To me, Everything starts
with the *small phenomenon.*

Jusang Lee
2017 – 2021

Jusang Lee

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Bio   Works

Education

08/2021–Present	**Illinois Institute of Technology** (Chicago, United States) Bachelor of Architecture (Dual-degree Program)
03/2017–Present	**Hanyang University ERICA** (Ansan, Korea) Bachelor of Architecture (Dual-degree Program)

Professional Experience

12/2019–04/2021

Studio Yeonhwa (Suwon, Korea), **Freelancer** (Visual Specialist)
Worked across visualizing phase and made digital images and physical model
– Agriculture Processing Support Center, Dangjin, Korea | DIGITAL RENDER IMAGE
– Public Braille Library, Gwangju, Korea | DIGITAL RENDER IMAGE, DIAGRAM
– Exhibition 'Architecture that the Forest Remember' | PHYSICAL MODEL

12/2020–02/2021

Studio OASE (Seoul, Korea), **Internship**
Worked across all project phases and participated in old project archiving and remastering
– Public Library, Uam-dong, Busan, Korea | COMPETITION
– Private House, Guncheon, Gyeongju, Korea | CONCEPT
– Community Service Center, Sadang-dong, Seoul, Korea | COMPETITON
– Archiving & Remastering Studio OASE's Old Projects | DIGITAL WORKS, PHYSICAL MODEL

Honors and Awards

02/2022	**Dean's List, IIT** (Chicago, United States)	GPA: 3.83/4.0 (Fall, 2021)
12/2021	**Open House 2021, IIT** (Chicago, United States)	Faculty Picks
11/2021	**Section Physical Model Competition, IIT** (Chicago, United States)	Nominated (Joy Part, Craft Part)
07/2021	**Department of Architecture Awards, ERICA** (Ansan, Korea)	1st Prize, GPA: 4.5/4.5
12/2020	**Department of Architecture Awards, ERICA** (Ansan, Korea)	1st Prize, GPA: 4.5/4.5
07/2020	**Department of Architecture Awards, ERICA** (Ansan, Korea)	1st Prize, GPA: 4.5/4.5

Extra-Curricular Activities

11/2021–12/2021

Body Architecture, Mentee, Studio Filippo Nassetti (Parametric-Architecture.com)
Learned how to human-kind design through computational and parametric method

07/2020–08/2020

Resting Sound Concert, Video Director & Designer, The MU:EL (Culture and Arts Community)
Participated in the project through exhibition design & making live performance video

02/2018

ERICA International Alumni Workshop, Mentee, Hanyang University ERICA
Participated in the studio project and archiving projects

Personal Activities

12/2021–Present

Free Distribution of Grasshopper Script 'ObjectMaker' Series at Personal Webpage
Producing useful grasshopper scripts for 3D-modeling and distribute them free of charge

08/2021–Present

Filming and Editing Videos at Personal Youtube Channel
Editing videos, filming myself, and communicating with the world

03/2021–08/2021

Hanyang University ERICA 'Department of Architecture' Basketball Team Leader
As a team leader, managed administrative, accounting, and basketball games

12/2019–02/2020

Travel Around the World 'Russia-Finland-Japan-United States'
Traveled through Siberia, Russia and Finland by train and also treveled to Japan and the United States to see the REAL WORLD

04/2018–12/2019

Military Service, Republic of Korea Army
Serving as a soldier for 20 months and learning about responsibility

Self-Introduction

Starting my architectural journey in 2017, The idea that architecture can **CHANGE THE WORLD** never changed. So I'm trying to **SAVE THE WORLD** through architecture. When working on a project, I'm always inspired by **THE SITE** and focus on the **PHENOMENON**. Currently, I live in Chicago and I'm on the dual-degree program for Hanyang University ERICA (Ansan, Korea) and Illinois Institute of Technology (Chicago, United States).

Area of Interest

Urbanism: Housing, Slum, Phenomenon
Environment: Sustainability, Climate Change, Renewable Energy
Social issue: Refugee, Social Equity, Famine
Visualization: UI/UX, Line Drawing, Axonometric Projection
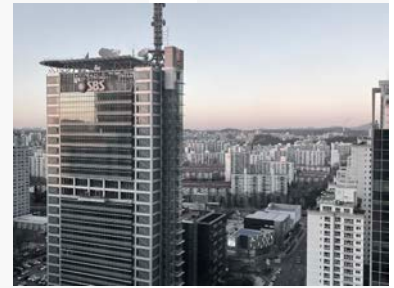**Technology:** 3D Printing, AR/VR, Big Data

Others

Software	Rhino, Grasshopper, AutoCAD, Revit	Illustrator, Indesign, Photoshop, Lightroom	Enscape, Lumion, V-ray, Twinmotion, Keyshot
Languages	Korean	Native, English	Fluent (TOEFL : 91)
Organizations	Alpha Sigma Phi (08/2021–Present)

Prologue *"Phenomenon"*

Guro, Seoul (1997 - 2009)

Yangcheon, Seoul (2010 - 2016)

Ansan (2017 - 2020)

Chicago (2021 - Present)

4 Types of Cities
Ghetto, New Town, Suburb, and Metropolis.
Since I was born, I lived in 4 different types of cities. Living in various cities, I witnessed **a variety of phenomena making various cities**. So I've become interested in phenomena and people who create phenomena.

Individual Memory → Collective Memory → Building → Town → City

"Phenomenon"

The city is the locus of the collective memory.
— Aldo Rossi, The Architecture of the City

Way to New Jersey from Manhattan (21:43, February 7, 2020)

Social Group & History
As Aldo Rossi said,
"The city is the locus of the collective memory."
Therefore, the minimum units that make up the city, the people, and the histories of the site, are the most important thing to understanding the city. Therefore, I always start my project by understanding the social groups and histories of the project. **For me, the memories are the most important elements of the project.**

Six Corners Fieldhouse
3915 N Cicero Ave, Chicago, IL
'Land that must be EMPTY'

01 Order of City

Meaning of Path 02

4.16 Memorial Park
268, Dongsan-ro, Danwon-gu, Ansan
'LOST meaning of the Path'

Computational Design

06

ObjectMaker Series
'Freedom for Rhino!'

Computational Design

03

Polyhedragon Mask
'Body X Technology'

Social Group 05

B House (For Beer Home-brewer)
19, Dosan-daero 37-gil, Gangnam-gu, Seoul
'SPECIALIZED Space for Social Group.'

Feeling the Future
'Classic X Technology'

BIM

09

04 Locals

Community Service Center
32, Teheran-ro 7-gil, Gangnam-gu, Seoul
'Restoration of DAILY LIFE of Locals'

07 Sense

Classic

08

Highlight the Details
'Follow the Legacy'

Surge – 고양
55, Hanyangdaehak-ro, Sangnok-gu, Ansan
'SENSE, EARTH, and MYSELF'

00

Jusang Lee
Seoul | Ansan | Chicago
jlee327@hawk.iit.edu
"I always focus on the SMALL PHENOMENON"

Timeline
2017 – 2021

01 Six Corners Fieldhouse
'Land that must be EMPTY'

Type
Academic (IIT, 2021)

Program
Fieldhouse

Location
Portage Park, Chicago, IL, United States

Phenomenon

When I first visited Six Corners, the site, I realized that I couldn't build anything for the site had to be **EMPTY**, for it wasn't a space for a building to occupy. This place had to serve as a **PATH** for the neighborhood. So, I tried not to interrupt the existing **PATH**.

*Many locals are using this site as a **road**.(12:04, September 30, 2021)*
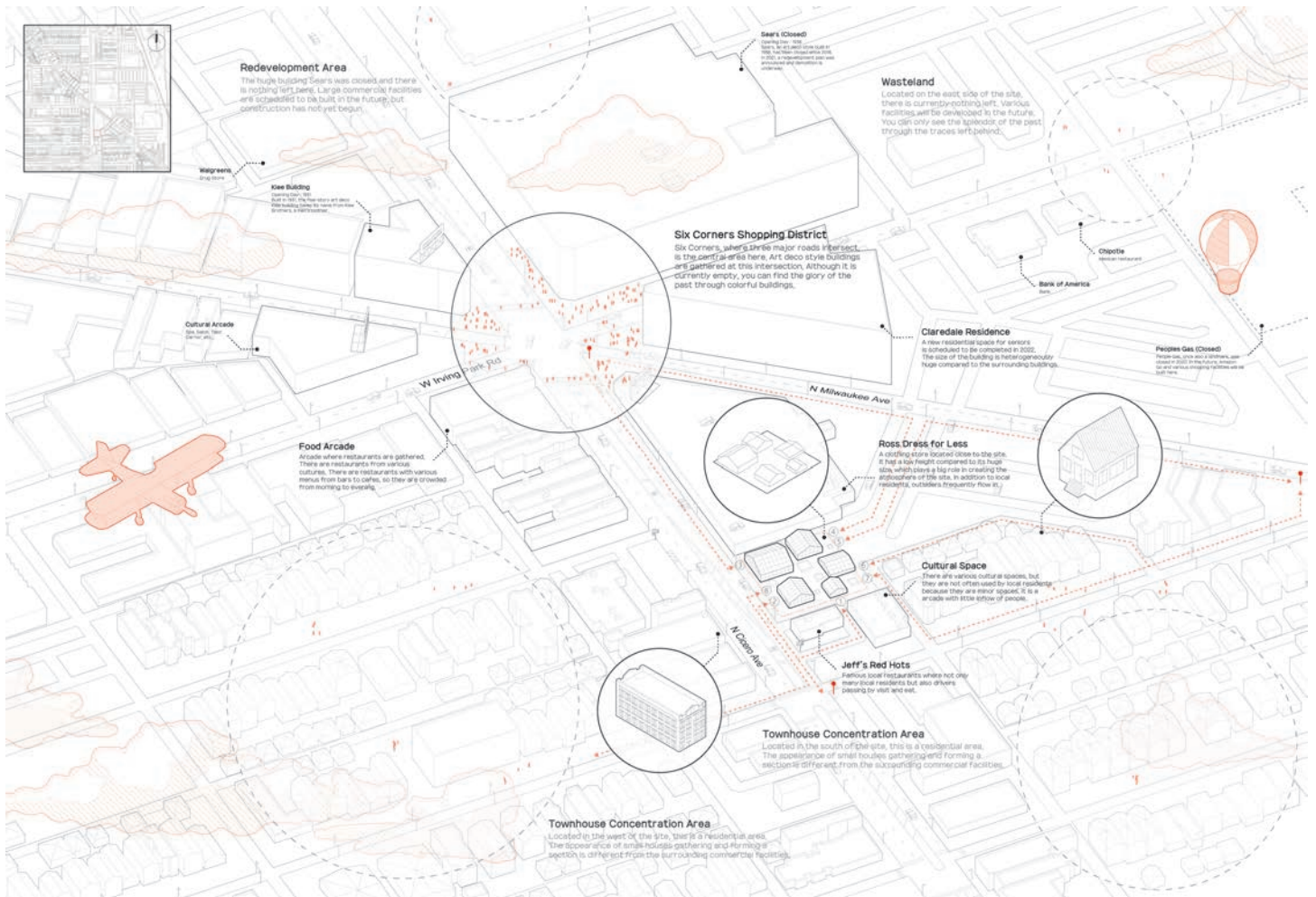
There are many beautiful historical buildings in Six Corners, but most of them are being deconstructed.

*Sears, one of the oldest shopping malls in Six Corners, was **deconstructed** (11:01, September 30, 2021)*

Legacy

In the past, the Six Corners was one of the largest shopping complexes in Chicago. Even though its glory has faded due to the recession, it remains a beautiful building. I didn't want to interrupt the **HISTORICAL ORDER** of cities with massive buildings.

Most of the buildings in Six Corners are rectangle.

*Beautiful brick buildings in **Art Deco Style** (12:07, September 30, 2021)*

Orders of City

To keep these **ORDERS**, I decided to **BURY** the building **UNDERGROUND** and follow the existing **ORDER** of the site.

