# LUJIA YAN

Selected architectural works 2017–2024

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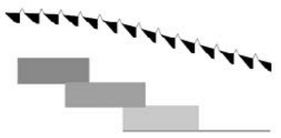
# 01 Gallery in the Valley

*Nature & Architecture*

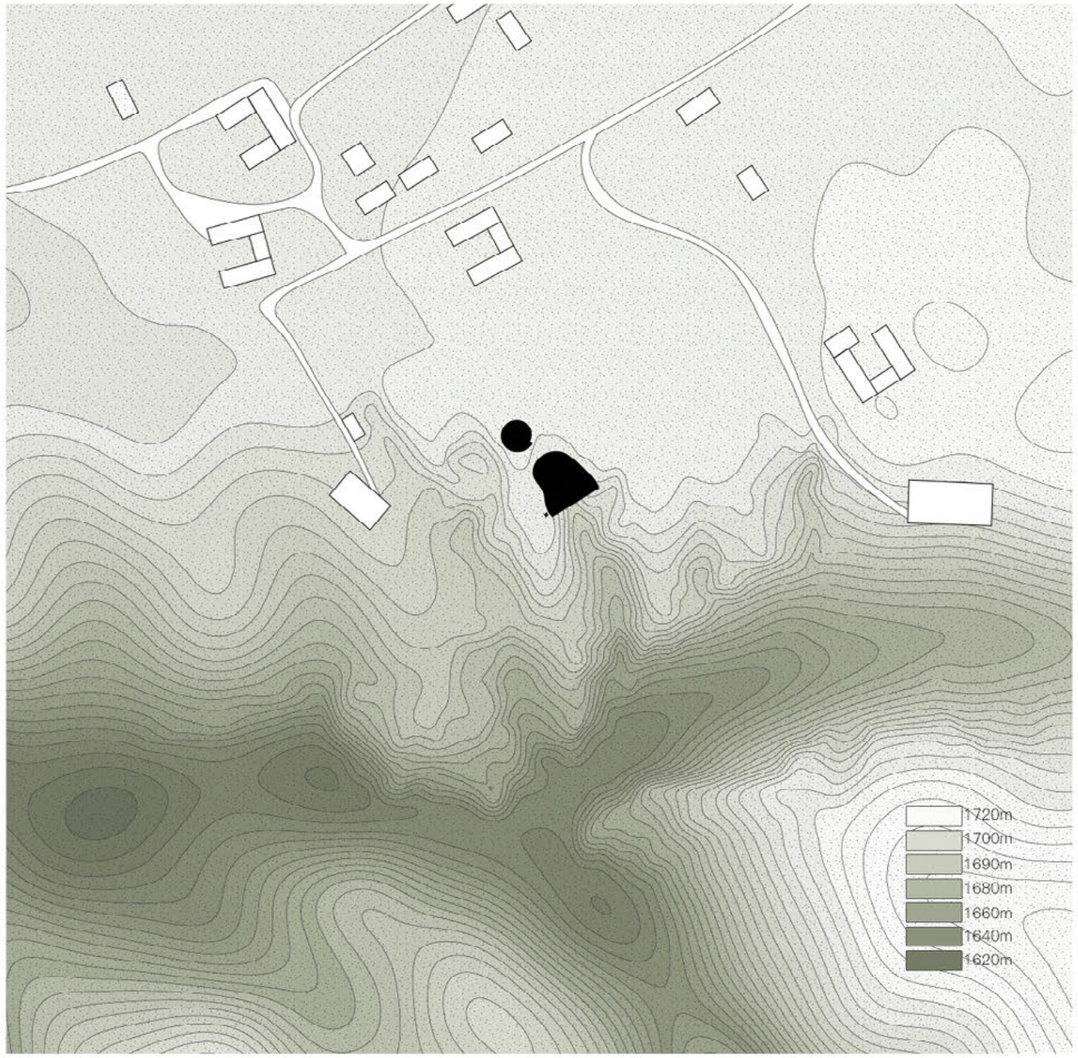


Core Studio, 2021 Fall
Instructor: Zhao Chunmei
Course Number: G3423C2375
Site: Tina Jiatang, Wu Zhong city, NingXia provice, China
Individual Work

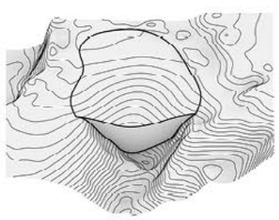
“the artists of land art sought expressive means going beyond the limitations of traditional painting on canvas. It was no longer the painted picture of a landscape, but rather the landscape itself or the landscape marked off by the artist that became the actual art object...”

Nature and architecture are in opposition to each other because the art gallery needed to be built in this ravine with extremely natural attributes. Can architecture be integrated into this ravine like land art? Over time, this art gallery will become a place on earth, like the ravine here, where the architecture, the ravine and paintings slowly merge.

The galleries are connected by a main route, which is folded under the large roof. The structure of the roof allows light to diffuse into the interior as if it were a cloud. On the roof, you can have an uninterrupted view of the ravine. The two worlds above and below the roof, building and nature form a unity of opposition.



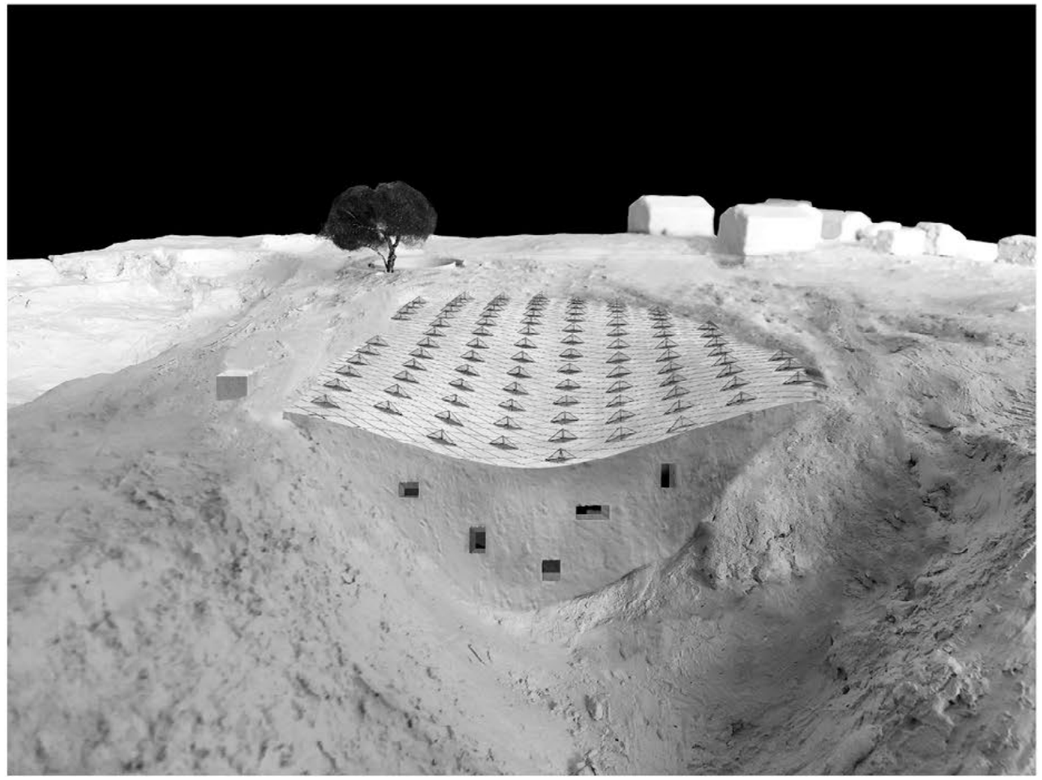


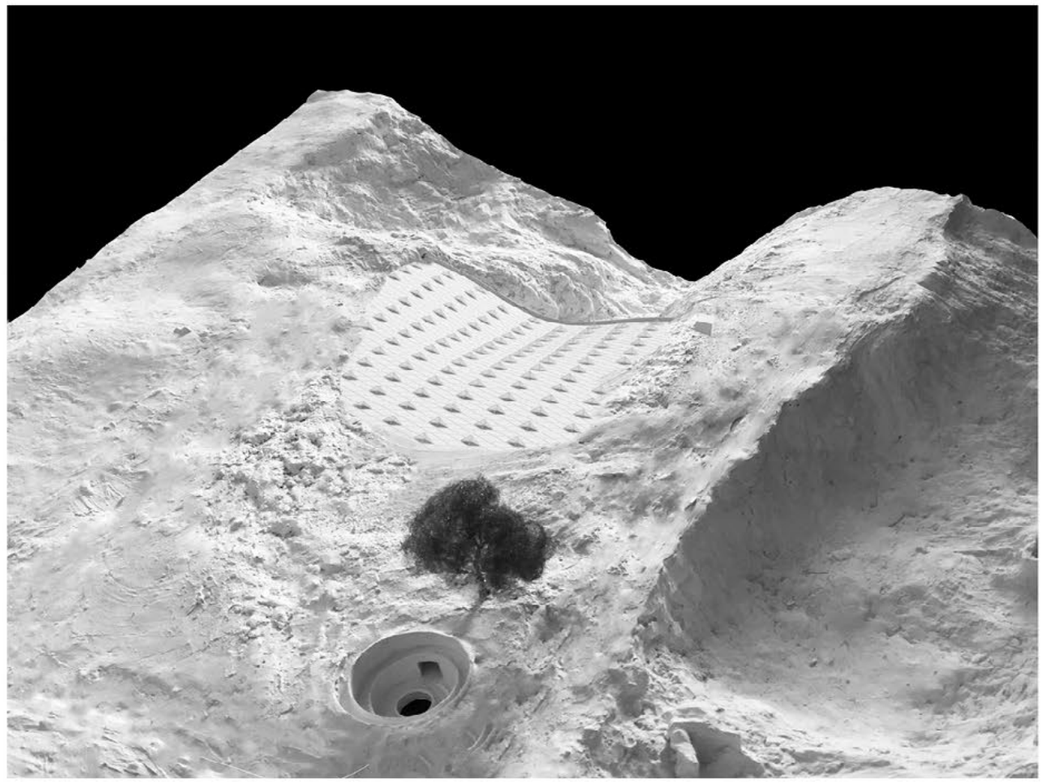



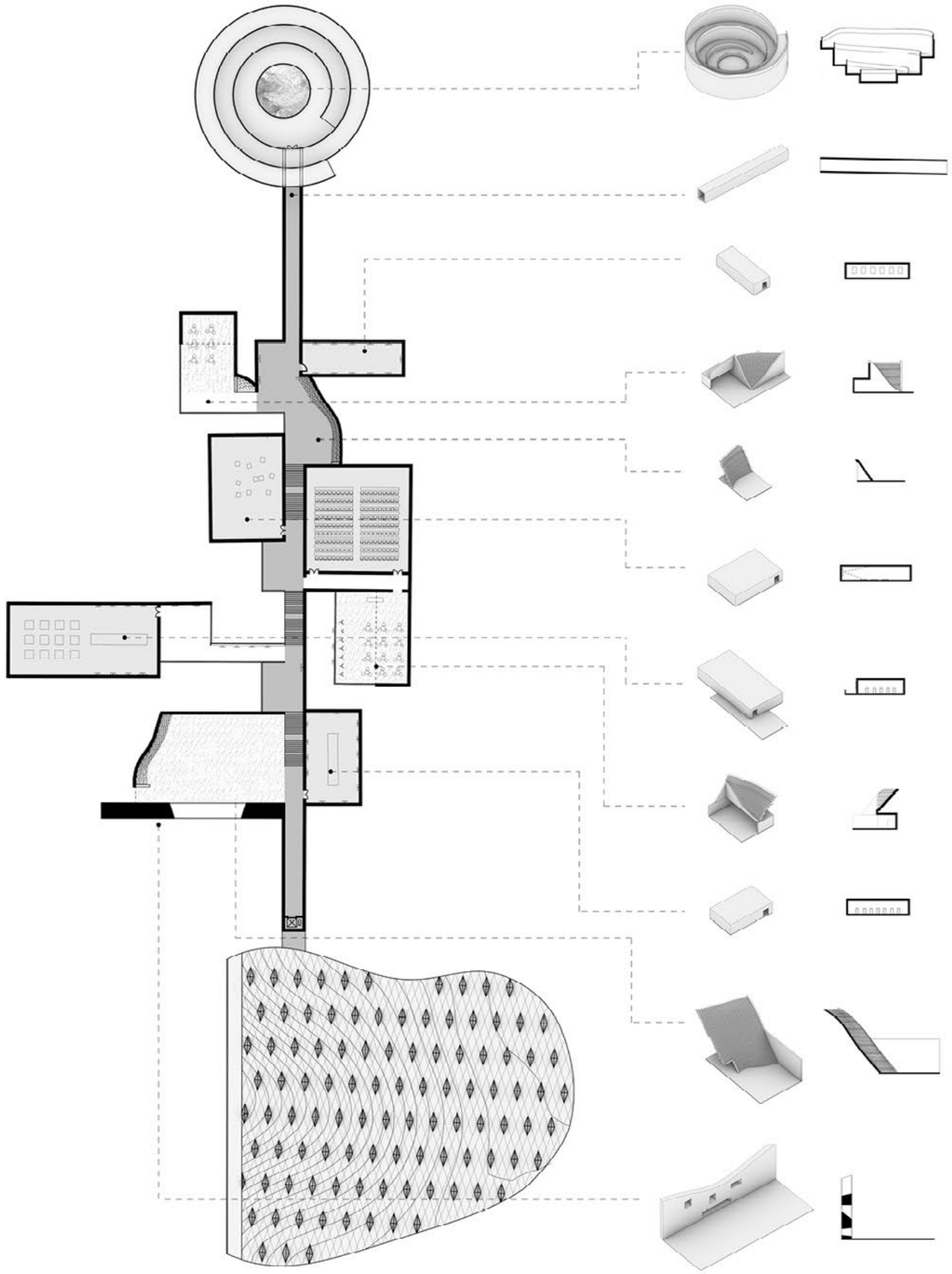


## MAPPING & FORM GENERATION

Take Land Art as the entry point of design. Tina Jiatang in NingXia has had natural ravine topography all the time, which is basic of magnificent landscape there. The artmuseum in this place needs to merge into the site and emphasiz the characteristics of the site, telling the story of the site.







CONCEPT PLAN

The galleries are connected by a main route, which is folded under the large roof. Each node has its own section and size, corresponding to different functions.



*Roof at night*

As night falls, the light inside the gallery beams out through pyramid-shaped glass Windows

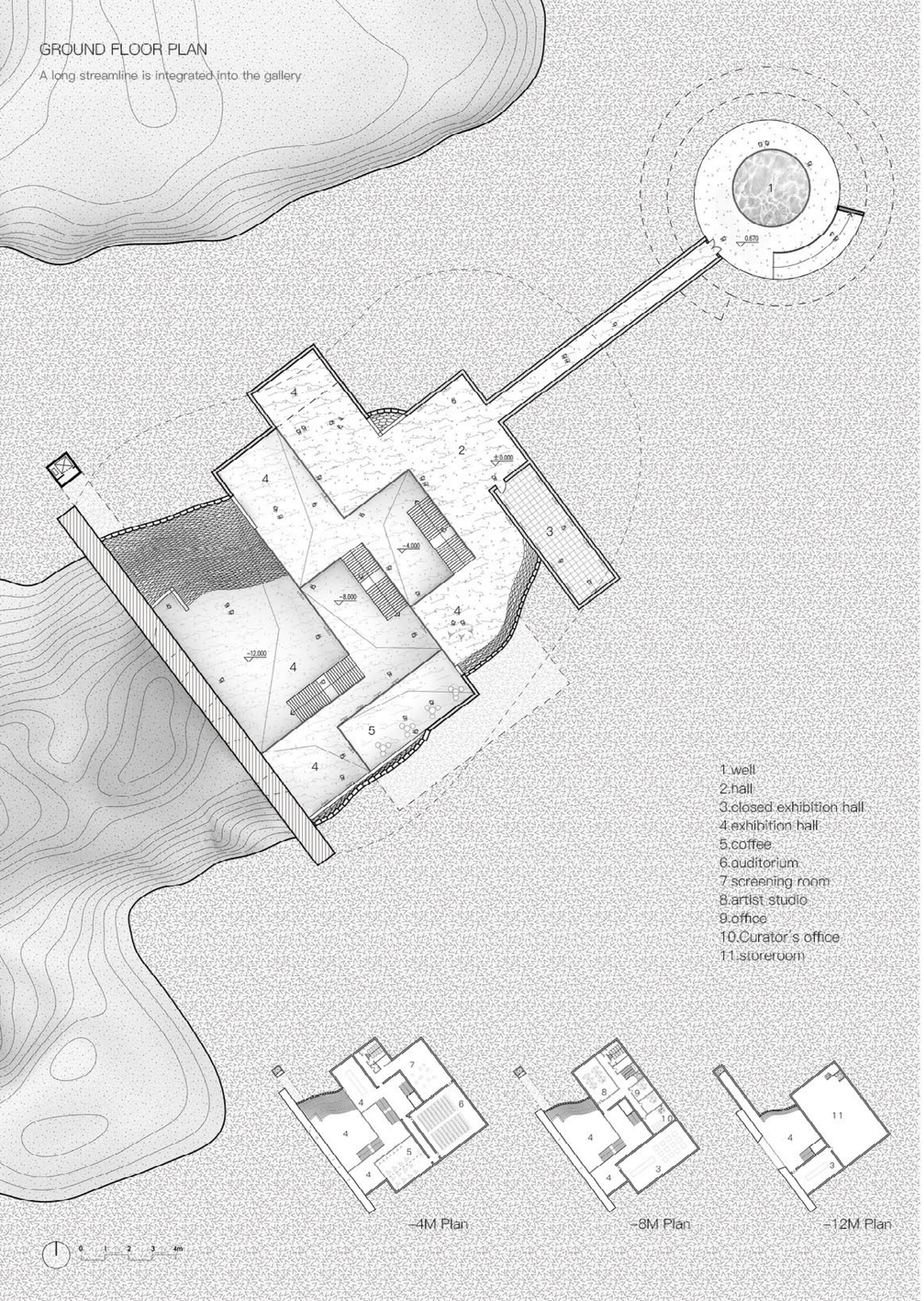


*Looking over the ravine from the roof*

As night falls, the light inside the gallery beams out through pyramid-shaped glass Windows

