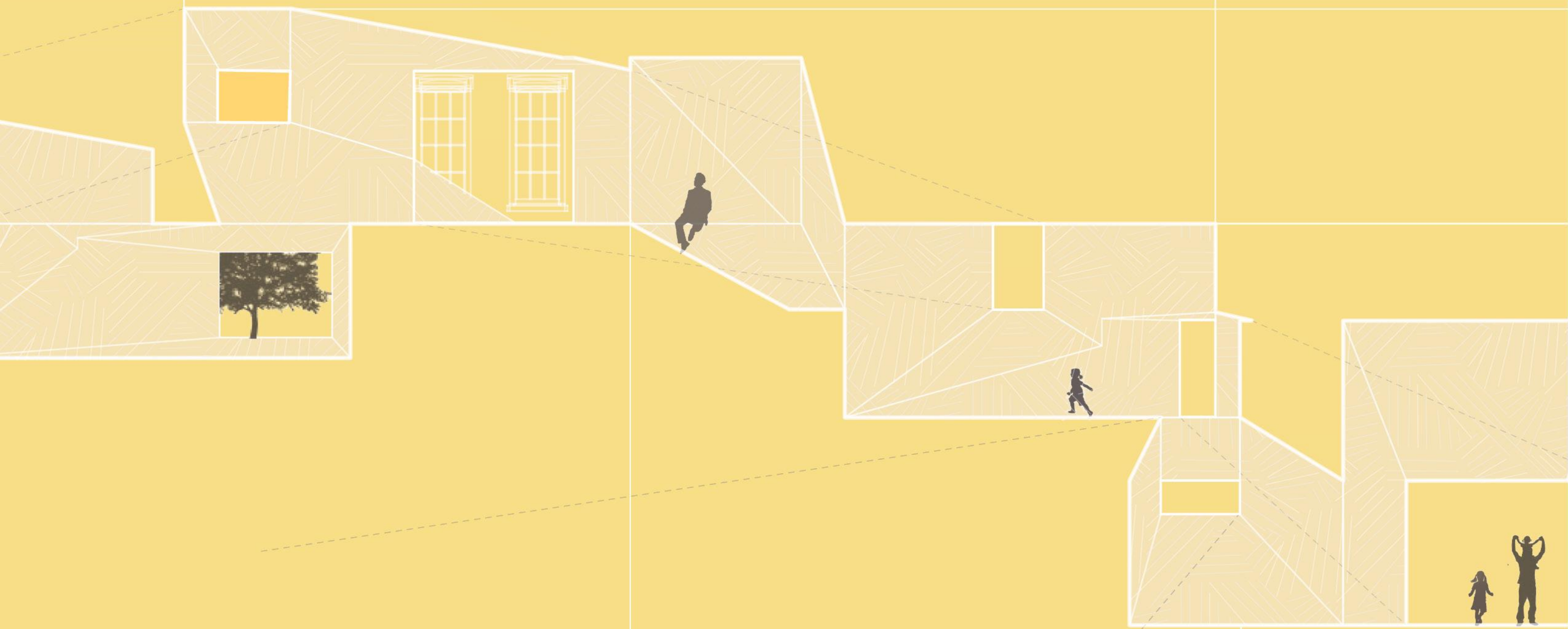


# HUIZE WU

## ARCHITECTURE PORTFOLIO

Academkic Works | 2022-2023



# Contents

## Academic Work

- |           |  |           |
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| <b>01</b> | <b>INBETWEEN</b><br>Summer 2022<br>A water retention system combined with a sports center examines the infrastructural networks connected through the septic system.           | P 01 - 08 |
| <b>02</b> | <b>ARCHiPORT</b><br>Fall 2022<br>A school a place to study and also a place to heal.   | P 09 - 22 |
| <b>03</b> | <b>SEMINR OF SECTION</b><br>Spring 2023<br>A sectional drawing in testing the representational techniques.   | P 23 - 26 |
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# INBETWEEN

Summer 2022 ARCH 6853 A | Professor Dan Wood

**Location:** Sullivan St, New York, NY

**Program:** Sports Center Incorporating with  
Water Retention System

The studio examines the urban and infrastructural networks connected through the septic system. By studying the history of sewers and sewage and how the public has interacted with them, the students will look at the potential future of the septic system and how it can function as an integral new people of a global green movement to make cities more ecological. This project focuses on the exploration of a water retention system combined within a sports center as a public program in Manhattan, New York City.

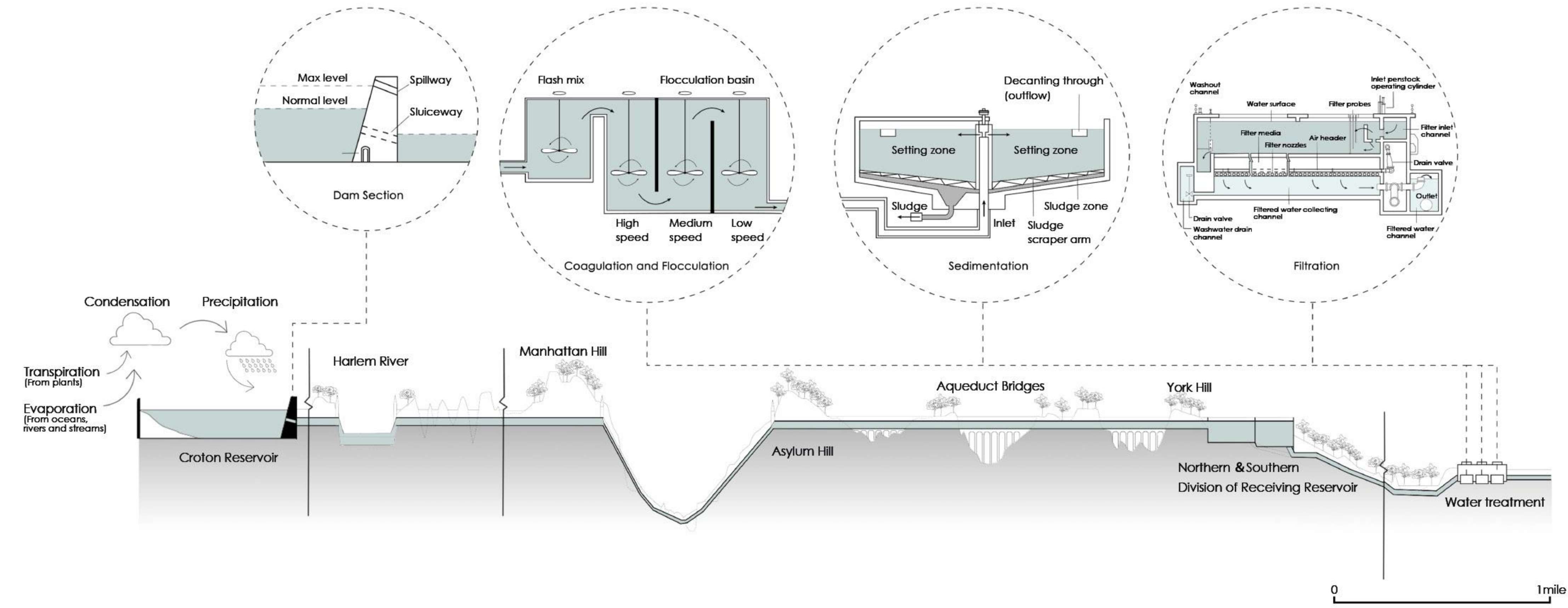




## Water Infrastructure Research & Study

### Reservoir System in New York City

Researching all of the parts of the New York City water system, from rainfall across the region's 2,000 square mile watershed through the system of reservoirs, water treatment, supply, pressure, mains, streets, buildings to an apartment – and then back out from an apartment through the streets, combination with stormwater to outflow at the river and sewage treatment, to post-treatment options. I am specifically looking into the reservoir water supply as the first part of the water system.



Reservoir Water Supplying System | Produced by Zichuan Mu (Research Partner)

## Site Research

### New York City Flooding Condition



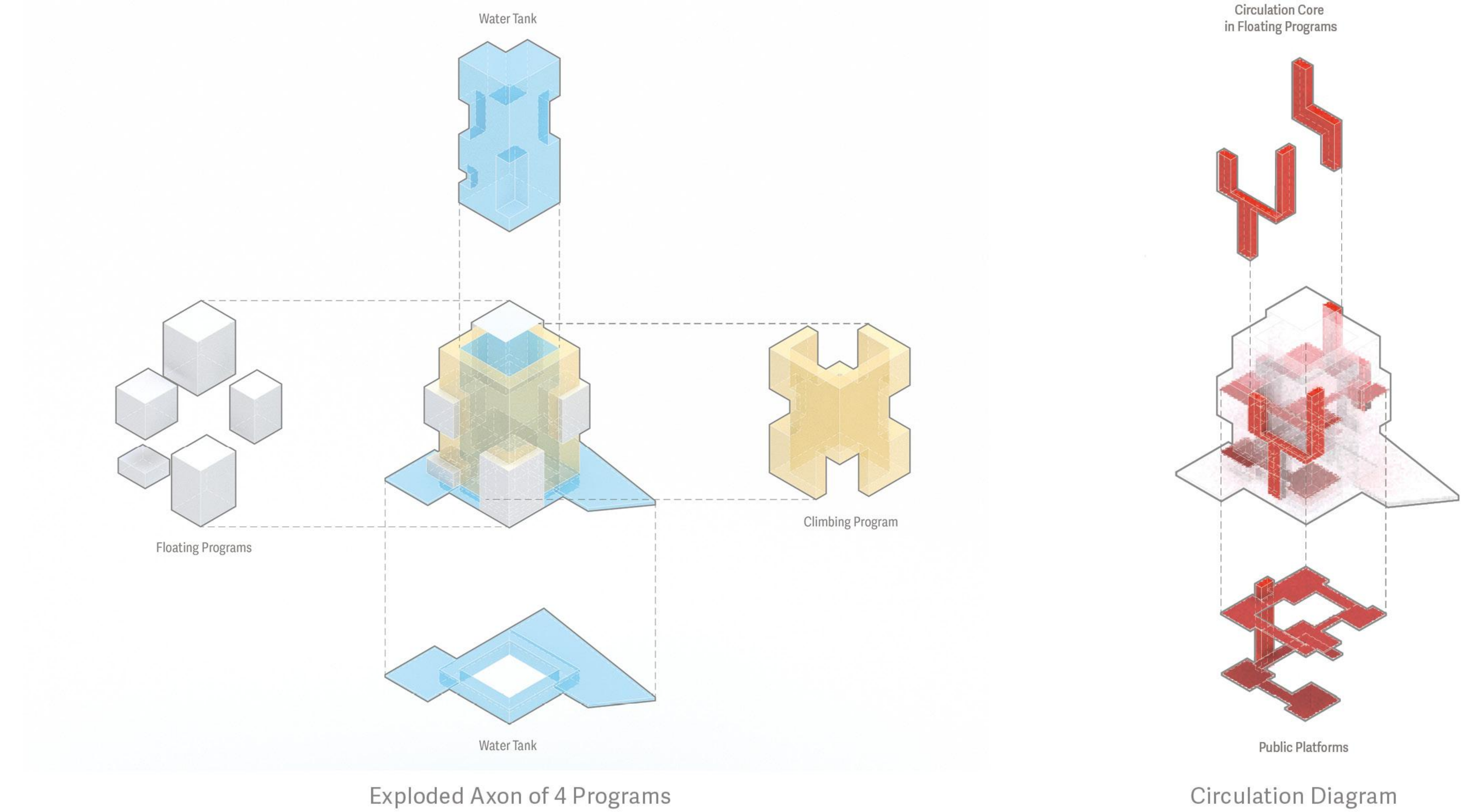
New York City Stormwater Flood Map

## Design Process

### Spatial Organization

The building is composed of 4 parts: water tank, water park, climbing program, and floating programs. The center space is used to collect rainwater and the water park is used for collecting rainwater on ground floor. The climbing program is placed inbetween the water tank and outer facade with the other sports programs floating and intersecting around.

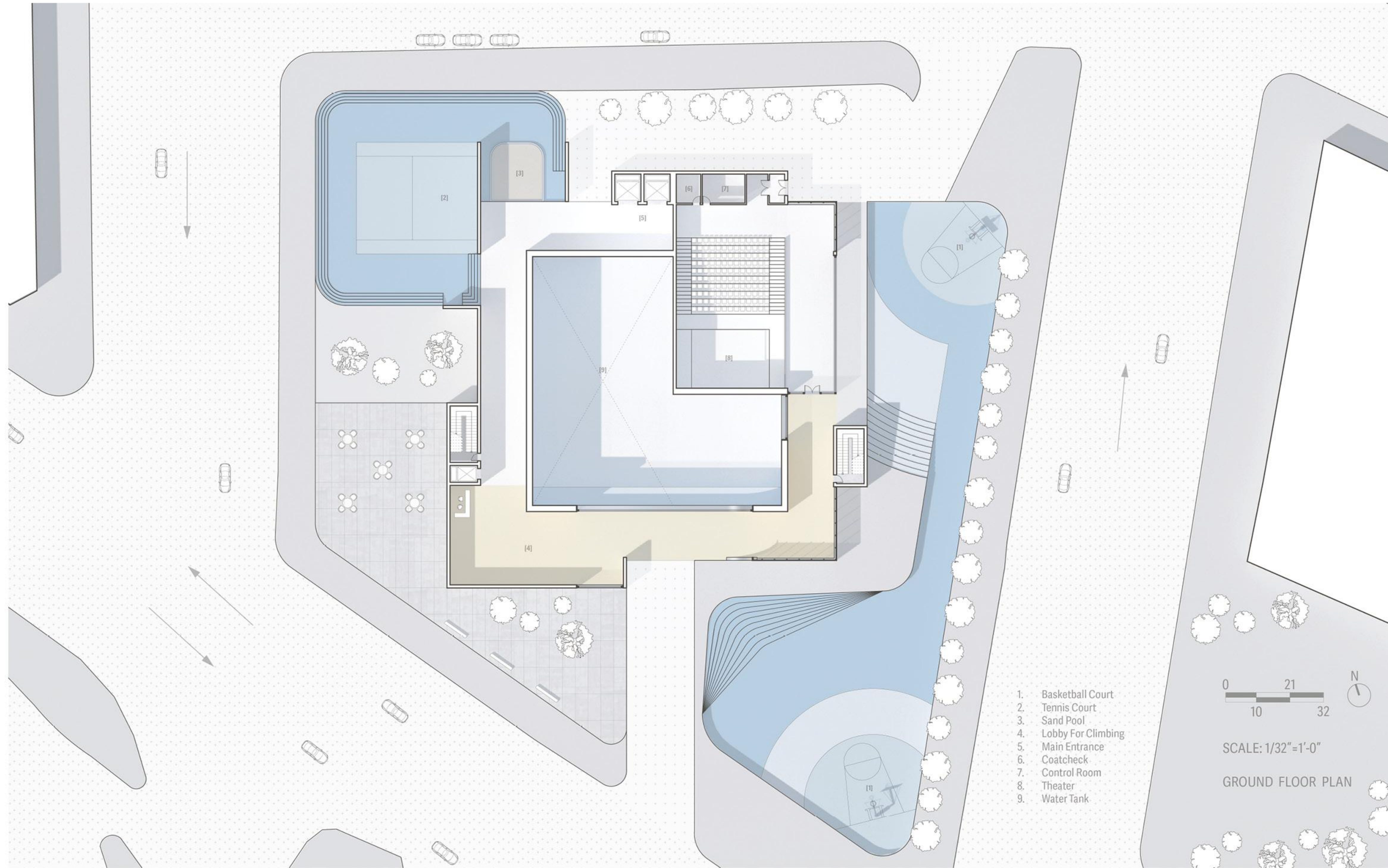
The vertical shafts lead the visitors to public floors, and each floating program is connect to two public platforms.



Exterior Perspective | Axonometric View



**Design Process**  
Water Retention System in Manhattan, NY



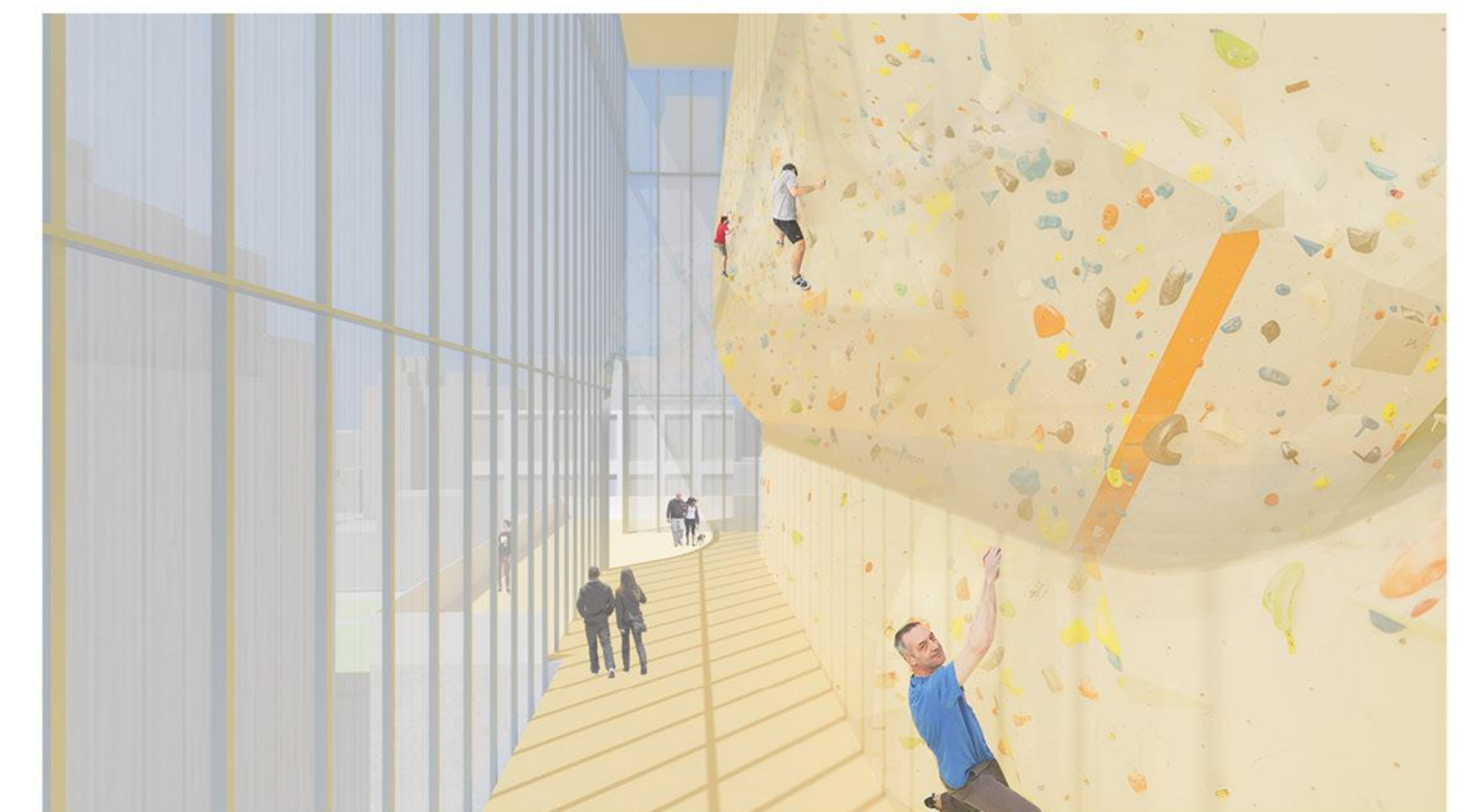
Ground Floor Plan | Lobby & Outdoor Water Park



