five Arches bridge, intended for pedestrians. It blends earthly and unearthly elements, merging organic and geometric motifs. Initially linking the commons to a restricted reservoir, it now awaits communal revitalization. This renovation emphasizes its envisioned role as the neighborhood's main thoroughfare, symbolizing unity between past and present.



The redesigned bridge features a striking canopy of balloons, serving as protective shelters and versatile communal areas. Tethered for easy adjustment, they complement strategically placed trees. Additional infrastructure encourages community participation, providing opportunities for elevated views and enclosed event spaces. Embracing inclusivity, the bridge invites all to transcend boundaries, bridging earthly and ethereal realms.



03

ARTIMEDU

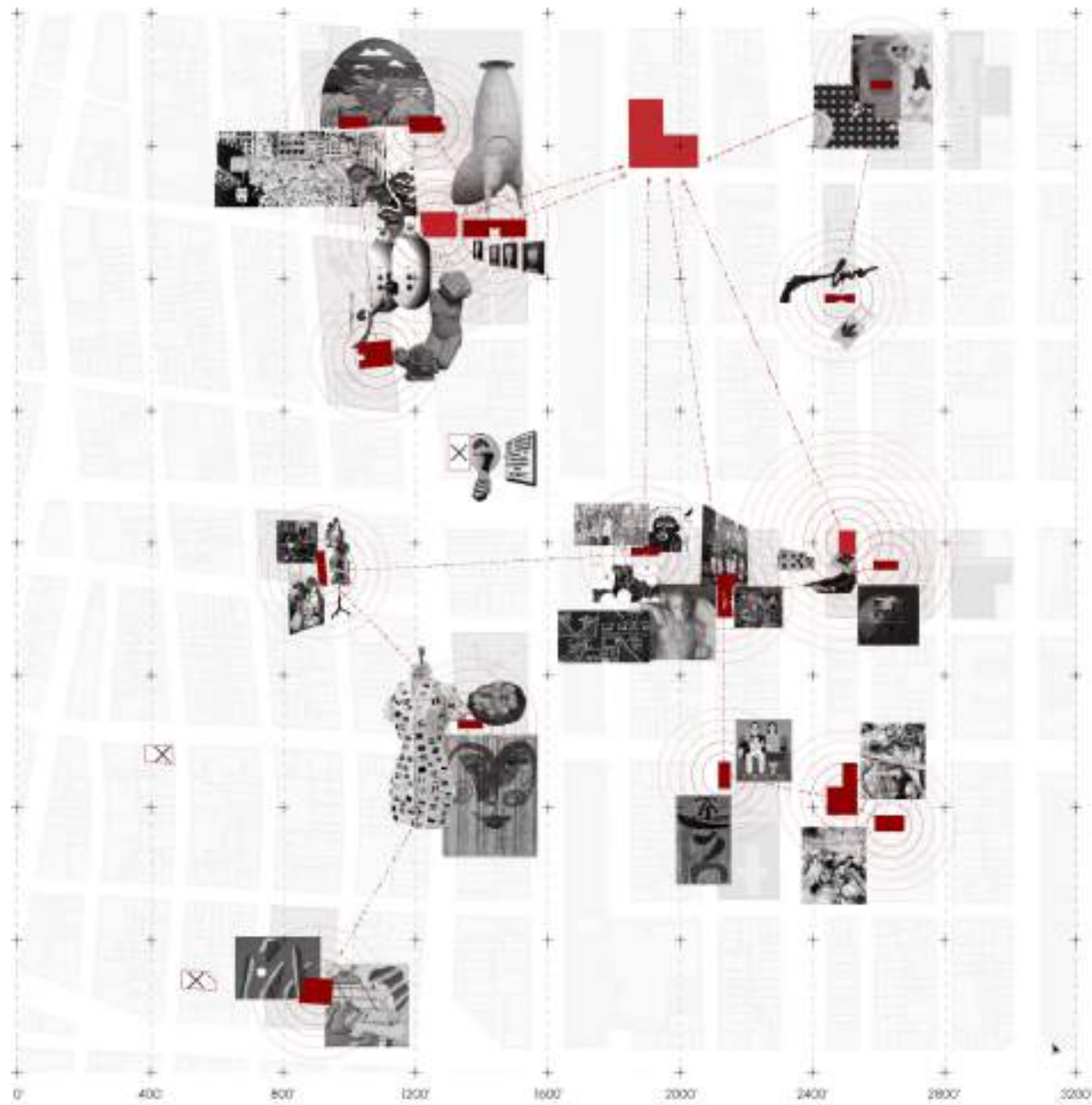
SOFT BOUNDARY COMMONS SCHOOL

CORE ARCHITECTURE STUDIO II
INDIVIDUAL PROJECT
GROUP FLOOR MATERIAL STUDY
INSTRUCTOR: AMINA S. BLACKSHER
LOWER EAST SIDE, NEW YORK CITY, NY
SPRING 2022

ARTIMEDU (Art Time Edu) is meticulously designed for K-8 students, emphasizing creativity through avant-garde design. Distinctive features such as translucent walls, adjustable curtains, and dynamic facades thoughtfully shape the common space, fostering collaborative creativity and enhancing the overall artistic experience for students. The floor-to-ceiling system, expertly crafted with DLT, seamlessly blends soft wood tones and eco-friendly cork mats, establishing a tranquil ambiance conducive to immersive artistic pursuits and providing an ideal environment for focused creative exploration.



