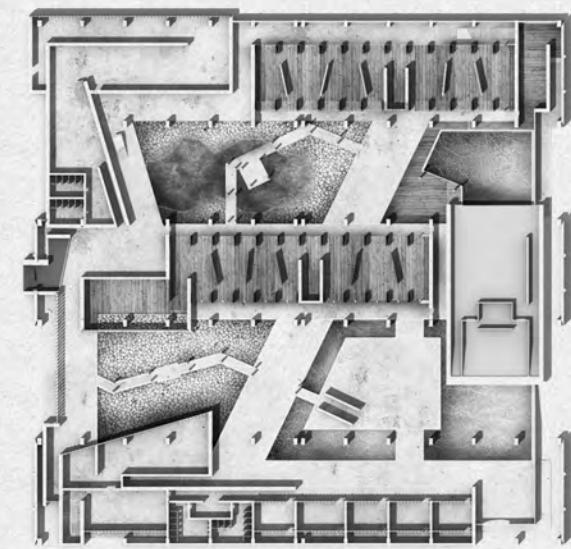


SELECTED WORKS  
2018



Ziqi Chen  
[zc2hc@virginia.edu](mailto:zc2hc@virginia.edu)

## DATUM HUDSON HORIZONTAL CITY COMPLEX OF NYC

UVa 2017 Foundation Studio II  
Instructor: Seth McDowell  
Site: Hudson Yards, NYC  
Individual Work

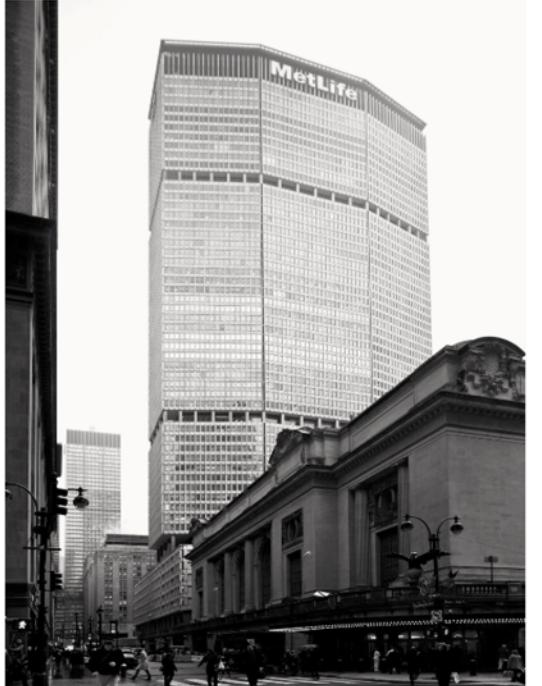


The exceptional planning method of Manhattan decided that this land would embrace the unlimited capital in the future, for the objective of it is to divide this attractive flat land into the smallest developable blocks and utilize them to the last square inch available. While the land is about to ran out after the unconstrained development in hundred of years, the sky is another realm for the capitalists to conquer. Skyscrapers seam like the most suitable building typology for Manhattan, and truth is Manhattan has been the circus and colosseum for the skyscrapers for decades. The potential of Manhattan's spatial capacity is infinite.

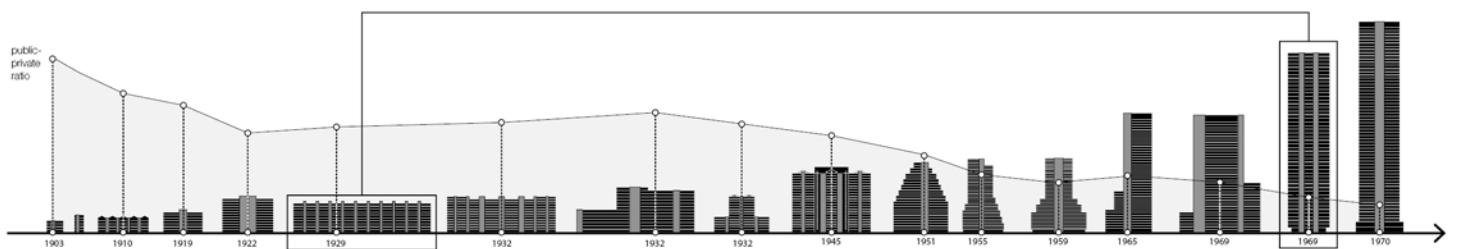
However the vertically growing city raised another problem, the alienation of the modern life. The verticality results from the desire of the efficiency of space, meaning the ownership of the space should be defined explicitly. The communal space such as street, lobby and corridor is minimized to the just acceptable level. Consequently, the urban life is moving from one cubic to another, without being able to build any connections to others in between..

Tracing back to the history of Manhattan, the linear shaped buildings were the mostly used typology, for it suits the narrow and long shape of the block. This arrangement provides a larger interface between the private and the public space. This condition is permanently changed by the trend of skyscrapers. The block is fragmented, and the footprint of the buildings shrinks into a small portion of it.

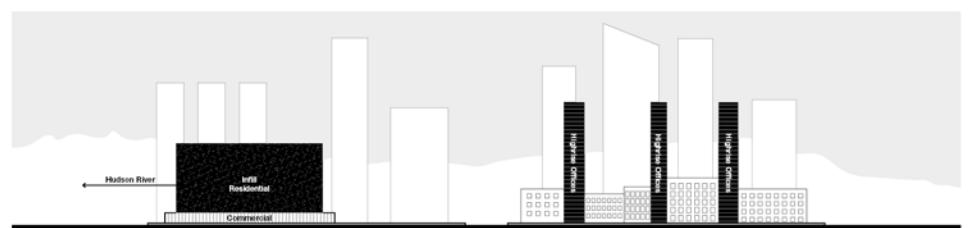
The project is reflecting this condition, and trying to introduce a strategy that can horizontalize the topology of modern skyscraper, and convert it into a dynamic mix-used building that allows encountering and interacting.



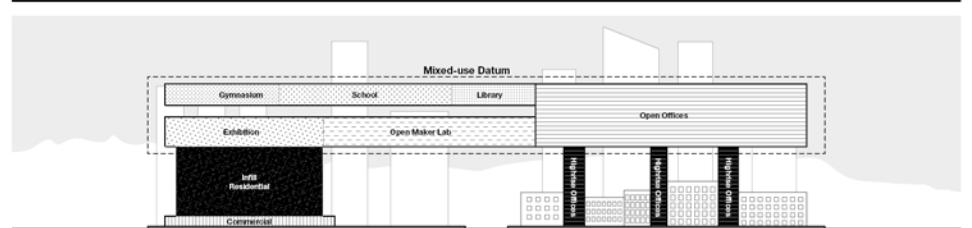
The diagram shows that the trend of Manhattan's building typology is the transition from horizontal linear multipurpose building to the single-purpose skyscraper. Coming with it is the decreasing of the communal space and alienation of modern life.



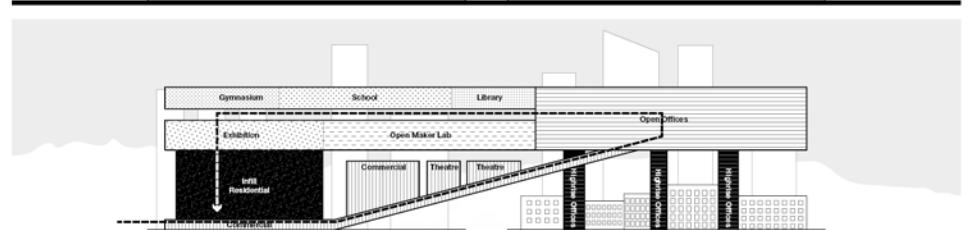
There are two blocks in the site, one is occupied by several offices, one is empty



taller new offices are located in the occupied block, and residential part is in the empty one for the view of the river.



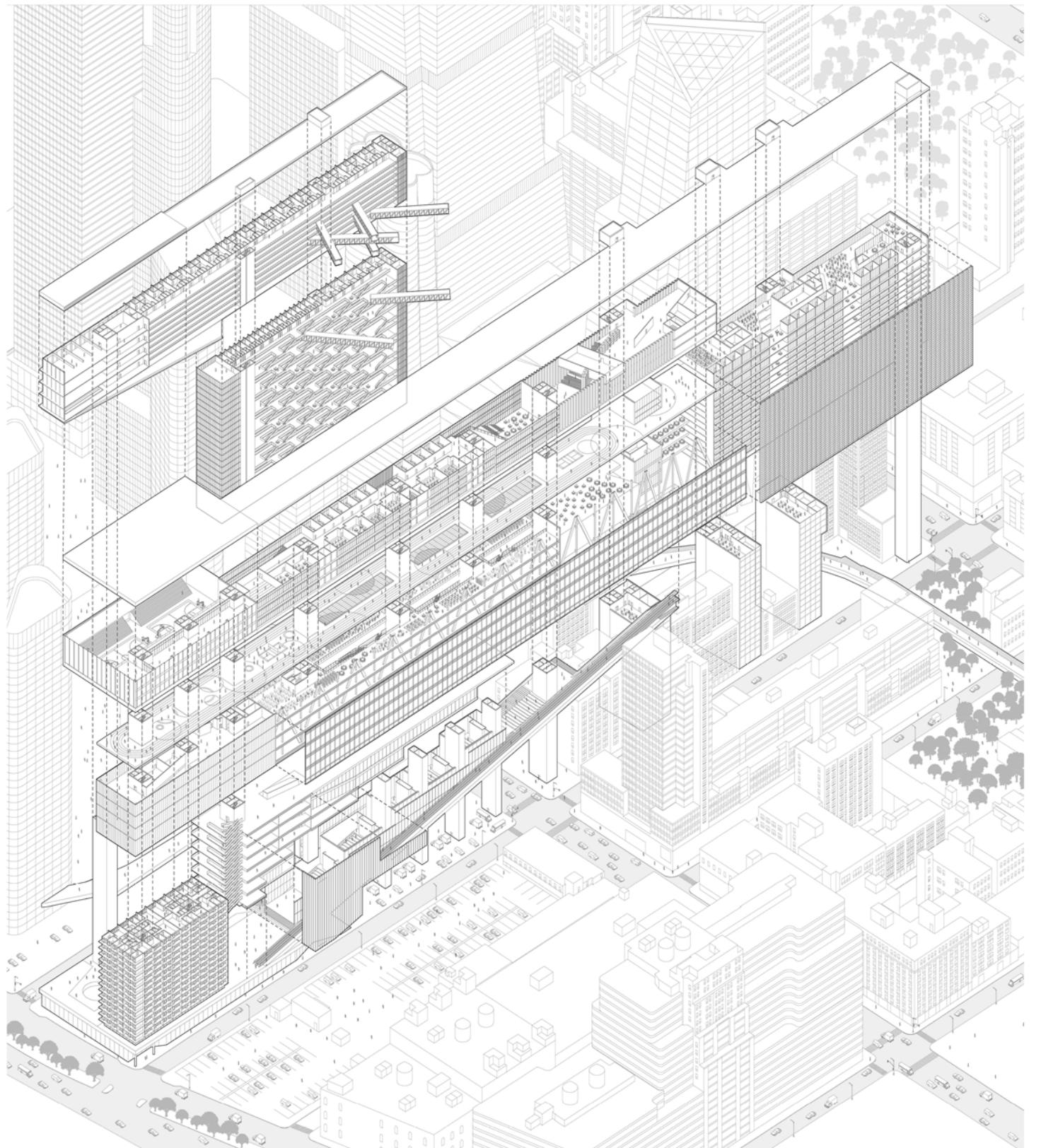
The horizontal Datum bridges the two blocks. communal programs are in it, allowing people to interact.