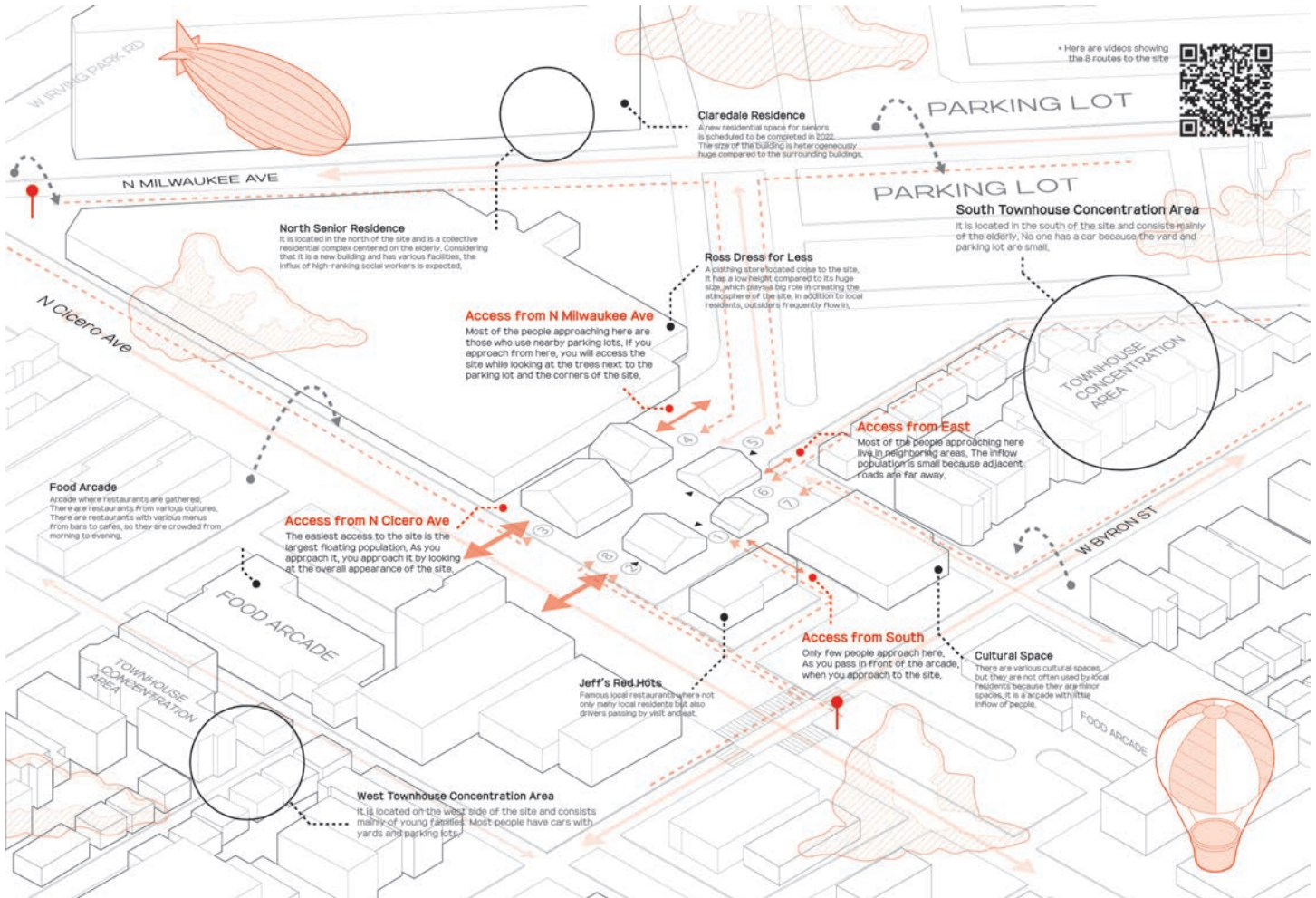To follow the site's order, I analyze the geometry of nearby buildings. As a result of analyzing the buildings, four geometries could be extracted, and these geometries influenced the determination of mass design.


Claredale Residence
A new residential space for seniors is scheduled to be completed in 2022. The size of the building is heterogeneously huge compared to the surrounding buildings.

PARKING LOT

PARKING LOT

South Townhouse Concentration Area
It is located in the south of the site and consists mainly of parking lot. No one has a car because the yard and parking lot are small.

North Senior Residence
It is located in the north of the site and is a collective residential complex centered on the elderly. Considering that it is a new building and has various facilities, the influx of high-ranking social workers is expected.

Ross Dress for Less
A clothing store located close to the site. It has a low height compared to its huge size, which plays a big role in creating the atmosphere of the site. In addition to local residents, outsiders frequently flow in.

Access from N Milwaukee Ave
Most of the people approaching here are those who use nearby parking lots. If you approach from here, you will access the site while looking at the trees next to the parking lot and the corners of the site.

Access from East
Most of the people approaching here live in neighboring areas. The inflow population is small because adjacent roads are far away.

TOWNHOUSE CONCENTRATION AREA

Food Arcade
Arcade where restaurants are gathered. There are restaurants from various cultures. There are restaurants with various menus from bars to cafes, so they are crowded from morning to evening.

Access from N Cicero Ave
The easiest access to the site is the largest floating population. As you approach it, you approach it by looking at the overall appearance of the site.

W BYRON ST

Access from South
Only few people approach here. As you pass in front of the arcade, when you approach to the site.

Cultural Space
There are various cultural spaces, but they are not often used by local residents because they are minor spaces. It is a arcade with little inflow of people.

Jeff's Red Hots
Famous local restaurant where not only many local residents but also drivers passing by visit and eat.

West Townhouse Concentration Area
It is located on the west side of the site and consists mainly of young families. Most people have cars with yards and parking lots.

The movement of locals occurs among transportation spots and gaps between the residential area and commercial area.

Attractor

People's movements influenced the placement of mass.
The two main roads surrounding the site, residential areas, commercial areas, and three bus stops each act as **NODES**. These nodes are connected to each other, **CREATING** movements of people, and the influence of these movements determines the distance of mass and creates an external space.
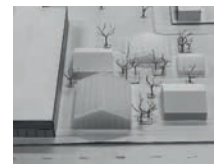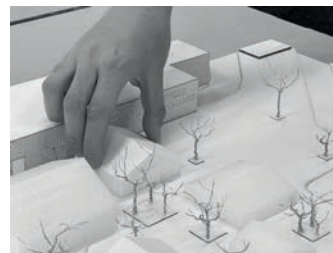
*Testing the **Path** with Study Model (October 23, 2021)*

Morning
Light intensively enters the community space.

**Afternoon**
Light evenly enters the entire space.

Twilight
Light intensively enters the rock climbing space.

Sunlight Test with Model (Pictured by Younghoon Jung)

Construction

The Hidden Oasis is a **STEEL** structure building and uses the W12 of W-Shape as a member. The facade of the ground layer adopts a curtain wall system and be made with **ETFE panels** and **Polycarbonate panels** based on HSS frames. The three-story building consists of a lobby, community space, and rock climbing.

Mining Underground

Underground, unlike general architecture, requires different strategies in light. So, three ceilings and various voids were constructed to bring as much light as possible into the space. A physical model was created to test light, and light was tested with various angles and directions.
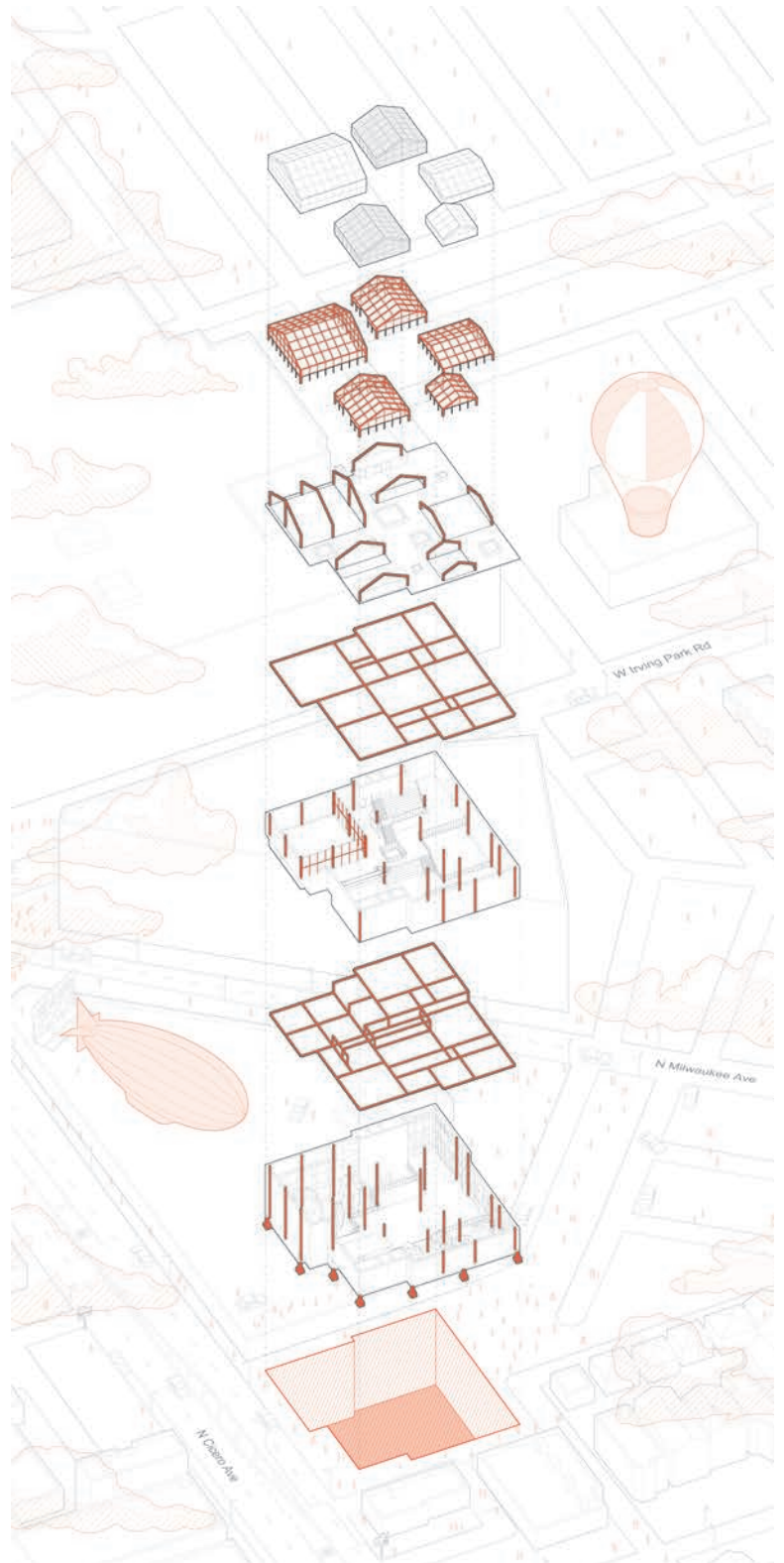
Steel structure and curtain wall system were used.
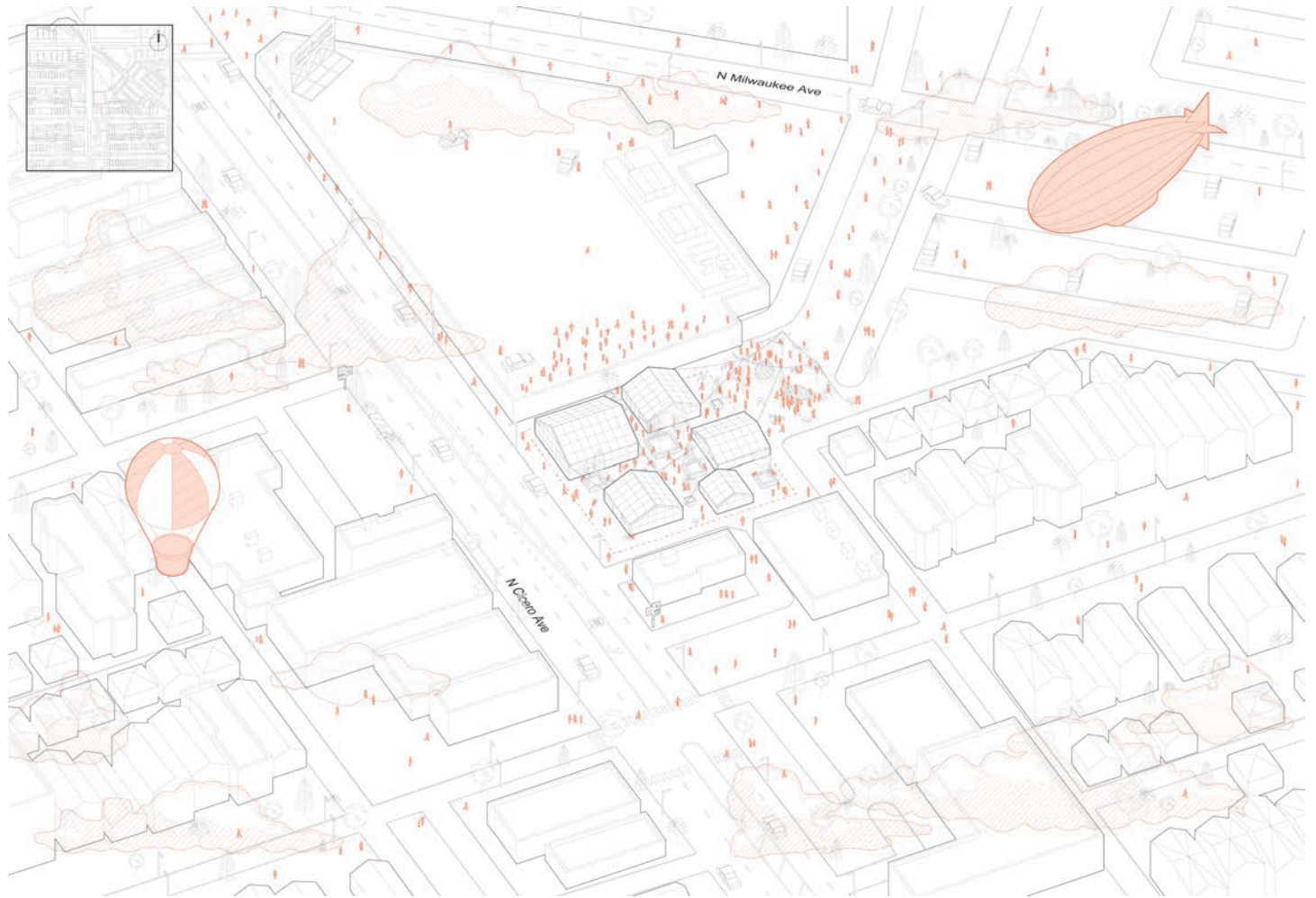
People gather in the playground, which is the intersection of various wires from attracting nodes.
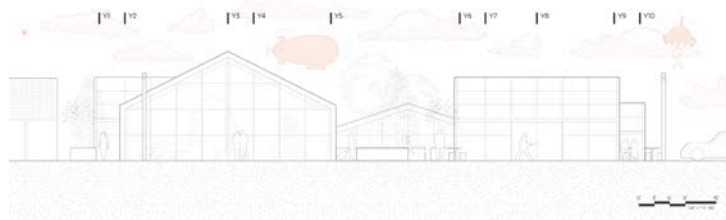
Elevation
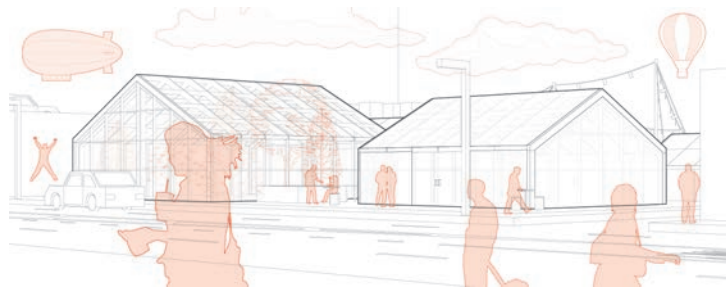
View from Commercial Area
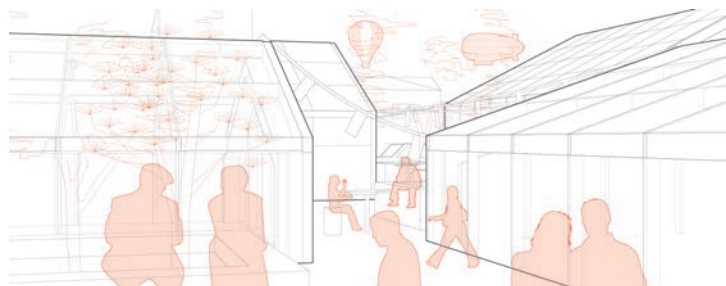
View from Residential Area
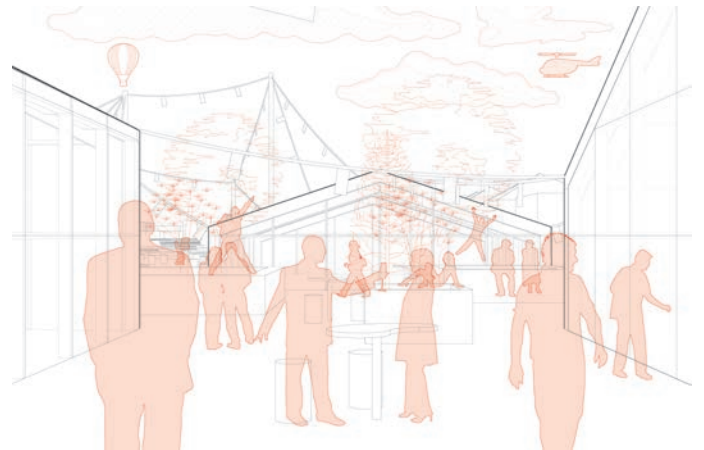
Local's various interactions occur in the Playground.