Exterior Perspective | Street View



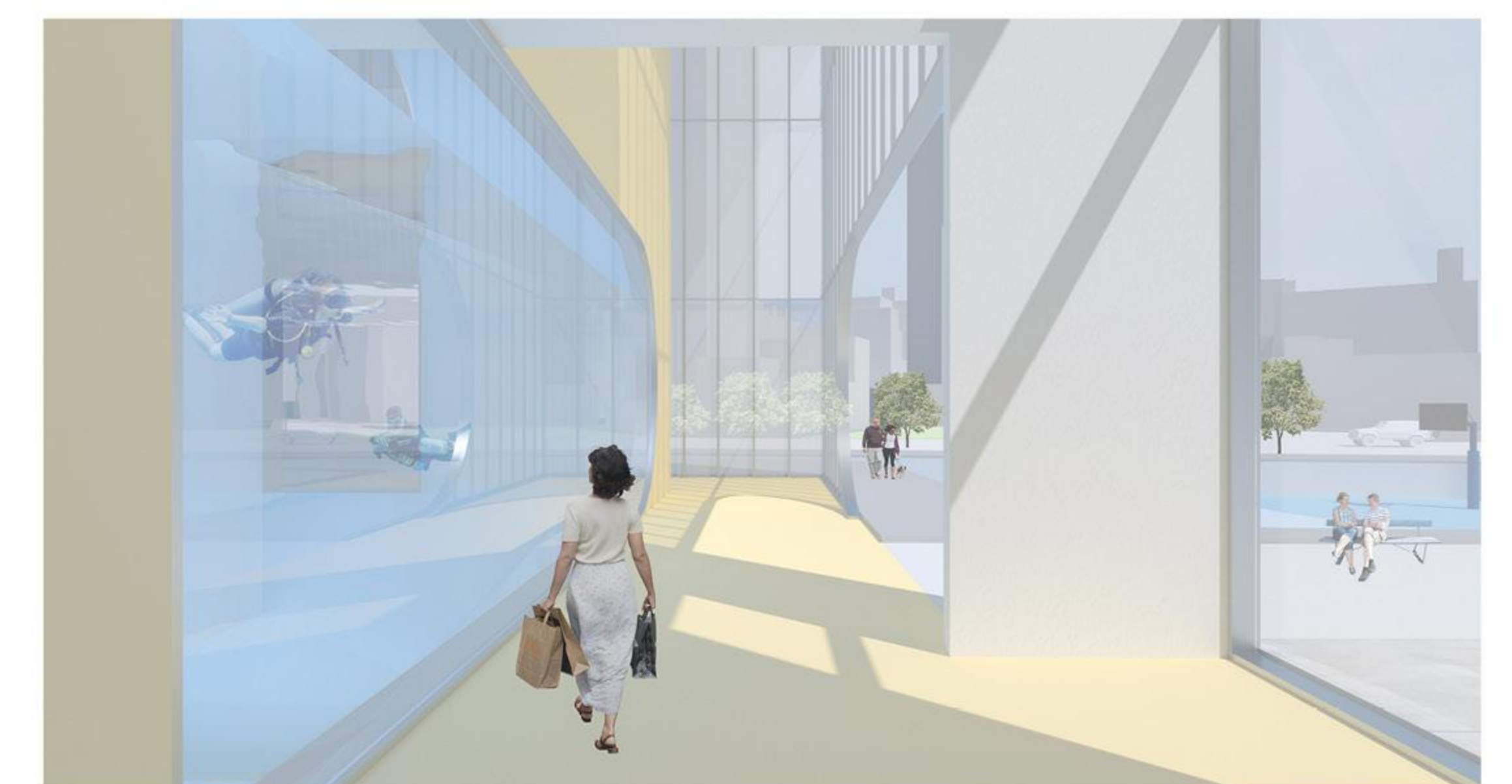
Exterior Perspective | Outdoor Balcony



Interior Perspective | Bouldering



Interior Perspective | Running Track

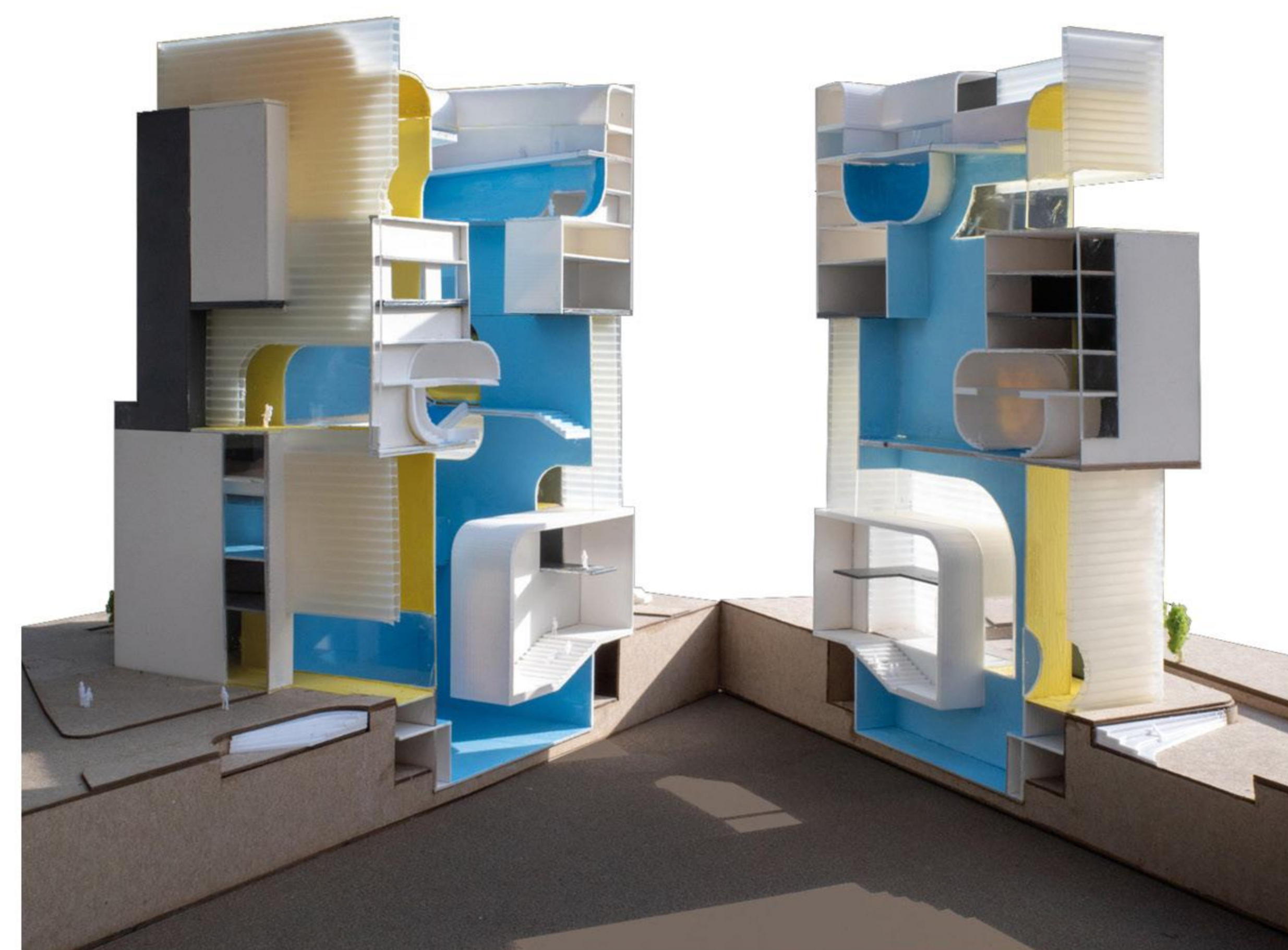


Interior Perspective | Lobby



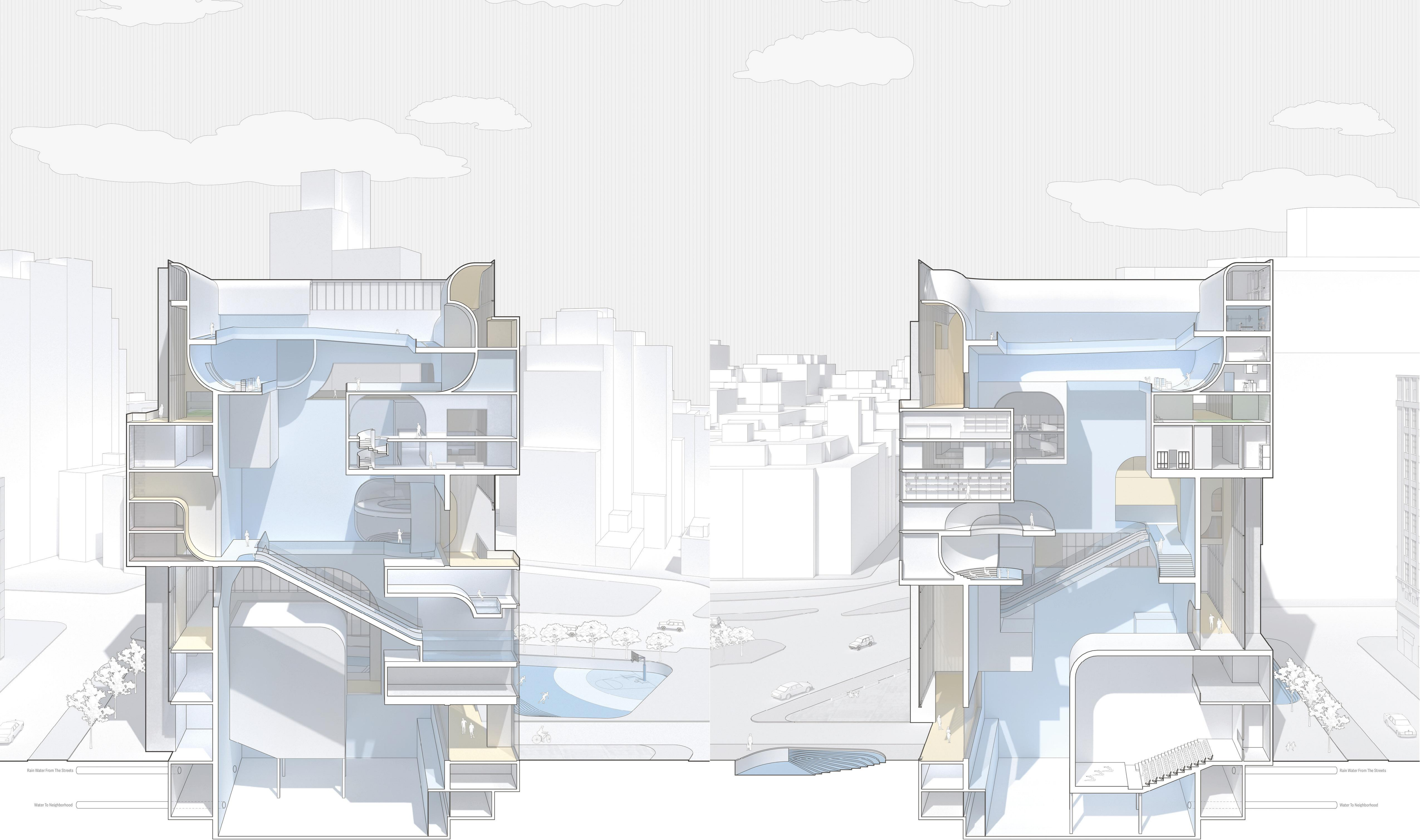
Perspective Section 2  
Perspective Section 1

4th Floor Plan | Common Floor in Connecting the Four Parts



Sectional Model | Physical model





Sectional Perspective 1 | From West  
07 | INBETWEEN

Sectional Perspective 2 | From East  
INBETWEEN | 08



# ARCHiPORT

Fall 2022 ARCH 4005 A | Professor Bernald Tschumi

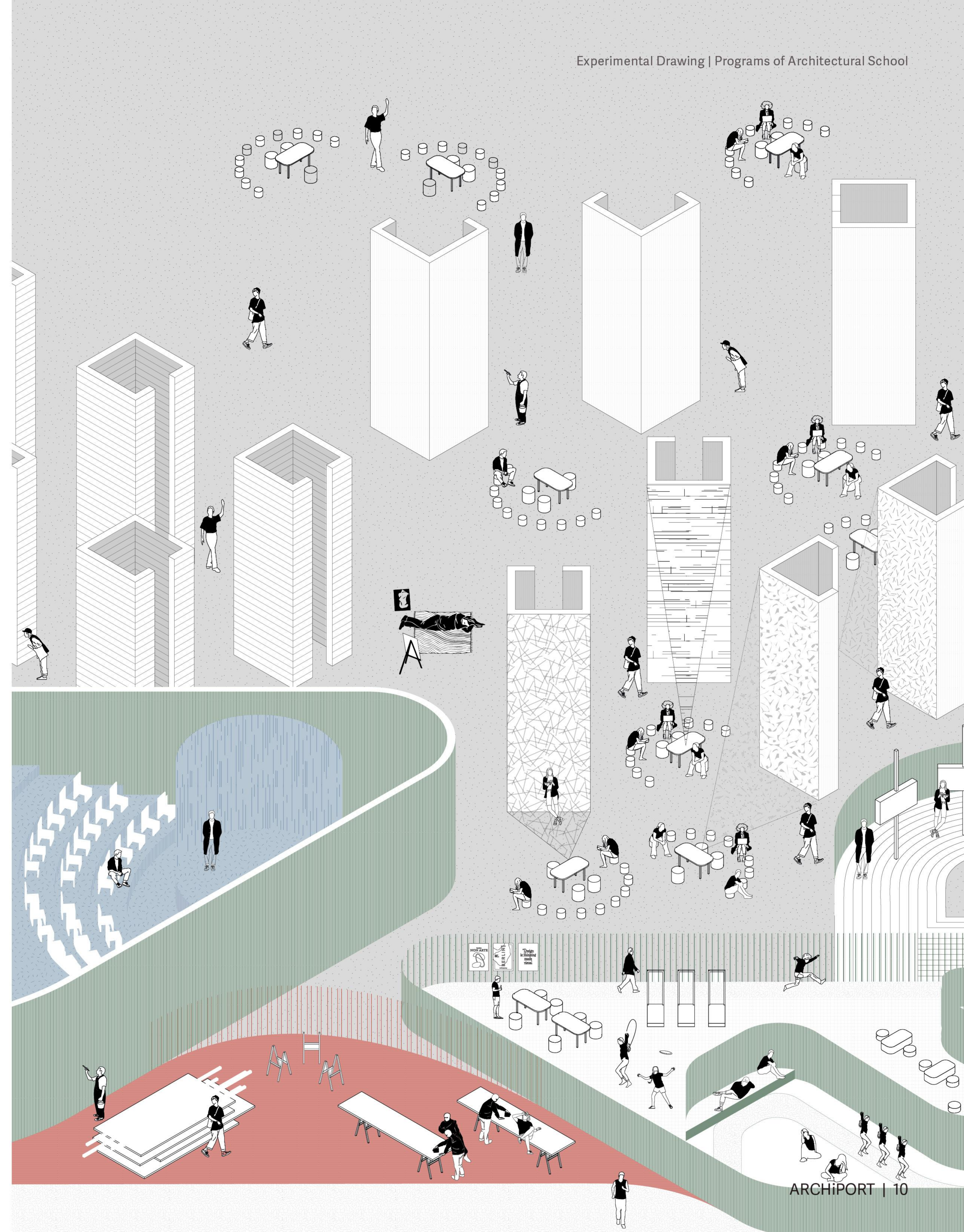
**Partner:** Lin Kan & Yufei Huang\*

**Role in Team:** Conceptual Design  
Digital Modeling  
Design Development

**Location:** IRT Powerhouse, 840 12th Ave, New York, NY

**Program:** Architectural School

School is a place to study and also a place to heal. Archiport as a port of architectural knowledge expands the boundary of educational location and emphasis on the comprehensiveness of study forms, envisioning that studio can be everywhere. By analogizing architecture study to the information flow, we propose that the study process can be divided into three categories: Acquisition, Processing, and Presenting (APP).



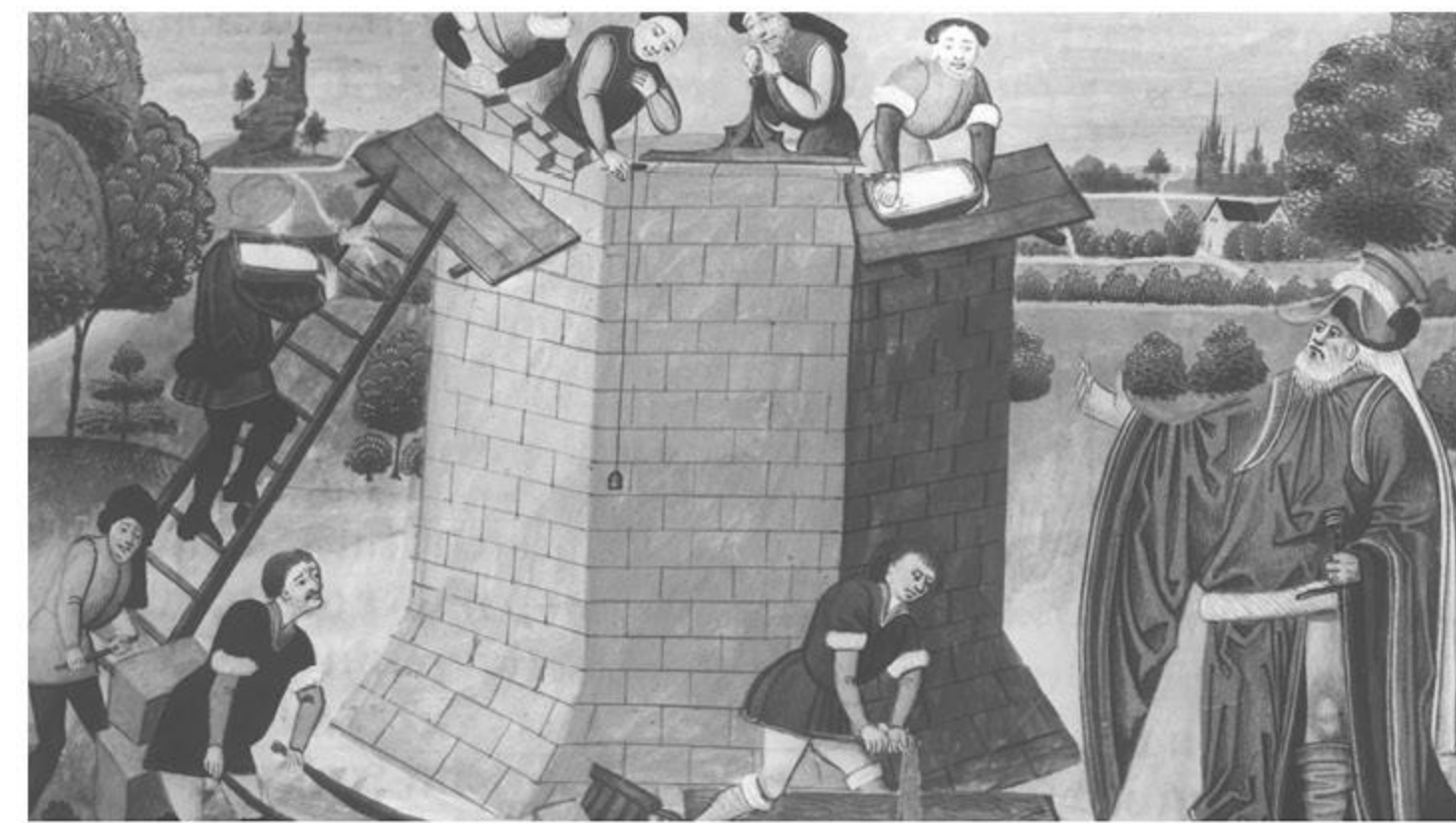
\* All graphic shown in this portfolio are solely down by myself, unless otherwise credited.



## Introduction

### The Revolution of Architectural Study Mode

Past | The Beginning of ARCH Study



Architects on the Construction Site

Now | Current Situation



GSAPP, Avery Hall, Architectural Studio

Future | What We Think It Could Be...

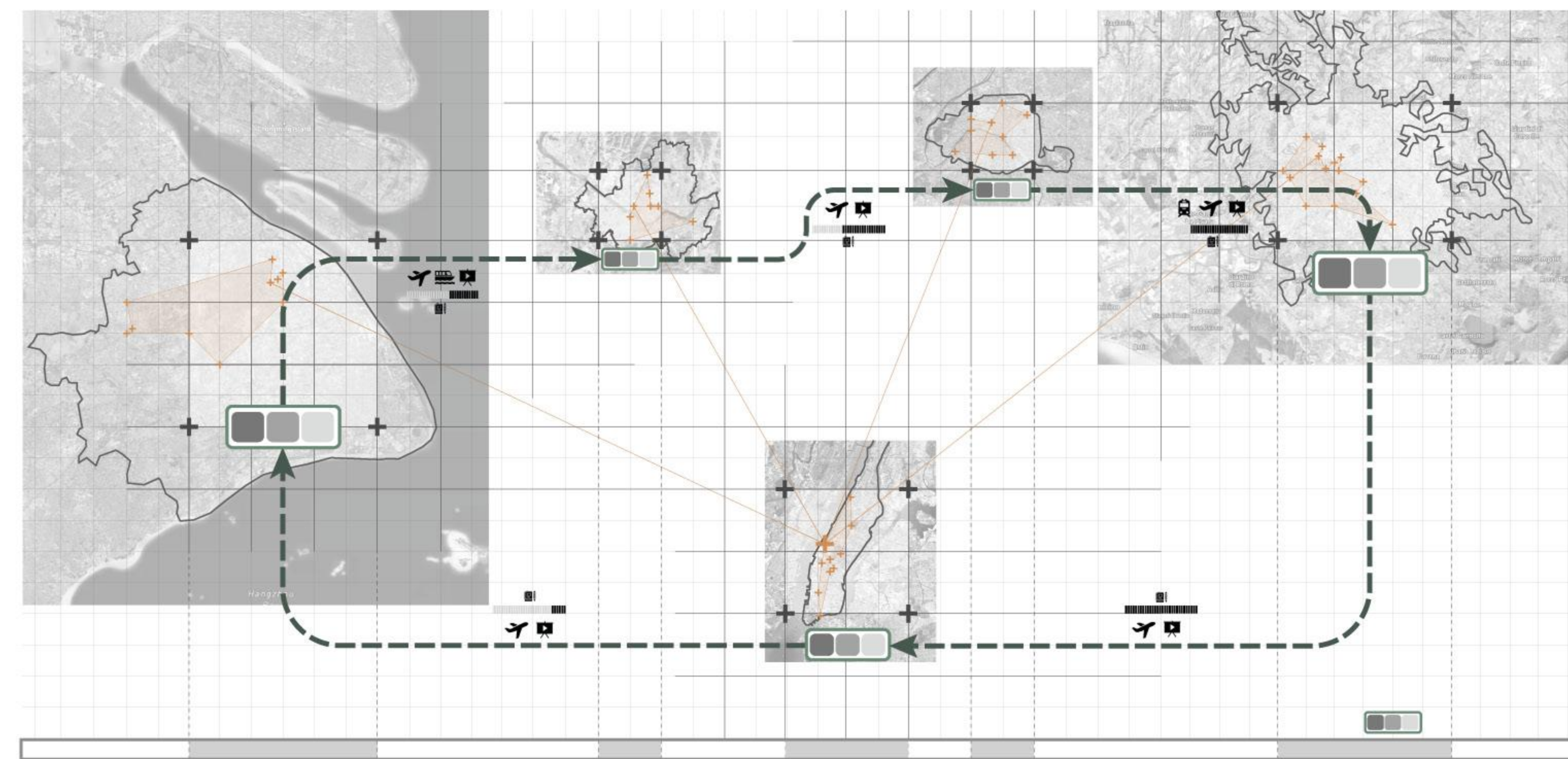


Studio Everywhere

## Studio Everywhere

### The Education System of The School

In the future, an architectural school is like an information station that can be constructed in every corner of the world, and students are able to physically attend the sites as part of their curriculum. With the help of technology, the sites could also be digitally projected into the studio space such that the building itself becomes a collage of studios everywhere.



Studio is Everywhere | Course Schedule All Over the World

## Future of ARCH Education

### Studying & Healing

Architecture school is an information center where we can freely grab knowledge and learn skills. And it is also a healthcare center that can heal students and visitors.

Therefore, as an indispensable part for caring and space for recreation, a new program: Healing Zone is introduced into our design.

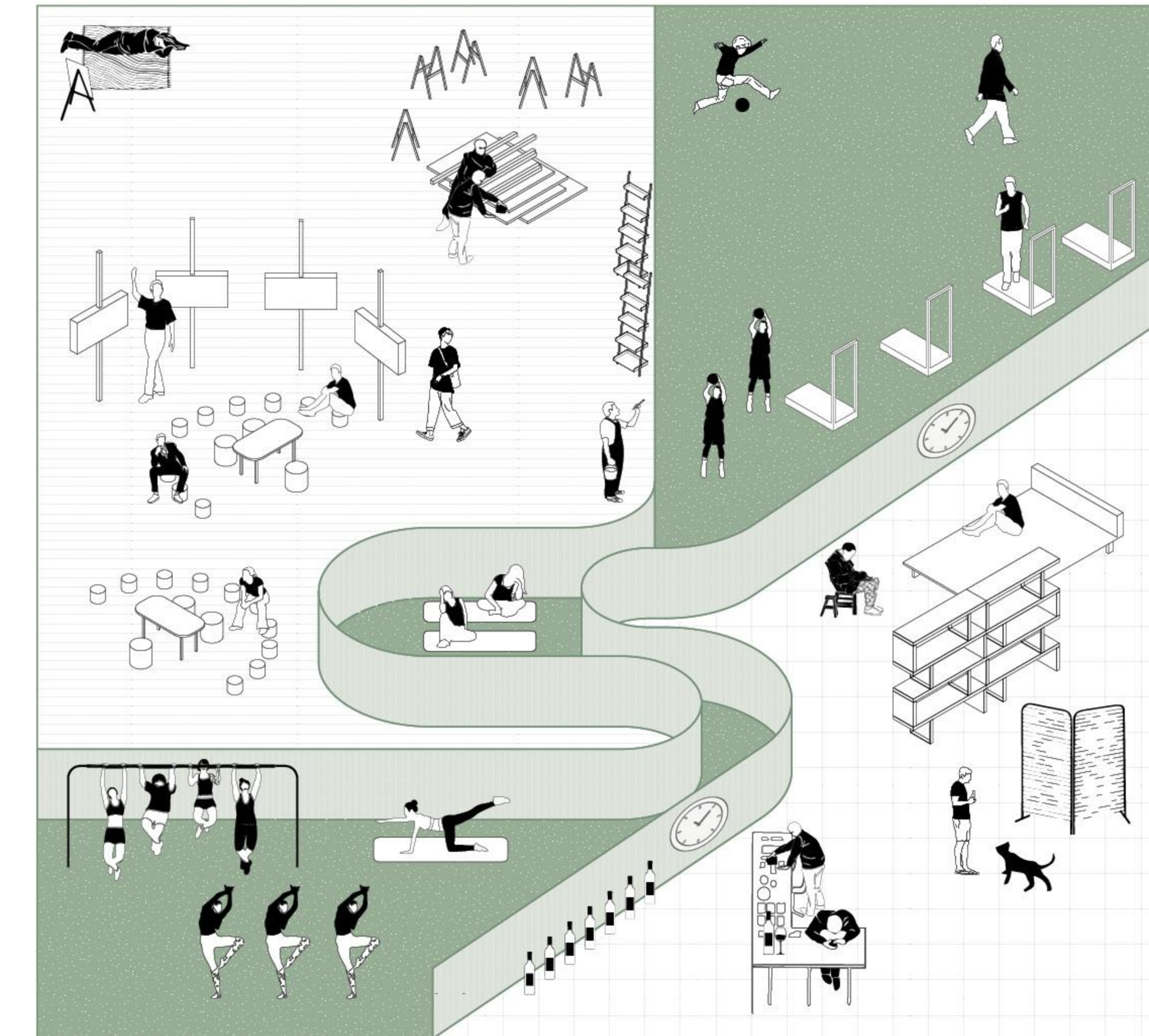


Experimental Collage of Future Architectural School | Programs Fusing Together

## Healing

### What is Healing Zone?

Experience in the Healing Zone | A Transitional Area Inbetween Studios



#### For School:

- Providing space, activities, facilities, and services for students to rest and take a break out of their heavy school works.
- Encouraging communication and reaction and attracting students to come to school.