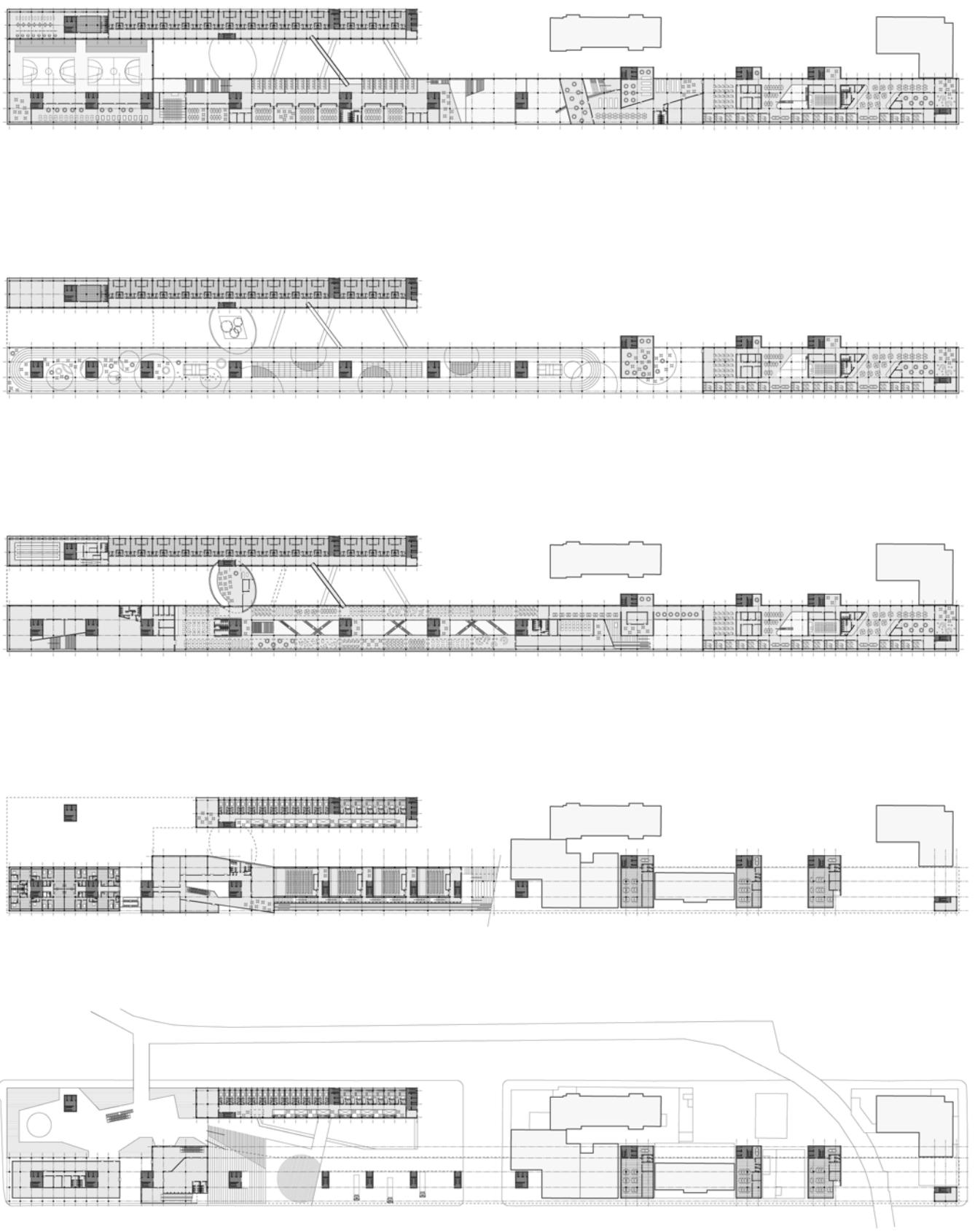
A giant escalator leads people from ground to the Datum, and forms a hierarchical sequence from private to public.



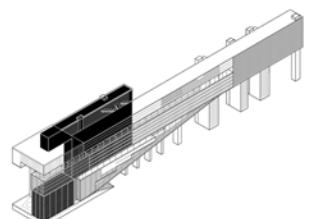
Adjacent to the site is the Hudson Yards, which is still under construction. In the future it will be crowded by skyscrapers. The horizontality of the project differs from it and shows more connection to the historic building on the other side.



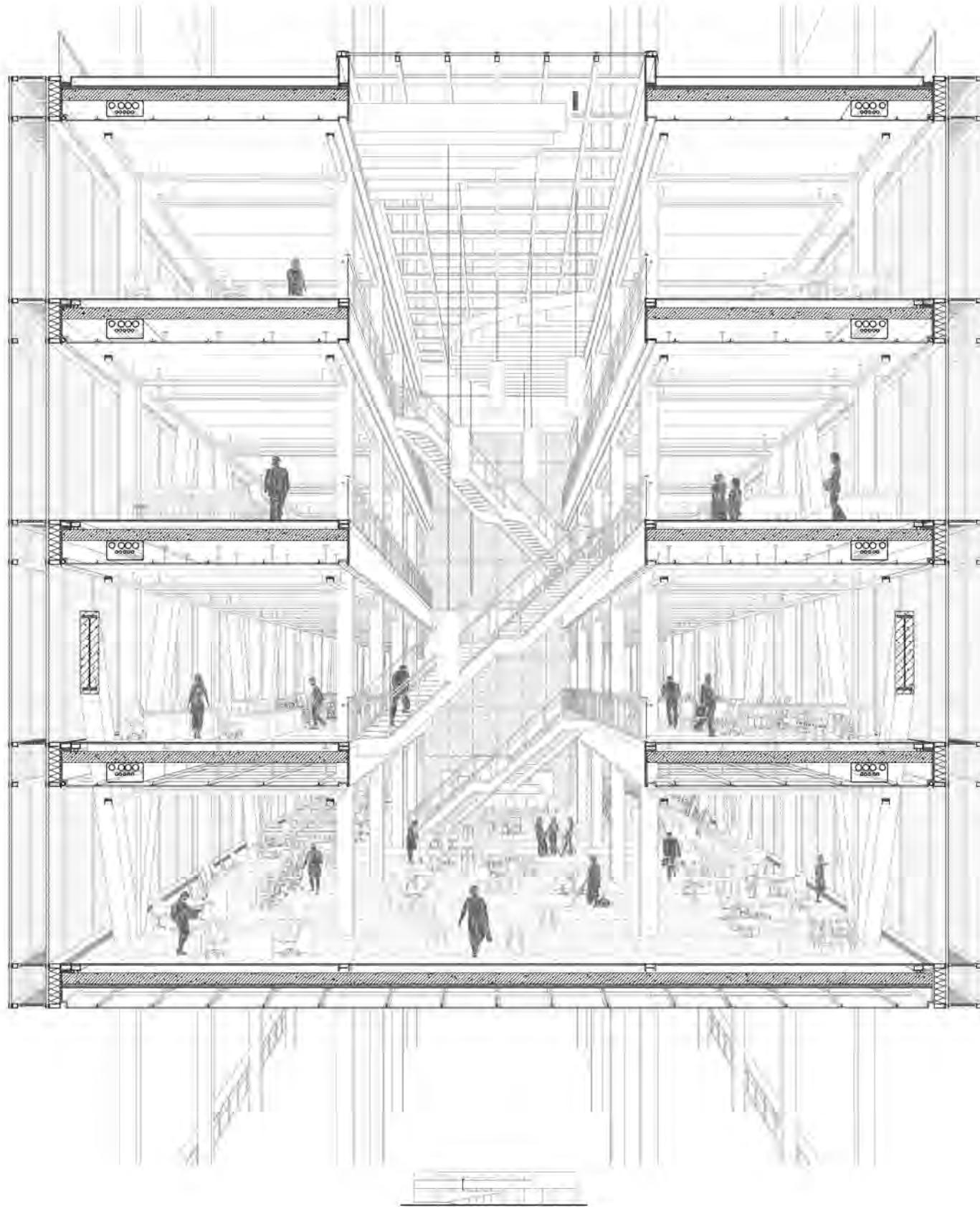
The importance of encountering and interacting is emphasized in the Datum. Programs like school, DIY maker workshop, design studio, hot desk offices, library and museum are located there. Private programs like hotels, apartment and traditional offices are connected to it. People can easily travel through different parts.



