

Zi En Zeng

Bachelor of Architecture  
National Yunlin University of Science and Technology

Selected works  
2019 - 2023



[Dao]: Path; Journey; Rules of what is natural



The view from the balcony of my home

Growing up with the view, I used to listen to birds and cicadas chirping and appreciate the layers of mountains weaving with sky, clouds, and city, and I could feel an intangible power flowing in harmony.

During my college years, I came across the Dao De Jing, which beautifully described the natural cycle. It perfectly captured the inherent power that I had felt while standing on the balcony of my home. Although I still don't fully comprehend some parts of it, the concept of harmony, flow, and cycles has stayed with me.

These three projects are all echoing the thoughts of the Dao De Jing. The Faintest Sound, The Greatest Music project aims to capture the essence of the Dao through the connection between nature, music, and architecture. The Returning To Nature Hostel project applies the cycle of the seasons to human emotions. Similarly, the Zih Ren Campus project takes a comprehensive approach to examining the natural cycle of architecture.

Despite their different focuses, these projects share a common goal: to practice Dao, the principle of how ten thousand things operate.

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The calligraphy is written by my friend, Alice.  
All drawings are created by me unless otherwise noted.



# 復

[fù]: return to

*"Become completely empty,  
Maintain true stillness.  
The ten thousand creatures all arise, and I  
watch them return,  
Swarming, they return to their source.  
Returning to the source is called stillness,  
It's called returning to nature."  
- 《Dao De Jing, Chapter 16》*

How can architecture lead  
people to return to nature

The purpose of this project is to transform the process of human emotions overflowing to emptiness, and the process of plants flourishing to returning to the root, into the architecture, and let people slowly understand that human emotions are like seasons, ups and downs are natural.

Returning to Nature

Year: 2018 (year 3)  
Project Type: Academic project  
Location: Chiayi, Taiwan  
Instructor: Prof. Yen-Ming Huang  
Counsultant: Jack Cheng



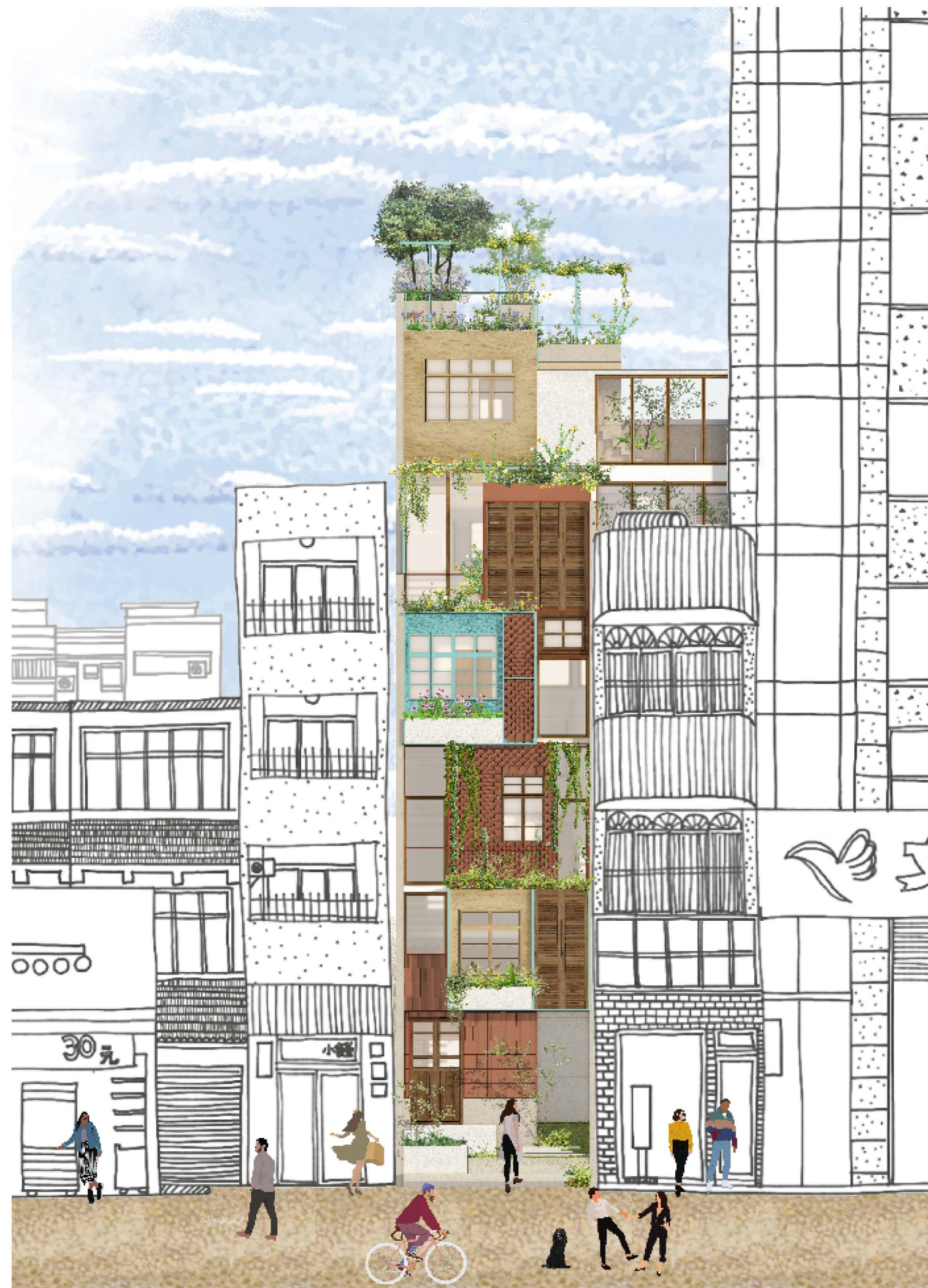




This building is a distillation of the history of Chiayi, which was the origin of many traditional techniques, such as koji pottery and cut-and-paste techniques. I incorporated that traditional component in the hostel in an innovative way accompanying the flourishing plants, such as using hanging minnan roof tiles to provide shade while maintaining ventilation.

The idea behind these efforts is that life is a journey, where ten thousand things experience ups and downs along the way; history, life, and emotions are not linear lines that, once passed, will gone forever. Instead, they are cyclical. This house quietly depicts this cycle, waiting patiently for the travelers to discover that: things come and go, then come back again.

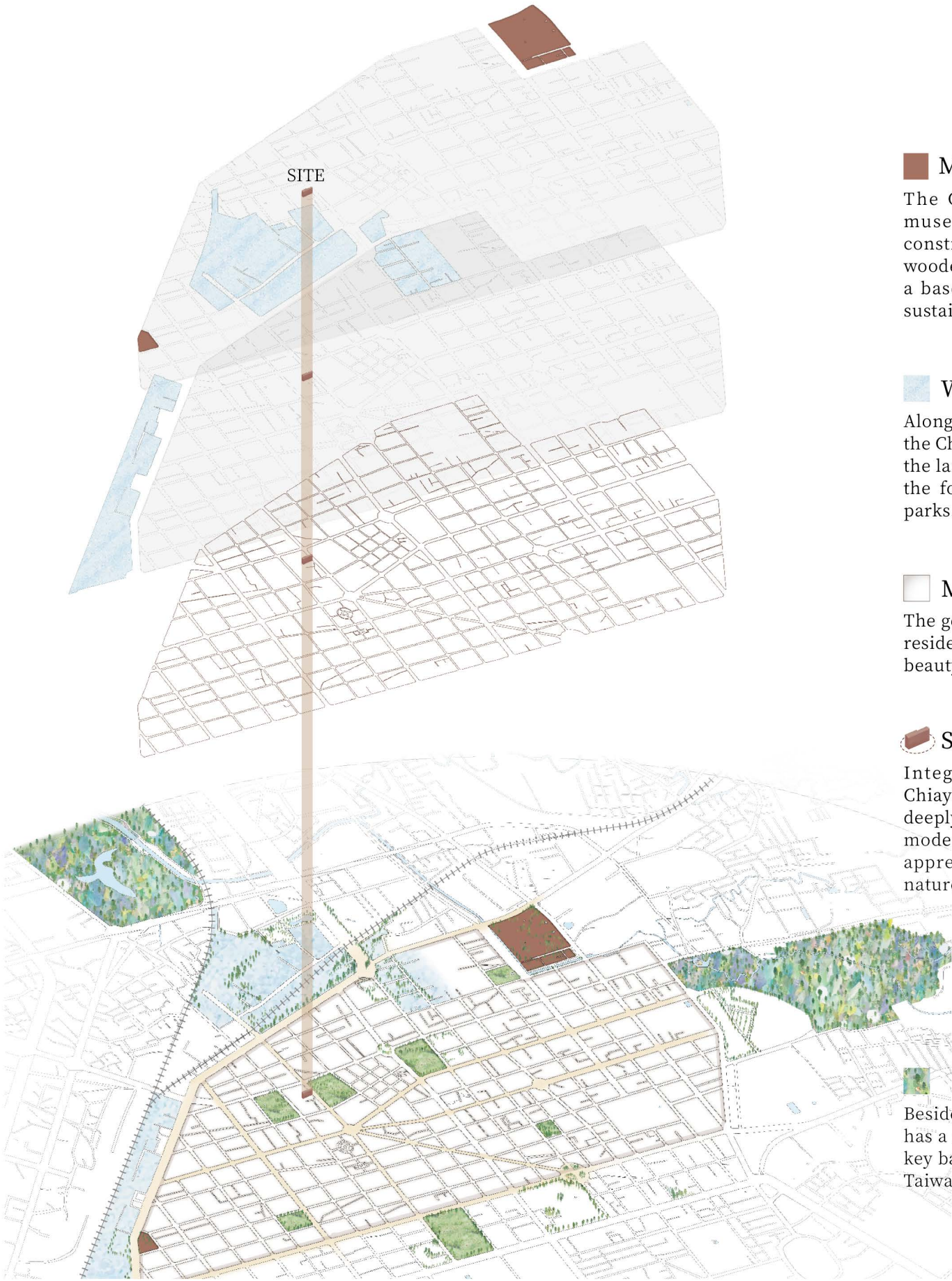
This project also tries to answer an inner question of mine: Beyond merely being friendly to the environment, can architecture obeying the rule of Dao be mentally friendly to humans?





Sustainable Wood City Vision

Chiayi has two forests, one is Alishan, and the other is MuDu, a city center composed of 6,000 wooden buildings. In the past decade, the Chiayi government has promoted the urban vision of a sustainable wood city in accordance with three levels of comprehensiveness.



MuDu Wood City

The Chiayi government built a museum with a composite wood construction method, restored the wooden community, and used it as a base to promote the vision of a sustainable wood city.

Wooden House Power

Along the Alishan Forest Railway, the Chiayi government transformed the large-scale wooden buildings of the forestry industry into cultural parks.

MuDu Wood City 1.0

The government renovated 6,000 residential buildings to restore the beauty of old wooden architecture.

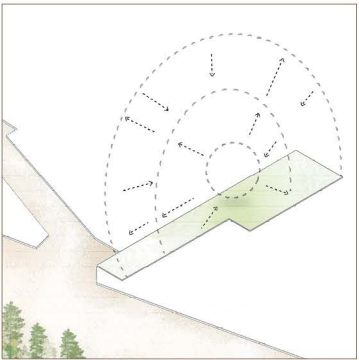
Site

Integrating the urban vision of Chiayi, this hostel allows visitors to deeply understand the potential of modern wood structure, as well as appreciate the beauty of Taiwan's nature and traditional culture.

Botanical Garden

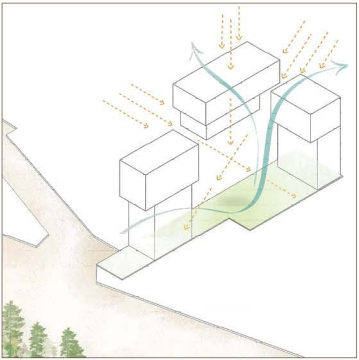
Besides the MuDu city plan, Chiayi has a national botanical garden, a key base for plant conservation in Taiwan.

Process to Return to Nature



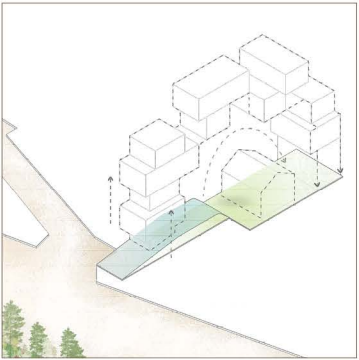
1 Become empty

Stretching out layers of spaces from core



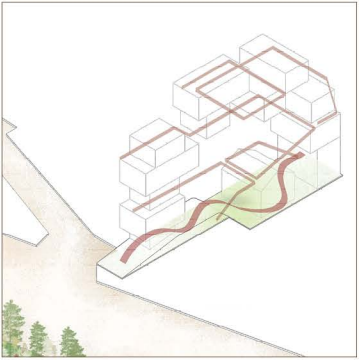
2 Sun spreads; Wind blows

Bring in ample sunlight and wind flow



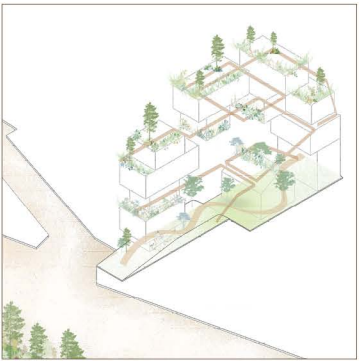
3 Lift and Interlace

Creating dynamic and offset building volumes surrounding the core



4 Meander

Interweaving spaces through narrow winding pathway



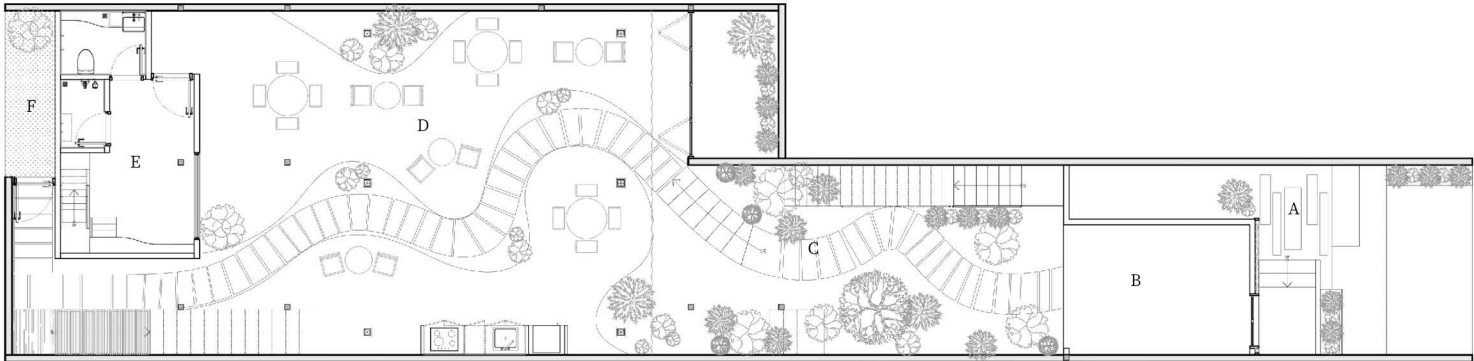
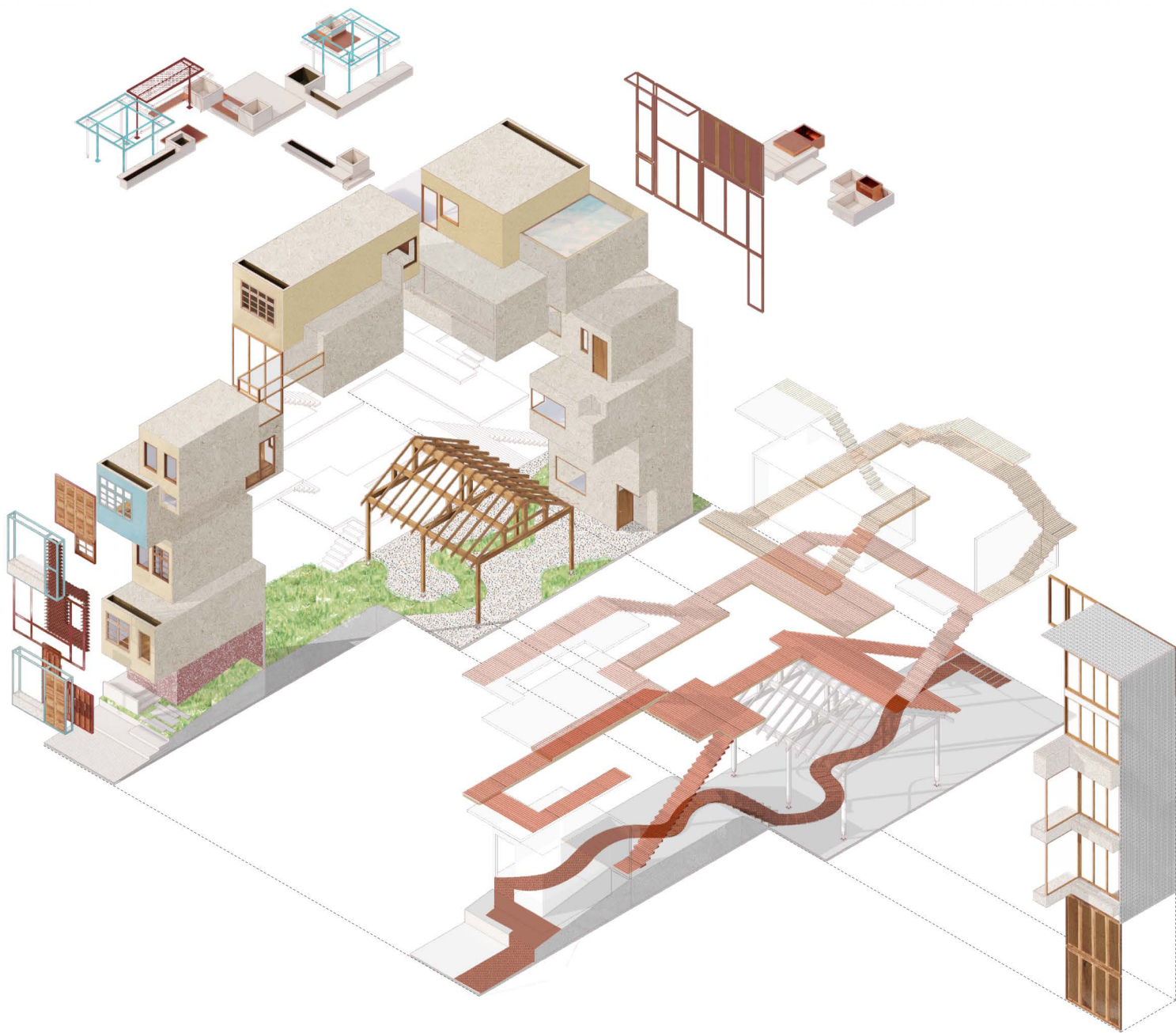
5 Returning to nature