Continuous Path

There are no community spaces and parks for local residents around the site. Considering the situation on the site, botanical garden and community spaces to replace parks were designated with rock climbing. I wanted this space to be recognized as an extension of the road. So all spaces are continuous and don't have the wall, but they are divided through split floor, ceiling height, and furniture.

'I hope this building be a PATH for the neighborhood.'

Legend
1. Playground
2. Entrance – East
3. Entrance – West
4. Lobby
5. Botanic Garden

6. Information
7. Cafe
8. Lounge
9. Bathroom
10. Classroom

11. Bouldering Area
12. Community Area
13. Line Climbing Area
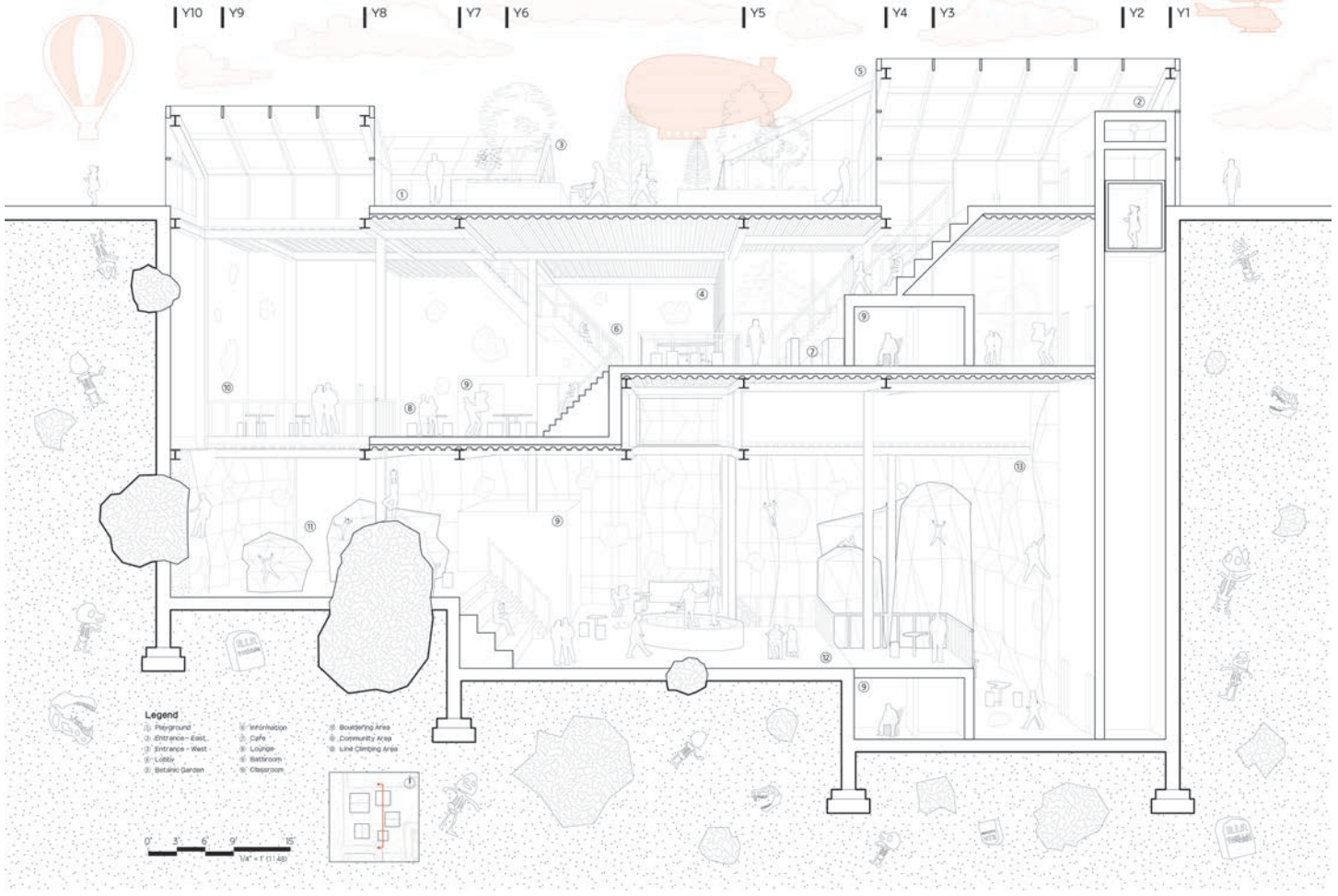
The stones underground are located there as they are and operate as objects.

Spaces connect to stairs and voids without walls.
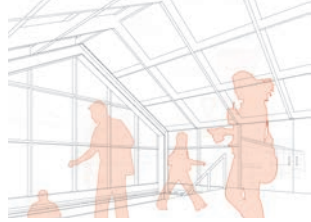
Rock Climbing

Entrance
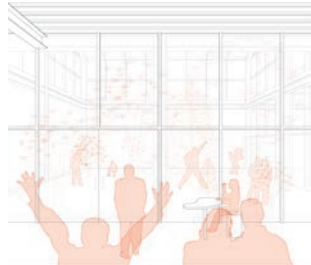
Botanic Garden
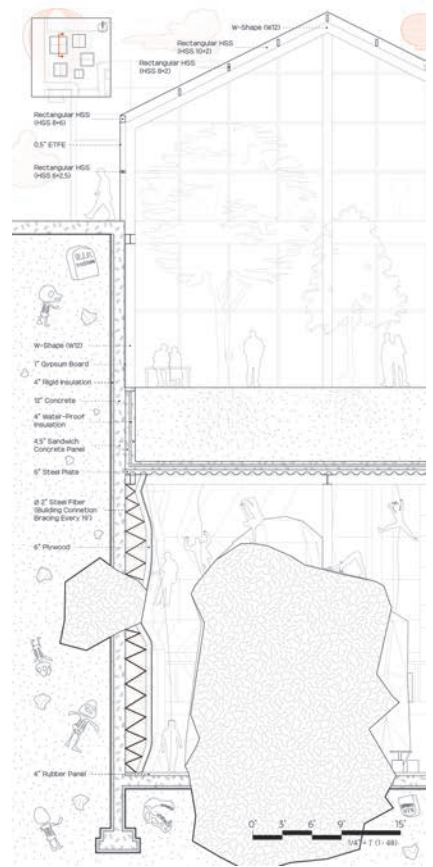
Waterproofing is the matter.