0 10 50 100m

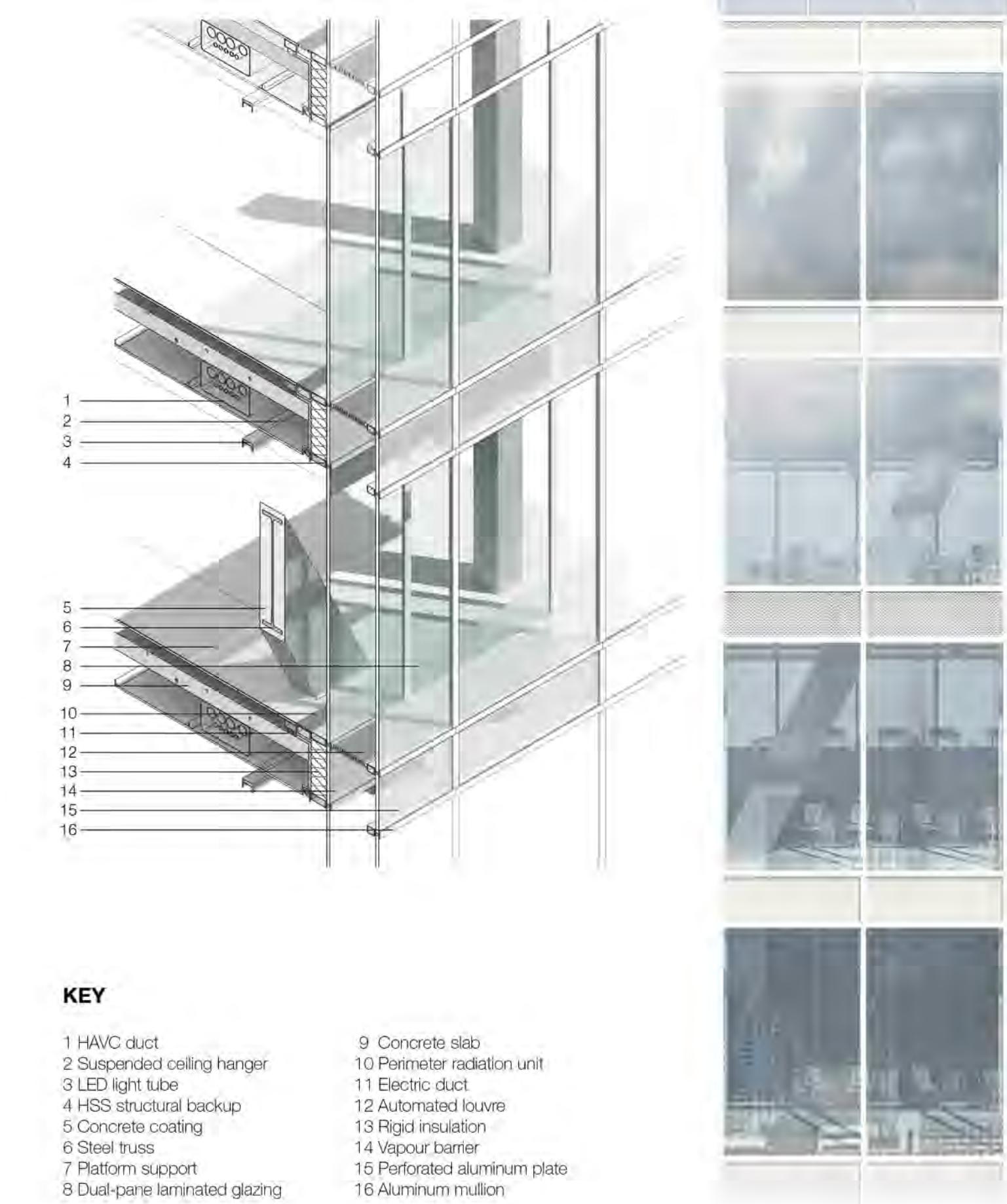


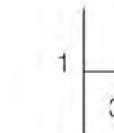
Residential  
Hotels and Apartments  
Integrated with SOHO offices



## DATUM STRUCTURE

The open flexible plan is applied in the Datum. Four 6-meter stories provide the most free space for any kind of creative activity. Users can choose to separate the space depending on their needs. The Datum spans between two blocks. 12m interval steel trusses are applied to carry the significant vertical load.





1 Datum south facade  
2 Hotel and Apartment North facade  
3 The in-between canyon

#### FACADE

The enormous volume of the project requires a transparent facade system that diminishes pressure. The Different intensity of grid and different materials on the facade demonstrates the diversity characteristic of the project, and also indicate the program inside.







02

## DESIGN FOR DIPLOMACY UNITED STATES EMBASSY IN MILAN ITALY

UVa 2018 Design Development Studio

Instructor: Phoebe Crisman

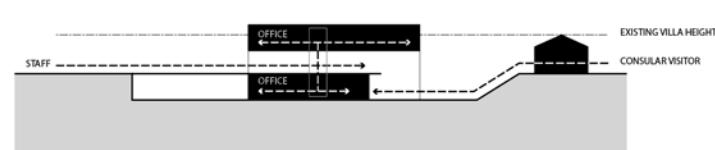
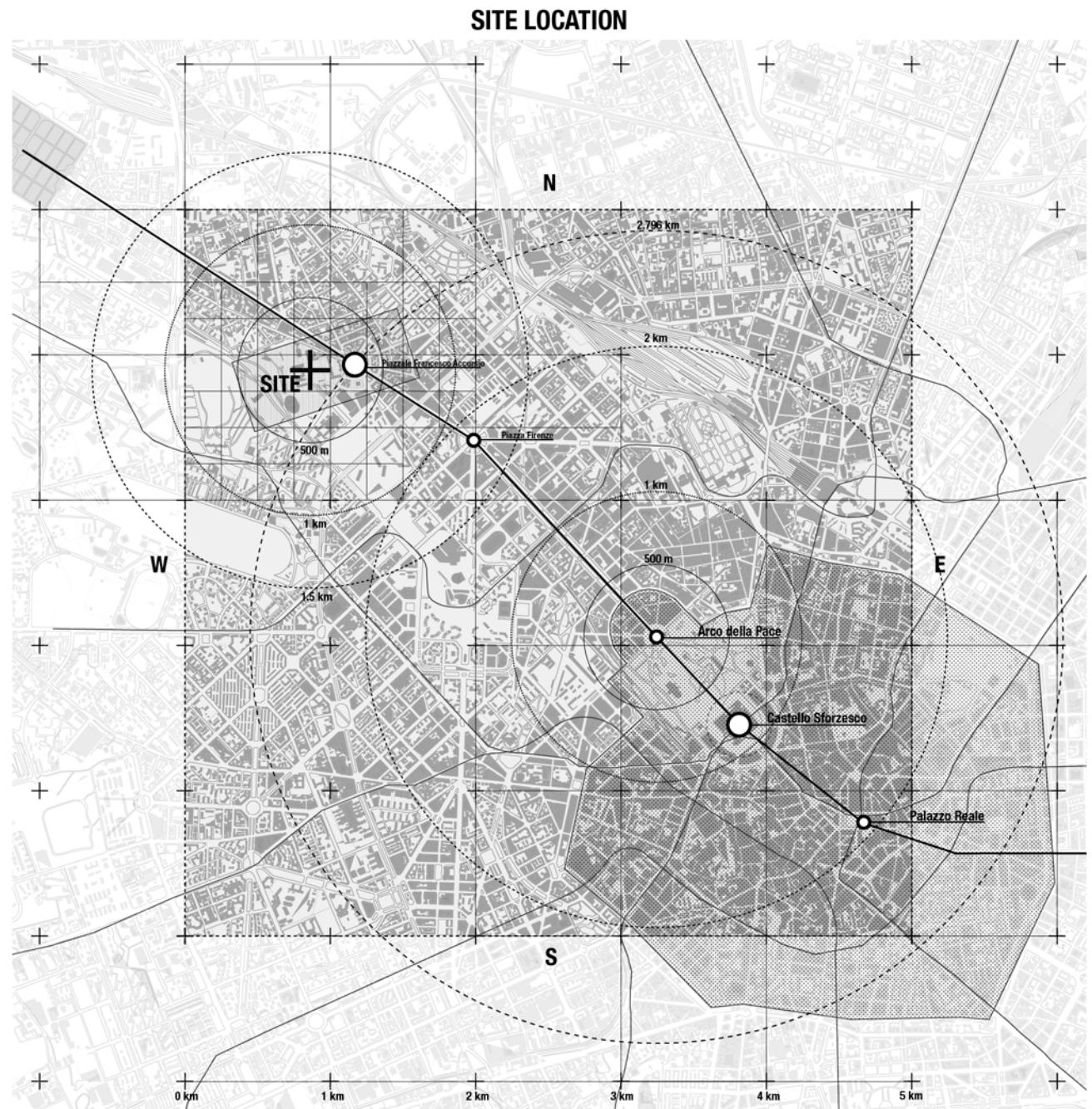
Site: Milan, Italy

Individual Work

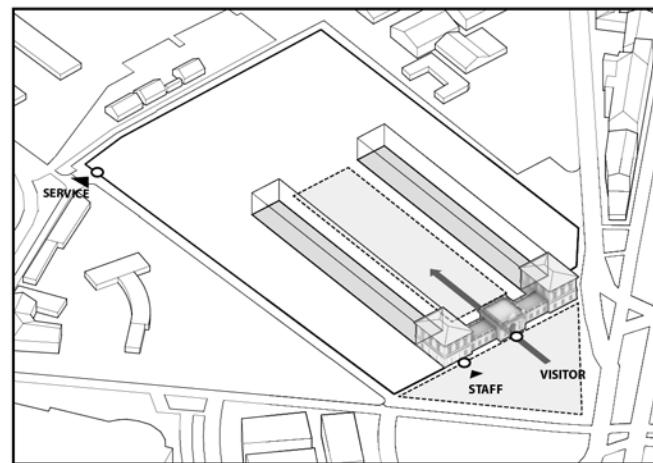
This project is aiming to discuss a question: What's the ideal appearance of the US embassy building. Due to its intense security and privacy requirements, the embassy buildings of United States have been the building typology with the least possibility of innovative design. For a long time, the objective of the embassy building design is to present a impenetrable and fortress-like image that keeps the people away from it. Just like Henry Graber stated in Fortress America: How the U.S. Designs its Embassies, "the State Department adopted a standard model of construction, which embassy historian Jane Loëffler describes as an 'isolated walled compound.' These spiritless shells are epitomized by the designs of PageSoutherlandPage, who have built 21 such embassies and consulates since 2001. From inside the walls of these fortified villas, you might mistake our embassies for social science buildings at a rural college."