LOWER EAST SIDE, MANHATTAN, ART & GALLERIES SITE ANALYSIS

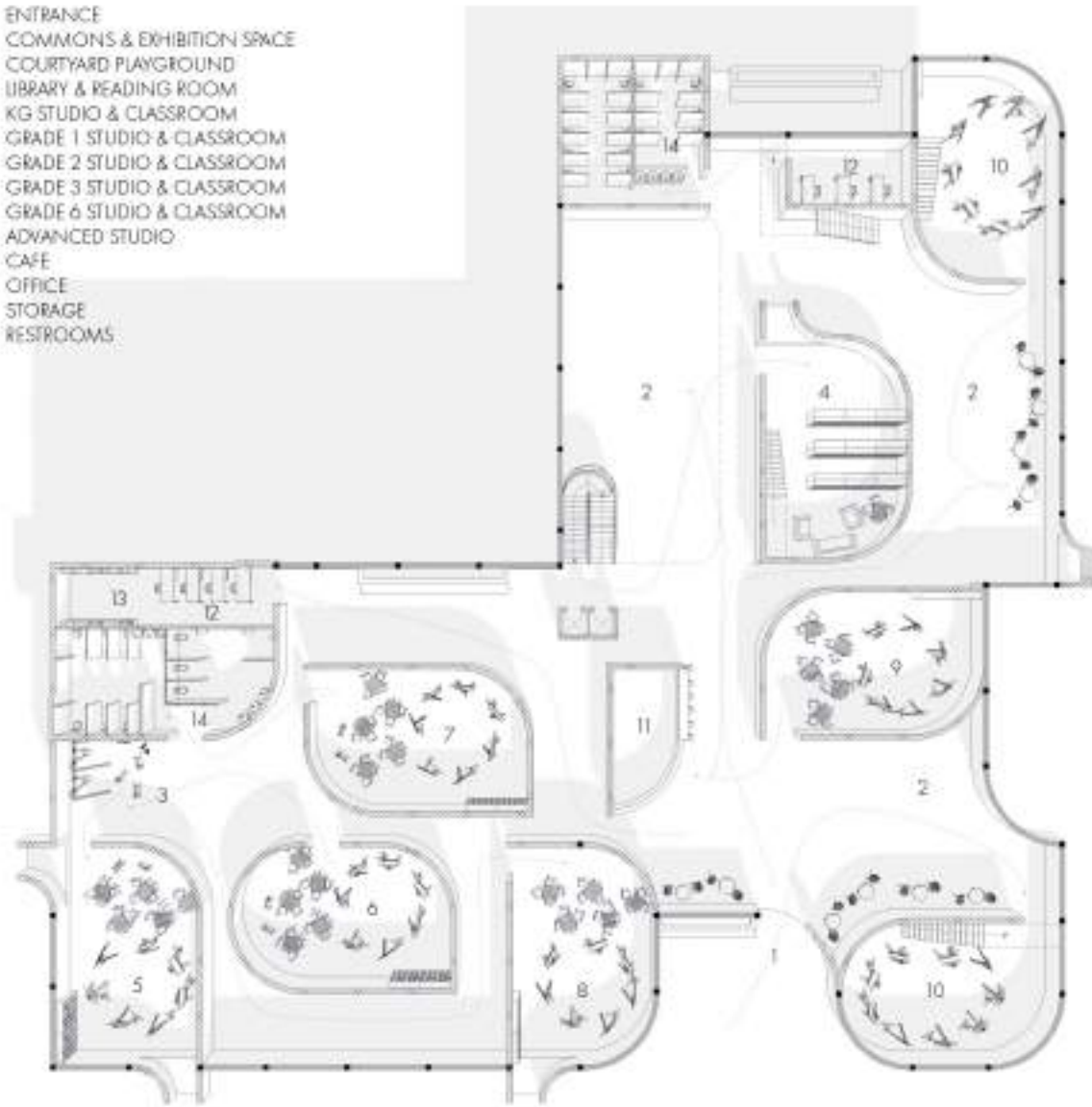


MODEL OF CRAFT SHOP & PAINTING STUDIO



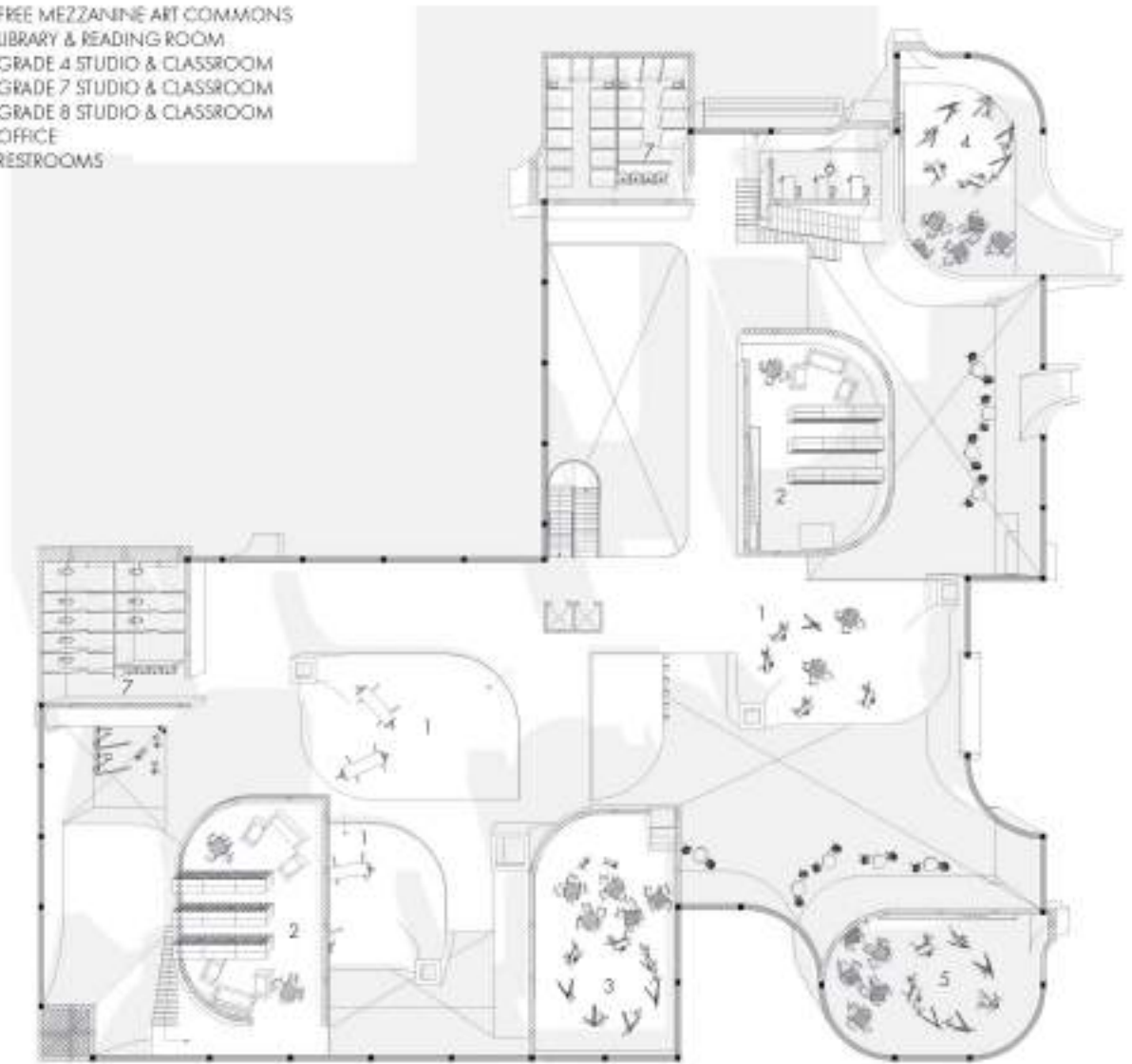
GROUND FLOOR PLAN

- 1. ENTRANCE
- 2. COMMONS & EXHIBITION SPACE
- 3. COURTYARD PLAYGROUND
- 4. LIBRARY & READING ROOM
- 5. KG STUDIO & CLASSROOM
- 6. GRADE 1 STUDIO & CLASSROOM
- 7. GRADE 2 STUDIO & CLASSROOM
- 8. GRADE 3 STUDIO & CLASSROOM
- 9. GRADE 6 STUDIO & CLASSROOM
- 10. ADVANCED STUDIO
- 11. CAFE
- 12. OFFICE
- 13. STORAGE
- 14. RESTROOMS



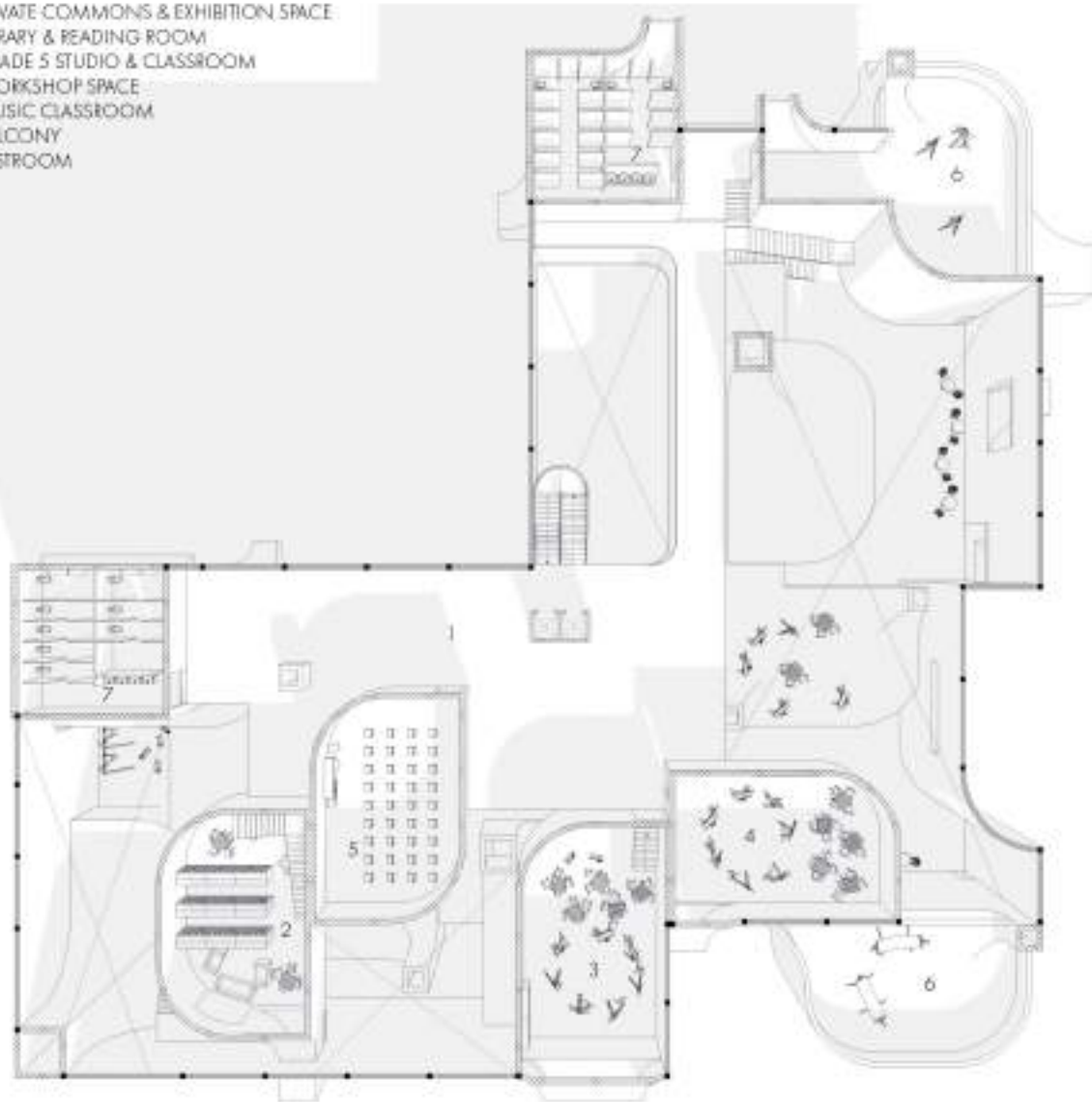
MEZZANINE PLAN

- 1. FREE MEZZANINE ART COMMONS
- 2. LIBRARY & READING ROOM
- 3. GRADE 4 STUDIO & CLASSROOM
- 4. GRADE 7 STUDIO & CLASSROOM
- 5. GRADE 8 STUDIO & CLASSROOM
- 6. OFFICE
- 7. RESTROOMS



UPPER FLOOR PLAN

- 1. PRIVATE COMMONS & EXHIBITION SPACE
- 2. LIBRARY & READING ROOM
- 3. GRADE 5 STUDIO & CLASSROOM
- 4. WORKSHOP SPACE
- 5. MUSIC CLASSROOM
- 6. BALCONY
- 7. RESTROOM