## GROUND FLOOR PLAN

A long streamline is integrated into the gallery




1.well
2.hall
3.closed exhibition hall
4.exhibition hall
5.coffee
6.auditorium
7.screening room
8.artist studio
9.office
10.Curator's office
11.storeroom



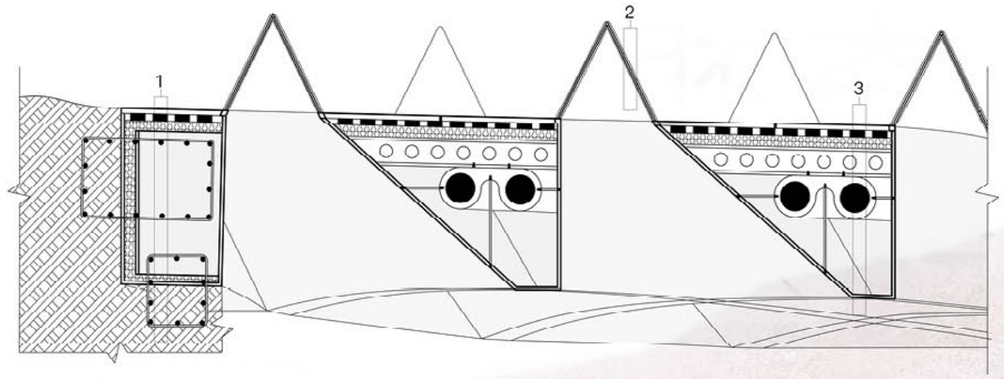
*Roof & Dyed concrete & Brick*

The warm tones of the interior space contrast with the nature of the outdoors



*Restrained window facing ravine*

Limit the indoor view to the ravine, which is opposed to the outdoor rooftop view, and block too much sunlight from the sun side




CONSTRUCTION DETAIL-ROOF LONGITUDINAL SECTION

1.IRON PLATE
WATERPROOF COILED METERIAL
INSULATION LAYER
IRON PLATE
REBAR
STEEL NAILS
IRON PLATE
CUSHION
RAMMED EARTH

2.GLASS
METAL SUPPORT
GLASS

3.IRON PLATE
WATERPROOF COILED MATERIAL
INSULATION LAYER
IRON PLATE
I-BEAM
METAL COMPONENTS
INHAUL CABLE
IRON PLATE

RESEARCH BUILDING SECTIONAL PERSPECTIVE

The section clearly shows the whole spatial narrative logic





# 02 House with a Stone

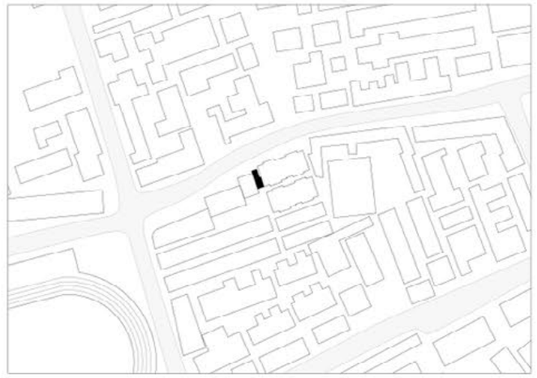
*New & Old*



Core Studio, 2019 Fall
Instructor: Xu Liang
Course Number: G2084C2375
Site: The Five Major Avenues, Heping District, Tianjin, China
Individual Work

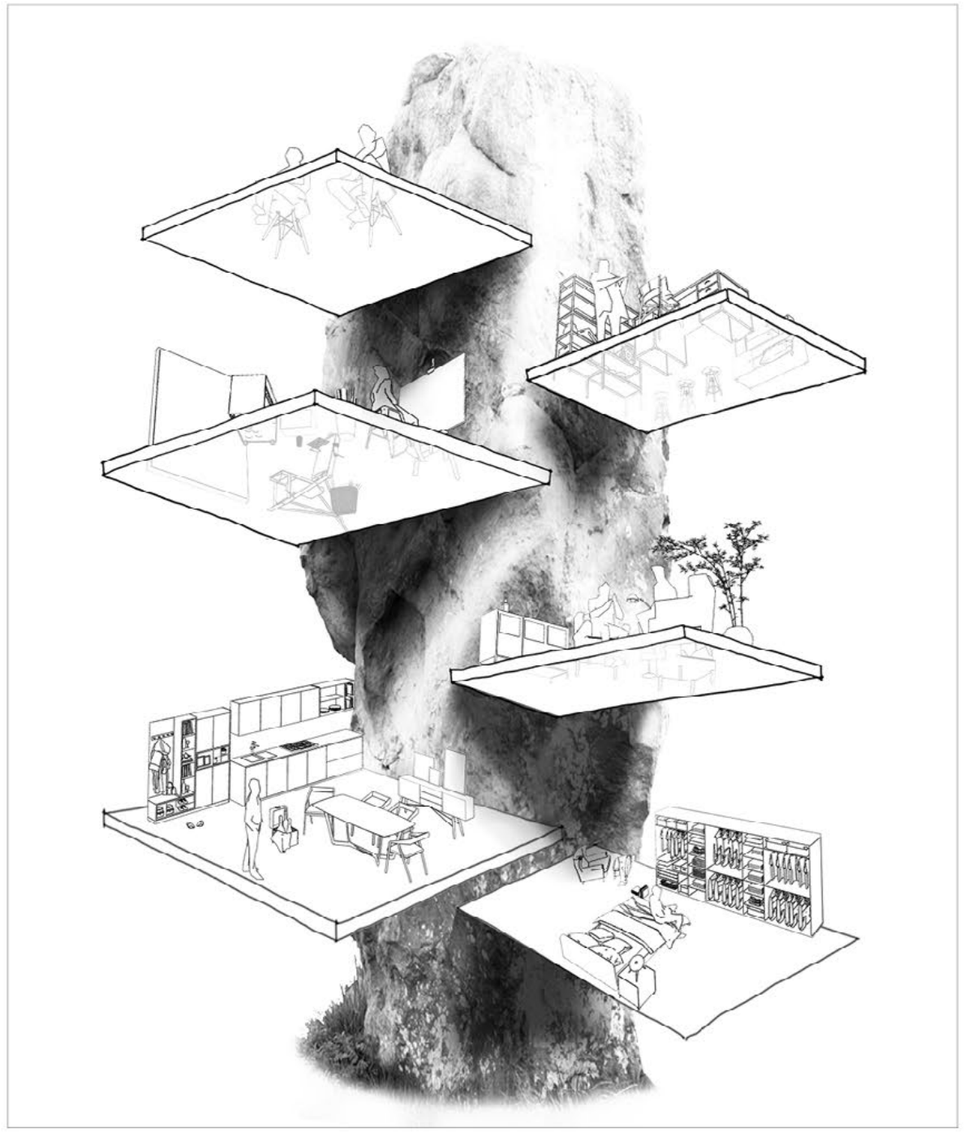
This is a private house designed for a painter couple in Tianjin. At the city level, the design attempts to deal with the chaotic environment of the Five Avenue historic district with various architectural styles with a silent attitude. The exterior adapted to the environment with te form of an arched roof, but it is unfamiliar in proportion. There are no Windows on the street facade to maintain the integrity of the whole street interface.

Hidden inside the house is a large stone. By changing the geometrical positions, light, and structural relationships and other relationships of the stone, a sense of non-daily atmosphere is created. The living Spaces on both sides of the stone are staggered, which are both open and private. Accurate and concise interior materials and details make the space light and clear.



## STIE PLAN

The house is narrow and vertical because of the site which is 14m long and 5.5m wide. The texture of the surrounding houses area is clear. The house is slightly backward along the street facade and slightly protruding on the back, so that the house has certain particularity in the texture. The house is separated from the house on the east side by a gap to satisty indoor light, while the exterior style corresponds to the house on the west side, which has an arched facade.

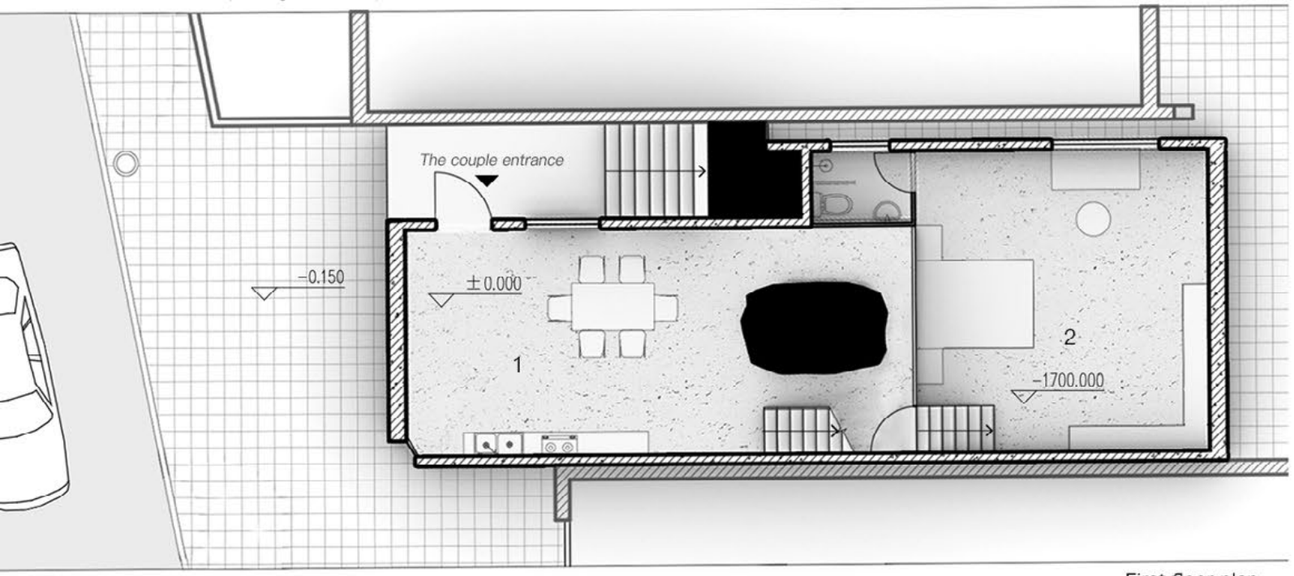


Stone has strong natural properties which means return. The living space is arranged around the stone, and the light from the top allows light to flow down the stone, emphasizing the spirituality of the stone. Stone is also the core structure of the house.

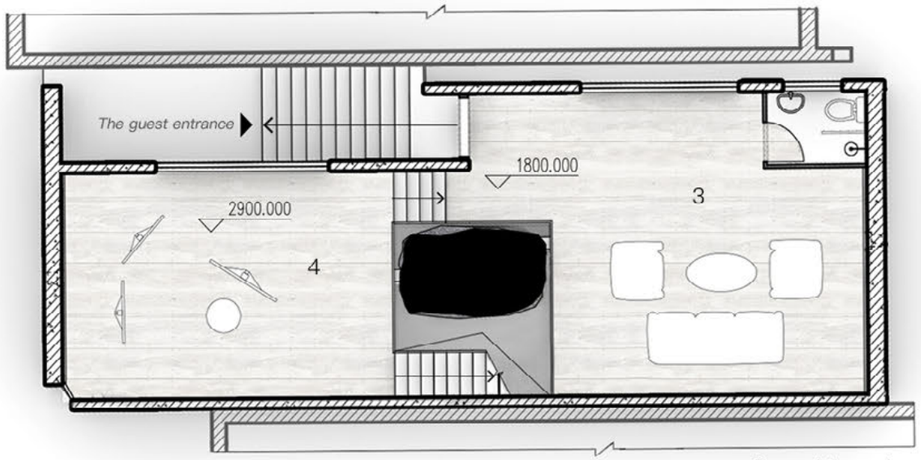


## PLAN

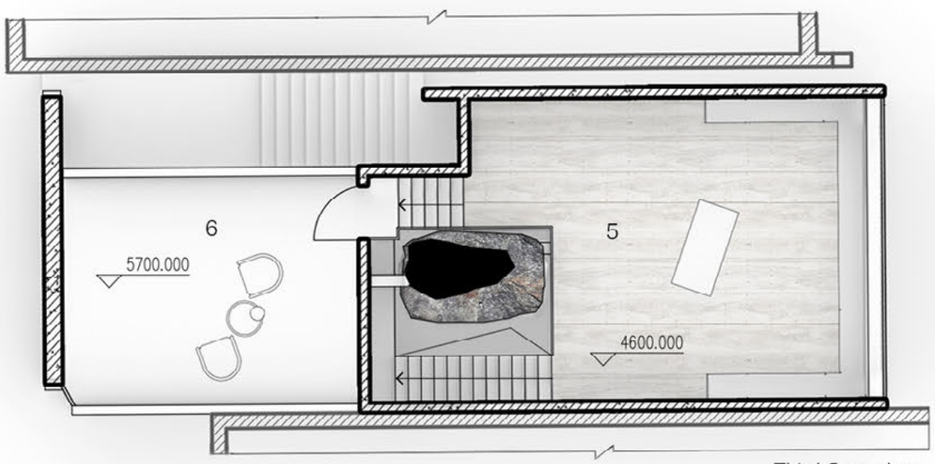
The floor remains in a yielding relationship with the stone




First floor plan




Second floor plan




Third floor plan

1. dining room
2. bedroom
3. living room
4. studio
5. study
6. terrace



*Studio & Gap & The old wall*

An old wall was visible through the window facing the gap. Diffuse light satisfies the light requirements of the studio.

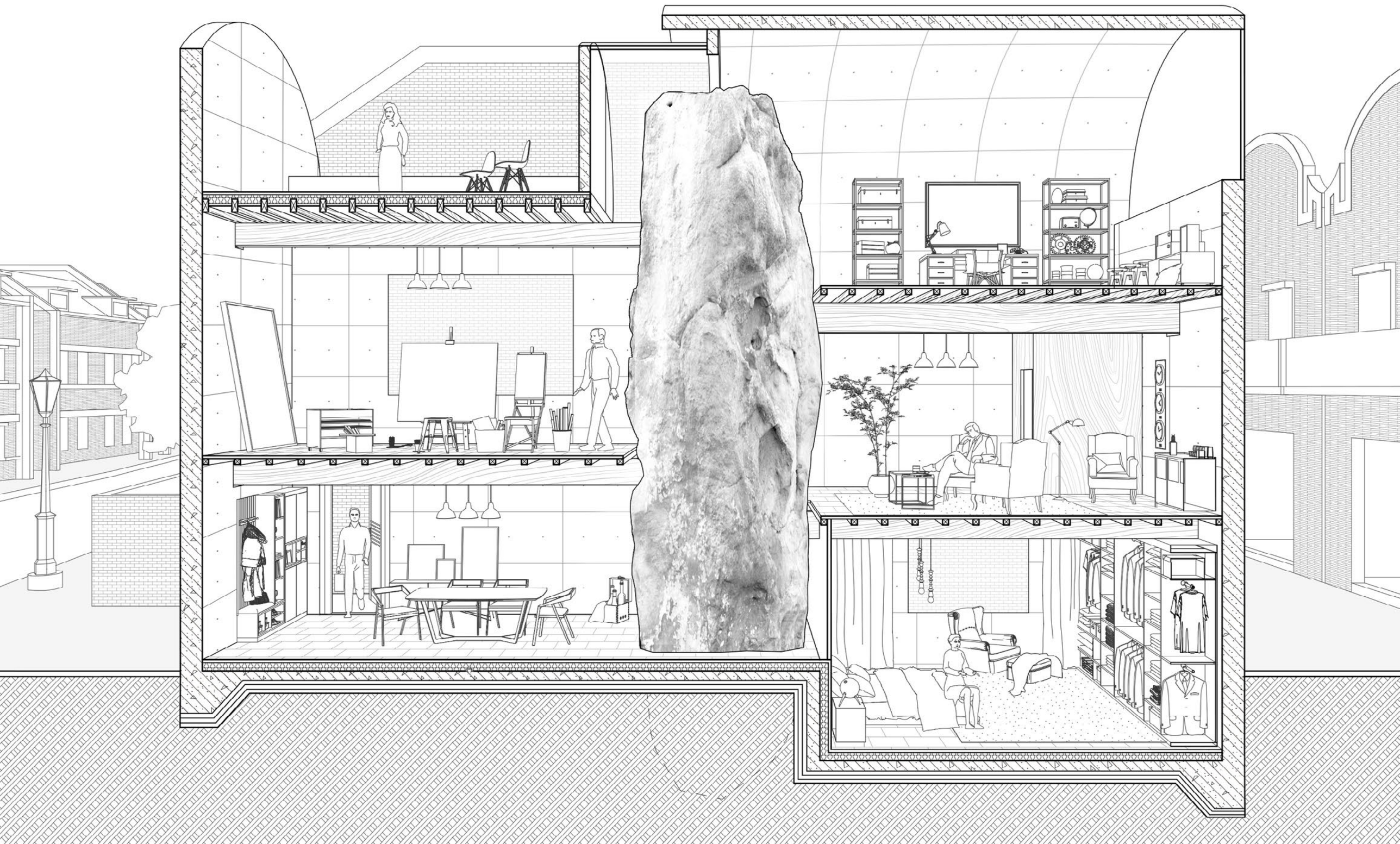


*arched roof*

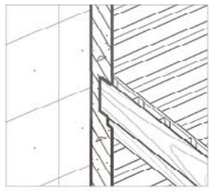
The arched roof frames the landscape, correspond to other houses.