This project rethinks the the image that an embassy building should present to the world: connection, hospitability and generosity. The site is an embassy building which is located in Milan, Italy, and is sited on an important city axis, which directly connects the center of the Milan and several historic sites. The most peculiar feature of the site is that there is a villa is located in the front of it, which is considered to be a valuable part of the context and should be conserved as part of the project.

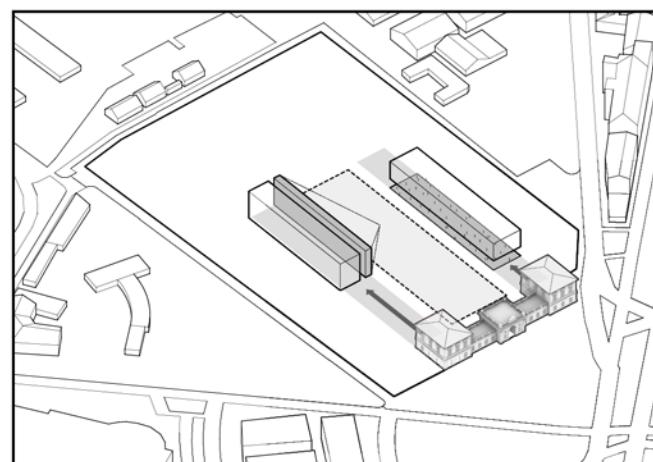
In order to respect the existence of the villa, the project is looking for a strategy to extend the villa and form a complete spatial sequence starting from it. The design is derived from the analysis of the Villa Lante, the travelling route of which is following the axis and composed by several stairs, which are often combined with fountains and other landscape components. The project is adopting this strategy that organizes the spatial sequence by height difference. It also benefits the design in several ways. First, the height of the additional buildings can be reduced by using the sunken gardens, which makes the outdoor activities more private. Second, the circulation of different groups of people can be easily organized by letting people entering from different levels.



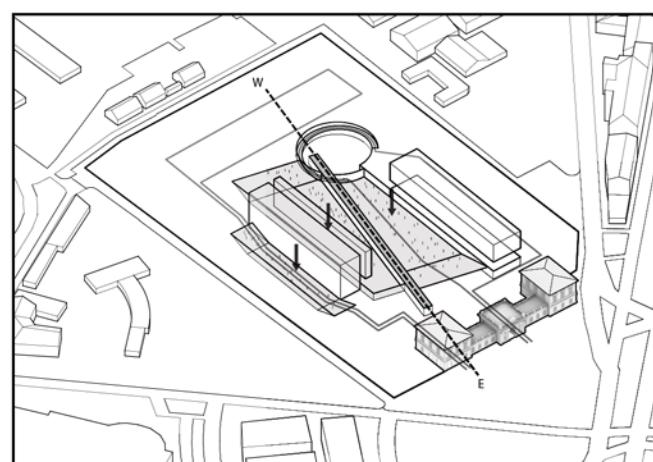
The site is an embassy building which is located in Milan, Italy, and is sited on an important city axis, which directly connects the center of the Milan and several historic sites. The most peculiar feature of the site is that there is a old villa in the front of it, which is decided to be reserved and would work as the beginning of the spatial sequence. To continuing the spatial experience the project studied form Villa Lante, in which the travelling route is following the axis and composed by several stairs, which are often combined with fountains and other landscape components. The project is adopting this strategy that organizes the spatial sequence by height difference.



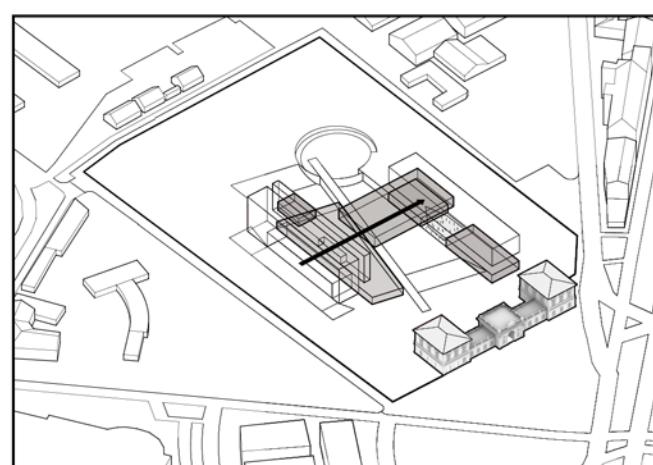
Two parallel lines are extended from the two ends of the villa and formed an inner courtyard together with the villa. The courtyard is connected with the triangular area in the front which would be used as the public garden by the villa.



The stuff entries from the south side and the visitors occupy the north side. In responding to the program, the two extended volumes are shifted and cut in different ways to protect the privacy and emphasizing openness.



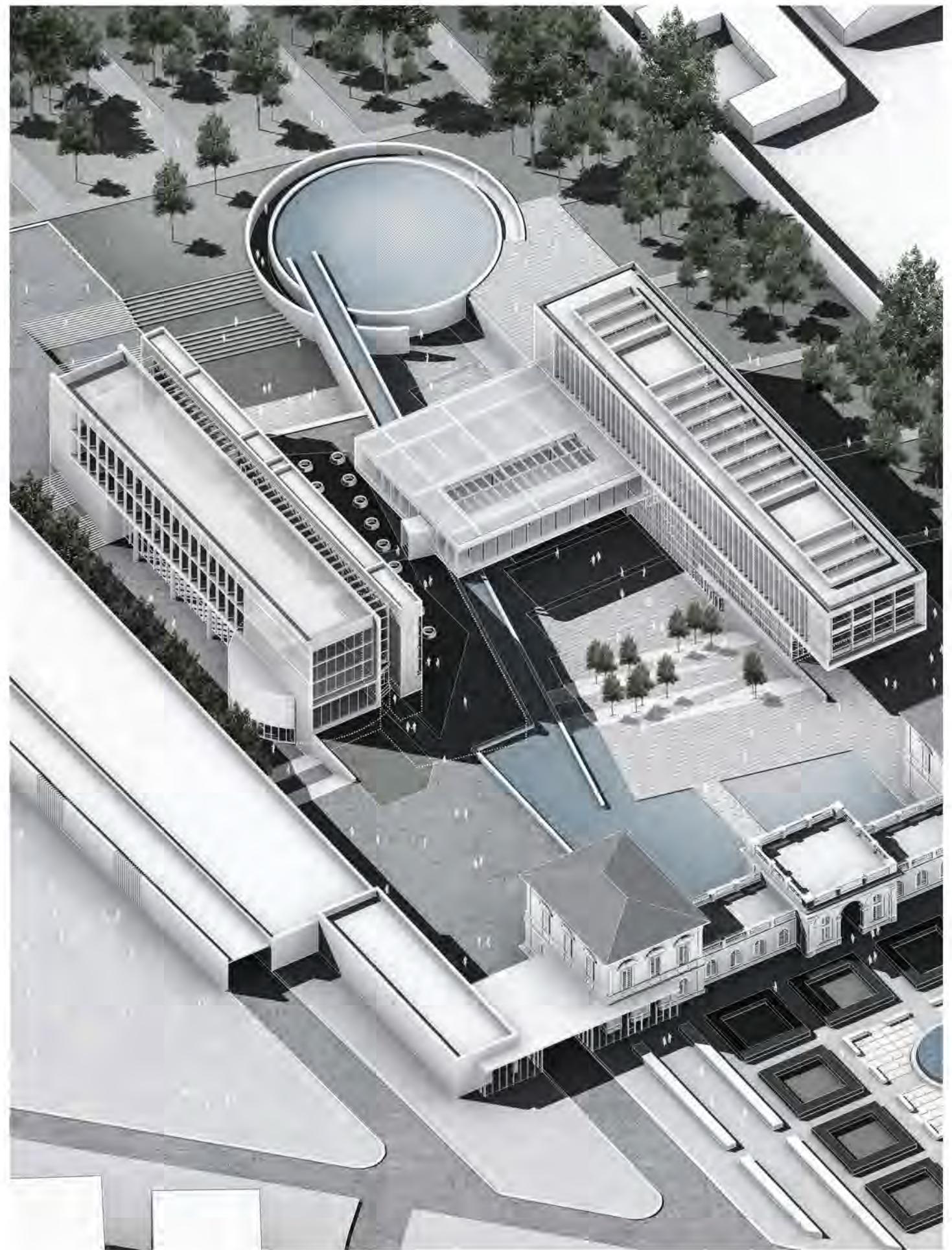
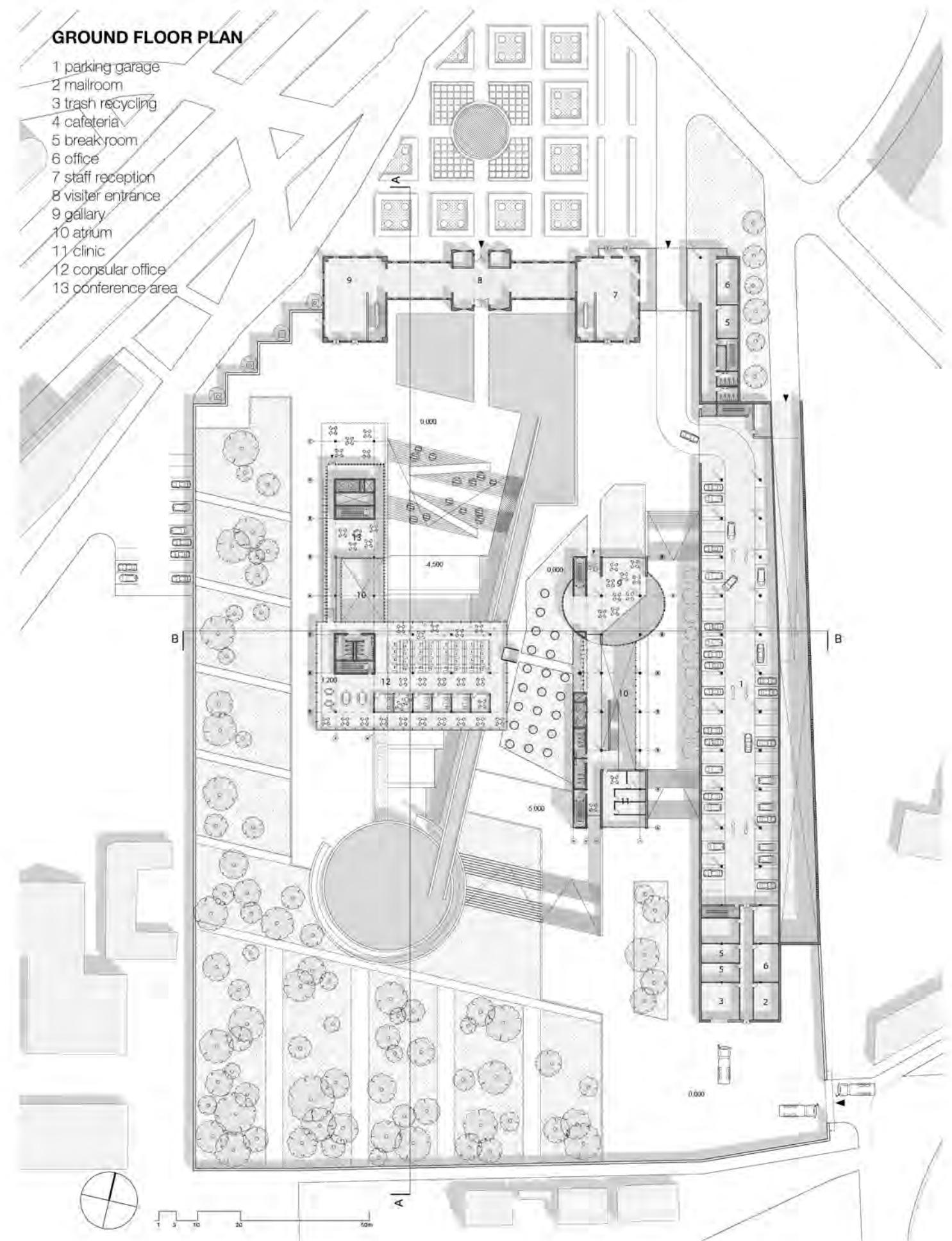
The circulation of different groups of people will then be divided by a water channel, the visitors would enter a sunken plaza that connects the consular hall, the staff would entering the office area directly from the ground level.