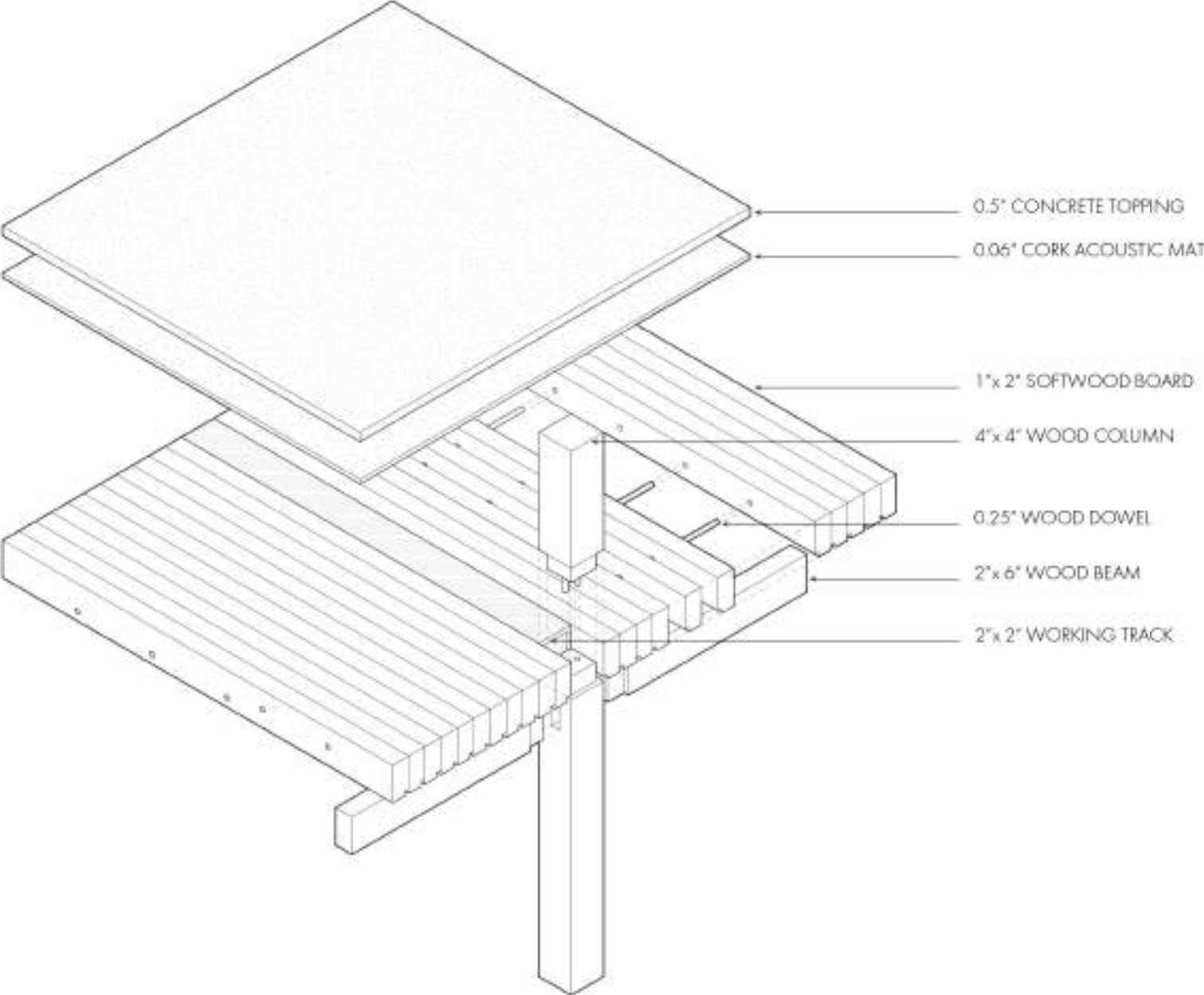


WEST OBLIQUE SECTION WITH CONTEXT

- 1. ROOF PLAYGROUND
- 2. COMMONS & EXHIBITION SPACE
- 3. COURTYARD SKYLIGHT
- 4. SKYLIGHT
- 5. BALCONY
- 6. LIBRARY & READING ROOM
- 7. MUSIC CLASSROOM
- 8. GRADE 5 STUDIO & CLASSROOM
- 9. WORKSHOP SPACE
- 10. KG STUDIO & CLASSROOM
- 11. GRADE 1 STUDIO & CLASSROOM
- 12. GRADE 3 STUDIO & CLASSROOM



EXPLODED AXONOMETRIC DETAIL OF DIF COLUMN-CEILING-FLOOR SYSTEM | DETAILED MODEL



04 TUNNEL 'VISION' BOUNDARY BREAKING INTERVENTION

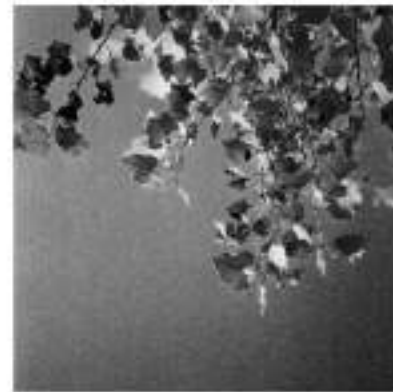
ADVANCED ARCHITECTURE STUDIO V
INDIVIDUAL RESEARCH & DESIGN PROJECT
INSTRUCTOR: MARIO GOODEN & RAVEN CHACON (COMPOSER AND MUSICIAN)
PUPIN HALL, COLUMBIA UNIVERSITY, NY
FALL 2023

This project pioneers a non-traditional field survey, using sound recordings to transform conventional site analysis into unique musical notations. Commencing with Beacon Mountains, it sparked the concept of boundary-breaking. An innovative rain gutter system, the initial architectural detail, seeks to reconnect humans with nature. Delving into the secret tunnel system beneath Columbia University, the hidden history in Pupin Physics Building exposes the institution's lack of transparency, symbolizing the Manhattan Project. The final intervention aims to shatter privacy barriers, fostering equality in public spaces. The 'vision' of listening through tunnels aims to usher the commons into a more transparent environment.





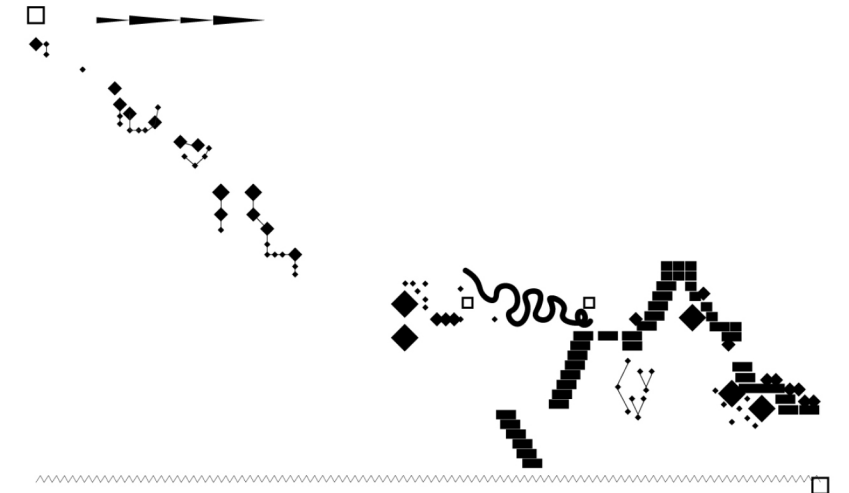
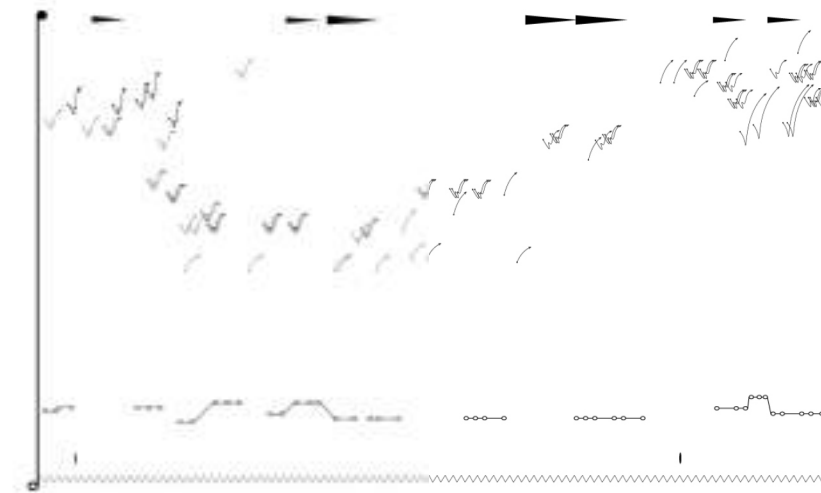
Wind:
For the one that never left, the sound of the wind captures the breath of nature; she whispers when she's tender, she howls when she's upset. You can't see her but you can hear and feel the existence of the wind when you are a part of mother nature.