#### For Community:

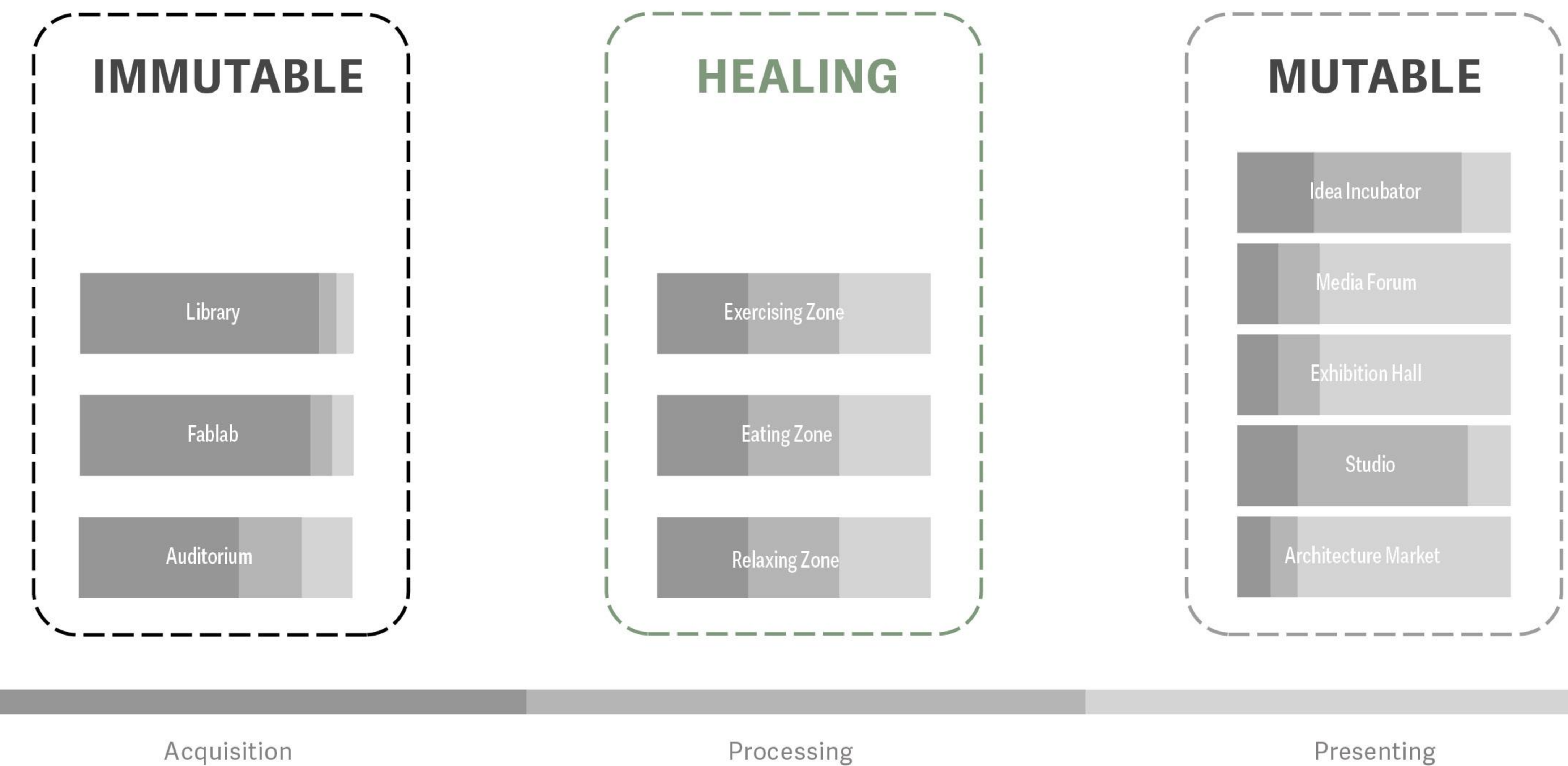
- Providing health services for communities, and school becomes a healthcare center as part of the public services.

## A.P.P Diagram

### The Revolution of Architectural Study Mode

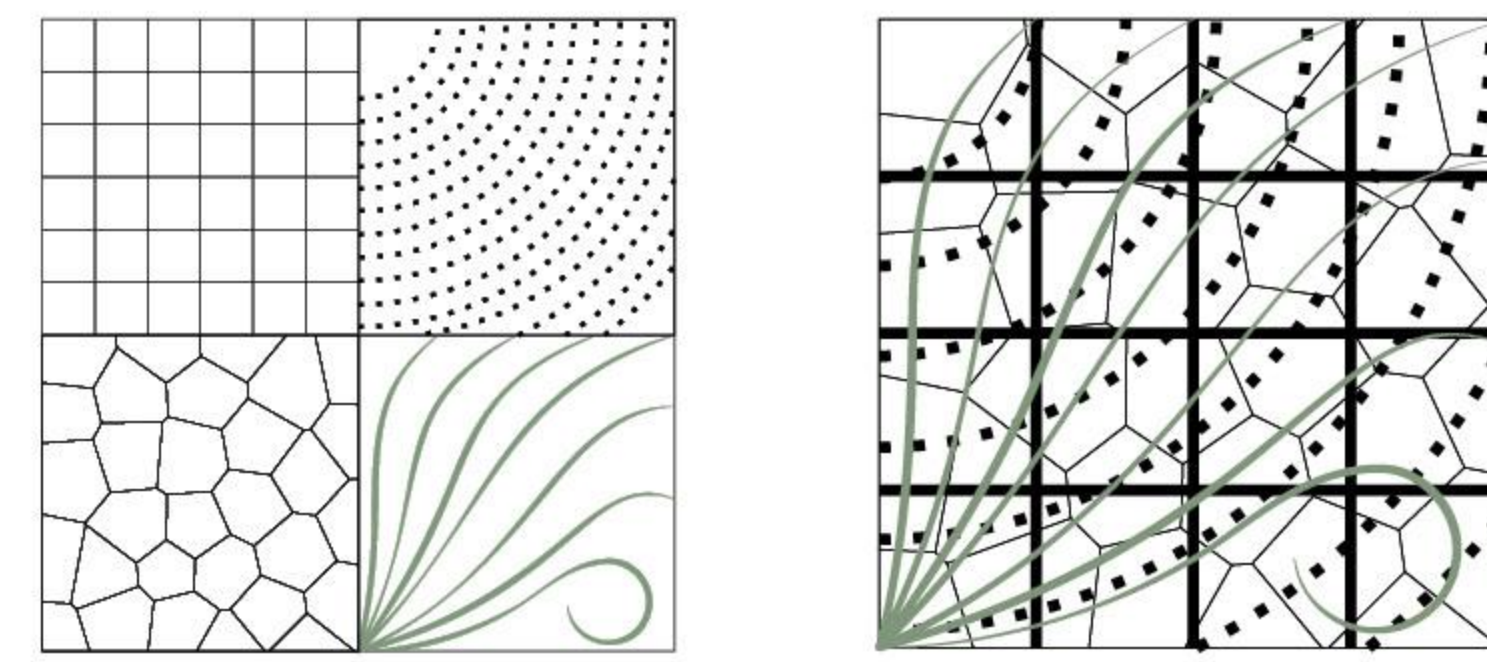
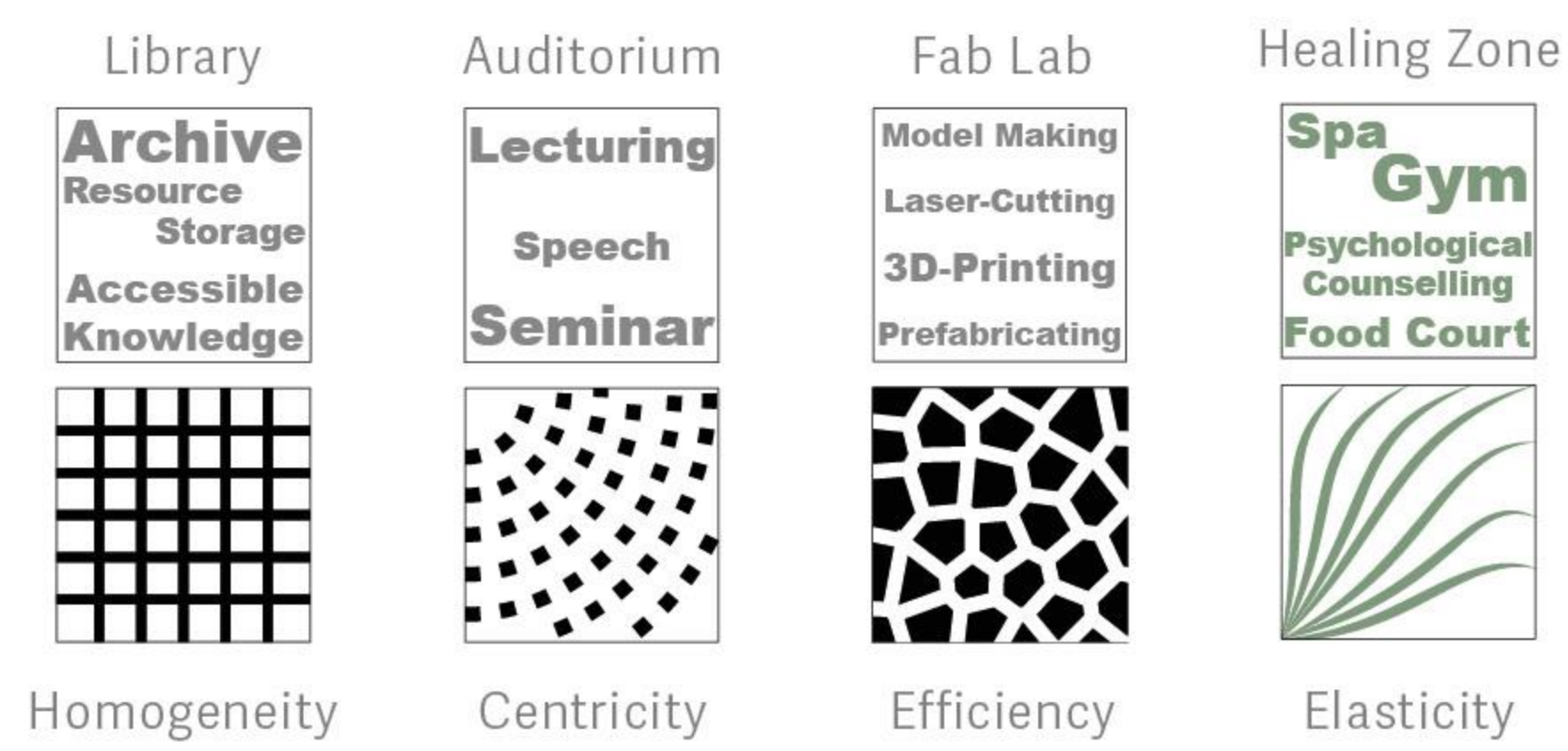
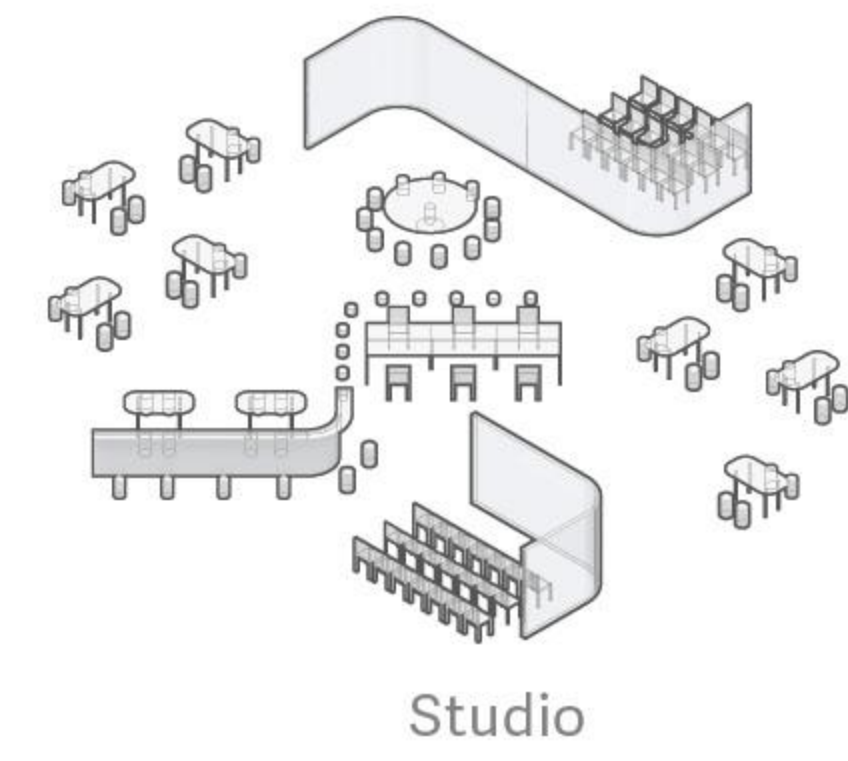
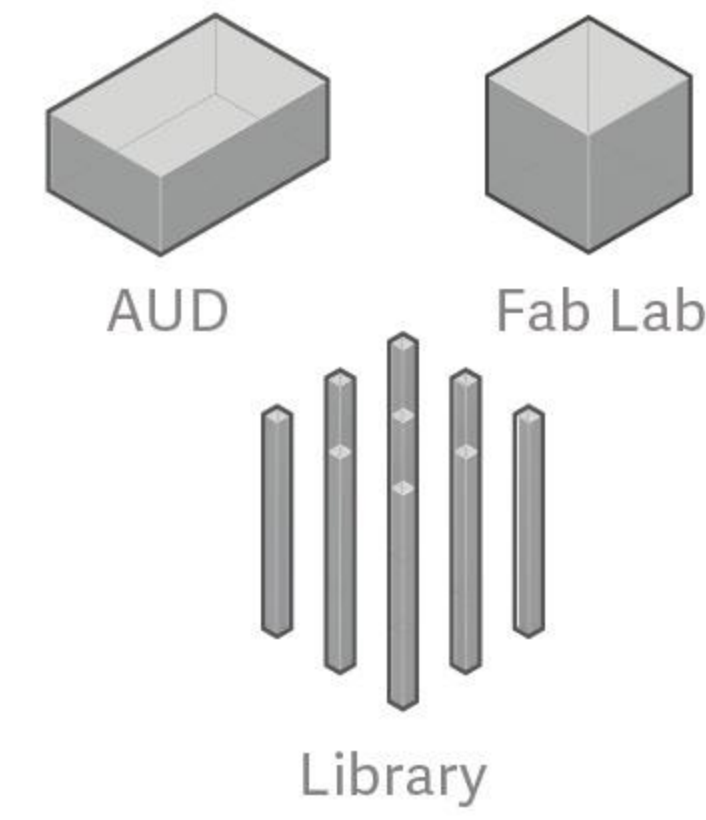
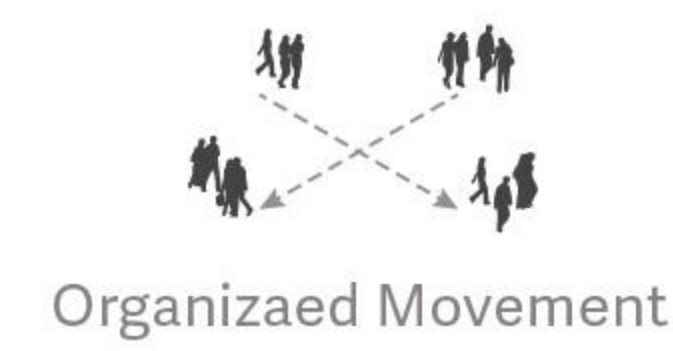
By analogizing architecture study to the information flow, we propose that the study process can be divided into three categories: Acquisition, Processing, and Presenting (APP).

Inside the school, the information transition among the three behaviors happens in every program but with different ratios in each part. The programs with a large proportion of acquisition are regarded as the immutable, where students and teachers come to grab the physical or technical knowledge as desired. With the same logic, the other is considered as the mutable including the space of thinking ideas, making productions, and presenting works. And Healing Zone is an intermediated area that weaves around the two, providing a special zone of rest out of the convention.

