PORTFOLIO

20 | 20
20 | 25

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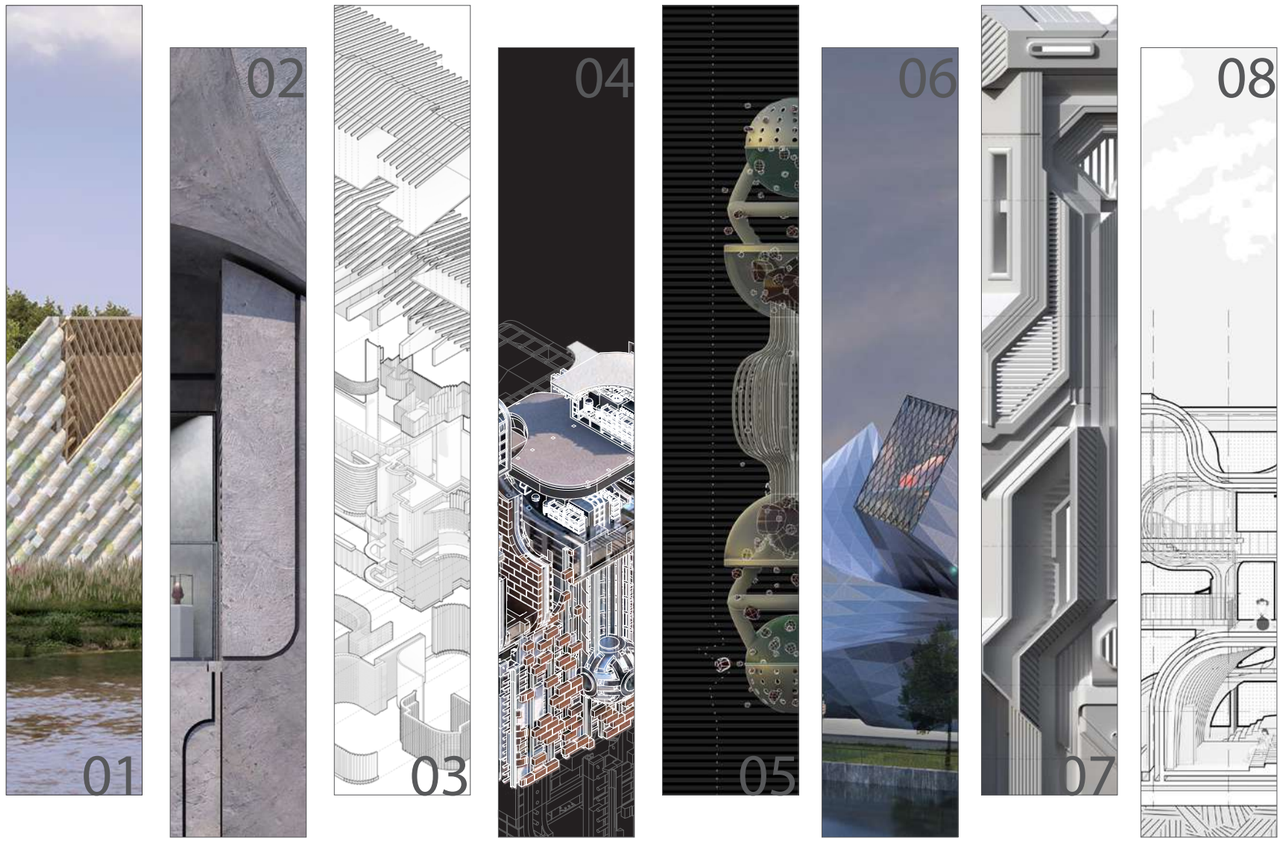
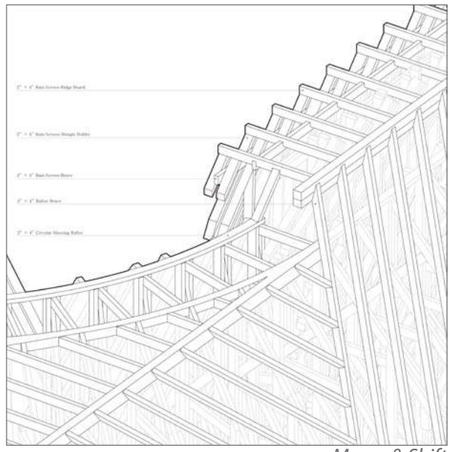
Academic



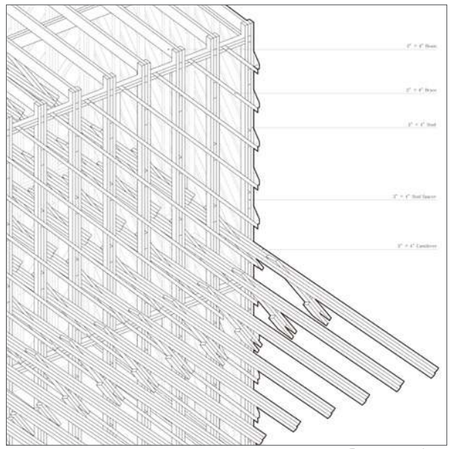
01. Thickened Envelope

2025
Summer 2025
_2025.06 ~ 2025.08
_Academic
_Professor : Nate Hume
_Teamwork with Cheolwon Yeom
_Boat House

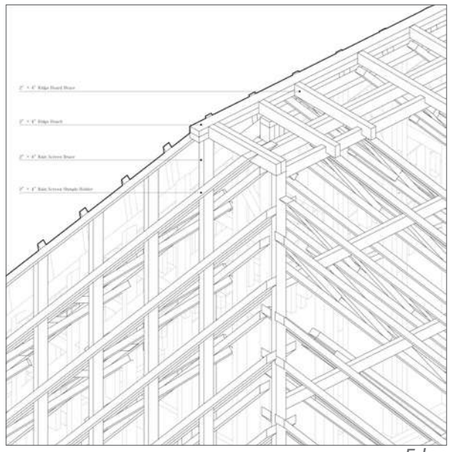
This project explores the geometric flow generated by thickening the envelope of a gable-form boathouse. Rooted in the verticality of traditional wood framing, the diagonal brace becomes the driver of transformation. Instead of thickening along the vertical structure, extending the diagonals produces new flows that shift or continue as they meet the original envelope. These thickened geometries create layered transitions between inside and outside, forming semi-outdoor spaces for boat drying and enhancing the spatial quality of direct interaction with the water.



Merge & Shift

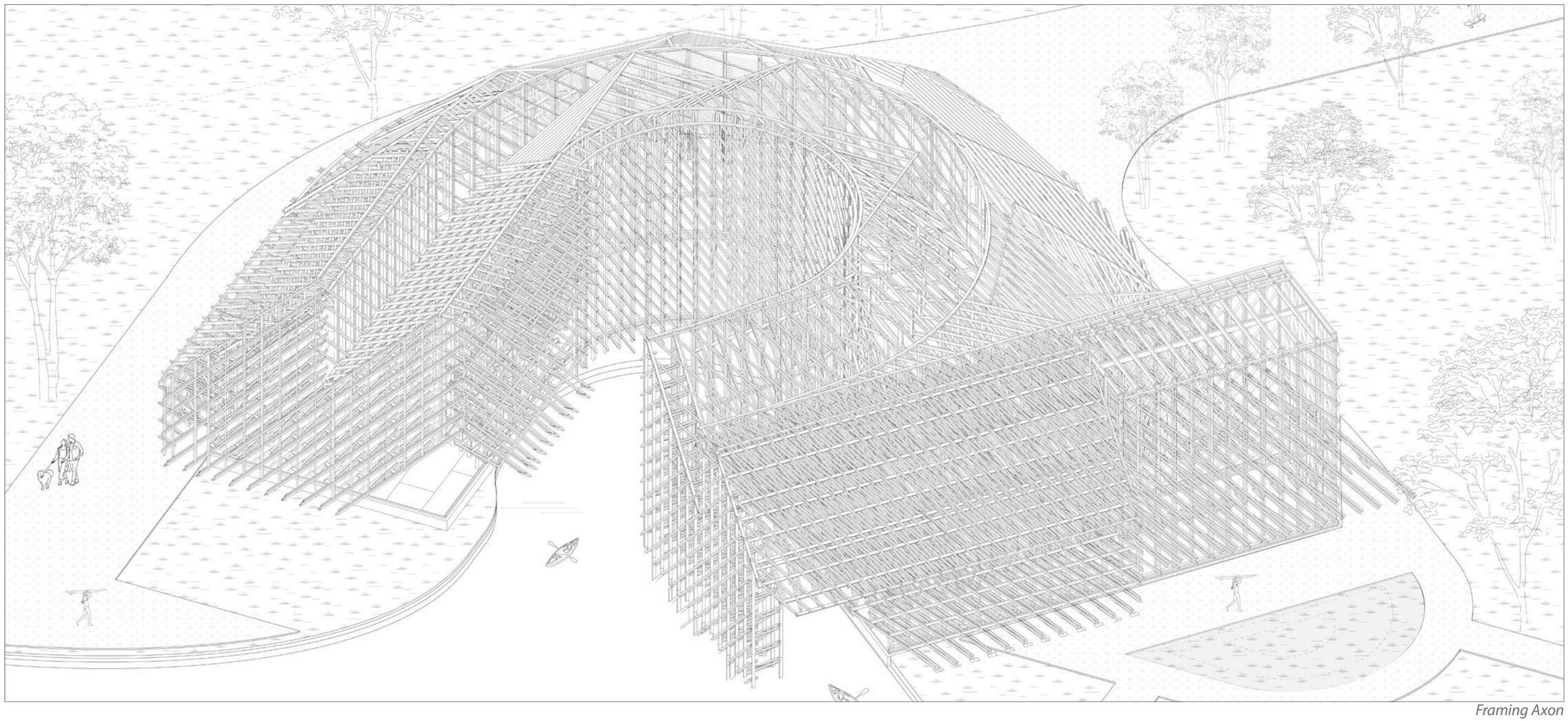


Penetrating



Edge

The wooden structure of this boathouse, where diagonal bracings wrap around a softened, circular sweep of saw-tooth gables, departs from the typical vertical framing system. This configuration gives users a renewed sense of space and depth, while the shifting angles of the diagonals create layered views, unexpected shadows, and moments of visual passage that continuously reshape the spatial experience.



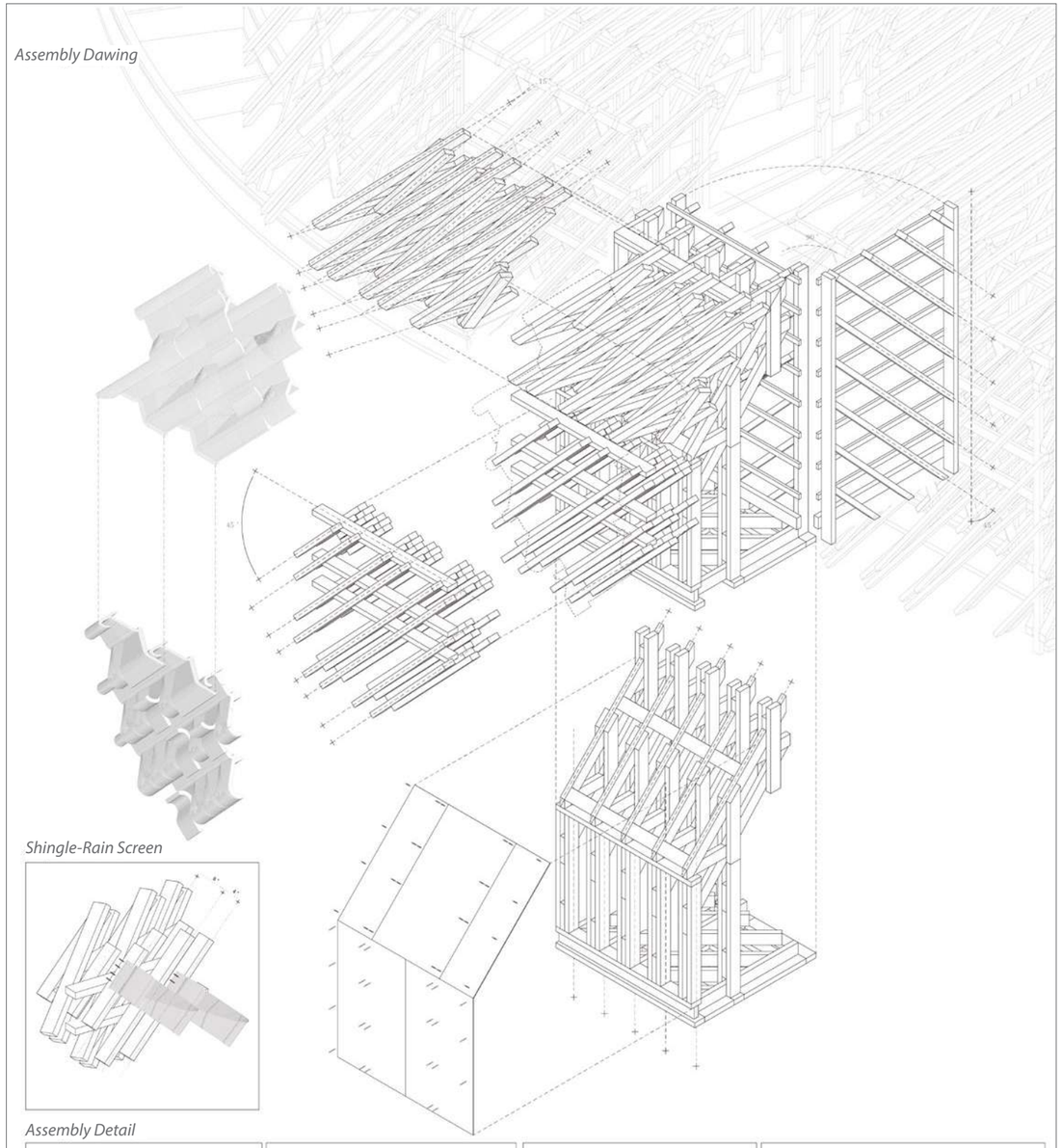
Framing Axon

Interior Render

The diagonal bracing not only provides an aesthetic effect from the exterior but also generates unique spatial experiences inside. As the external braces thicken and extend inward, the timber members transform into racks for storing boats. Meanwhile, the circular rotation of the gable truss members creates intricate ceiling details, where light diffused through the polycarbonate sheathing produces a soft and dynamic atmosphere.