## SECTIONAL PERSPECTIVE

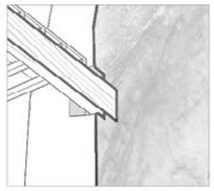
Light wood is fixed in heavy concrete and stone. Gaps between the wooden floors and the stone allow light to pass through, and the height difference between the functionally connected floors is small. At least three Spaces can be perceived simultaneously in different locations.



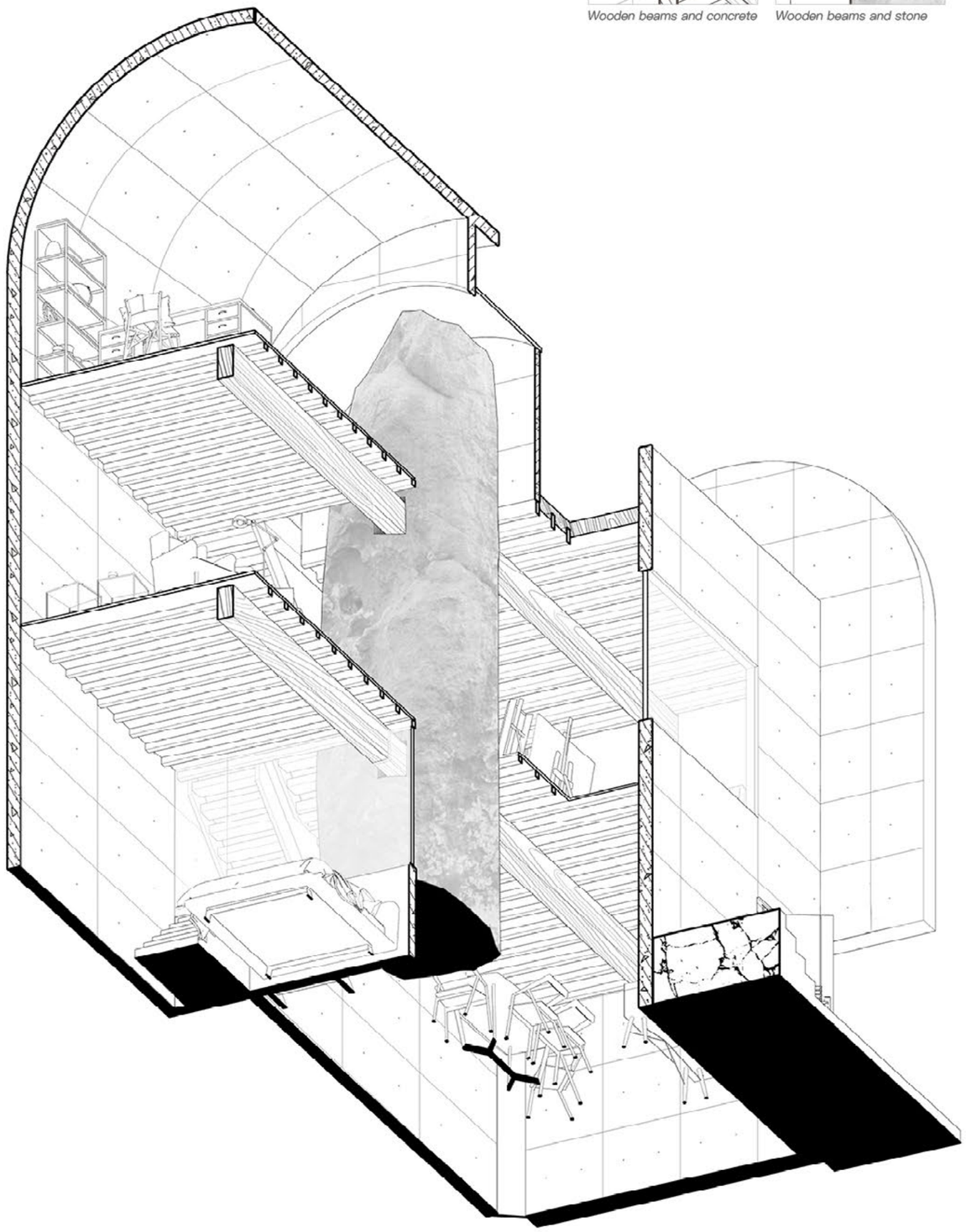
It shows the design of the intersection of wood beam, stone and concrete, and the influence of the structural design of wood beam on people's feeling in space



*Wooden beams and concrete*



*Wooden beams and stone*







# 03 The shelter of swimming pool

*Big & Small*



Core Studio, 2020 Spring
Instructor: Hu Zinan
Course Number: G2611C2375
Site: Natatorium In University, Tianjin, China
Individual Work

The swimming pool which records the development of the school and era, is now in a state of decay. From the range of elements in that site, I decided three programs are crucial for the space: a swimming space, a quiet study space, and an open space to connect the school with the outside world.

Two shells are placed in the site to form three layers of space -- swimming pool under the shell, learning space in the shell and playing space on the shell. Open holes according to the original trees of the site, and three places can be perceived and communicate with each other at holes but do not disturb each other at other locations.

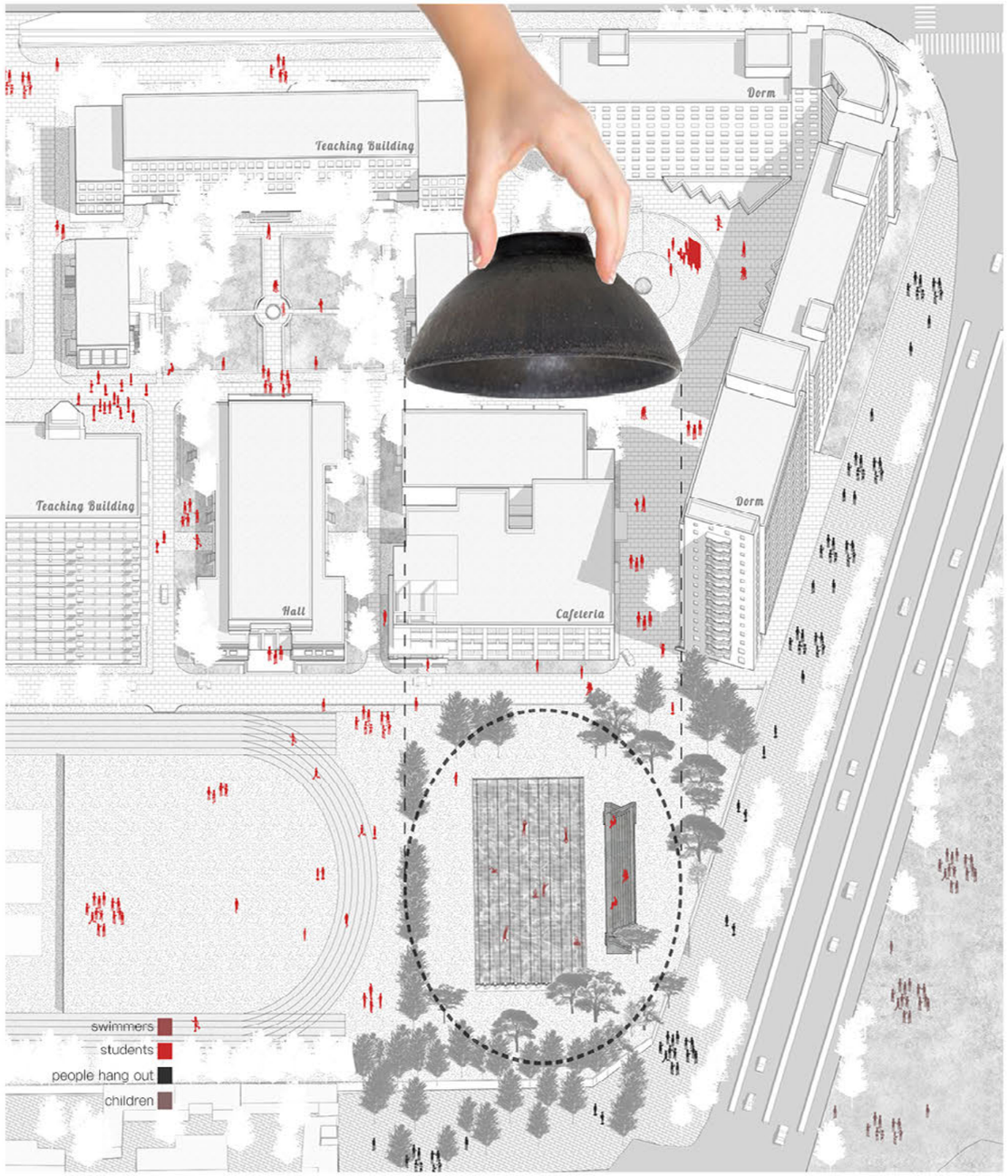
The large structure and small space atmosphere form unity of opposites. At the same time, the complex crowd around the site is also connected.

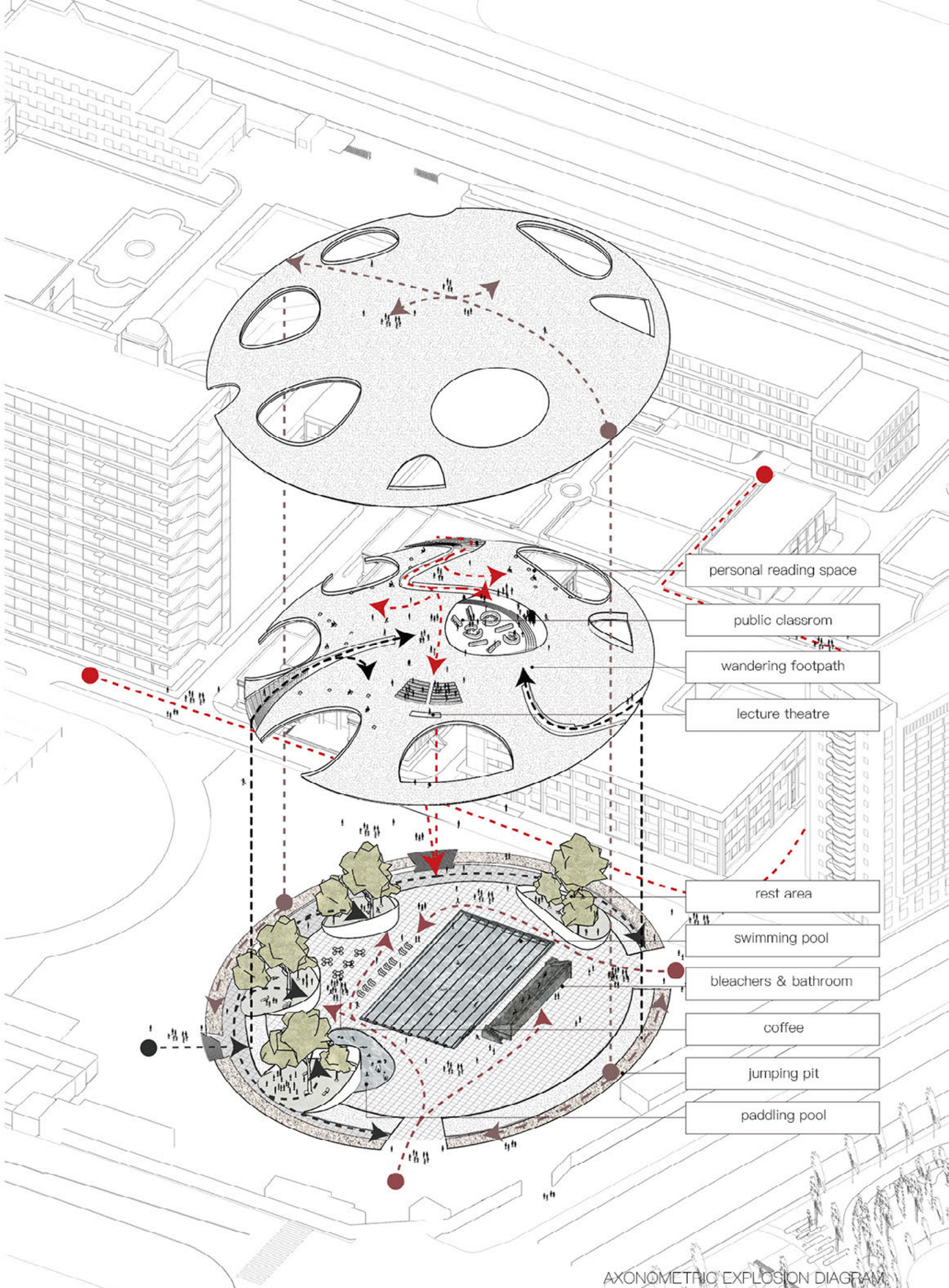
## SITE SITUATION

The open-air swimming pool has been abandoned, with silt piled up inside and a large number of trees remaining around it.



The site is surrounded by a complex mix of people: students, residents walking, children playing, and swimmers. From the range of elements in that site, I decided three programs are crucial for the space: a swimming space, a quiet study space, and an open space to connect the school with the outside world.
Considering the large span structure of the natatorium, the shell structure is used to integrate the site contradiction.