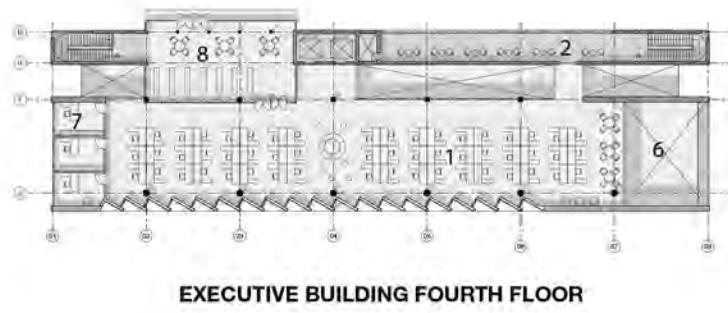
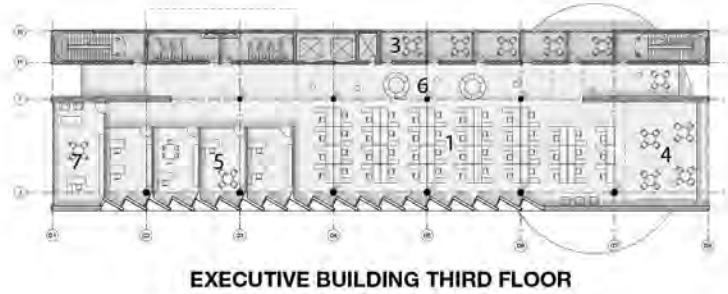
To bridge the gap, the most important program: the consular office is put in a reflective box that sits over the sunken plaza. It brings consular staff to the consular hall and also works as a showcase and a bridge that reflects its context.

## GROUND FLOOR PLAN

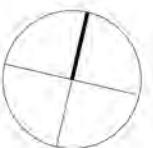
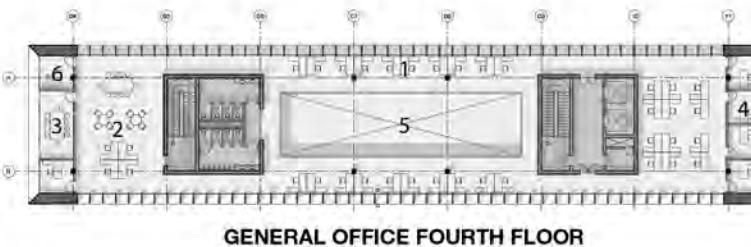
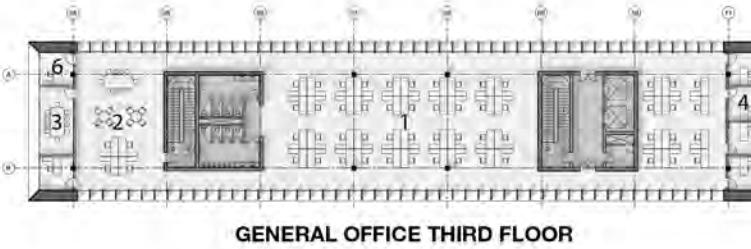
- 1 parking garage
- 2 mailroom
- 3 trash recycling
- 4 cafeteria
- 5 break room
- 6 office
- 7 staff reception
- 8 visitor entrance
- 9 gallery
- 10 atrium
- 11 clinic
- 12 consular office
- 13 conference area



1 office  
 2 break room  
 3 multipurpose office  
 4 conference room  
 5 work room  
 6 atrium  
 7 supervisor office  
 8 library



1 office  
 2 break room  
 3 conference room  
 4 work room  
 5 atrium  
 6 supervisor office



0 1 5 10 20 50m

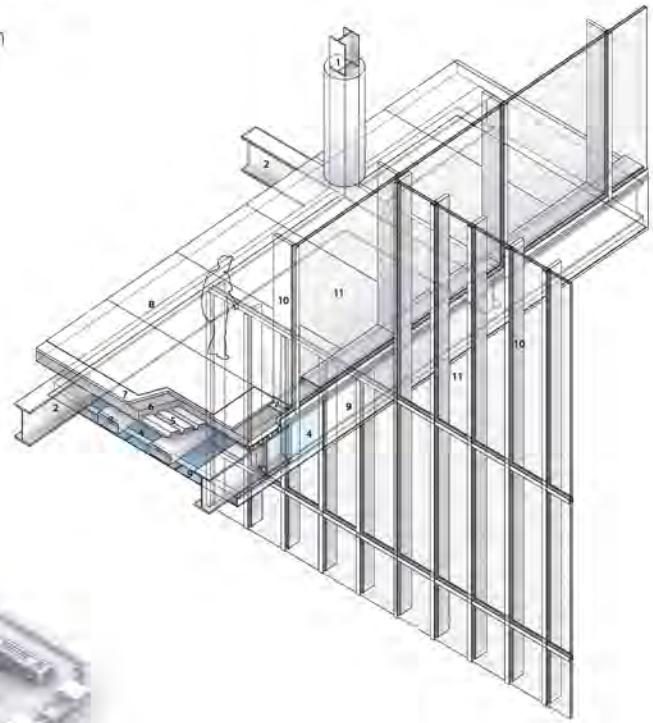


Both the staff's and the visitors circulation are organized by sunken plazas that make the spatial experience more interesting as well as easily devide the circulation and keep the pravacy of different groups of people. While the visitor's plaza emphasizes the spatial experience like walking in a garden, the sraff's plaza protect the staff's privacy from the pedestrians on the street.