Filling space with endemic plants

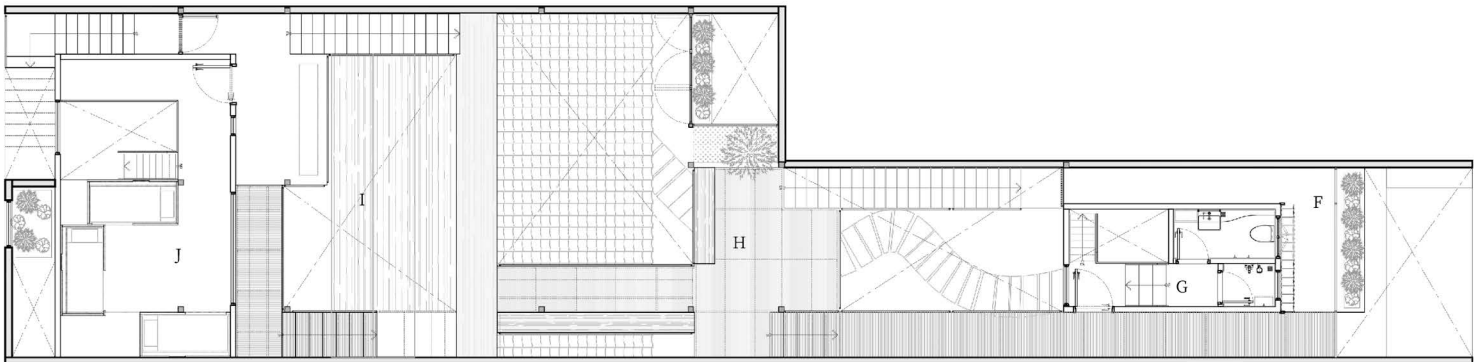


Layers of Emptiness

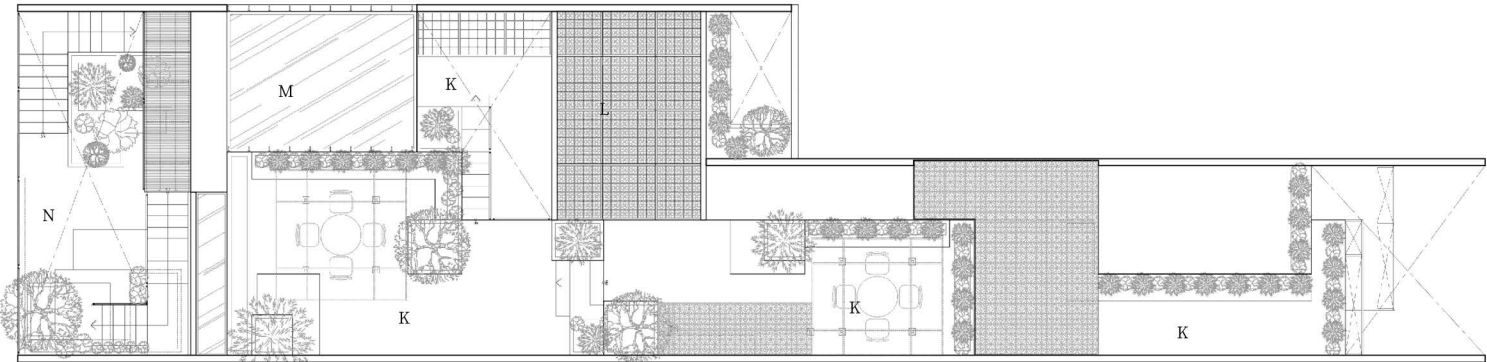
From the splendid colors and materials of the facade, the spaces composed of simple texture and kaleidoscopic sunlight, the winding corridors, to the void in the central part, less and less, a series of subtle layers symbolizing the preachings of the Dao De Jing: "Become completely empty, Maintain true stillness." As people move through the building, they shed their emotions layer by layer until reaching the state of emptiness.



Ground Floor Plan

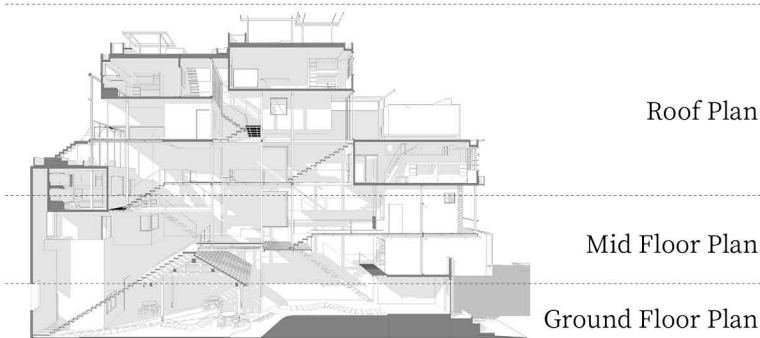


Mid Floor Plan



Roof Plan

- A Entrance
- B Transition Area
- C Indoor Forest
- D Dining Area and Kitchen
- E Hostel Room
- F Balcony
- G Hostel Room
- H Resting Area
- I Roof Top Stairs of Dining
- J Area
- K Hostel Room
- L Rooftop Garden
- M Skylight
- N Meditation Room



Roof Plan

Mid Floor Plan

Ground Floor Plan



10 50 100  
20 200 cm



# Indigenous plants in Taiwan

Enclosing by the sea, Taiwan has a rich diversity of local plant species. I selected 40 endemic plants based on their color, shade tolerance, and size and planted them in various places in the building. By doing so, this building also reflects the philosophy of the Dao Te Ching: the cycle of life and death through the natural cycle of plant growth and decay.

4500

Native plant species

1050



Endemic plant species

600

Endemic fern species

Indoor Forest - Fern



The indoor forest receives limited sunshine, suitable for planting ferns.



Lepidagathis formosensis Clarke ex Hayata      Ophiopogon intermedius D. Don

Pathway - Ornamental Flowers



The aisle is lined with potted single-plant ornamental flowers of different colors.



Bredia gibba Ohwi      Hypericum formosanum

Rear Garden - Drought-Tolerant Plants



The rear garden is suitable for drought-tolerant and sun-loving plants.



Mahonia oiwakensis Hayata      Nageia nagi (Thunb.) O. Ktze.

Roof Garden - Vine

The rooftop garden is the sunniest place and has sun-resistant plants as well as climbing plants that provide shade.

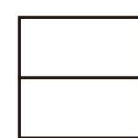
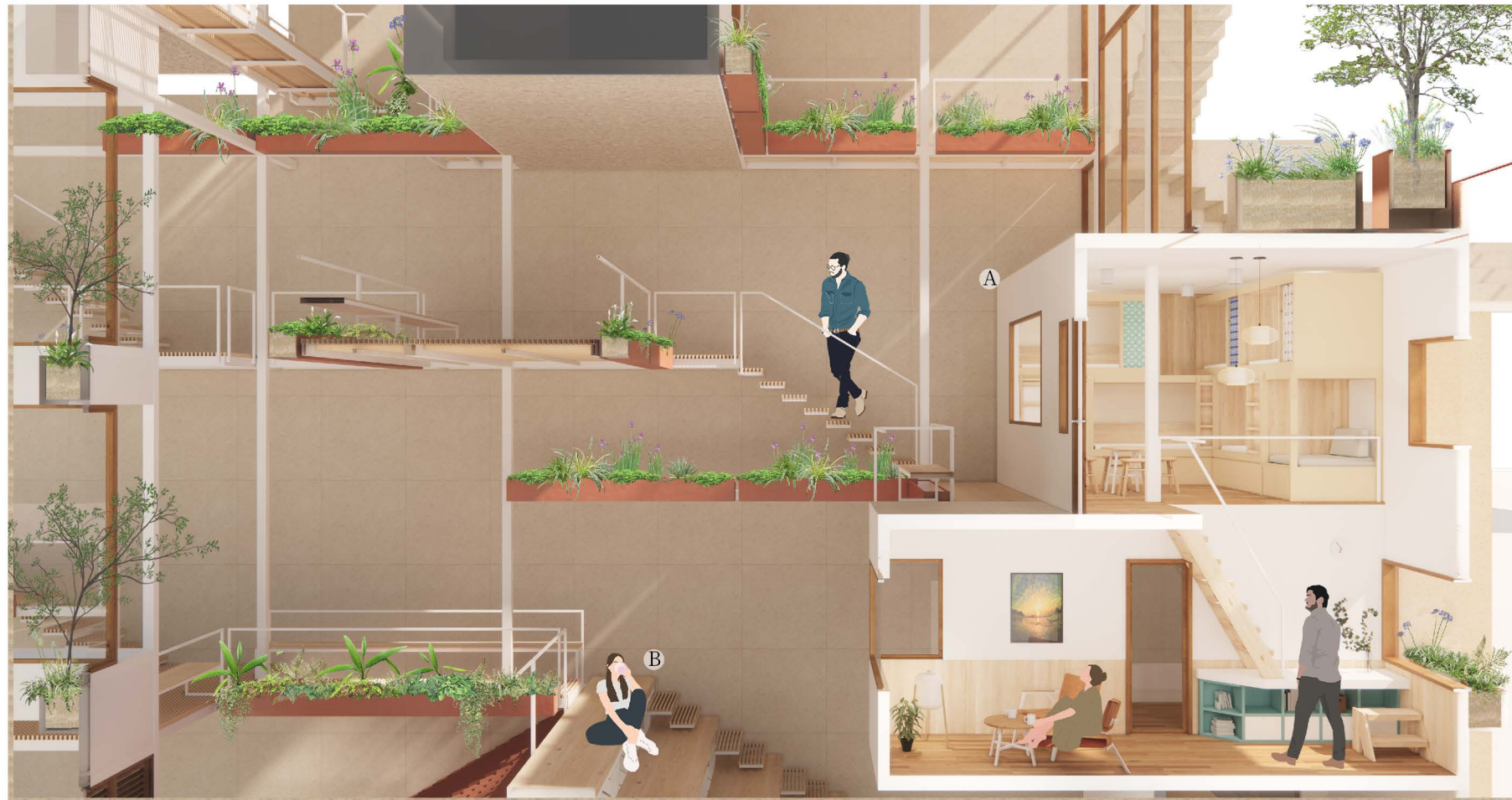


Justicia procumbens L. var. procumbens L.      Cinnamomum kotoense Kaneh. & Sasaki

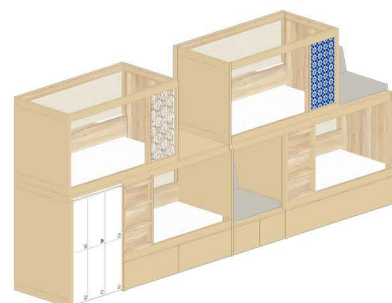




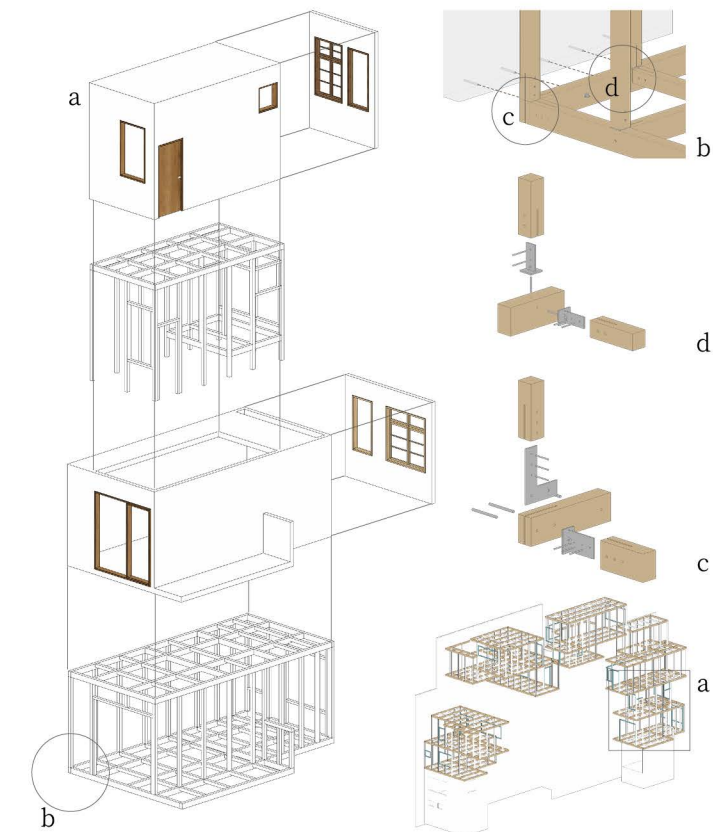
The staggered volumes create many gaps that allow light and wind to participate. The concept is also brought into the rooms, where the bunk beds made of Taiwan fir are offset from each other, shaping the personal space of the guests.



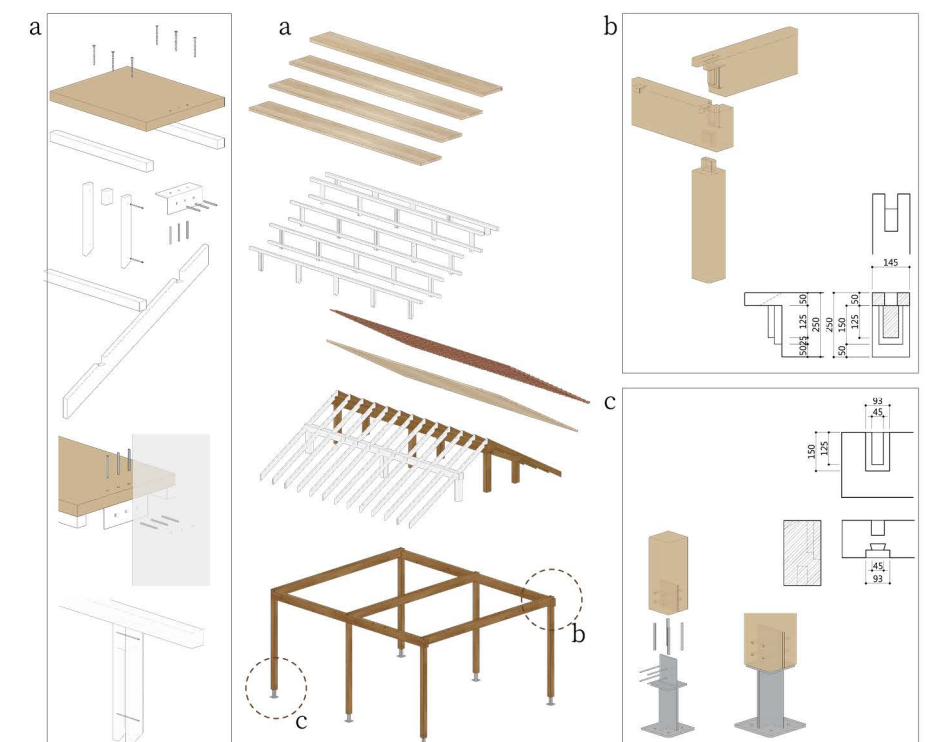
Flexible Modular: Adaptive to different needs



The concrete structure on the first floor stabilizes the foundation and isolates the moisture, while the wood structure from the second floor onwards has the advantages of fast assembly and lightweight. Also, the color, texture, and even smell of wood, will make the guests feel warm and natural.



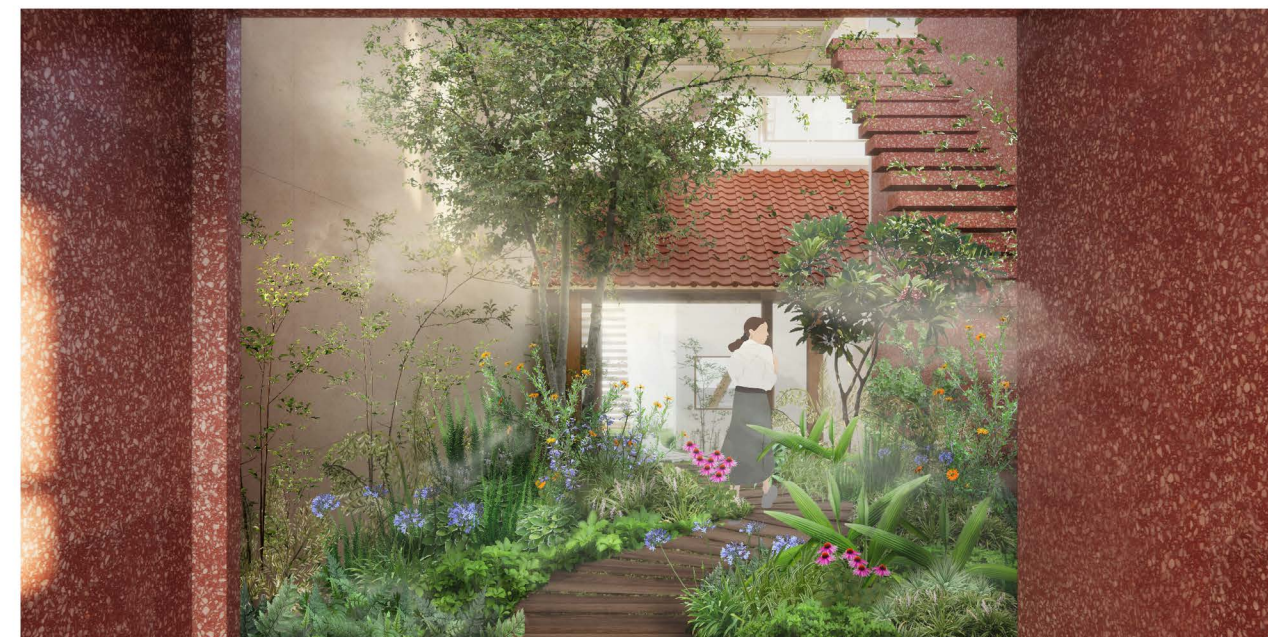
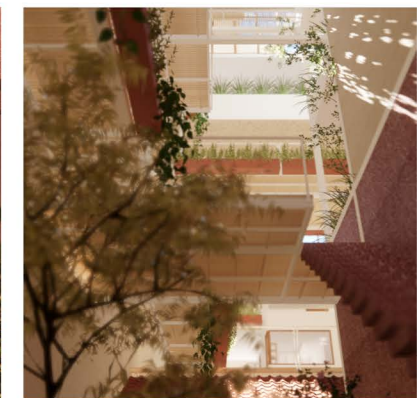
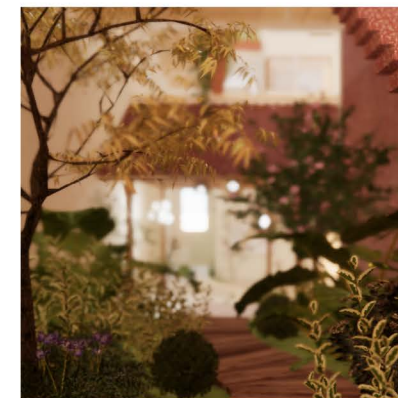
The pavilion roof combines new and traditional wood structures. The new structure can not only become a seat but also turn the roof space into a social platform. The other side retains the traditional mortise-and-tenon structure, and the combination of old and new wood structures becomes the feature of this space.