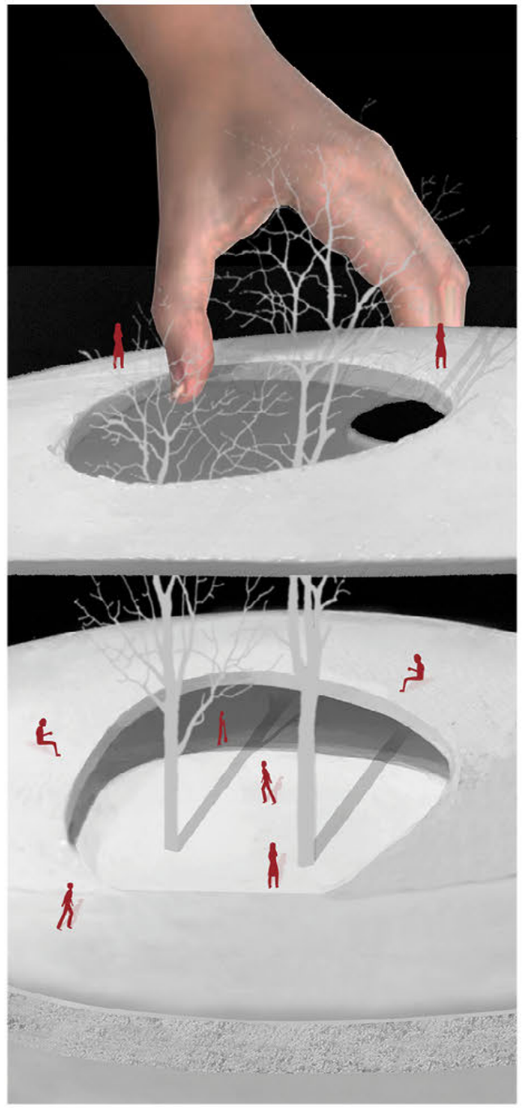




AXONOMETRIC EXPLOSION DIAGRAM

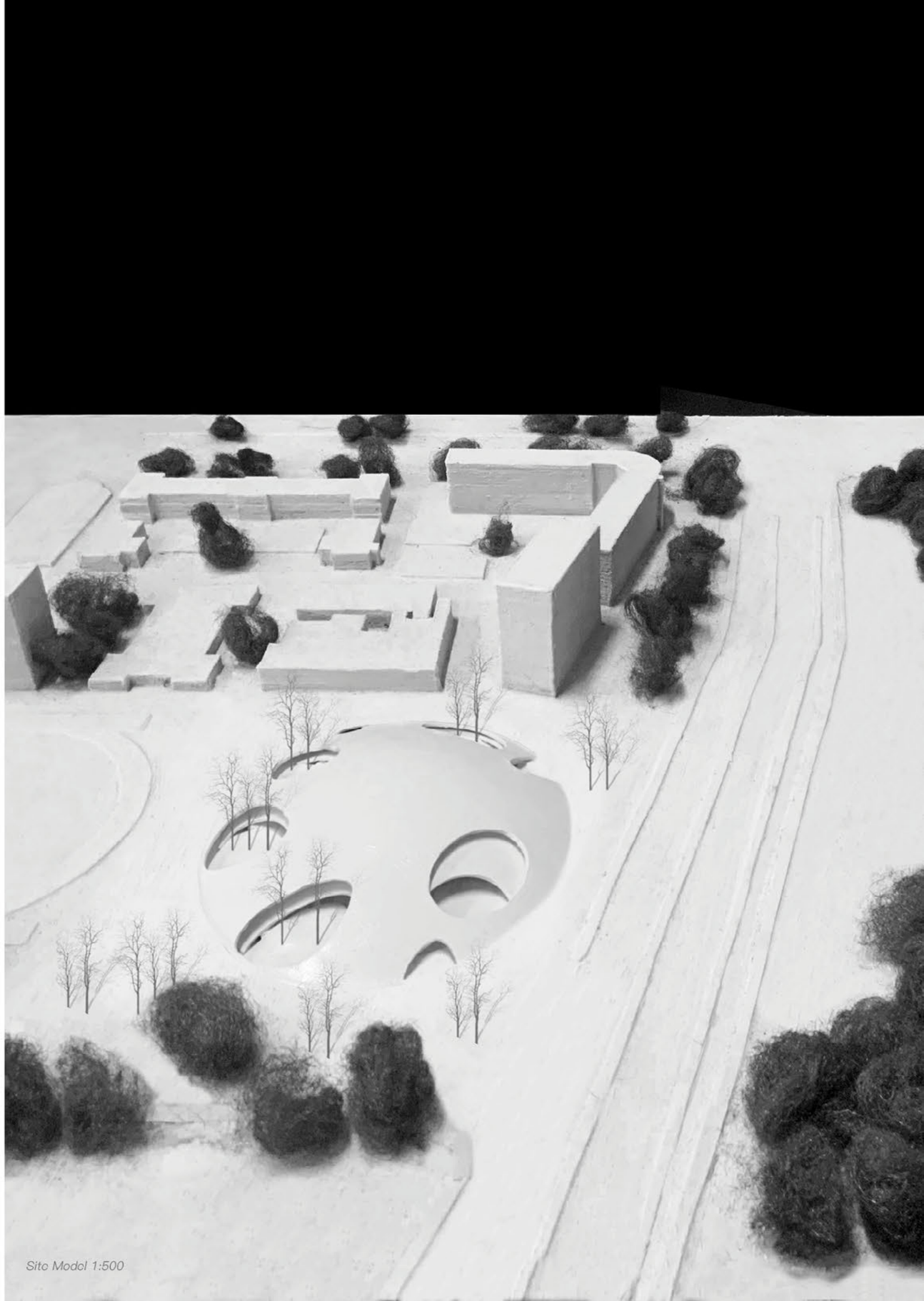




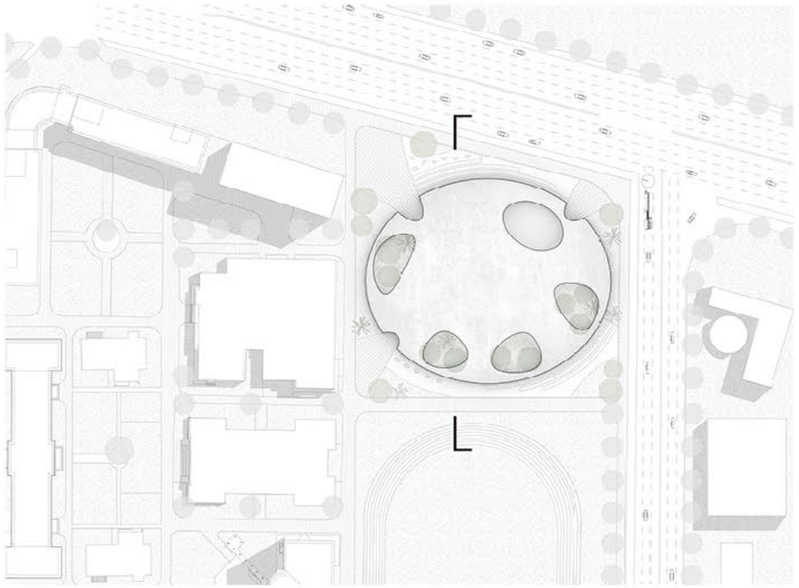
Entrance Model

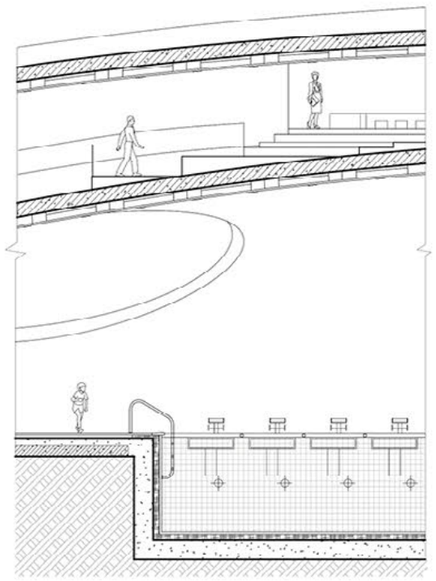


Hole Model

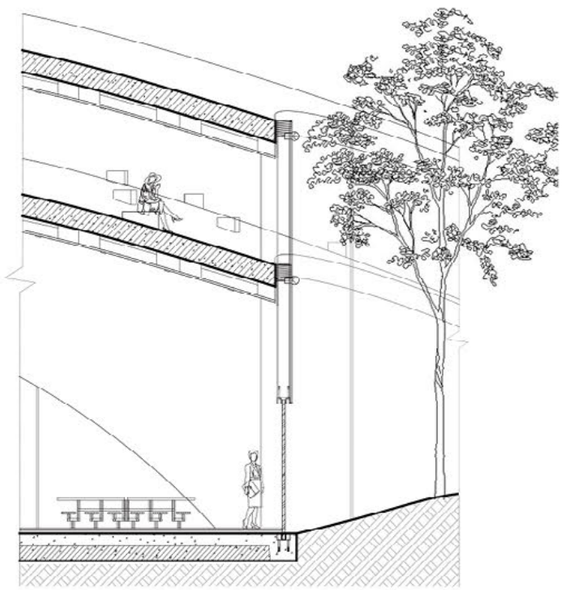


Site Model 1:500

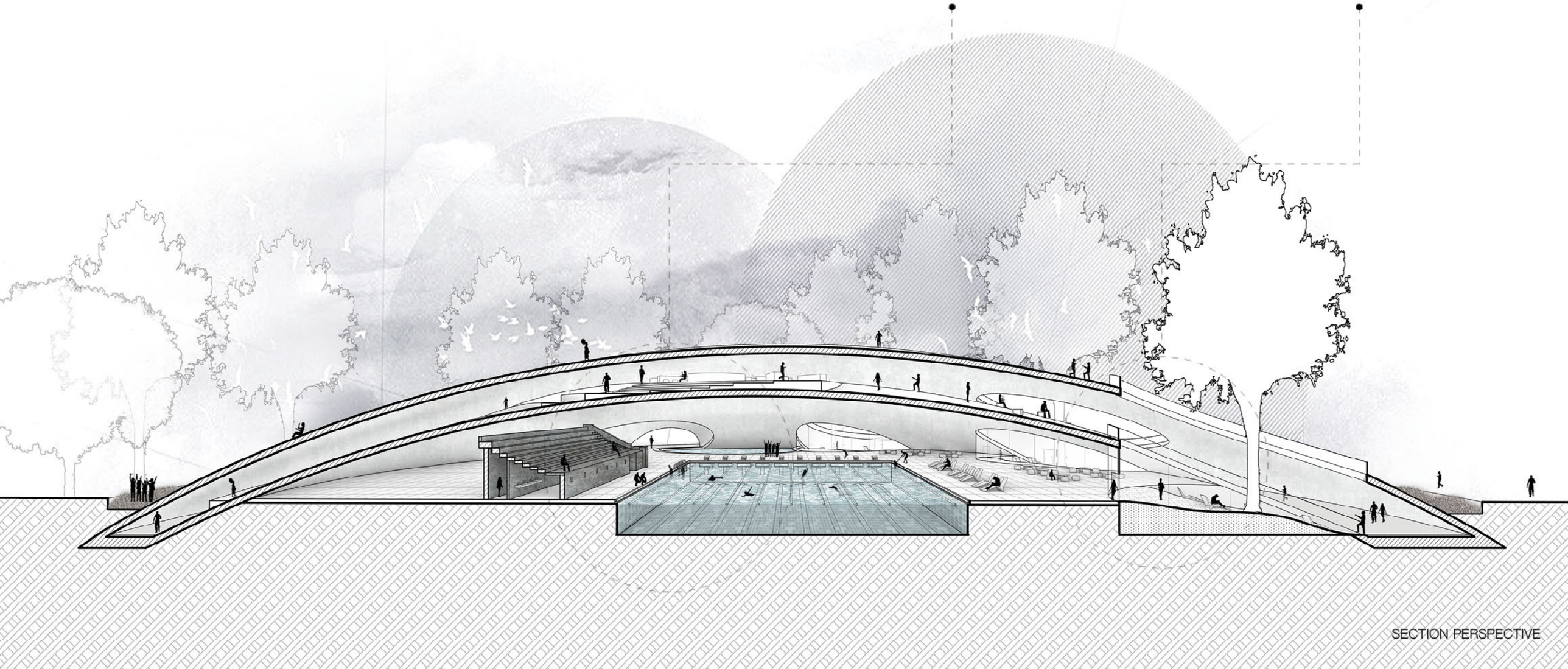




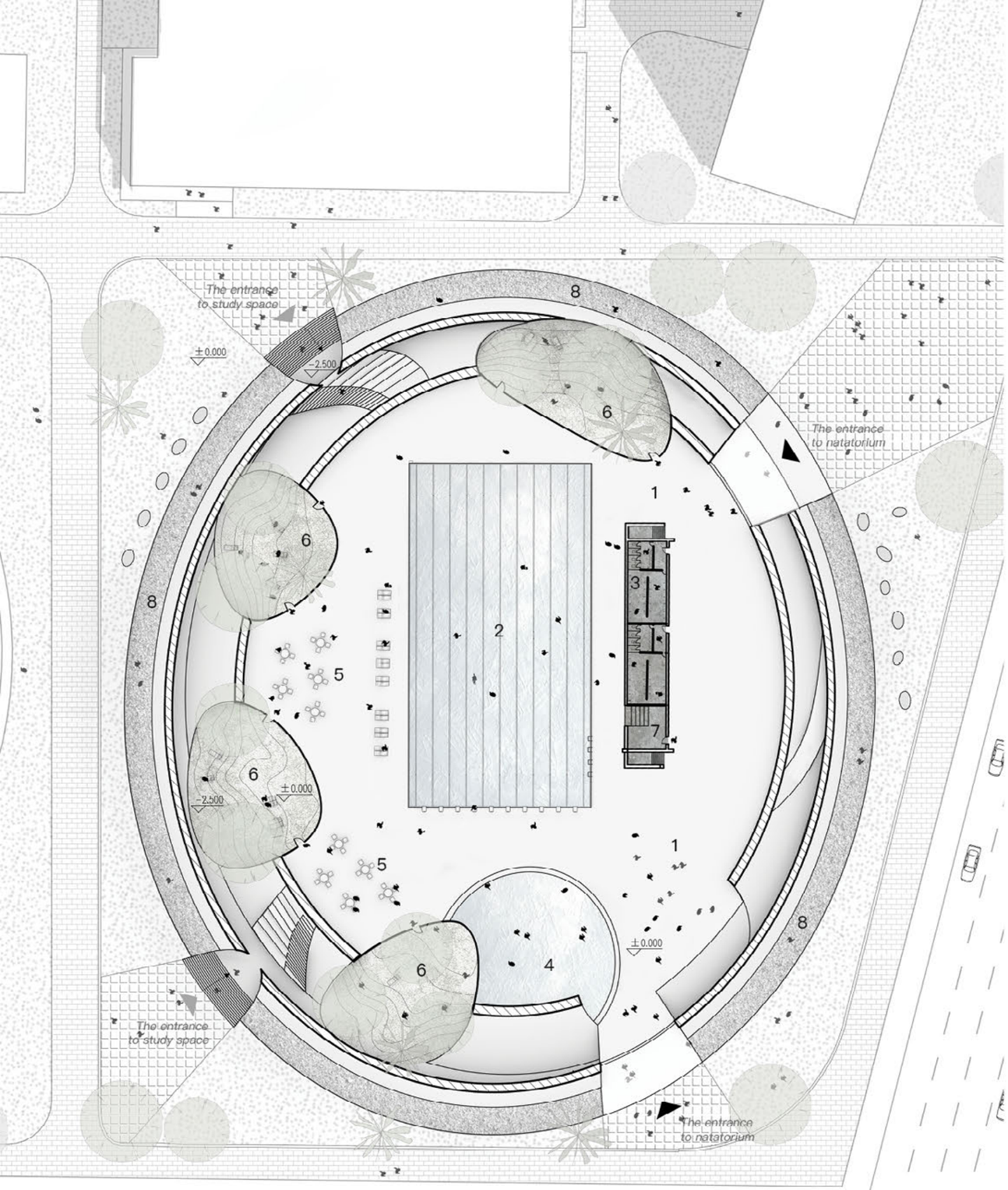
note diagram 1



note diagram 2



SECTION PERSPECTIVE




1.hall
2.swimming pool
3.bleachers & bathroom
4.paddling pool
5.coffe
6.rest area
7.storeroom
8.jumping pit

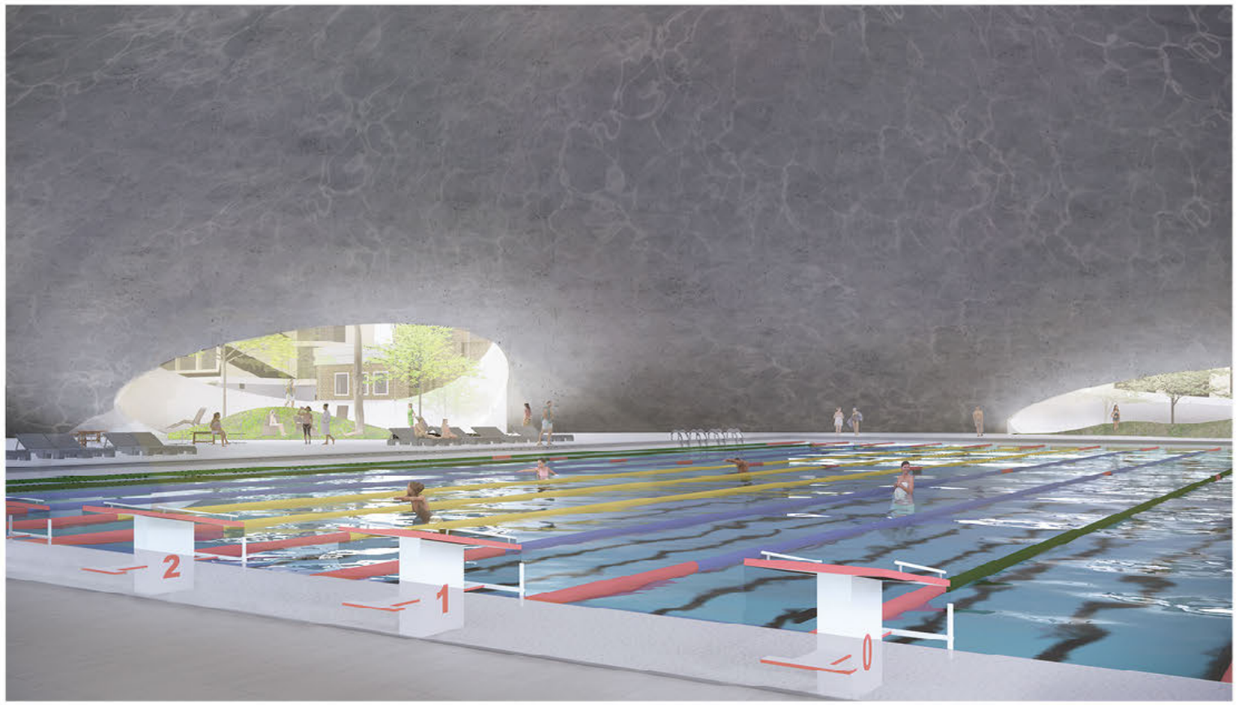
SPACE UNDER THE SELL

Natatorium space



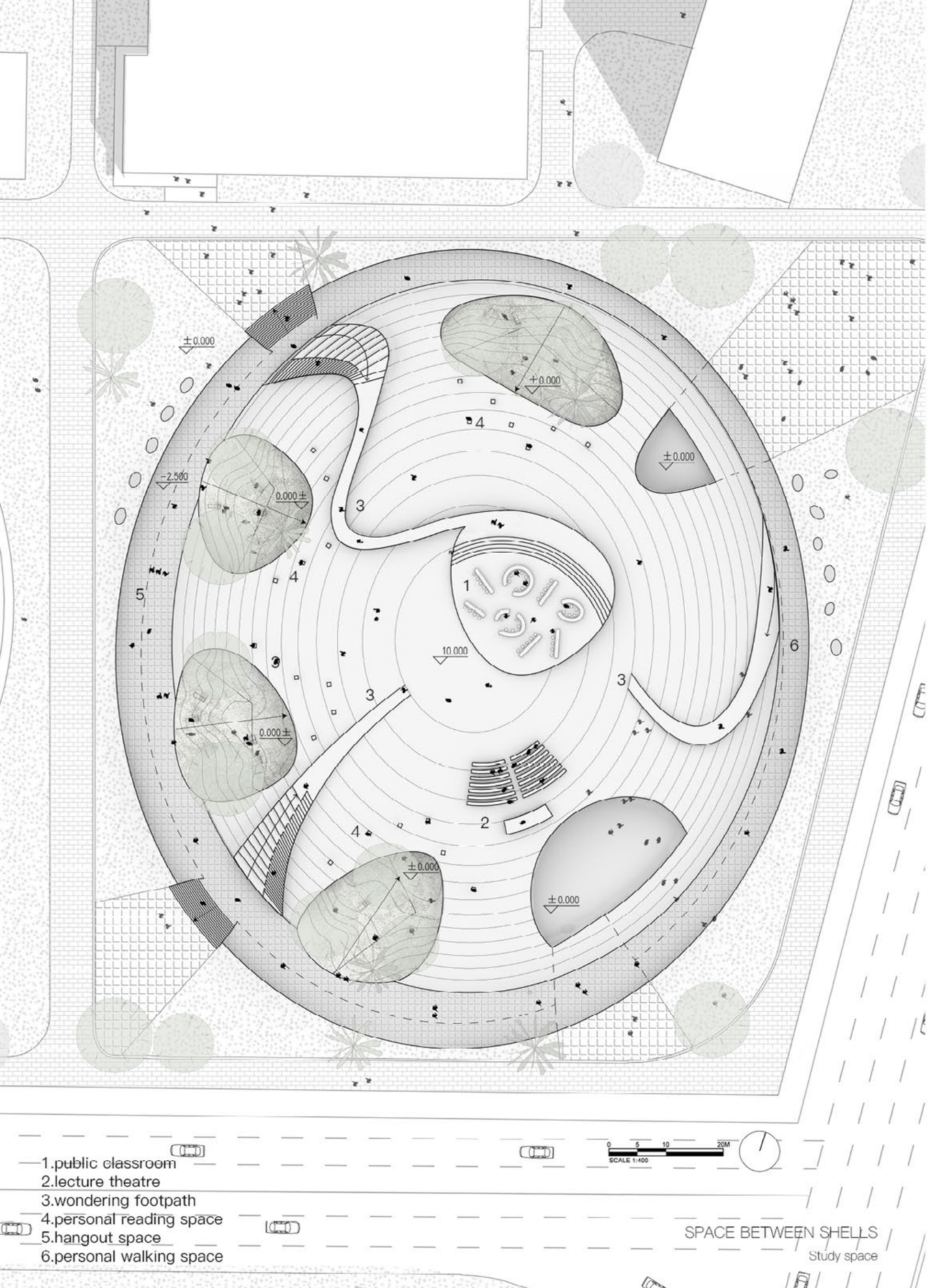
*Shell & Swimming pool & bleachersl*

The dilapidated old bleacher is covered by pure new concrete shells



*Holes & Shell & Swimming pool*

Light enters the swimming pool through holes, and water reflects on the concrete shell