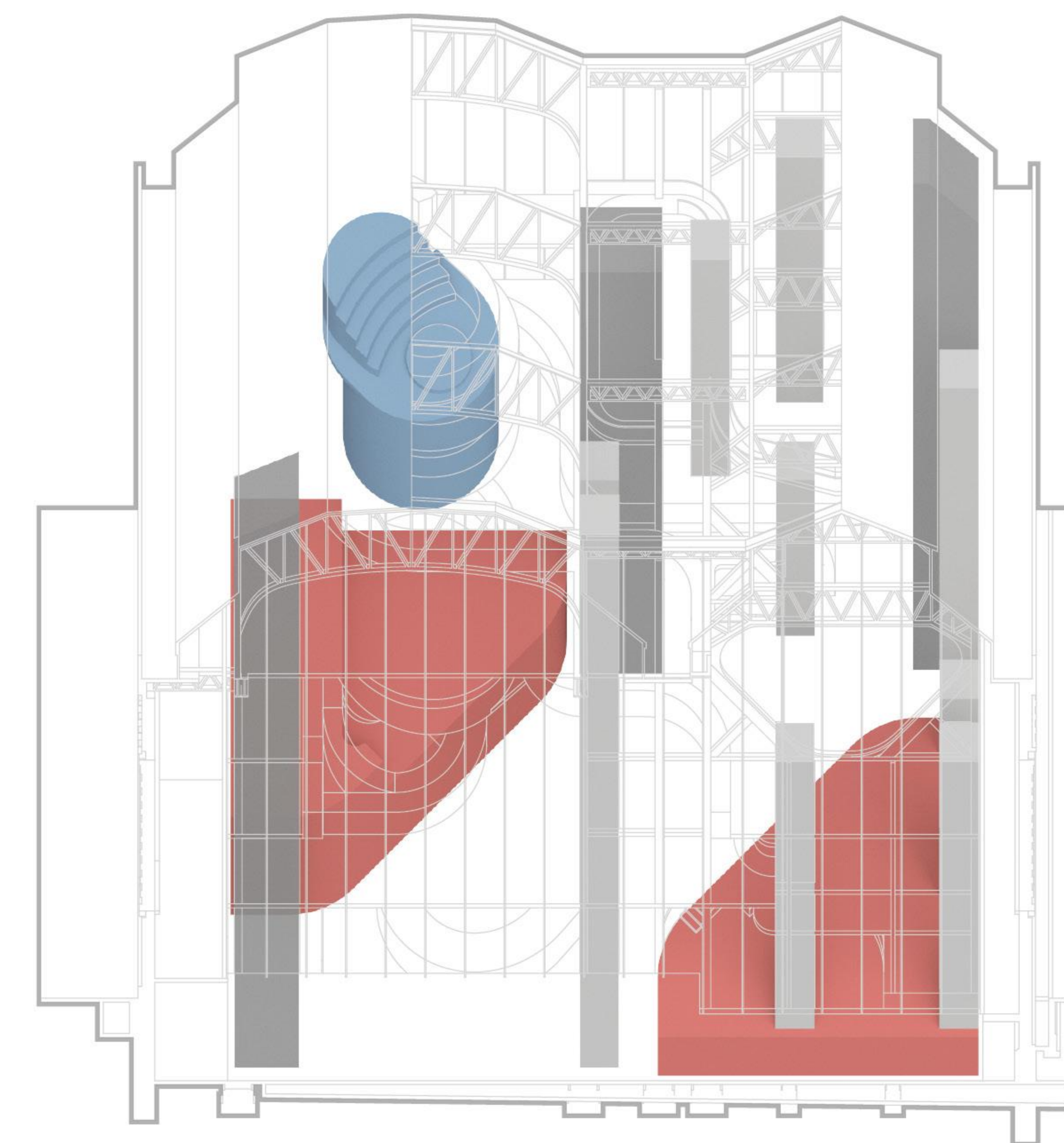
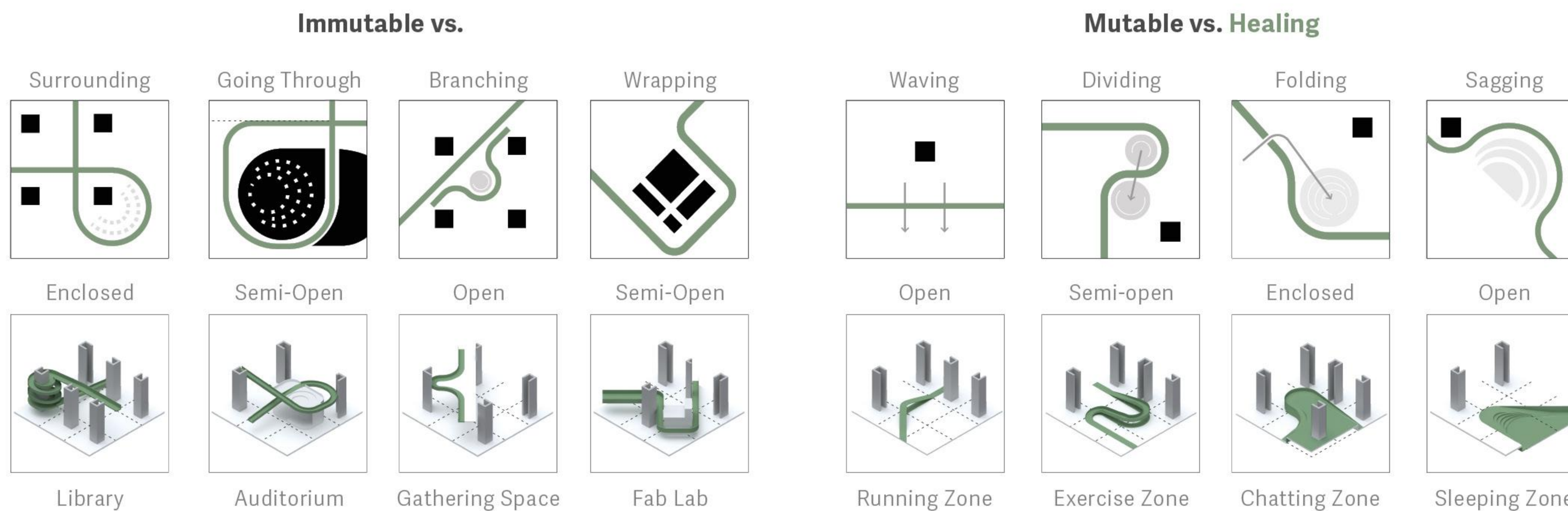
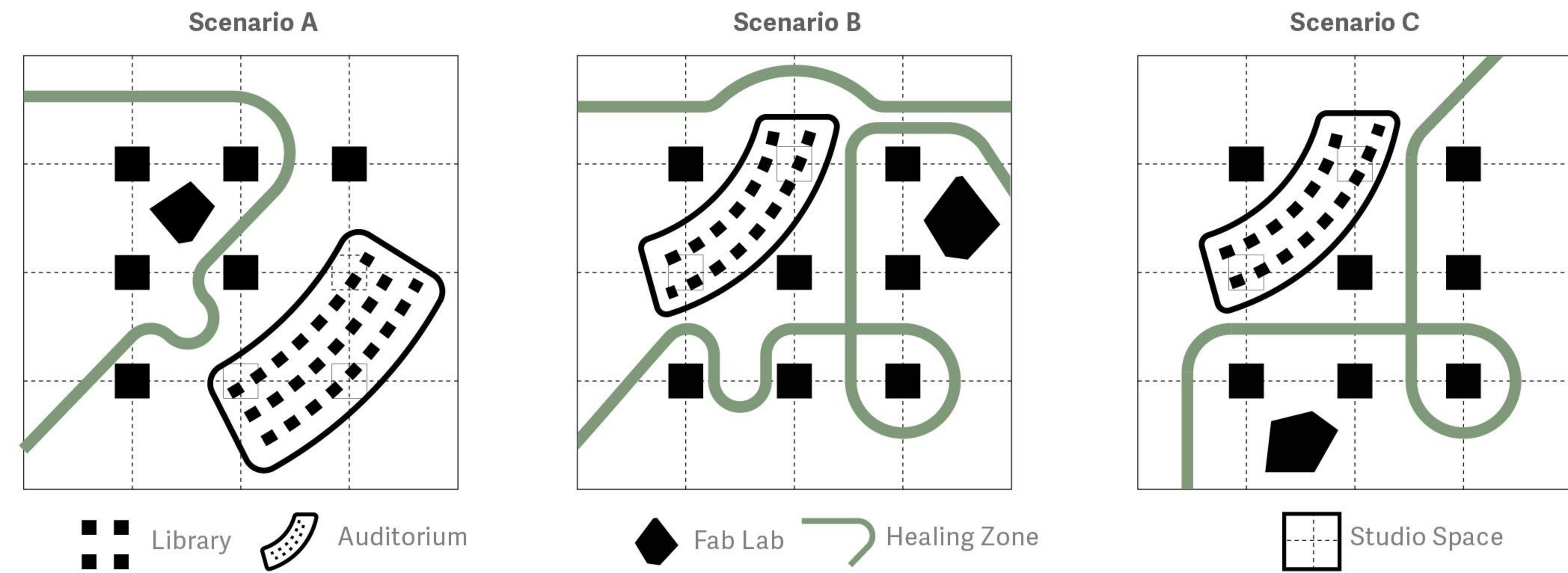
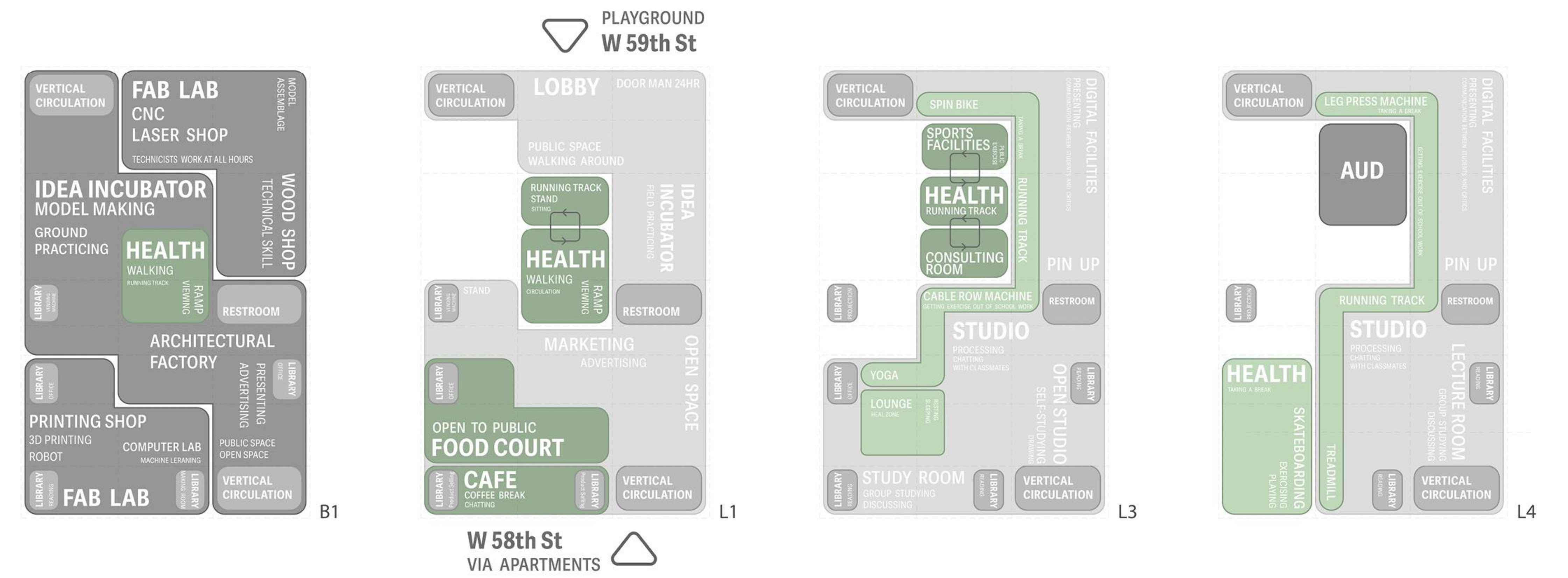




# Typology Development

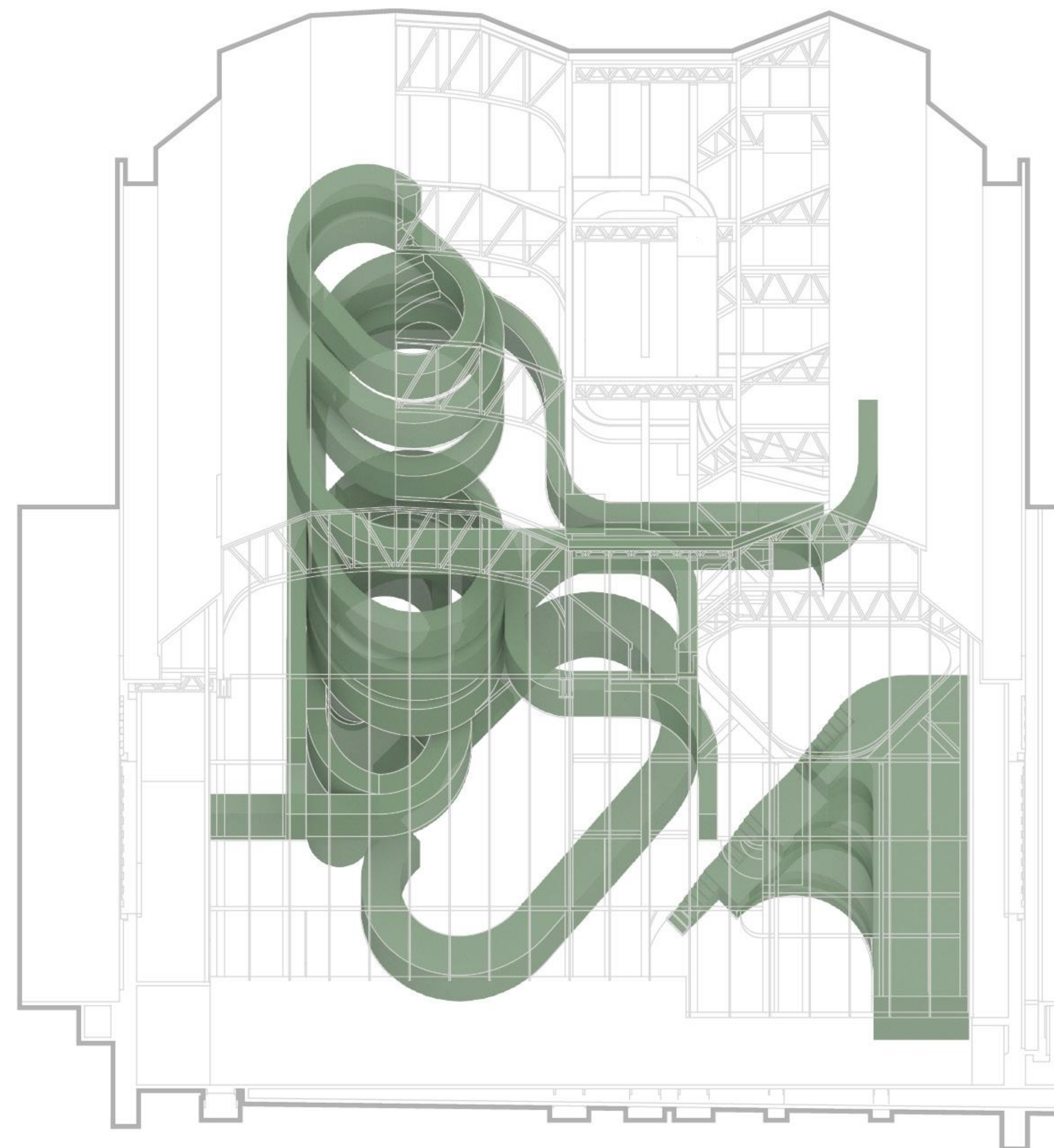


# Program Allocation



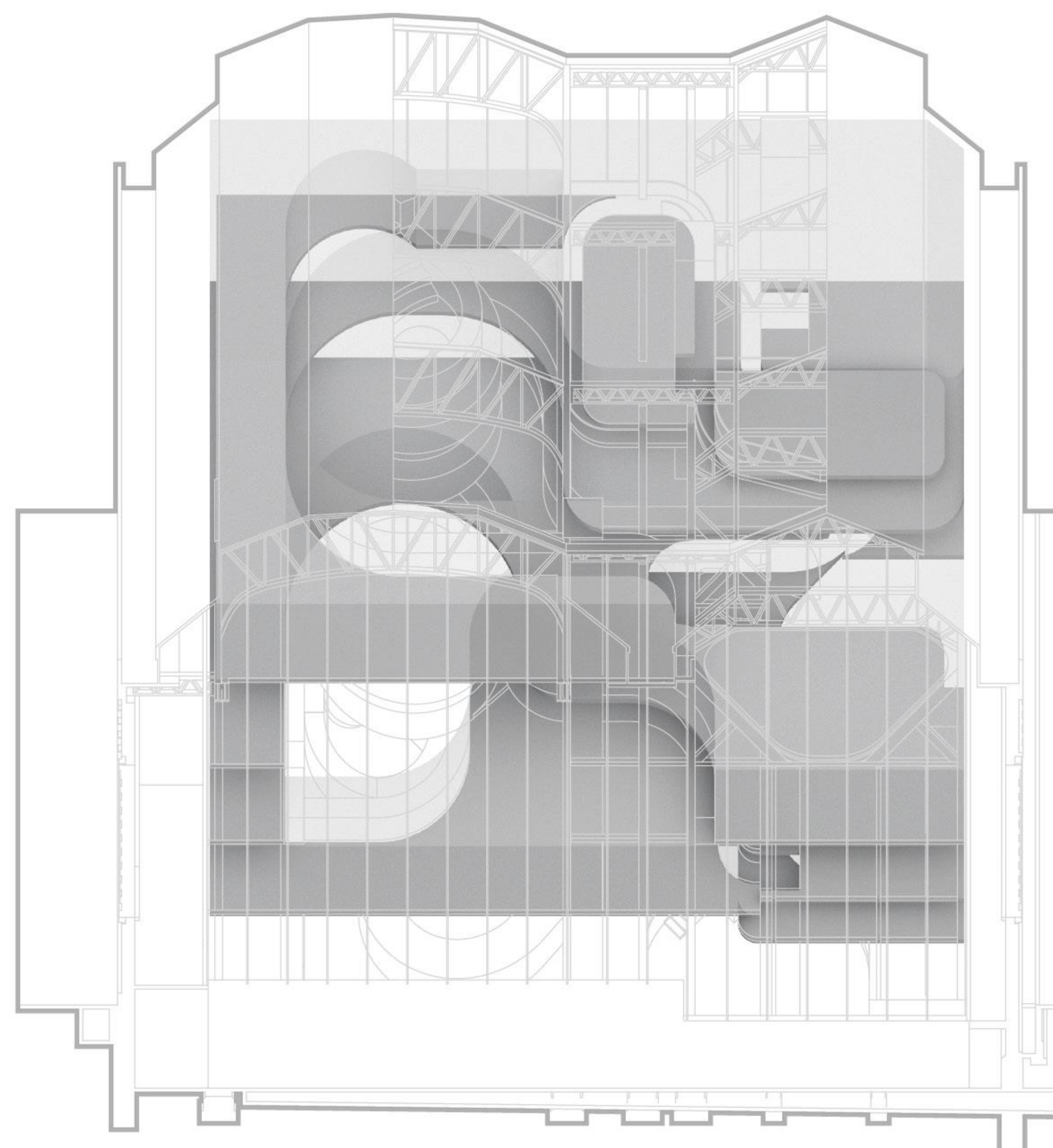
Immutable Program  
 Vertical Shaft Library Auditorium Fab Lab