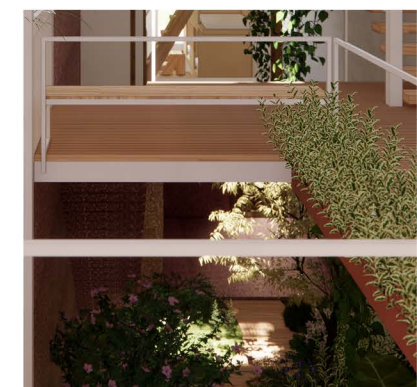




Entering the hostel, passing through the transition space, an indoor forest revealed.



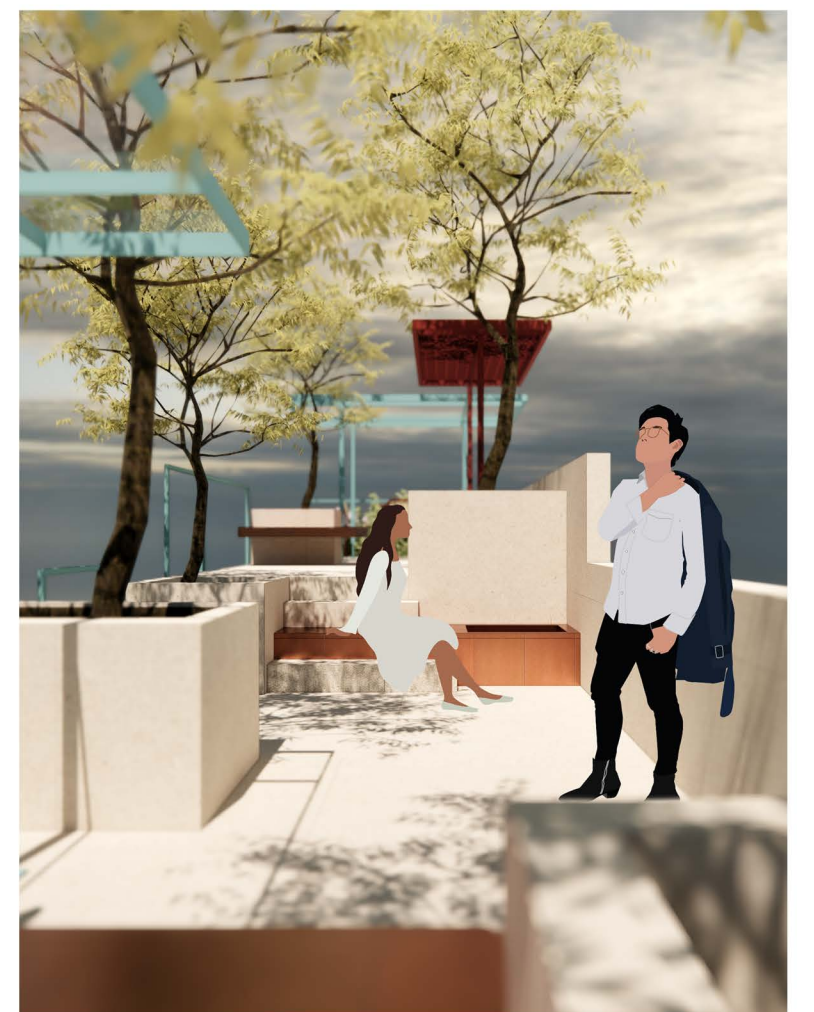
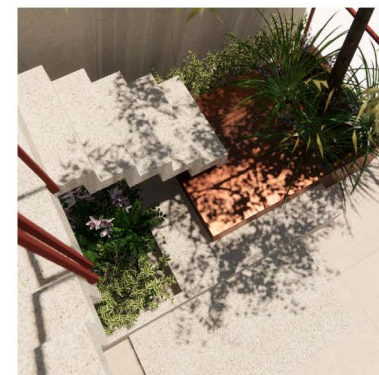
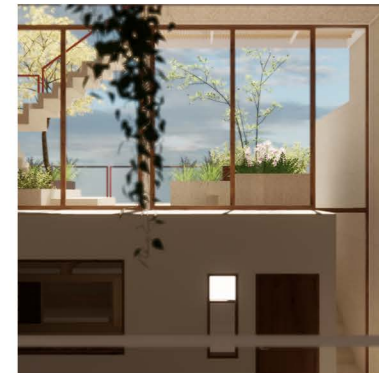
What hides behind the forest is the wooden pavilion, and what is behind the pavilion is a stair leading people to the upper floor.



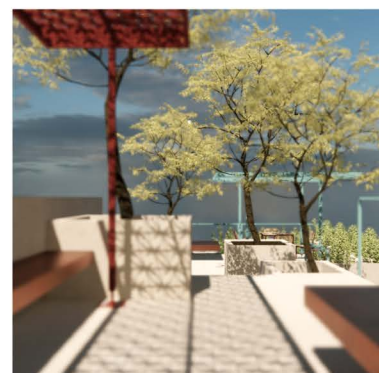
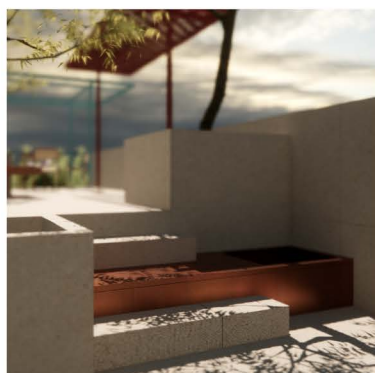
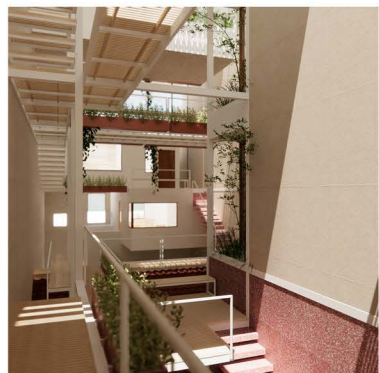




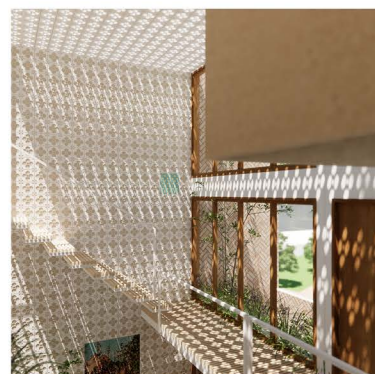
Following the corridor upwards, passing through spaces that are sometimes dark and sometimes bright, sometimes spacious and sometimes narrow, plants still grow vigorously in groups, wither after the peak, and then sprout again.



The winding corridor connects the upper floors with the scattered architectural volumes, and the plants on both sides show their beauty in different postures. The gaps between the architectural volumes welcome the participation of light and wind.



Reaching the rooftop garden, a park, and the cityscape of Chiayi stretching along the building. The vines swaying in the wind create patches of shade where people can rest and cool off. Going back inside, walking along different corridors, looking at the plants that grow and wither in the same way. This is nature.





大音希聲

[Da yin xi sheng]: Great · tone · rare · sound

*"The squarest things have no corners,  
The greatest tools are completed last,  
The greatest tones are inaudible,  
The greatest images have no form,  
Dao is hidden and has no name,  
So, only Dao is good at giving and accomplishing."  
- 《Dao De Jing, Chapter 41》*

How to reflect the essence of Dao from the common language of music and architecture?

Architecture and music, seemingly so different, but actually have the same compositional logic, can reflect each other's aesthetics. This project seeks to examine the relationship between architecture and music from an architectural point of view, then taking into account the unique needs and requirements of music education to propose a new paradigm of music educational space in Taiwan.

## The Faintest Sounds, The Greatest Tones

Year: 2019 (year 4)

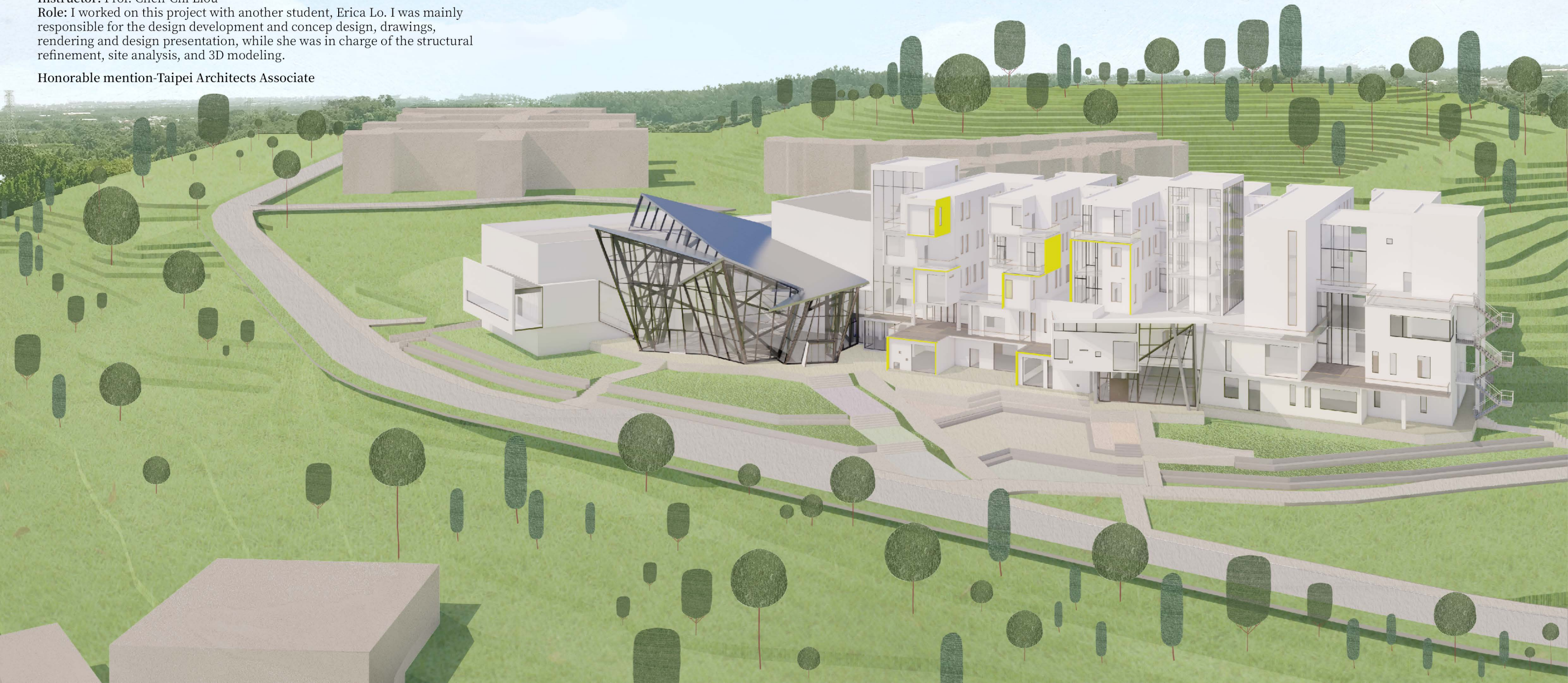
Project Type: Thesis project

Location: Tainan, Taiwan

Instructor: Prof. Chen-Chi Liou

Role: I worked on this project with another student, Erica Lo. I was mainly responsible for the design development and concep design, drawings, rendering and design presentation, while she was in charge of the structural refinement, site analysis, and 3D modeling.

Honorable mention-Taipei Architects Associate





Architectutre is frozen music

In Dao De Jin, the music in nature is an inaudible, intangible power one can only feel, but not hear. Music and architecture are two forms of art that share many similarities. Both rely on patterns, structures, textures, harmonies, colors, and dynamics to create expressive and aesthetic works. So I break down the structure of music and architecture to see how they reflect the nature of each other.

Music

Tone/ Tempo

Dynamic/ Rhythm

Harmony

Architecture

Form

Layer/ Texture/ Volume

Proportion

Spaces tailored for music education

A well-designed music education space should be able to provide students with: ample space, rich equipment, proper acoustic design, and also, diverse community interactions are very important. In this project, we assume that the new department building has an incubation center, which regularly invites music professionals to share cutting-edge professional experiences, and help students to hone their musical talents.

Education Spaces

The education space provides diverse and different scales of teaching spaces, and can adapt to different music styles and forms.

Music Hall

The music hall comprises a flexible rehearsal space and a formal concert hall, where students can collaborate with and perform alongside world-class musicians.

Administrative Center

The center is responsible for operating both the college and the incubation center.

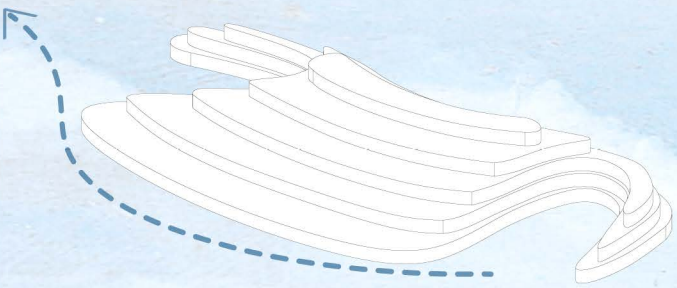
Incubation Center

The center is equipped with advanced technology that includes recording, practice, and research studios, enhancing students' creativity and expressiveness of music.



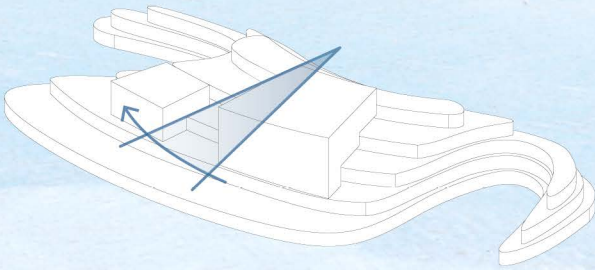
Merging into natural surrounding

The site is located next to the Wu Shan Tou Reservoir, where the terrain is undulating. Therefore, this project not only aims to integrate architecture and music to reflect the essence of Tao, but also to echo the pulse of the terrain in the process. By doing so, it makes sure every corner can receive adequate sunlight, and ventilation is also considered, creating a harmonious and inviting space.



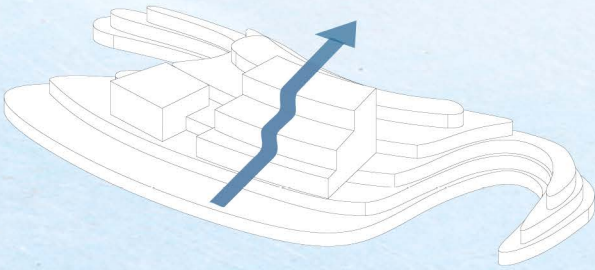
Forming

Following the geographical features



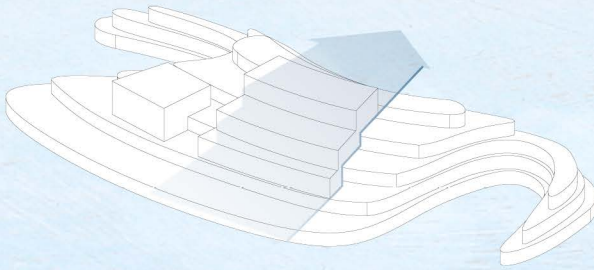
Dividing

Splitting the music hall from the main building and rotating it following the terrain



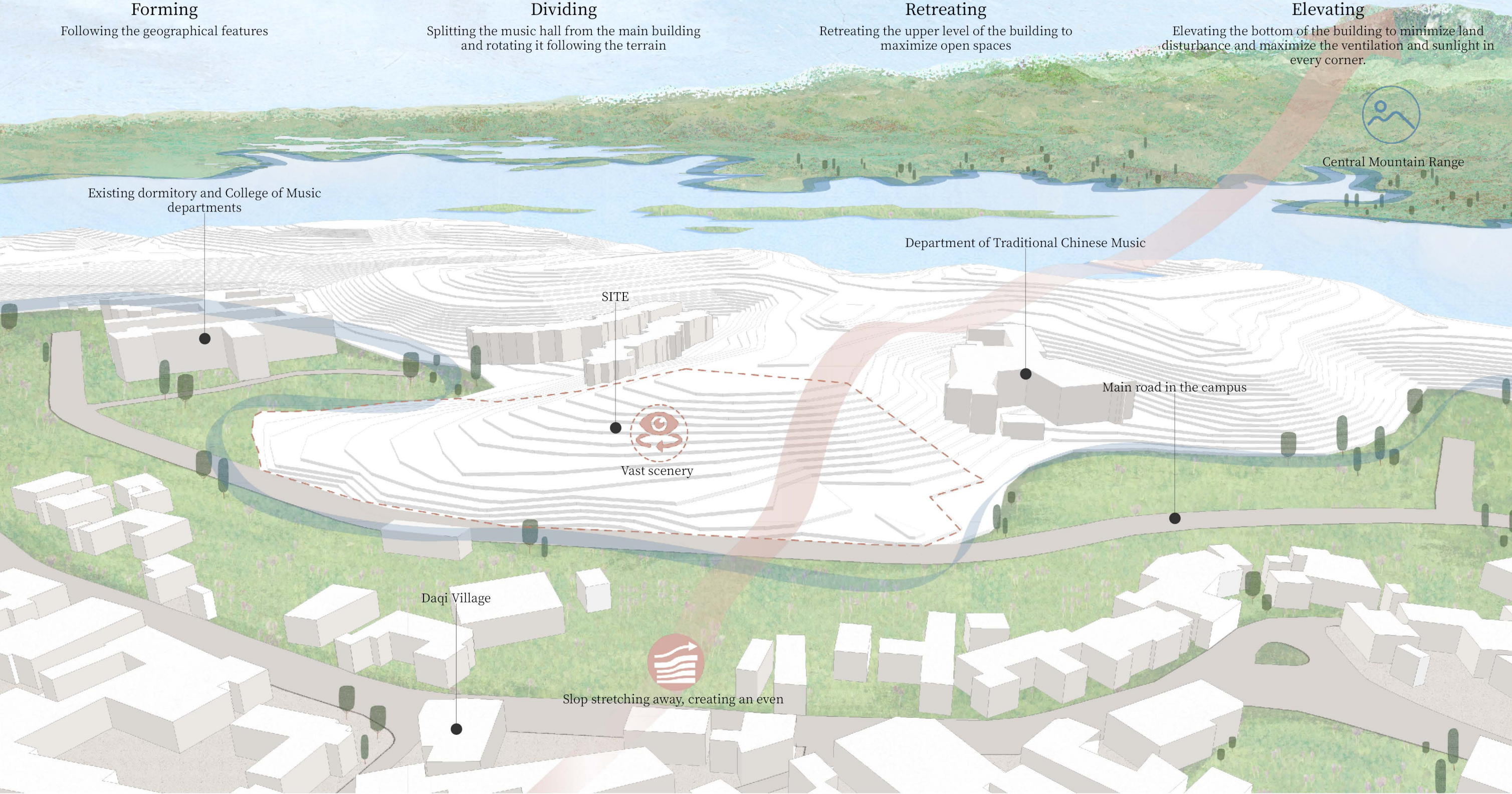
Retreating

Retreating the upper level of the building to maximize open spaces



Elevating

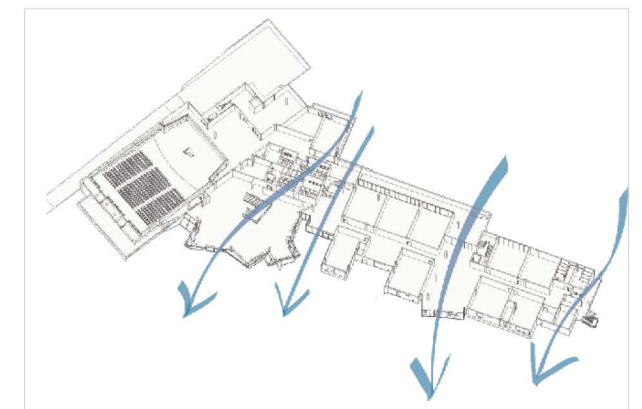
Elevating the bottom of the building to minimize land disturbance and maximize the ventilation and sunlight in every corner.