1.public classroom
2.lecture theatre
3.wondering footpath
4.personal reading space
5.hangout space
6.personal walking space

SPACE BETWEEN SHELLS

Study space



*public classroom & wondering footpath*

The dilapidated old bleacher is covered by pure new concrete shells



*Holes & personal reading space & lecture theatre*

On your walk, you pass many study spaces and the light changes



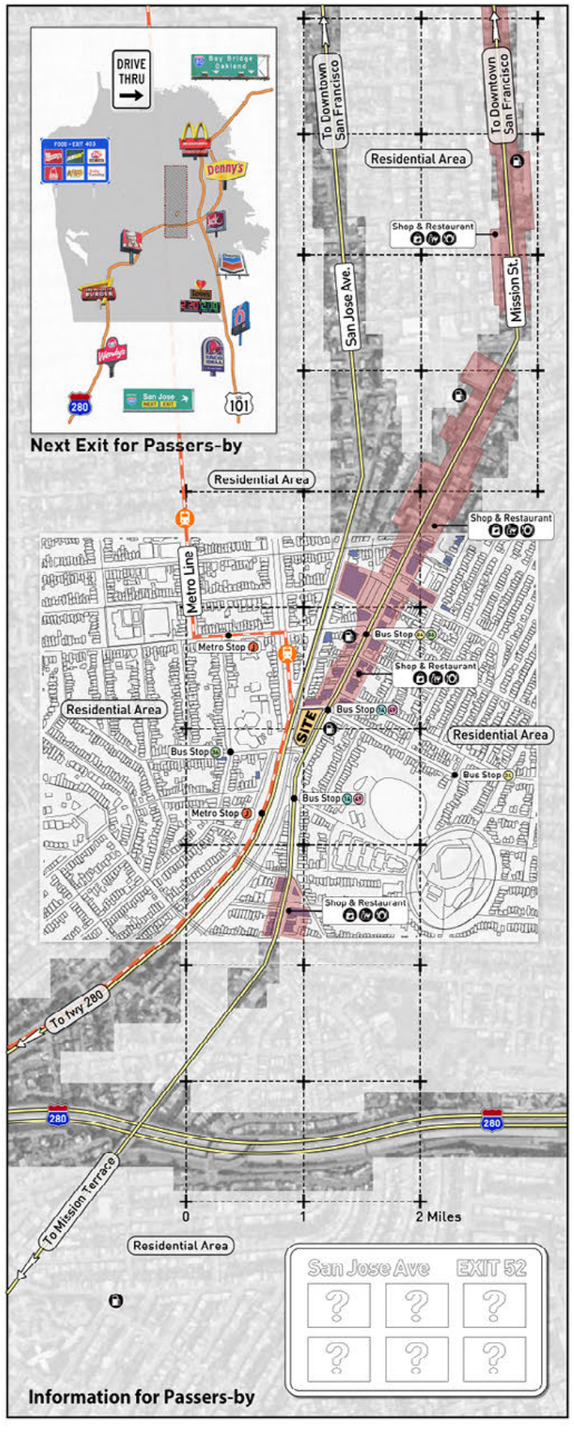



# 04 Flea Market

*Circle & Square*

Core Studio, 2023 Fall
Instructor: Daniel Spiegel
Site: 3550 Mission St, San Francisco, CA
Grounp Work
Collaborator: Chao Sun

This is a community center, and the overall design concept is putting a flea market in it. Our site is in a boundary location on a city perspective, so we need to serve not only the residents here, but also those driving by. People often need to fill up and eat at traditional gas stations, so we'll have more food space for them as well. On a large urban scale, we realized that the site was on a continuous and complete slope, and we also wanted to continue this slope into the building, so we designed a semi-outdoor ramp and circular elements to cater to this idea. We use three types of circles to respond to different situations. Many pedestrians will come to this place, so we designed a circle ramp here to guide people into our building's roam path, people can walk around our building. In this place we use a whole circle to cater to the flea market/performance and food court function. It is also a double high space. And two half circle ramps outside with this space. In the north, we use a circle path to guide people to view downtown San Francisco. This was our overall design, using circular elements and ramps to complete a flea market and a new community center, and turning the roof into an important concept in the design.

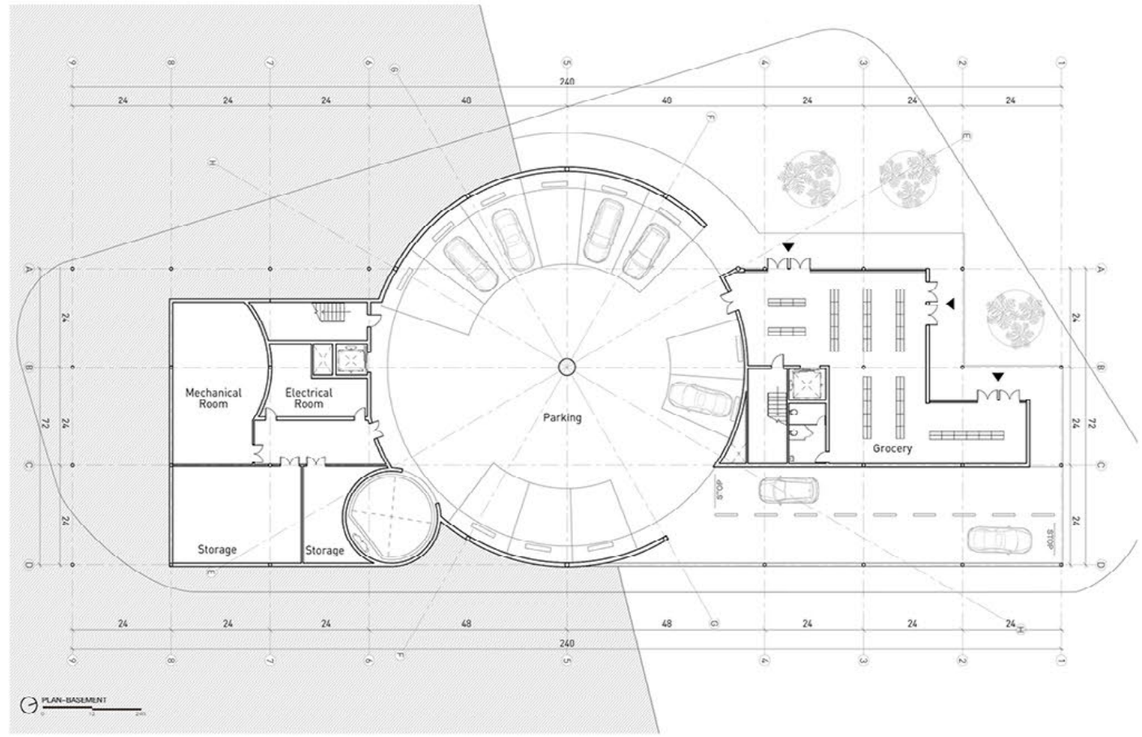




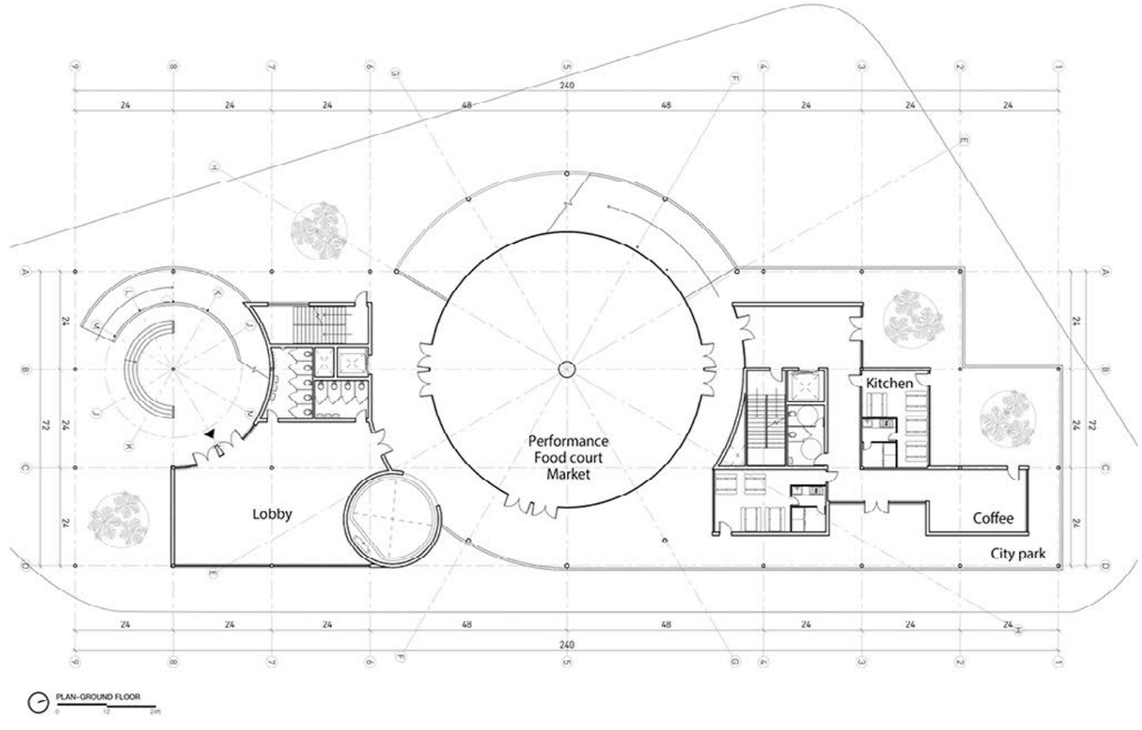


## Two Main Features

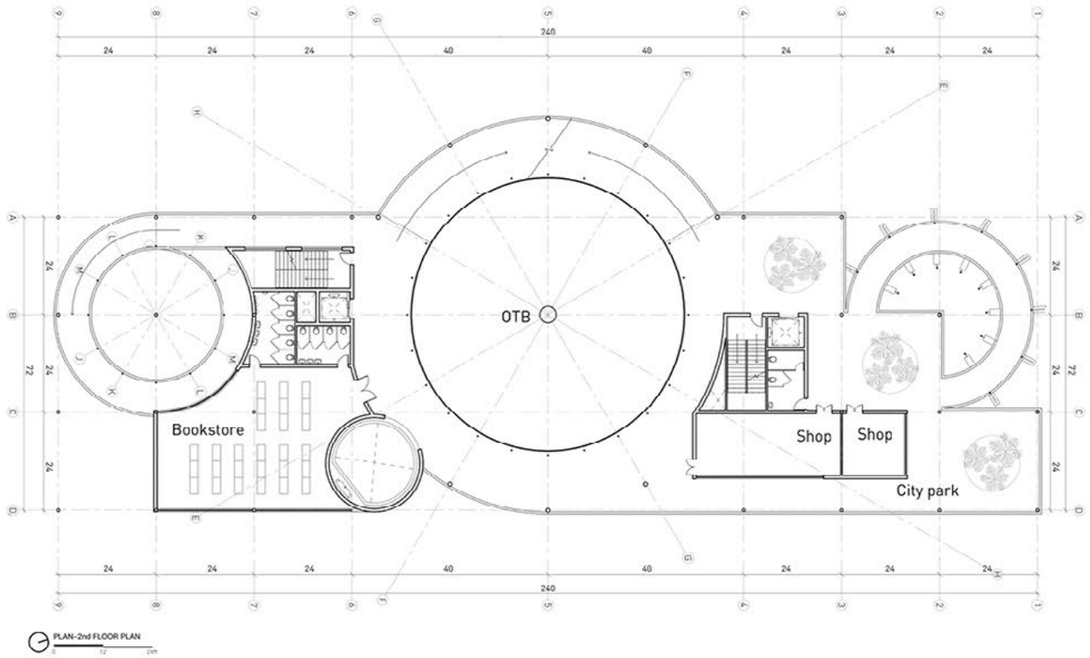
This site has two main features. One is passers driving by who pay attention to what kind of service area is here and the other is residental who need flea market. Tha data indicates that a large number of ownership of occupied units are renter occupied, which means that people move frequently. Consequently, there is a particular need for locations where one may purchase used goods. The site is in a boundary location on a city perspective, so we need to serve not only the residents here, but also those driving by. People often need to fill up and eat at traditional gas stations, so we'll have more food space for them as well.




Baesment Plan




Ground Floor Plan

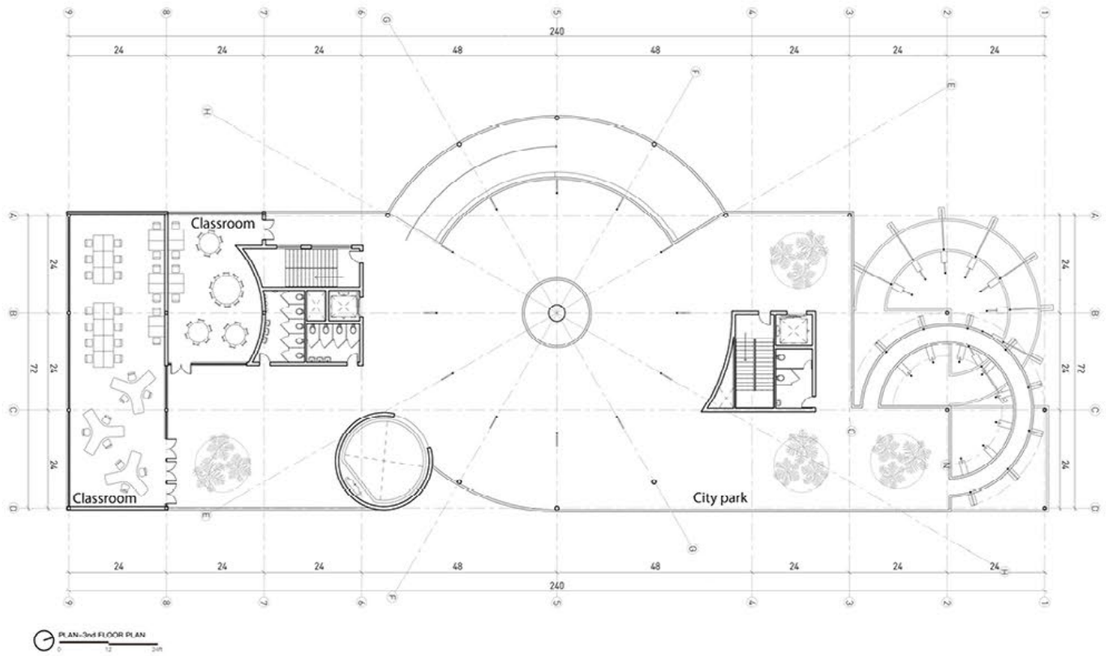



2nd Floor Plan



*Market & Food court & Perfomance*

Different activities are happened at this double height space during different days.




3rd Floor Plan



*Cables & Circles*

Golden cables form an interesting landscape.

plastic mesh

aluminum cable

W24 steel I-beam

steel cable

steel I-beam

W24 steel I-beam

steel I-beam

2' concrete shear wall

1' diameter steel column

4' diameter steel column

STRUCTURE



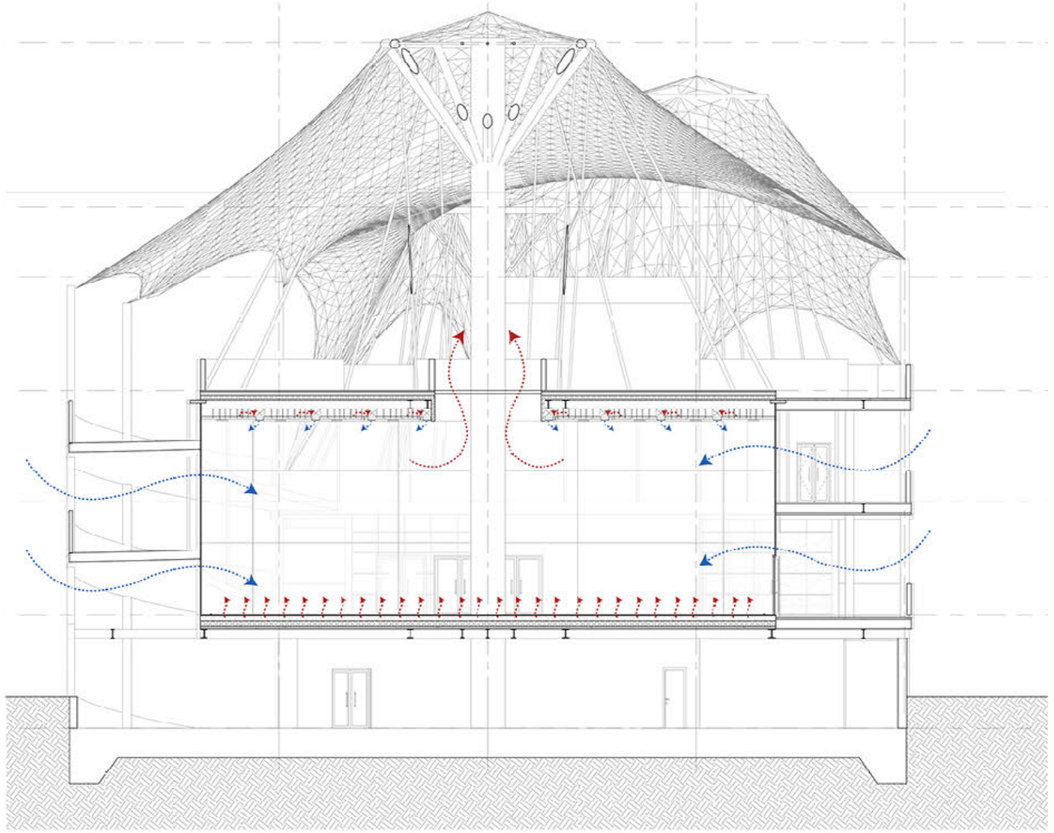

*Kiosk*

Different kiosks come to the roof and people sell or buy goods.