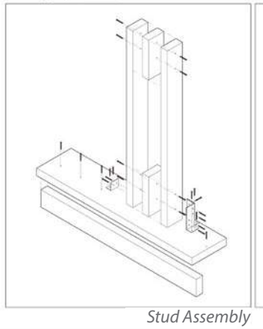
Framing Axon

Assembly Dawing

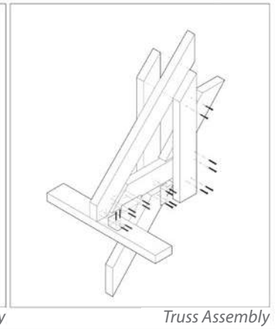


Shingle-Rain Screen

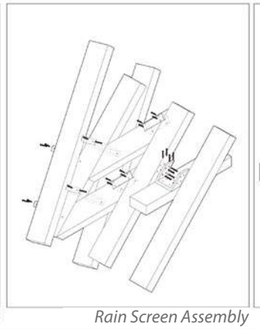
Assembly Detail



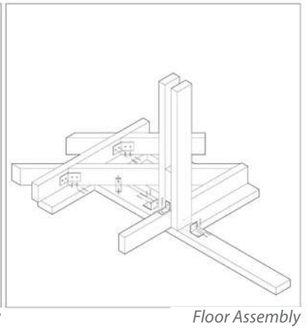
Stud Assembly



Truss Assembly



Rain Screen Assembly



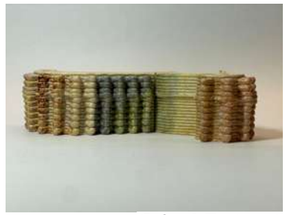
Floor Assembly

Framing Front

Framing Side 1

Framing Side 2

6 ft(l) x 6 ft(w) x 8 ft(h)_Final Mock-up


Color & Texture 1


Color & Texture 2


Color & Texture 3


Color & Texture 4


Color & Texture 5


Color & Texture 6


Color & Texture 7


Color & Texture 8


Color & Texture 9


Single color


Color combination 1

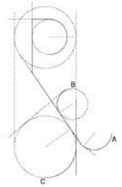

Color combina-

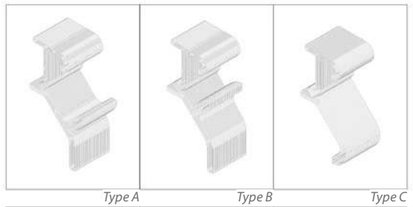

Color Combination 3

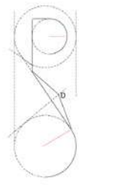

Shingle Composition 1

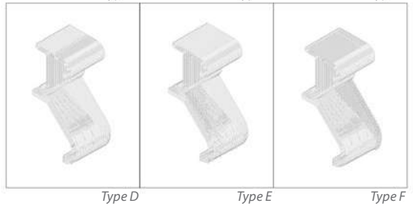

Shingle Composition 2

Shingle Module

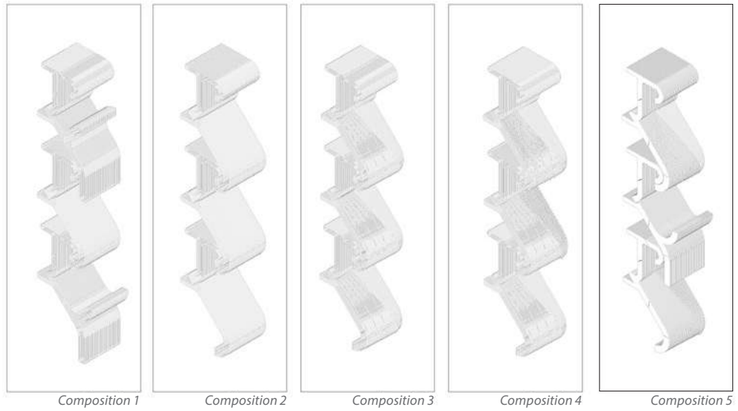



Type A Type B Type C




Type D Type E Type F

Vertical Composition

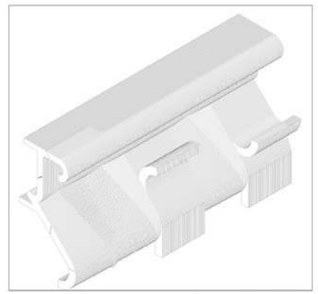

Composition 1 Composition 2 Composition 3 Composition 4 Composition 5

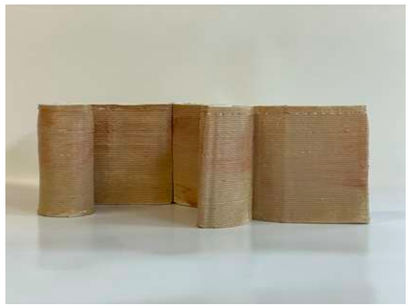
Horizontal Composition

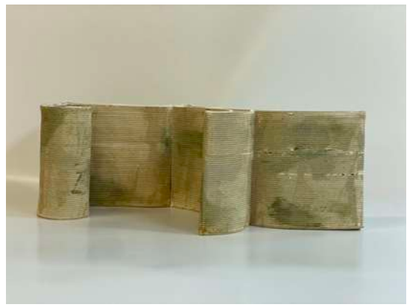

Composition A-B


Composition A-B-C


Composition E-F


Composition A-B-E-F


Type A

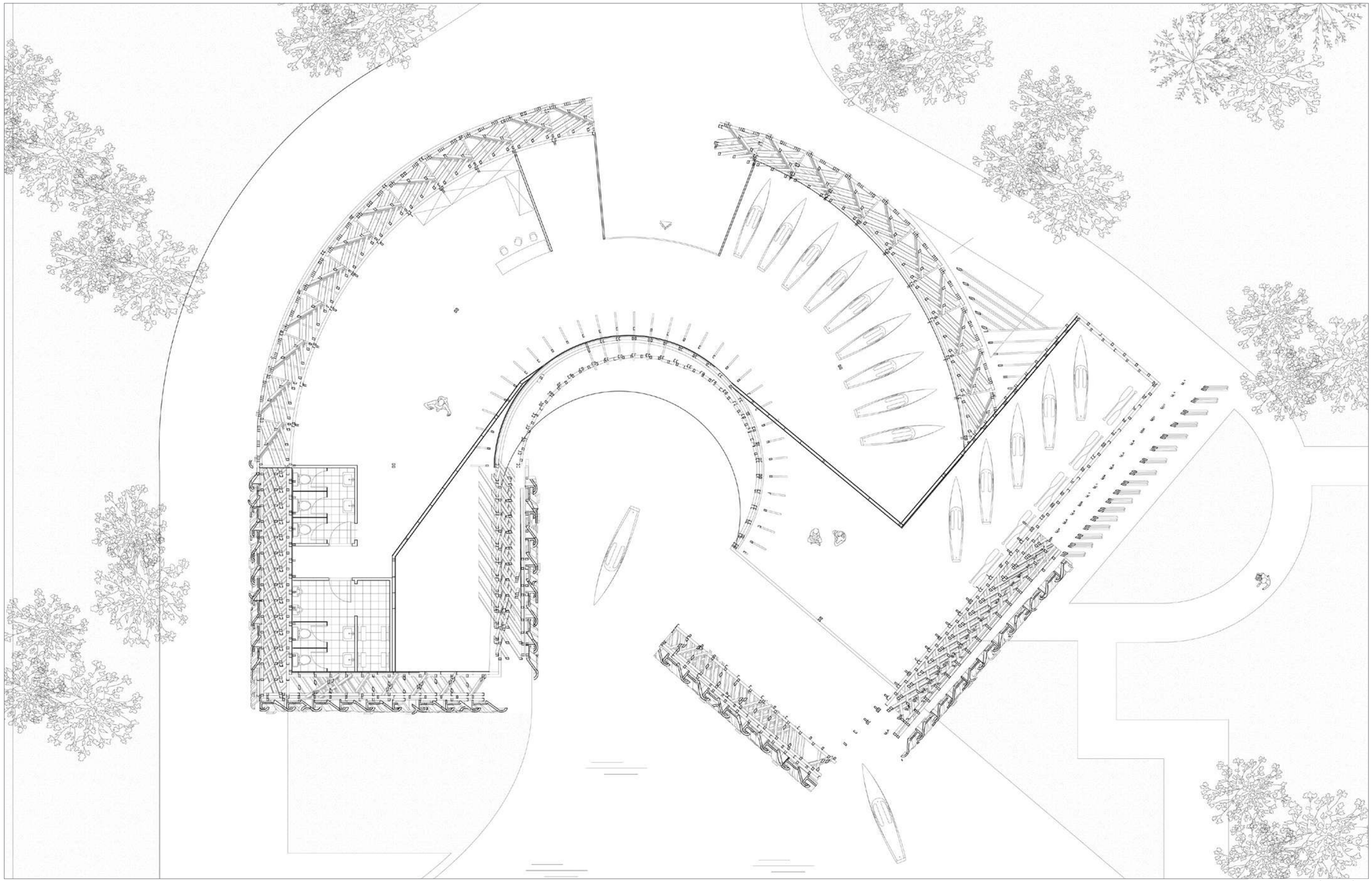

Type B


Type E


Texture Continuity


Overlapping


Shingle Composition



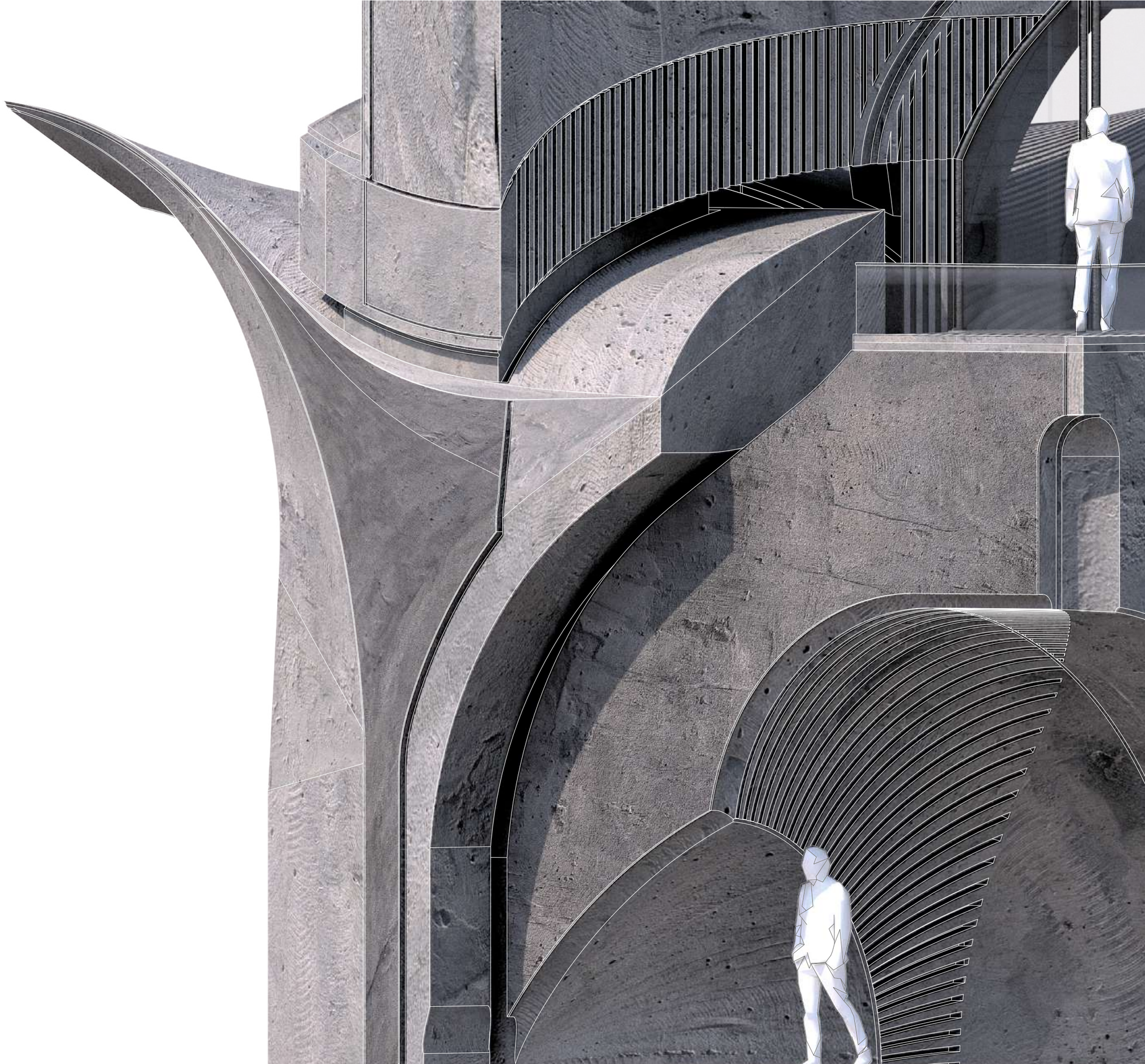
Floor Plan

Section Perspective

02. Carved-In

2025
Spring 2025
_2025.02 ~ 2025.05
_Academic
_Professor : Hina Jamelle
_Teamwork with Cheolwon Yeom
_Islamic Museum

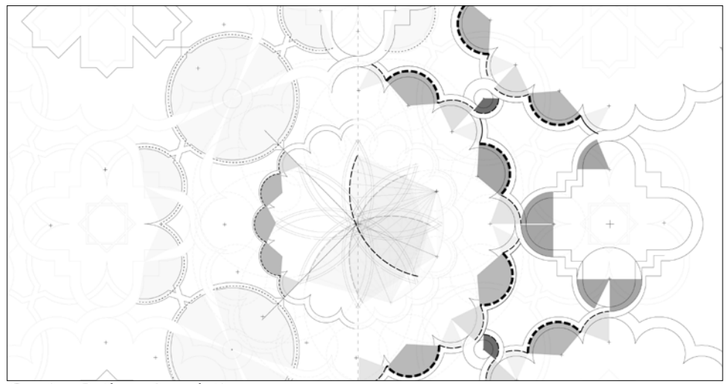
A defining aspect of the arabesque work is its intricate **carving**, which operates as both ornament and structure. Though planar, stucco carvings of varying depths and angles create a layered play of light and shadow, enriching perception beyond its flatness. We translate this principle into architecture by using carved surfaces as a design strategy that shapes spatial articulation. Variations in depth and orientation generate a multi-layered composition where materiality and void interact, reinforcing the relationship between ornament and structure.



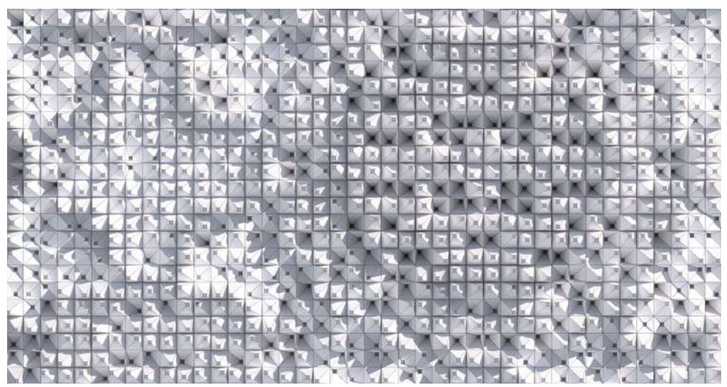
The first of the three vertically arranged images on the left is the arabesque work that is the basis of this project, a wall motif carved on one of the walls of the Court of Lions in the Alhambra palace in Granada, Spain. The next diagram is a diagram created by analyzing the geometry of this motif and finding rules for **carving** rythm and angulation within this motif. For the last diagram, the original arabesque work were used in the Midjourney program to create the three middle AI images below, and the **Carving** Depth Variation and Volume parts were extracted from the three images created here to create the Final AI Image.

In the final AI image, the orientation and depth of **carving** give different feelings. Carved surfaces with different directions meet with surfaces and points to create a dynamic and different sense of space. This process became the foundation for the detail model.

Original Arabesque Work



Carving Rythm_Angulation

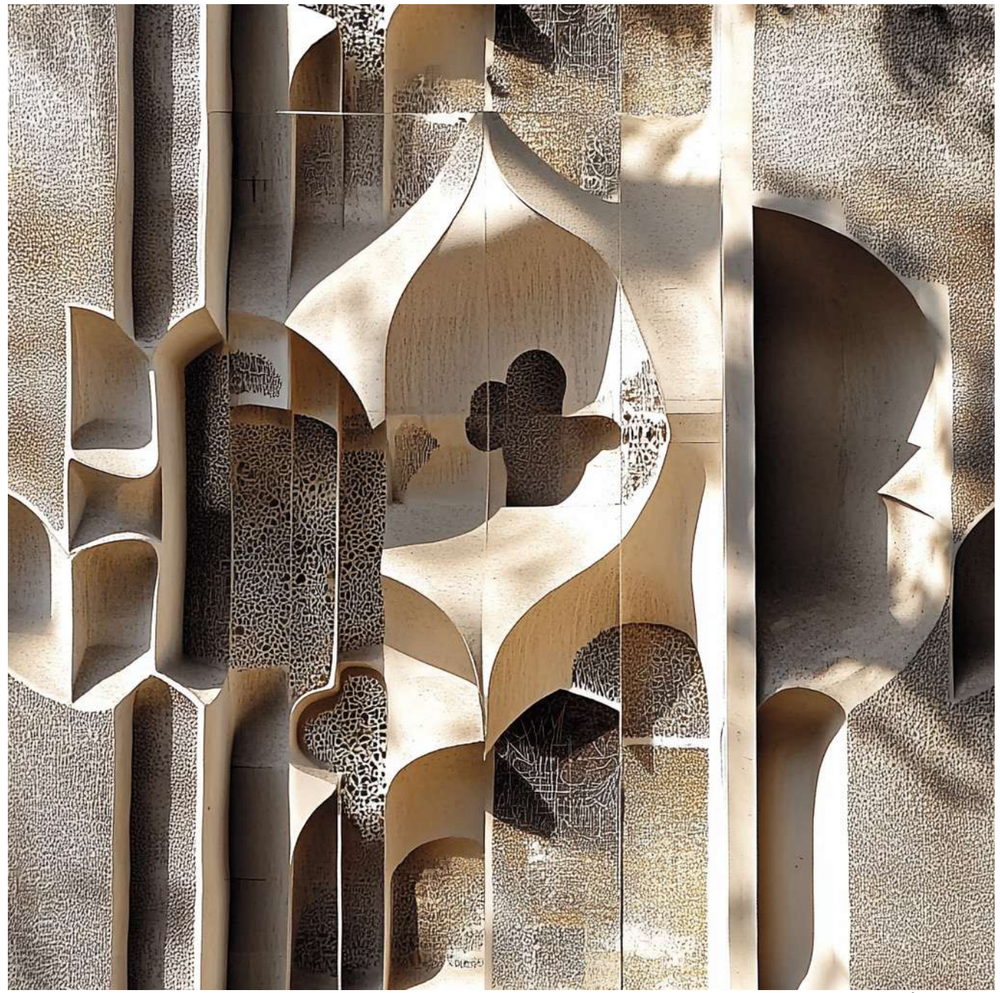


Carving Depth

AI Image(Depth Variations)

AI Image(Carving Volume)

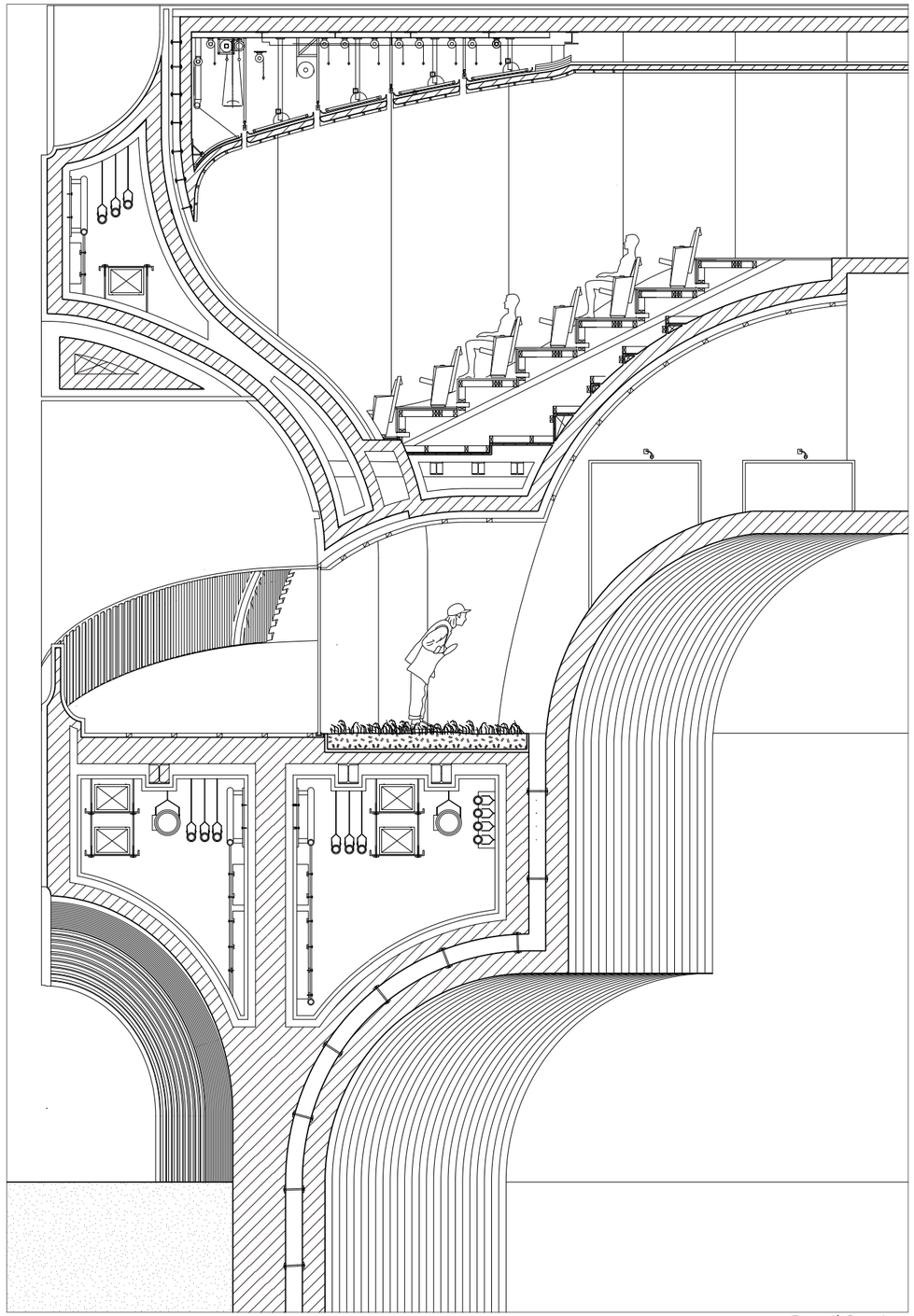
AI Image(depth with volumes)