# Proposition: weaving music into space arrangement

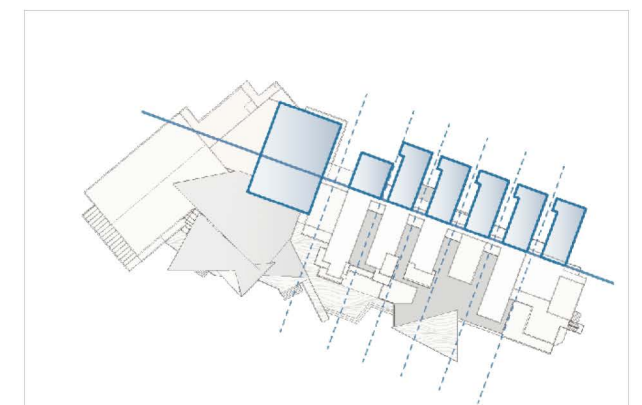
- A Backstage Area
- B Music Hall
- C Foyer
- D Elavator Hall
- E Music Classroom
- F Main Lobby
- G Backyard
- H General Classroom
- I Elavator Hall
- J Campus Green
- K Plaza



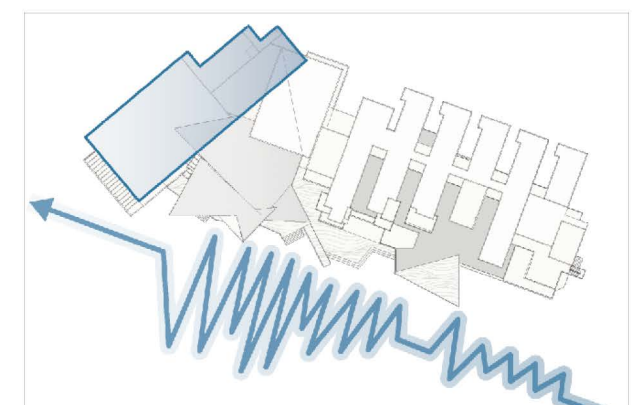
1.Verticle circulation as the rhythm of music



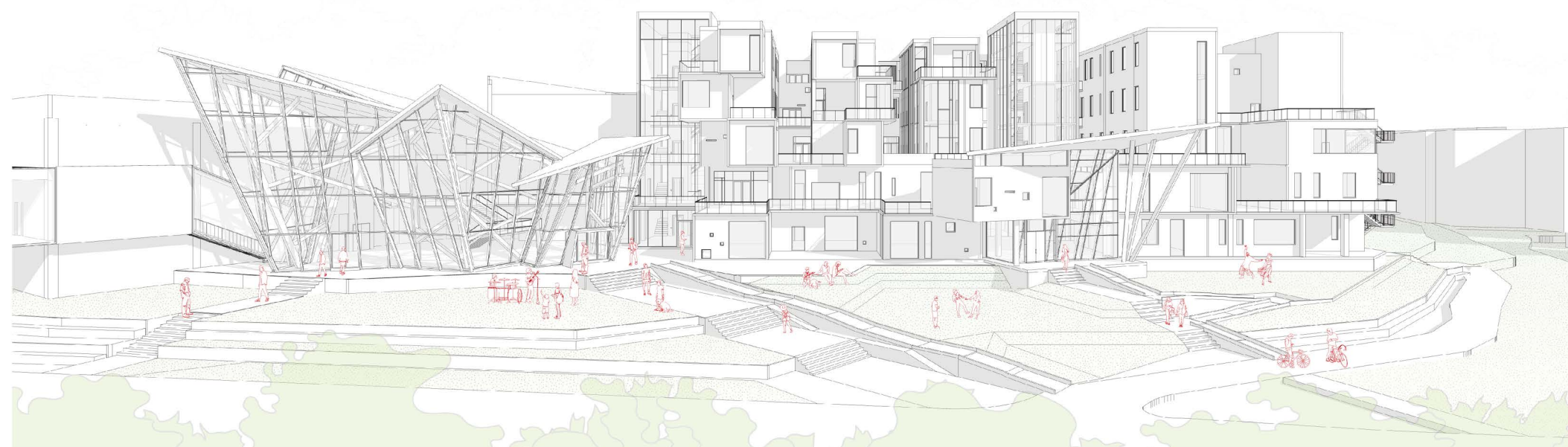
2.Lively building volumes attract attention



3.Rigorous volumes are formed as stable tempo cushioning behind the building



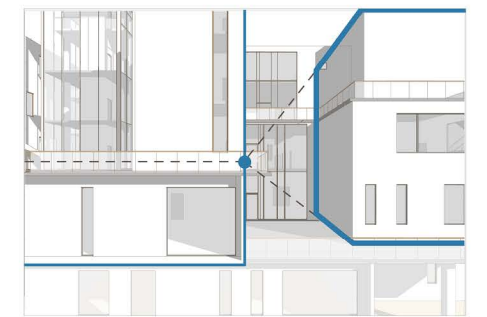
4.End the music with magnificent building volumes



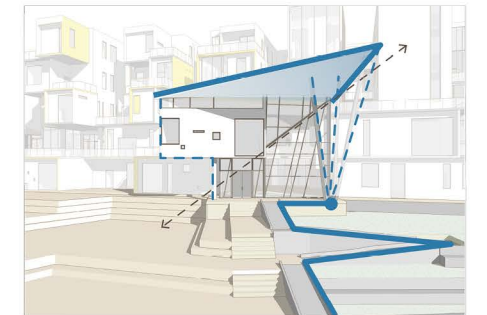


## Form follows rhythm: Transform auditory images into visual images.

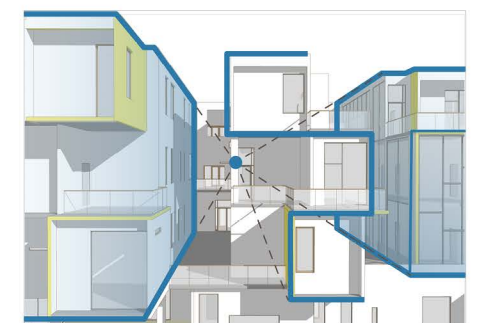
This building, as the department building for music and applied music, represents various connections between classical music and modern music. The appearance of the building echoes the elements among themselves, sometimes stable and sometimes lively, the straight corridors contrast with the shifted windows, and finally, the firm shape of the concert hall and the assertive foyer resist each other, as the ending of the music.



A.Overture :  
Stable and orderly building volumes



B.Intermezzo:  
Dynamic contours as the musical transition



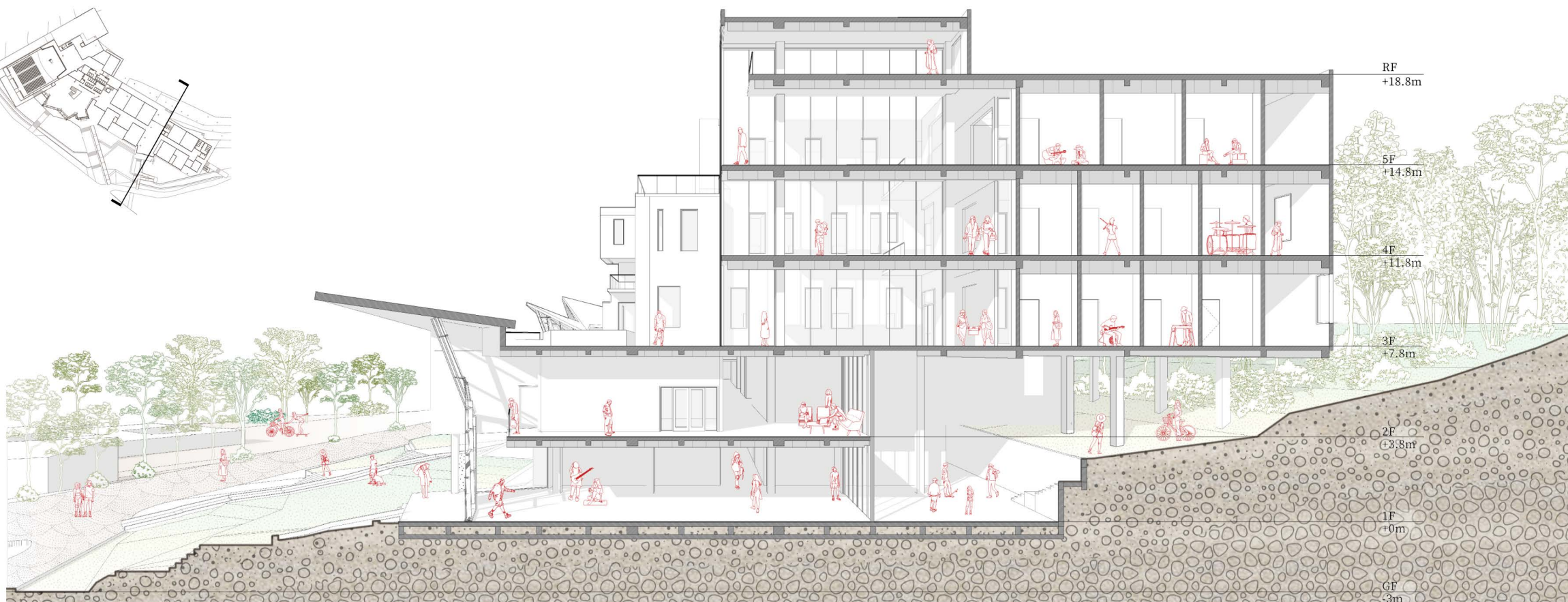
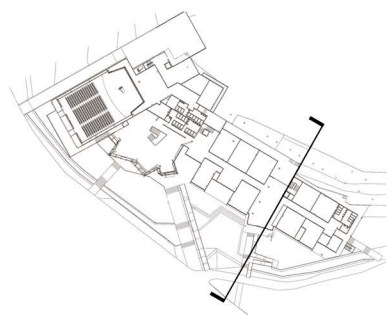
C.Ensemble:  
Lively and staggered building volumes



D.Aria:  
Aggressive architectural structure and mass



E.Finale:  
Magnificent volumes resist the aggressive form

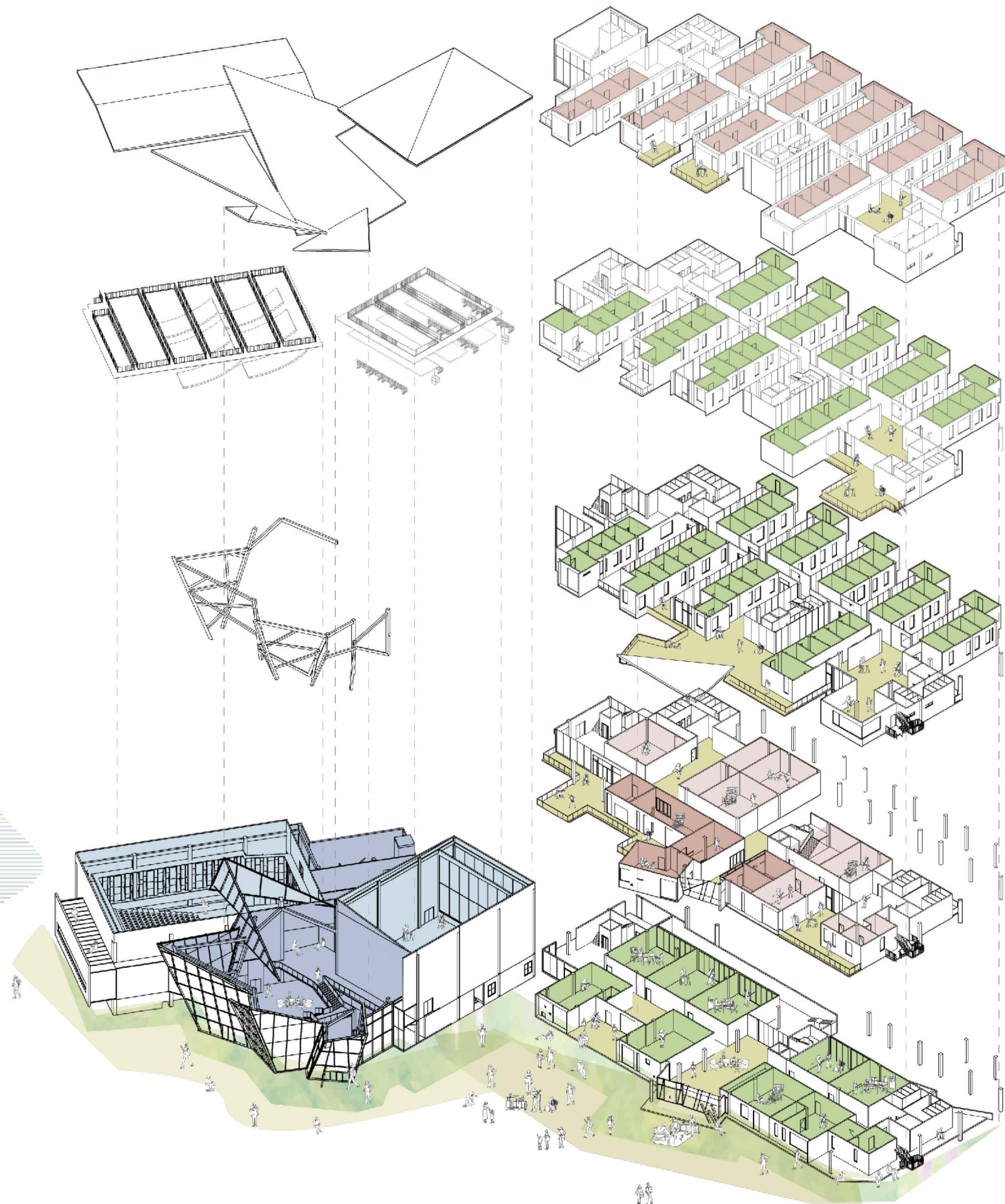




## Spaces are organized to serve particular purposes

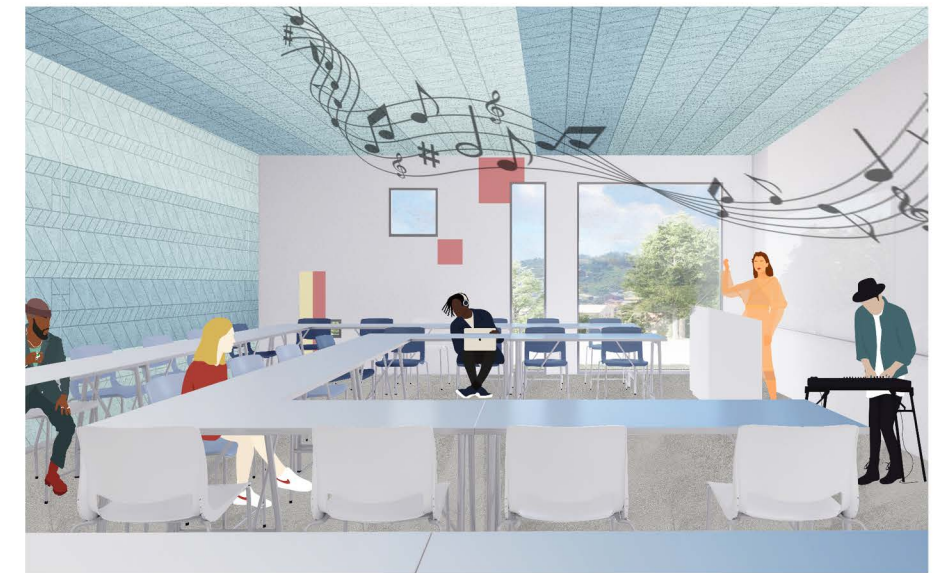
Low-traffic

Spaces are organized by considering their function and stream. High-traffic spaces, such as classrooms and recording studios, are arranged near the lobby and administrative center, while the professor's office and personal practice studio are located on the upper floors.