Healing

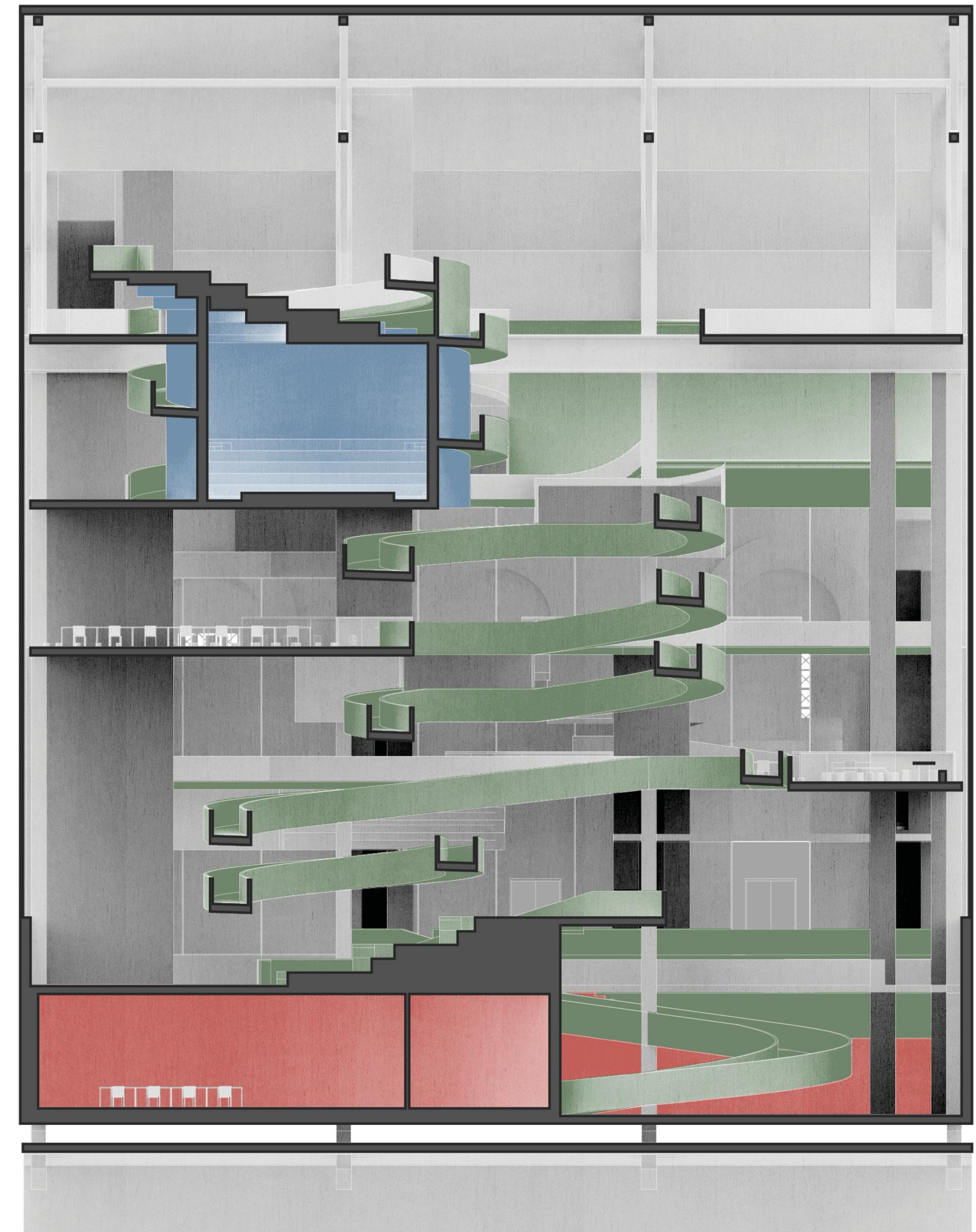
■ Healing Zone



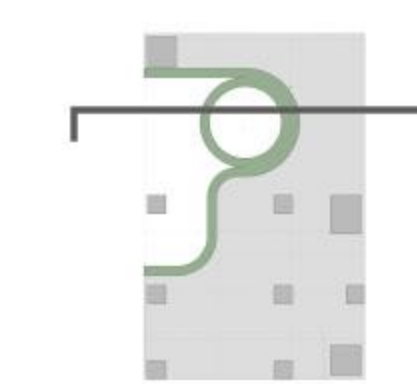
Mutable Program

■ Studio Space

Program



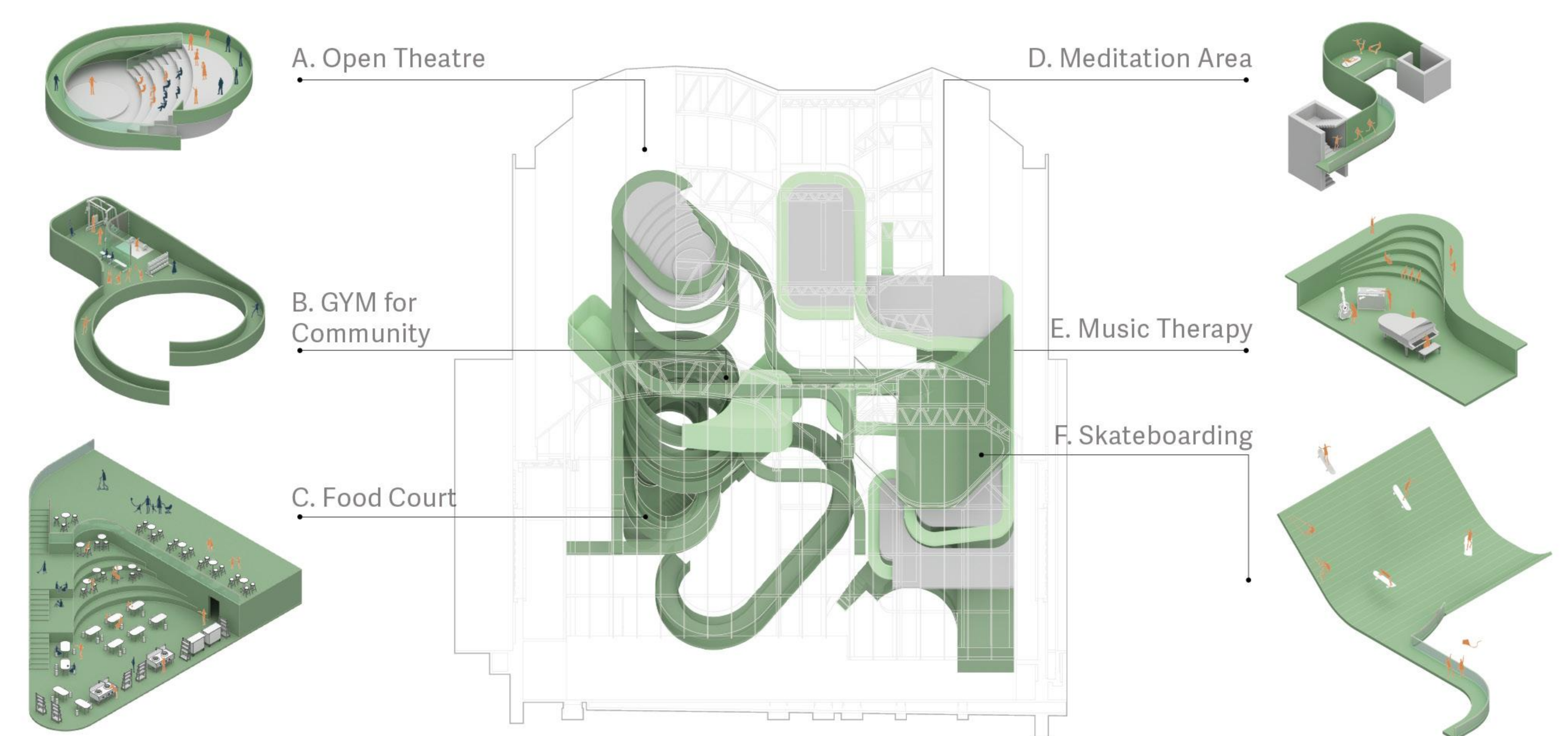
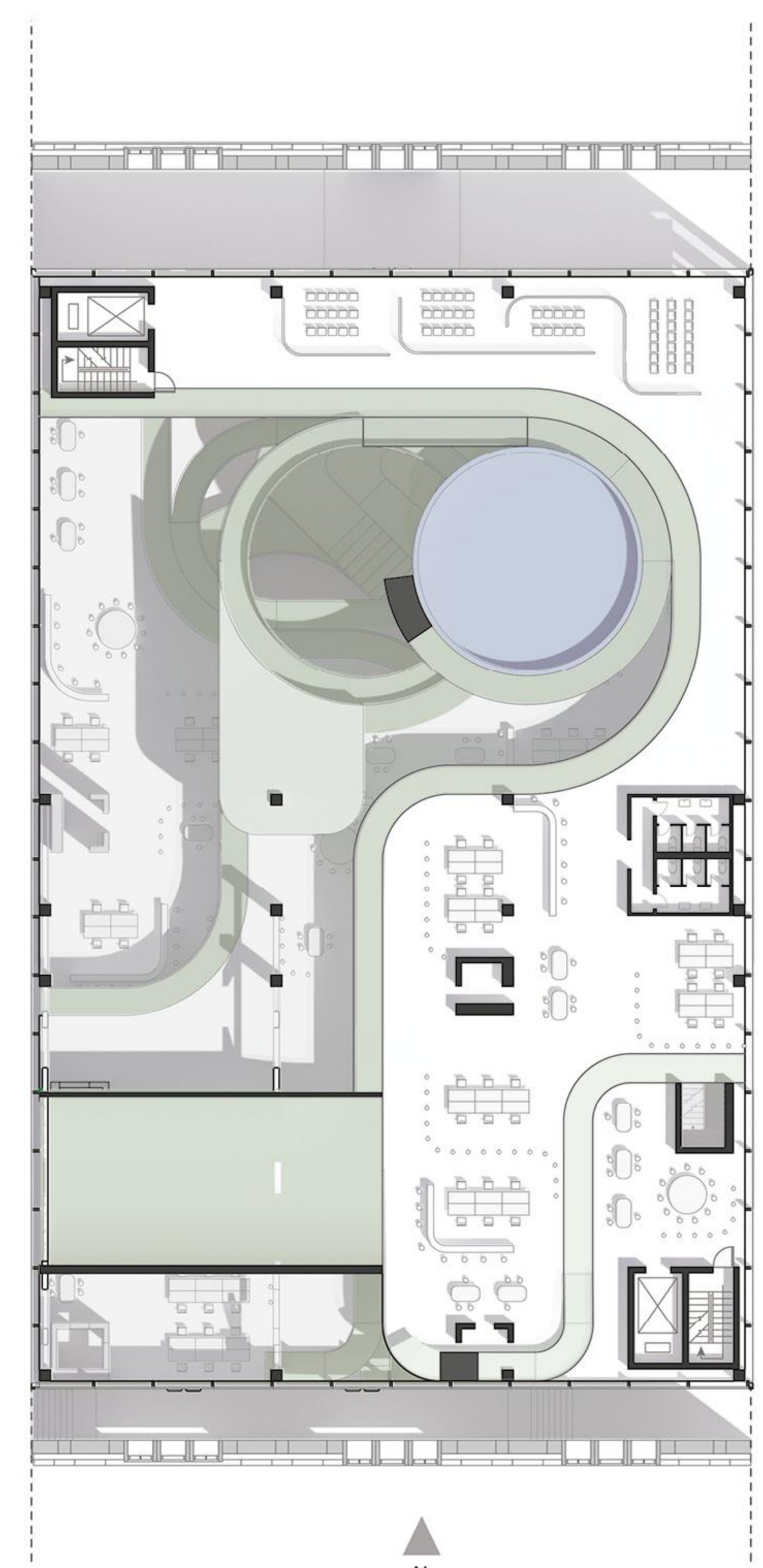
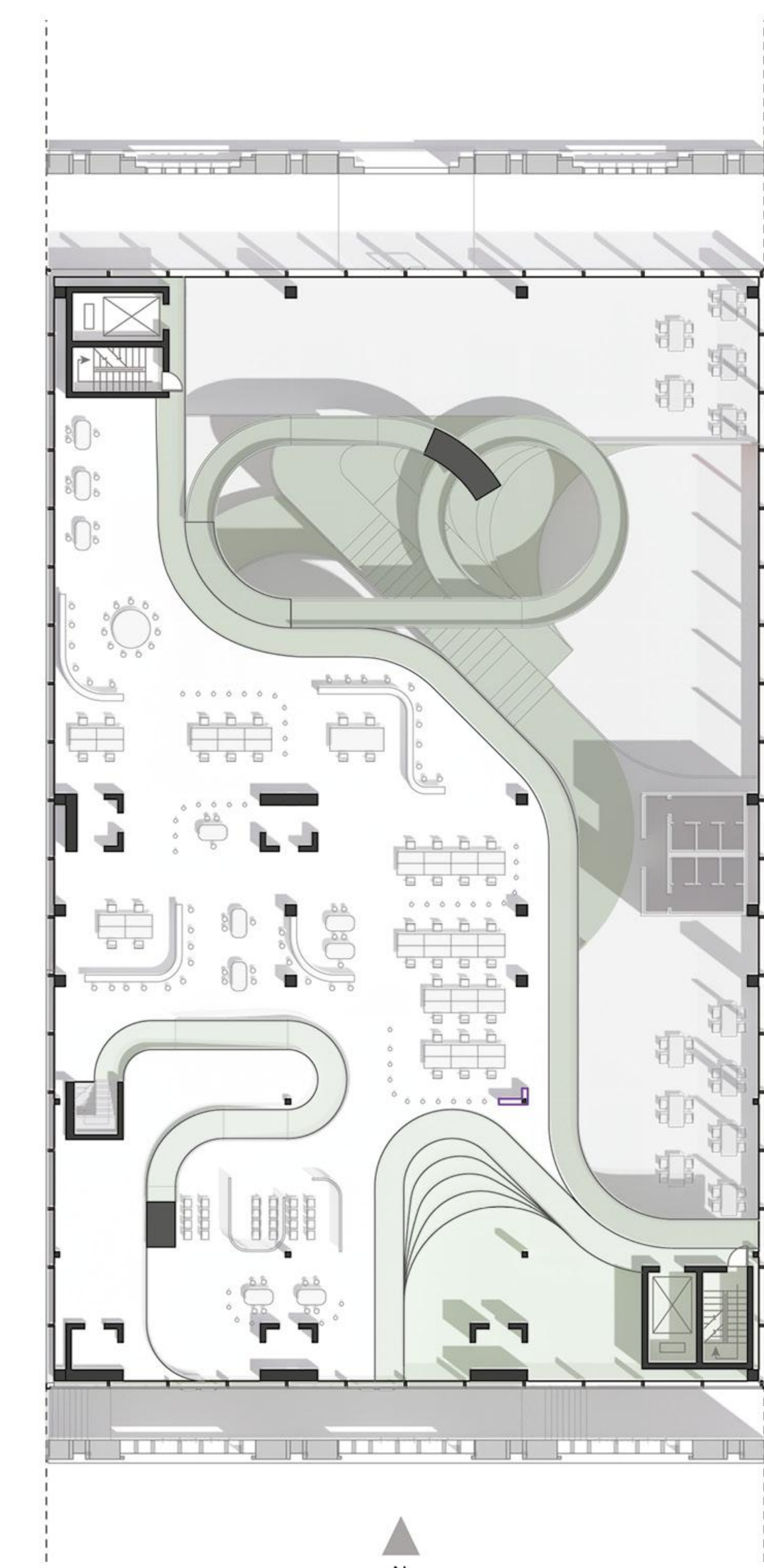
Cross Section | From West Side



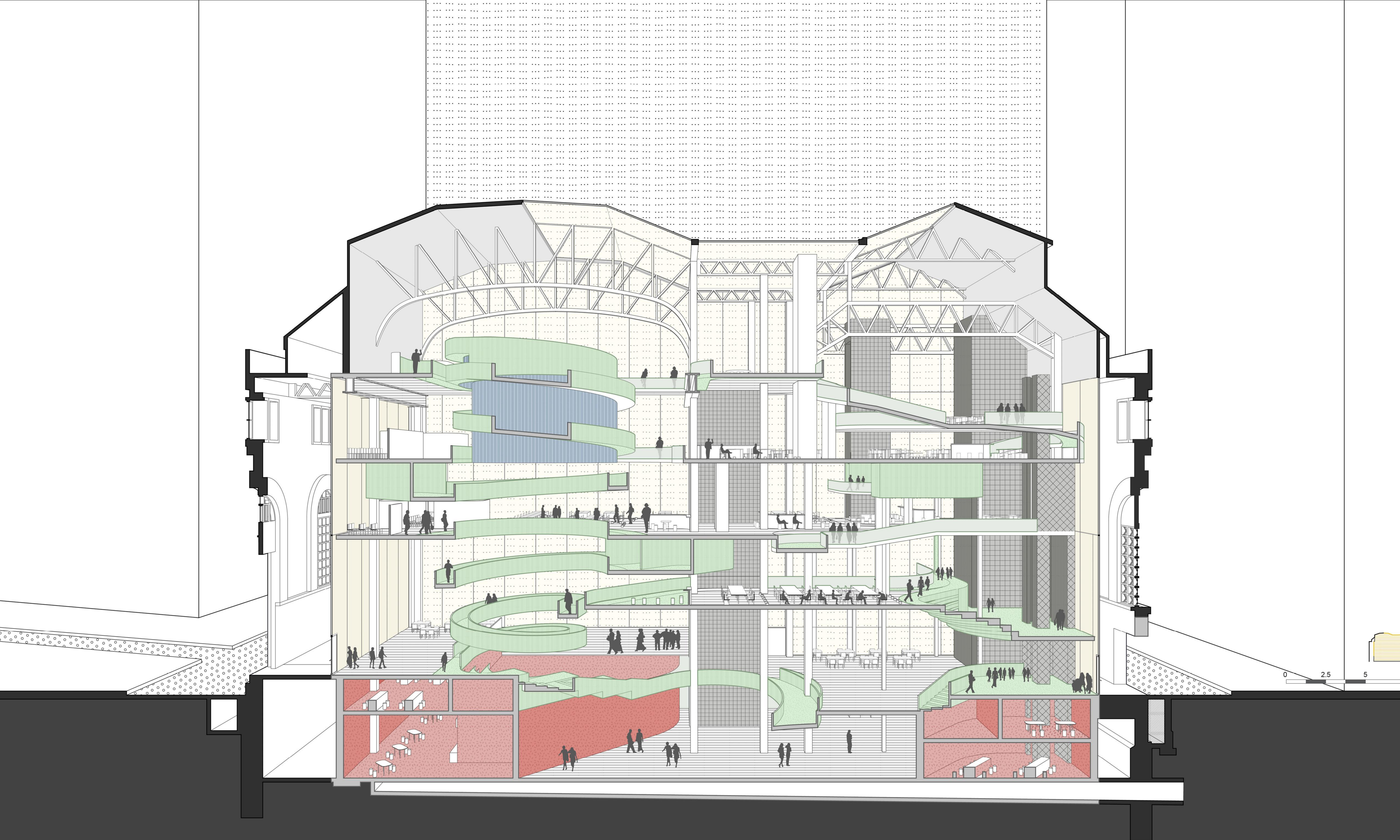
■ Vertical Shaft   ■ Library   ■ Auditorium   ■ Fab Lab   ■ Healing Zone

0 2.5 5 10 20 30 40 M







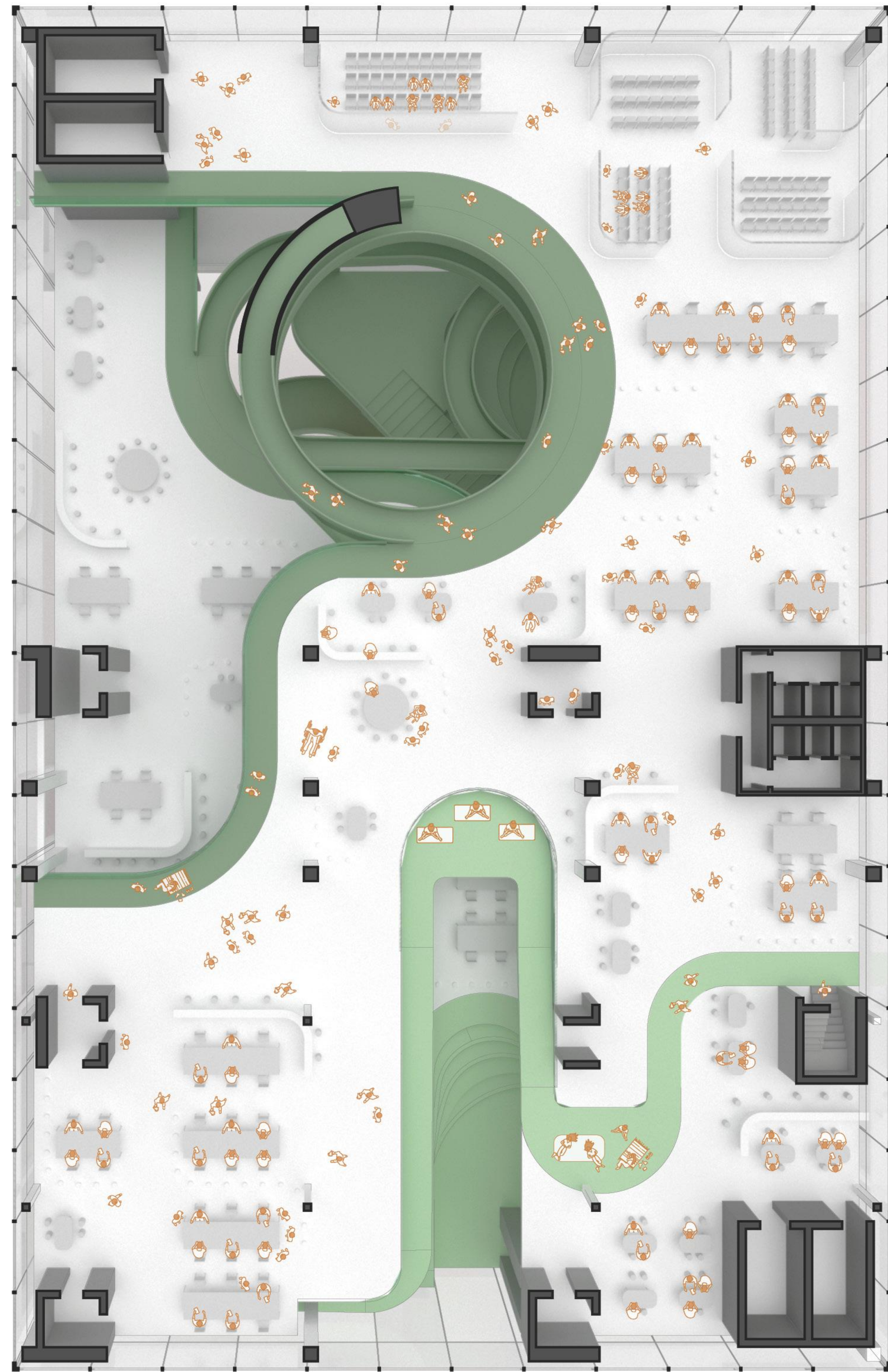




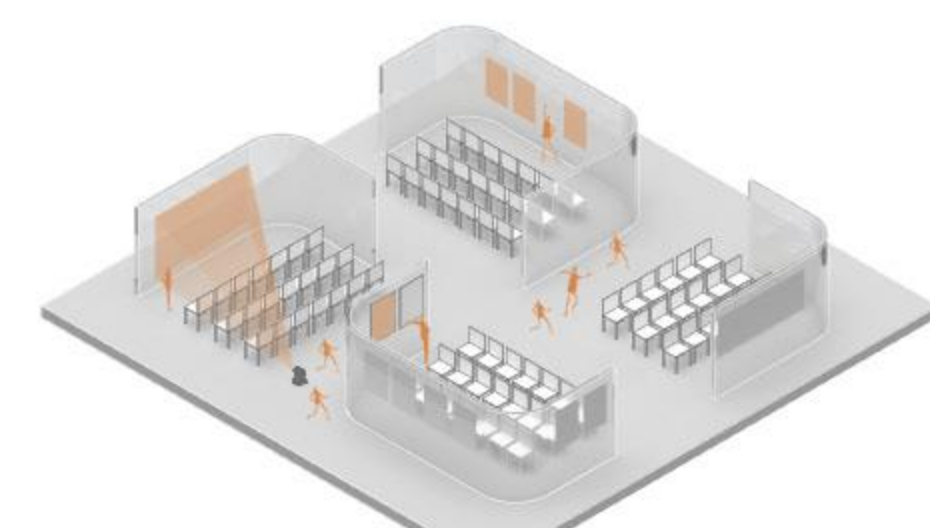
## Studio Space

### Combination of Various Studio Typologies

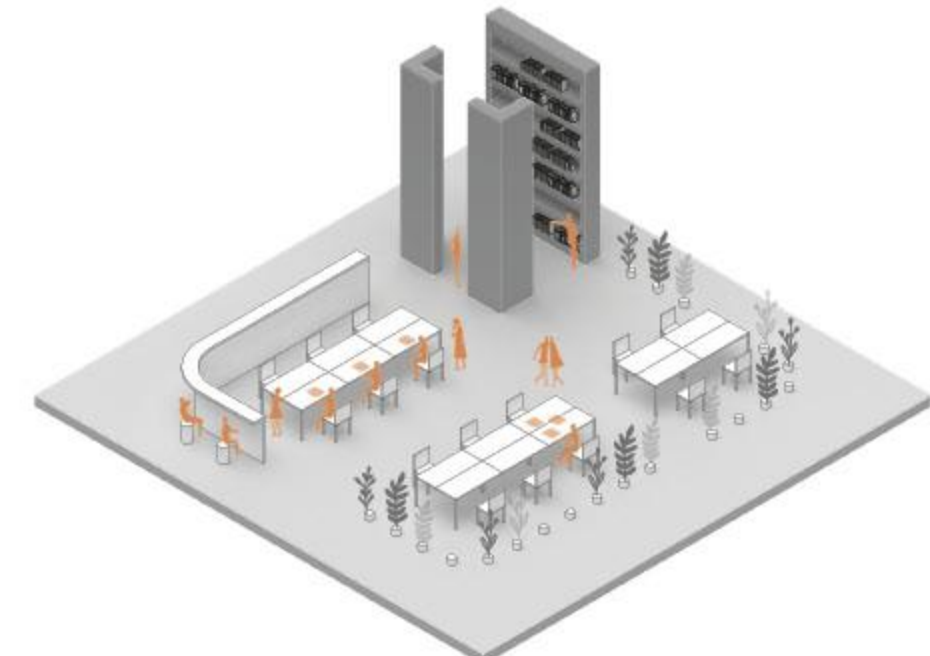
On the open plan, space for studio could be categorized by six events: presentation, reading, deskcritic, self-study, discussion and group study. In addition, the furniture setting could be mass produce for corresponding programs and space.



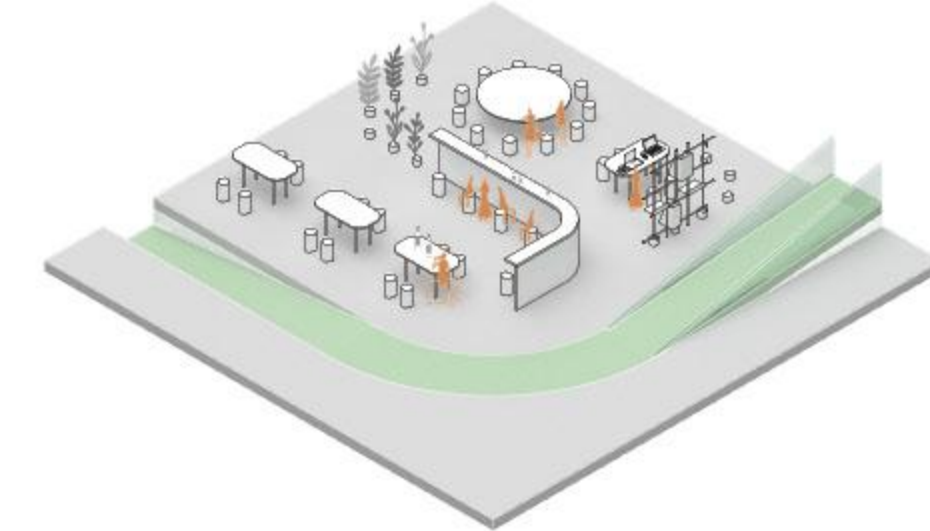
3rd Floor Plan | Activities in Studio Space