Final AI Image

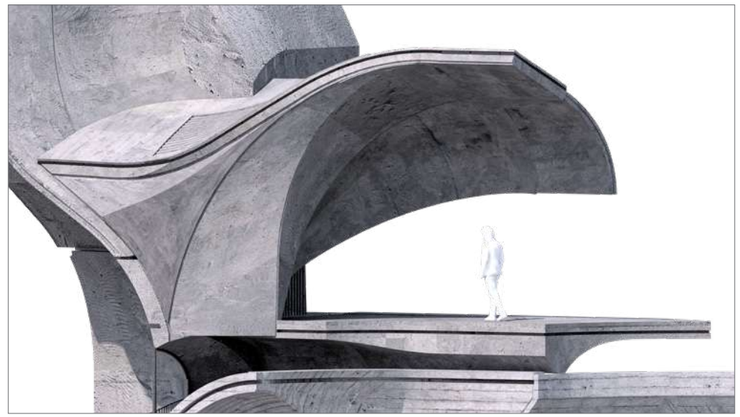
Detail Modeling

3D Printed Model_Mid-Term



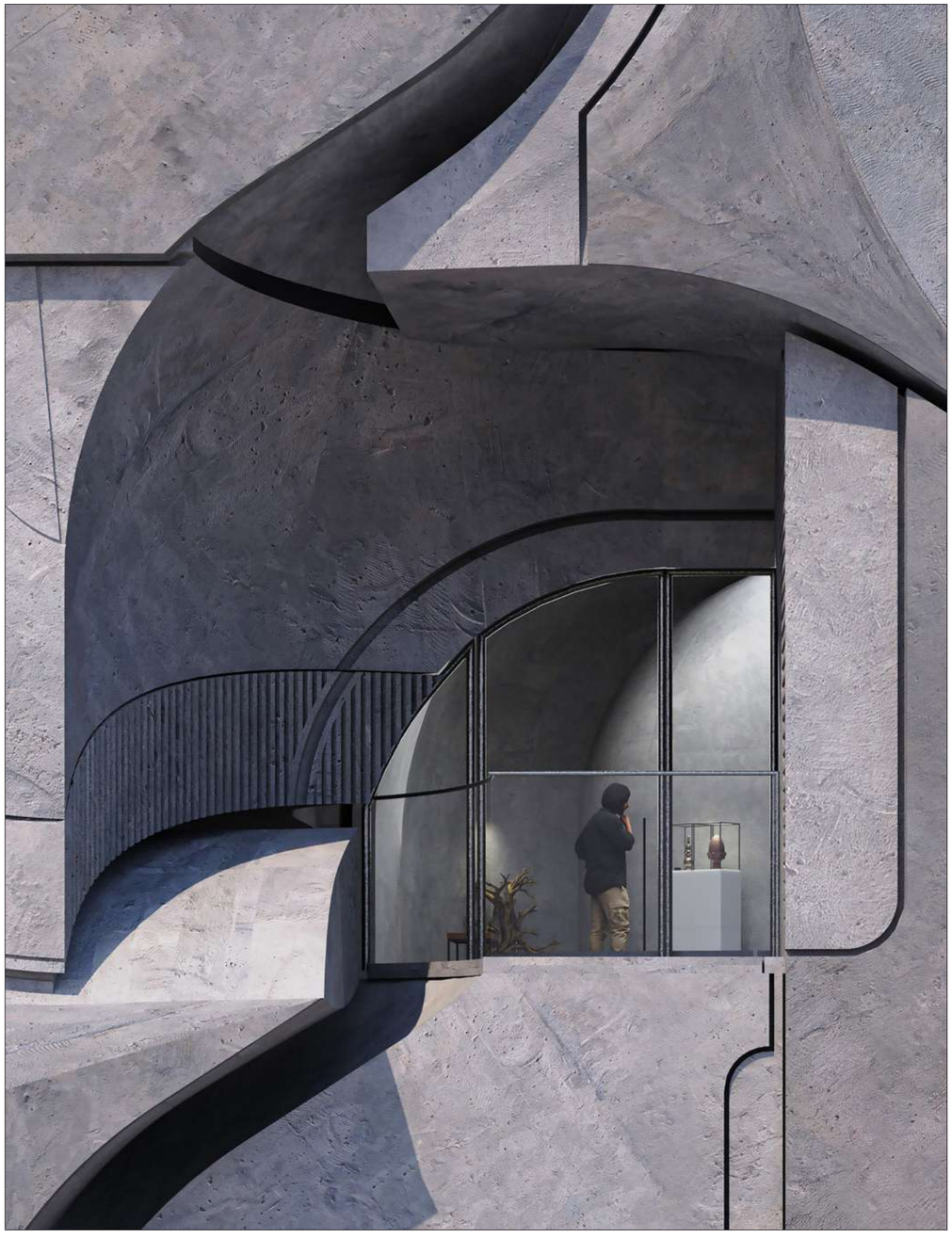
Detail Section

Seam

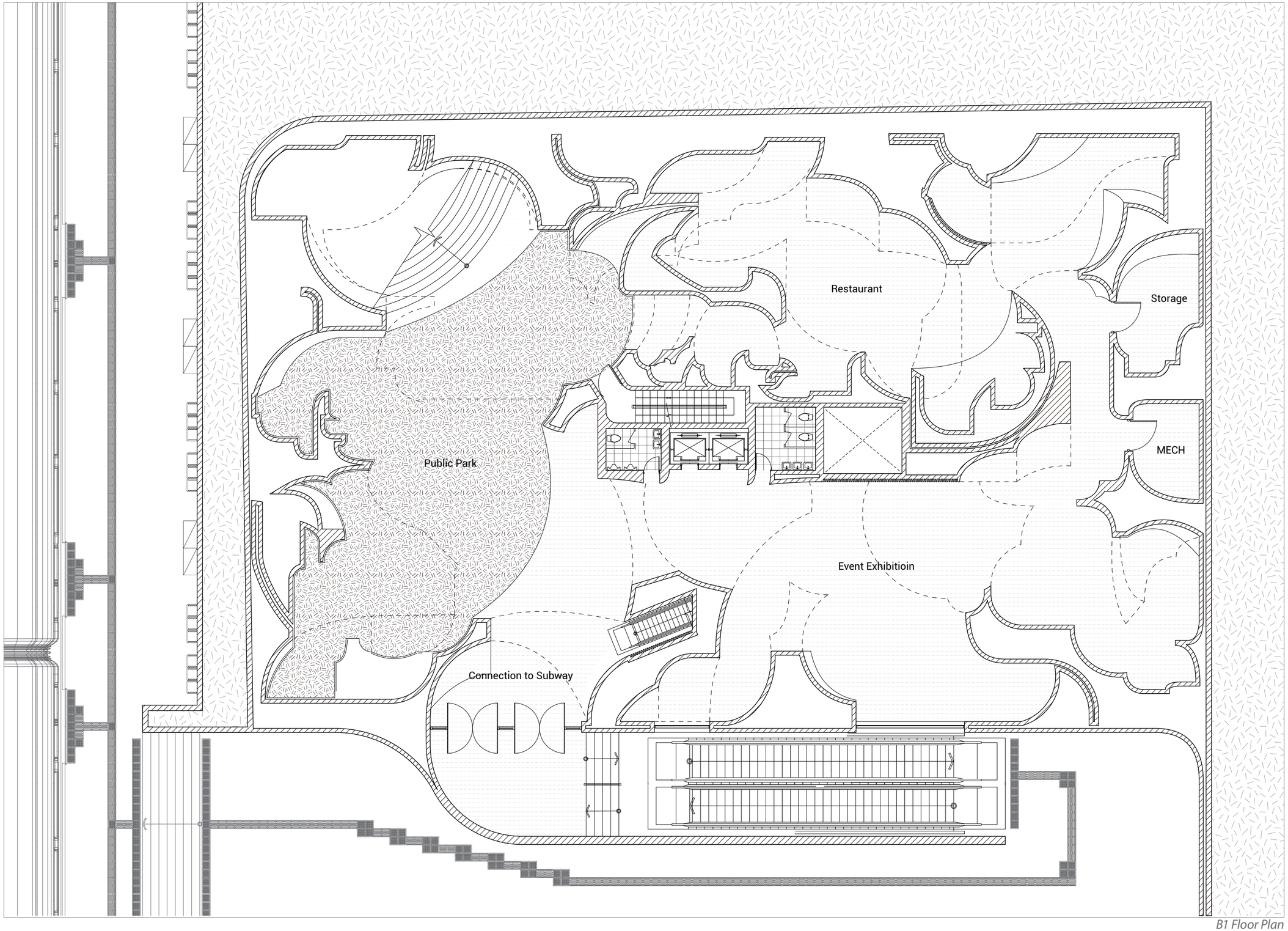


Transition

Spatiality



Spaces created using carving techniques give users a different sense of depth and spatial experience. Each carved component is defined by thin seams, softeing the heavy materiality of concrete and creating a distinct aesthetic effect.



B1 Floor Plan

BIG CAMERA

ビックカメラ

RF

4F

3F

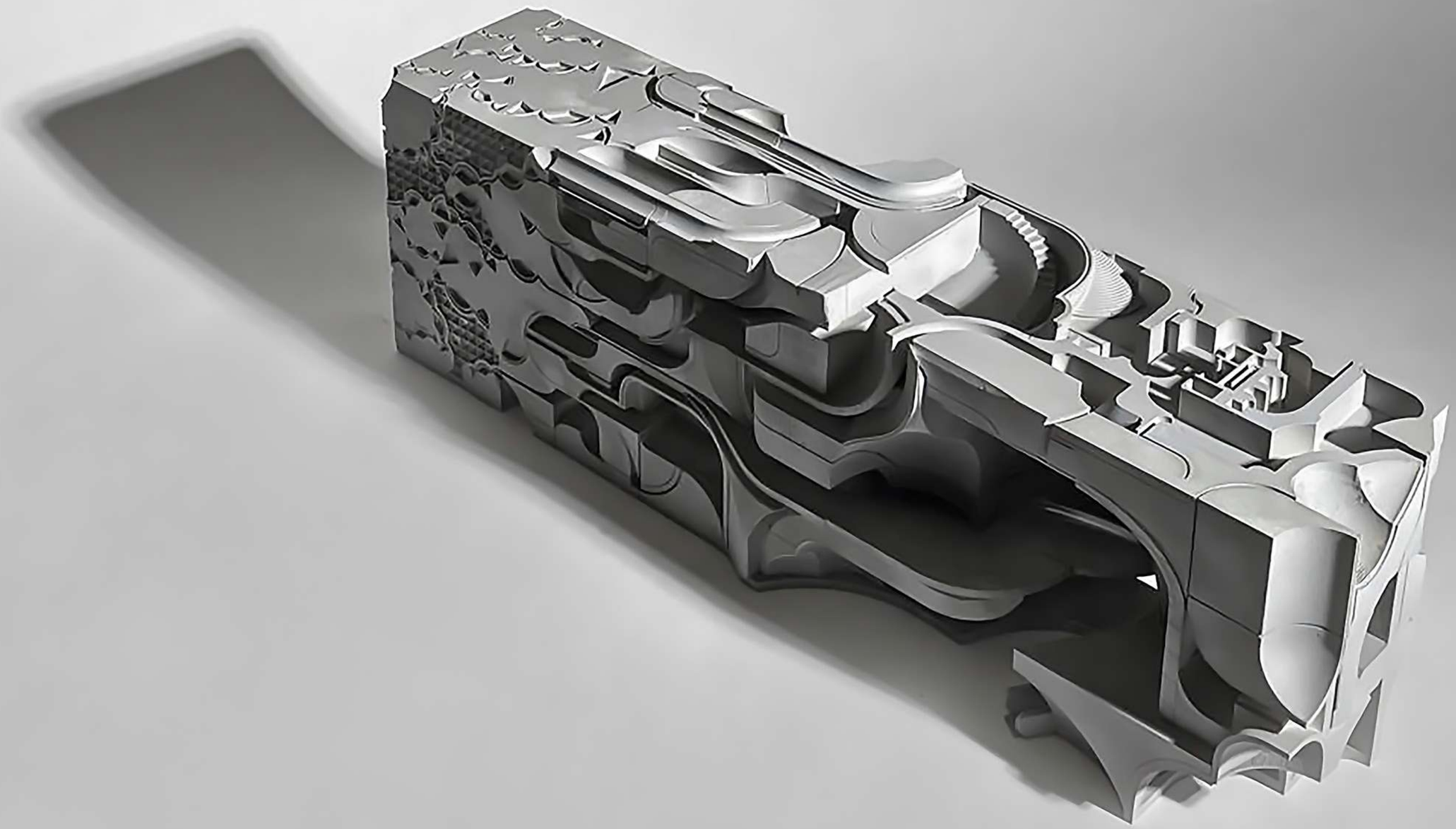
2F

1F

GF

B1

B2



Hybrid Model

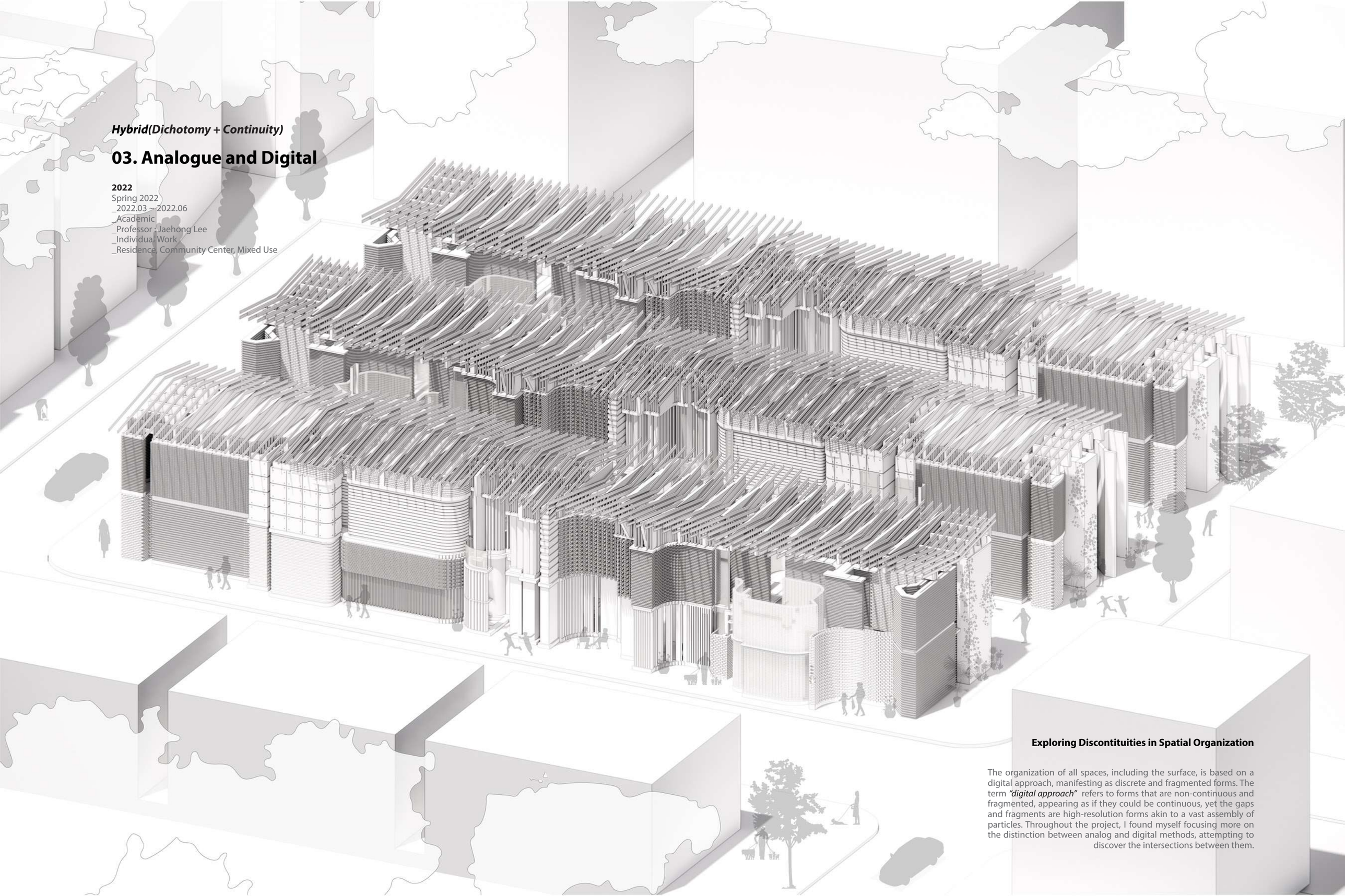
Elevation

The aesthetic created by combining various carving techniques such as large cuts, small cuts, chiseling, and grooving becomes especially prominent when viewed in elevation. A single carved component may sit beneath another, or share the same seam, producing unusual effects. Large-cut techniques were used to form the two main entrances at both ends as well as the terraces. Small-cut techniques were applied to create smaller terraces and, when combined with large cuts, created edges. Grooving techniques were used on concrete walls to produce multiple seams, which soften the heavy materiality of concrete.