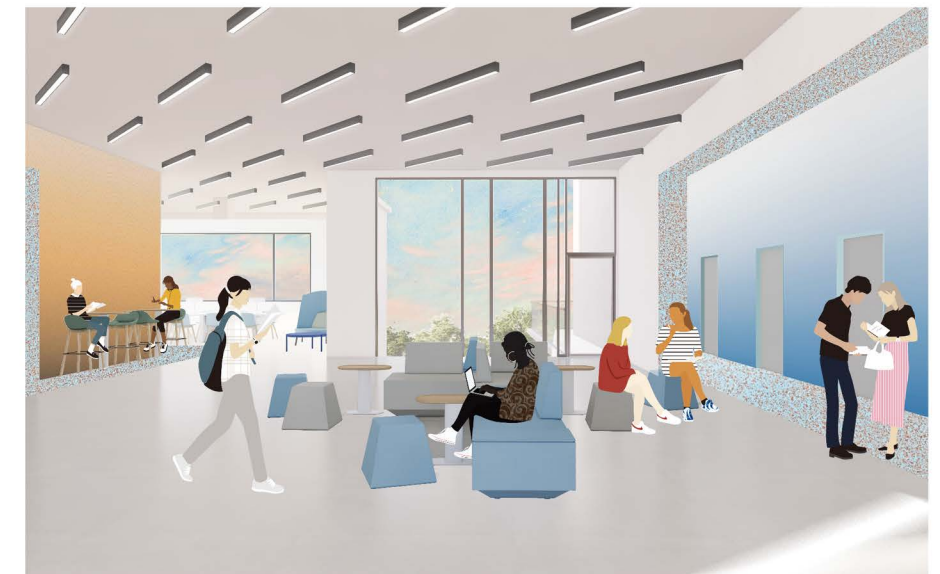


High-traffic

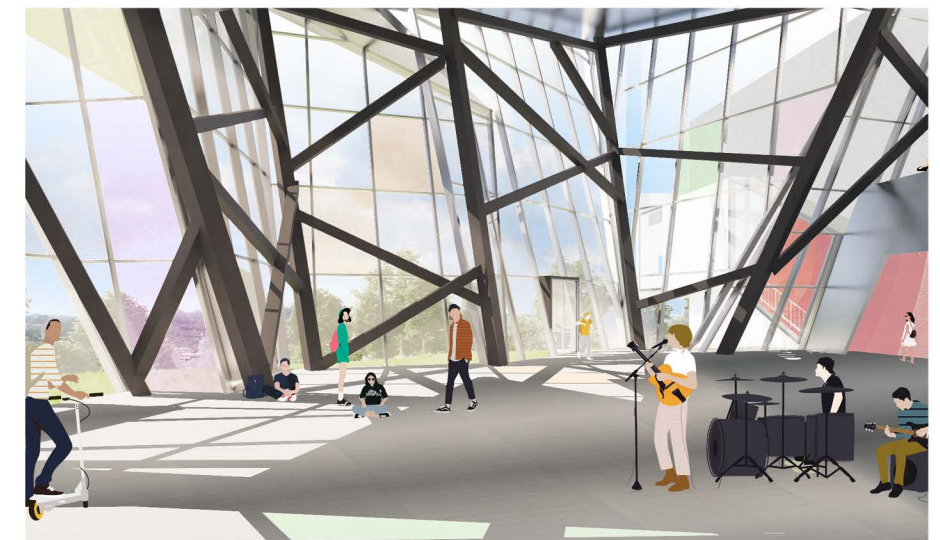
- Professor's Office
- Public Area
- Musical Studio
- Public Area
- Musical Studio
- Public Area
- Administrative Office
- Recording Studio
- Musical Studio
- Public Area
- Music Hall
- Recital Hall
- Foyer
- Backstage Area
- Music Classroom
- General Classroom
- Public Area
- Campus Green



Music Classroom: Acoustic panels and colors responding to the vibrant openings and the vast scenery.



Public Area: Integrating gradient materials, lighting, and colors into public spaces



Foyer: The scattered structures transform into splendid shadows



# 自然

[Zih Ren]: Law · natural

*"People follow earth, Earth follows heaven,  
Heaven follows Dao,  
Dao follows what is natural."  
- 《Dao De Jing, Chapter 25》*

How can the cycle of architecture, construction methods,  
and materials follow the rules of what is natural?

Humans keep extracting resources from the earth, and then discard their products, and the garbage floating on the sea surface is only the final result. To solve this problem, we must start from the beginning. As humans create new things, we must think of its whole life cycle—how it integrates into our world visually, what it means for our society culturally, and what form it will take at the end. Therefore, I propose to build a park with sustainable methods, which not only serves as a model of sustainable architecture, materials and methods, but also uses this as a base to inspire creativity in various industries, and invites the public to visit, and draws the attention of society in all aspects.

Zih Ren

Year: 2023  
Project Type: Personal project  
Location: Chiayi, Taiwan  
Consultant: Jack Cheng

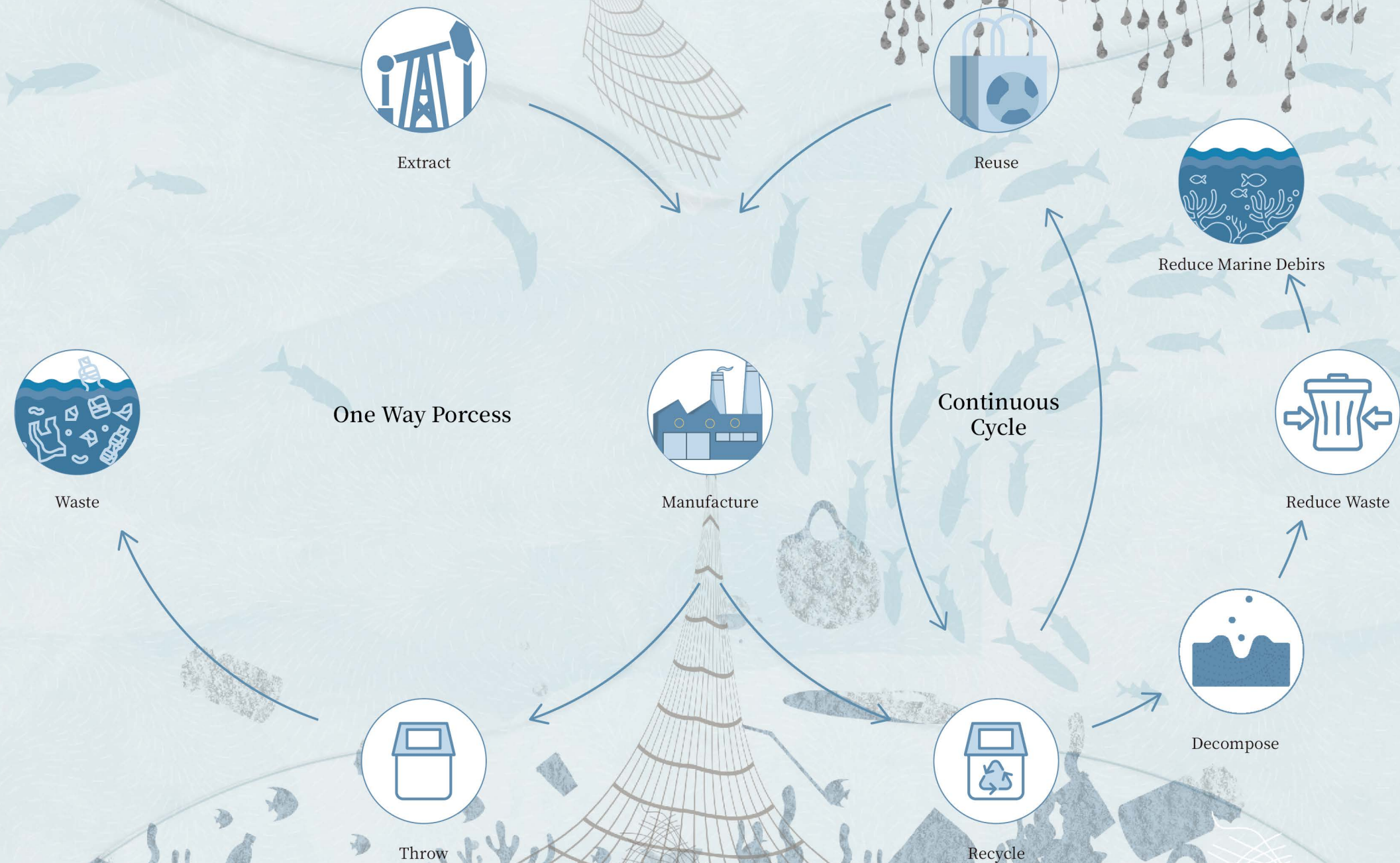




## Following the cycle of what is natural

According to UNEP, 12.7 million tons of plastic enter the ocean every year, equivalent to one truckload per minute. Most of them are fishing waste (nets, gear) that sink to the seabed. Also, Taiwan is surrounded by the sea, leading to a severe marine waste problem. Moreover, the central region of Taiwan is an ideal location for oyster farming. Each year, this industry produces tens of thousands of tons of oyster shells that currently have no practical use; the discarded fishing gear that is cleaned up on the shore, if not properly reused, will eventually end up in landfills.

However, from production to disposal, it is not a linear process, it can be a continuous cycle. In this way, the items that were once produced, the buildings that were built, can also become part of the resources, and be recycled.





## Oyster Cultivation: Dongshi , Chiayi

### Neglecting the unique geological context



The site is located in the west of Taiwan, near the sea. The flat terrain offers a comprehensive sea view. Nearby sandbanks and oyster farming create a unique landscape, but the existing design fails to respond to them.

### Lack of integrated planning

The tourist fish market is divided into two parts, resulting in a dispersed flow of visitors. The site has an artificial beach, a large lawn, scattered installation art, and splash pads, but it requires proper unity and circulation planning.

Dongshi Township has the largest scale of oyster farming in Taiwan, so the government planned this base as a tourist fish market for Dongshi, but due to poor design, there are not many visitors. Moreover, despite the government setting up a temporary storage area for oyster shells, there is still no efficient way to use the 120,000 tons of oyster shells produced every year. Therefore, the purpose of this park is to solve the above problems from a comprehensive perspective.

### Monotonous function

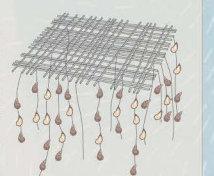
Apart from the tourist market, there are no other spaces to visit, limiting the visiting potential.

### Lack of gradient landscape design

As people move around, the disorganized facilities obstruct the view.

### Bamboo raft

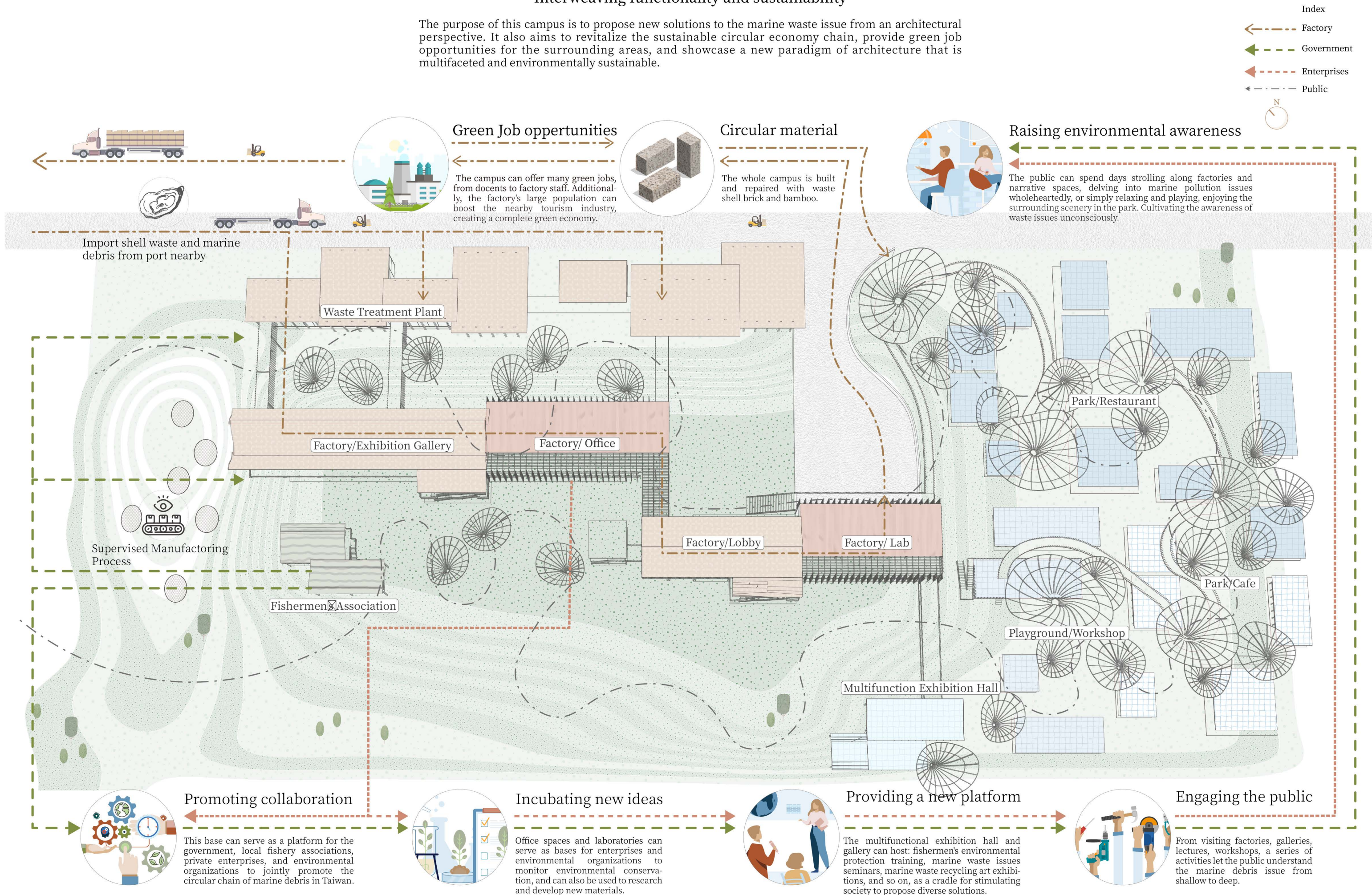
The unique view of Dongshi is contributed by the bamboo raft technique, which involves tying oyster shells into strings and hanging them under the sea on a bamboo raft.





## Interweaving functionality and sustainability

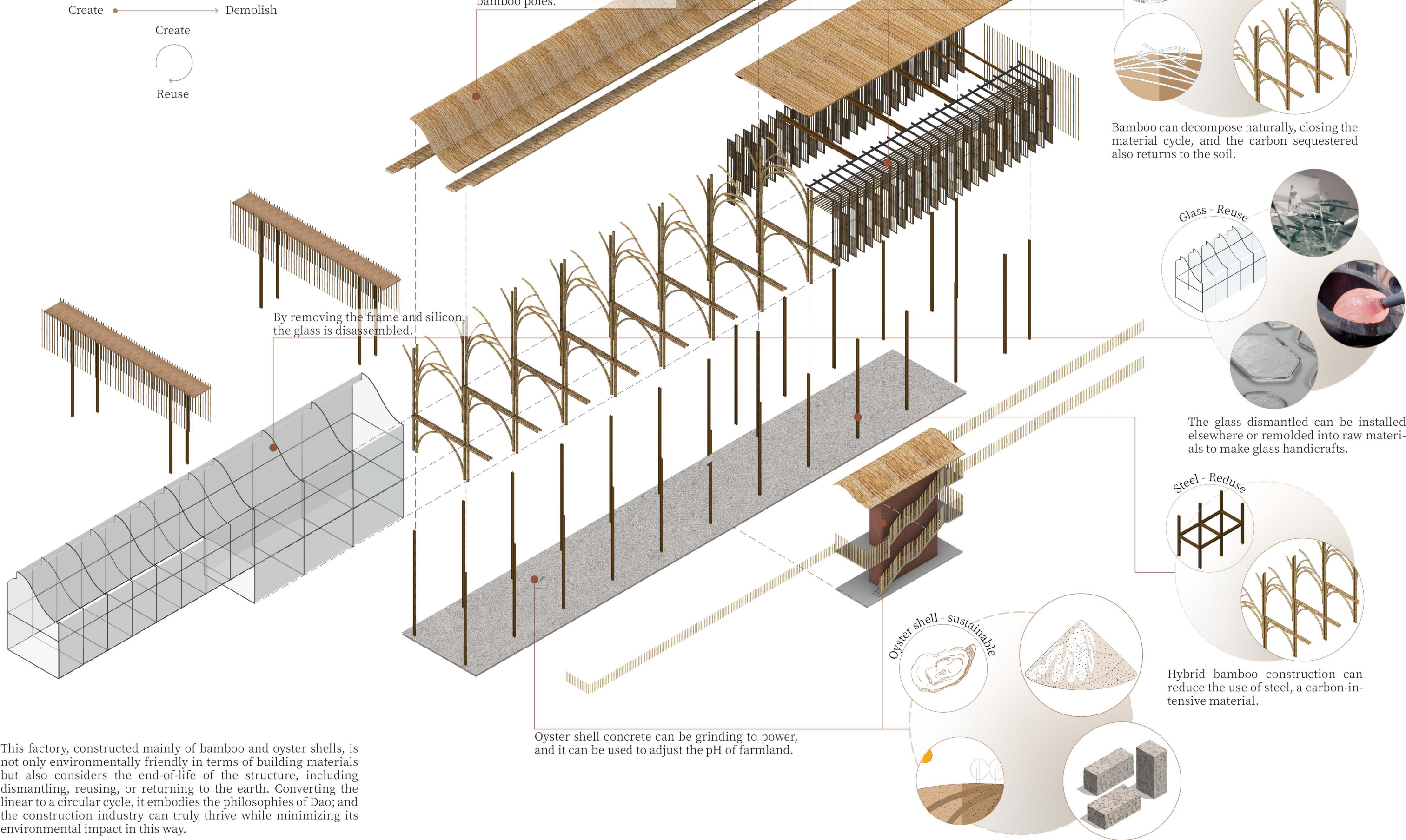
The purpose of this campus is to propose new solutions to the marine waste issue from an architectural perspective. It also aims to revitalize the sustainable circular economy chain, provide green job opportunities for the surrounding areas, and showcase a new paradigm of architecture that is multifaceted and environmentally sustainable.





Embodying the natural cycle into architecture

The construction industry accounts for 37% of the world's greenhouse gas emissions, of which the cement industry accounts for 7% and the steel industry for 9%. Buildings made of these materials not only damage the environment during the construction process, but also consume a lot of environmental costs when they need to be demolished.

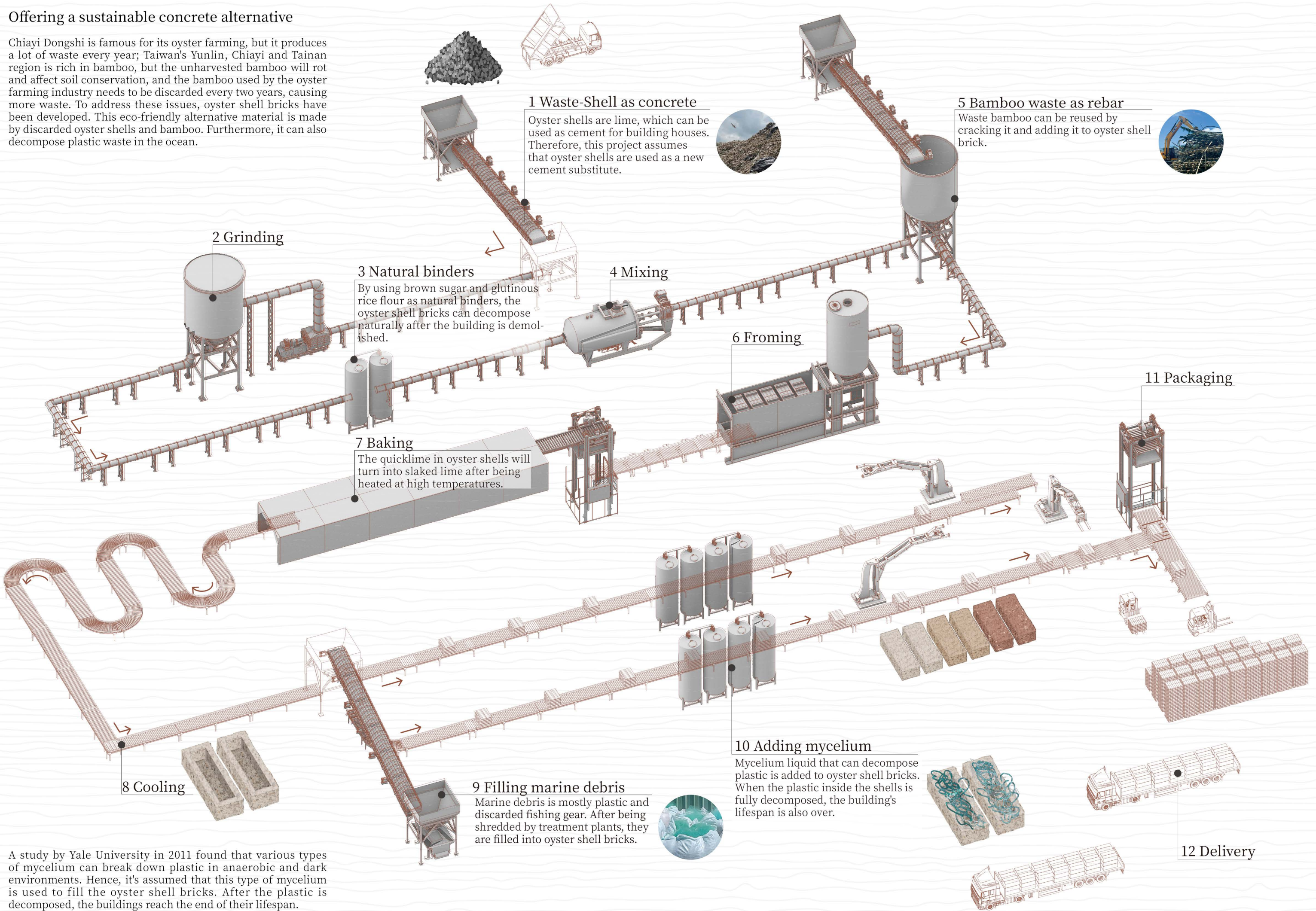


This factory, constructed mainly of bamboo and oyster shells, is not only environmentally friendly in terms of building materials but also considers the end-of-life of the structure, including dismantling, reusing, or returning to the earth. Converting the linear to a circular cycle, it embodies the philosophies of Dao; and the construction industry can truly thrive while minimizing its environmental impact in this way.