Ansan-si Timeline — About 4.16 Memorial Park

2021
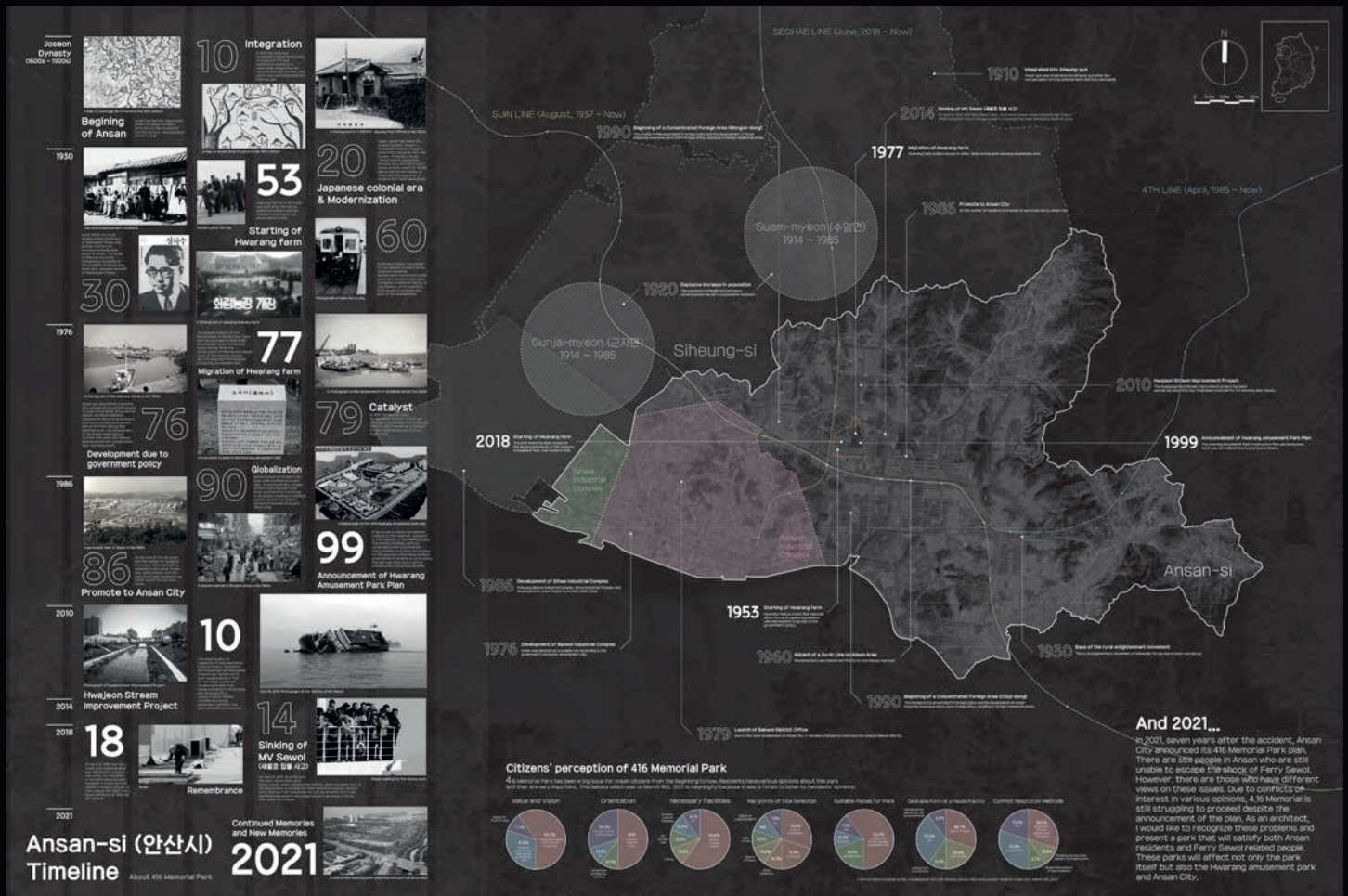
Ansan-si is a city with a lot of pain historically. It was abandoned by the country, and various accidents occurred.

Sewol Ferry Disaster (April 16, 2014)

Sewol Ferry Disaster was a disaster the sinking of a ship heading to Jeju on April 16, 2014. 325 people of second-year students from Danwon High School, who were heading to Jeju for a school trip, were on board, of which 248 passed away, because of this disaster.

Ansan-si, where Danwon High School is located, was declared a special disaster zone in 2014 due to the accident, and still hurts from the accident. Ansan-si announced a plan to build a memorial park to commemorate this accident.

The elderly do not use the entire park, but only limited areas.
(15:11, March 3, 2021)

02 4.16 Memorial Park ⚲
'LOST meaning of the Path'

Type
Academic (ERICA, 2021)

Program
Museum

Location
Danwon-gu, Ansan-si, Gyeonggi-do, Korea

Phenomenon

Hwarang Park is a large park, but the park was built indiscriminately without a plan, resulting in a **POOR CONNECTION** between each space. I **OBSERVED** the park and found that the path that had to connect space was rather **CUTTING-OFF** between space to space. So, I want the park to be operated as **ONE PARK**, not as separate space.

Splited Park

I tried to figure out what FACTORS made the park recognized as a separate space. I identified all the elements surrounding the park and analyzed the things that influence people's movements. I DIVIDED the park into 17 areas that have DIFFERENT characteristics and started looking for factors make the park divided.

1st zone is a community facility area, with most of the land public facilities, it is an independent area and is surrounded by residential areas with no connection to the surrounding areas.

There are various flows within the 17 divided areas.

Existing paths were divided rather than connected to space, forcing each part of the park to operate individually. This is why I created a new path. I hope that the new roads will connect the disconnected spaces and that the Hwarang amusement park will be able to operate as a 'One Park', not as a sum of individual spaces.

I hope the two new big flows reconnect the park as one park.

Redefining the Path

When I observed the movements of people approaching the park, I could see that the paths were RESTRICTING people's movement rather than connecting spaces. The path existed, but it was not connecting the spaces used by people, but randomly connecting the spaces. It was just paths created by CITY ZONING LAW.

So, I propose a new masterplan and a new building to be built on empty land that can bring space together.

1. Frame Unit (2021.03.25)
I thought about various ways to express curved surfaces.
Each unit can be a building itself or an element of a building.

2. Idea for the Site Environment (2021.03.28)
I have suggested a variety of ideas relating the site environment to the architecture.
I wanted to build a structure that didn't deviate much from the order of the land.

Ambiguous Boundary
In order for the paths and buildings I made not to block people's movement, it was important to REMOVE internal and external boundaries. Starting with a frame unit created to create ambiguous boundaries, space began to be created following the site's condition.
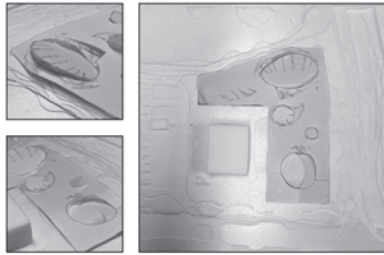
3. Idea of a Memorial Space (2021.03.28)
It modeled images of memorial spaces.
I wanted to make people feel stuffy but mysterious.

5. Arrange the Finish Line (2021.04.11)
The shape of the building looked complicated, so the ends were organized and the relationship with the land was re-established.

4. Apply to Site Contour Lines (2021.04.06)
I matched my architectural ideas to site contour lines.
I also applied the louver system that I thought last time into this idea.
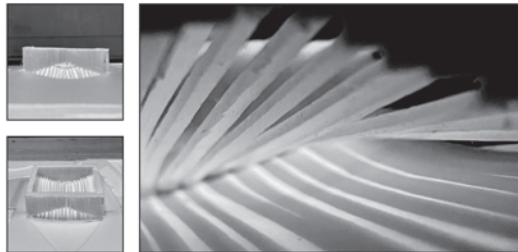
Physical Model Development 1
2021.03.25 ~ 2021.04.11
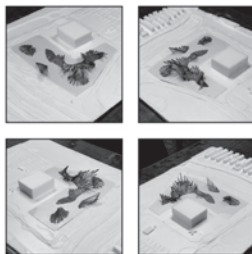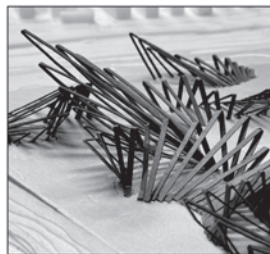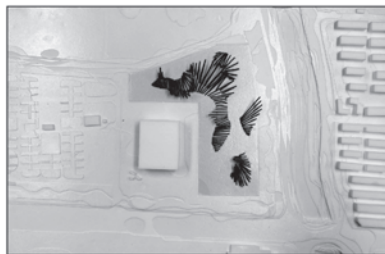
6. Sectional Approach (2021.04.15)
I thought that the space I wanted would not come out through a flat approach,
so I tried to solve these points through a cross-sectional approach.
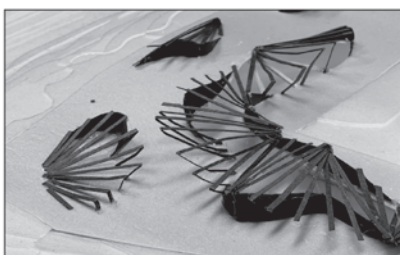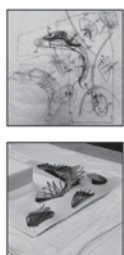
7. Realistic Scale Application (2021.04.20)
The existing model did not fit when the scale was realistic,
but I modified these parts to make the model more realistic.
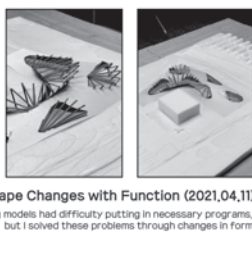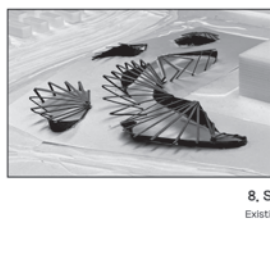
8. Shape Changes with Function (2021.04.11)
Existing models had difficulty putting in necessary programs,
but I solved these problems through changes in form.

Physical Model Development 2
2021.04.15 ~ 2021.04.25

The model changes into buildings according to the conditions of the site.

*Physical Model
Development Process
(16 Models, 127 Pictures)*
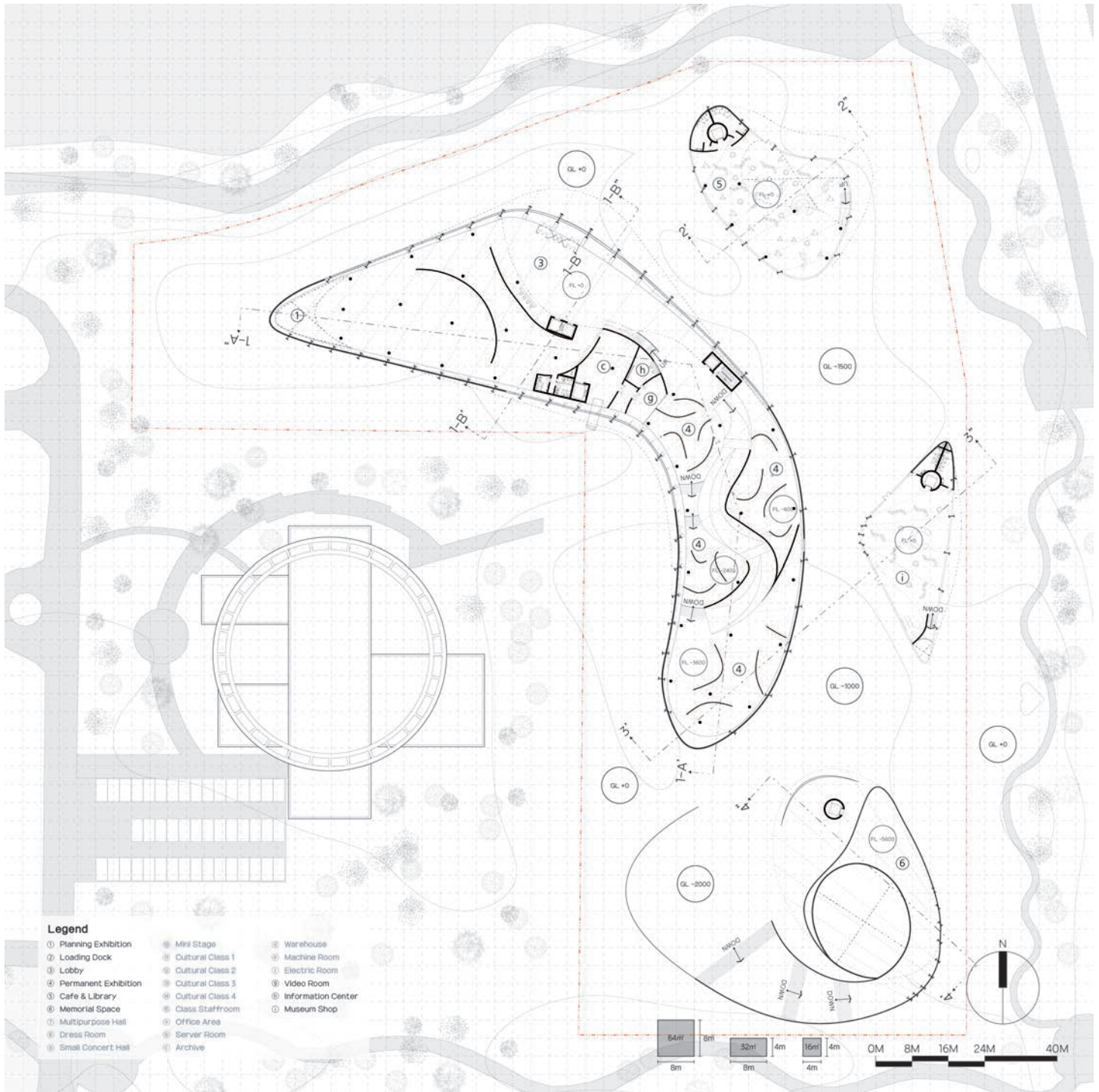
The spaces divided according to the flow create a new flow.