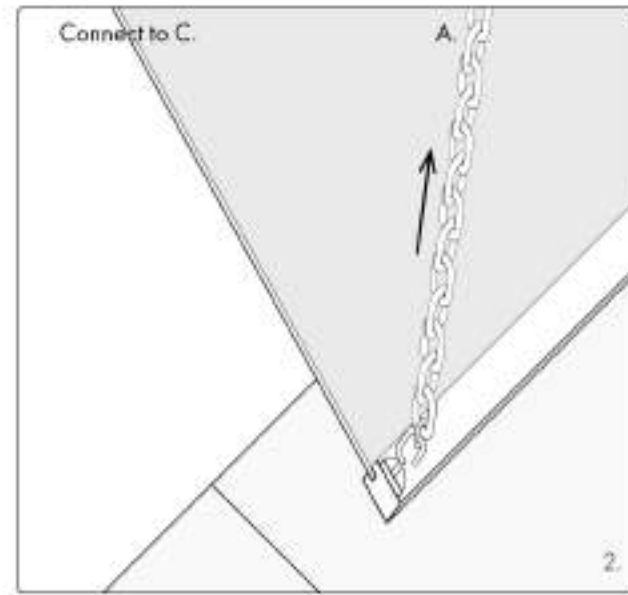
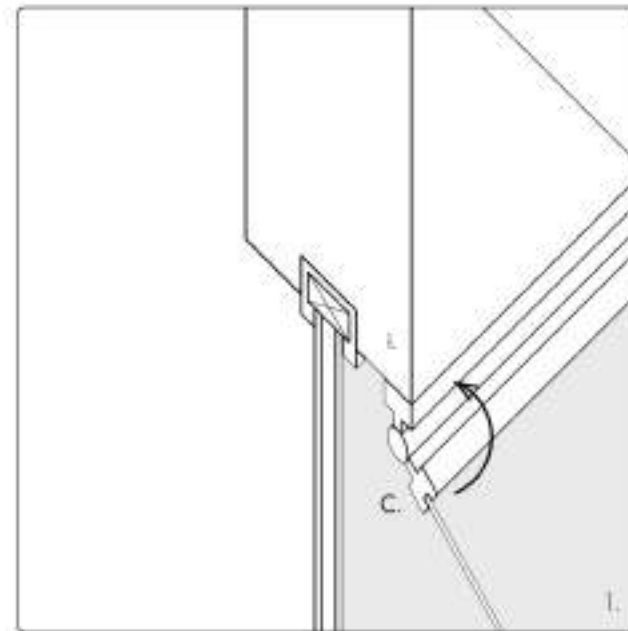
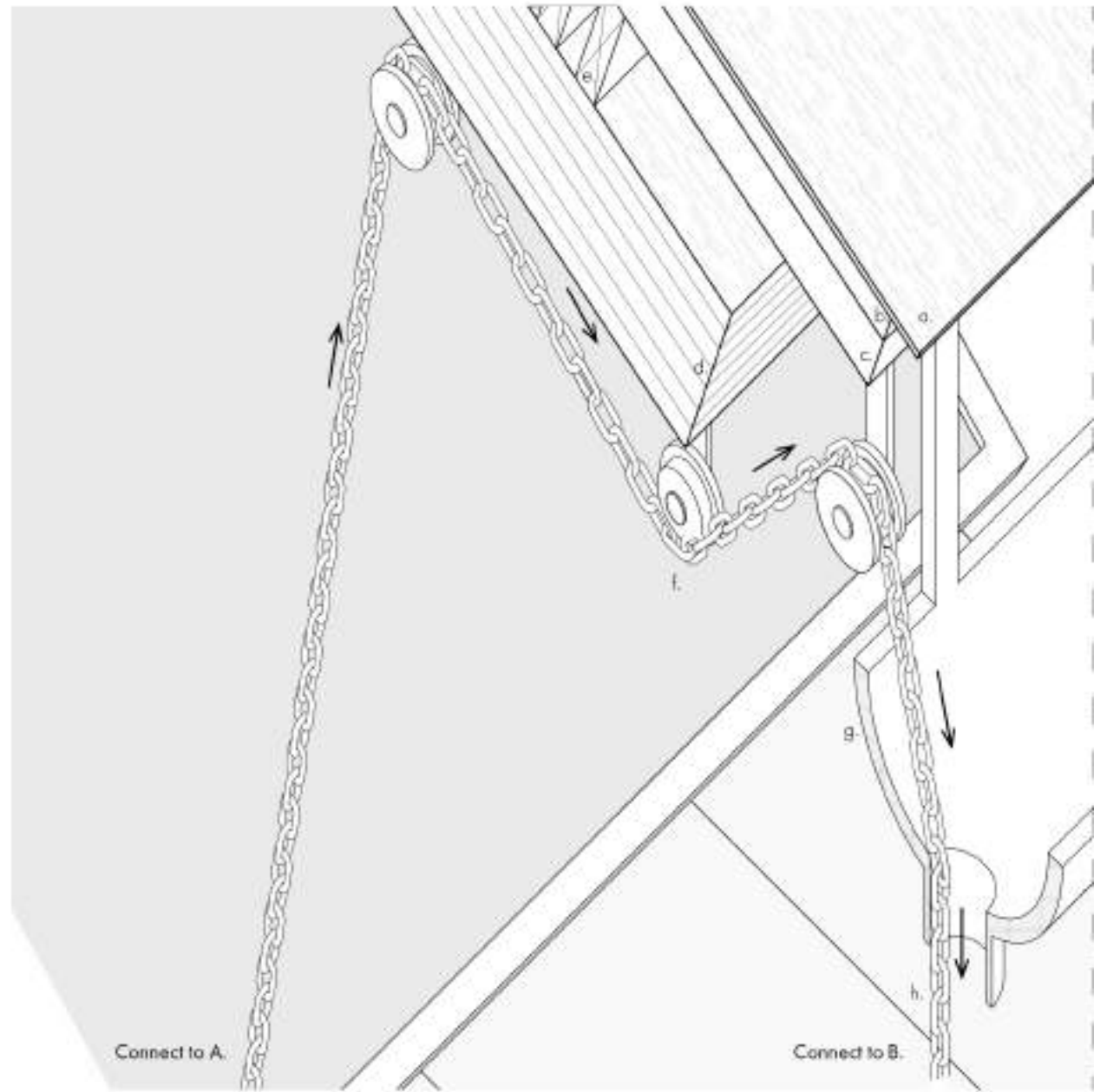
Tree:
The recording of the tree is a piece of work by the chorus of all kinds, the ones hosted by the trees. It responds to the activities of the creatures from the roots to the tip of the trees and even higher. Cricket, the rough skin of the tree, birds, and man-made engines...



Mountain:
The sound of the mountain reveals the movement of creatures passing through the body of the giant. Allow yourself to feel small and be with the rock, getting closer to the surface. Listen to the rolling stones and the stream flowing through the rocks. Walk your way through the mountain; it is a song of interaction.