Hybrid(Dichotomy + Continuity)

03. Analogue and Digital

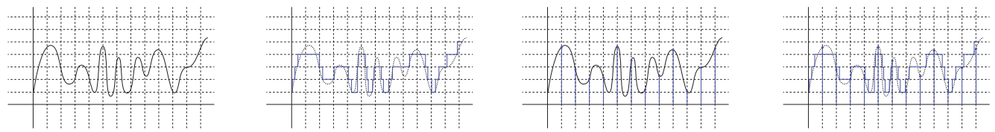
2022
Spring 2022
_2022.03 ~ 2022.06
_Academic
_Professor : Jaehong Lee
_Individual Work
_Residence, Community Center, Mixed Use



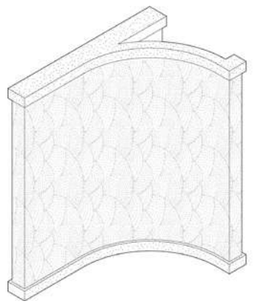
Exploring Discontituities in Spatial Organization

The organization of all spaces, including the surface, is based on a digital approach, manifesting as discrete and fragmented forms. The term *"digital approach"* refers to forms that are non-continuous and fragmented, appearing as if they could be continuous, yet the gaps and fragments are high-resolution forms akin to a vast assembly of particles. Throughout the project, I found myself focusing more on the distinction between analog and digital methods, attempting to discover the intersections between them.

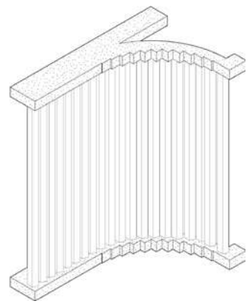
Analog and digital signals differ in their nature of continuity. ***Analog signals*** are continuous, with the gaps between them always filled. Mathematically, they are closer to concepts in calculus, particularly differentiation. On the other hand, ***digital signals*** are discrete, with gaps between them, making them distinct and set-based. The convergence of these two, analog and digital, occurs at points where a hybrid form emerges, exploring the intersections and blending of the continuous nature of analog and the discrete, set-based nature of digital. This exploration involves investigating structures that embody a hybrid combination of analog and digital elements, creating a building that fuses both forms.



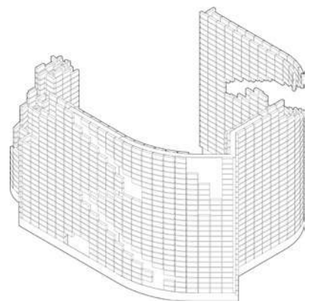
1. Analog 2. Quantization 3. Sampling *4. Digital*



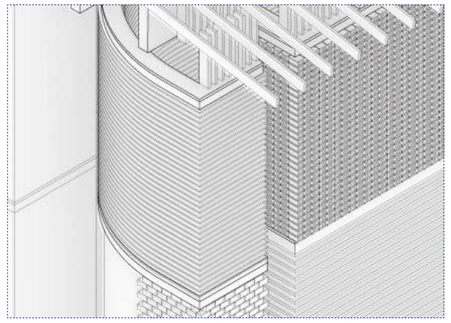
Analog Model



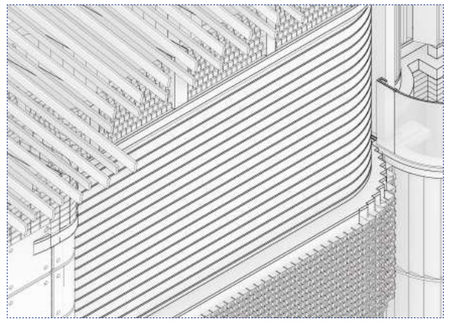
Digital Model



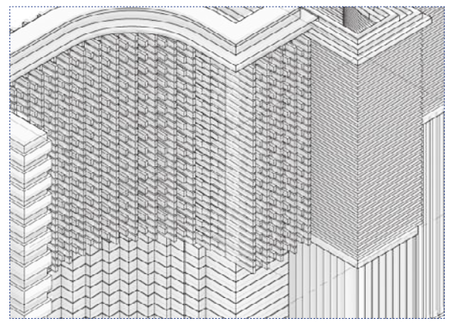
Prototype of Hybrid Model



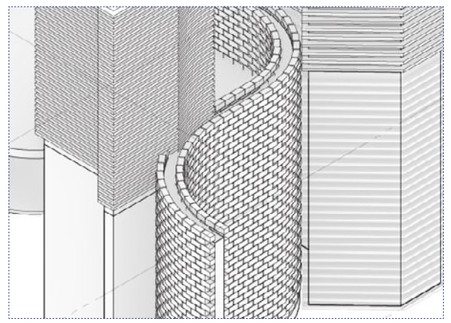
A. Interwoven type (Bricks and Concrete)



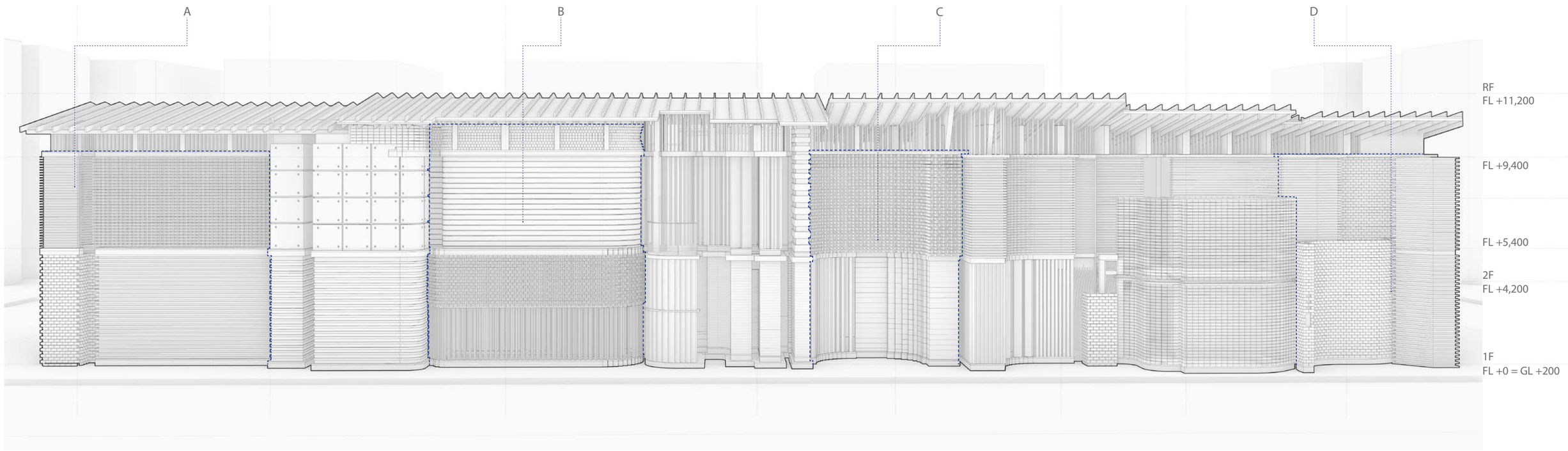
B. Interwoven type (Glass Bricks and Concrete)

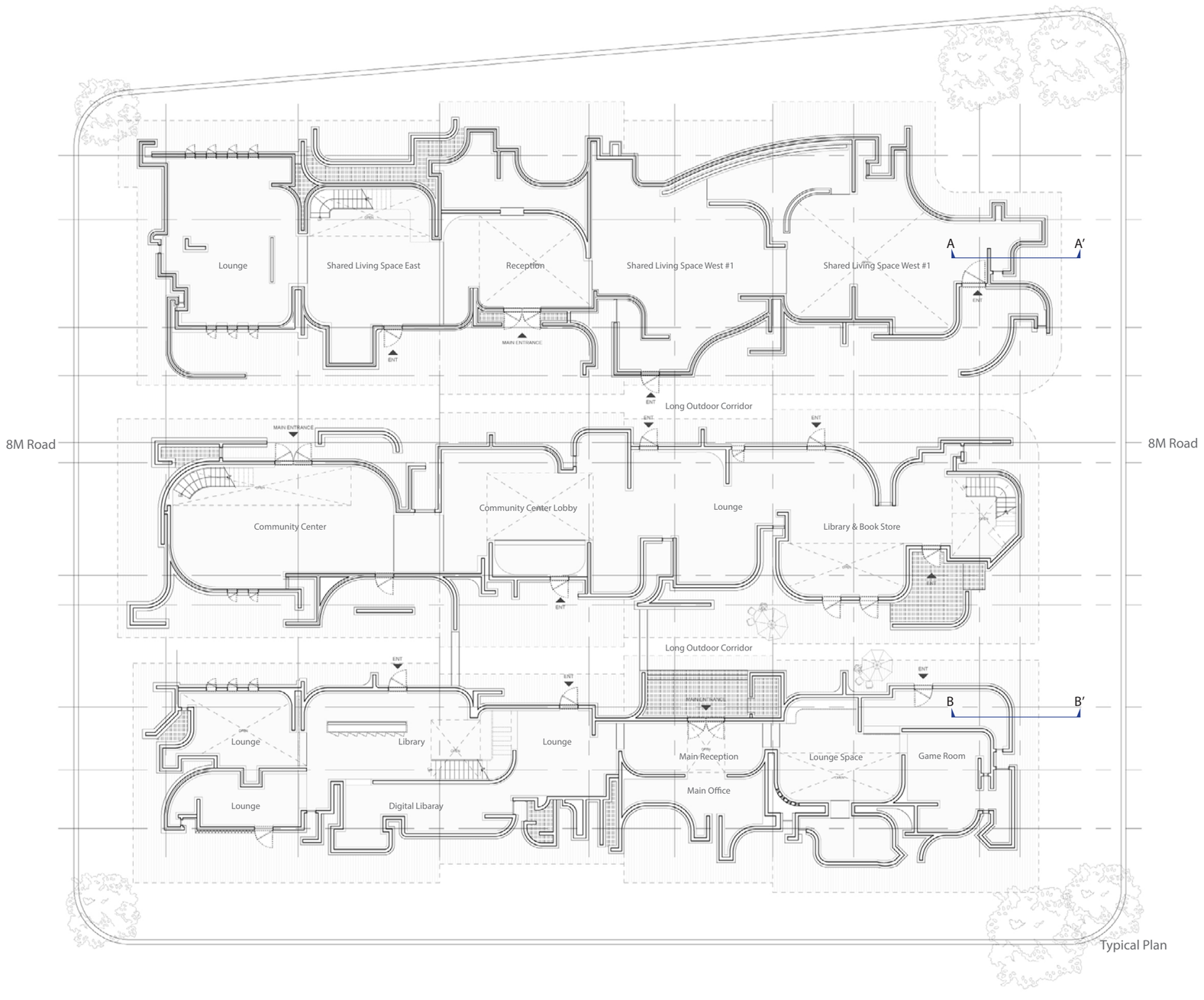


C. Interwoven type (Wood, Concrete and Bricks)



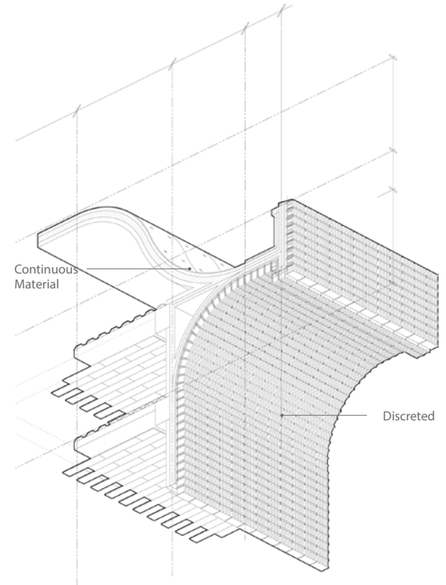
D. Interwoven type (Bricks and Bricks)



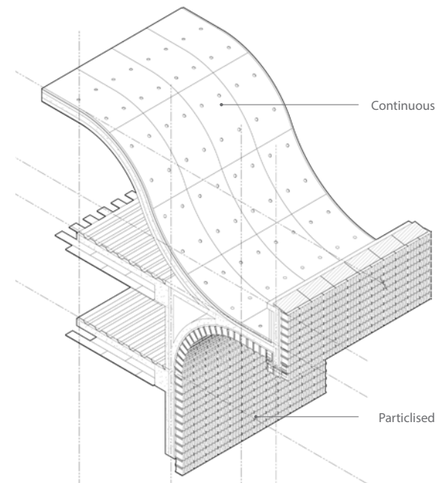


Typical Plan

The composition of ***digital*** and ***analog*** elements can be closely observed on a flat plane. When viewed at the pedestrian level, The composition of ***digital*** and ***analog*** elements can be closely observed on a flat plane. When viewed at the pedestrian level,



Detail Section Drawing A - A'



Detail Section Drawing B - B'

H200 x W50 Wood Louver
Thk 200 Insulation
Thk 100 Gymsum Board
H200 x W50 Steel Truss

Roof Floor
FL +11,200

2nd Ceiling
FL +9,400

Precasted Concrete (Exposed)
Rigid Insulation
Curved Concrete (Exposed)
Designated Finish (Interial)

0.5B Bricks Finish
Air Space
Rigid Insulation
Water Proof Finish
Precasted Concrete
0.5B Tiles Finish (Interior)

Thk 50 Wood Flooring
Thk 150 Access Floor
Thk 150 Deck Plate

2nd Floor
FL +4,200

In interior spaces, a juxtaposition of discrete building materials such as bricks and wood, and continuous building materials like concrete, creates a layered relationship. The individuals utilizing this space can discern how ***analog*** and ***digital*** elements establish connections, offering a platform for new experiences.

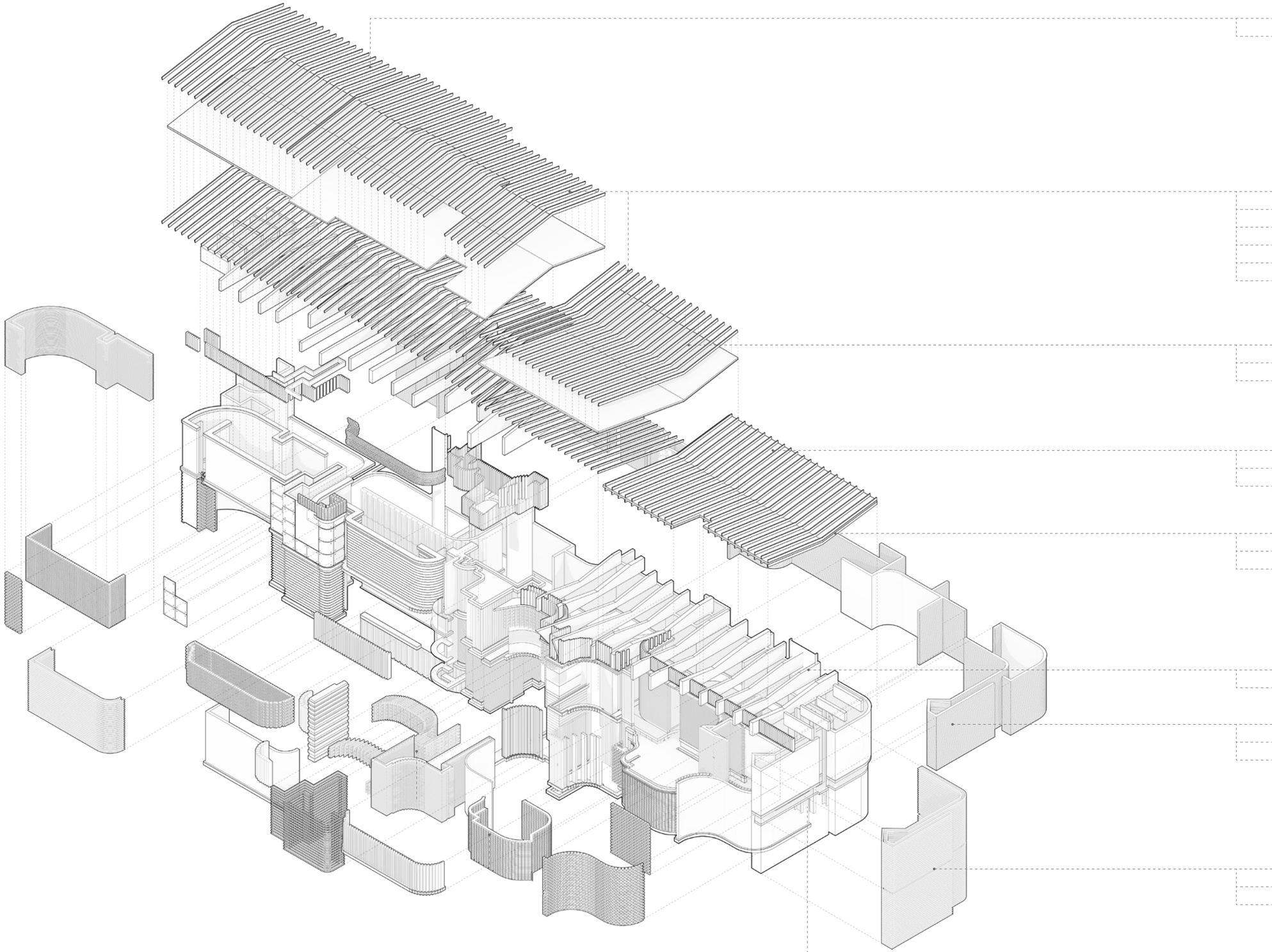
0.5B Bricks Finish
Air Space
Rigid Insulation
Water Proof Finish
Precasted Concrete
0.5B Tiles Finish (Interior)