Legend

① Planning Exhibition	⑩ Mini Stage	⑲ Warehouse
② Loading Dock	⑪ Cultural Class 1	⑳ Machine Room
③ Lobby	⑫ Cultural Class 2	㉑ Electric Room
④ Permanent Exhibition	⑬ Cultural Class 3	㉒ Video Room
⑤ Cafe & Library	⑭ Cultural Class 4	㉓ Information Center
⑥ Memorial Space	⑮ Class Staffroom	㉔ Museum Shop
⑦ Multipurpose Hall	⑯ Office Area	
⑧ Dress Room	⑰ Server Room	
⑨ Small Concert Hall	⑱ Archive	

Intersection

New paths and existing paths cross, creating a new flow. New flows attract people and lead into the new spaces such as center squares and memorial space.

Flows intersect and create an interesting space.
(15:25, March 21, 2021)
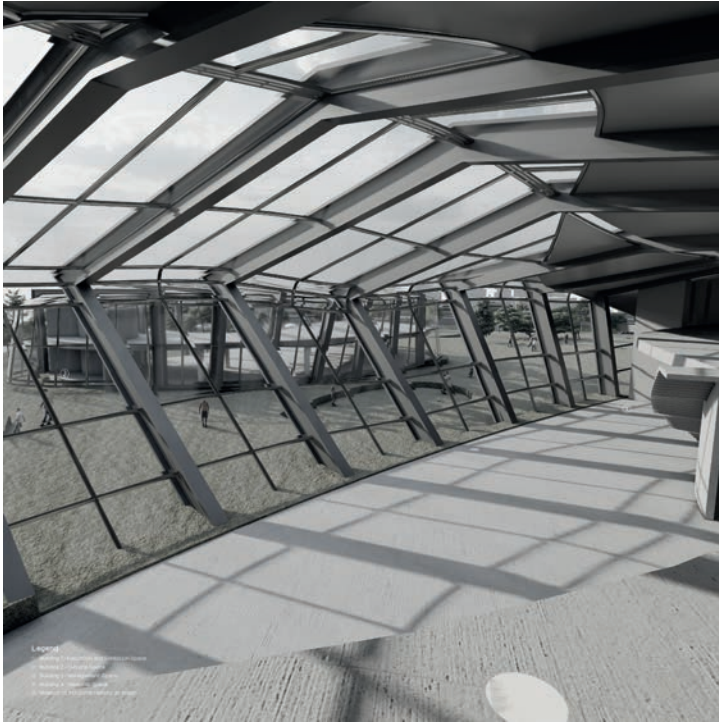
The space divided into steel frames overlaps and has duplicity.

Hwarang Park is a park for memorials and also for locals.
(15:21, March 21, 2021)

Duplicity

Steel frames that look like silhouettes repeat and overlap, blurring the boundaries between the inside and outside. As a result, space has duplicity in which the difference between the inside and the outside cannot be properly recognized.
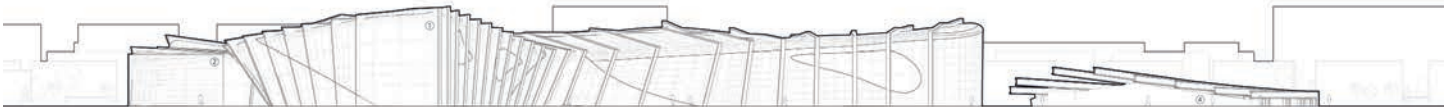
The frames support the panel and create a free interior space.

Towards ONE Park

I wanted to make a park that was open to **BOTH** guests at a memorial and locals. Hwarang Park is not just for someone, but for **EYERYONE**.

'I hope that everyone will be able to use the park freely through my ambiguous spaces.'

The steel frames break the boundaries of buildings.

A wearable mask that can view, detect, and respond to overcome human limitation. (Rendered by Jiwon Park)

Overcome Human Limitation

Human vision has limitations in reaction speed and viewing angle. Therefore, certain occupational groups, such as firefighters and soldiers, have difficulty exercising their abilities. Is there any way to overcome their difficulties with technology and ideas? I thought that these limitations could be overcome if we brought operating mechanisms from animals that have superior performance than human perspectives in nature.
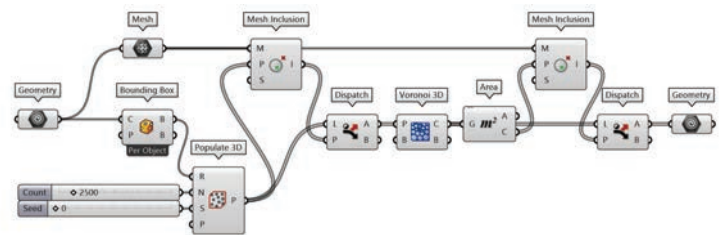
Script for making Polyhedron which following the human shape.
(Codied by Jusang Lee)

03 Polyhedragon Mask
'Body X Technology'

Type
Workshop + Team Project (2021)

Program
Product Design

Role
Design, Coding, Visualization
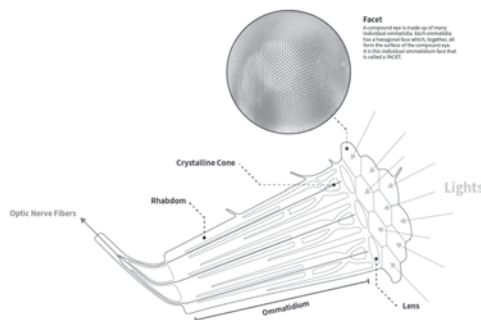
Solution from Dragonfly

Dragonflies have very large eyes and have very good vision. The dragonfly's visual system is extremely sensitive to movement and it points in almost all directions and gives the 360 degree visual field.

Analysis of dragonfly vision nerves. (Drawn by Jusang Lee)

Combine with Technology

There's a limit to the speed of human reactions. However, with the help of technology, we can **SPEED UP** the reaction.

The LiDAR sensor detects the approach of an object and immediately transmits data to the analysis part, And the analysis part **STIMULATES** spinal code to induce **SPINAL REFLEXES** to make a quick response.

LiDAR Sensor

LiDAR Sensor

LiDAR Sensor

LiDAR Sensor

Analysis Part

!

1. LiDAR sensors detect DANGER
2. Each sensor transmits data to the analysis part
3. The analysis part sends STIMULATION to the SPINAL CORD after data analysis

With the help of technology, we can speed up the reaction. (Drawn by Jusang Lee)

1. Light Part (Polyhedron Prism)
Light refraction is controlled by various angles from polyhedron surfaces. Lights are collected at the focal point and image data is transmitted to the image sensor.

2. Transmission Part (Accelerometer & LiDAR Sensor)
The lights collected in the focal point and trasmitted to the image sensor.

4. Vision Part (Screen & HUD)
The part where the user can use to see 360 degrees view, whereall the visual datas are collected to be in use.

3. Analysis Part (CPU & Connector with Spinal Cord)
The main CPU of the mask. It finalizes the visual datas. Moreover, it is connected to the spinal cord and let the user have spinal reflex in the case of emergency or approach of danger.

1. Light comes in through the **Light Part**
2. Light and Movement are sent to the **Transmission Part**
3-1. Light visualized the data in the **Analysis Part** and transmitted to the **Vision Part**
3-2. Judgement made in the **Analysis Part** and signals sent to the **Spinal Cord**

4. Spinal Cord

The four other parts collect information and command humans to act. (Drawn by Jusang Lee)

Fabrication

Polyhedral parts are connected to communicate information and help humans make quick judgments. The polyhedragon aims to overcome human limitations. With a process of detect – transmit – respond in terms of visualization and motion. To overcome the human limitation, A wearable that can view, detect, and respond.

04 Community Service Center
'Restoration of Daily Life of Locals'

Type
Academic (ERICA, 2020)

Program
Office

Location
32, Teheran-ro 7-gil, Gangnam-gu, Seoul

Phenomenon

On the first day, I visited the site, young children were running and playing on the asphalt road.
"Why can't this park, the ONLY PARK in this block, be used entirely for local residents?"
This park belongs to the residents, not to anyone else. I wanted to return this place to the local residents, not victims of reckless development.

Locals only have asphalt. (15:18, August 5, 2021)

Yeoksam-Dong, Gangnam

Gangnam, A city created by necessity
The purpose of the project was to examine the development process of Gangnam New Town, which was transformed from a quiet rural area to a modern urban area in a short period of time, and to identify the problems that arose in the process.

80 Activation
Maturity of Gangnam development
With the development of subways and road, Gangnam has entered a mature stage. At that time, it was difficult to merge housing sites due to sporadic development, so small houses were built on the interior of the block at its corners. As residential areas became active, various public facilities were created.

70 Alternative
Inhibitor of Gangbuk development
In the early 1970s, due to the deepening bias in the development of Gangbuk, the government restricted the construction of buildings in Gangbuk and lifted various laws and regulations that prevented the development of Gangnam. Through these measures, development will begin in the mid-1970s.

00 Metamorphosis
Changes in local commercial area
The soaring real estate prices and growing corporate demand for offices located in Teheran-ro have changed the way Gangnam was constructed, which was mainly composed of residential areas, to commercial areas. There have been many changes in the local culture because of the organizing the land.

90 Saturation
Back side of high-fast development
Following the high-fast development in the 1980s, many side effects appeared in Gangnam. Various problems such as soaring real estate prices and traffic congestion emerged, and the government tried to solve the problem by reorganizing the city. Nevertheless, Gangnam was still the center of Seoul.

20 Disorder
Many problems to solve
The lack of concrete plans, the implementation of temporary policies caused problems in urban structure, and the lack of prior investigation into the area resulted in a uniform landscape. In addition, various special favors implemented to promote Gangnam development led to the inequality with Gangbuk.

10 Stickyization
A city where change has stopped
In the 2010s, there was no significant change. Still, the commercial district occupies the edge of the block, and the residential district occupies the inner part of the block. The price of real estate continued to rise and private offices began to gradually enter the residential district.

Gangnam was deformedly developed by the government. As a result, many side effects are occurring.

*Why are they **closed** to the public despite their role being the **popularization** of Taekwondo?*
(18:28, October 2, 2020)

Kukkiwon

Kukkiwon, which was established to promote Taekwondo, was **CLOSED** to local residents, contrary to its original purpose, and I thought this space should be **OPEN** to people. Therefore, I propose a community service center with a botanic garden for local residents on this site.
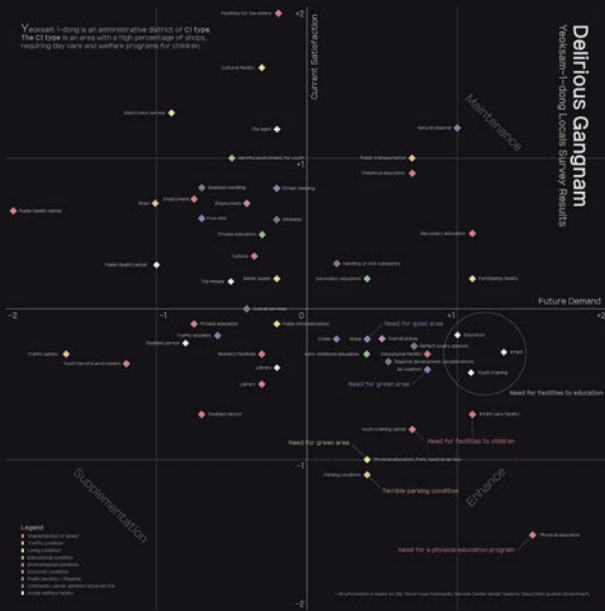
Future demand & Current satisfaction matrix

Students have nowhere to go in Gangnam. (12:07, October 2, 2020)

Program

Prior to setting up the program, I investigated facilities that are currently insufficient for local residents and facilities that are expected to be in future demand. Facilities that are in demand both now and in the future were facilities related to education and nature, and in response to these demands, offices include educational facilities and nature.