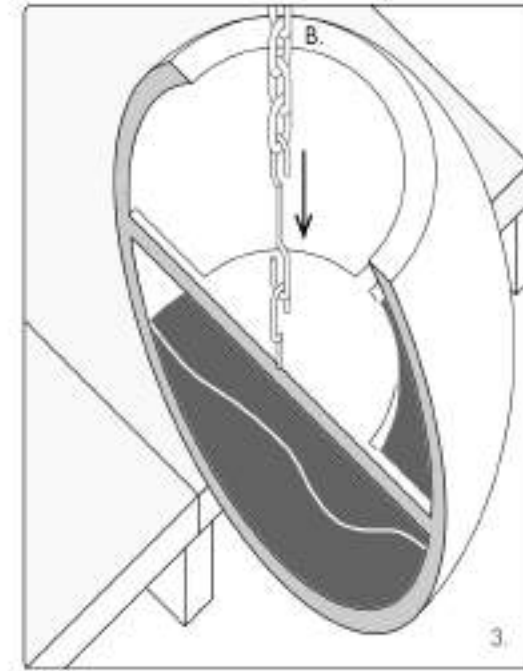


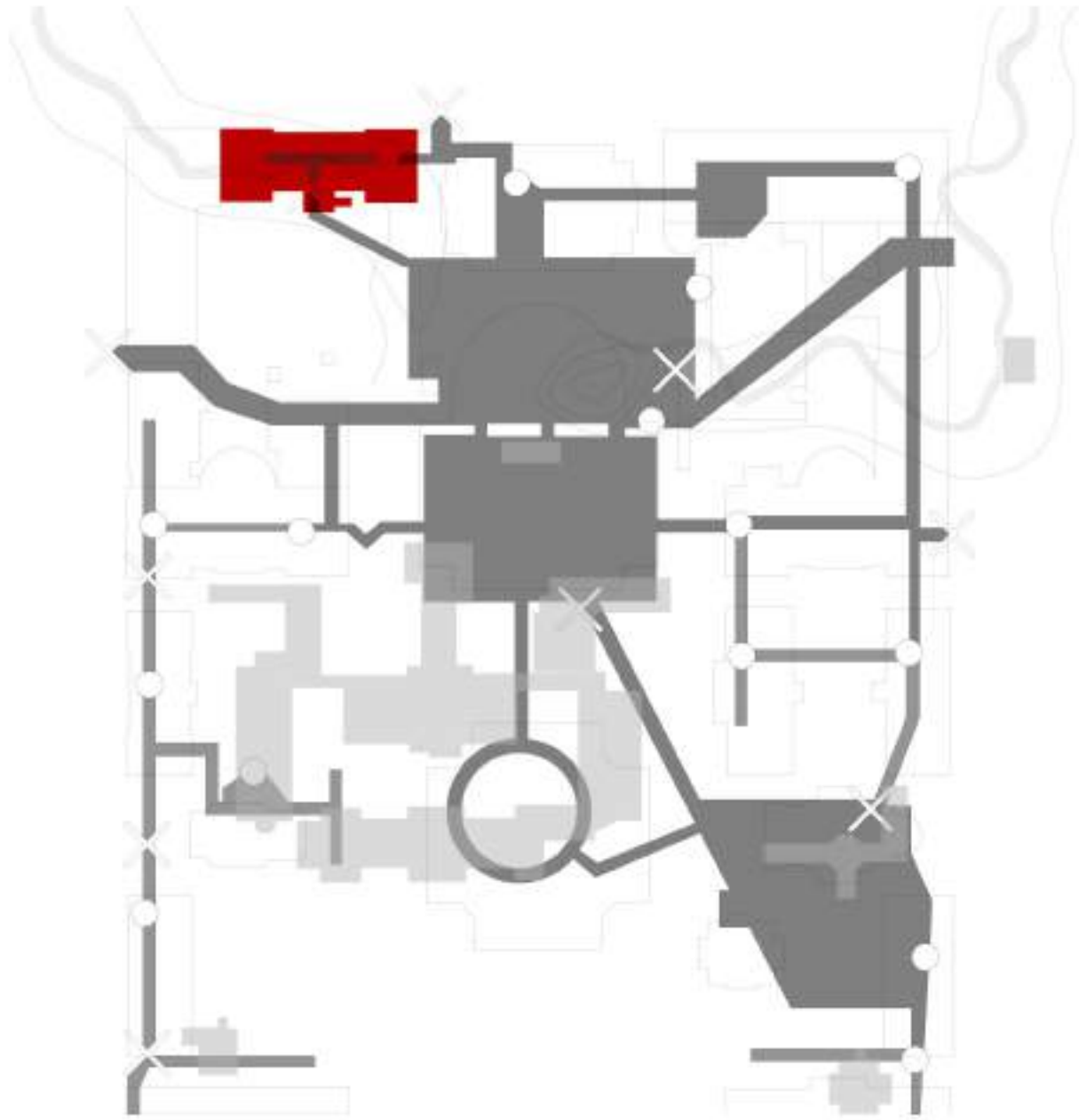
FIRST HALF OF RESEARCH: ARCHITECTURAL INTERVENTION DETAILS BASED ON THE BEACON SCORE



The pulling-system rain gutter breaks the man-made boundary. When the rain gatherer becomes heavier, the window shades will open by Mother Nature. Instead of hiding yourself inside a shell, enjoy listening to the song of nature.

- 1. Hinged Shades Connection
- 2. Rain Chain Connection to Hinged Shades
- 3. Stone Ball Rain Gatherer Detail
- a. Wood Roofing
- b. Plywood Decking
- c. Wood Truss Framing
- d. Wood Truss Framing
- e. Wood Blocks as Needed
- f. Pulling System
- g. 3/16" Metal Rain Chain
- h. D-8" PVC Pipe Rain Gutter
- i. Concrete Wall





The man-made spirit silently observes this site, entrenched in its underground realm for decades, witnessing the passage of time and recording both humane and inhumane conflicts.

HISTORICAL LAYER #01:

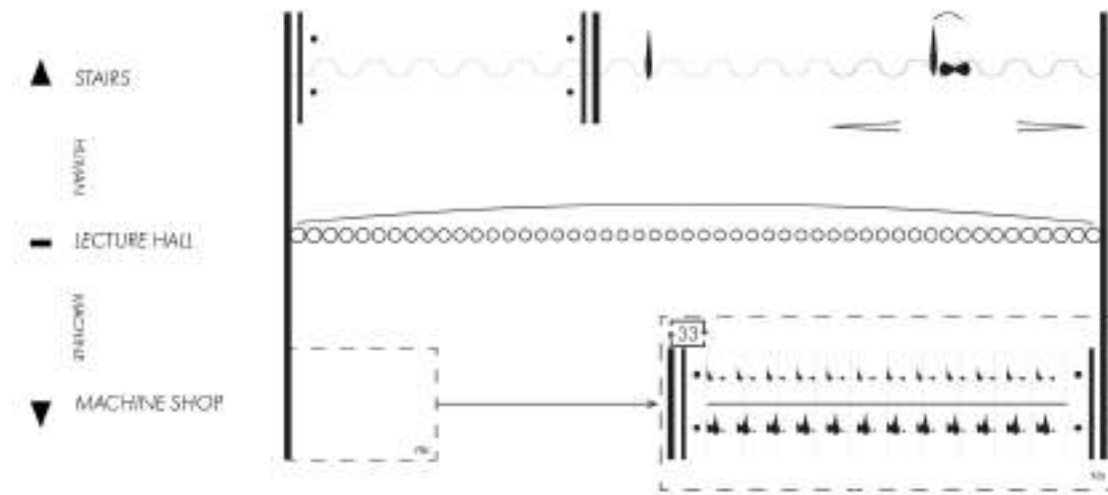
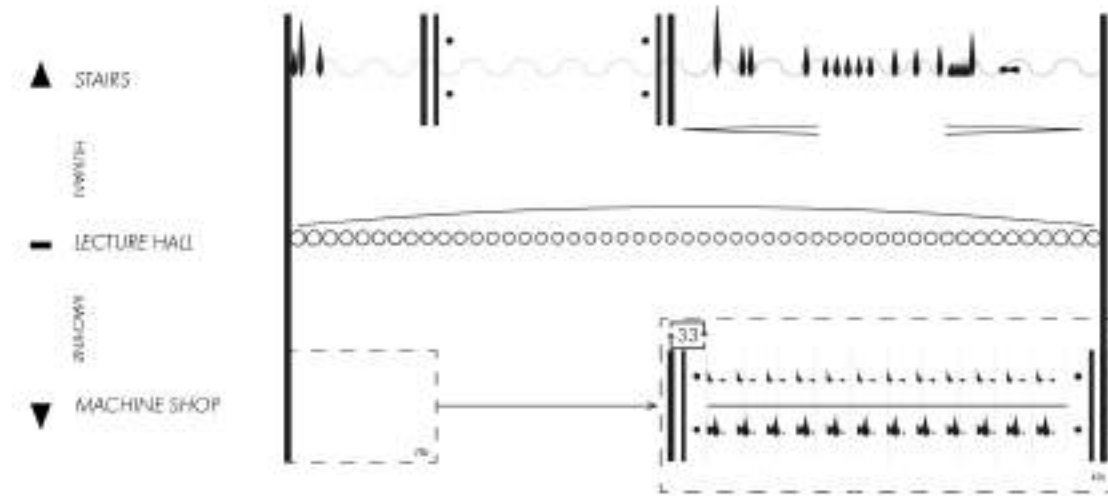
Nestled in a meadow with flowing creeks, the site boasts a rich history. In 1821, New York Hospital established the Bloomingdale Insane Asylum, providing compassionate care to patients. The tunnels, initially for patient transport, became vital infrastructure.

HISTORICAL LAYER #02:

In 1896, Columbia University moved, expanding the tunnel network for coal transport. Witnessing events like the cyclotron lab construction and Vietnam War protests, they evolved into hubs of campus activity.

HISTORICAL LAYER #03:

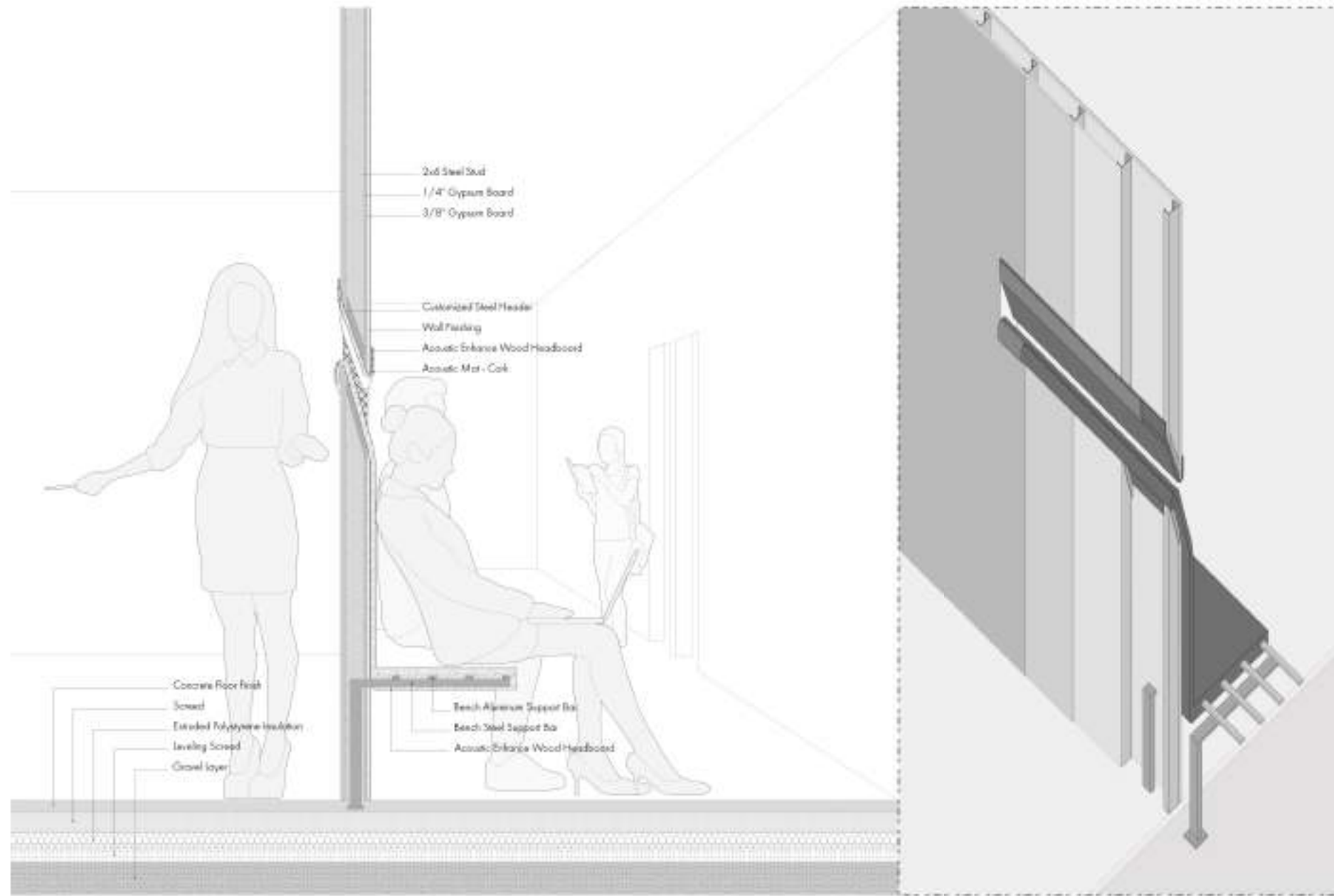
Integral to Pupin Hall's construction (1925-1927), the tunnels facilitated lab connections and transported materials during the Manhattan Project. Despite ethical dilemmas, they played a role in ending World War II, encapsulating the conflict of humane intentions amid inhumane actions.



In my field recording exploration, I meticulously observed the interplay between human activities and the mechanical rhythms resonating throughout the architectural space. Delving into the sectional perspective, I discerned a symphony of sounds, each distinct yet harmoniously woven together, portraying a vivid tableau of simultaneous occurrences. The dynamic flux of human movement juxtaposed against the monotonous cadence of machinery created a compelling contrast, emphasizing their spatial proximity and emotional distance.

This sonic exploration prompted a deeper reflection on the architectural ethos, where notions of humanity and mechanization, transparency and hierarchy, converge within the confines of the academic environment. It spurred me to contemplate the challenge of unraveling the veiled narratives concealed behind the physical barriers of these spaces, urging a quest for uncovering the hidden truths obscured within their walls.

TUNNEL 'VISION' WALL INTERVENTION SECTION & AXONOMETRIC DETAILS



Continuing with the theme of openness and transparency established in the initial research phase, the intervention delves deep into the tunnel system, drawing metaphorical parallels with the academic structure.

It boldly challenges traditional hierarchical norms, seamlessly fusing public and private realms into a cohesive whole. Central to this transformation is a meticulously crafted sonic bench integrated into a lecture hall wall, meticulously engineered to optimize acoustic performance.

Designed with careful consideration, the bench's configuration ensures accessibility and comfort, aligning with mouth level on one side and smoothly transitioning to ear level on the other when seated.

Constructed from acoustically enhanced wood and featuring integrated cork on the drywall surface, this innovative creation facilitates active engagement with lecture content from the common area, without disrupting those within the hall. This subtle yet profound intervention redefines the educational environment as a shared commons, welcoming all who are curious and eager to participate.

05

**HARVEST HUSTLE: ROUND ROCK MARKET-
PLACE RALLY RENDEZVOUS**
RETHINKING COMMUNITY MARKET

ADVANCED ARCHITECTURE STUDIO VI
INDIVIDUAL DESIGN PROJECT
INSTRUCTOR: CHRIS CORNELIUS
ROUND ROCK, NAVAJO, AZ
SPRING 2024

Utilizing an innovative board game design, this tool seeks to enhance the Round Rock community's understanding of the mechanics behind a successful community-owned flea and trading market. Nestled on Navajo Nation land, the Round Rock community enjoys robust internal and external connections. Yet, obstacles like land ownership disputes and traffic congestion impede market access for residents. To address these challenges, this project advocates for establishing a new trading market at the Round Rock chapter house location. This initiative aims to foster and sustain community growth through a comprehensive grasp of the market dynamics.



FLEA MARKET MELTDOWN

CONFLICT & COLLABORATION
 Drink Flea Market ~~Shades~~
 BUT Vendors Make Do

1. The flea market is a place where vendors sell their goods. It is a place where vendors can make money and where customers can find what they need. The flea market is a place where vendors and customers meet. It is a place where vendors can sell their goods and where customers can buy what they need. The flea market is a place where vendors and customers meet. It is a place where vendors can sell their goods and where customers can buy what they need.



2. The flea market is a place where vendors sell their goods. It is a place where vendors can make money and where customers can find what they need. The flea market is a place where vendors and customers meet. It is a place where vendors can sell their goods and where customers can buy what they need. The flea market is a place where vendors and customers meet. It is a place where vendors can sell their goods and where customers can buy what they need.

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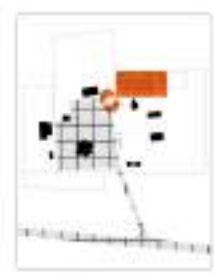
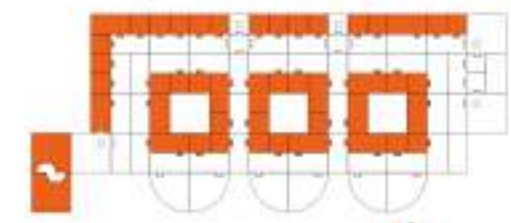
4. The flea market is a place where vendors sell their goods. It is a place where vendors can make money and where customers can find what they need. The flea market is a place where vendors and customers meet. It is a place where vendors can sell their goods and where customers can buy what they need. The flea market is a place where vendors and customers meet. It is a place where vendors can sell their goods and where customers can buy what they need.

36° 30' 35.892" N 109° 28' 26.724" W
 36° 19' 38.1" N 109° 15' 6.408" W
 36° 6' 4.248" N 109° 35' 6.648" W

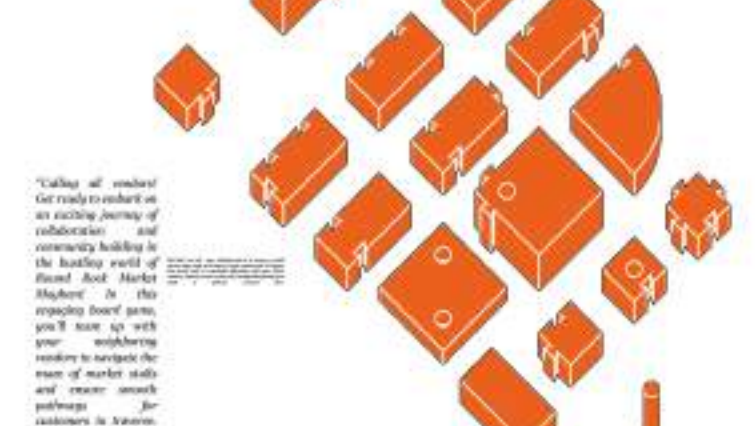


Harvest Hustle: Round Rock Marketplace Rally Rendezvous

This board game is your ticket to mastering and negotiating with your vendor pals.
 Dive deep into the roads of Round Rock's diverse customer base while juggling the demands of your fellow vendors.
 Especially in this game, you'll choose the path of doom! Get ready to unite, strategize, and triumph together!



idea? sometimes it doesn't have to be time to figure it out



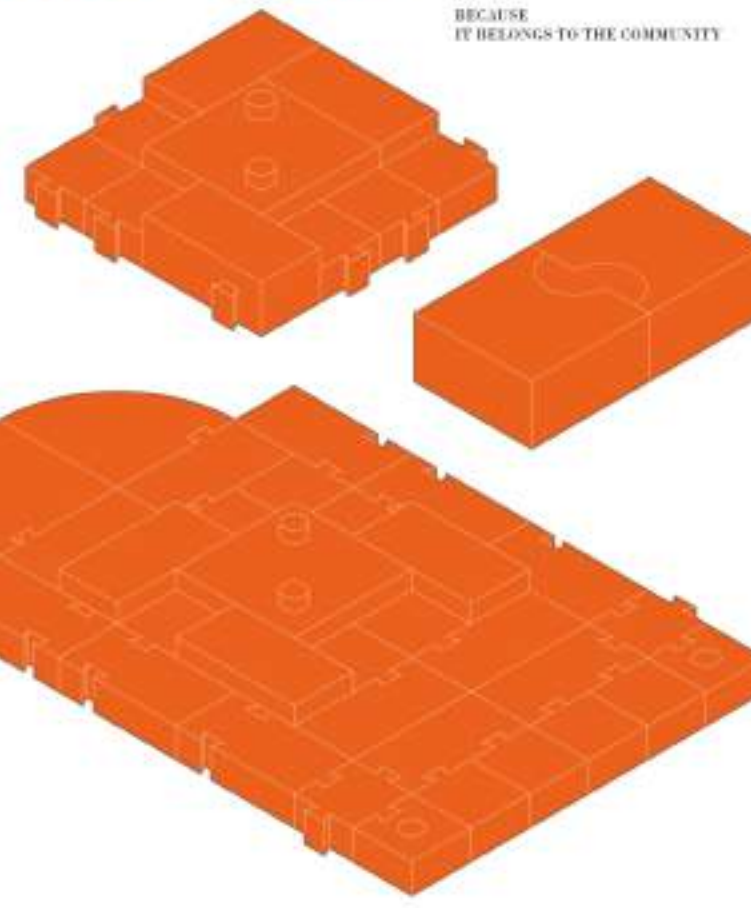
- Small vendor #01 x34
- Medium vendor #02 x10
- Large vendor #03 x4
- Public road #04 x8
- Private road #05 x6
- Loading road #06 x8
- Central service zone #07 x4
- Special piece #08 x6
- 1 point x2
- 2 points x8
- Public road #02 x6
- Private road #02 x6
- Loading zone #02 x8
- Service zone #04 x4
- Special piece #02 x4
- 2 points x8
- Public road #03 x18
- Utility zone #05 x6
- Special piece #03 x4