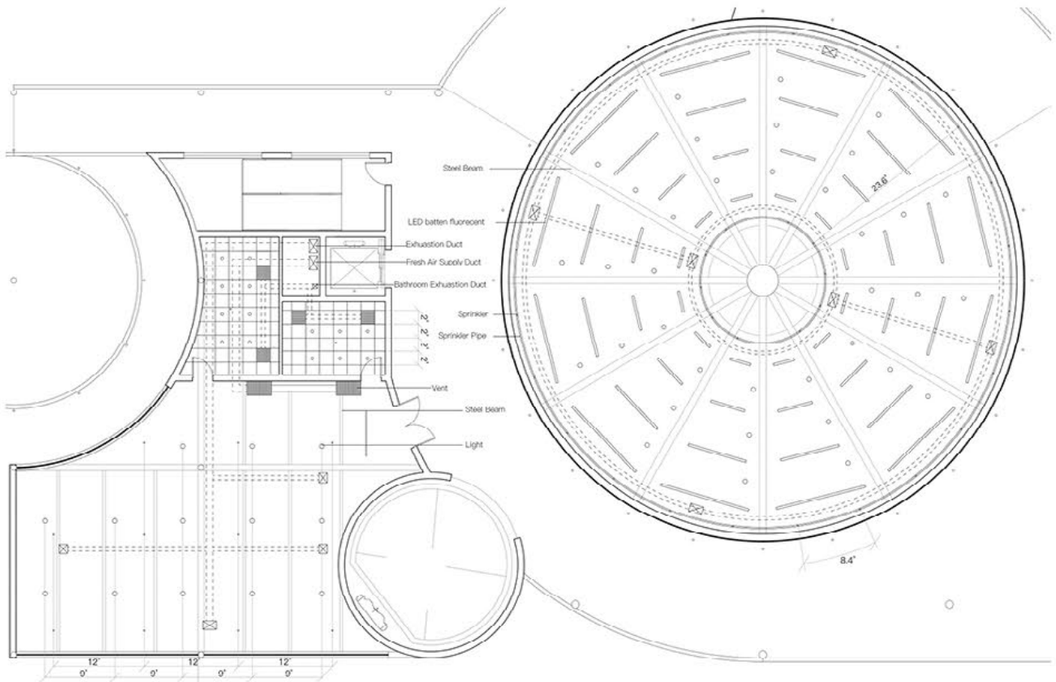


*The Flea Market*

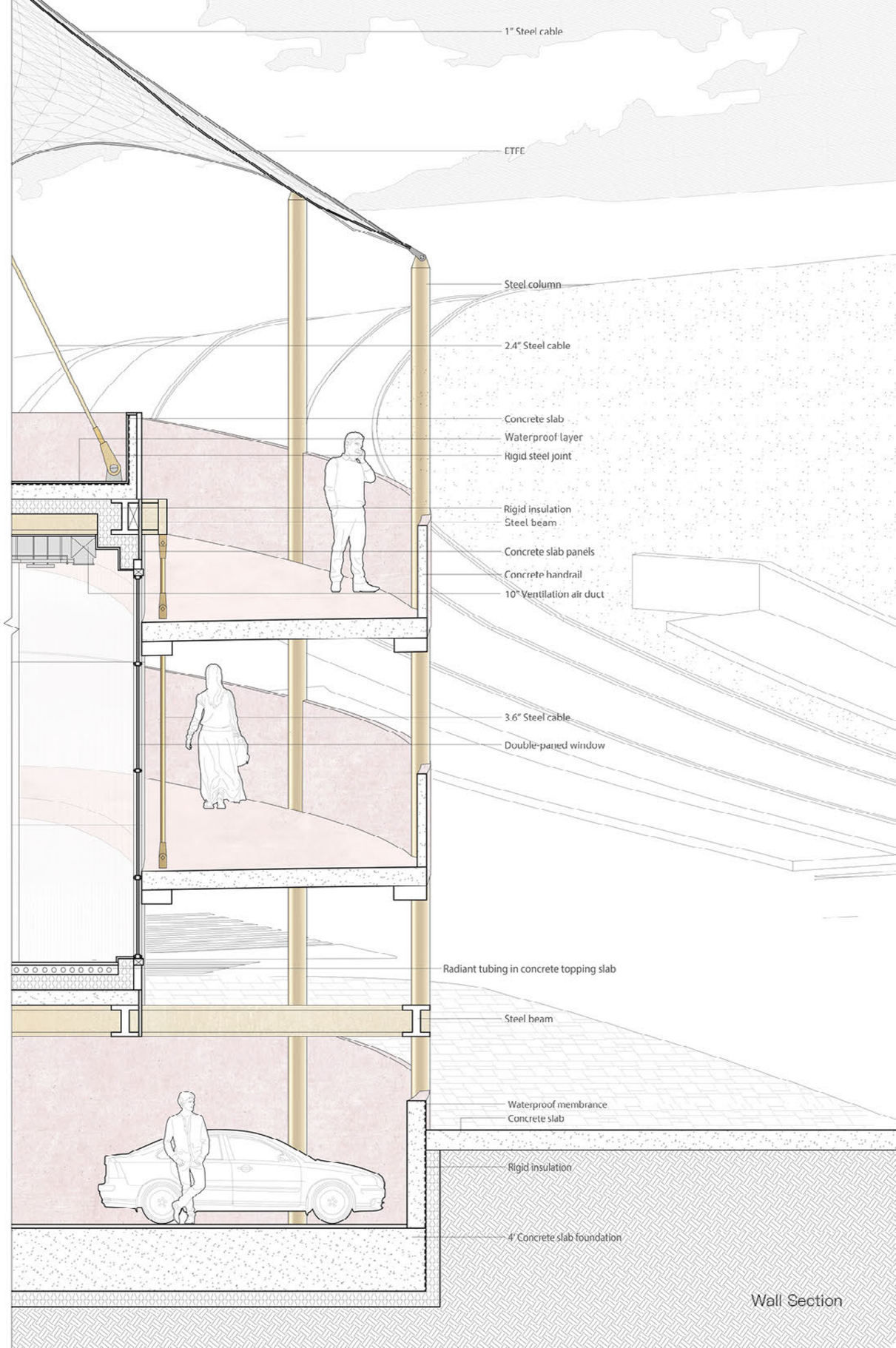
Circles, squares and structures harmoniously integrate together.



Section




Reflected ceiling plan




Wall Section



All the residential areas and thoroughfares are connected by the flea market. Residents who need to move out can sell their used goods, while newcomers can purchase them at a lower price. After a long drive, drivers can enter and enjoy some food, along with the wonderful view and their leisure time.



# 05 Moraga Heights

*Affordable Housing*

Core Studio, 2023 Spring
Instructors: Tomas Mackey, Claire Parisa, Ben Metcalf, Daniel Simons
Site: Blair Park, Piedmont, CA
Groupp Work
Collaborator: Ailin Wei, Prameet Gupta(Developer), Truman Braslaw(Planner/Counsel)

Moraga Heights is a mixed-income residential project that elevates the experience of living in Piedmont. With its connective architecture and continuous planned dimensions, the project achieves 167 comfortable homes and new public facilities that serve Piedmont residents. Facilities include a daycare center, childrens' library and recreational courts. Moraga Heights also contributes to revitalizing Moraga Canyon by mobilizing resources for expanding Coaches' Field (a key demand for a loved community recreational resource) with an increased capacity parking structure, modernizing the Corporation Yard to serve city needs better, revamping Blair Park and creating new skating features.

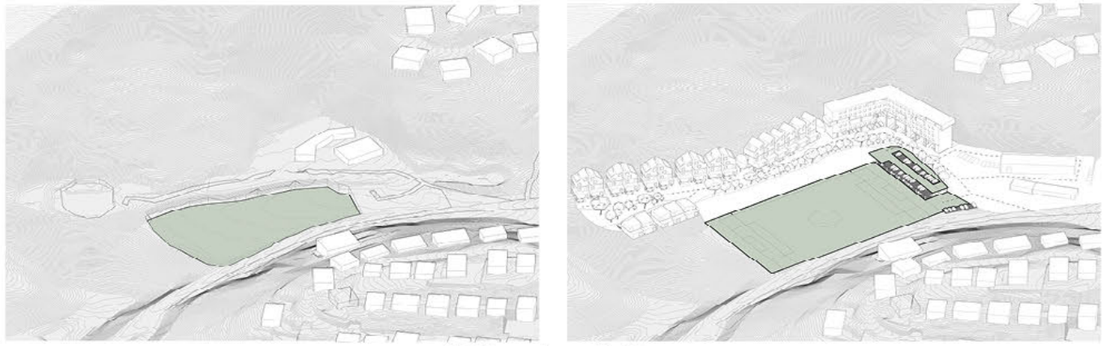
The project's open space and landscape architecture create a continuous, walkable pathway from the North to the South parcel whose curves communicate with the topography of the snaking Moraga Canyon. Along this pathway, pedestrians encounter neighbors, public facilities, pocket gardens, and open spaces that unify the community while respecting the Piedmont design character it sets out to blend with.



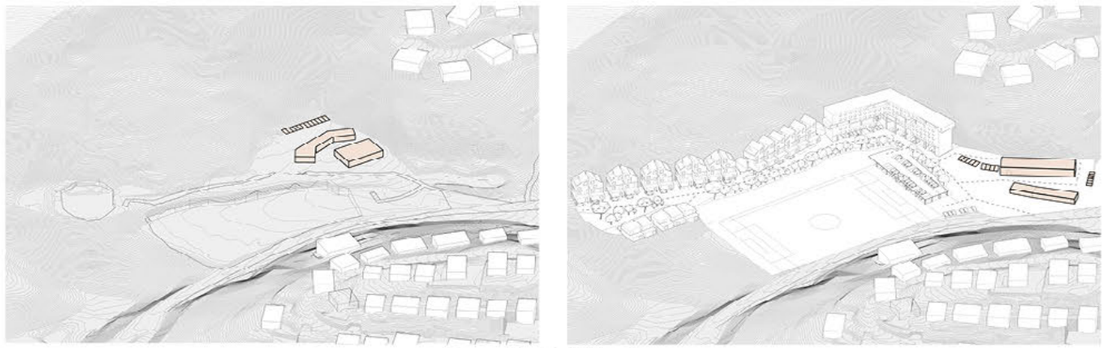
SITE CONDITION

Before

After



Field Expansion and Parking

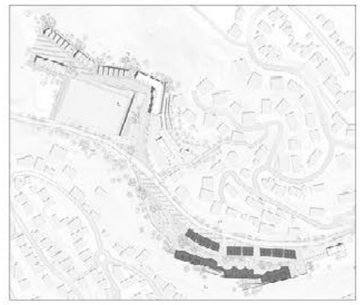


Corporation Yard Relocation

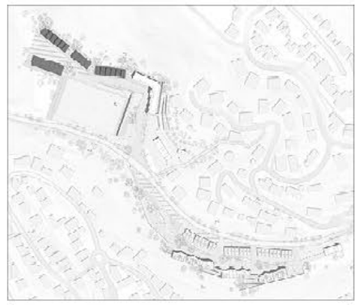
## Residences Development Program



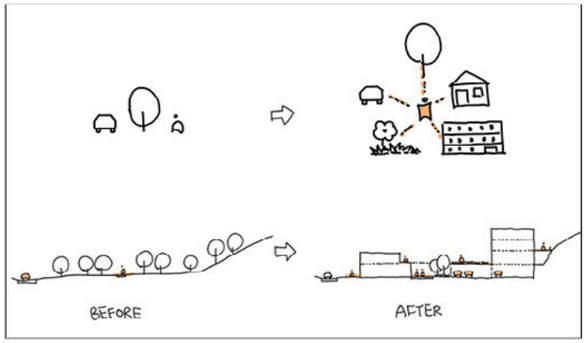
| Affordable residences | |
|---|---|
| Development Program | North Parcel (9% LIHTC) |
| Studio | - |
| 1BD | 21 |
| 2BD | 22 |
| 4BD | - |
| Manager | 1 |
| Total | 44 |
| Affordability | 30%-60%AMI |
| Averagr AMI | 47.4% |

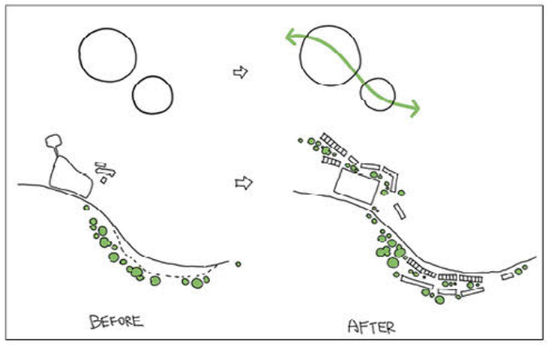


| Affordable residences | |
|---|---|
| Development Program | North Parcel (4% LIHTC) |
| Studio | 15 |
| 1BD | 18 |
| 2BD | 22 |
| 4BD | 25 |
| Manager | 1 |
| Total | 81 |
| Affordability | 30%-60%AMI |
| Averagr AMI | 44.9% |

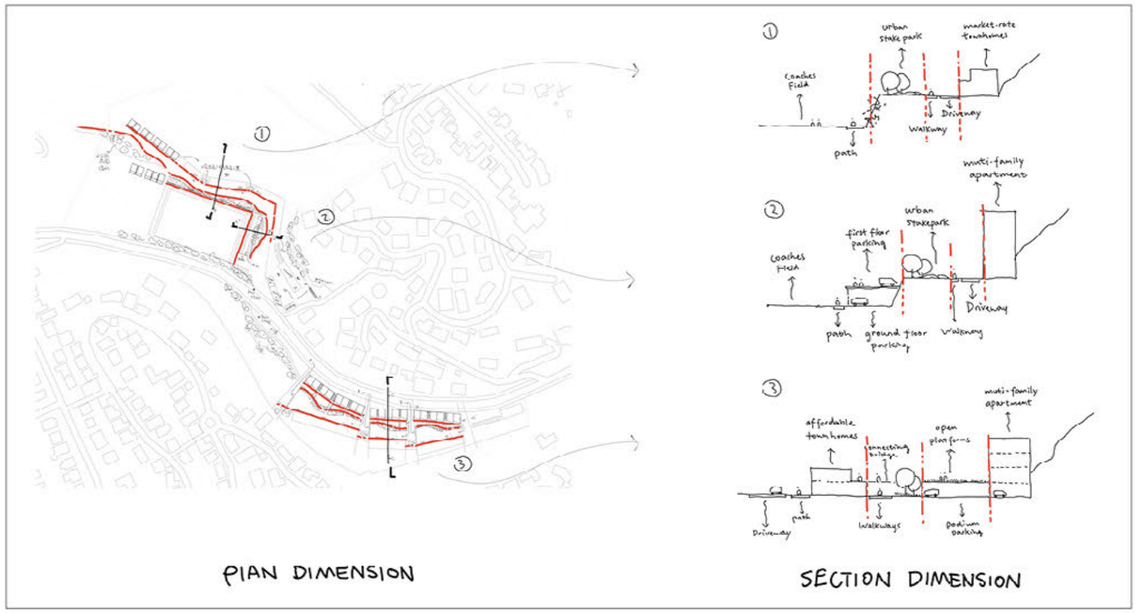


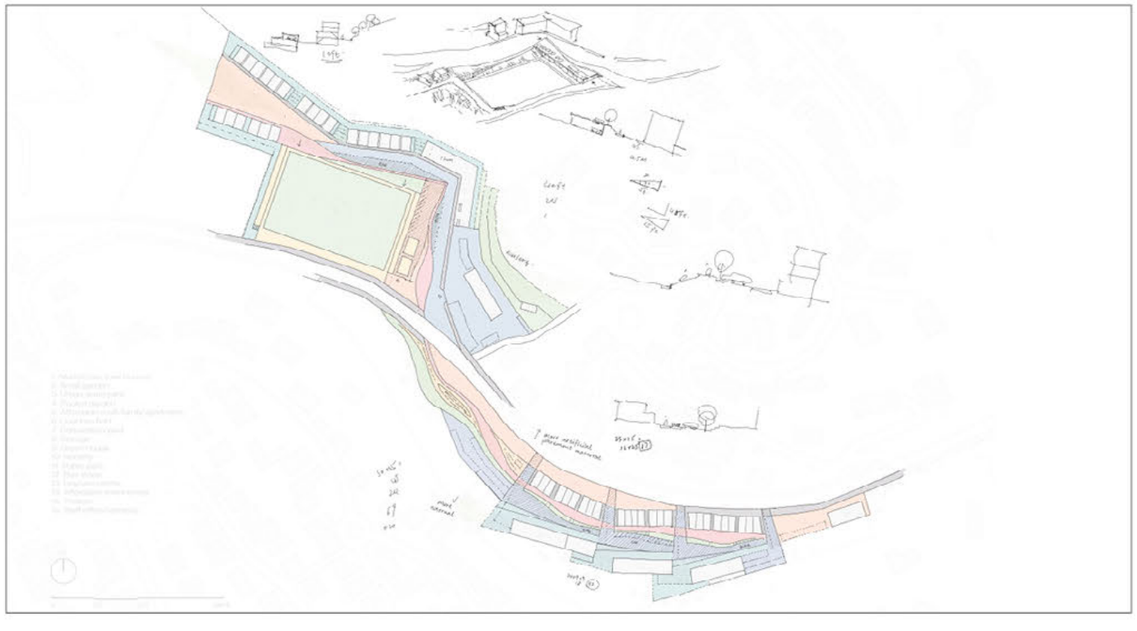
| For sale townhome units | |
|---|---|
| For sale townhome unites | Count |
| Type 1 - 1000 SF (views) | 5 |
| Type 2 - 750 SF (views) | 5 |
| Type 3 - 1,750 SF (luxury) | 16 |
| Type 4 - 1,000 SF (luxury) | 16 |
| Land value capture for Piedmont | $9.9M |
| EIFD bonding proceeds | $13.1M |