Offering a sustainable concrete alternative

Chiayi Dongshi is famous for its oyster farming, but it produces a lot of waste every year; Taiwan's Yunlin, Chiayi and Tainan region is rich in bamboo, but the unharvested bamboo will rot and affect soil conservation, and the bamboo used by the oyster farming industry needs to be discarded every two years, causing more waste. To address these issues, oyster shell bricks have been developed. This eco-friendly alternative material is made by discarded oyster shells and bamboo. Furthermore, it can also decompose plastic waste in the ocean.



A study by Yale University in 2011 found that various types of mycelium can break down plastic in anaerobic and dark environments. Hence, it's assumed that this type of mycelium is used to fill the oyster shell bricks. After the plastic is decomposed, the buildings reach the end of their lifespan.



## Bridging from large to small

The scale of the park buildings ranges from the factory that needs to match the mechanical size to the pathway and ground that suit the human scale. It not only clearly divides the campus, but also creates layers of landscape design.

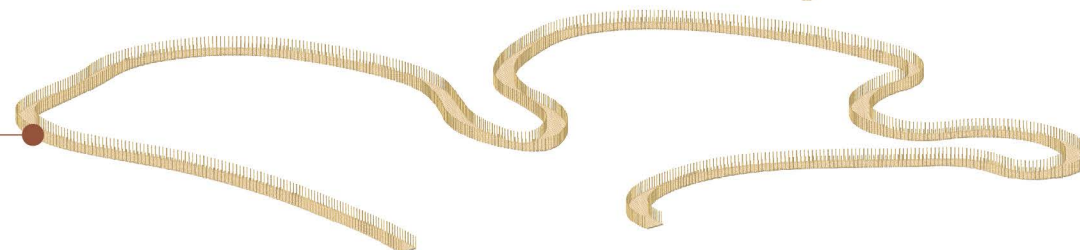
Layer 4



### Umbrella-shaped structures

Various sizes of umbrella-shaped structures woven from bamboo are scattered throughout the park. The large structures mark the location of the plaza, while the small ones surround the plaza to add a lively touch and places to cool off.

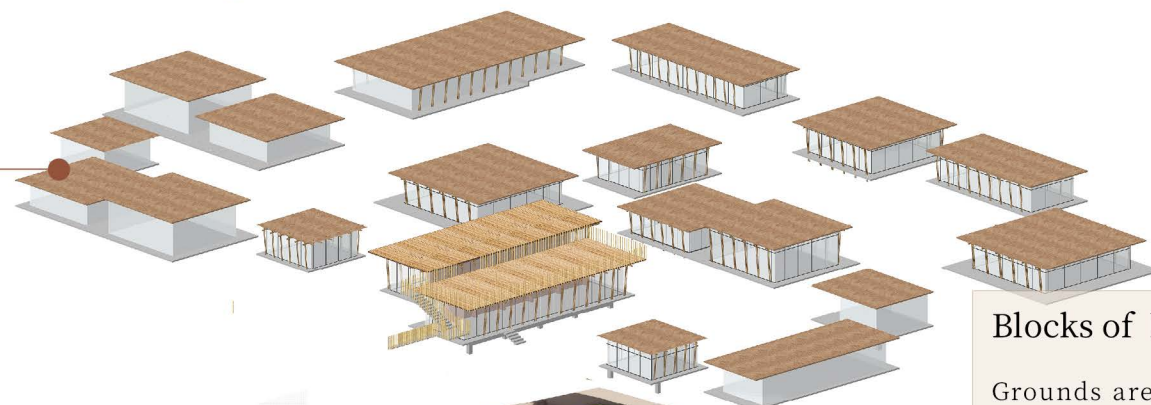
Layer 3



### Skybridge

The bridge connects different clusters to create a unity between the scale of the dining buildings and the bamboo structures. Meandering through the bridge also provides a more comprehensive view of the park.

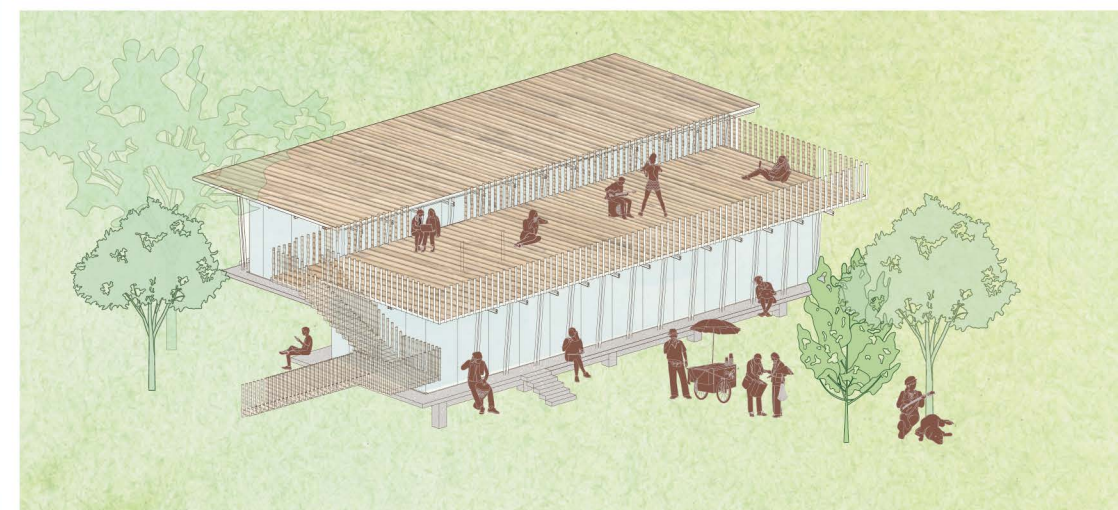
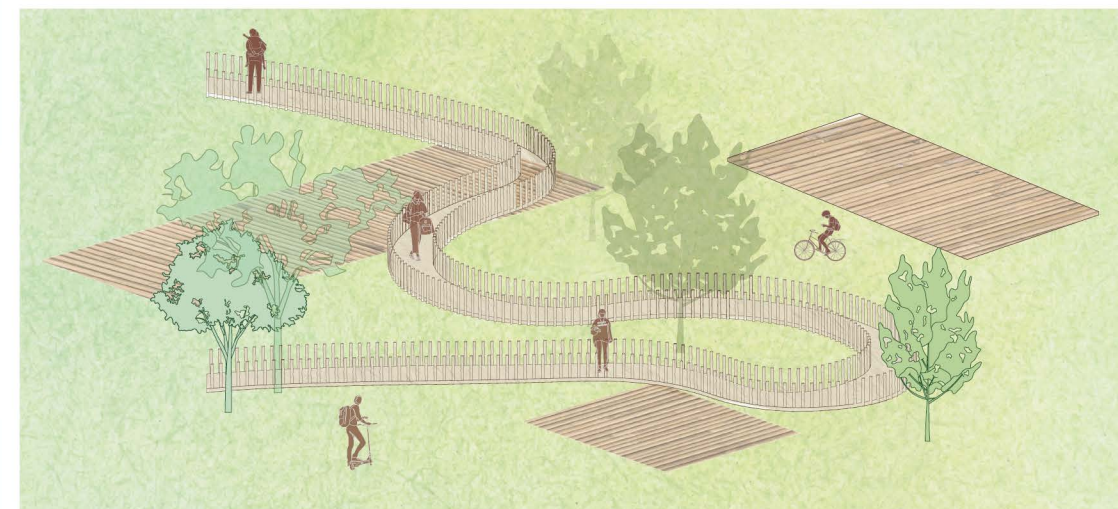
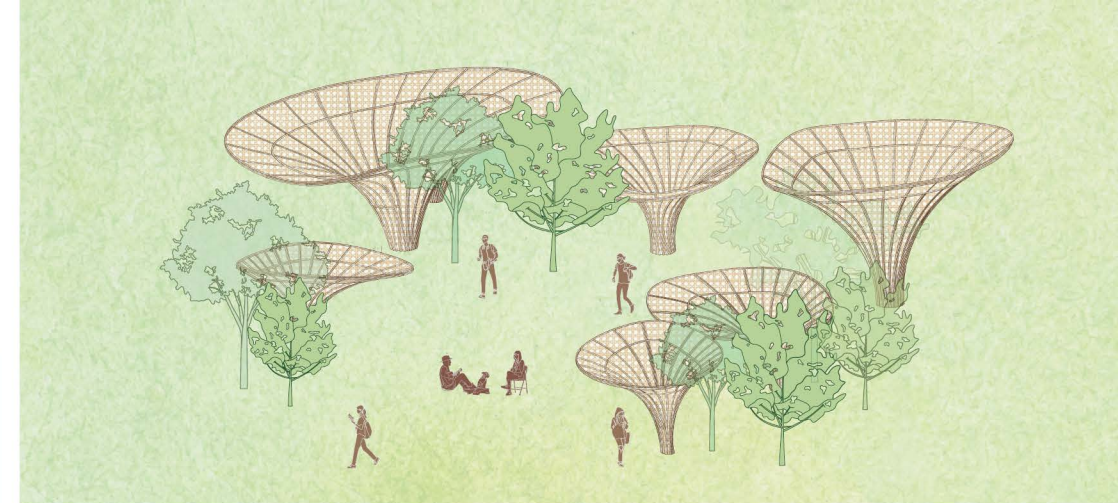
Layer 2



### Blocks of buildings

Grounds are defined by blocks of buildings that have similar functions.

Layer 1



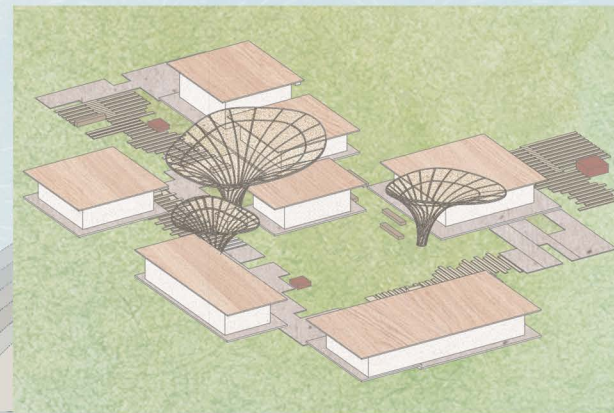


## Embracing geological features

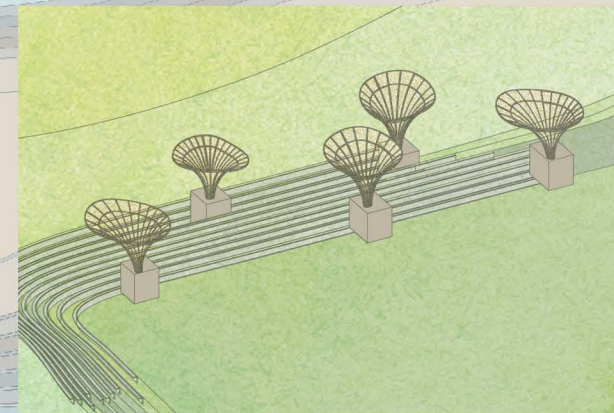
Echoing the surrounding scenery, the narrow and winding sandbars, the calm waves, and the clusters of oyster racks, I extend the building downward, and arrange the front plaza in the same shape as the sandbars. The downward-built building can meet the factory operation height, and will not exceed the surrounding windbreak forest, destroying the vast skyline.



A. A large expanse of grassland faces the sea, with stairs built along the terrain, allowing the scenery to stretch along the way from buildings, grassland, and oyster racks to the ocean.



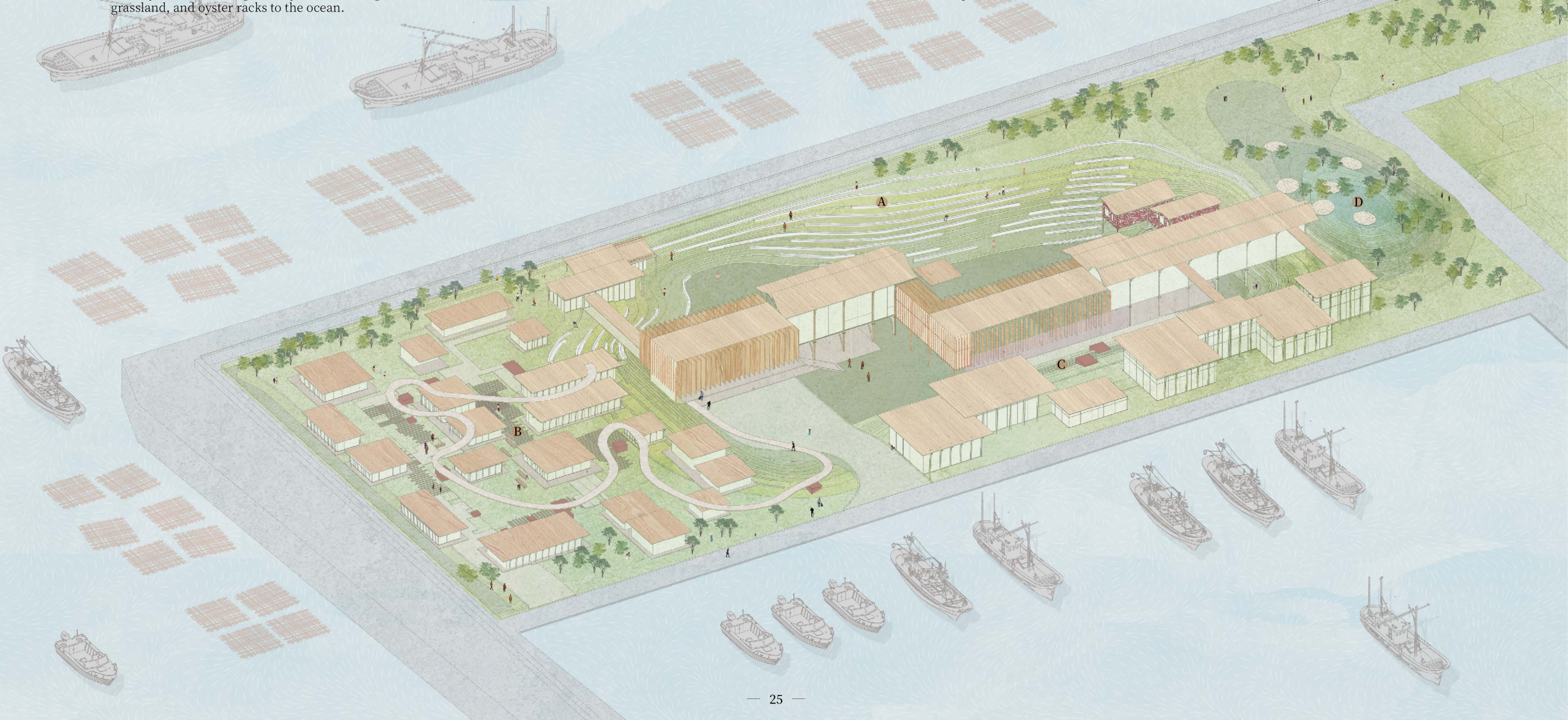
B. The aisle and the square are created according to the arrangement of the restaurant area.