Social Group's Cooperate & Discord
Person-to-person relationship

Cooperate

Discord
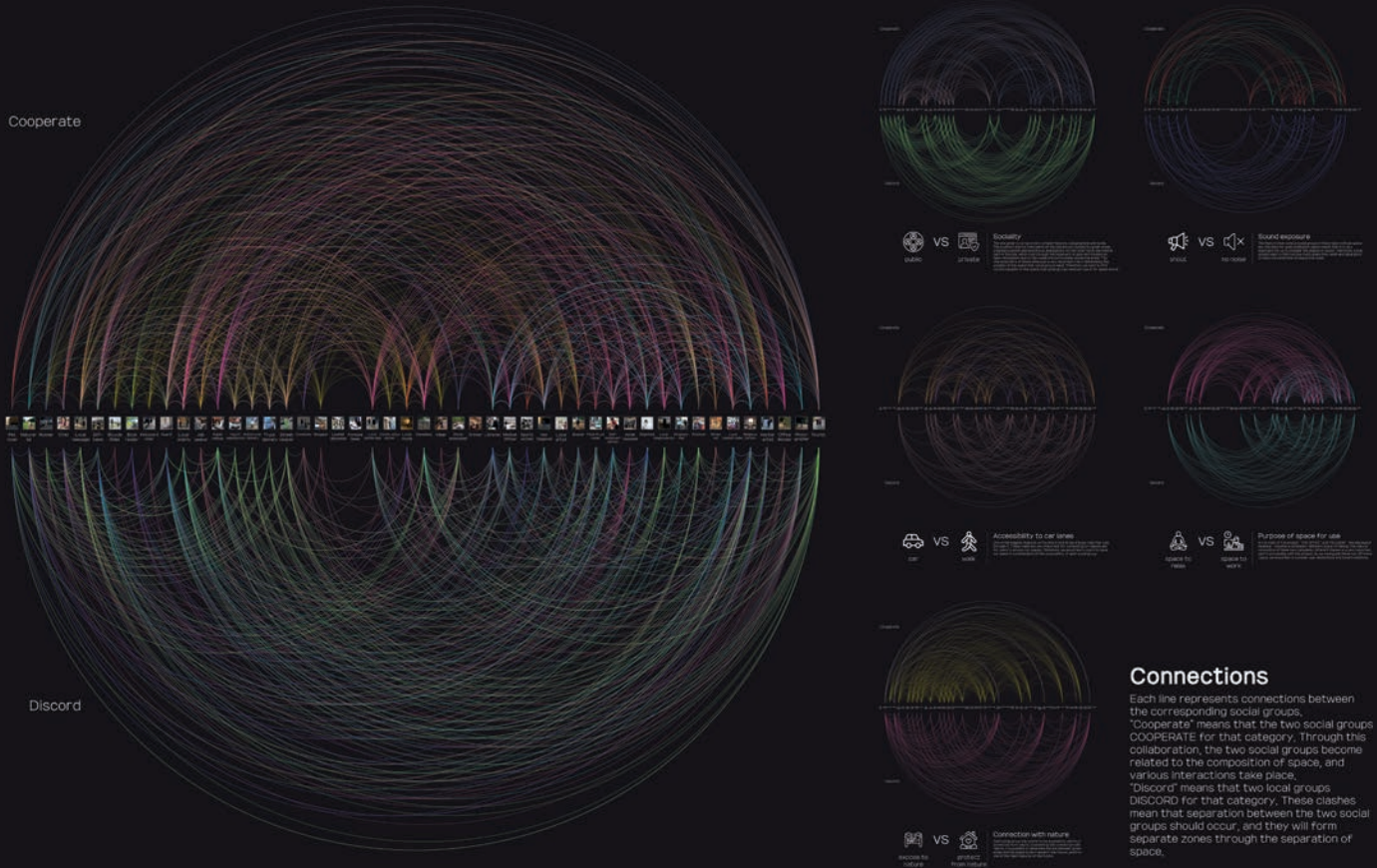
48 social groups and 10 categories determine the location of the site and the placement of the program.

Connections

Each line represents connections between the corresponding social groups. "Cooperate" means that the two social groups COOPERATE for that category. Through this collaboration, the two social groups become related to the composition of space, and various interactions take place. "Discord" means that two local groups DISCORD for that category. These clashes mean that separation between the two social groups should occur, and they will form separate zones through the separation of space.

Local Social Group

Sites are places where residential and commercial districts are together, and there are numerous social groups. Each of the 48 social groups has a preferred space and a avoided space. Their preference for space becomes an important factor in arranging various spaces. The arrangement and hierarchy of space are determined through social groups.

System Reformation

The system of community service center in Korea is **OLD** and **INCONSISTENT** with modern society. Therefore, I propose a 'MOBILE community service center system' different from the existing system. With the new system, residents don't have to wait for their turn. They just wait in the desired space, and public officials will visit them for work.

Program Map
The restoration of daily life

Child Zone
Space for children has been required within this site. We want to quench children's thirst through various spaces for children. With a BIG SLIDE!

Botanical Garden
The lack of green space in the site and the inability to use the park properly suggest the reason for putting green space in this space. I hope that these gardens will help local residents regain their daily lives.

Cafeteria
The existing waiting space was a stuffy space with only simple furniture. I want to create a new waiting space through the cafeteria.

Student Zone
Students are being kicked out of this site because they have no place to study. Therefore, we want to provide an ideal space for them to focus on their studies.

Entrance
Entrances are installed everywhere except in residential areas to create a space where local people can come in at any time.

Civil Service Zone
Unlike the existing office space, I would like to separate and specialize the office space.

Local People Zone
Various activities take place in the local people zone. Create community spaces for local residents and make them available at any time.

Service Support Zone
In the service support zone, there are spaces such as electric and mechanical rooms that are essential to use the community center. These spaces restrict the movement of traffic so that only a limited number of people can enter them.

ARCADE · CHILD ZONE · CAFETERIA · RESIDENTIAL AREA · STUDENT ZONE · ENTRANCE · BOTANICAL GARDEN · CIVIL SERVICE ZONE · YEOKSAM PARK · LOCAL PEOPLE ZONE · SERVICE SUPPORT ZONE · NATIONAL CHILDREN LIBRARY

Nature

The area near Kukkiwon, designated as a site, was not used for local residents, even though it was the only green area in the block. In addition, the Gangnam area is absolutely lacking in green areas due to development. Therefore, I propose Botanic Garden to return nature to local residents. Botanic Garden will provide local residents with nature and shelter from city.

It presents a completely new type of community center.

In response to natural elements such as sun, wind and rain, building saves energy through facilities and materials.
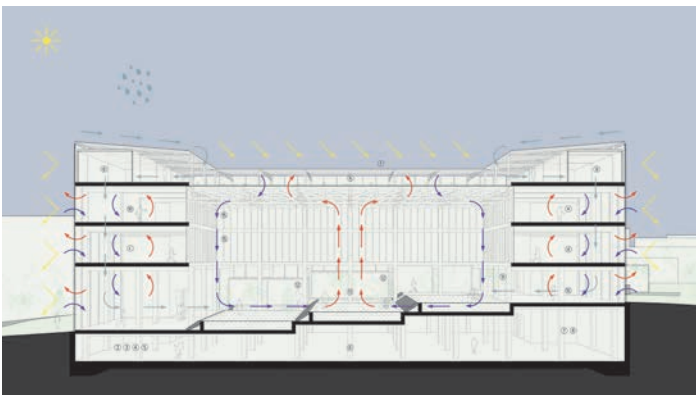
Rainwater is used in plants and rooftop gardens.

Detail Section - Structure Joint & Double Facade

Water in the rooftop helps maintain the temperature inside.

Sustainability

It is important to reduce energy consumption as much as possible due to the characteristic of botanic garden that consume a lot of energy. Therefore, I propose a double facade structure to increase sustainability. Double facade helps maintain the pleasant environment for the office and the temperature required for botanic garden efficiently.

'I hope that the space for local residents will restore its original function and RESTORE THE DAILY LIFES of local residents.'

Housing and offices are mixed without boundaries, and countless people pass through them.

Phenomenon

Apgujeong, where the site is located, is a **COMPLEX MIXTURE** of **RESIDENTIAL** and **COMMERCIAL ZONES**. The two heterogeneous spaces are mixed without a clear boundary, causing many problems. Local residents are unable to sleep late at night due to people who use a commercial zone, and those who move into commercial districts are subject to many restrictions on their activities due to residential districts.

What was needed in this confusing mix of zones was a space that **NARROWED THE GAP** between the two areas.
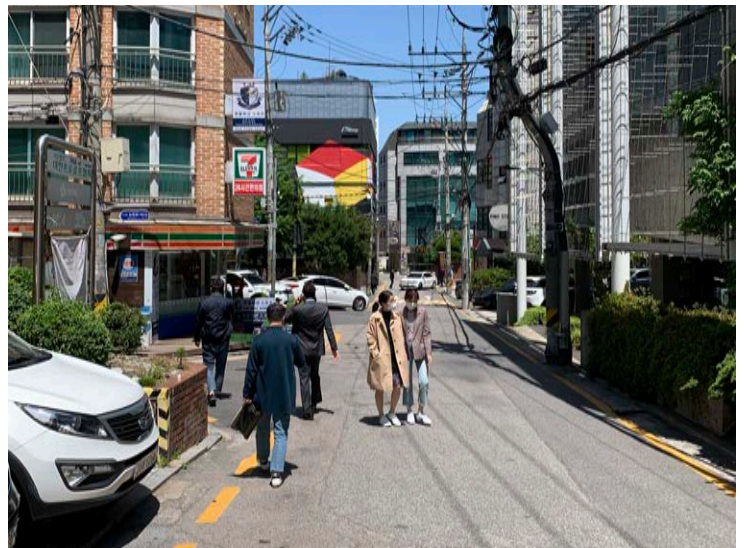
Residents and office workers always encounter each other.
(12:14, May 13, 2020)

05 B House (For Beer Homebrewer)
'Specialized Space for Social Group.'

Type
Academic (ERICA, 2021)

Program
House

Location
19, Dosan-daero 37-gil, Gangnam-gu, Seoul

Housing Issue

For those in their 20s and 30s living in Korea today, a house is just a sleeping space. In addition, those who enjoy "homebrewing" as a hobby need space for various facilities. Therefore, in order to solve his problem, I propose the typology of **SHARE HOUSE**.

Social Group
'Generation 2030' Who Love Homebrewing

College Student
00:00 01:00 02:00 03:00 04:00 05:00 06:00 07:00 08:00 09:00 10:00 11:00 12:00 13:00 14:00 15:00 16:00 17:00 18:00 19:00 20:00 21:00 22:00 23:00 24:00

Self-ownership
00:00 01:00 02:00 03:00 04:00 05:00 06:00 07:00 08:00 09:00 10:00 11:00 12:00 13:00 14:00 15:00 16:00 17:00 18:00 19:00 20:00 21:00 22:00 23:00 24:00

Office Worker
00:00 01:00 02:00 03:00 04:00 05:00 06:00 07:00 08:00 09:00 10:00 11:00 12:00 13:00 14:00 15:00 16:00 17:00 18:00 19:00 20:00 21:00 22:00 23:00 24:00

Local People
00:00 01:00 02:00 03:00 04:00 05:00 06:00 07:00 08:00 09:00 10:00 11:00 12:00 13:00 14:00 15:00 16:00 17:00 18:00 19:00 20:00 21:00 22:00 23:00 24:00

Space Activation
00:00 01:00 02:00 03:00 04:00 05:00 06:00 07:00 08:00 09:00 10:00 11:00 12:00 13:00 14:00 15:00 16:00 17:00 18:00 19:00 20:00 21:00 22:00 23:00 24:00

Quiet Time   Overcrowded Time   Local crowded Time   Leisure Time   Overcrowded Time

Activation time table
00:00 ~ 24:00

- ■ Outing
- ■ Semi-Public Space
- ■ Public Space
- ■ Semi-Private Space
- ■ Private Space

Share House
00:00 01:00 02:00 03:00 04:00 05:00 06:00 07:00 08:00 09:00 10:00 11:00 12:00 13:00 14:00 15:00 16:00 17:00 18:00 19:00 20:00 21:00 22:00 23:00 24:00

Breakfast   Lunch   Dinner   Beer Night
Watch Basketball Game

Program time table
00:00 ~ 24:00

- ░ Residential Program
- ░ Preparation Program
- ░ Local Social Program
- ░ Public Program

Even within the 2030 group, they have different lifestyles.