**DESIGN CONCEPT**



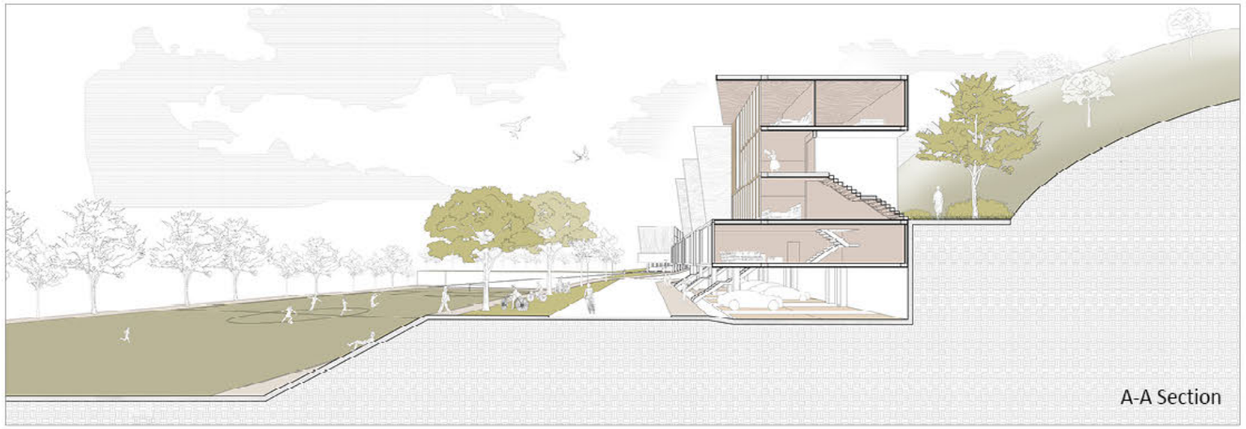





1 Market-rate townhomes
2 Community shared garden
3 Coaches field
4 Bicycle parking
5 Affordable muti-family apartment
6 Lobby
7 Upper floor parking
8 Pickleball court
9 Ground parking
10 Bus stop
11 Corporation yard
12 Fuel tank
13 Tooling
14 Storage
15 Nursery
16 Green house
17 Urban skate park
18 Plaza
19 New public park
20 Parking
21 Affordable townhomes
22 Community Library/community room
23 Mechanical room
24 Leasing office
25 Laundry room
26 Mail room
27 Lobby
28 Daycare center
29 Trash room
30 Storage room
31 Staff office/cafeteria

N

Ground Floor Plan



A-A Section



B-B Section



C C Section



*Apartment & Green landscape & Soccer Field*

Affordable housing in north parcel



*Continuous green street between affordable housing*

Affordable housing in south parcel



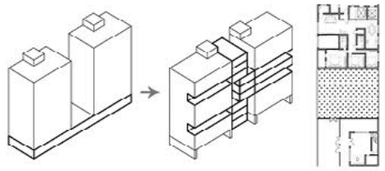
# 06 The Reinvention of Residential Buildings in China

*Public & Private*

Core Studio, 2020 Fall
Instructor: Shu Ping
Course Number: G3038C2375
Site: Tianjin, China
Grounp Work
Collaborator: Chen Zhaojie
Contribution: Research, design, plan, section, render

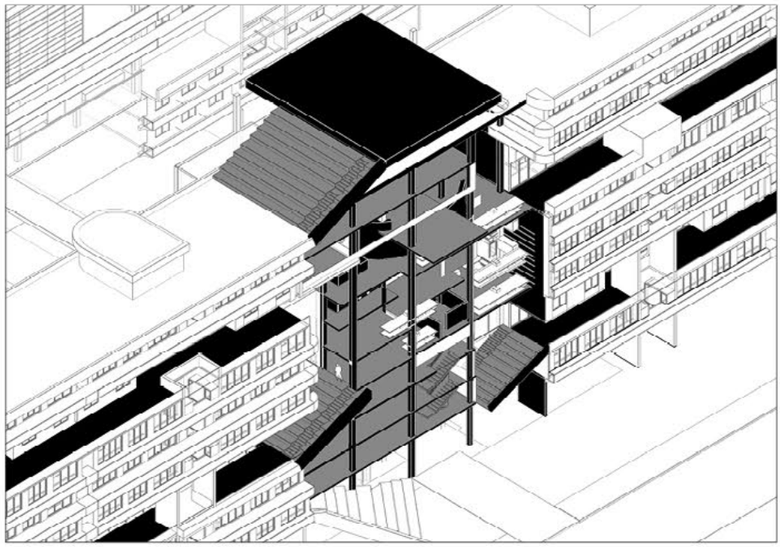
The site is located in Tianjin city, China. The residential buildings here have been built for a long time and have formed a very mature form. Most of these buildings are three-sided or four-sided slab-type apartment houses. Public Spaces are located on the ground floor with doors facing outwards. This space of form is not connected, because public space can not effectively serve residents. At the same time, the needs of residents are also increasing, requiring more diverse functions and communication spaces. The relationship between public and private spaces needs to be reorganized.

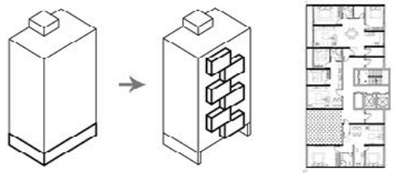
There are three types according to the form of the building: 1. Commerce at the bottom is connected while the residential buildings are separated. 2. Residential buildings with a separate Commerce at the Bottom. 3. Residential buildings with separate Commerce at the bottom and unused gable walls. All their ground floors are raised on stilts, and the public space is extended vertically.



TYPE 1

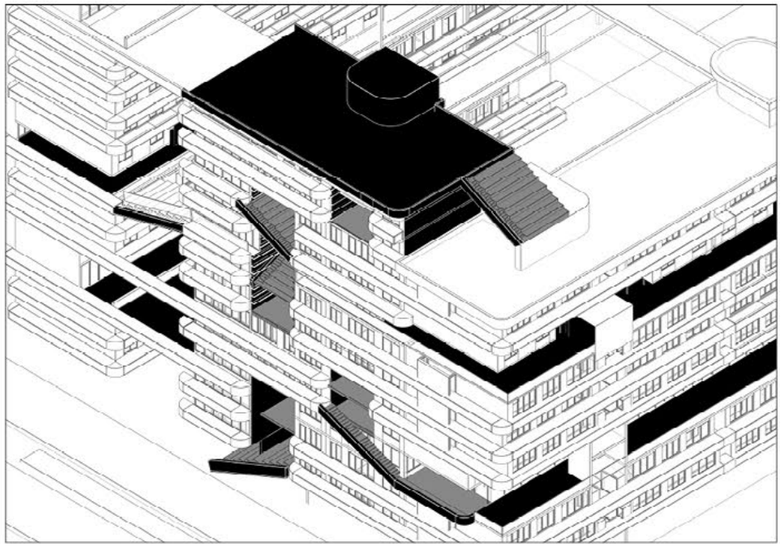
Commerce at the Bottom are connected while the residential buildings are separated.

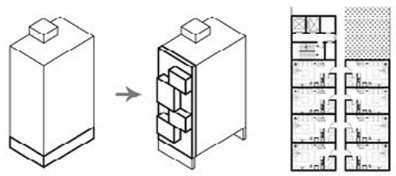




TYPE 2

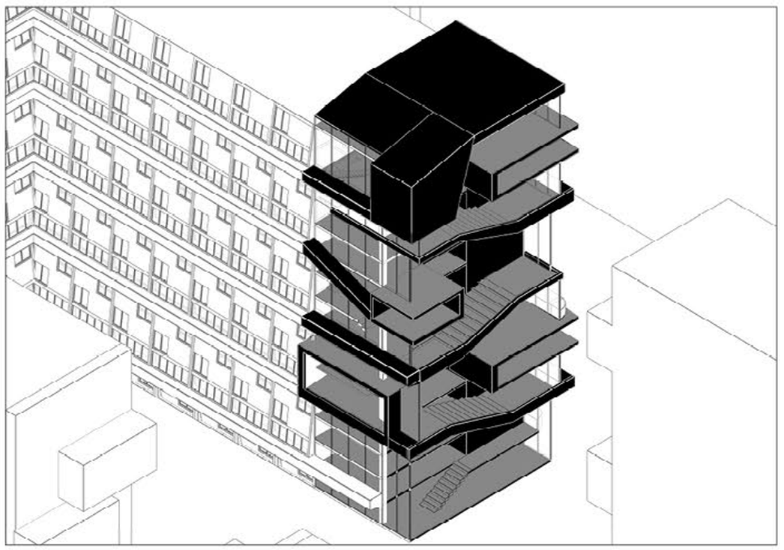
Residential buildings with a separate Commerce at the Bottom.

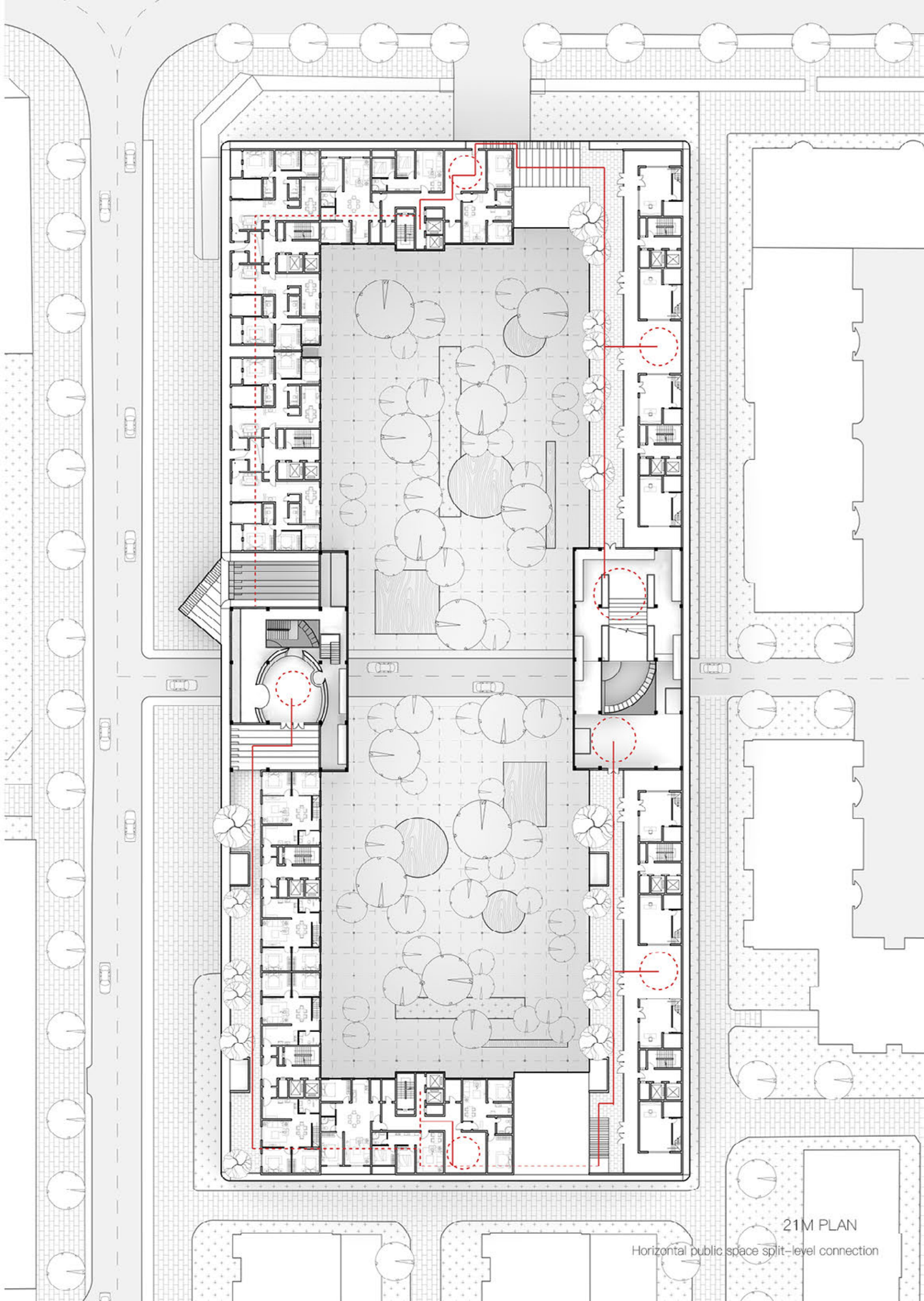




TYPE 3

Residential buildings with separate Commerce at the Bottom and unused gable walls.





21M PLAN

Horizontal public space split-level connection

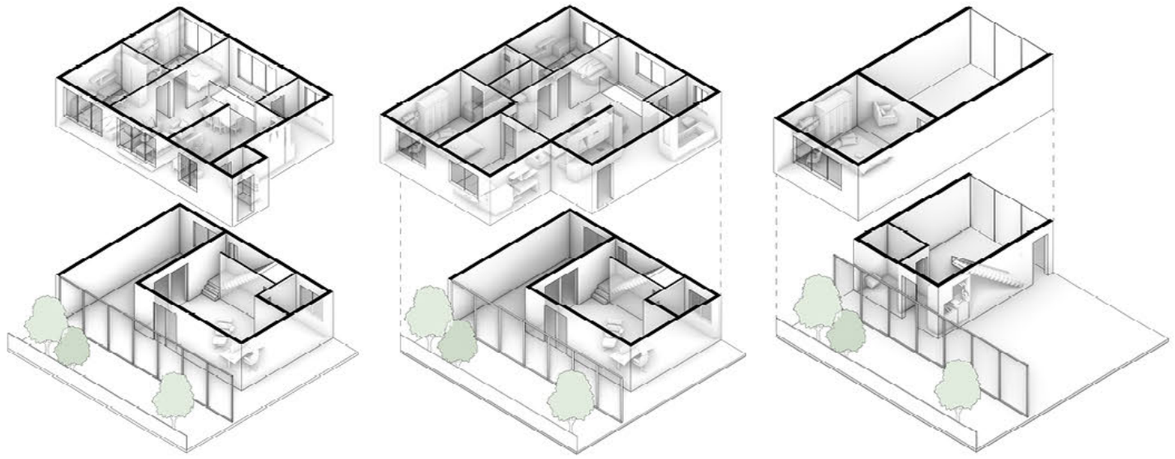
THE VERTICAL SPACE – TYPE 1

It shows the vertical space design of type 1.



*Atrium*

Different forms of functional space are integrated into a atrium.



Residential and Commercial Apartment

This type of house combines horizontal public Spaces, with the first floor space being used for shops, living rooms or other communal uses.



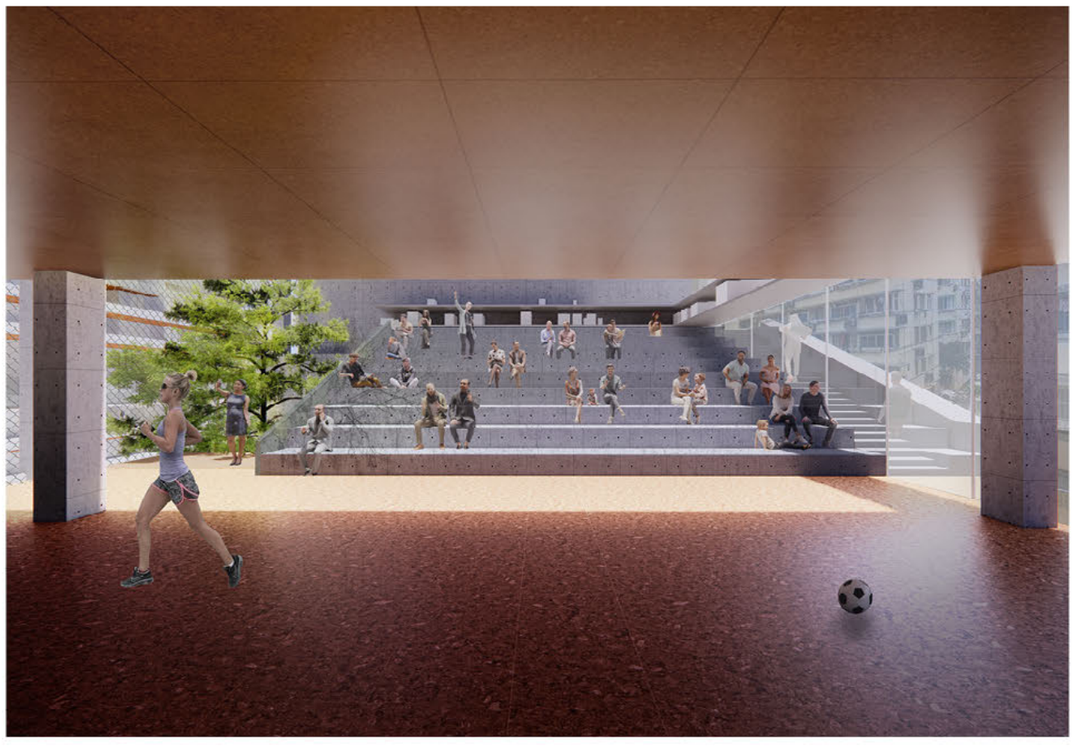
Housing Unit Program Plans

The door model of different area can be combined mutually. Single, two-person or multi-person families are integrated to facilitate further communication.



*Apartment & Business street & Green landscape*

Horizontal extension of public space brings corresponding sense of space.



*View from private space to public space*

Low, dark private spaces contrast with bright, soaring public spaces.

The high integration of public space and private space makes space efficiency further improved and people's life substantially changed.