M-Ba
Thk 50 STS Panel Finish

2.0B Bricks
Air Space
Sheating
Rigid Insulation
Inbetween Space
Precasted Concrete
Exposed Concrete Finish

1st Floor
FL +0.00 CL+200

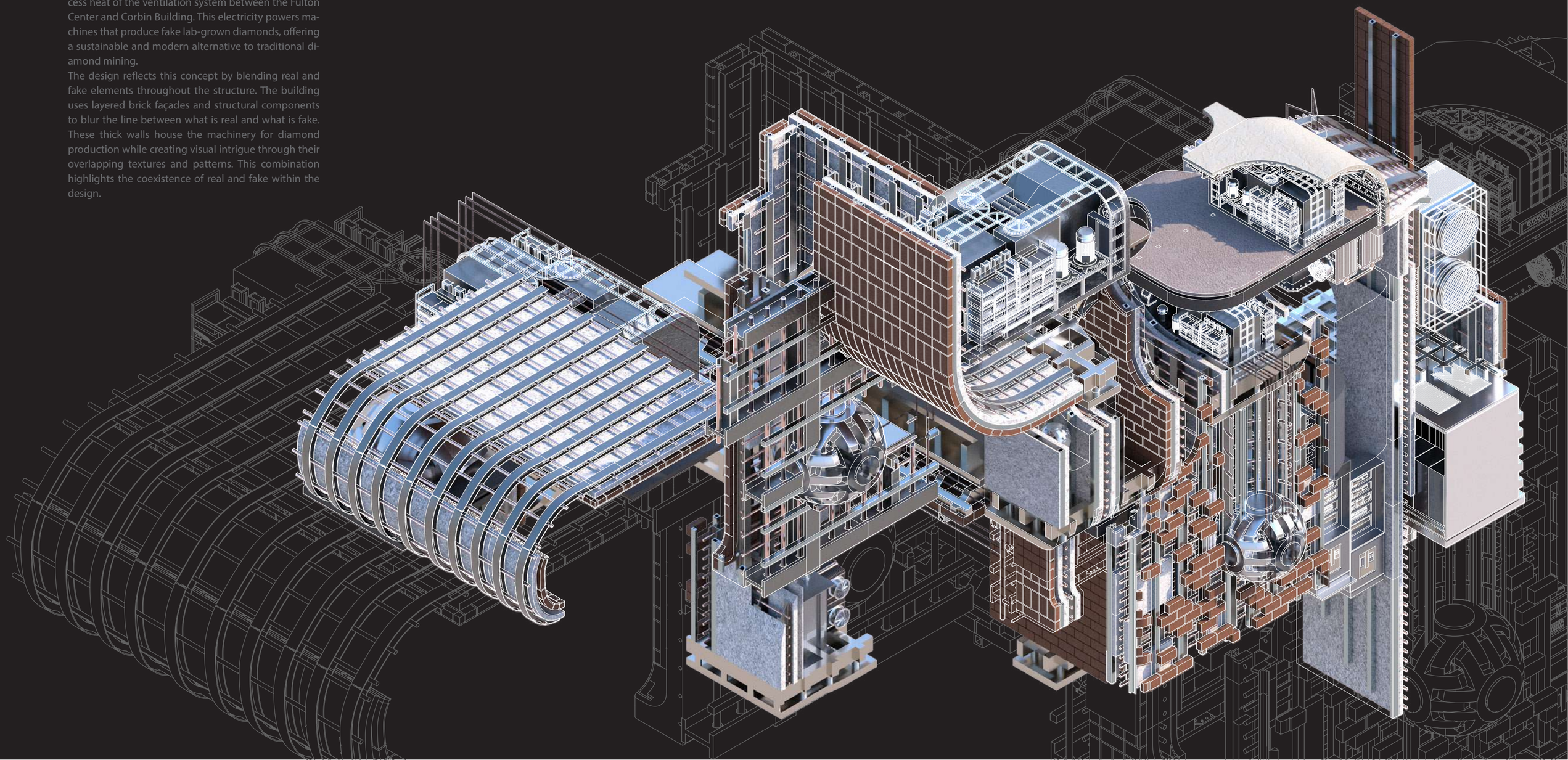
Thk 50 Wood Flooring
Thk 150 Access Floor
Thk 50 Water Proof Finish
Thk 200 Rigid Insulation
Thk 0.05 PE Fle 2 Pieces


W50 x H200 Wood Louver
Wood Louver Assembly
W50 X H200 C-Channel Steel Bar
Thk100 Gymsum Board
Thk50 Water Proof
Thk200 Rigid Insulation
W50 x H200 Wood Louver
Wood Louver Assembly
Thk100 Gymsum Board
Thk50 Water Proof
Thk200 Rigid Insulation
W50 X H200 C-Channel Steel Bar
Roof Assembly
Wood Louver Assembly
Wood Finished Concrete
Precasted Concrete (Exposed)
Thk200 Rigid Insulation
Wood Finish
Prefabricated Roof Truss
Wood Finished Concrete
Precasted Concrete Panel
Open Joint Assembly
Precasted Concrete Louvers
Concrete Louver Assembly
Open Joint Assembly
0.5B Glass Bricks
Brick Assembly
Open Joint Assembly

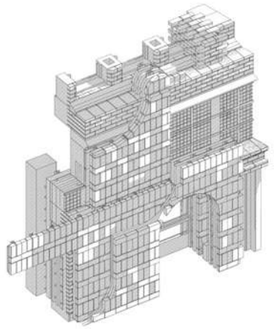
04. Fake Real, Real Fake

Fall 2024
_2024.09 ~ 2024.12
_Academic
_Professor : Ali Rahim
_Teamwork with Si Miao
_Electricity Power Generation & Lab-Grown Diamonds

The “Fake Real, Real Fake” project centers on the idea of using what is real to create what is fake. The building harnesses real electricity, generated from the excess heat of the ventilation system between the Fulton Center and Corbin Building. This electricity powers machines that produce fake lab-grown diamonds, offering a sustainable and modern alternative to traditional diamond mining.
The design reflects this concept by blending real and fake elements throughout the structure. The building uses layered brick façades and structural components to blur the line between what is real and what is fake. These thick walls house the machinery for diamond production while creating visual intrigue through their overlapping textures and patterns. This combination highlights the coexistence of real and fake within the design.



Site Analysis



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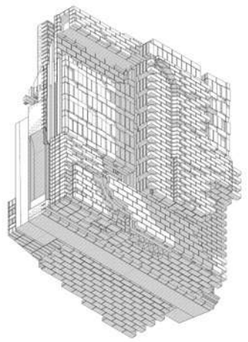

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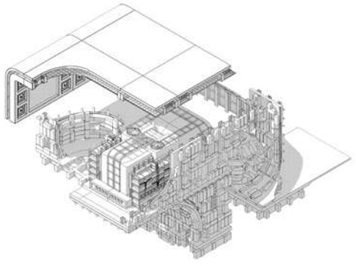

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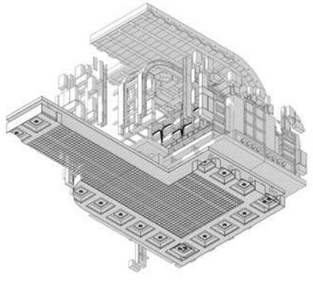

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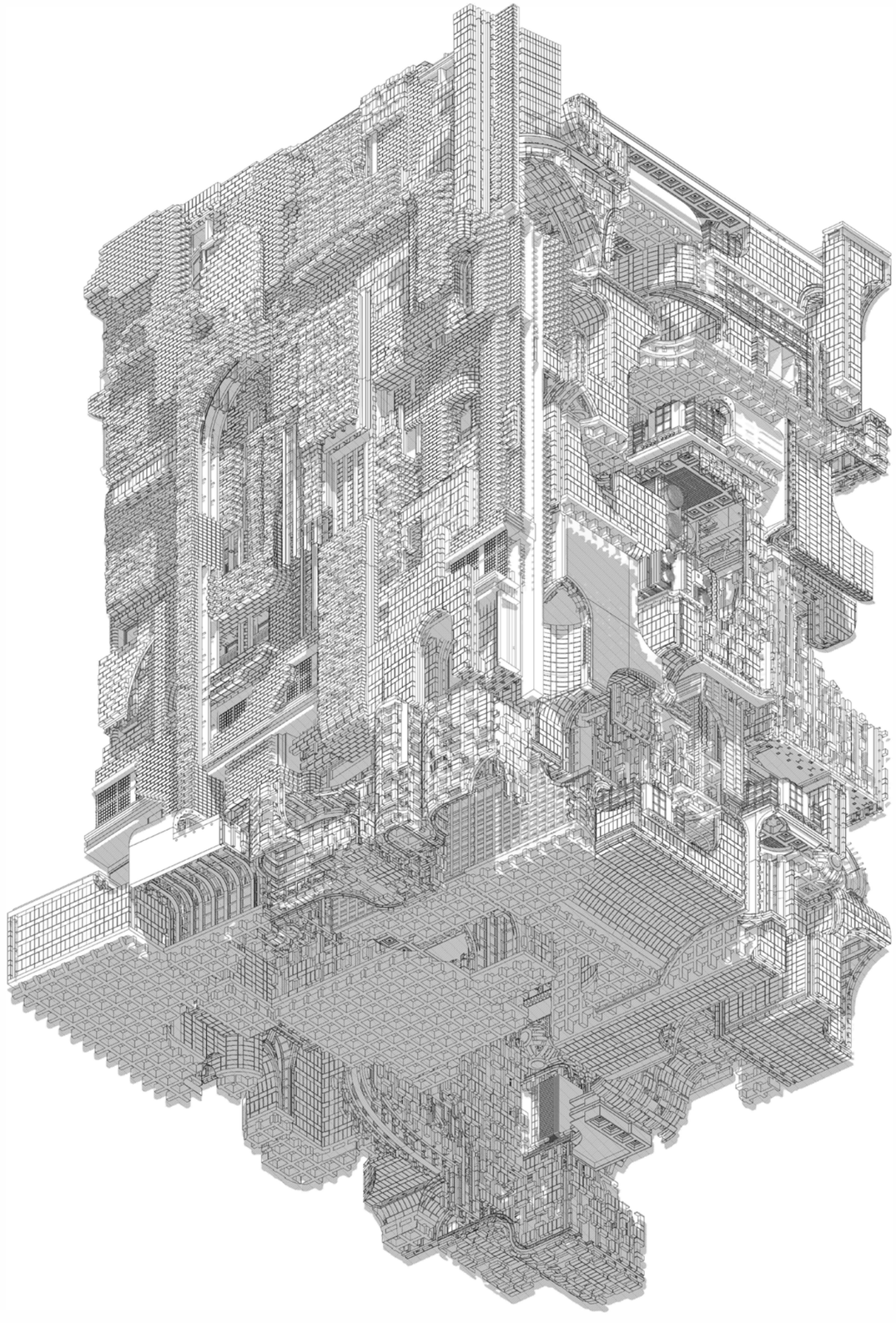
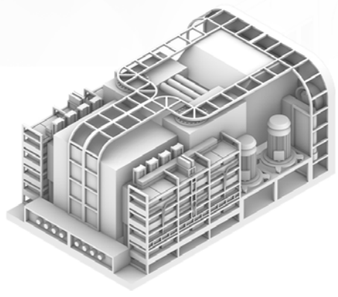
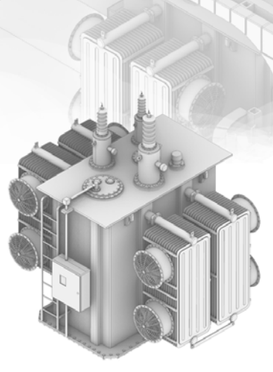


Choisy

System Diagram

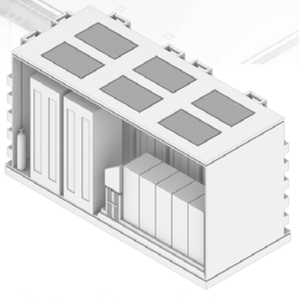


PCS



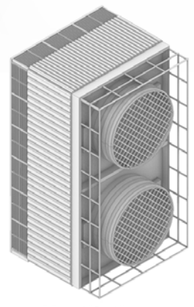
Transformer

Switch Gear



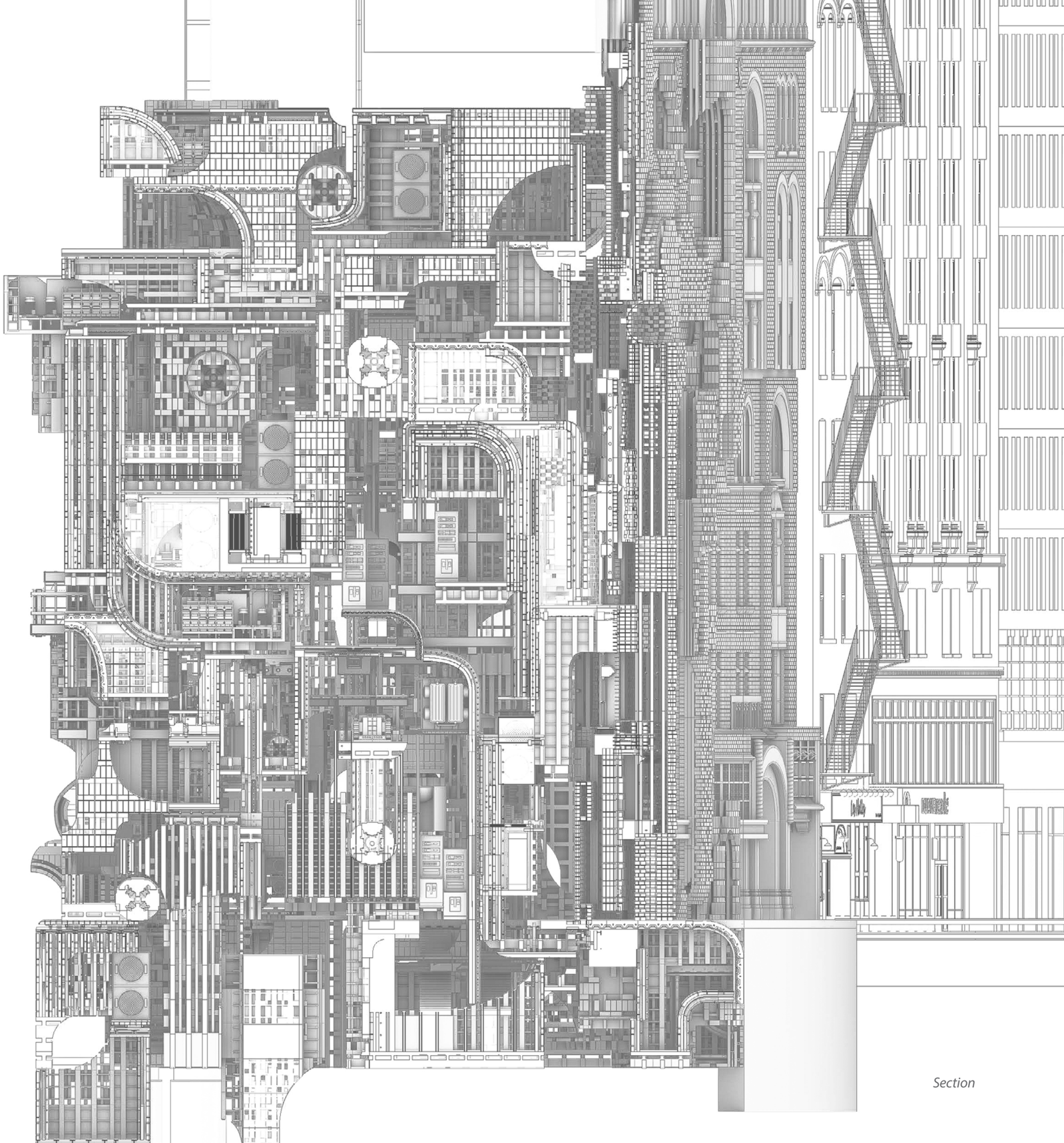
Battery Storage System

Lab-Grown Diamond Machine

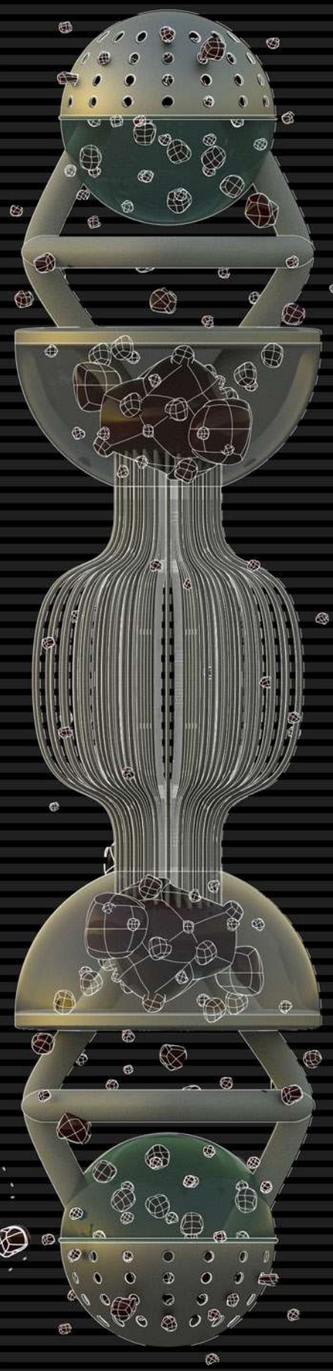


Ventilation

The project proposes utilizing excess heat from the central glass ventilation system and converting it into energy, creating a sustainable power source that not only improves building efficiency but also generates additional revenue for the city. By transforming waste heat into a productive resource, the design demonstrates how infrastructure can merge environmental responsibility with economic value.