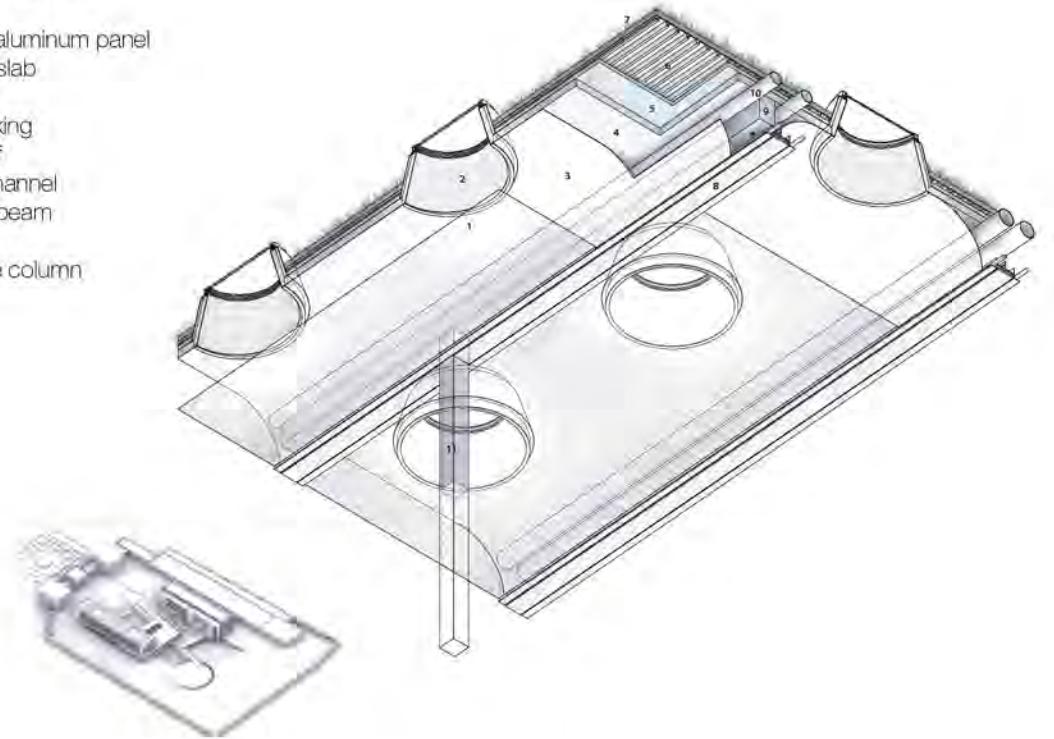
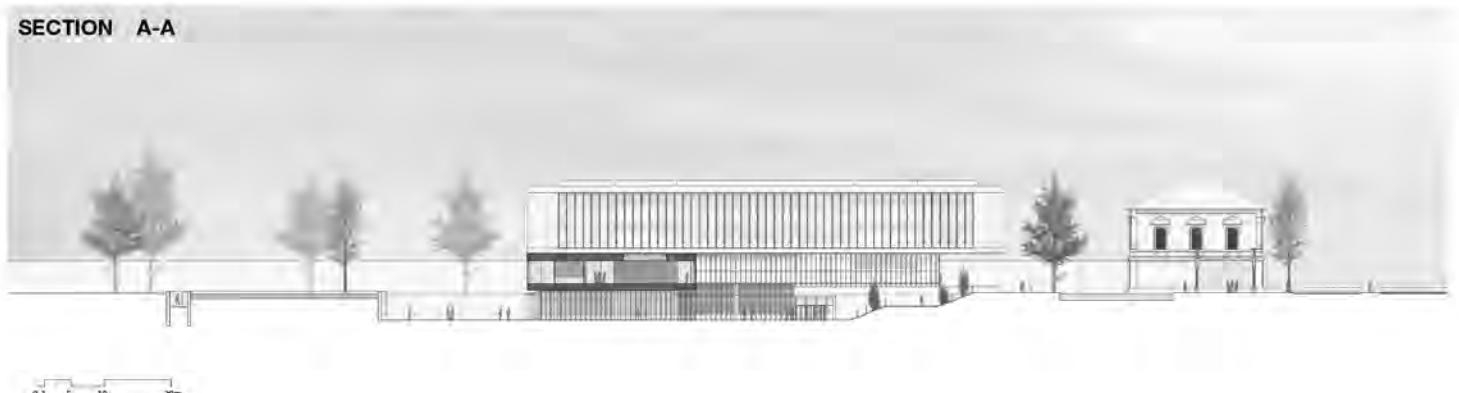
**CONSULAR HALL/CONSULAR OFFICE  
GLAZING FAÇADE DETAIL**

- 1 concrete coated I-steel column
- 2 I-steel beam
- 3 duct
- 4 insulation
- 5 steel decking
- 6 concrete
- 7 radiant floor system
- 8 finish layer
- 9 stainless steel panel
- 10 mullion system
- 11 double pane glass



**UNDERGROUND OPEN OFFICE  
ROOF AND SKYLIGHT DETAIL**

- 1 poly-carbonate panel
- 2 skylight
- 3 reflective aluminum panel
- 4 concrete slab
- 5 insulation
- 6 steel decking
- 7 green roof
- 8 diffuser channel
- 9 concrete beam
- 10 duct
- 11 concrete column





03

## INTERLACED COURTYARDS AN INTERVENTION STRATEGY FOR THE REMAINING INDUSTRIAL STRUCTURE

XJTU 2013 Design Studio  
Instructor: Shanyao Zhu  
Site: Xi'an, China  
Individual Work

The political movement played an important role in the shaping of Chinese modern cities. The will of dominant political group usually lead to the excessive development of certain type of infrastructure of building.

During 1970's, the Cultural Revolution was happening all over the country. The importance of education was challenged. The whole country was in a fever of industrial production, in order to boost the economic gross. During that time, academic activity and industrial production are forced to be combined. This movement resulted in a massive construction of industrial building in university campuses. After 1976, with this ridiculous trend died away, all those industrial buildings were rapidly abandoned, and had become people's fading memory of that particular time and place.

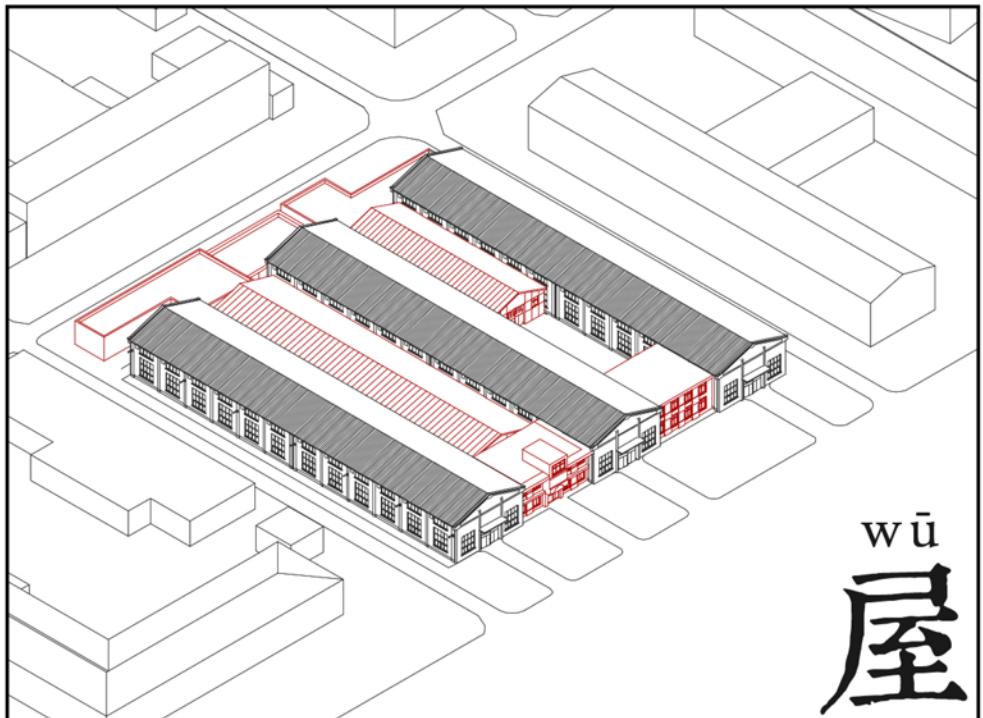
The site of this project is in a campus, where numbers of old industrial barn houses were left unoccupied for decades. Not only the land was wasted, but the aging structure can be a hazardous problem to the students' safety. The objective of this project is to retrofit one of the left industrial buildings in the campus, and try to transplant new programs into it.

The required function of the project is a department building of architecture school. There are two major problem to solve. First, what's the design language of the new addition part. The addition should be seamlessly merged into the existing structure. Second, how to organize the program, the diversity of the space is desired in order to settle different program. The translucent bars that resemble the shape of existing barns are decided to be the language of the addition. The additional part and existing buildings are interlaced. This arrangement is the also the result of required programs.

By interfacing the pitched roofs, the project also celebrates the layout of Chinese traditional courtyard house. The peaceful spiritual atmosphere of the traditional architecture of China relies on the metaphysics and symbolism. The project also deconstructs the elements of Chinese traditional courtyard house, and tries to reconstruct in the design.

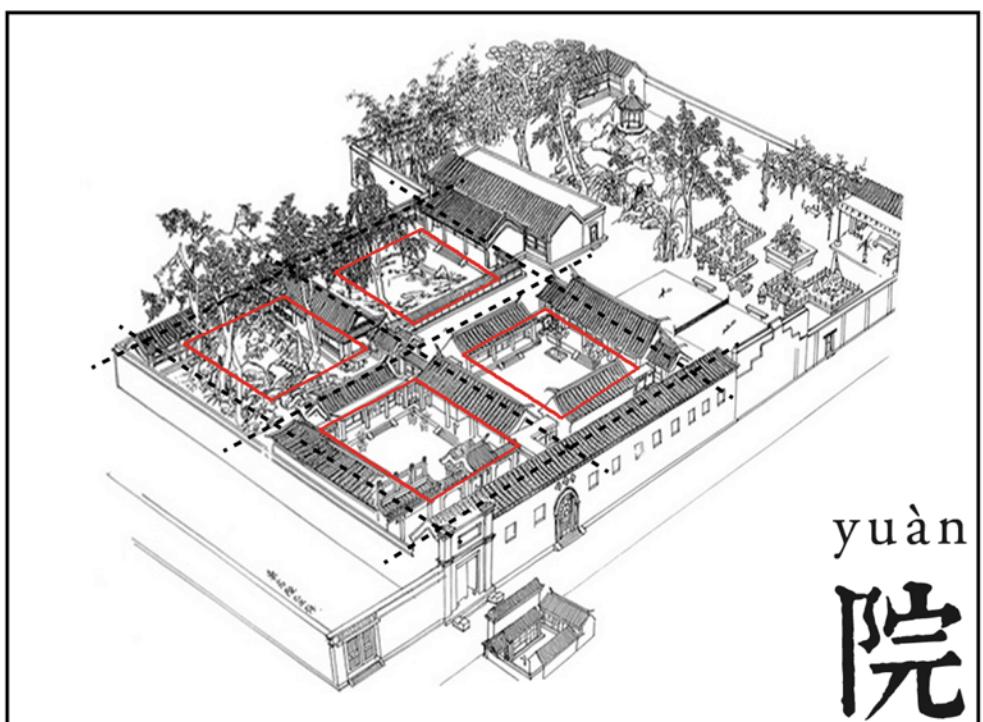
## INTERVENTION AND ENCLOSURE

Because of the Cultural Revolution, Chinese Universities have gone through a period during 1970's when industrial production and academic courses are forced to be combined. This movement resulted in a massive construction of industrial building in university campuses. With this ridiculous trend passing away, all those industrial buildings were rapidly abandoned, and had become people's fading memory of that particular time and place. The objective of this project is to retrofit one of the left industrial buildings in the campus, and try to transplant new programs into it.