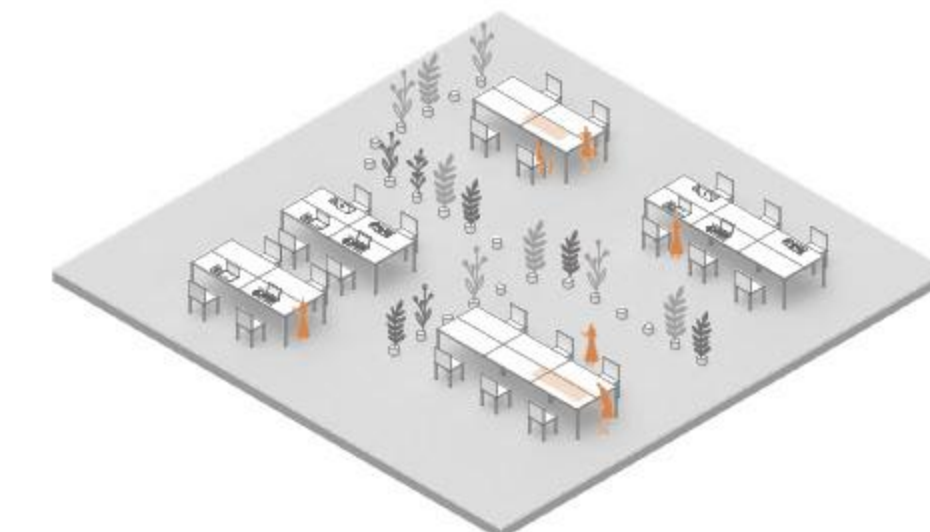
A. Presentation



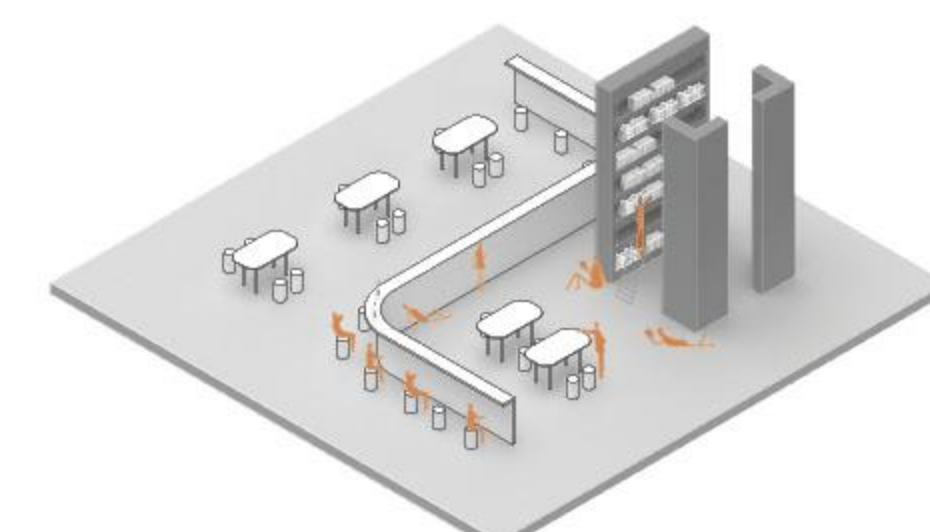
B. Reading



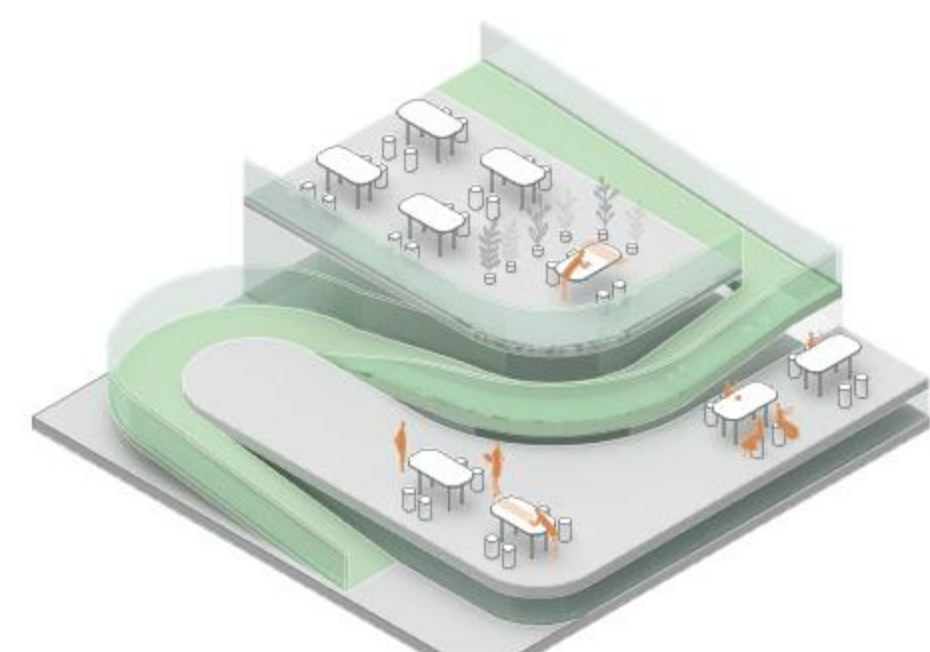
C. Desk Crit



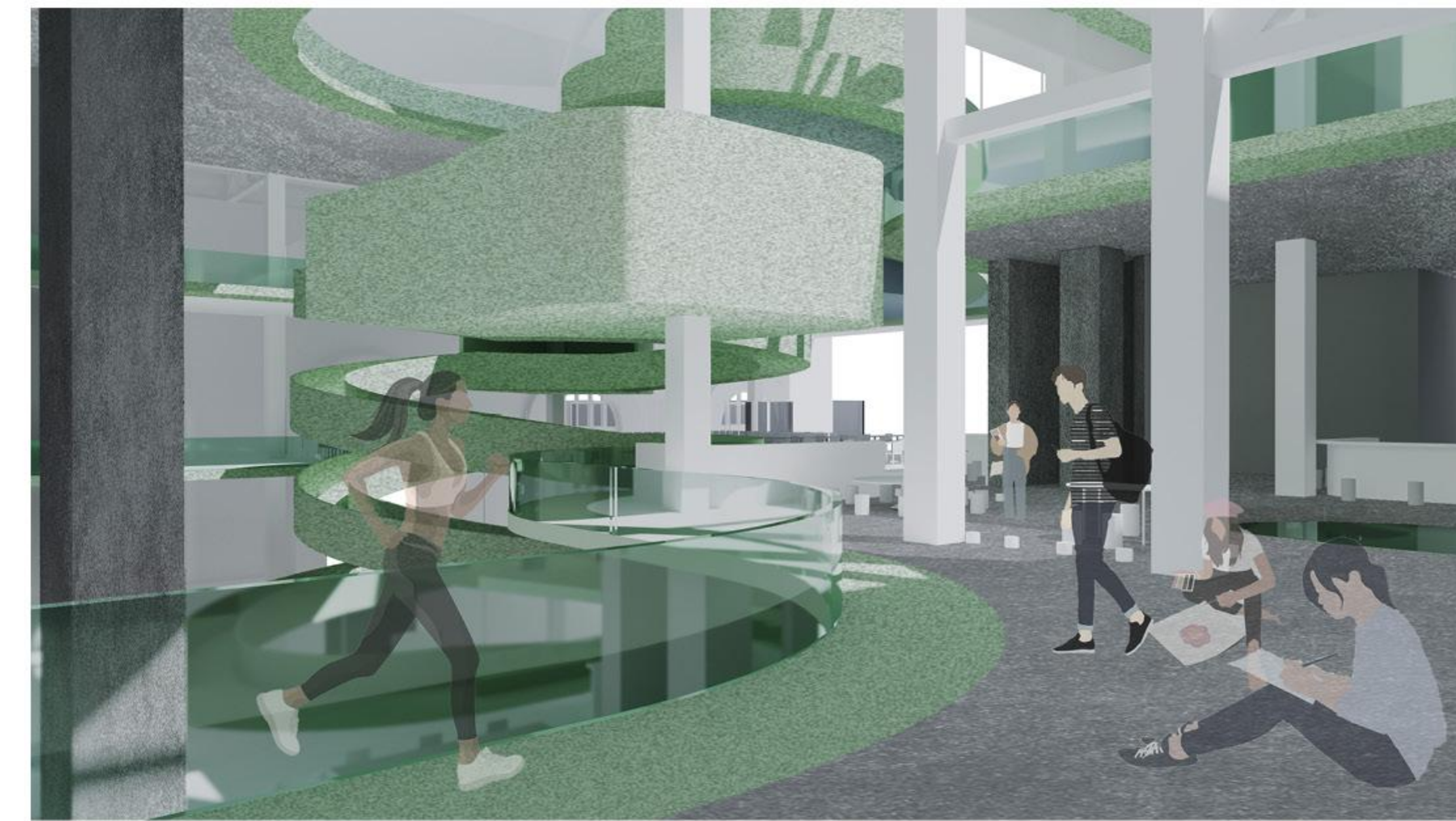
D. Self-Study



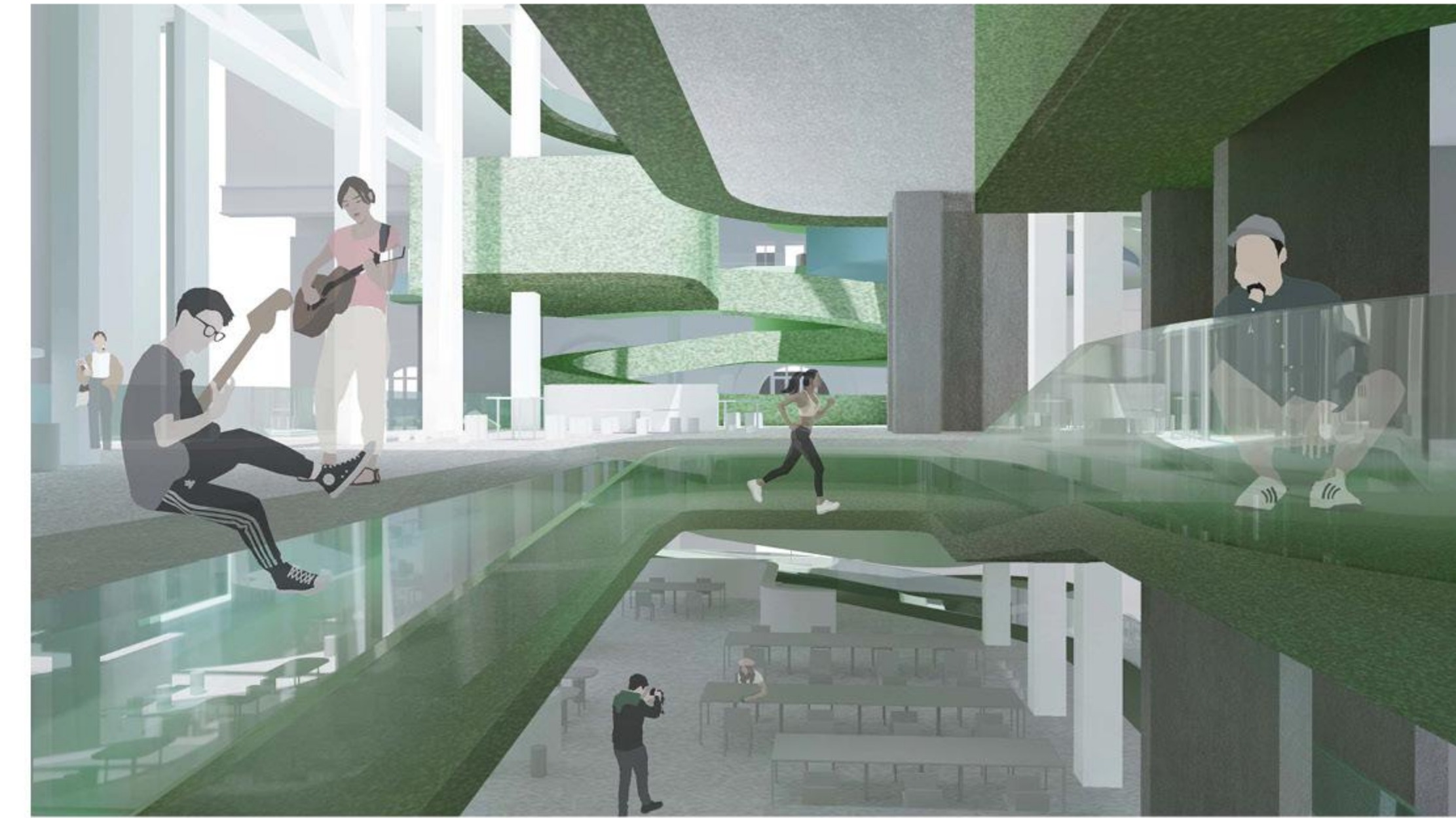
E. Discussion



F. Group Study



Interior Perspective | From 2nd Floor Studio Space



Interior Perspective | From 4th Floor Studio Space

## Conclusion

### What is the Future of Architectural School?

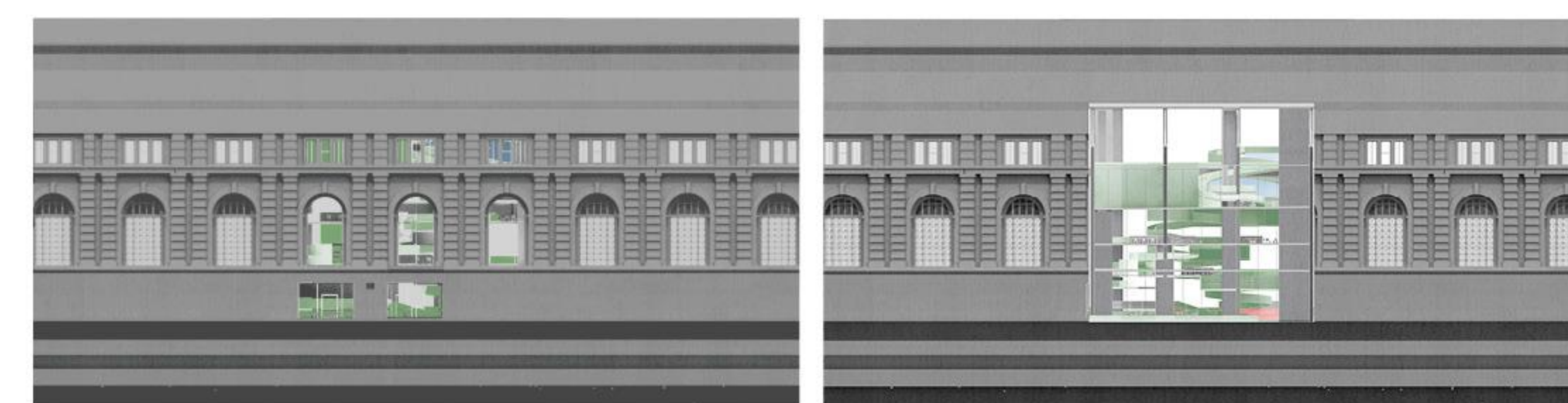
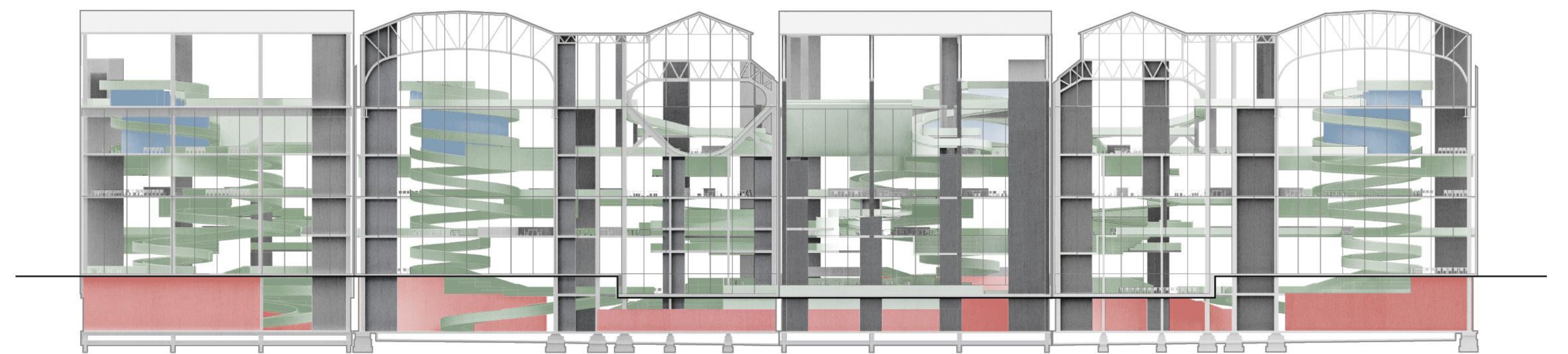
Archiport is open to the public on the ground floor and base floor, where public programs in the healing zone are located with the fab lab and architecture markets. Upper floors are mainly for studio and healing zones for students. Studio is an open space providing possibilities for various activities without rigid divisions. Archiport as a port of architectural knowledge expands the boundary of educational location and emphasis on the comprehensiveness of study forms, envisioning that studio can be everywhere.



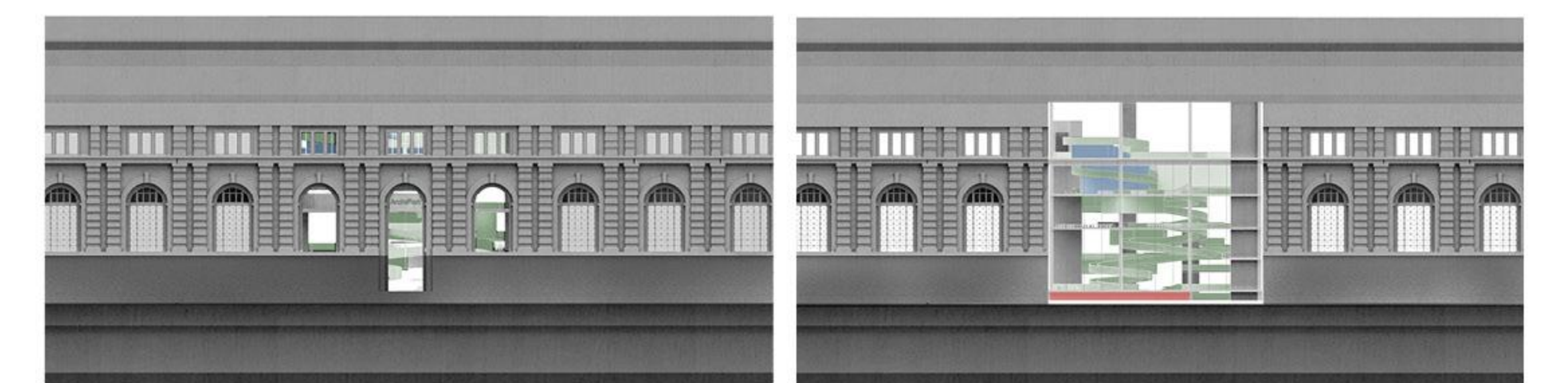
Interior Perspective | From 3rd Floor Studio Space

## ARCHiPORT

School is a place to study and also a place to heal



Elevation A | From South Side



Elevation B | From North Side

Unfolded Elevations | Healing As A Belt Meandering Through the Space



# SEMINAR OF SECTION

Spring 2023 ARCH 4975 A | Professor Marc Tsurumaki

**Project Name:** Moshimo Restaurant

**Location:** Brighton, UK

**Program:** Sushi Bar Restaurant

The seminar will use the investigation of section to raise broader questions regarding the representational techniques that architects deploy and the complex interrelationship between delineation, ideation and materialization. Forms of representation are never neutral or transparent and profoundly effect the ways in which we are able to conceive and realize our work. An understanding of the way section operates as a representational device, what it reveals as well as what it conceals, will be considered critical to understanding how to deploy and utilize it in our own work.









# SOLE TO SOUL

Spring 2023 ARCH 4106 A | Professor Boonserm Premthada

**TA:** Jules Kleitman

**Partner:** Sixuan Wang

**Role in Team:** Conceptual Design  
Digital Modeling & Physical Model  
Design Development

**Location:** Ta Klang Village (Elephant Village), Surin Province, Thailand

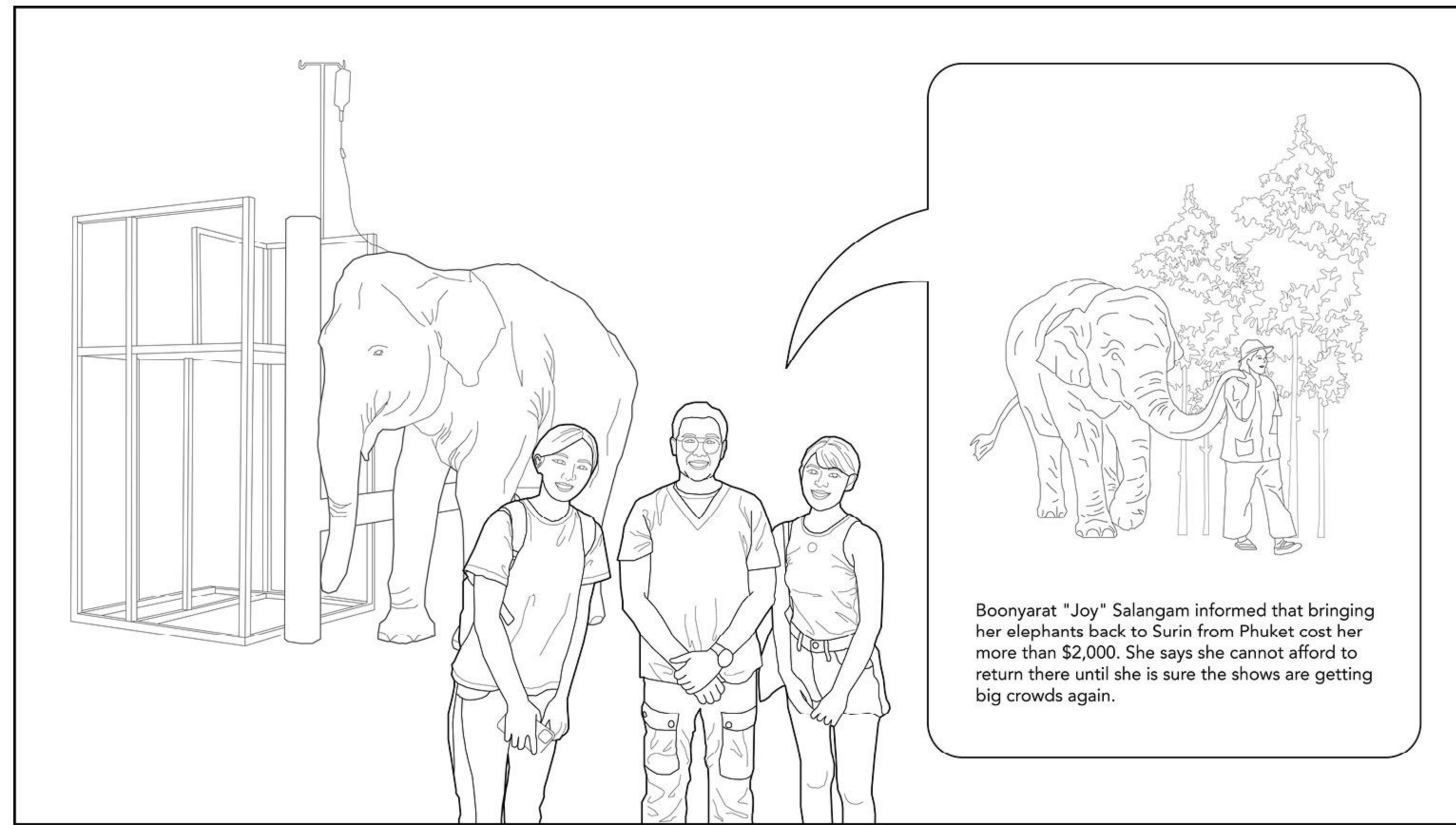
**Program:** Rehabilitation Center for Elephant

This project acknowledges the importance of foot care to the well-being of elephants and responds to the post-Covid tourism industry by redefining clinical spaces for animals.

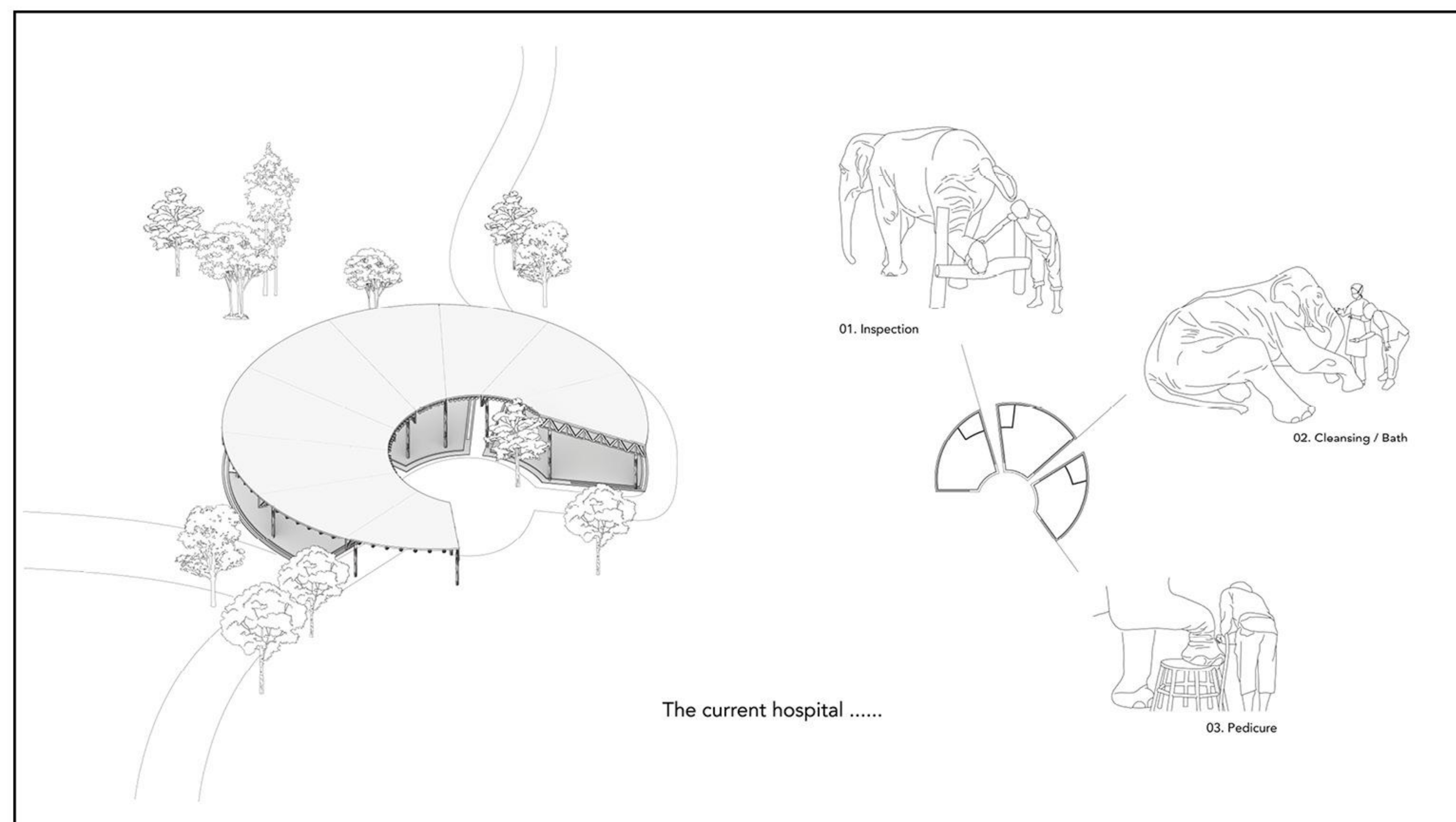
During our site visit, we observed how elephants freely roamed among the trees, and as we removed our shoes, we too experienced a sense of calm. Therefore, this design aims to foster a connection between humans and elephants by emphasizing the tactile experience of their feet. Drawing from the expertise of local doctors, various ground materials are applied for different program areas to train elephants' fragile footpads. Two circulation paths with alternating heights are designed to increase proximity between visitors and elephants, breaking down the barrier between the two and even allowing for interactions. This approach not only ensures the safety of tourists but also frees elephants from being chained up. Other programs such as clinics, elephant foot training areas, and a central garden are spreading around the elephant main trail. A key insight we gained from our design process is the importance of considering scale in both time and space. Elephants and humans can seek their unique journeys by following the tactile feeling along the pathway and in the zones.