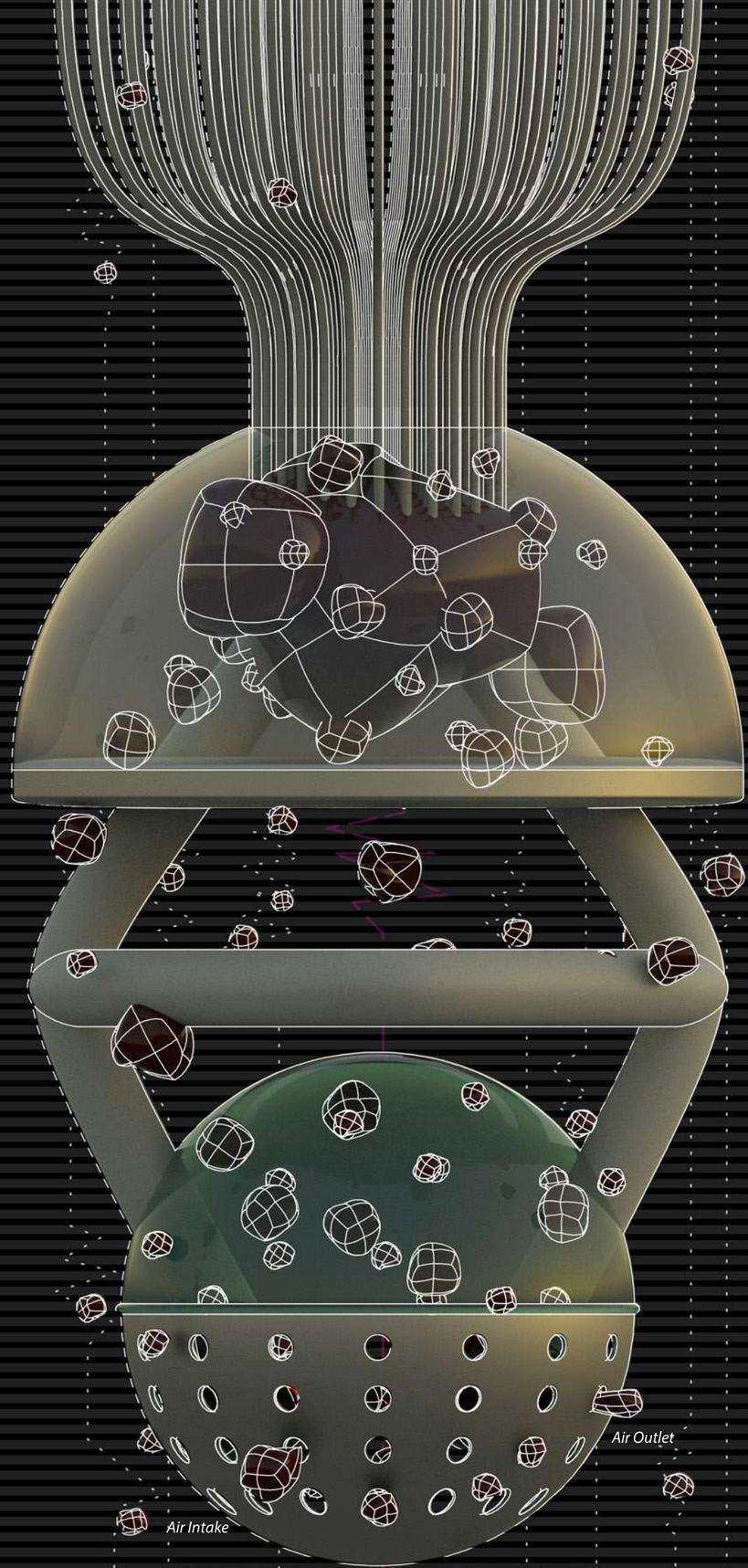
Section



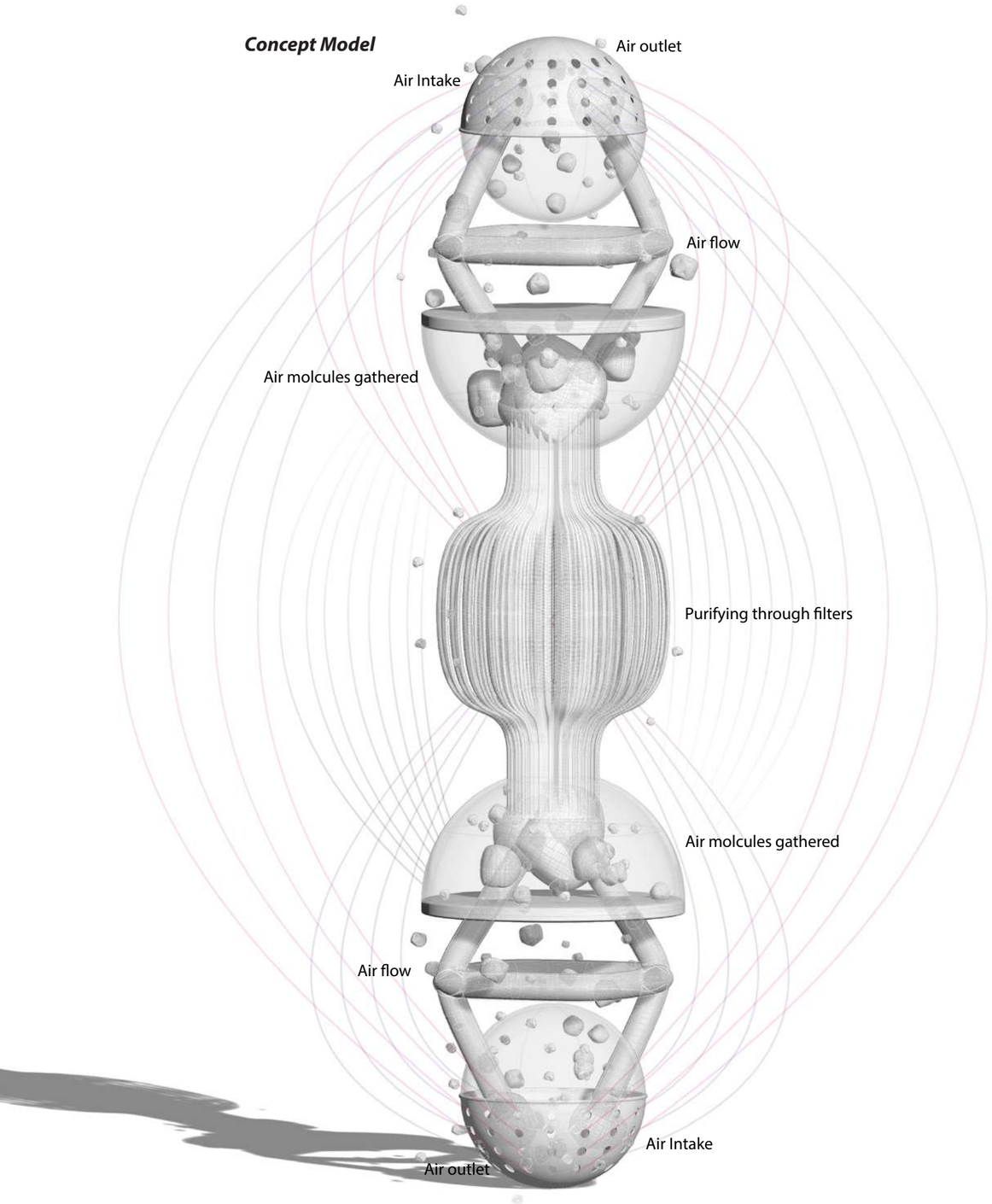
05. Humans in Human

2020
_ 2020.09 ~ 2020.12
_ Academic
_ Professor : Gi-Sung Choi
_ Individual Work
_ Smart Farm, including Process of Respiration

Humans absorb oxygen and expel carbon dioxide through a process called **respiration**. This project applies this breathing process to architecture to create living, breathing spaces and provide users with a comfortable and eco-friendly work environment. Air circulates inside the building through pipes and is discharged to spaces where fresh air is needed, while CO_2 is absorbed and filtered. The largest pipe integrates air, water, and energy channels, serving both as the building's framework and as the backbone for smart farm circulation.



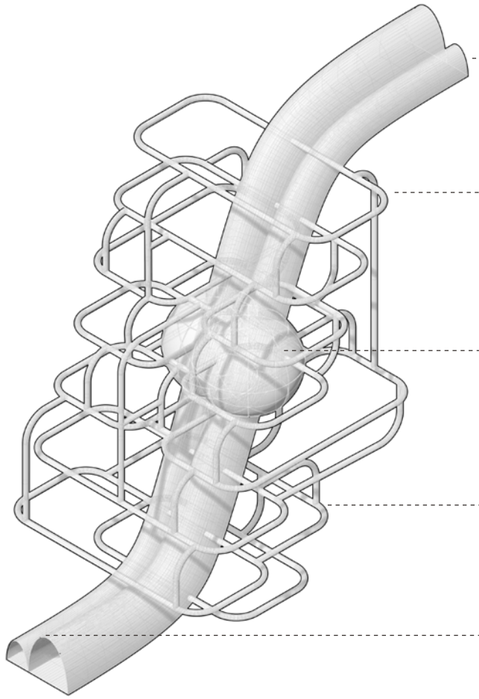
Concept Model



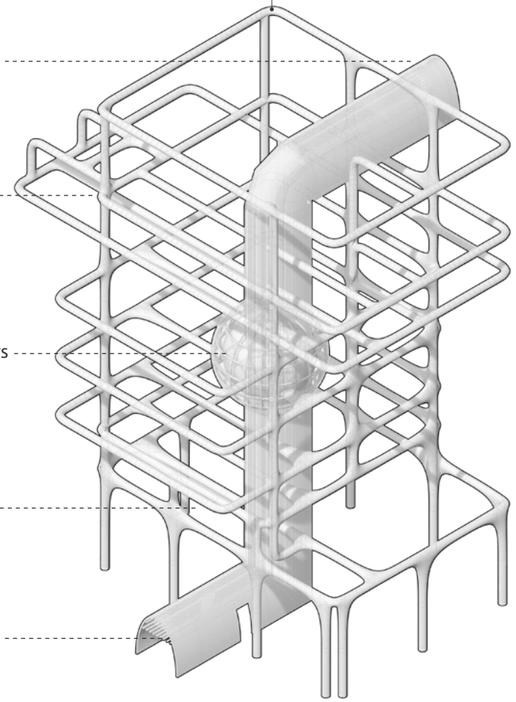
Pipes in a Pipe

Small pipes flow through a large pipe, which serves as the frame of a building. These pipes serve as deliverymen to discharge fresh air from each area and suck up the contaminated air and send it to the center of the building. As a result, this type of pipe acts as a facilitator in the process of ***respiration***.

System Model



Building Model

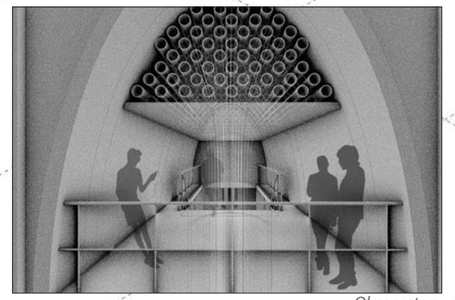


Concept Development

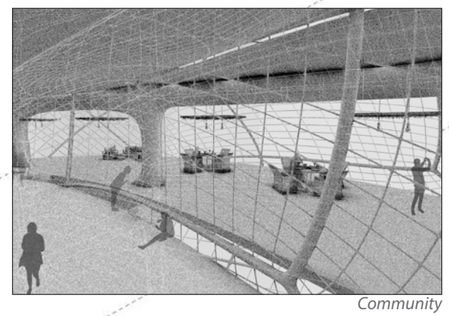
After made best represent the process of ***respiration***, I created a system model that can accommodate the process in the most compact construction and developed it to be applied to actual construction. Air is sucked in from the air in the lower left and upper right sections, and it arrives in the circular center of the building in small tubes. After that, it is purified and the purified air circulates through the skeletal pipes spread on each floor.

Concept Applying to Building

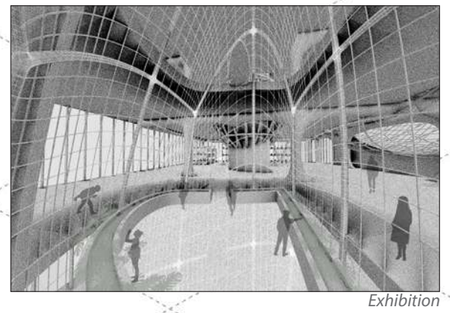
The space was constructed based on the building model developed from the ***respiration*** concept model. Since the entire building acts as a smart farm, a smart farm space was created on all floors except the lobby and public space on the first floor. Since the air purification pipes are distributed like alveoli out of our lungs, purified air can be used on all floors, and carbon dioxide can be absorbed and purified again. Small pipes come out of the large pipes and play a role in supplying the moisture and nutrients needed for plants.