Harvest Hustle: Round Rock Marketplace Rally Rendezvous

RULES RULES RULES

IS THERE ANY SHOULD THERE BE ANY?
 THERE ARE SOME BUT IT'S FREE... IT'S OPEN... IT'S UP TO Y'ALL
 BECAUSE IT BELONGS TO THE COMMUNITY

- 1. Vendor Placement:** Small and Medium vendors can be placed next to each other but must connect with Roads. Big vendors can be placed freely but must be positioned on the outer edge of the market puzzle.
- 2. Road Placement:** Roads can be placed next to each other, but Public Roads can only exist in pairs. Loading Roads can only exist between the Loading Zone and vendors. All roads should be organized alongside vendors under the supervision of the console.
- 3. Central Service Zones:** Central Service Zones can only be established when vendors create the Harmony Square by strategically placing their pieces. Achieving the Harmony Square rewards participating vendors with two points.
- 4. Utility Zones:** Vendors are encouraged to collaborate to create Utility Zones. Doing so rewards participating vendors with two points.
- 5. Trading Zones:** Big vendors that share a Trading Zone will be rewarded with one point.



The rules foster strategic thinking and collaboration. Players strategically place vendors and roads, maintaining balance and challenge. Collaboration is essential for success, ensuring an engaging and rewarding gameplay experience for all.



*In the heart of Navajo Nation's sacred land,
Where whispers of reverence for food command,
The earth's bounty cherished, every grain,
Nurtured by hands that feel no strain.*

*In this realm where artisans thrive and roam,
Creativity blossoms, a gem-filled tome,
For each stone and jewel, a story untold,
Crafted into treasures, more precious than gold.*

*From the depths of the earth, treasures arise,
In skilled hands, their beauty never dies,
For here, among the Navajo's proud arts,
Every piece, a testament to ancient hearts.*





*In Navajo's sacred realm, tradition whispers soft and low,
 Reverence for food entwines with every prayer's gentle flow.
 With hearts aglow with love, they nurture the earth's embrace,
 Planting seeds of sustenance, their hands interlace.*

*With patience as their guide, they watch the crops ascend,
 A testament to harmony between land and soul, blend.
 As harvest time draws near, they gather 'round the flame,
 Sharing their abundance, lifting spirits without shame.*

*Through trade and giving, they weave connections true,
 In a dance of reciprocity, where dreams come into view.
 In Navajo's sacred land, harmony takes its throne,
 A symphony of giving, in every heart, it's known.*



In Navajo's eyes, nature's wonders unfold,
Each creature, each plant, a story to be told.
For animals are brothers, sisters too,
In harmony with humans, their spirits imbue.

With reverence and respect, they tread the land,
Nature's teachings guiding every hand.
In art and in work, the echoes resound,
Inspired by the earth, where beauty is found.

Their beliefs intertwined with the land,
A sacred bond, forever hand in hand.
In Navajo's heart, nature's song is sung,
A symphony of life, forever young.☒