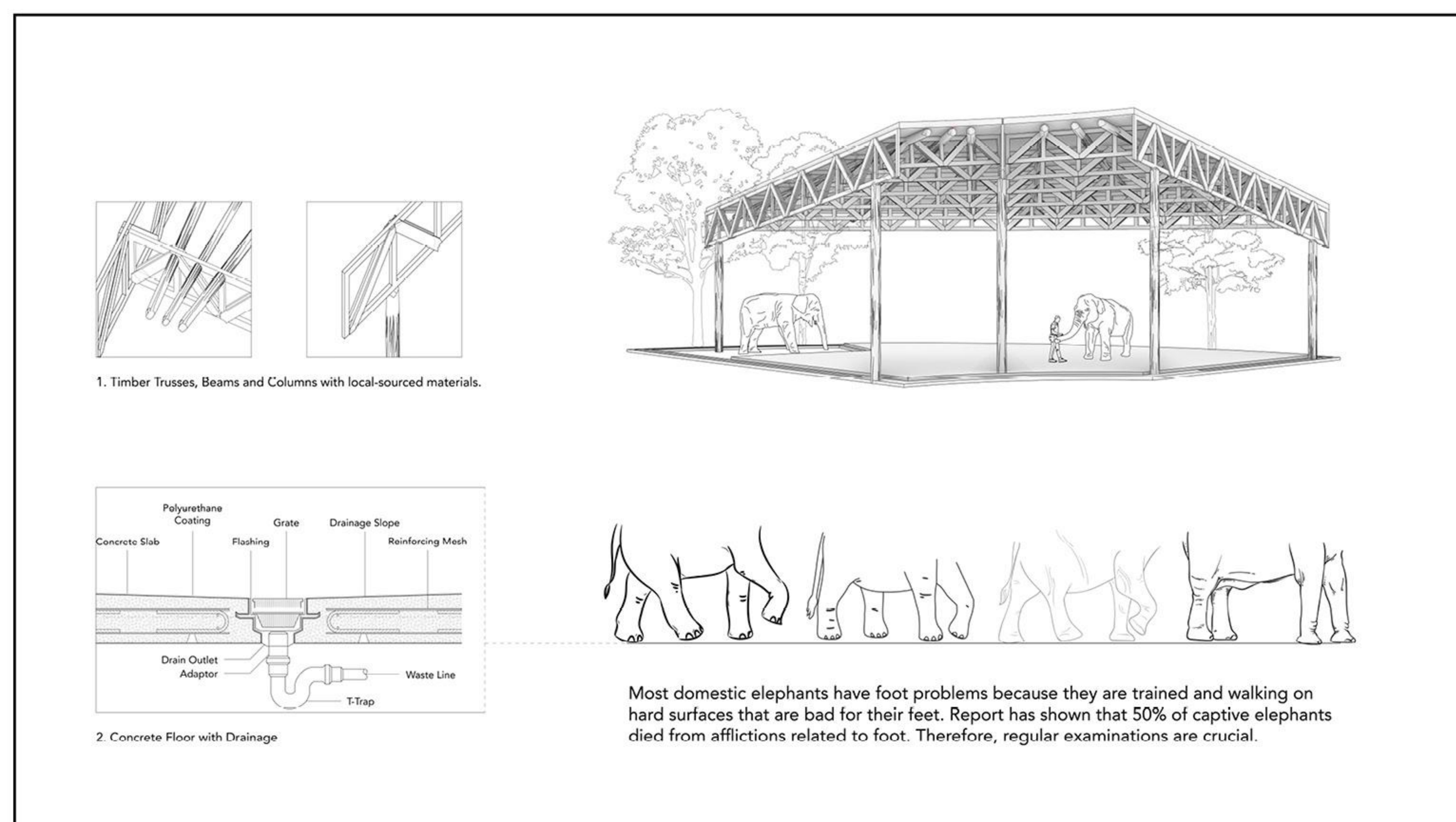




Elephant Hospital



Elephant Clinic Design | Elephant Foot Care



Detail Construction Section and Drawings of the Clinic

## Introduction Research in Buriram, Thailand

As the Covid-19 pandemic unfolded, Thailand's tourism industry was severely impacted. More than 100 elephants and their trainers lost their jobs, and as a result, many of these retired elephants returned to their hometown of Surin. The rigorous training and performances on artificial hard surfaces have taken a toll on many elephants, leading to foot injuries such as nail loss and creaking in foot pads.

Mahout Boonyarat stated that it cost her over two thousand dollars to bring her elephants back to Surin from Phuket. She mentions that she won't be able to return there until she is confident that the shows will attract large crowds again, as she cannot afford the expenses otherwise. During our site visit to Elephant Village, we interviewed a local doctor who told us that, in response to economic challenges after the pandemic, they are conducting regular health check-ups for local elephants through tourist activities. This approach inspired us to consider establishing a clinical space that focuses on providing foot care for elephants as part of our design.

Our proposal is to construct an open-air clinic within the forest, which will have three main sections dedicated to inspection, cleansing, and bathing, as well as pedicure services. The clinic features a six-meter-tall roof that is supported by trusses spanning from 9 to 12 meters in length. To minimize labor and cost, we plan to use tree trunks and branches found on-site for the columns, trusses, and beams, creating a contrast with the perfect prefabricated wood panels and shingle coverings on the top.

## Tactile Sensation of Feet Research of Elephant Feet

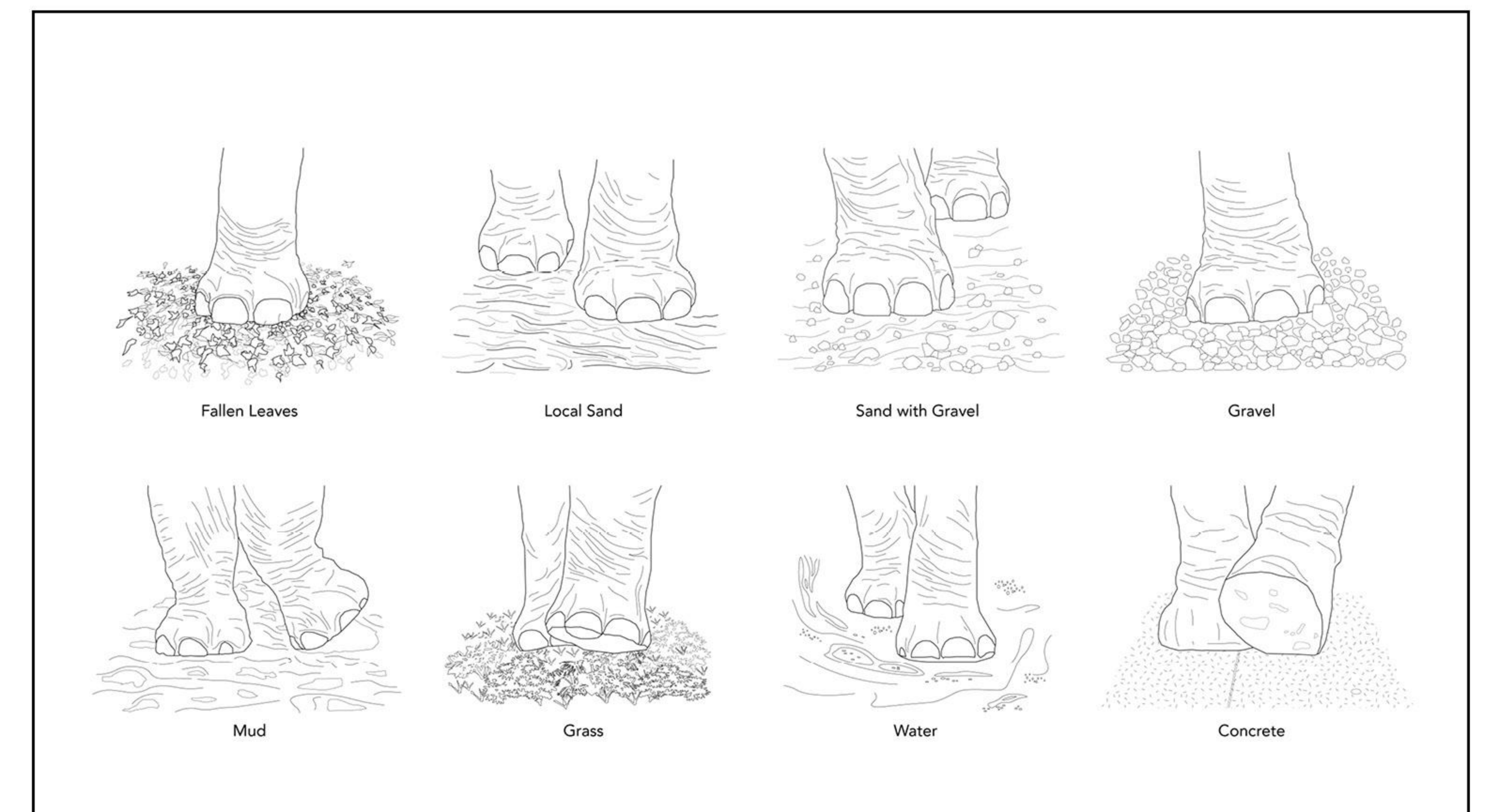
As there is limited knowledge regarding elephant healthcare, the local doctor suggested using a horse clinic as a reference for the floor design.

To ensure hygiene, the clinical settings will feature concrete floors, with a slight slope and drainage system in place to facilitate cleaning. The concrete floor will also be coated with polyurethane to resist water and prevent other forms of deterioration. In outdoor settings, local doctors highlighted the fact that elephant feet are soft and fragile. To strengthen and increase resilience of their feet, caretakers typically set up a training area with a mixture of ground materials. Here is the material palette we plan to use for this purpose.

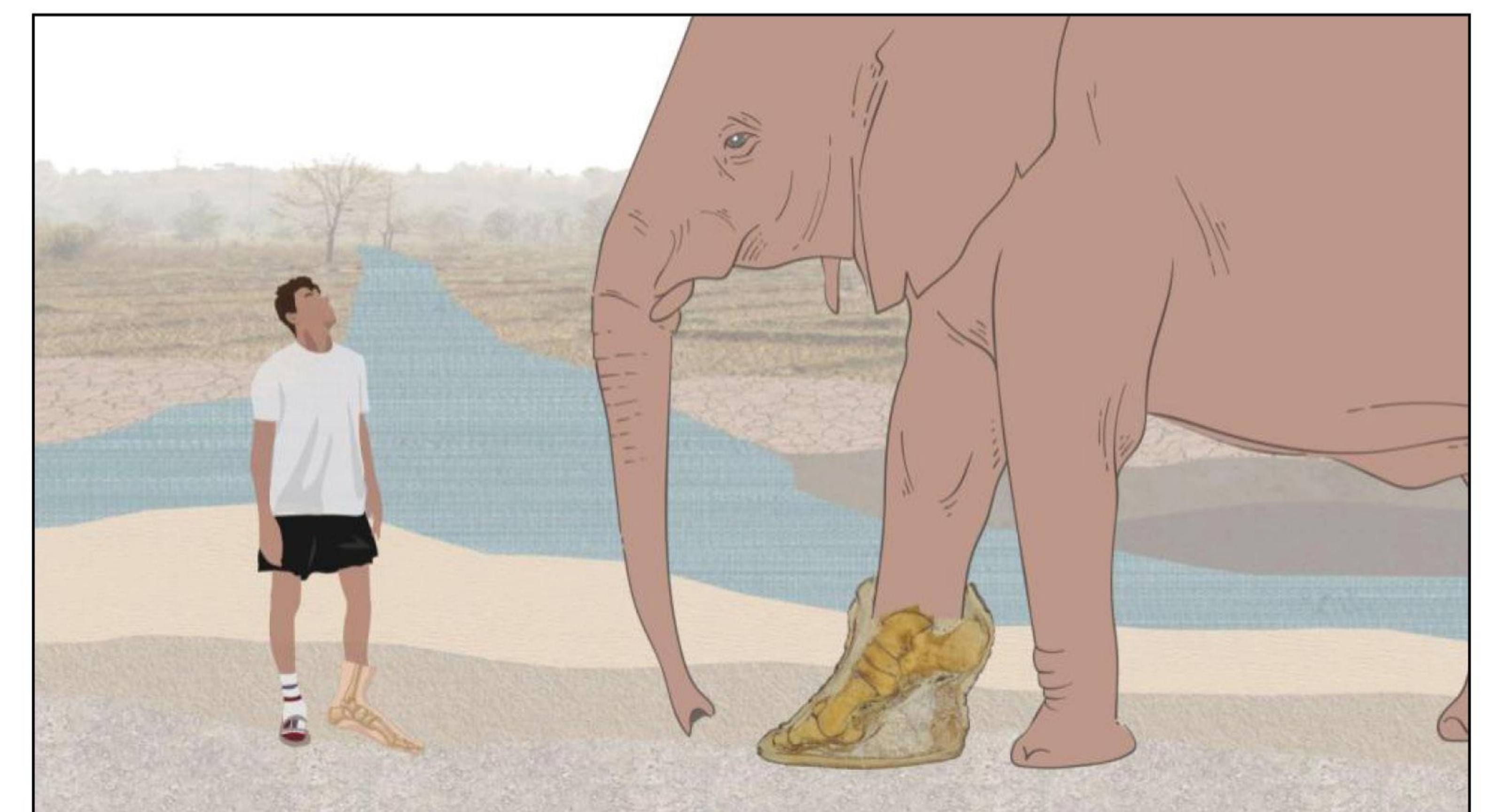
To better feel what elephants feel, we took off our shoes, walked barefoot in the forest and felt a sense of peace. And so do the elephants. They are comfortable and free when wandering around nature. Therefore, we want to reinforce such a sense of comfort when bringing the two species together, to establish connections between human and elephant by focusing on the tactile experience conducted through their feet. Therefore, our design philosophy is to foster a learning process between human and elephant, facilitating the development of new collaborative relationships based on interdependence while rehabilitating the fractured ones.



Research of Horse Feet

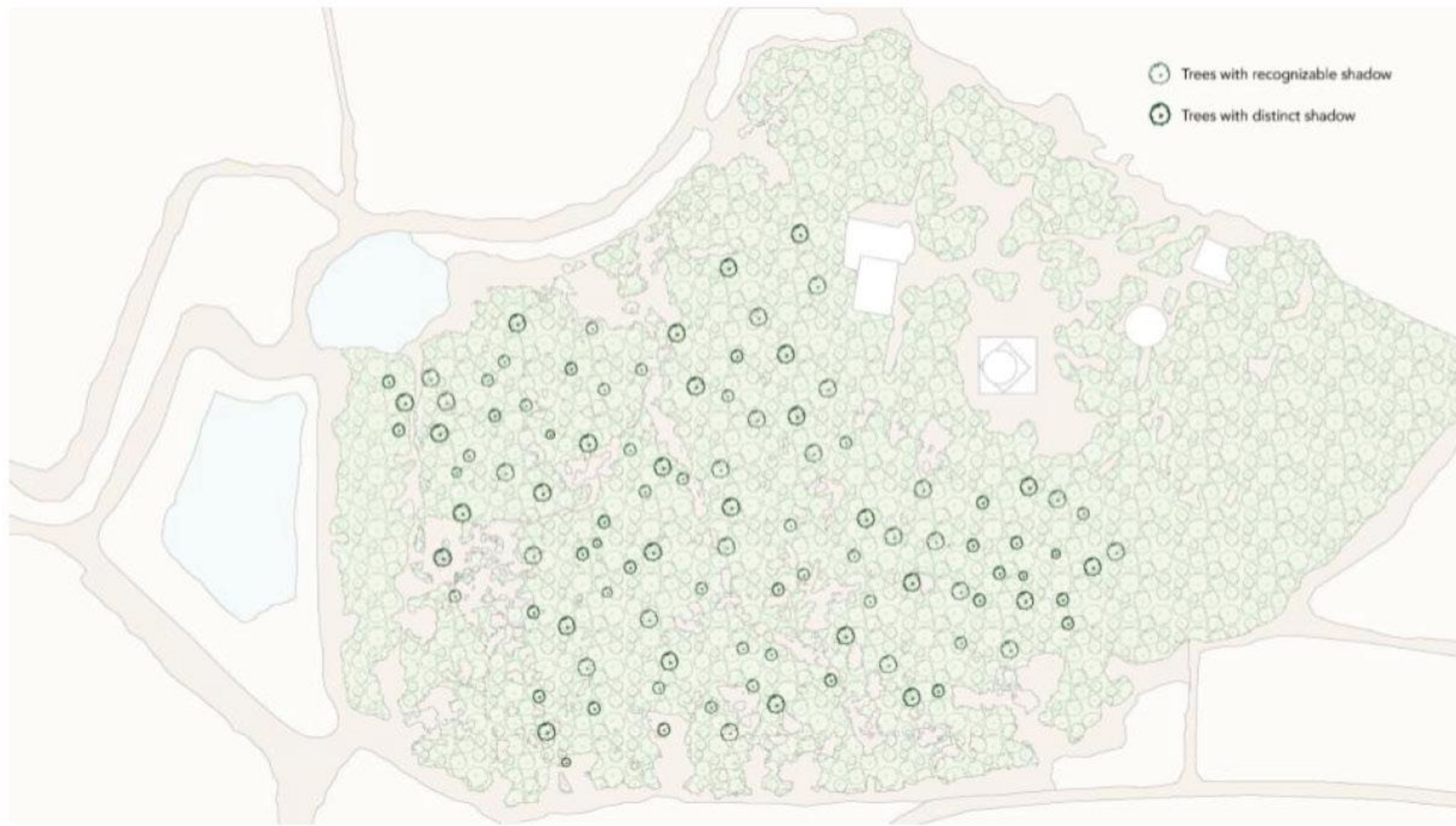


Material Palette



Oblique Axon Experimental Drawing





Height of Tree in The Forest



Tree As Design Guidance



Project Plan | Site View

### Site Analysis Site Research in Elephant Village

We choose the forest with the great proximity to the village where elephants live, temple area where tourists gather, and natural resources such as ponds and napier farms. We utilize the fact that elephants' walking pattern is driven by their movement to avoid trees. So we marked the most distinguishable trees through satellite images. And generate this undulating trail with a total length of 2.5 km. It is a one-way path with programs inserted along the way, providing opportunities for elephants to walk as more as needed.

In the design, the project consists of 5 parts. The main path for the elephant trail, tourist path, elephant foot training area, clinic, and central garden with a pond connecting through. As mahouts guide the elephants roaming inside the area through the main trail, the material leads the way and generate various walking experience as they enter into different programs. We wanna utilize and preserve the local materials such as local sand, gravel, fallen leaves, grass, and water as ground materials spreading into the area. The central area is an elephant garden where the pond and mud are situated. The tourists are able to see, touch, and interact with the elephants in the outer area. As the elephants gradually walk into the central garden, a more quiet and relaxed ambiance is revealed.