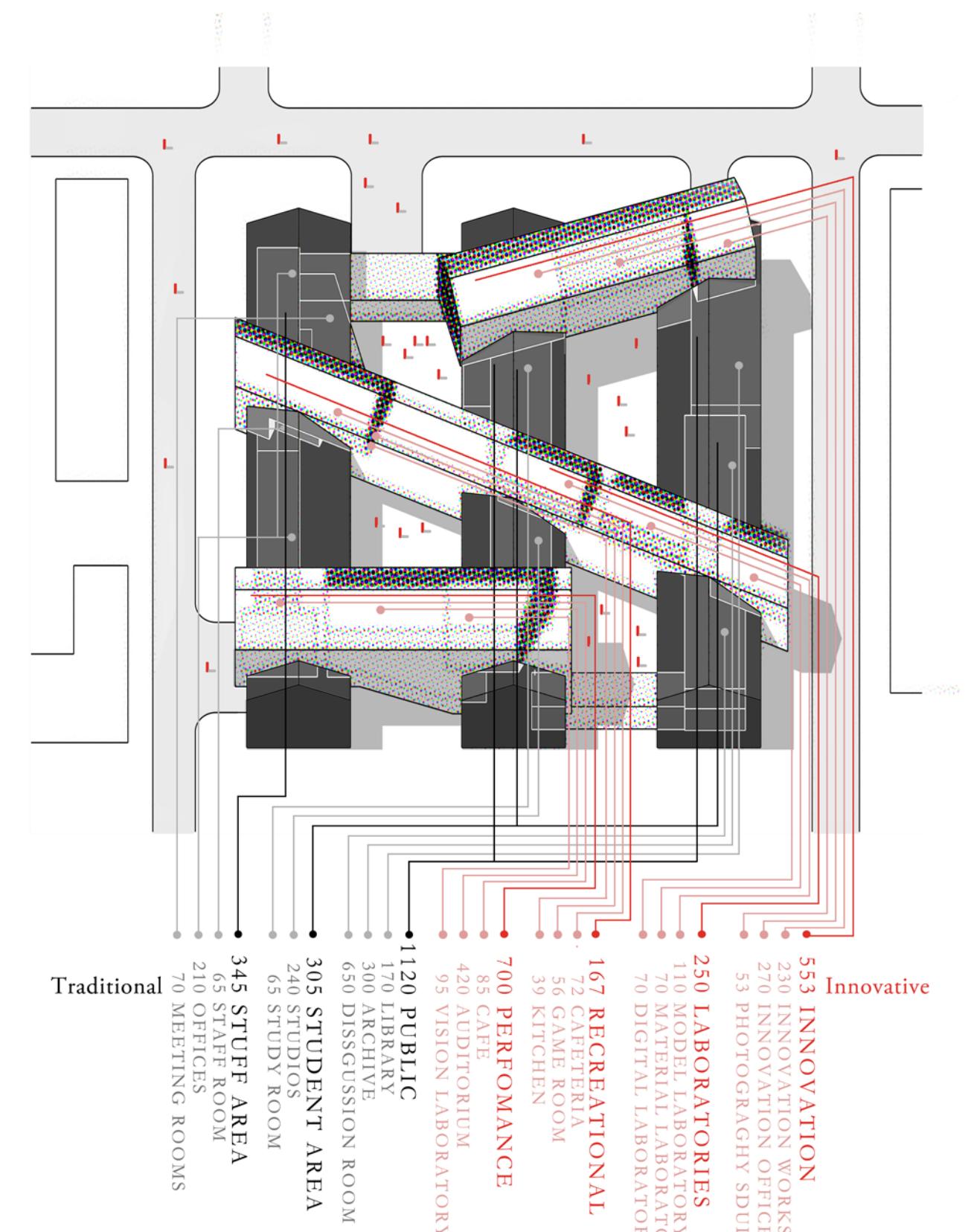
### BARNs

There are three old barns in the site, which are linear and parallel to each other. This inflexible arrangement is a typical mode of old campus factories. Some randomly constructed structures add to its boreness.

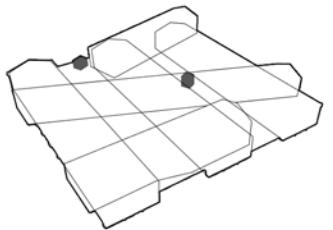


### YARDS

The arrangement of Chinese traditional courtyard can be educative, given that it's a interlaced arrangement of linear buildings which can generate multiple enclosed courtyards that content different functions and create a enjoyable atmosphere.

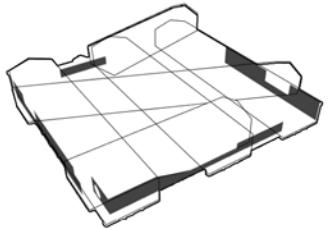


The interlaced arrangement is the result of comprehensive analysis of required functions. Layout of Traditional Architecture department building is constrained in routine functions such as studios, offices and other public spaces. Such functions are usually isolated and lack of connection, which resemble the factories. The inserted innovative functions including modernized labs and innovation workshops can be regarded as chaotic factors that interlace with routine functions and break the traditional vigorless layout.



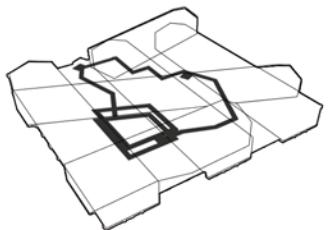
## 亭 PAVILION AS TERMINAL

Pavilion in Chinese traditional architecture is a small-scale metaphysical element which represents the instantaneity. It provides a spot to stop and relax.



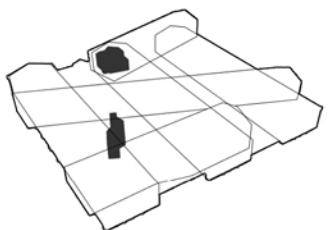
## 墙 WALL AS DIVISION

The punctured wall is an important element in Chinese traditional courtyard, for it creating a subtle spatial division. It constrains the accessibility but not visibility of a territory.



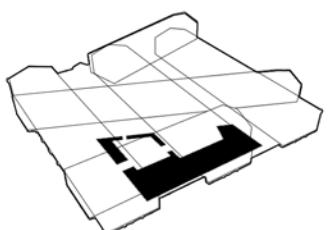
## 廊 VERANDA AS PATH

Veranda in Chinese architecture is a roofed passage that defines a path between buildings. Traveling along this path you can always find the best spatial sequence.



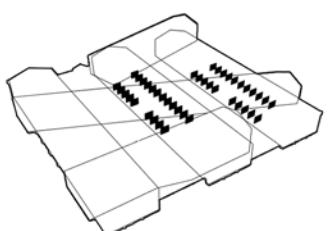
## 石 STONE AS MOUNTAIN

Taihu stone has been a peculiar element of Chinese courtyard building tradition for hundred of years. The strange shaped stone abstract the form of mountain.



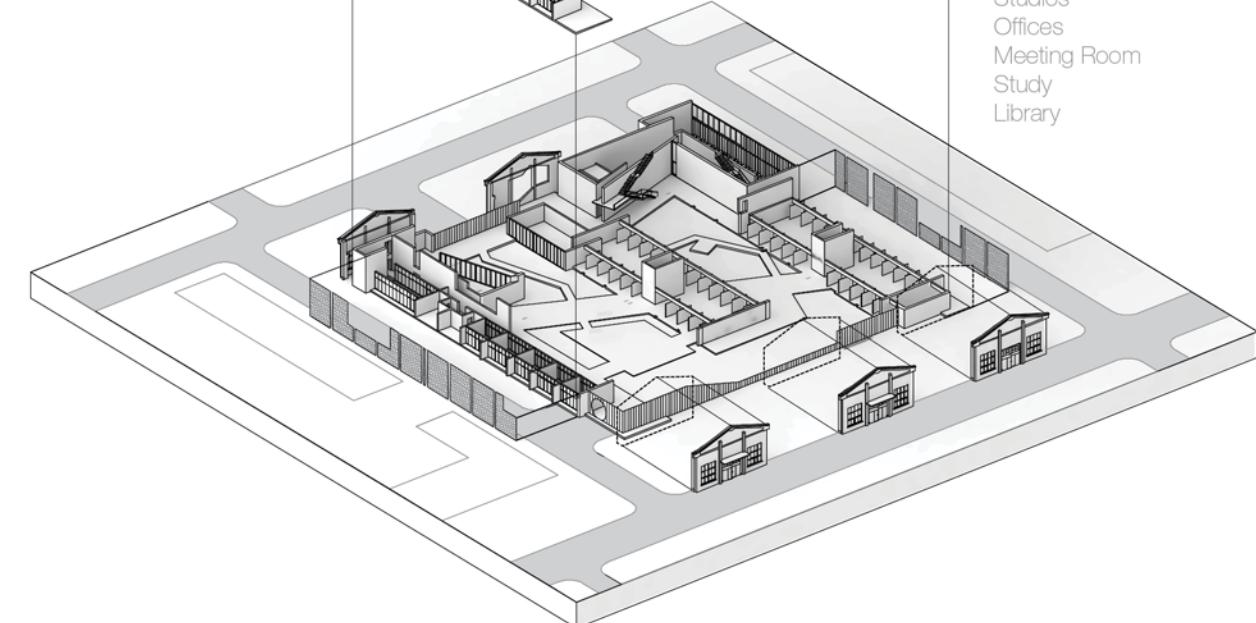
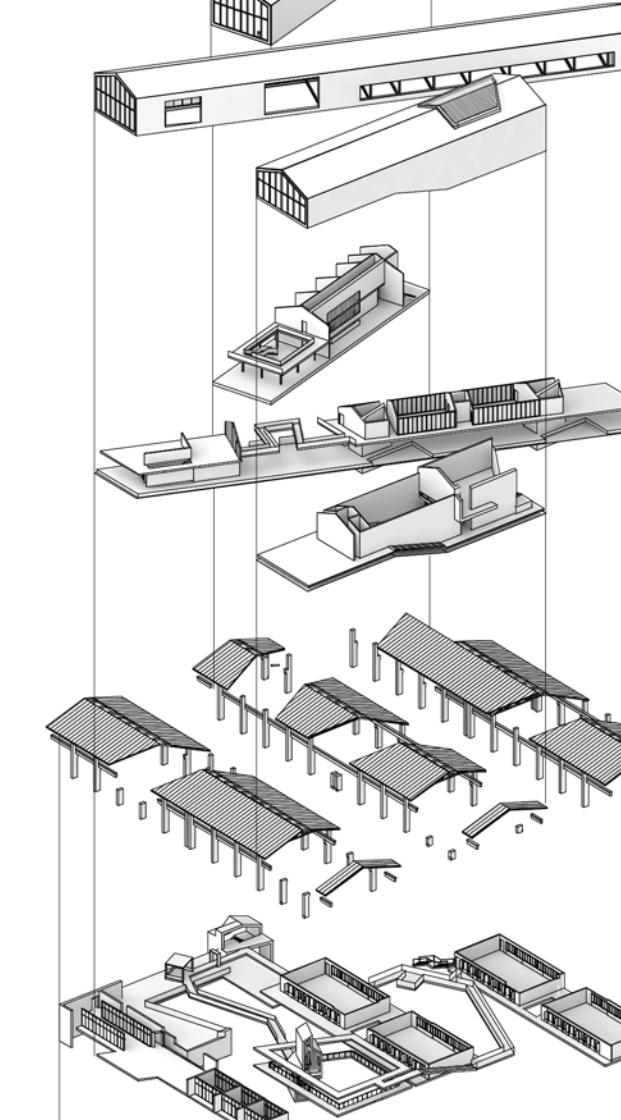
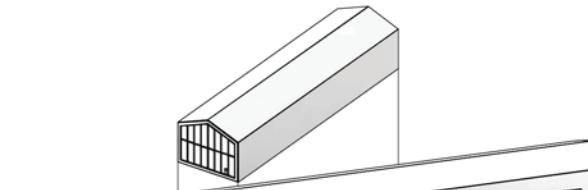
## 池 POND AS LAKE