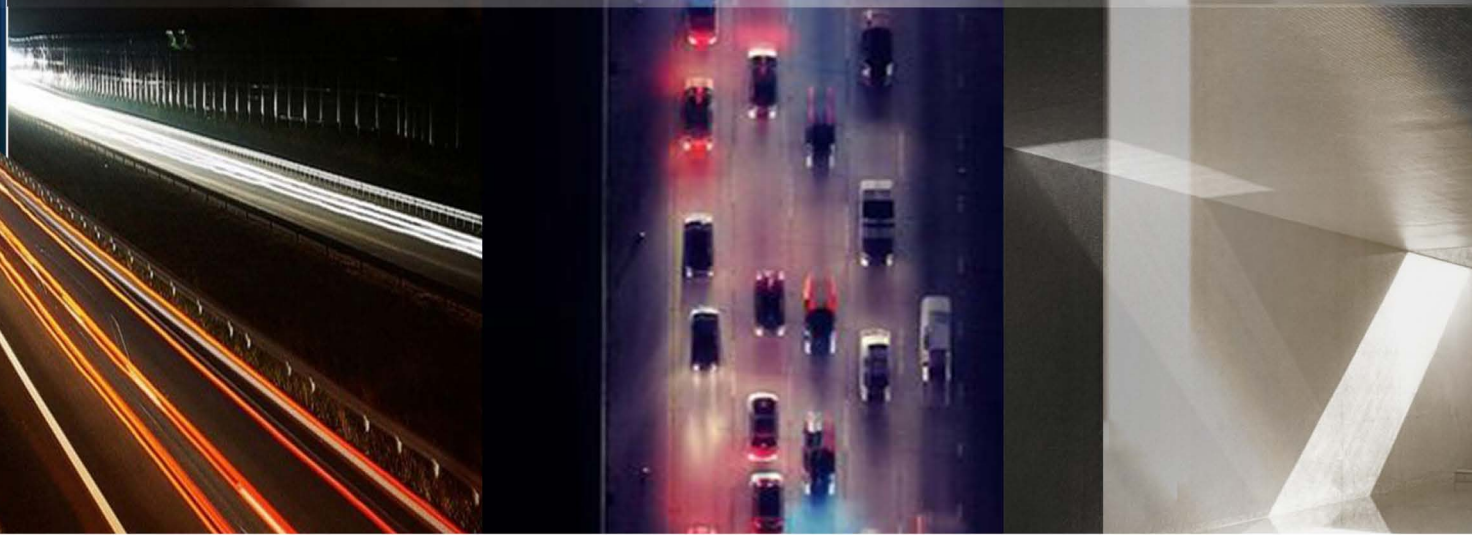
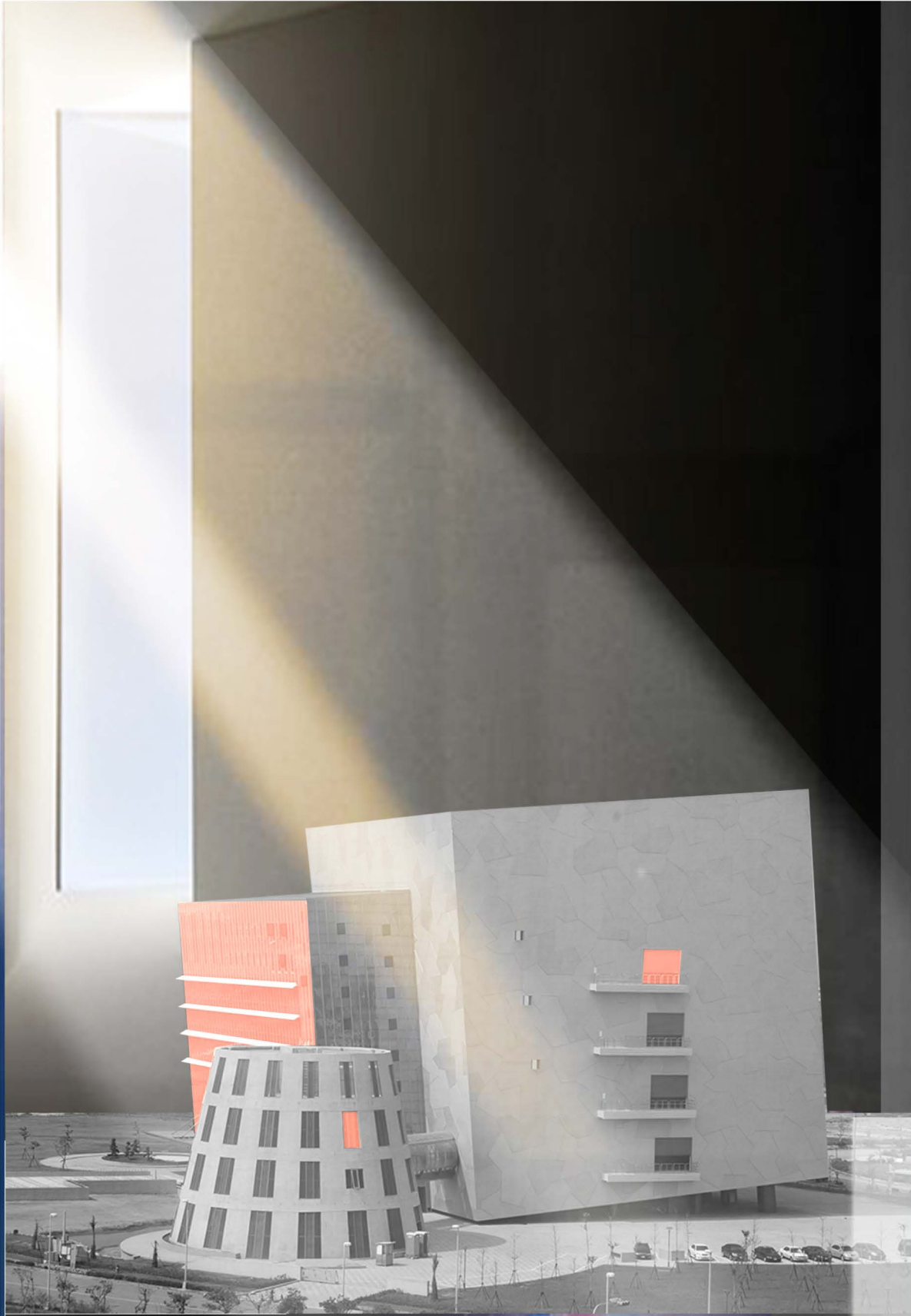
C. The long and narrow land between the factories is transformed into a concave staircase that connects to the front prairie.



D. The existing hill is preserved, and a winding playground is designed around it, enabling visitors to be surrounded by surrounding trees.







## Coplus Headquarters

Coplus is a Taiwanese company that manufactures headlights and taillights. The building was designed by architect Hans Hollein, with unbalanced volumes leaning, colliding, and straight windows bringing back the balance. The design concept was aimed at aligning the building's components with the core product of the client by incorporating the main concept of light stream, point, and line to plane

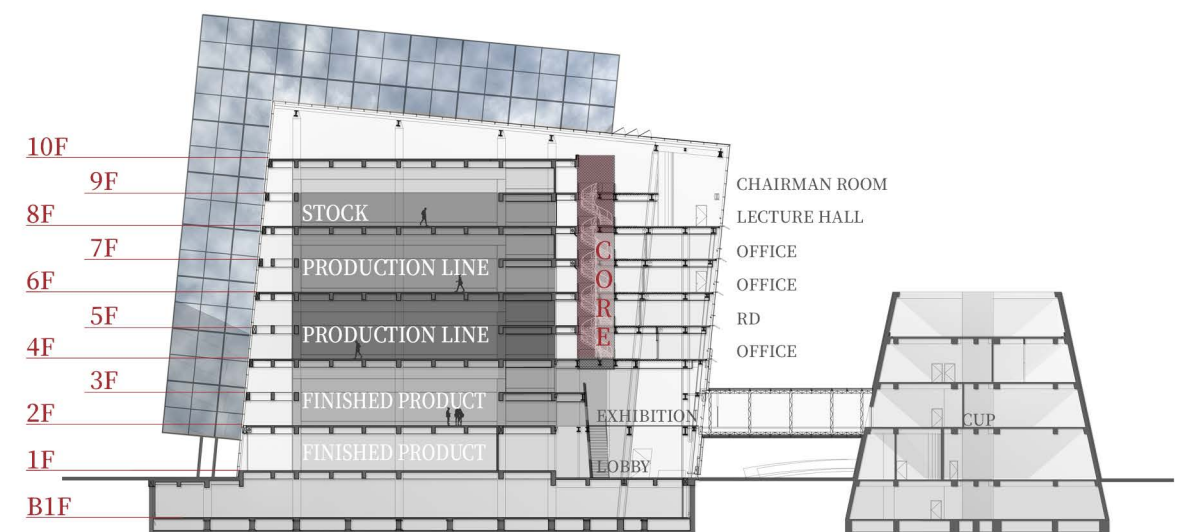
**Year:** 2022

**Project Type:** professional project

**Location:** Tainan, Taiwan

**Team member:** Construction Project Manager, Design Project Manager, two other designers, and me.

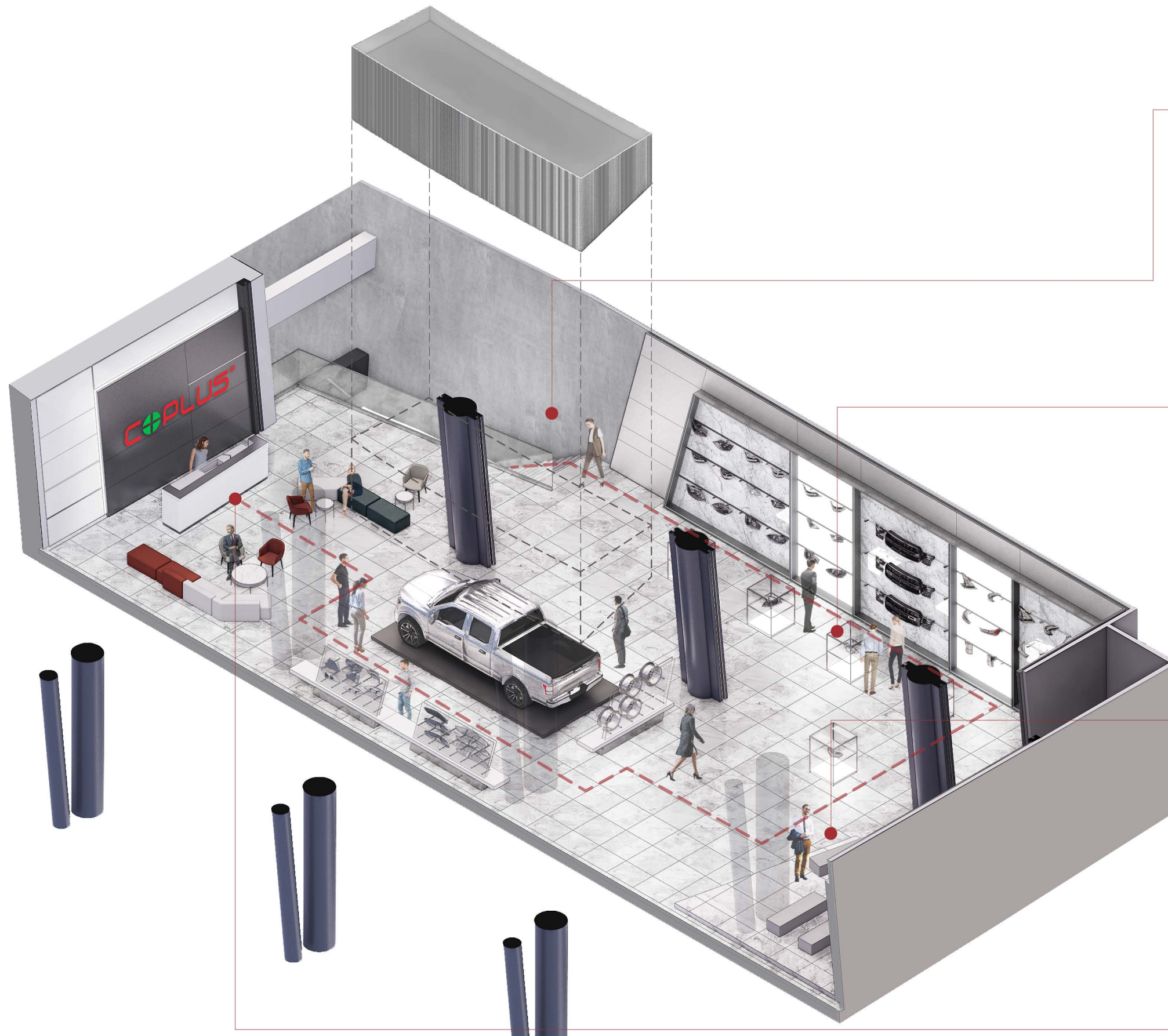
**Role:** In the design process, I mainly focused on the design development of the exhibition area and cafeteria, including concept, detail design, construction drawing, and contractor communication. During construction, I oversaw the entire building, coordinated design requirements, and coordinated the contractor's agenda to address practical issues faced during construction.





## Exhibition area

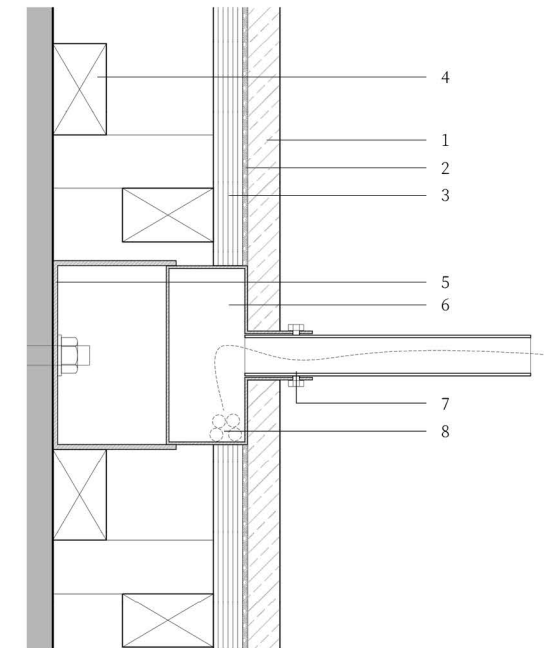
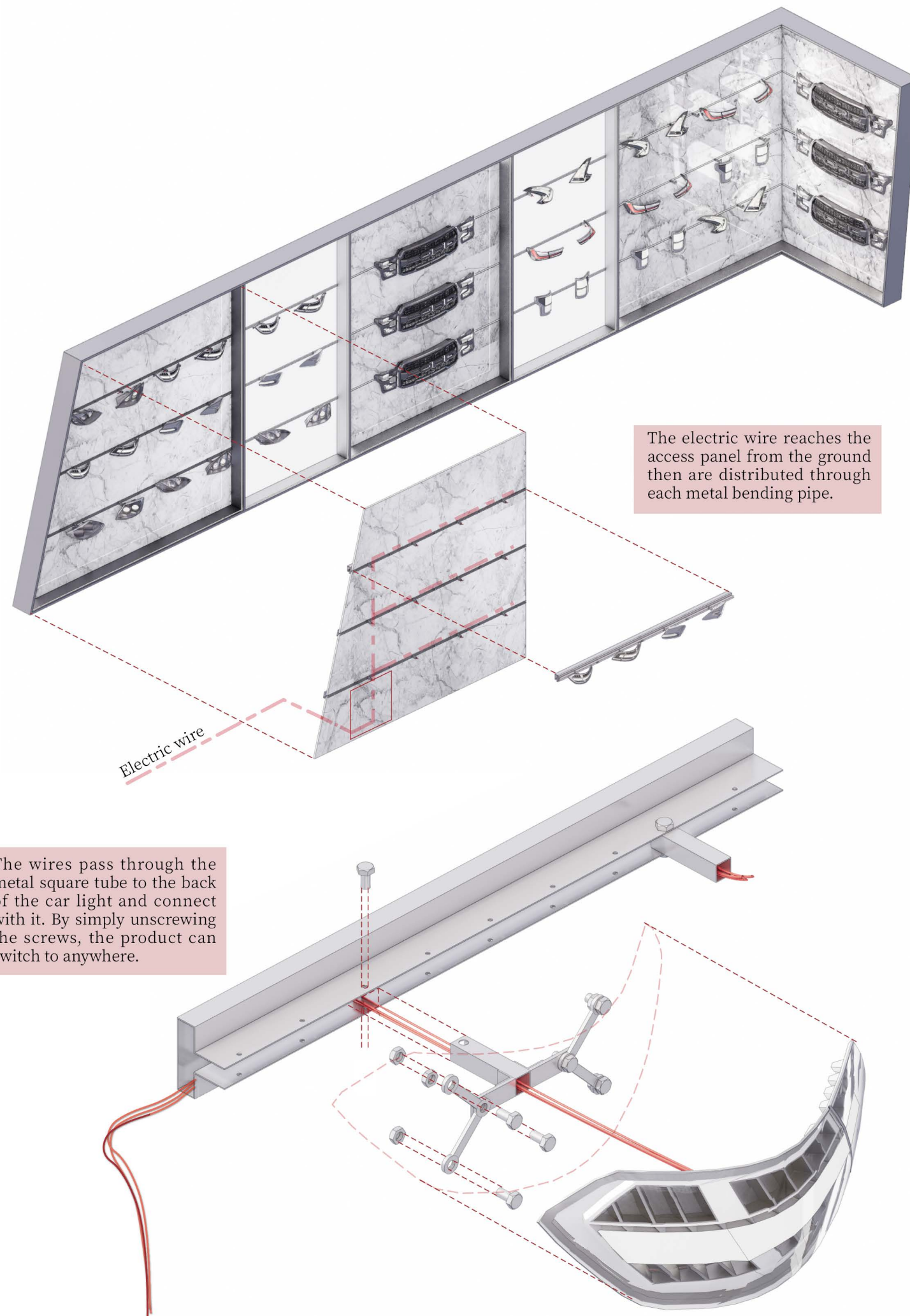
Walking into the showroom, the metal cabinets made of marble are adorned with large white light panels in the middle. The central area displays a real car and car accessories, allowing guests to experiment with the lighting effects. Finally, they can discuss cooperation matters at the coffee bar.



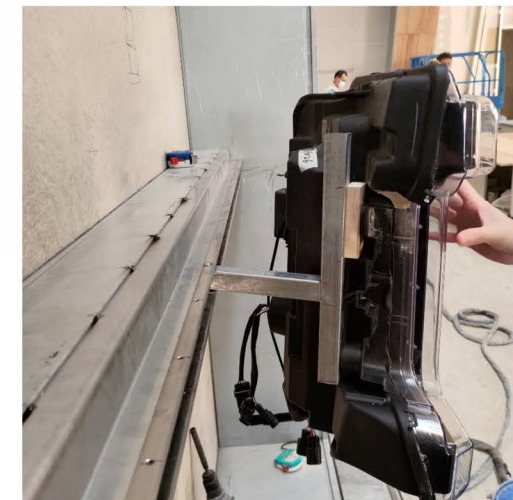


## The flexibility of display shelf

The challenge of this project was to meet the demand for flexible arrangement of the products while powering them and showing all their function. Therefore, I communicated with the MEP, multimedia contractors, and clients several times and had to overcome problems, such as power overload and poor joint durability.