# 07 Agricultural community

*Agriculture & Architecture*

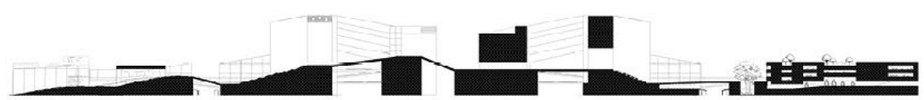
Core Studio, 2022 Fall
Instructor: Rene David
Course Number: ARCH201
Site: Oakland, California, The U.S.
Individual Work

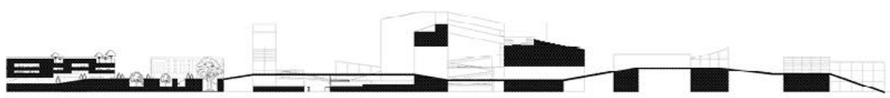
This project starts from the concept of the ”slope” to connect the green lines in the whole city and combine agricultural cultivation.

The site is located in a neighborhood with an existing market, and the only remaining existing building on the site is the market. The main design building is divided into two parts: the apartment on the top and the business on the bottom. In the middle is the slope, which is also the roof of the commercial block. Because our green and pedestrian path is basically on the roof, the slope connects the roof of the existing market to the roof of the new greenhouse, thus further connecting the people on the ground to the people on the roof. The apartments float above without interrupting the continuous path and maintain the privacy of the apartments. The volume of the apartment also has its own planting area, which is not accessible to the public.

I also defined the thickness of soil required by various plants to change the thickness of the roof at different locations.

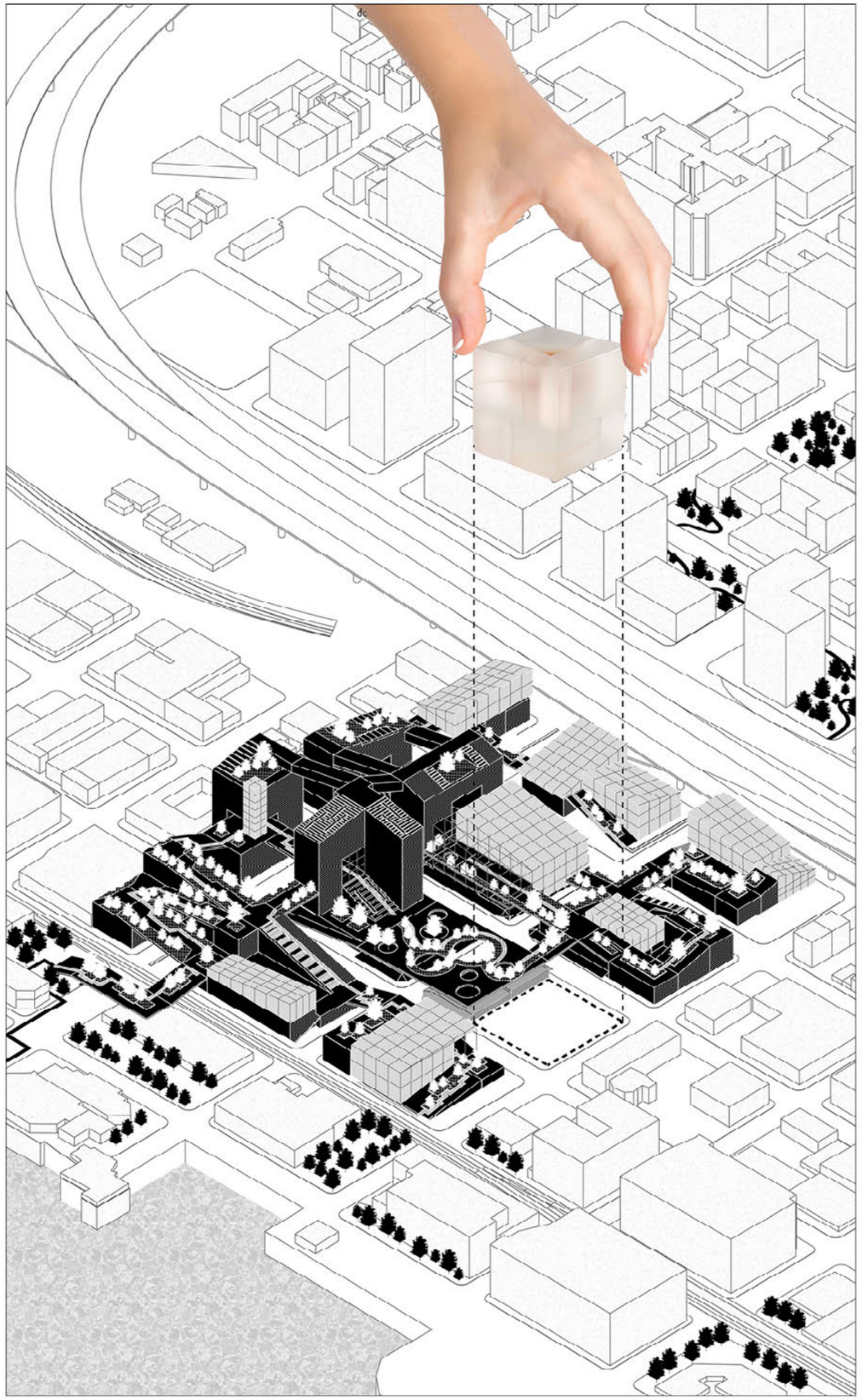






## CONCEPT

Oakland's urban greening is connected in a loop so that the city can be connected in section. The ground is connected to the building through a continuous section, and the planning activites are happened along the green way.

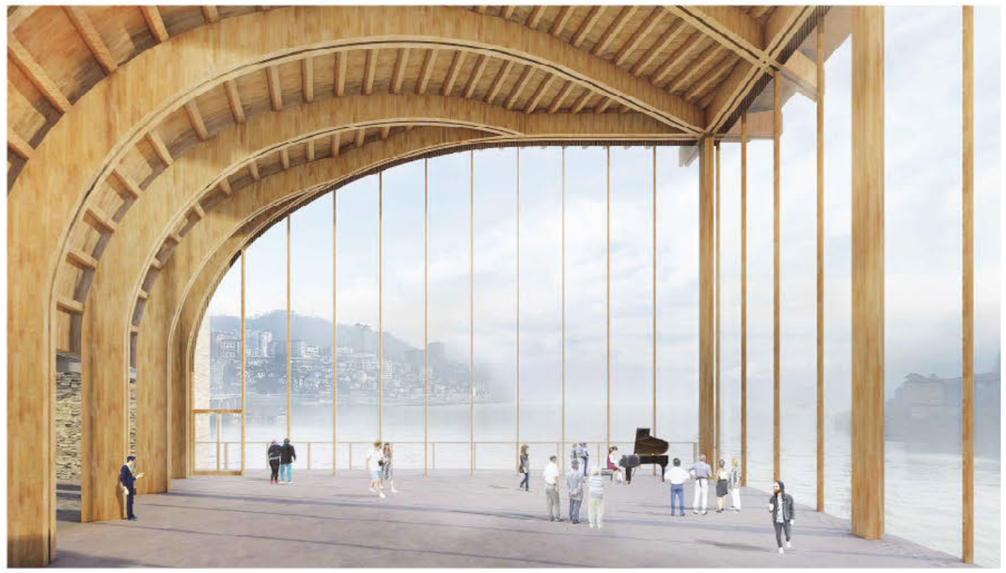


PROFESSIONAL WORKS

Intern Work
DNA _DESIGN AND ARCHITECTURE
Project: Ziyang Cultural-Sports Center
Site: Ziyang, Sichuan, China
Date: 2020.11

Ziyang, standing on the river, is built on the mountain. This project designs the shape and flow of the building from the intention of tea leaves and sailboats unique to ziyang, while the structure of the building resembles the veins of tea leaves, while creating a large space. The main body of the building adopts a combination of steel structure and wood assembly structure, the roof is paved with local slate, the walls are built with local slate horizontal masonry, and the periphery of the building is enclosed with stone walls and glass curtain walls.

This project is located in Renhezui, Ziyang County, with a proposed planning site area of 14,000 square meters and a proposed construction area of about 5,600 square meters. The landscape area is about 11100 square meters. The building has five floors, including theater, swimming pool, museum, training and fitness, etc. It follows the terrain, separates pedestrian and vehicular traffic, allows visitors to enter and exit freely, the building boundary is blurred, the space is permeable inside and outside, and the building is in harmony with nature.



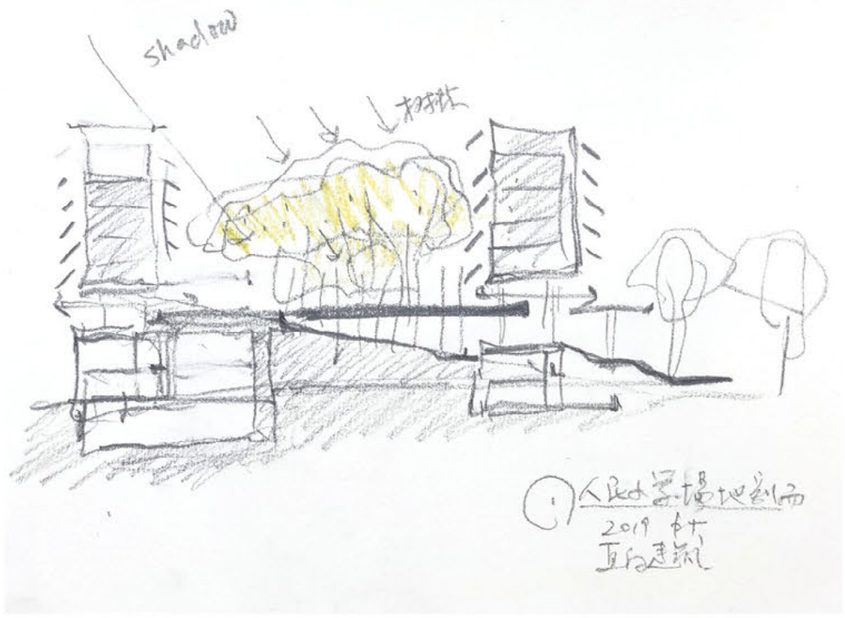






Intern Work
VECTOR ARCHITECT
Project: People's Elementary School
Site: Futian distract, China
Date: 2021.01

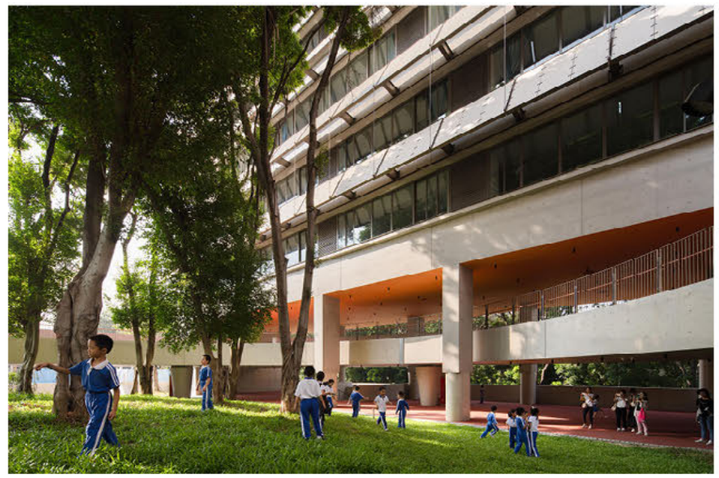














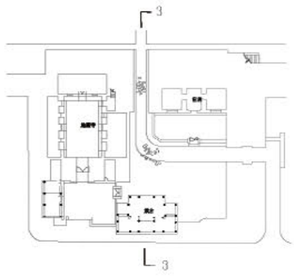
Publication

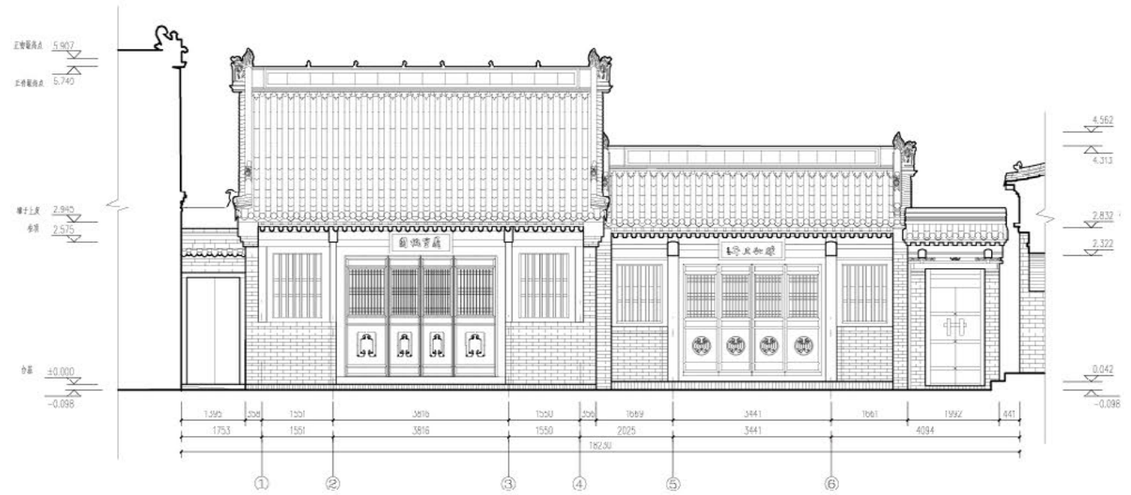
*Vernacular Architecture Surveying and Mapping*

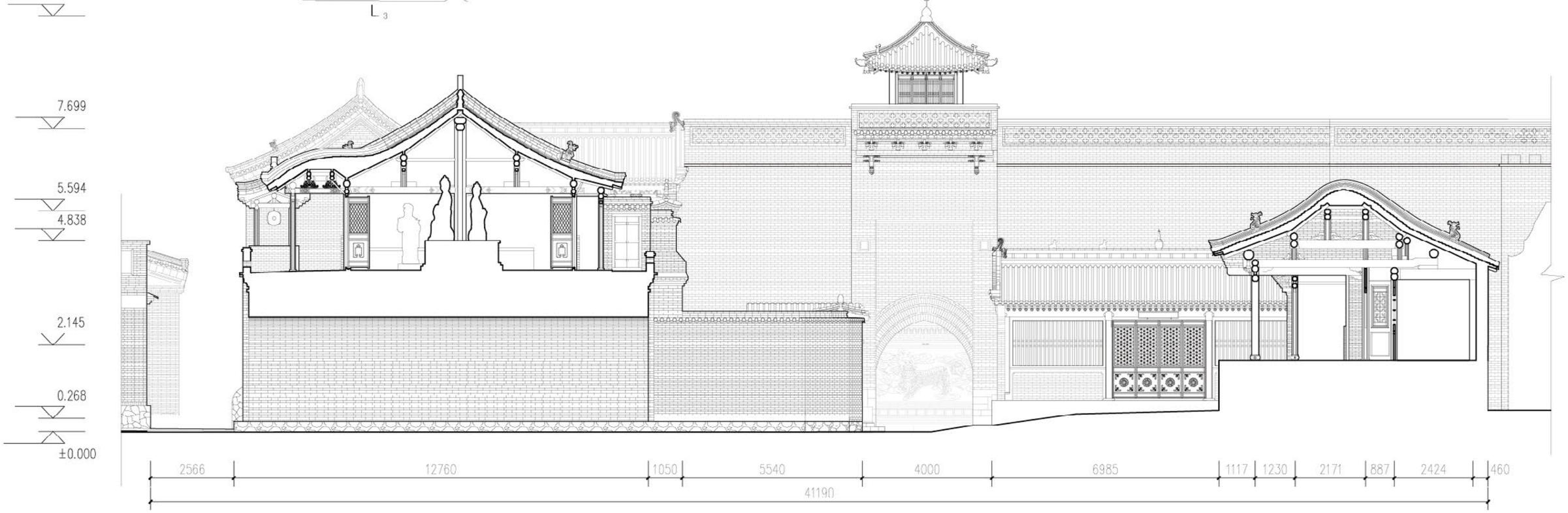
Site: Zhangjiakou, Hebei, China

Published the co-authored project "Hebei Classic Historical and Cultural Village Architectural Map—Xigu Castle" at Tianjin Science and Technology Press in 2022.01

Description: The town of Zhangiakou in Hebei Province retains many forms of traditional Chinese dwellings and temples, which are more than 100yeas old. However, due to the lack of protection, the current situation is not optimistic. What we do is recording them by drawing their forms and details. These are part of my mapping results about the Xigu Castle.



Tectonic Precedent: Züri–Modular in Thun
Instructor: David Jaehning
Date: 2022.11

The population of Zürich increased steadily in the 1990s, which triggers the need for more schools, kindergartens, and nurseries. Peter Ess used the modular concept, and he thought this temporary modular school pavilion can provide insights into solving the city's imminent growing need for more school spaces.

Swiss wood is chosen as the standardized structural frame of each unit due to its availability in Switzerland and its easiness to assemble. It is also a sustainable and environmentally friendly material that has good thermal efficiency and meets the goal to perish over time. The wall is made of plasterboard infilled with insulation. The facade is made up of giant glass allowing abundant natural daylight to pass to the interior. The facade cladding is made of natural larch wood. A tractable shading device on top of the window as well as a designed ventilation component to prevent overheating in summer.





TEAM 2.0 Competiton, 2022 Spring
Instructor: Hu Zinan
Site: Dahutong, Tianjin, China
Date: 2022.06

This Museum consists of three parts: exhibition, residents' life, and greenery. The exhibition space assumes the main function of the museum, and there are a large number of residential areas around the site, so the living flow of the residents becomes another important flow, and the greening is a further response to the greening needs of the city and the cultural area of the site. Corresponding to the diagram on the right, the exhibition space is firstly in the form of a long strip, then the living space is inserted, so that the residents' life also becomes part of the exhibition, and finally the green space and the green slope at the bottom are inserted.

The museum box, on the other hand, is open plan and integrated with the long museum, while the part of him that picks outward is also a glass volume, and the view of the sea river becomes a natural part of the exhibition.