### Design Proposal A Rehabilitation Center for Elephant

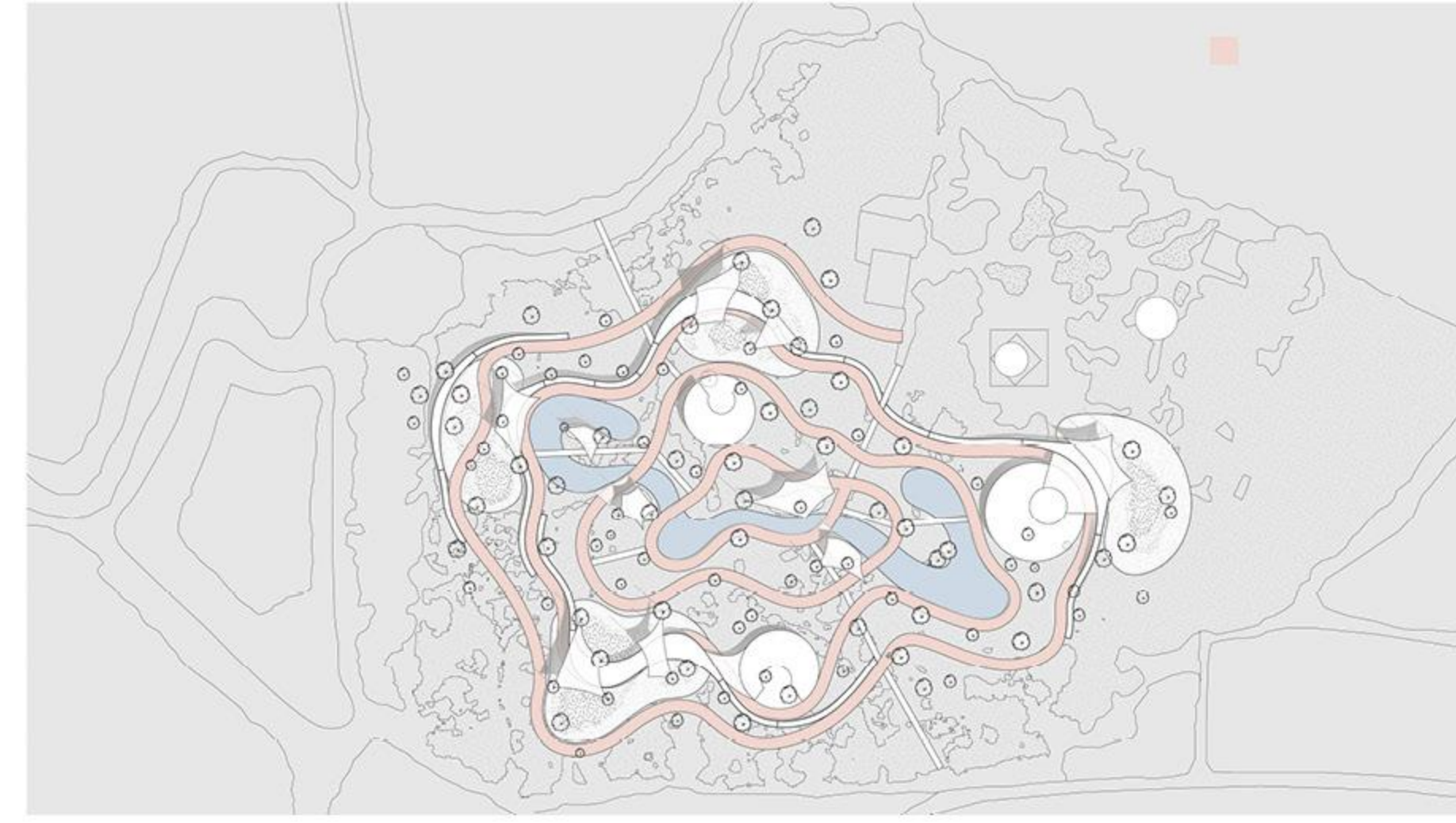


Plan Oblique | Site View





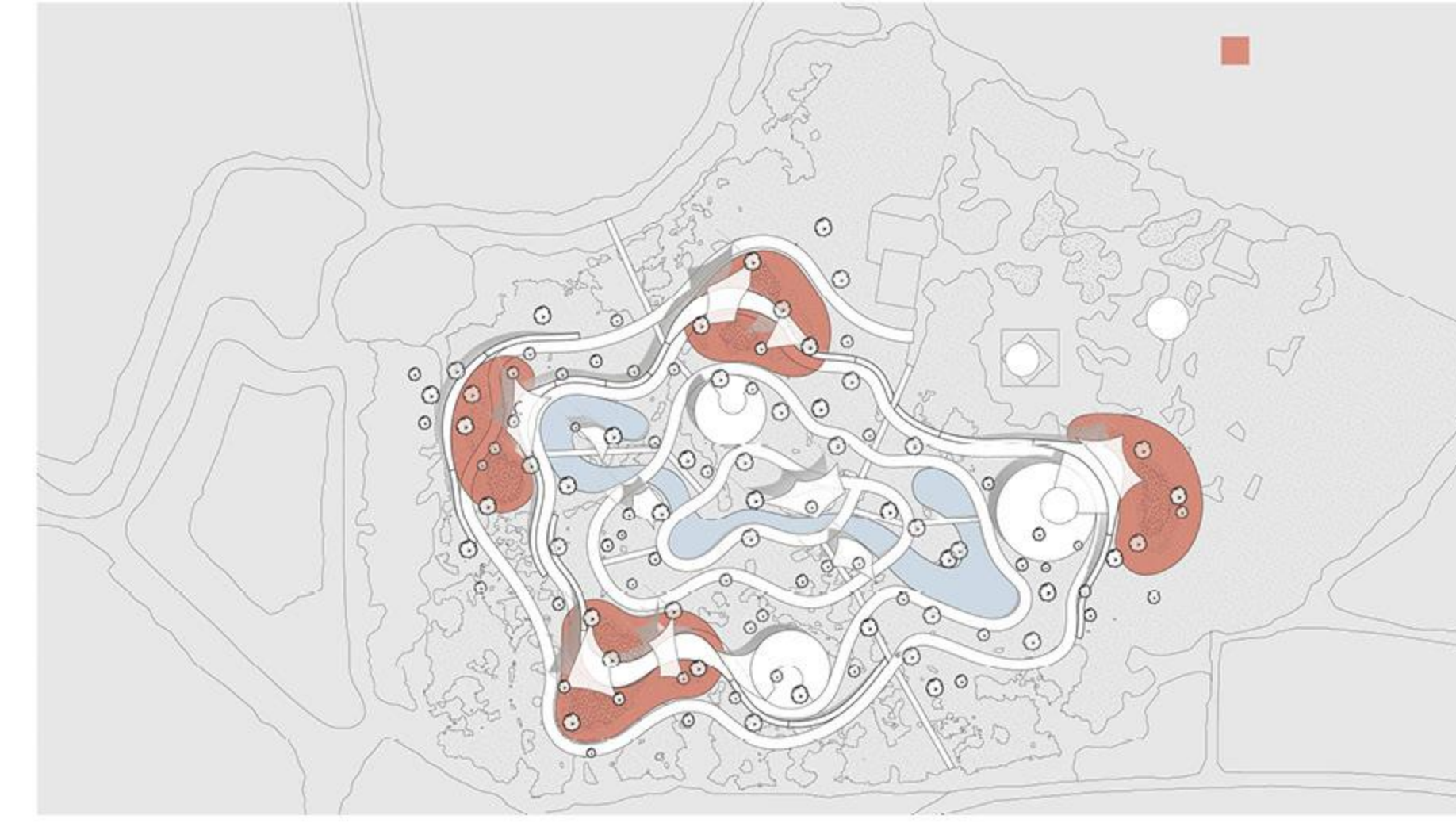
Project Plan | Tourist Path & Short Cut



Project Plan | Elephant Main Trail



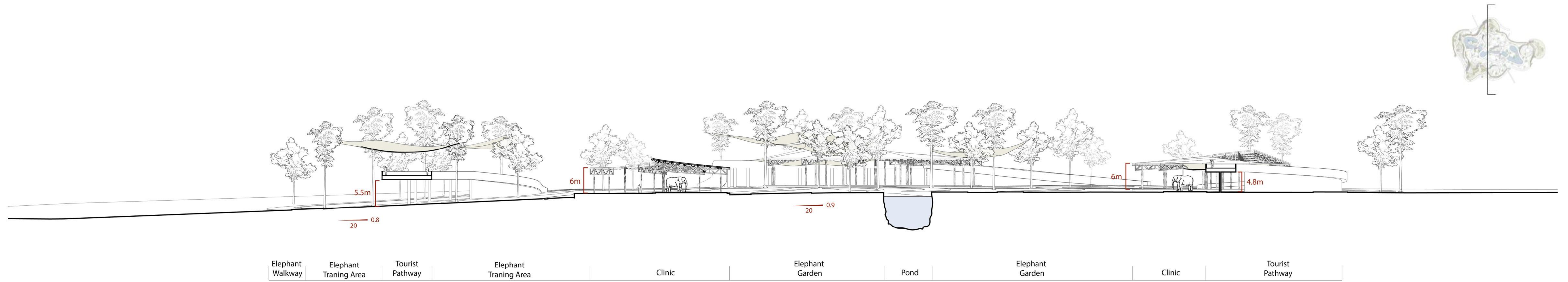
Project Plan | Veil



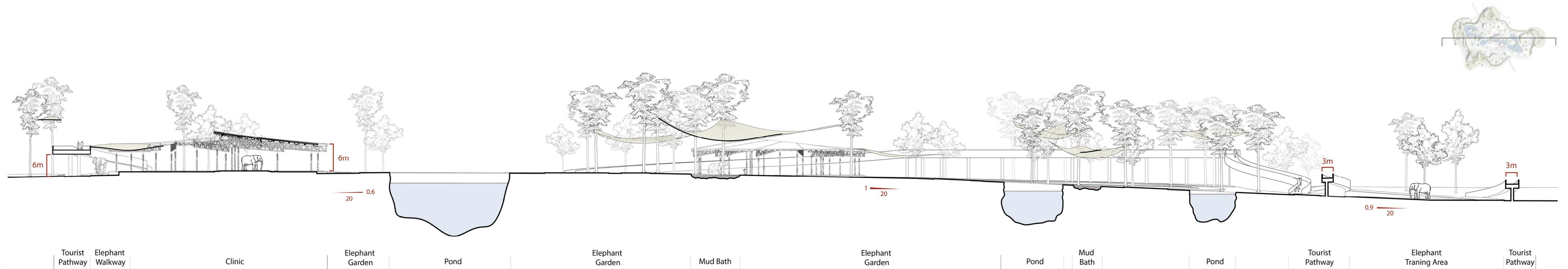
Project Plan | Elephant Foot Training Area



Project Plan | Elephant Clinic

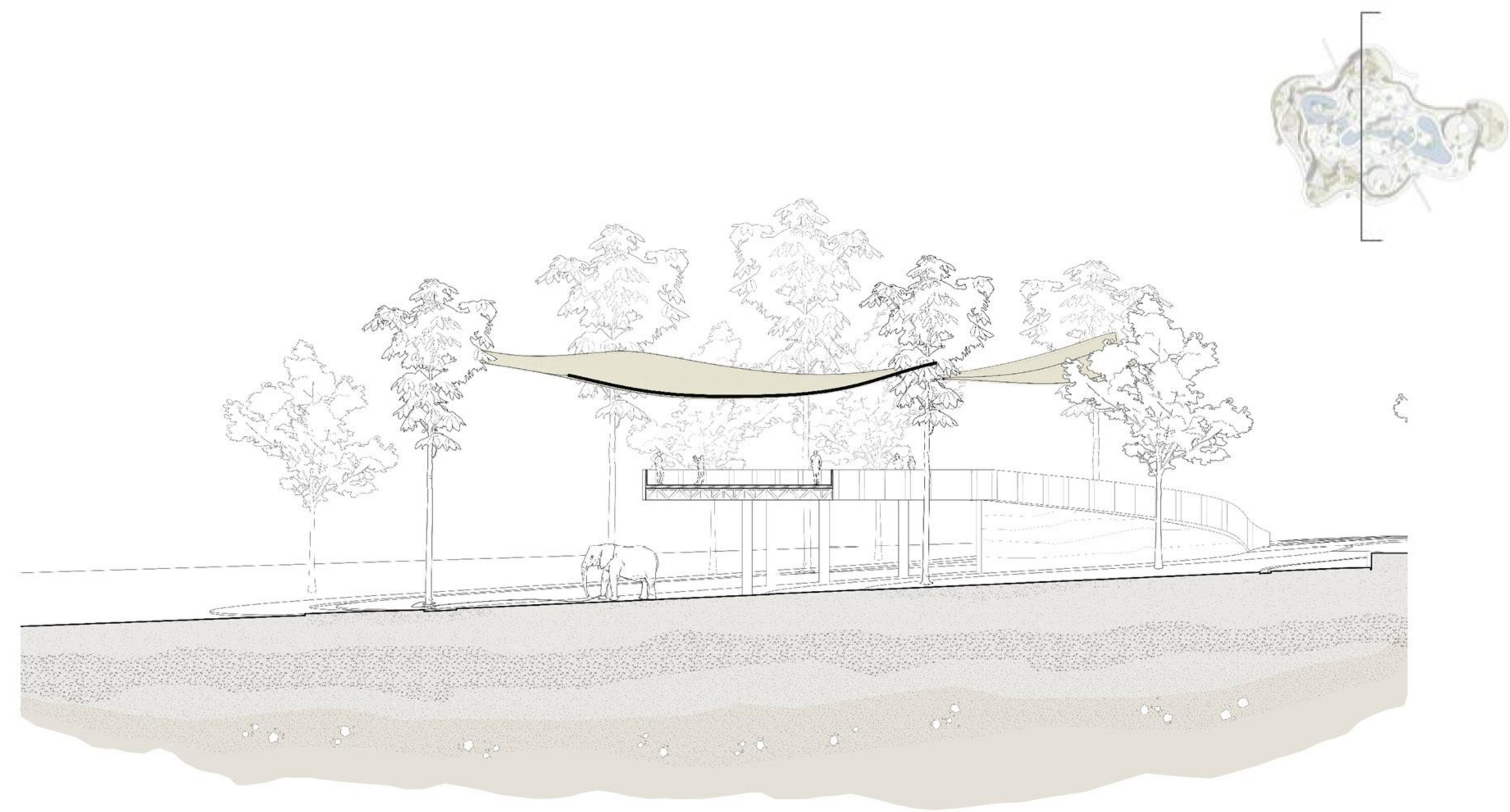


Short Section | From East View

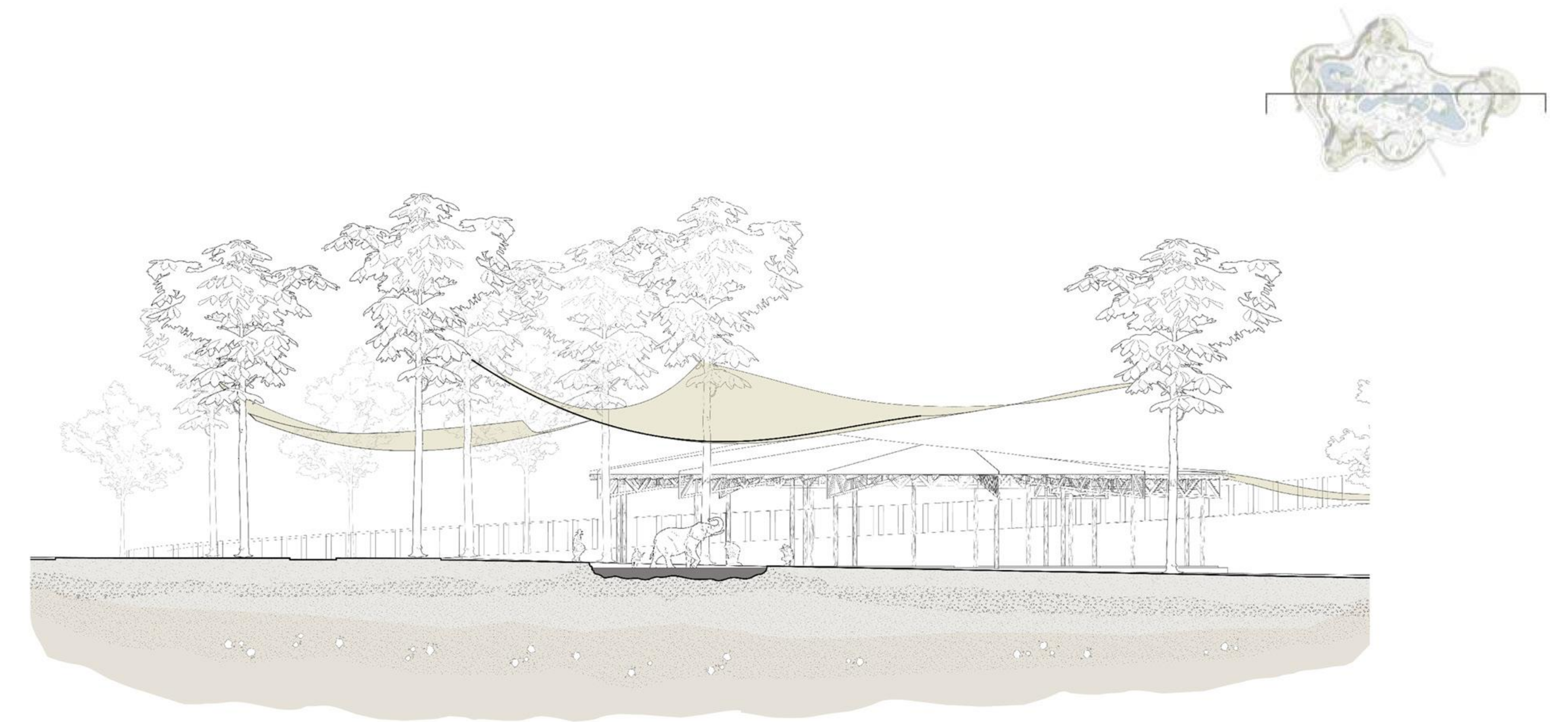


Longitudinal Section | From South View

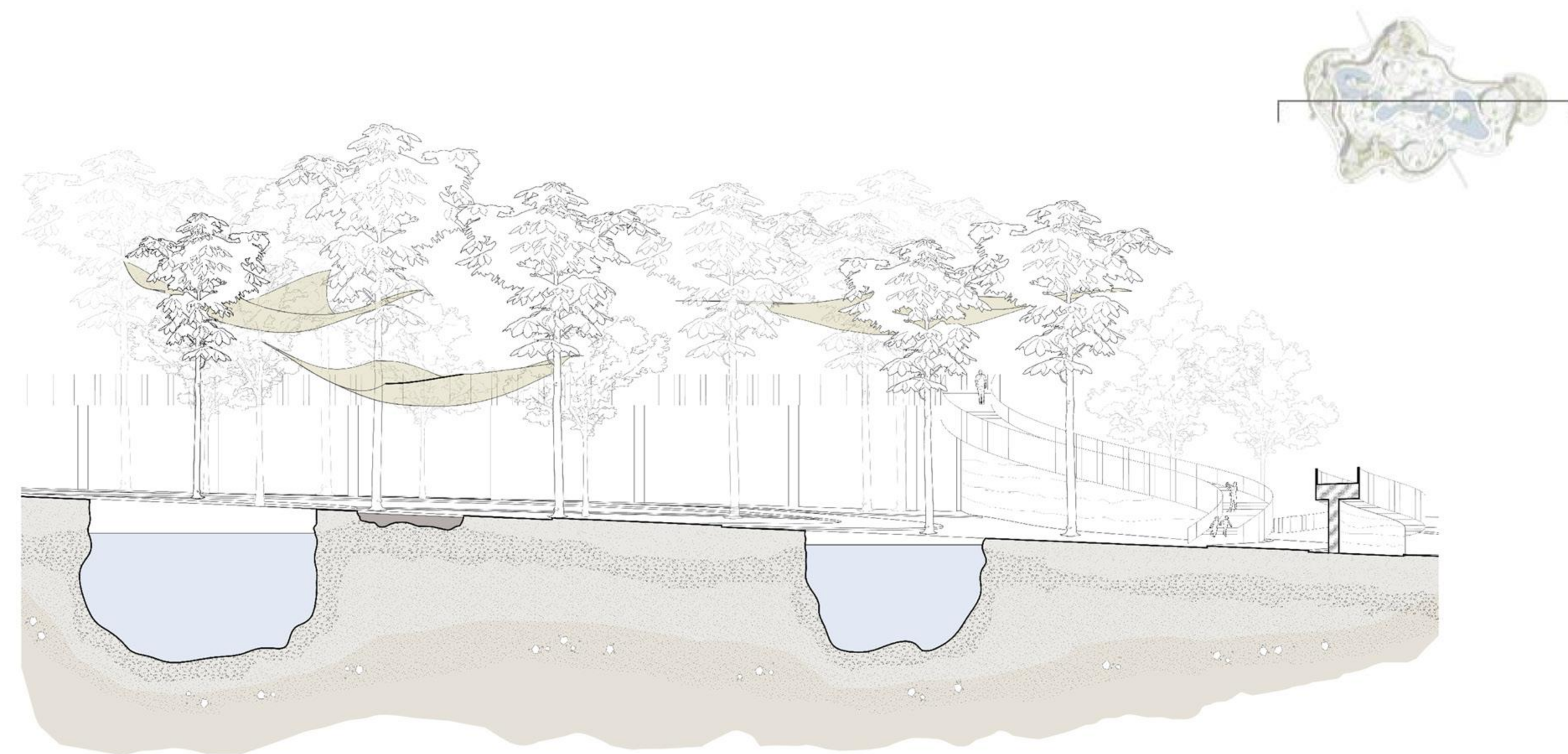




Detailed Section A | From East View



Detailed Section C | From South View



Detailed Section B | From South View



Detailed Section D | From South View





Perspective View A | Tourit Path & Elephant Clinic



Perspective View C | Tourit Path



Perspective View B | Elephant Foot Training Area



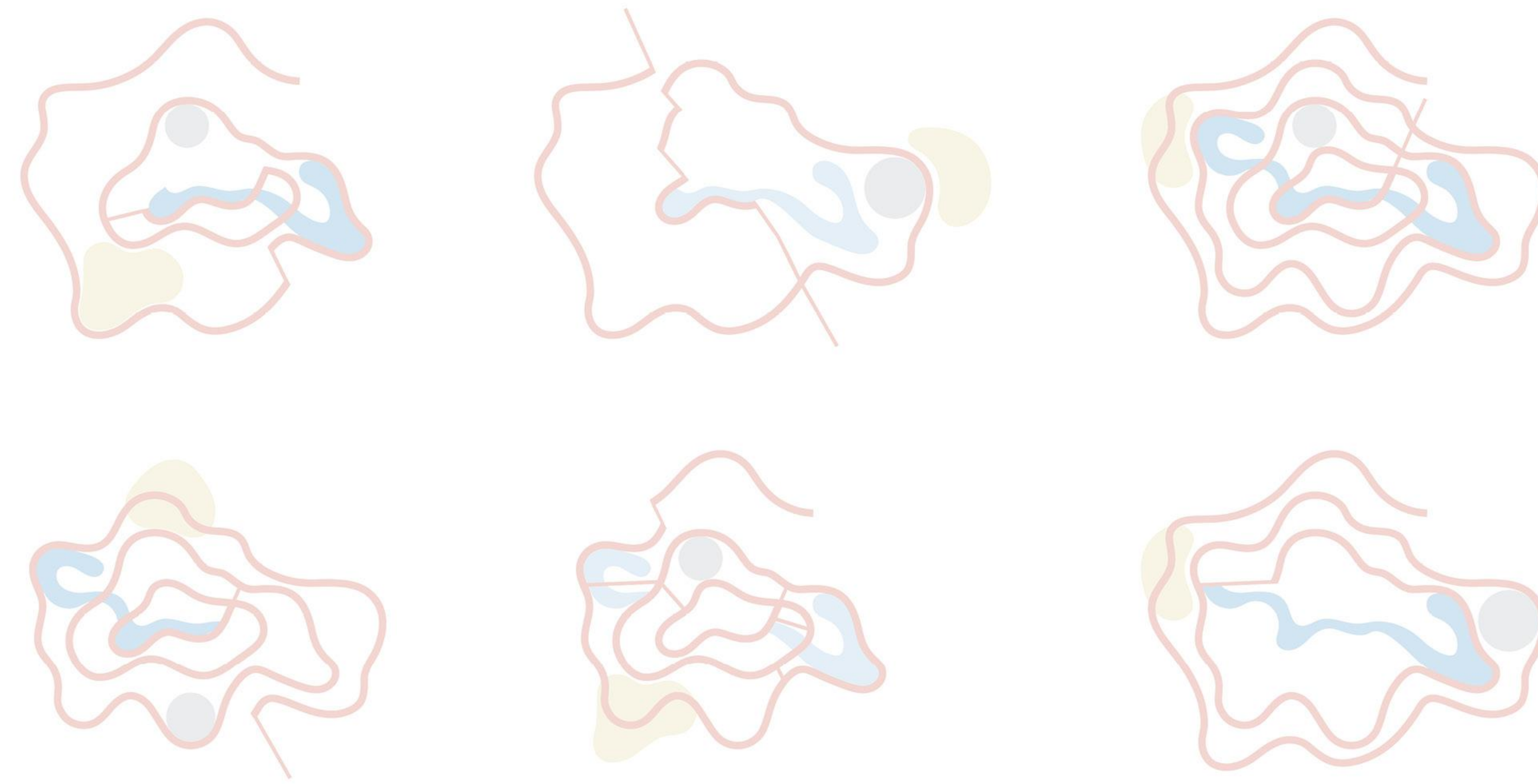
Perspective View D | Elephant Main Trail



**Time & Space**  
A Key Insight of The Project: Sole to Soul

A key insight we gained from our design process is the importance of considering scale in both time and space. As each elephant may find a distinctive route which will result in a unique tactile experience and spatial sensation. When it comes to travel, there are various options for getting from one point to another. Choosing a longer route can take more time, but it offers more opportunities for encounters and experiences, while opting for a shortcut may save time but limit our experiences. Our design utilizes a juxtaposition of these two systems to meet diverse needs. This approach could also be applied to other scenarios that require coping strategies for different needs, acknowledging the trade-offs between efficiency and experience.

The project aims to create a system for elephant foot treatment that is based on a journey of tactile sensation. Elephants could have proper treatment in the clinic and also explore a sense of comfort as they walk inside the area. Here, we wanna design a space where people and elephants seek a tactile experience through walking. And at the same time, it formulates a special way of advertising and opening up the local culture and life of elephants to the public.



Conceptual Diagram | Spatial Sensation