Generation 2030
Sharehouse is characterized by a space where people in various fields live together. Considering these characteristics, it is essential to analyze the movements of various people in constructing the space of the share house.

Therefore, the daily movements of the social group 2030 generation were analyzed to identify people's movements in the residential environment. These analysis data help determine the time and program when space is activated.
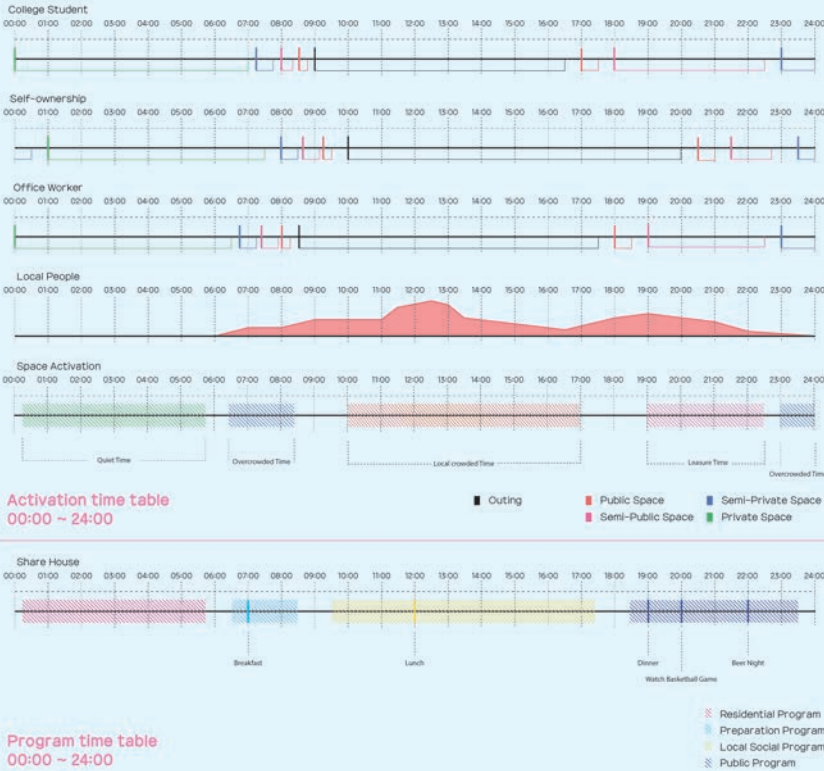

1. Sterilize homebrewing equipments
The most important thing in making beer at home is getting rid of unnecessary germs. Because the bacteria that have not been removed change the taste of beer during the beer fermentation process.
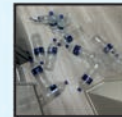
2. Make baby beer
Mix the wort, water, and sugar that needed for fermentation. Mix well and add yeast for fermentation. It is important not to stir the yeast. If you stir it after add yeast, the fermentation will take place too quickly and become barley vinegar.

4. Package aging beer
Transfer fermented beer to a bottle. Likewise, it is very important to get rid of the bacteria that are harmful to the freshness of the beer when you pack the beer.

5. ENJOY HOMEBREWING BEER!
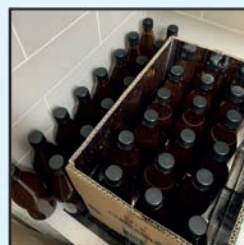
3. Check the status of beer
Check the weight of baby beer every day. If beer goes into effect normally, the percentage will be lower. If the portion of beer is constant for 2 days in a row, the fermentation is complete.

Be a Beer Homebrewer
The beer-making process is complicated, so you have to consider all the factors. Therefore, I investigated the difficulties and the process of making beer to understand the space needed, and studied the physical elements needed to actually create space, such as the tools needed, the numbers of those tools, and the condition of the space needed.

In addition, I had time to make my own beer and learn about the potential of social groups.

Social Group
'Generation 2030' who love homebrewing

I made my own beer over two months to understand social groups.

Process

One of the important features of making beer is that the beer-making process has a large order. I wanted to provide a differentiated experience from other beer factories or breweries, where users can move and participate in the process. Therefore, a huge type of lamp is presented as a way to reveal this linear process of beer generation and create various experiences for users.

How to Make Beer
Guide for Beginning Homebrewers

Origin of Beer
The most important ingredients for beer are grain and hop, both of which are grown on farms. It is very important to select raw materials well because the taste varies greatly depending on the farm and species produced.

Ingredient of beer – Grain
Most of the beer produced in Korea is made of barley. Recently, however, attempts have been made to make beer from various grains such as corn, wheat, and rye, which has enabled the emergence of various beers.

Water
Water is a very important factor not only in the cultivation of grains but also in the production of beer. Since the quality of water is directly related to beer, most beer breweries manage water well.

Core of Beer – Hop
Hop, also called Hopfen, belong to the rosewood family, and grow to more than 5m and up to 15m when fully grown. Beer has a unique bitter taste and scent to prevent oxidation by miscellaneous bacteria. Hop has been used in beer since around the 13th century. It is a cold-resistant plant that can withstand minus 50 degrees Celsius and grows well in a cold climate.

WORT KETTLE
MILL
WHIRLPOOL TANK
WORT RECIVER
MASH KETTLE
COOLER
LAUTER TUN
MASH TUN
READY TO DRINK!
STERILE FILTRATION
FERMENTATION TANK
9~14℃ LAGERS
SPENT GRAIN TRUCKED TO LOCAL DAIRY FARMS AND PIGGERY
STORAGE TANK
16~26℃ ALES

Consumer
Demand for various beers has been increasing in Korea since the 2010s. As import standards eased and foreign beer was imported at low prices, this phenomenon occurred as consumers who used to drink only the same beer preferred a new taste.

Brewery in Korea
Since the late 2000s, interest in the taste of beer has gradually spread, with more beer pubs on the streets where you can enjoy various craft beers at high prices, and small breweries producing craft beers one by one.

Yeast
The yeast used not only for bread but also for beer is a very important factor in making beer. This is because fermentation occurs through yeast, and beer containing alcohol can be made only after the fermentation process. Yeasts have a great influence on the taste of beer.

The beer making process is not only linear but also complicated.

A Home-brewer needs a variety of facilities to make beer.

Space Map
For craft beer homebrewers

Sprouting
The barley shall be ventilated to maintain a constant temperature of 12 to 17°C, while oxygen shall be supplied and CO2 discharged.

Kilning
After germination, barley shall be dried at room temperature with a moisture content of 8 to 10%.

Preservation
Storage of malt is preferable below 20°C, and it is recommended to avoid absorption of moisture as much as possible.

Steeping
In general, barley is recommended to reach 42-44% moisture content at water temperature of 12 to 14°C.

MALTING AREA

Lautering
min 620x620x1050 (100L)
After mashing, the mash is naturally filtered using a filter plate and filter tank with a thin and long hole (width 0.4 ~ 0.7mm, length 20 ~ 30mm).

Milling
min 790x980x1300
The milling is used with a sieve-mixed grinder.

Mashing
min 750x540x470 (80L)
The purpose of the mashing is to obtain a large amount of malt juice for beer fermentation which consists of a barley concentrate.

Barley
Barley grows best in cool ground – ideal temperatures hover right around freezing.

Recycling
Spent frain trucked to local dairy farms and piggery

Boiling
min 1140x1140x1520 (100L)
Boiling time is about one to two hours, and concentrated malt has a glossy, sweetness, and fresh smell of the hopp.

Hops
The added amount of Hope is about 1.5 to 1.8 kg for 1 kL of completed beer and is added two to three times during boiling.

BREWING AREA

Cooling
min 1500x1060x960
Cooling is carried out to remove the cold break, and cold break should be completely removed, to promote the aging and flavoring of the beer.

Yeast
The added amount of Yeast is about 1.5L for 1 kL of completed beer and will grow and multiply.

Hop yards
The best climate for hops yard is the long day and the daily temperature difference between night and day is large.

Lagering must under 0~1°C
Lagering usually use glass lining or aluminum, it depends on the type of beer, but it usually takes 40 to 60 days for draft beer and 70 to 90 days for bottled beer.

Packaging
It is draft beer that removes yeast with a filter without sterilizing it after filtration, and beer that is sterilized before or after infusion into a bottle or tube is a common bottled, and canned beer.

Fermentation
min 650x1650x1520 (2x100L)
The fermentation of beer takes place in two stages. Pre-fermentation is fermented by adding 0.5% beer yeast to the cooled beer juice. It usually takes 8 to 12 days at 5 to 10°C. Maturation takes place at 0~1°C.

FERMENTATION AREA

Laboratory
Most brewers get their yeast from commercial yeast laboratories such as Wyeast.

Filtering
min 1100x1100x1520 (500L)
The aged beer is filtered and made into transparent beer. The main purpose of the filtration is to remove the turbidity. The beer in each curse group is mixed, and cooled to 0~1°C through the beer cooler to filter.

**FILTERING & PACKAGING AREA**

Components
Various facilities are needed to perform homebrewing. Therefore, in order to use these huge facilities, space on a different scale from the general scale of housing was required. Therefore, my project needed to weave various scales of space, such as the human scale needed in the general residential process, the huge scale needed for brewery, and the scale needed for beer-enjoying space.
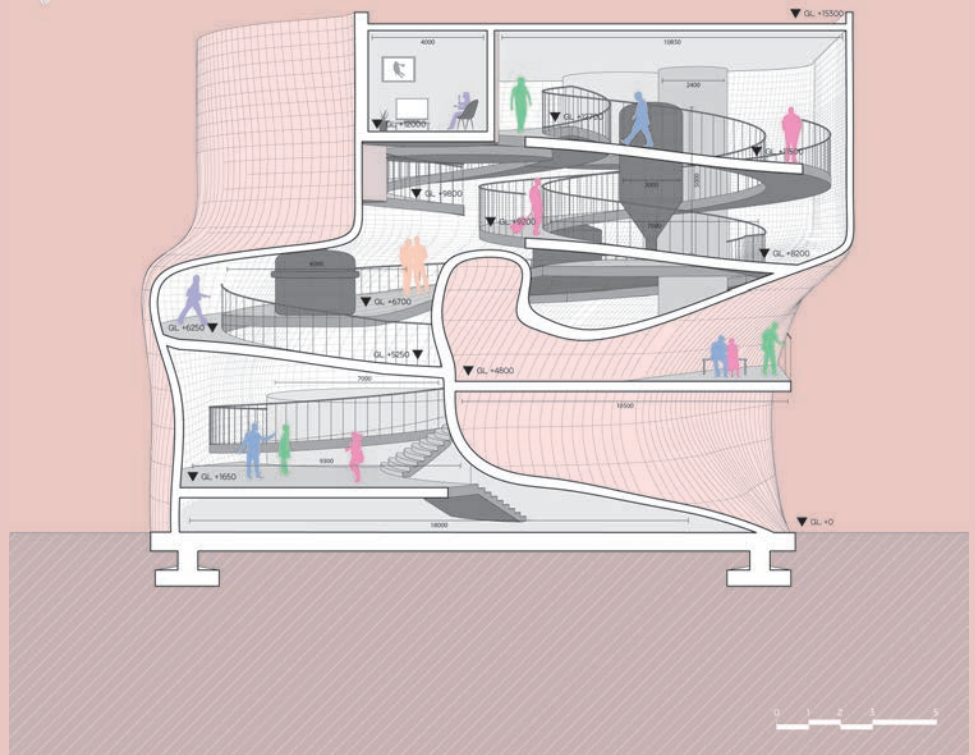
Through a space composed of unusual types of lamps, I hope that users will feel experiences and unique sense of space.
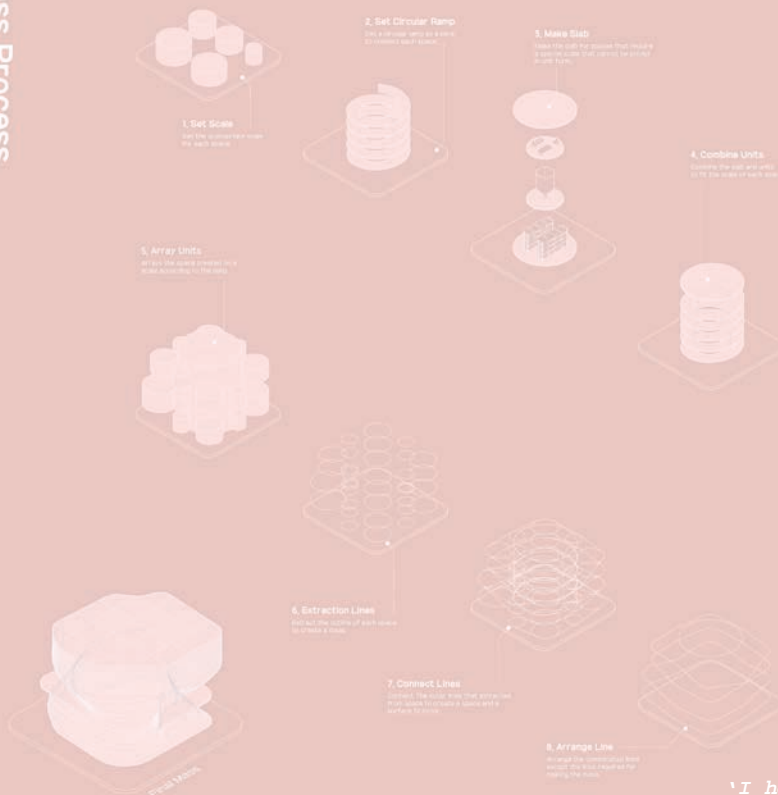
Specialized Space

The beer-making process is characterized by a **LINEAR FLOW**. Taking advantage of these characteristics, the beer production process was connected with one **RAMP**, and residential spaces were inserted between them to create a space where beer brewerys and residences are together.