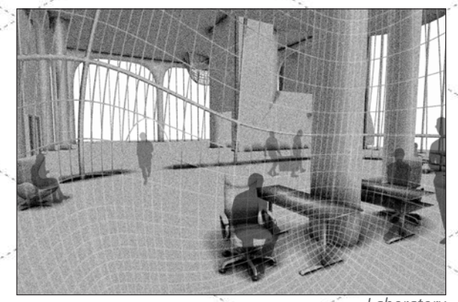
Observatory



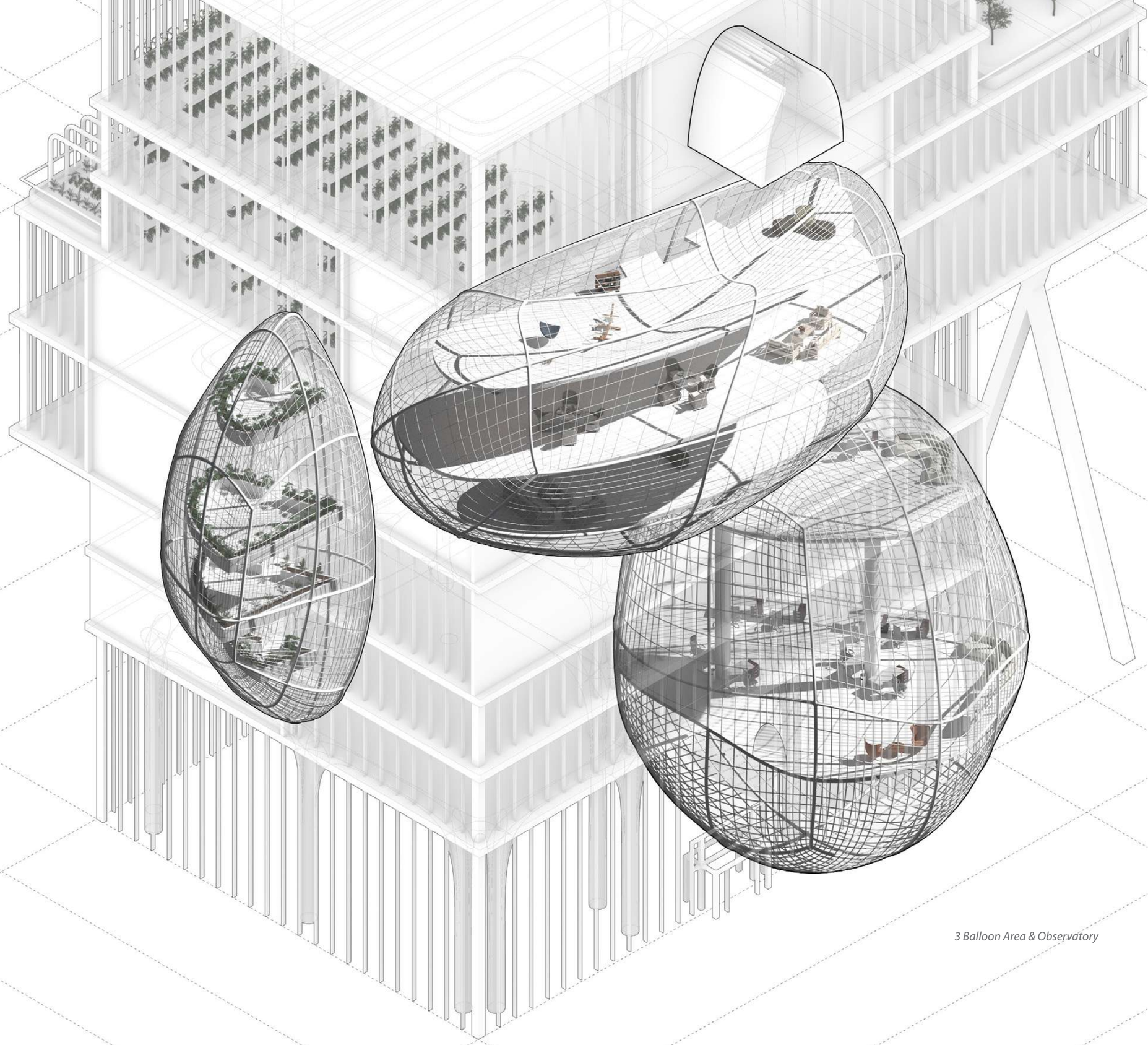
Community



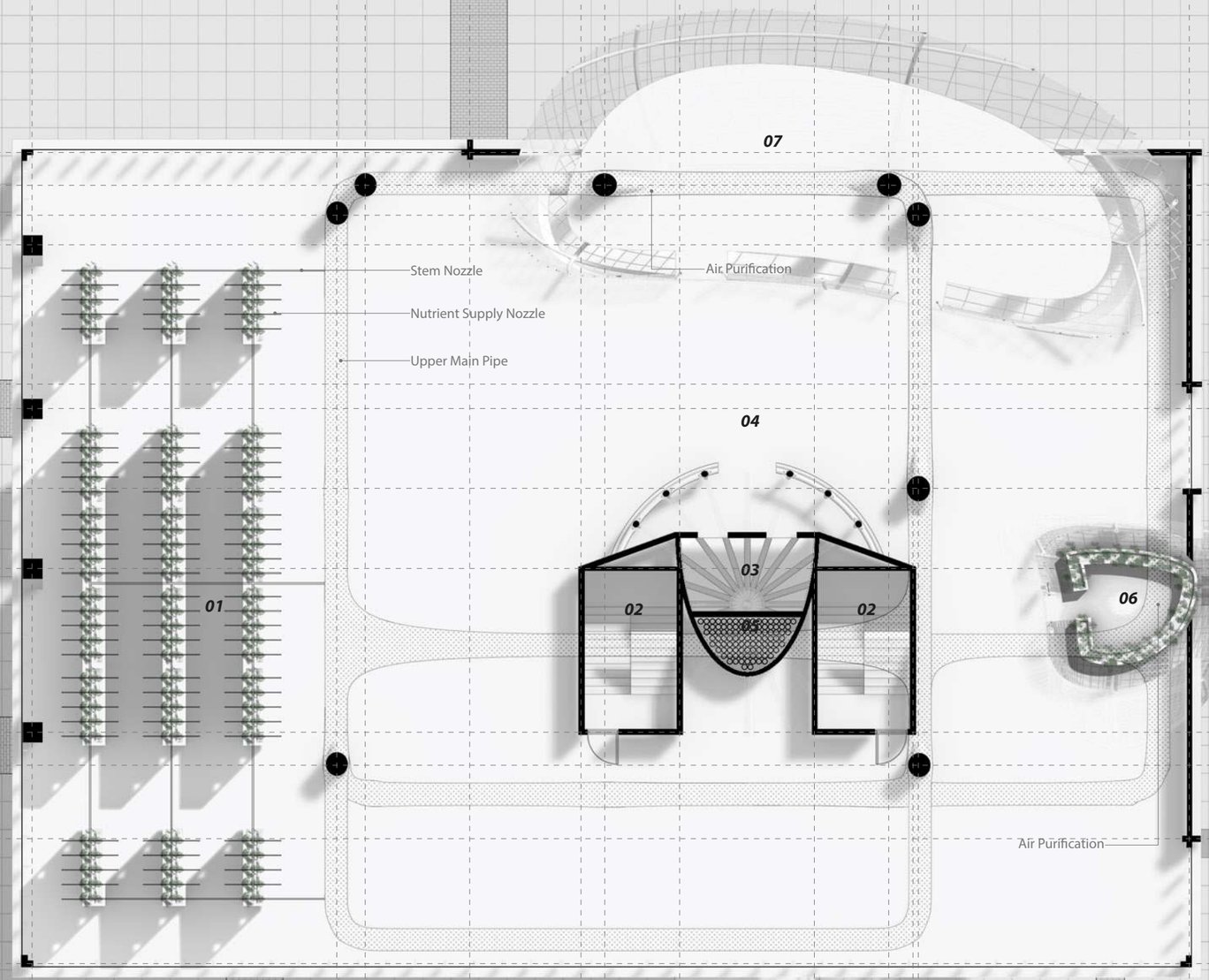
Exhibition



Laboratory



3 Balloon Area & Observatory



0M 5M 20M

5th FLOOR PLAN(1/200)

01. Smart-Farm spae
02. Stair Case
03. Elevator
04. Lobby
05. Air-Raising Pipes
06. Smart-Farm Exhibition Space
07. Community Center

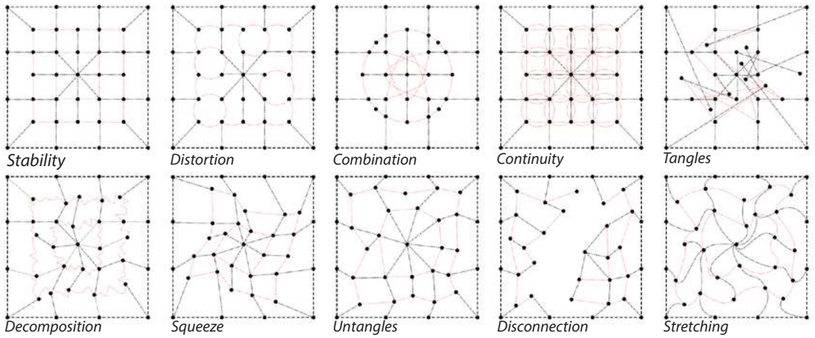
06. +10-19

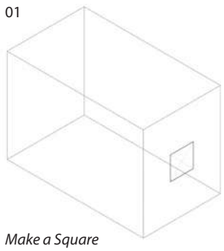
2022

_ 2022.09 ~ 2022.11
_ Academic
_ Professor : Gi-Sung Choi
_ Individual Work
_ Juvenile Detention Facilities

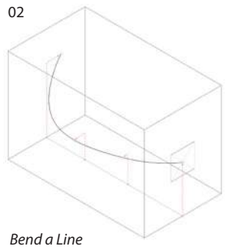
Knot Journey

This project began with a consideration of juvenile crime, which is a widely discussed social problem in South Korea. Juvenile offenders between the ages of ***10*** and ***19*** will be monitored and protected for six months at this facility. The concept of a fence was conceived in that adolescents had to live in a designated area for six months of education, and it developed into the image of a ***knot*** that constitutes a fence. From this perspective, I considered the concept of students unraveling a knot that is twisted within a large mass called a knot. The movement line is planned in the direction of the twist of the knot, and when the end of the movement line is reached, it means completing the six-month process and returning to society.




01

Make a Square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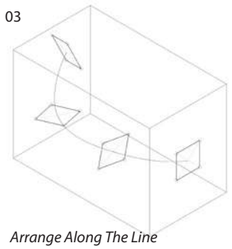
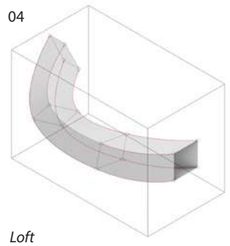
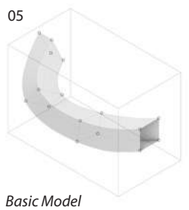
Bend a Line


03

Arrange Along The Line


04

Loft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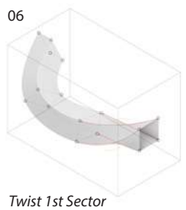
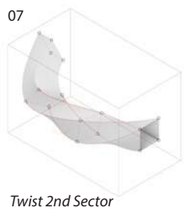
Basic Model


06

Twist 1st Sector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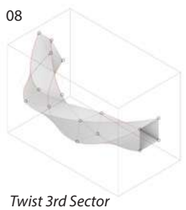
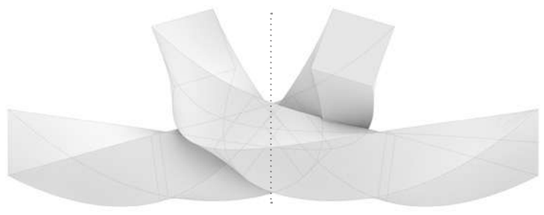
Twist 2nd Sector


08

Twist 3rd Sector

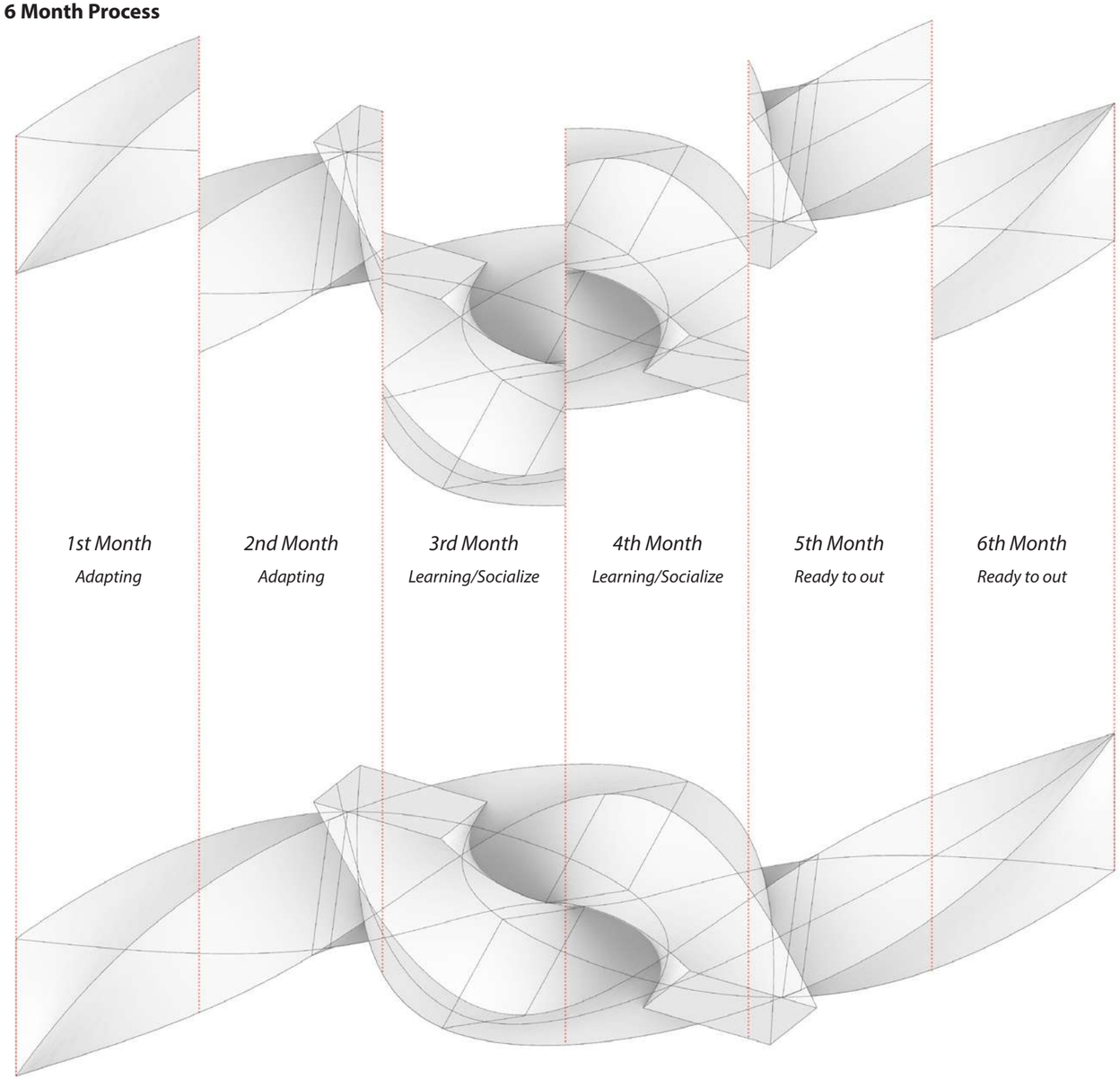


Mirror a Singel Model

Lateral View

The properties of a ***knot*** include Stability, Distortion, Combination, Continuity, Tangles, Decomposition, Squeeze, Untangles, Disconnection, and Stretching. Among them, Tangles, which is the most basic attribute of the ***knot***, was selected. To form a Tangled design mass, a basic model was made from one square, and the model was twisted and mirrored. In a ***knot***-shaped space, juvenile offenders prepare to enter society through the process of adaptation, education, and socialization for six months.

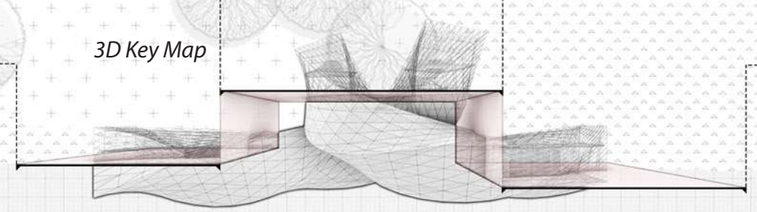
6 Month Process



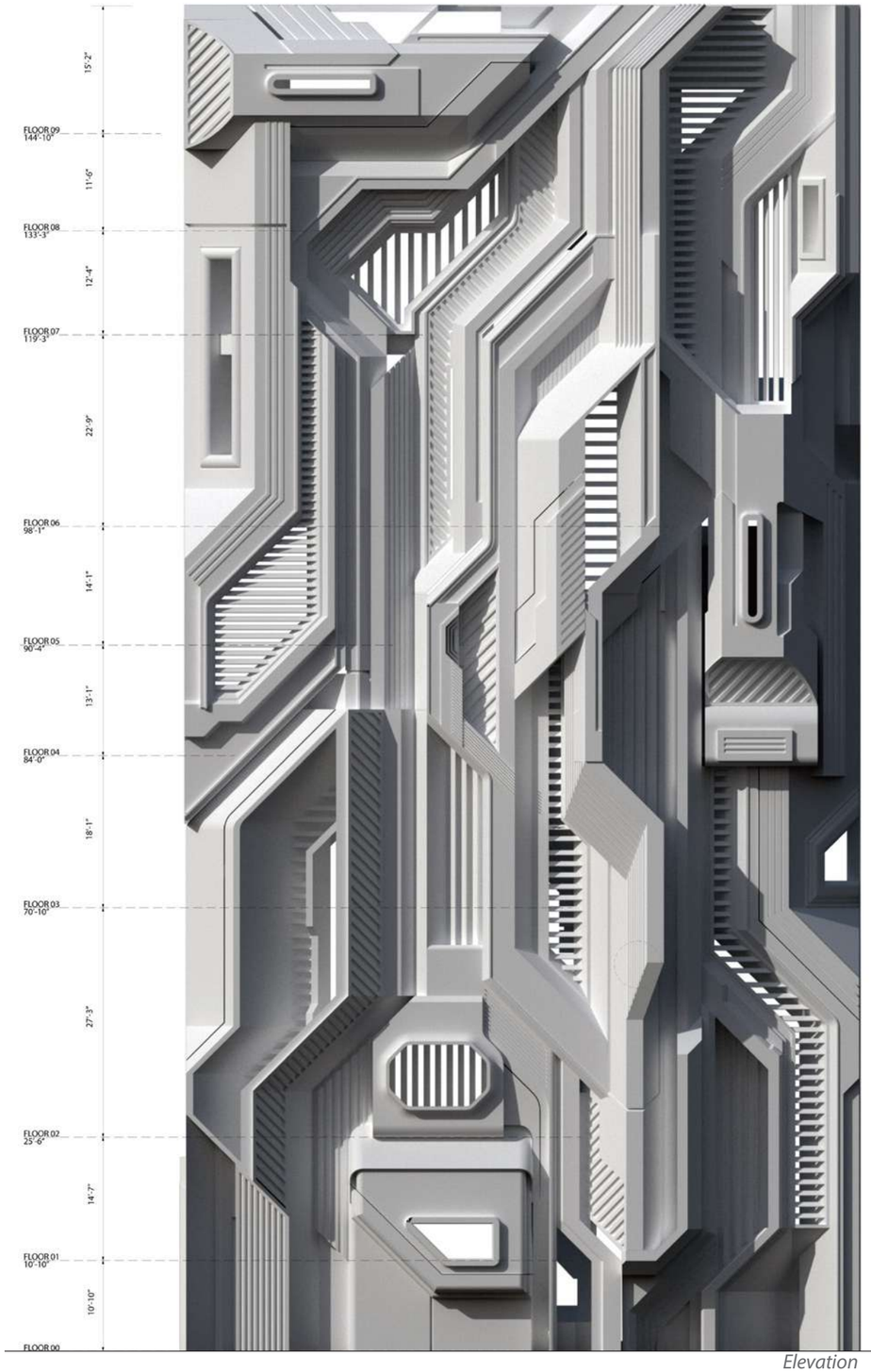
Plan Composition(1/200)

01. Dormitory Room
02. Student Lounge
03. Reading Room
04. Rest Room
05. Lobby

3D Key Map



0M 5M 20M



Elevation

07. Diagonal Intersection

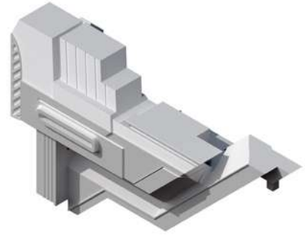
2024
Fall 2024
_2024.09 ~ 2024.12
_Academic
_Professor : Hina Jamelle
_Teamwork with Yangyang Zhu
_Facade Study

This facade concept emphasizes sensory impact through layered articulation and dynamic composition. A 45-degree diagonal orientation intersects with horizontal and vertical elements, generating rhythm and interplay. Ornamentation enhances visual complexity and invites tactile engagement, making the facade central to the building's identity. Composed of five distinct components, the design integrates tall verticals, angular cutouts, perforations, and voids to establish balance and depth. From elevation to isometric view, cylindrical projections, sharp transitions, and stacked perforations highlight the dialogue between solid and void. Together, these elements create a cohesive yet dynamic architectural presence that blends structural solidity with spatial openness.