- 1 Statuario marble, polished
- 2 Marble Adhesive
- 3 Red 18mm Waterproof Plywood
- 4 Millwork framework, 2inch x 1.2inch
- 5 2t metal bending material, attached to the wall by anchor bolt
- 6 1.6t metal bending panel, welded to 2t metal pipe.
- 7 25x25mm square steel pipe screwed with bending panel
- 8 Electric Wire



Muck up to see the durability of joint

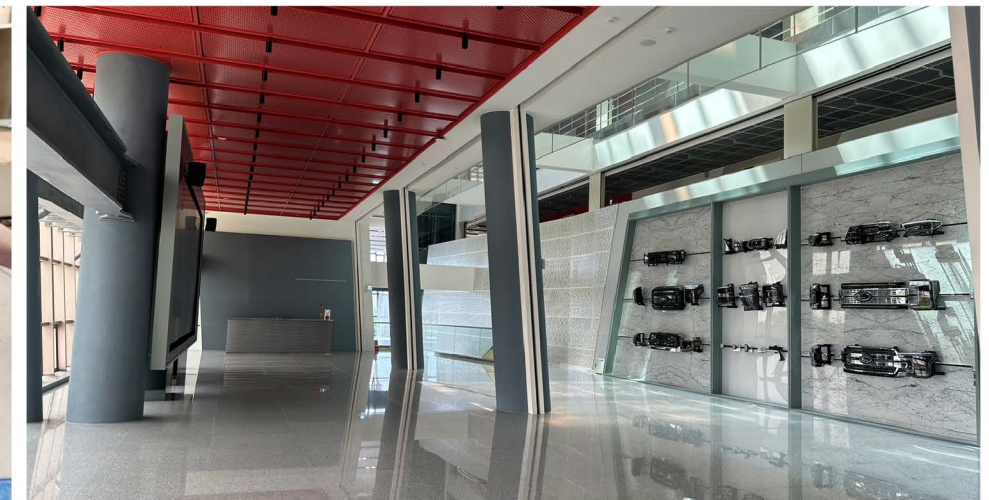


Photo record during construction



Structure of display shelf

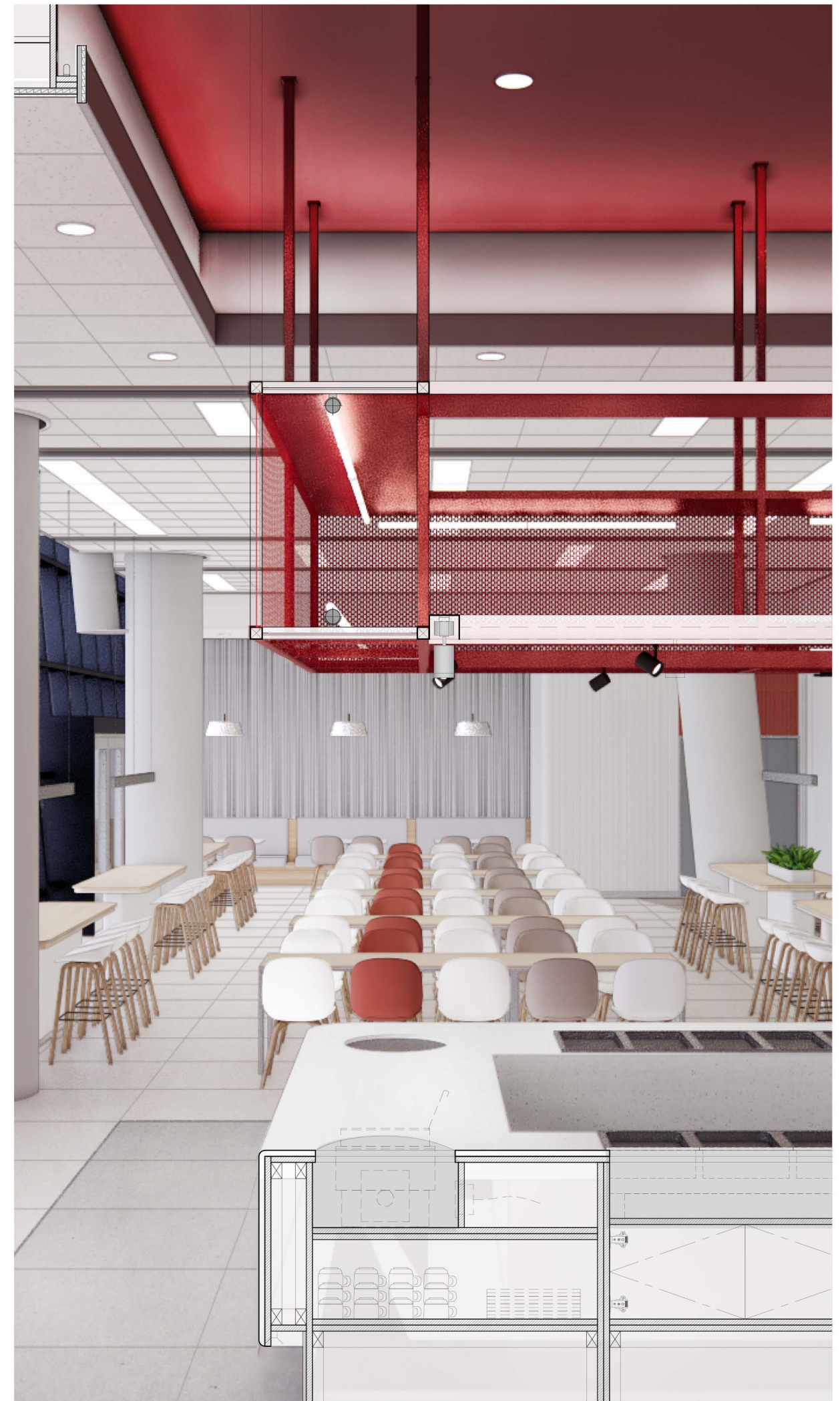
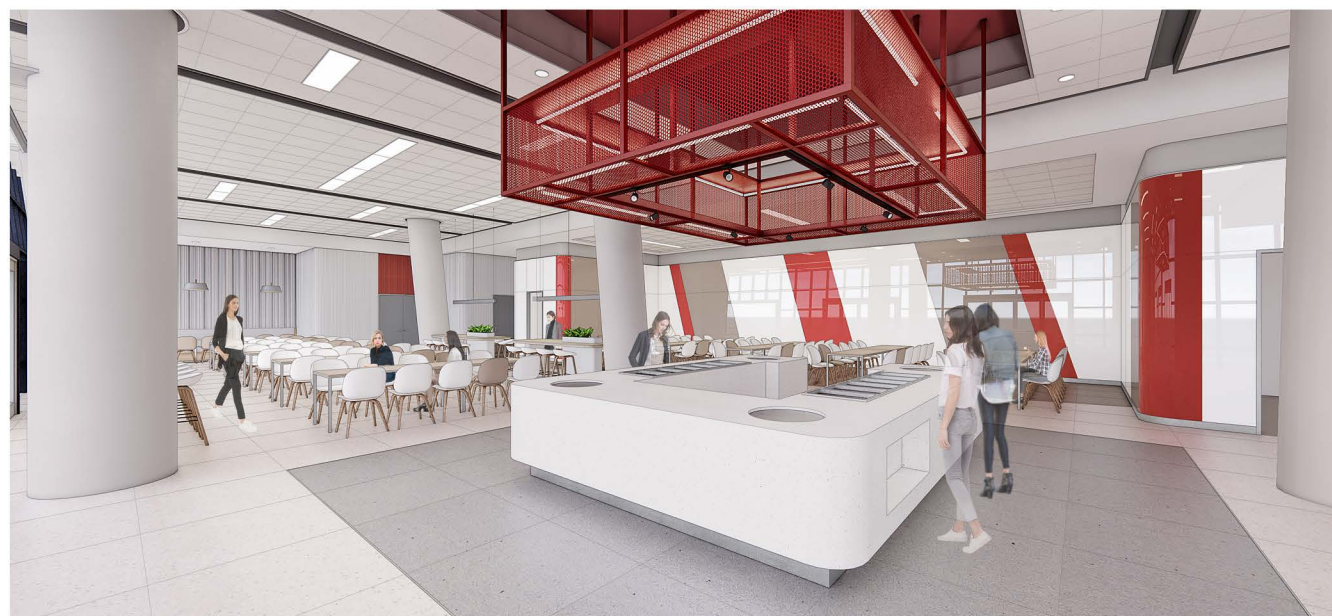
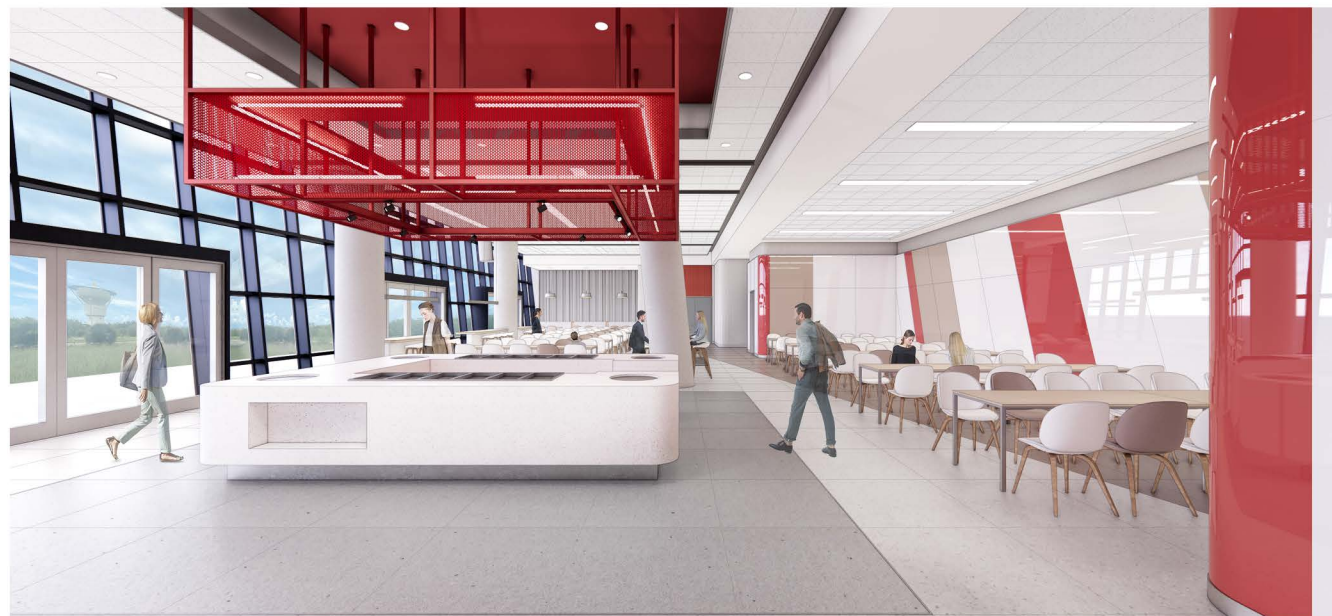
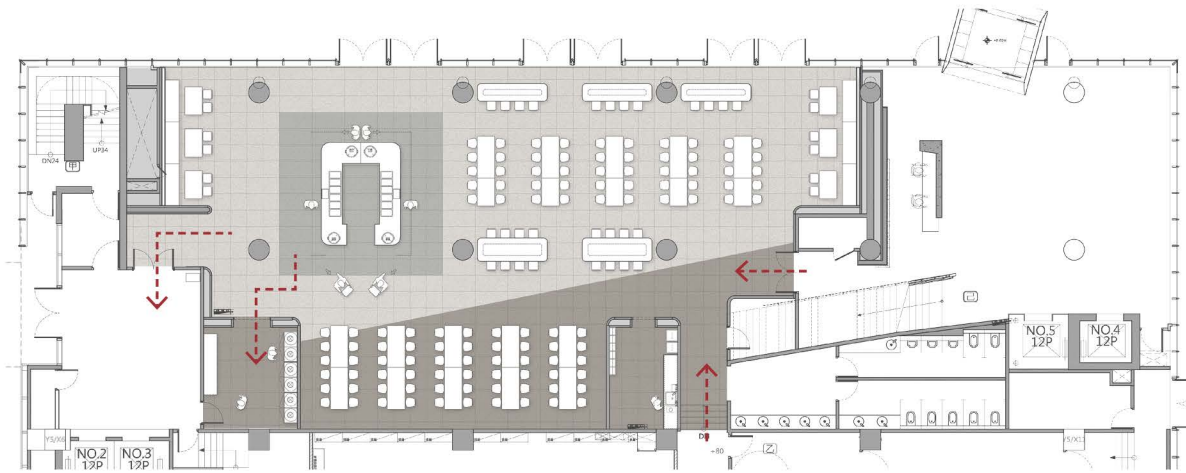


Photo record during construction



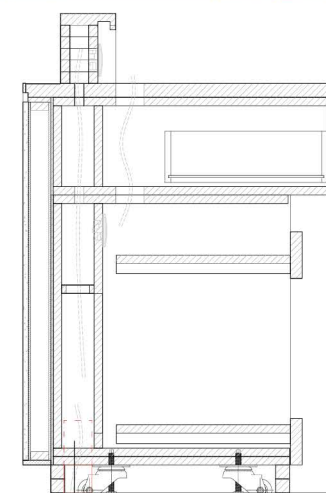
## Cafeteria

Tilted lines have been incorporated into the design of the floors and walls to match the architectural elements. Responding to architectural tension created by the building, the central island has a solid acrylic surface, which creates a sturdy and substantial look, in contrast to the lightweight perforated metal panel used for the hanging cabinet.





## Sky Dining Reception Area at Taipei 101



Wires entering from the openings underneath can provide power to individual parts or connect with other wires to power the whole counter



Split into 2 parts



Each module can work individually with full functionality



Flexible combination

To ease the congestion of check-in crowds during meal times, Taipei 101 set up a new check-in counter in the lobby. The challenge of this project was to preserve the mobility of the lobby space. In accordance with the frequent exhibition functions of the lobby, the counter needed to be dismantled and moved to other places while still having power and internet access. For this purpose, the counter was designed as a modular unit; each unit has independently adjustable feet and wires, and different units can be freely combined.

**Year:** 2022

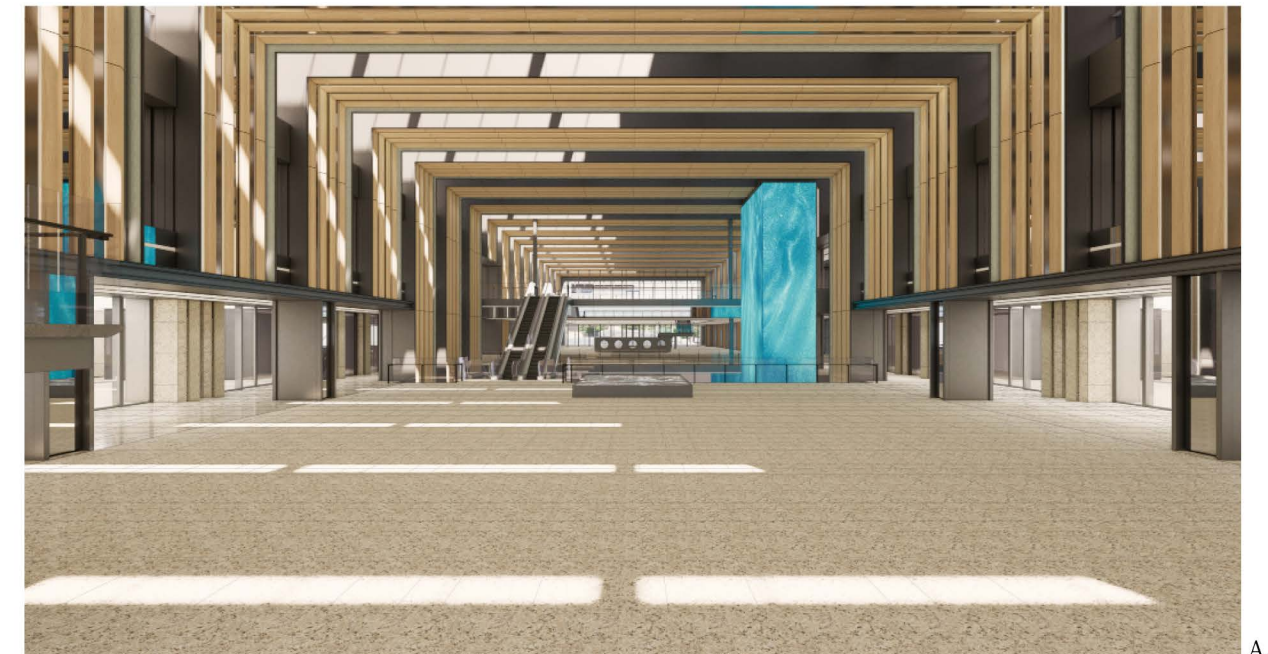
**Project Type:** Professional project

**Location:** Taipei, Taiwan

**Team member:** Construction Project Manager, Design Project Manager, and me.

**Role:** Role: As the main designer, I was responsible for concept, design development, technician drawings, construction supervision

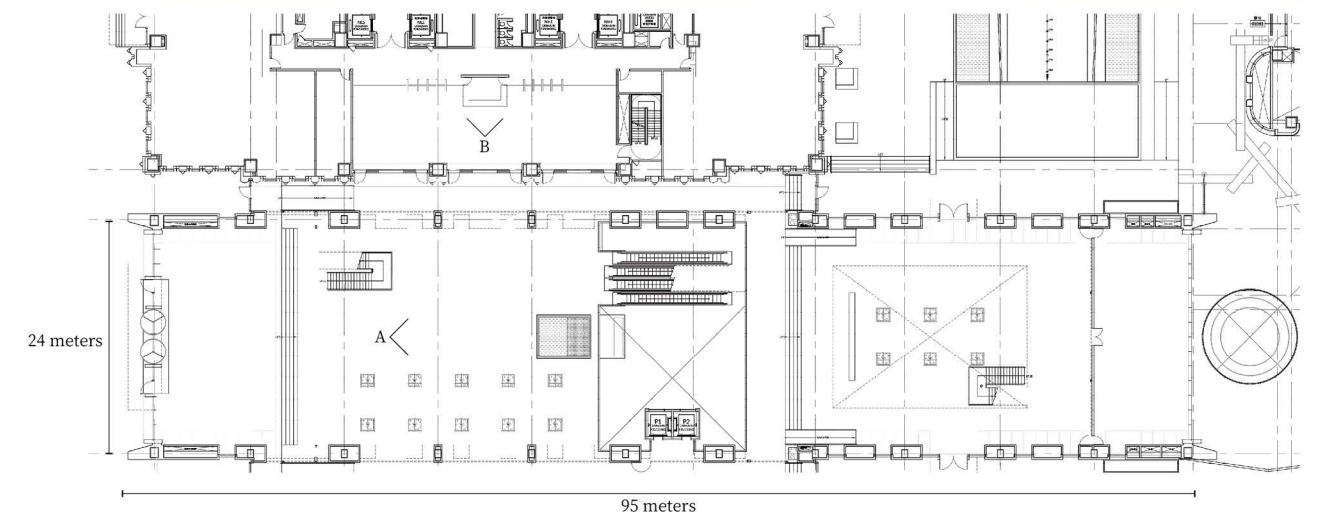
## Formosa Plastic Company Headquarters



A



B



Mandartech joins the design team of Kris Yao Artech, and it is responsible for the interior design of the Headquarters Lobby, Atrium and elevator hall of both office buildings and residential buildings. The atrium of the headquarters is a three-level upwards, five levels downwards, 95 meters long, and 24 meters wide architecture, connecting both sides of office buildings. Corresponding to architectural elements, skylights, U-shaped structure, ornamental belt and its gigantic scale, the interior design utilizes repetitive forms of triangle-shaped wooden panels interleave with bead blasted and mirror-finished titanium metal panels.

**Year:** 2023~ ( In Progress)

**Project Type:** Professional project

**Location:** Taipei, Taiwan

**Team member:**

**Architectural Design team-** Principal Architect and Partners, Vice Design President, and Project Manager.

**Interior Design Team-** Principal Architect, Design Director, Design Project Manager, and me.

**Role:** As the main designer, I am responsible for developing, organizing, and communicating the design proposal with the design director. Align agendas and modifications with the architecture team representative. Reports to the principal architect and project manager of our team with the latest progress enabling them to present smoothly the final design presentation with the principal architect of the architecture team.

\* Ground floor plan is created by Architecture firm