'I hope that the GAP between the different zones of Apgujeong will be REDUCED and the city will operate in HARMONY.'

The beer-making process plays a big role in determining mass.

No More Grinding!

The problem that occurs during 3D modeling is that if one parameter changes, all modeling must be proceeded again. In order to minimize such **GRINDING**, parametric grasshopper scripts are produced and distributed.

So far, a total of six scripts have been produced, and all scripts are open source and distributed free of charge, allowing people to apply, or learn grasshopper.

06 ObjectMaker Series
'Freedom for Rhino!'

Type
Personal (2021–Present)

Program
Grasshopper Code Design

Role
Planning, Coding, Visualizing

The spiral staircase, script #1, can be controled nine parameters.

07 Surge – 고양
'SENSE, EARTH, and MYSELF'

Type
Workshop (2018)

Program
Pavilion

Location
55, Hanyangdaehak-ro, Sangnok-gu, Ansan

Phenomenon
A familiar but awkward place to pass by.

From there, artifacts that start at the
main gate are fading out one by one.

On a day like every other day,
I happened to visit this place.

When I took my first step,
The soft ground sank down.

When I took my second step,
Withered leaves shattered with a rustle.

When I took my third step,
Rough leaves grazed my feet.

How many steps have I taken
leaving my body to the ground.

When I came to my senses,
I found myself surrounded by lots of trees.

-

We always live surrounded by someone's hands.

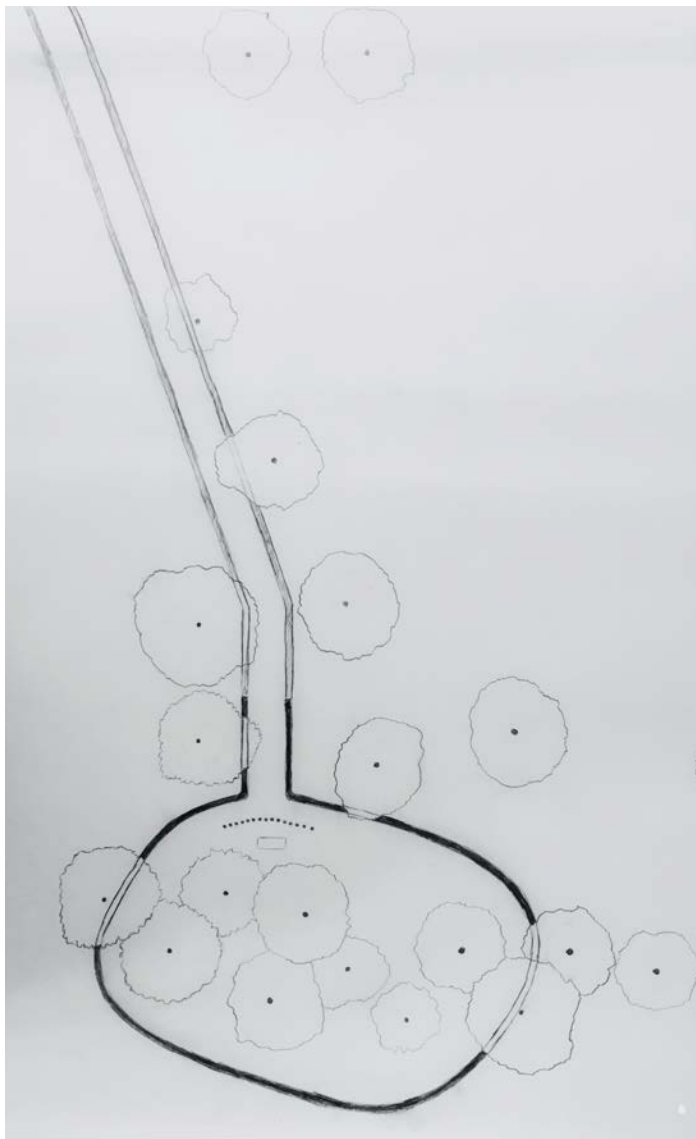When I leave myself in their hands and move on,

Somewhere along the line,
I find myself standing alone in hollow void.

So we need time alone.

To Not Forget oneself,
To Keep oneself surged.

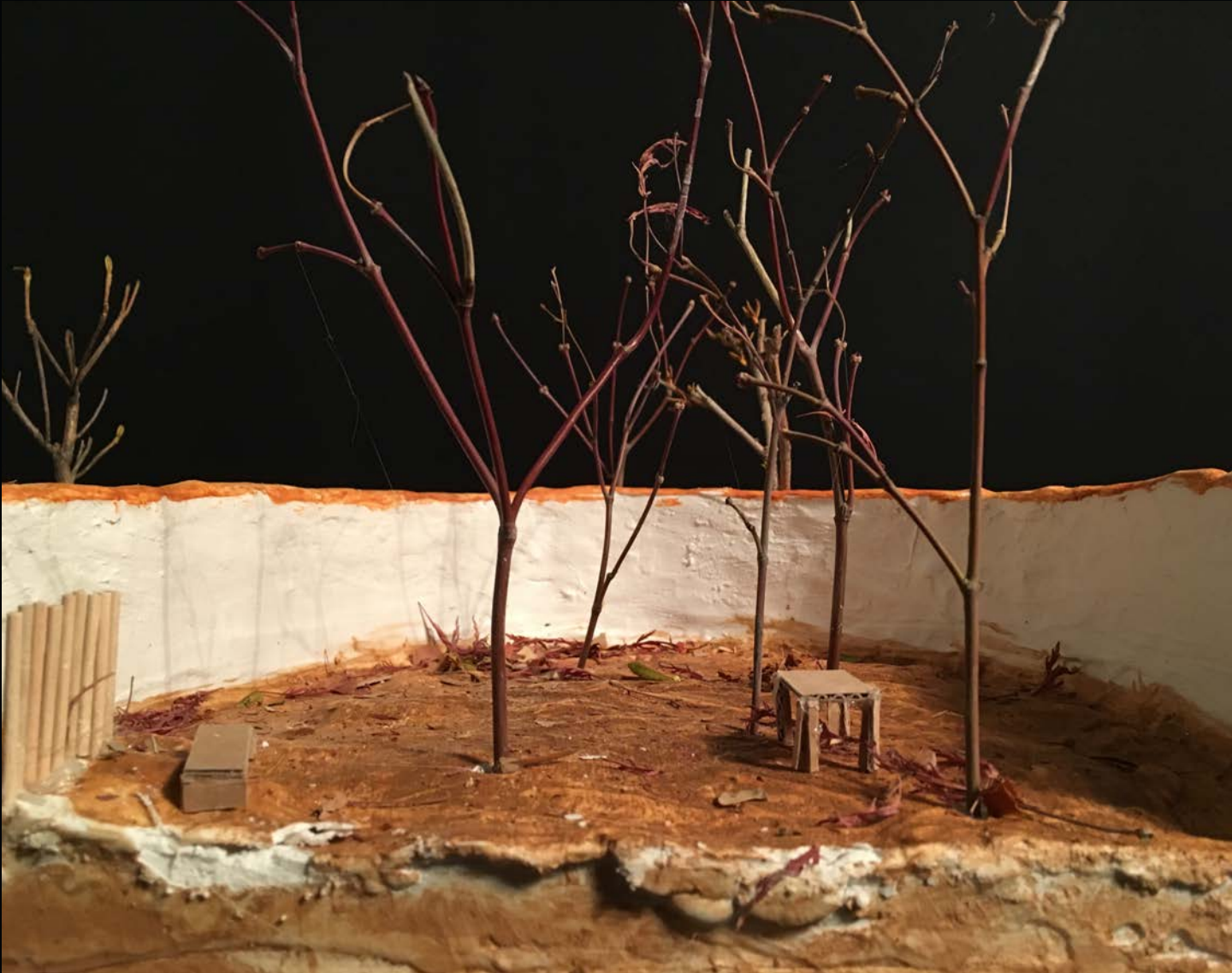*In the middle of the crunchy forest. (08:56, February 10, 2018)*

Senses that occur between the earth and me.

Walking in the soil, I focus on the senses.

As I took a step, I saw myself through the pillars far away.

I look back on myself, who was buried in my daily life alone in the arms of trees.

Merged Western and Eastern architecture. (Made by Jusang Lee, Hokwon Na, Borim Kim, Byungmun Kang, Dohun Kim, Jungmin Lee)

Follow the Legacy

Office of Space Group is one of the most beautiful buildings in Korean architectural history. Architect Kim Soo-geun tried to find a way to naturally coexist between old traditional buildings and today's buildings, and as a result, three completely different types of buildings coexisted.

I had time to study his architecture and analyze the details and composition of the space.
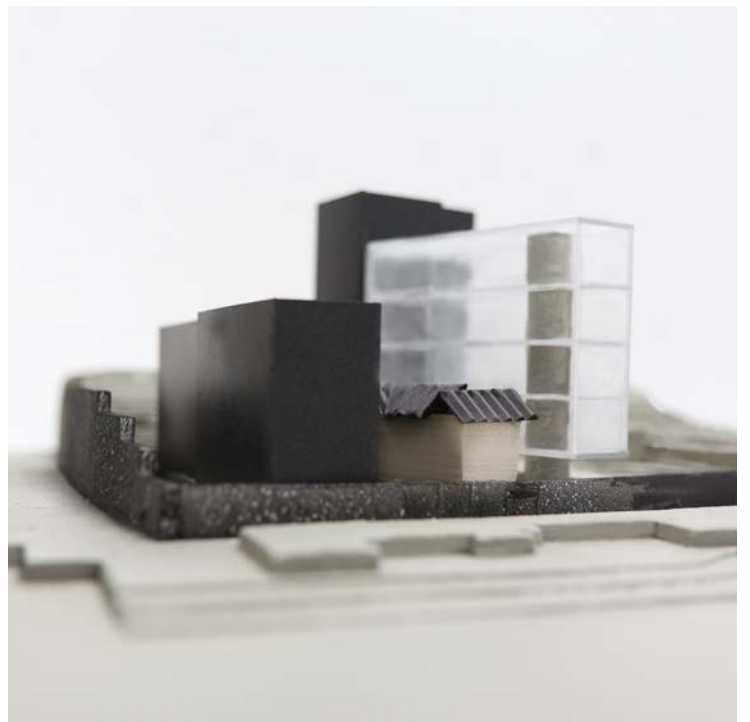
08 Highlight the Details
'Follow the Legacy'

Type
Academic + Team Project (ERICA, 2017)

Program
Reference Study

Role
Research, Visualization

Brick buildings, hanoks, and curtain walls all coexist.
(Made by Jusang Lee, Hokwon Na, Borim Kim, Byungmun Kang, Dohun Kim, Jungmin Lee)

Section from Revit (BIM)

Roof garden

09 Feeling the Future
'Classic X Technology'

Type
Academic (ERICA, 2021)

Program
Reference Study

Role
BIM Modeling (Revit), Visualization

<div align="right">Plan from Revit (BIM)</div>