06

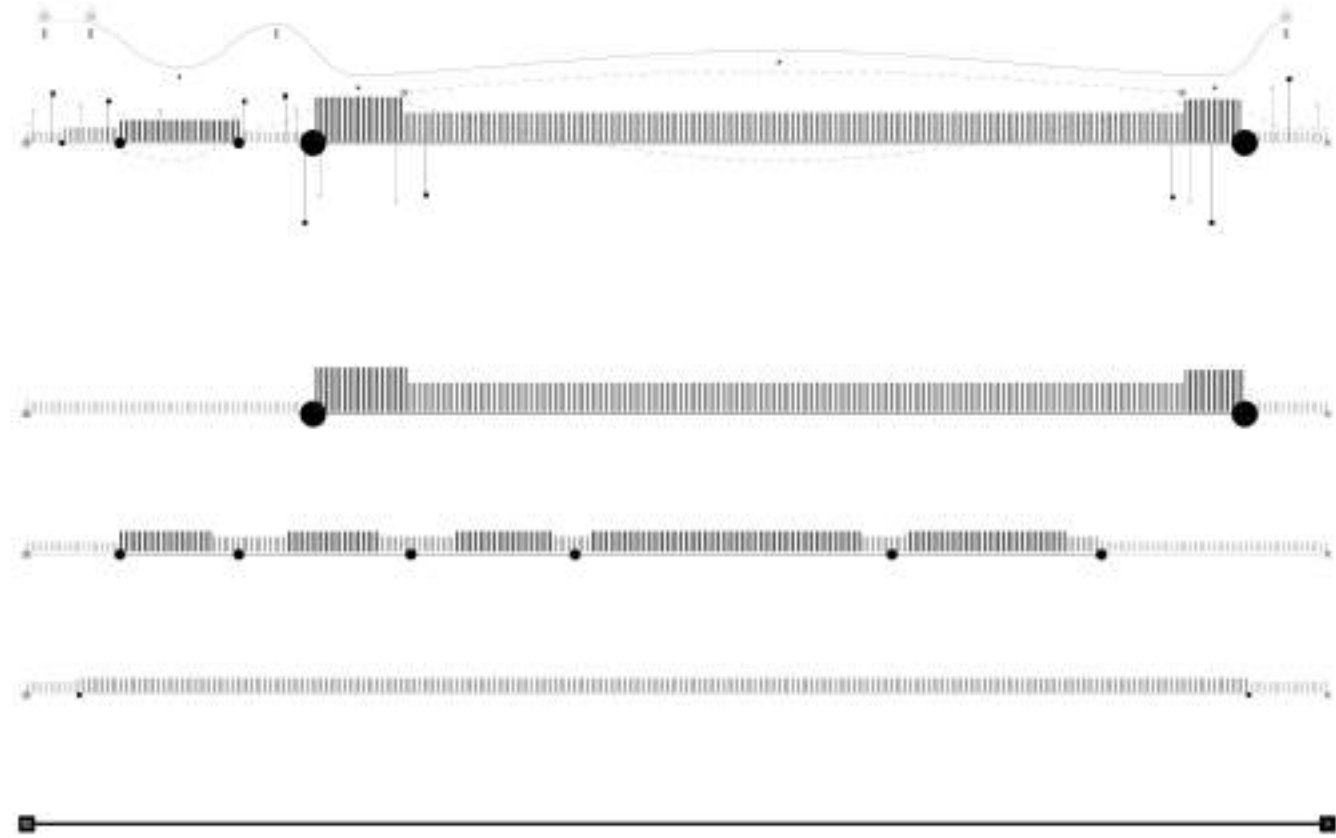
SENSCAPE

SENSORY URBAN GETAWAY SPACES

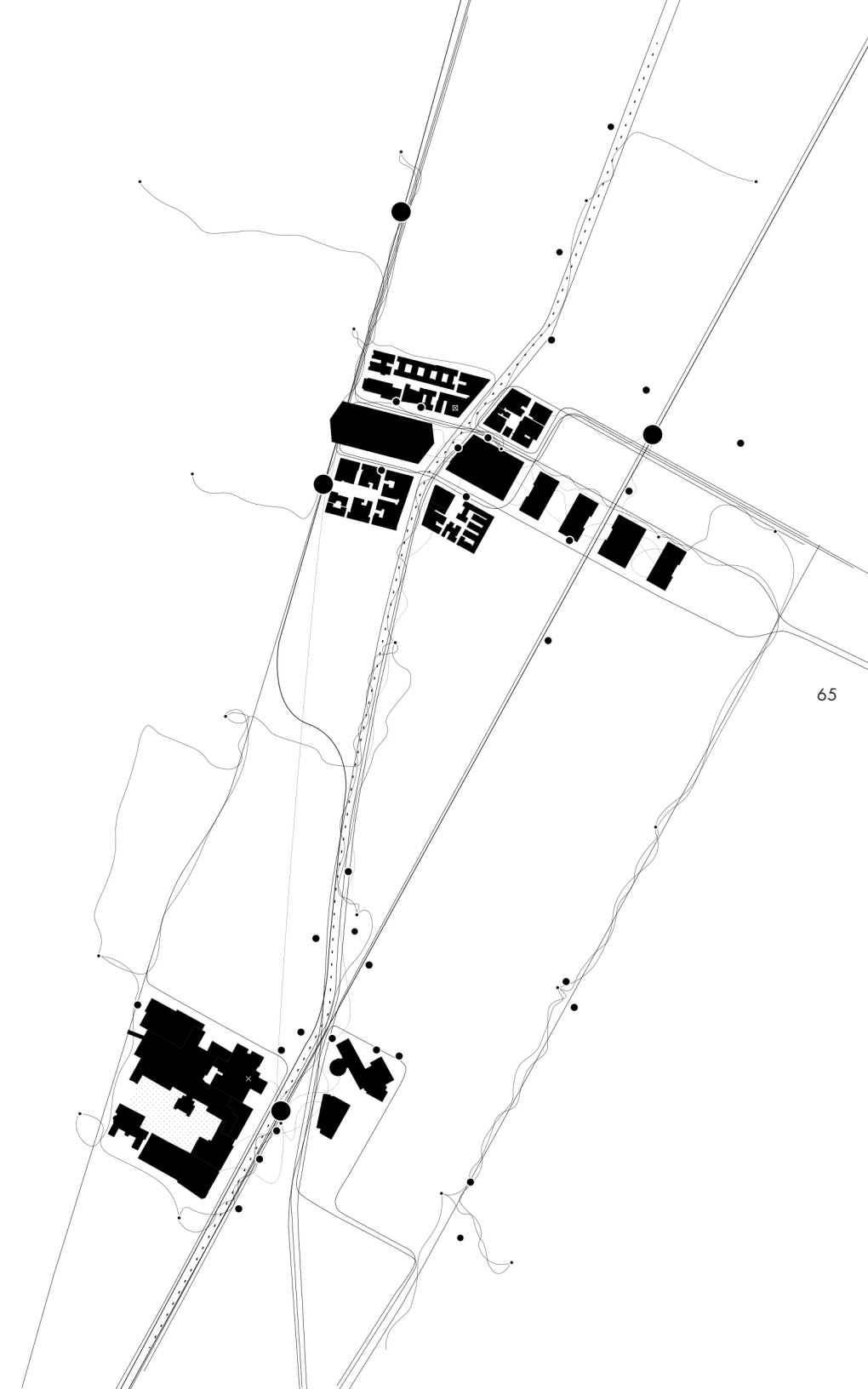
CORE ARCHITECTURE STUDIO I
INDIVIDUAL DESIGN PROJECT
INSTRUCTOR: MIKU DIXIT
WASHINGTON HEIGHTS, NEW YORK CITY, NY
FALL 2021

Senscape is a visionary project situated at Mitchel Square, near 168th St in Washington Heights. Our aim is to craft a sensory retreat amidst the hustle and bustle of urban life. Through a comprehensive analysis of the rhythms of daily life in Washington Heights, we have uncovered profound connections between the human body and its ambient environment. Factors such as light, sound, scent, and air quality all exert a tangible influence on our well-being. Senscape offers a sanctuary, an oasis within the city, where individuals can momentarily escape the demands of their busy lives. It serves as a multifunctional space—a playground, a gathering spot, a reading nook, or simply a place to unwind. Whether alone or in the company of others, Senscape invites you to be yourself, immersed in an urban enclave that feels worlds away from the city's hustle and bustle.

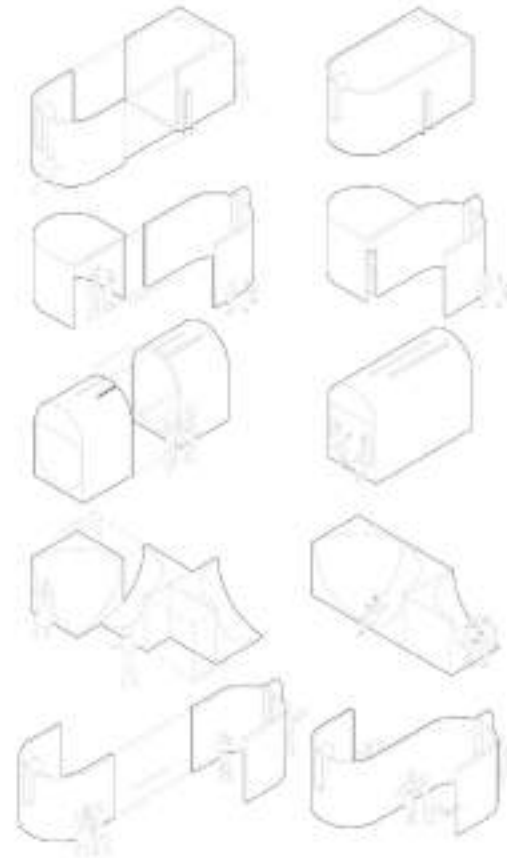
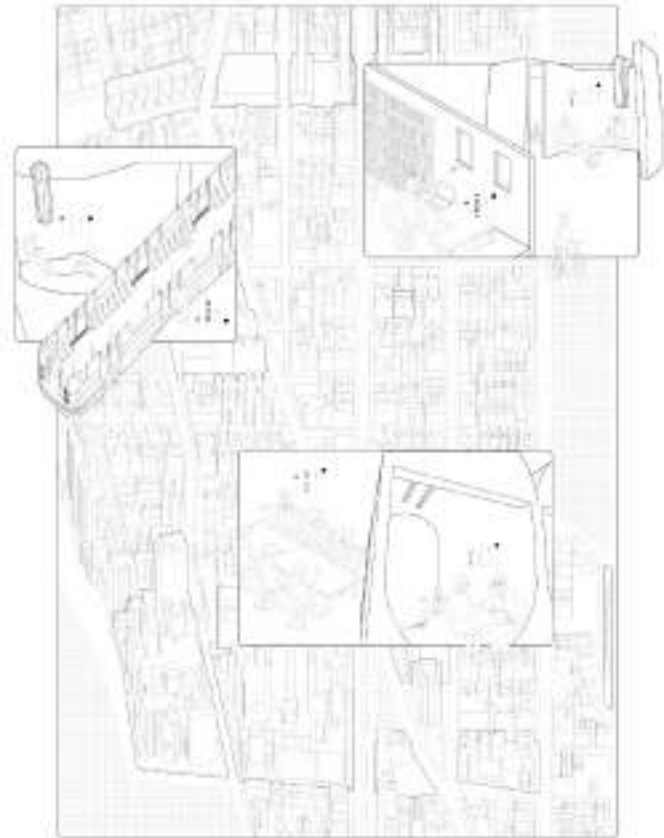




- ▣ Starting Point: Residential
- ✕ Destination: Columbia Nursing
- Broadway
- Parks
- Subway Stations
- Bus Stops
- CityBike Spots
- 1 Travel With Bike
- 2 Travel With Bus
- 3 Travel With Subway
- 4 Travel With Compositive Methods
- Air Freshness
- Lighting
- ▨ Transportation Noise
- Ambient Temperature
- Air Exchange Rate



In the heart of Washington Heights, bodies are constantly bombarded with stimuli. Whether on their daily commute to work or heading to campus, the relentless traffic, cacophony of sounds, array of smells, and sweltering heat create a sensory overload. Through meticulous mapping, our sensory analysis reveals how the human body processes signals from the environment and reacts to varying conditions, both physically and mentally.



MOSS
 LIGHT: DARK/DIM
 SMELL: EARTH/FRESH
 ACOUSTIC: QUIET
 TEMPERATURE: COOL

MOST MOSS ROOM, A QUIET SPACE FOR SELF-REFLECTION AND MEDITATION. AN EARTH AND PLANT REFRESHING SPACE ALLOWS HUMANS TO EMBED THEMSELVES INTO THE NATURE.



PEEK
 LIGHT: DARK/STRONG
 SMELL: WOOD
 ACOUSTIC: QUIET
 TEMPERATURE: NATURE

A DARK ROOM WITH A PEEK OF LIGHT COMING FROM THE OUTSIDE OR OTHER ROOMS, A CONNECTION SPACE, ALLOWS SOCIAL CONNECTION TO HAPPENED.



STEAM
 LIGHT: DARK/AMBIENT
 SMELL: EARTH/FIRE
 ACOUSTIC: QUIET
 TEMPERATURE: HOT

LIKE A SAUNA HOUSE, THIS SENSORY SPACE CREATES A WARM AMBIENT TEMPERATURE BUT WITH A COOL STONE SITTING SURFACE. A MIX OF CHANGING TEMPERATURES ALLOWS USERS TO RELAX, AND BIND WITH THE CREATED NATURAL ENVIRONMENT.



FLOAT
 LIGHT: DARK/DIM
 SMELL: FRESH
 ACOUSTIC: QUIET
 TEMPERATURE: COOL/WARM

SOFT SURFACE CREATES A FLOATING FEELING FOR THE USERS, SIMULATES A RELAXING ENVIRONMENT IN WHICH PEOPLE WON'T BE DISTURBED.

COMMONS

(n.)

within the architectural narrative, the essence of commons unfolds—a testament to the pivotal role of shared spaces. These meticulously designed arenas catalyze a sense of community, where social threads intertwine seamlessly within the constructed milieu.