Detail 1

Detail 2

Detail 3



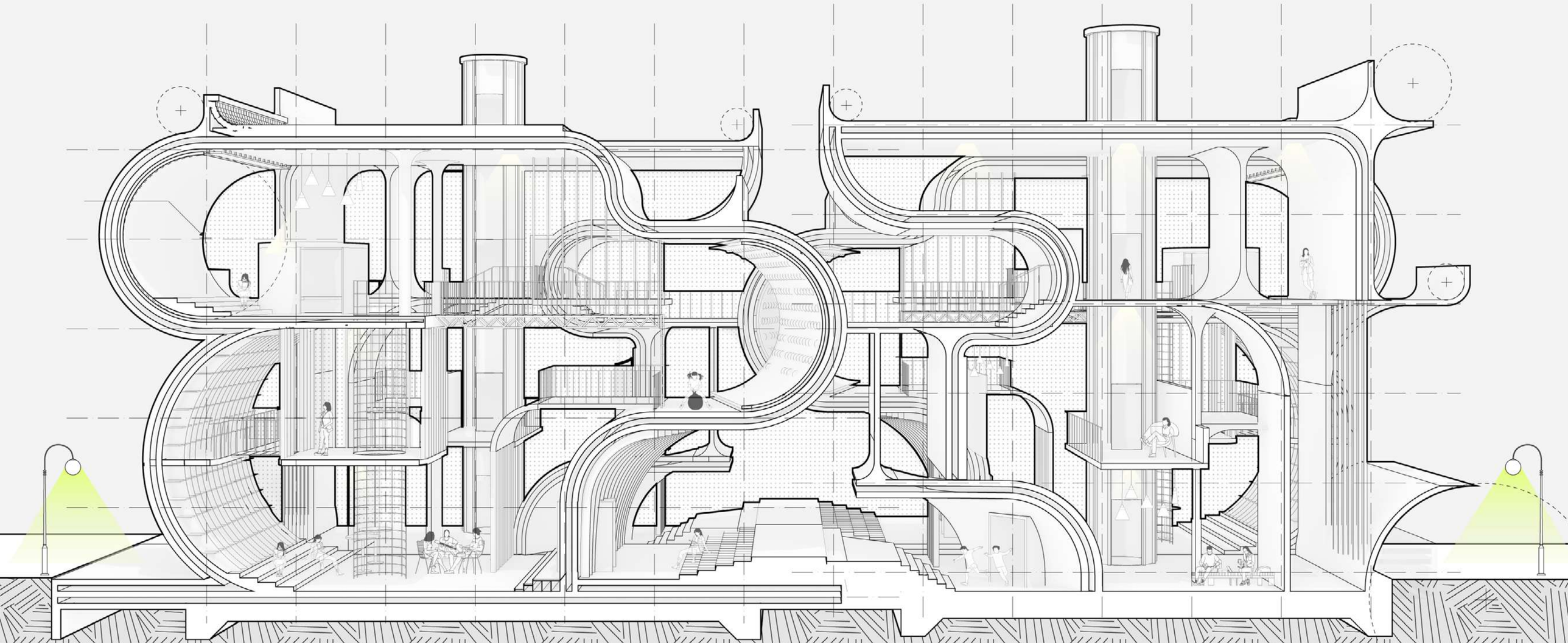
Detail 4

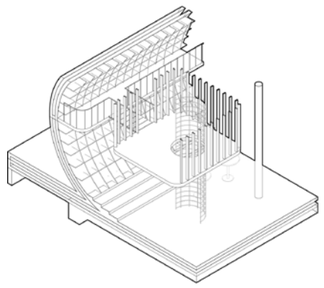
08. Nomad Playground

2021
_2021.03 ~ 2021.06
_Academic
_Professor : Jaehong Lee
_Individual Work
_Pavilion
_Playground, Exhibition, Education

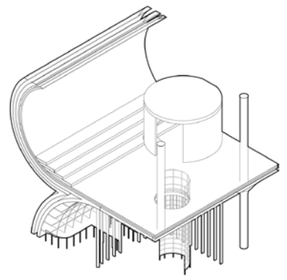
Wanderlust Oasis Pavilion
: Unleashing Playful Freedom in a Nomad Playground

In contemporary society, people have evolved from the traditional and standardized play culture to pursue a variety of recreational activities that cater to individual preferences. This project aims to propose an ***integrated space*** that encompasses multiple play areas, allowing individuals to engage in diverse recreational experiences within a single venue. The design encourages people to roam freely, exploring a range of activities tailored to their interests.





1



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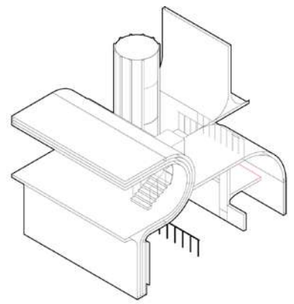

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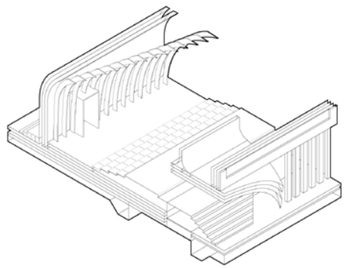

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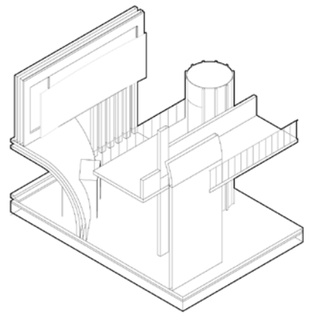

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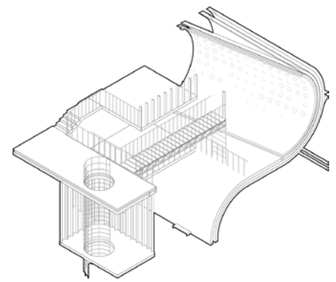

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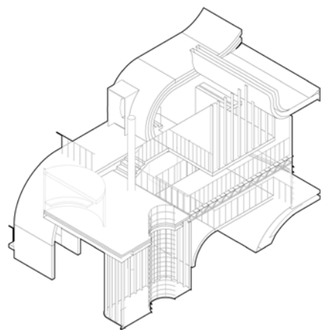

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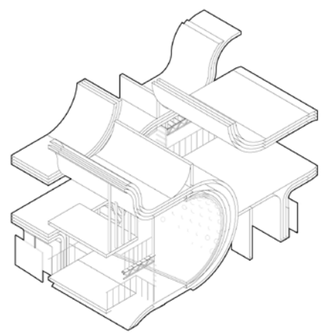

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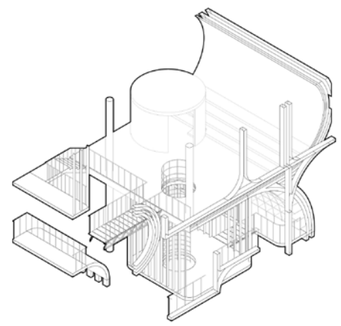

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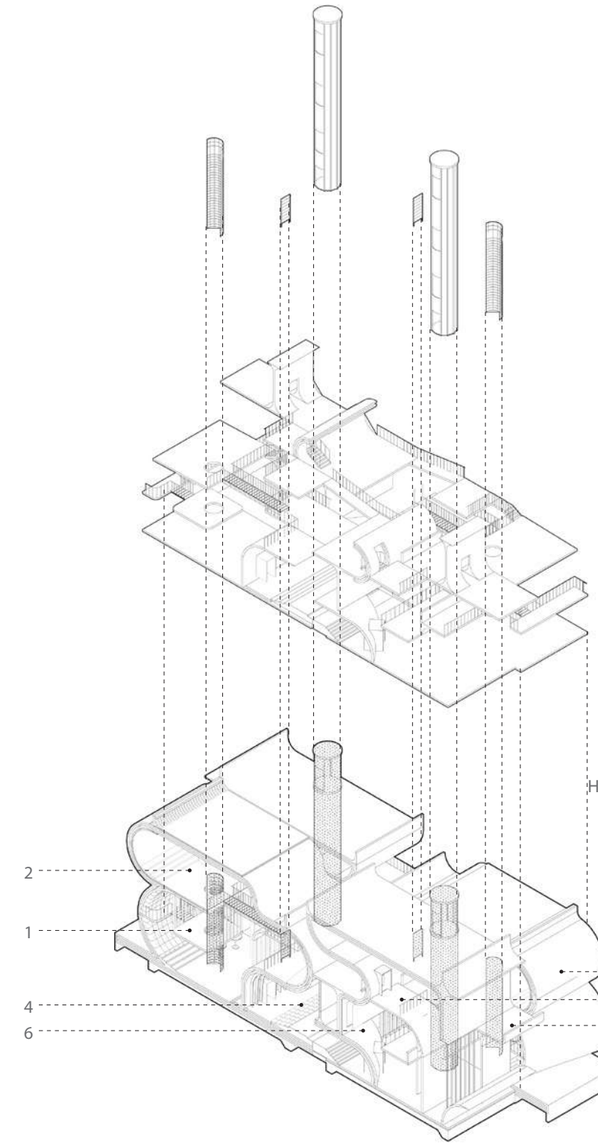
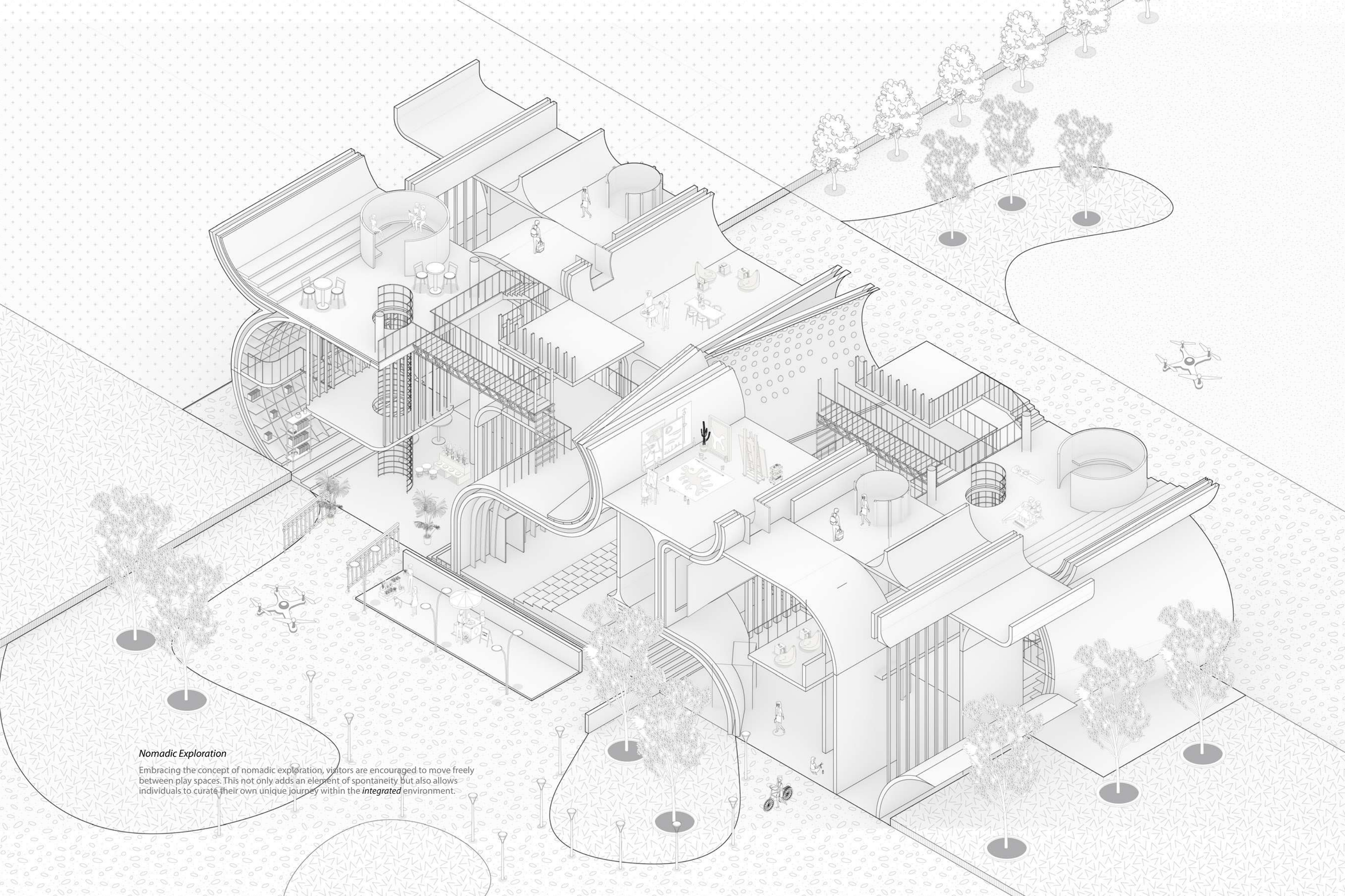


Diverse Play Zones

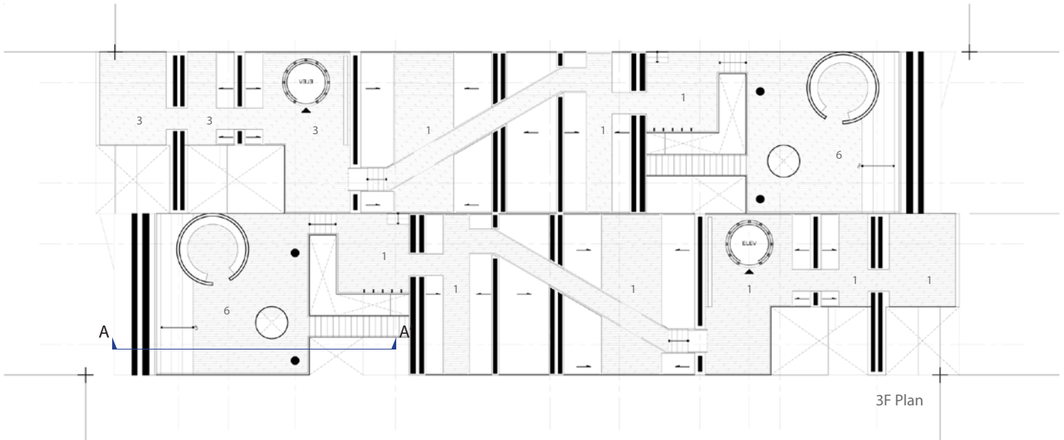
The ***integrated space*** includes diverse play zones, each tailored to a specific theme or activity. From adventure zones to creative workshops, visitors can choose from an array of options based on their interests.

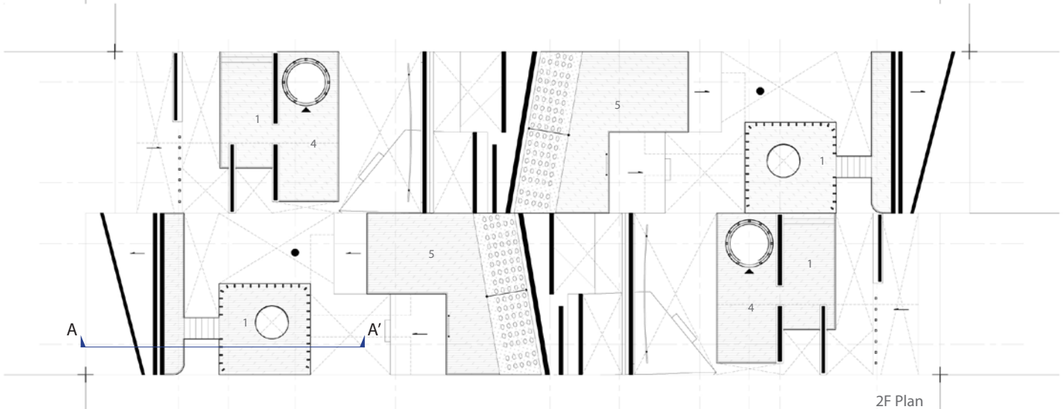
1. Library 2. Reading Space 3. Main Core
4. Main Square 5. Movie Theater 6. Climbing Space
7. 2F Main Circulation 8. Horizontal Circualtion 9. Gathering Space

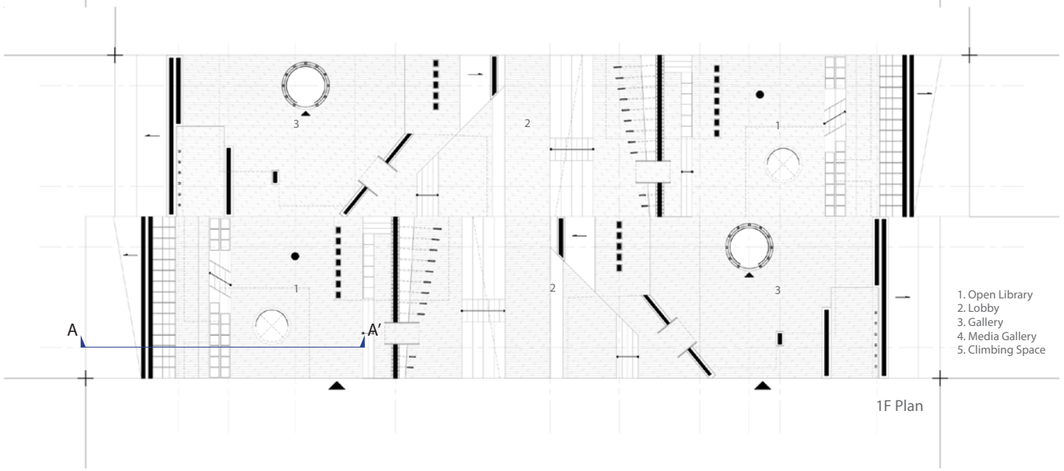


Nomadic Exploration

Embracing the concept of nomadic exploration, visitors are encouraged to move freely between play spaces. This not only adds an element of spontaneity but also allows individuals to curate their own unique journey within the ***integrated*** environment.







Fluid and Interactive Design

The layout promotes fluid movement between different play areas, encouraging a seamless transition from one activity to another. Interactive design elements enhance the overall experience, fostering a dynamic and engaging environment.