An artificial pond can represents a lake and mountain in Chinese architecture philosophy. Water always plays an important role in the theory of Feng Shui.



## 門 DOORS AS INTERFACE

The doors in Chinese architecture is not only the entrance, but a "invisible wall" that can build a intimate connection between the interior and the exterior. Open the door, the division disappears.

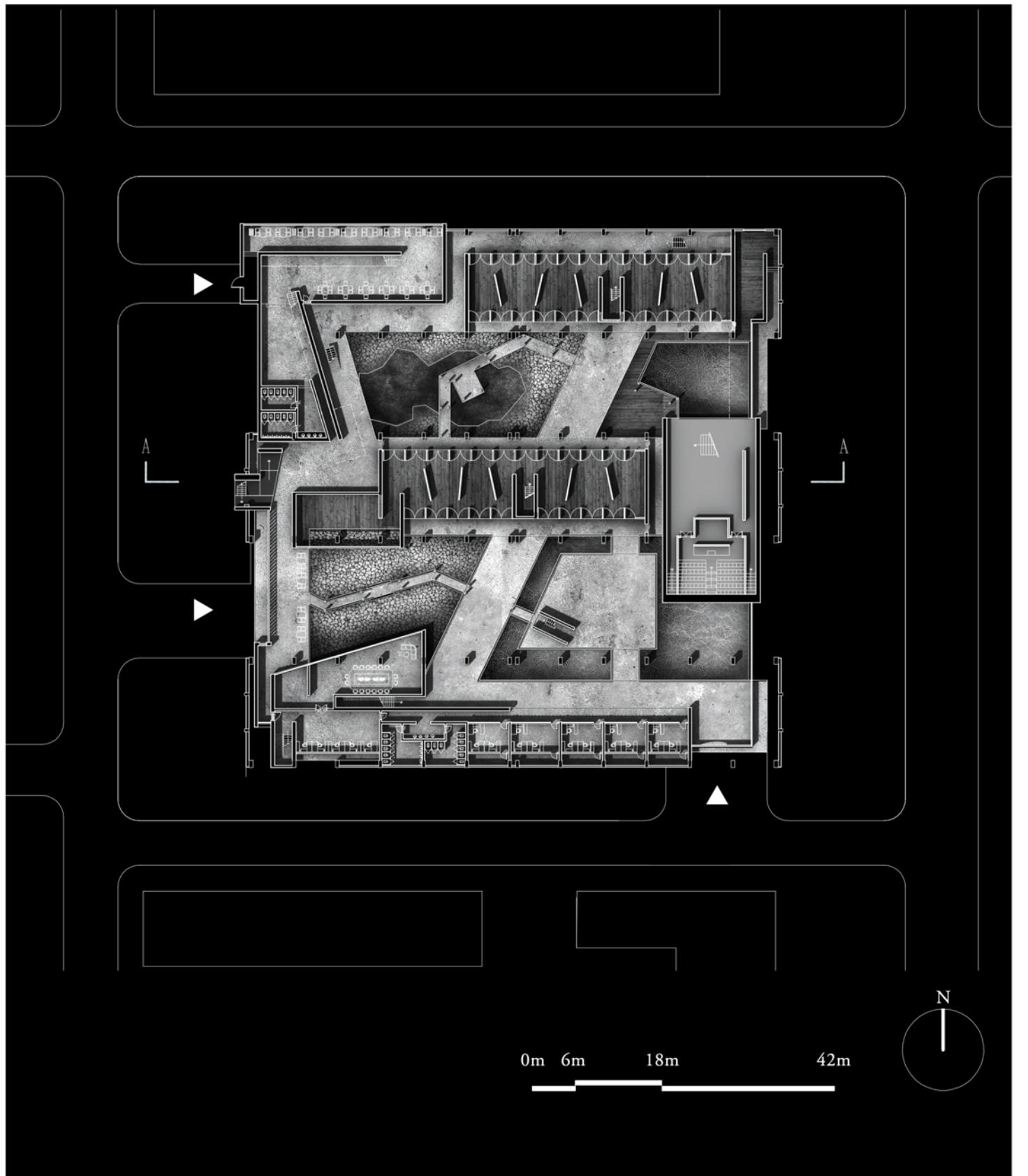


**Enclosure System**  
polycarbonate wall

**Innovative Bars**  
Media  
Laboratories  
Workshop

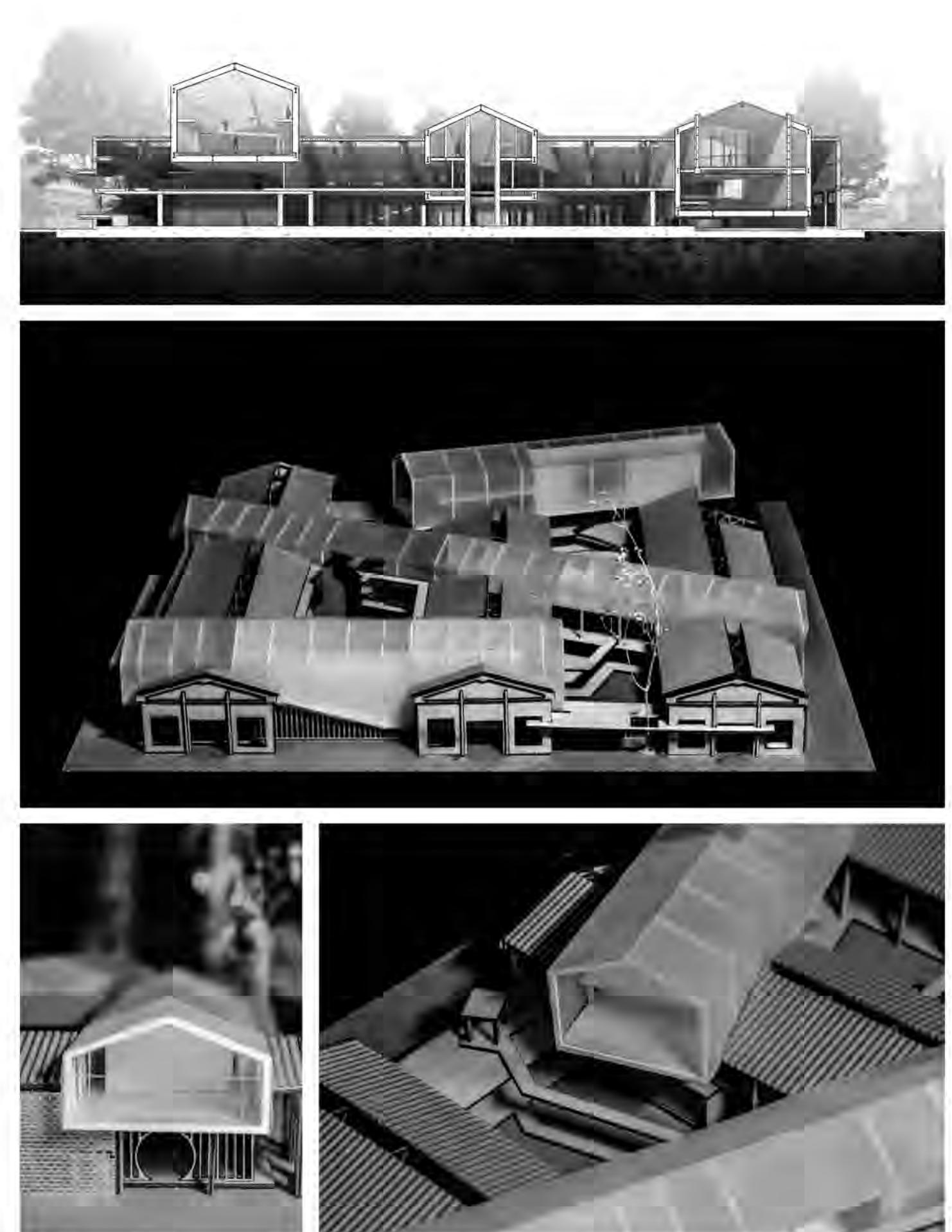
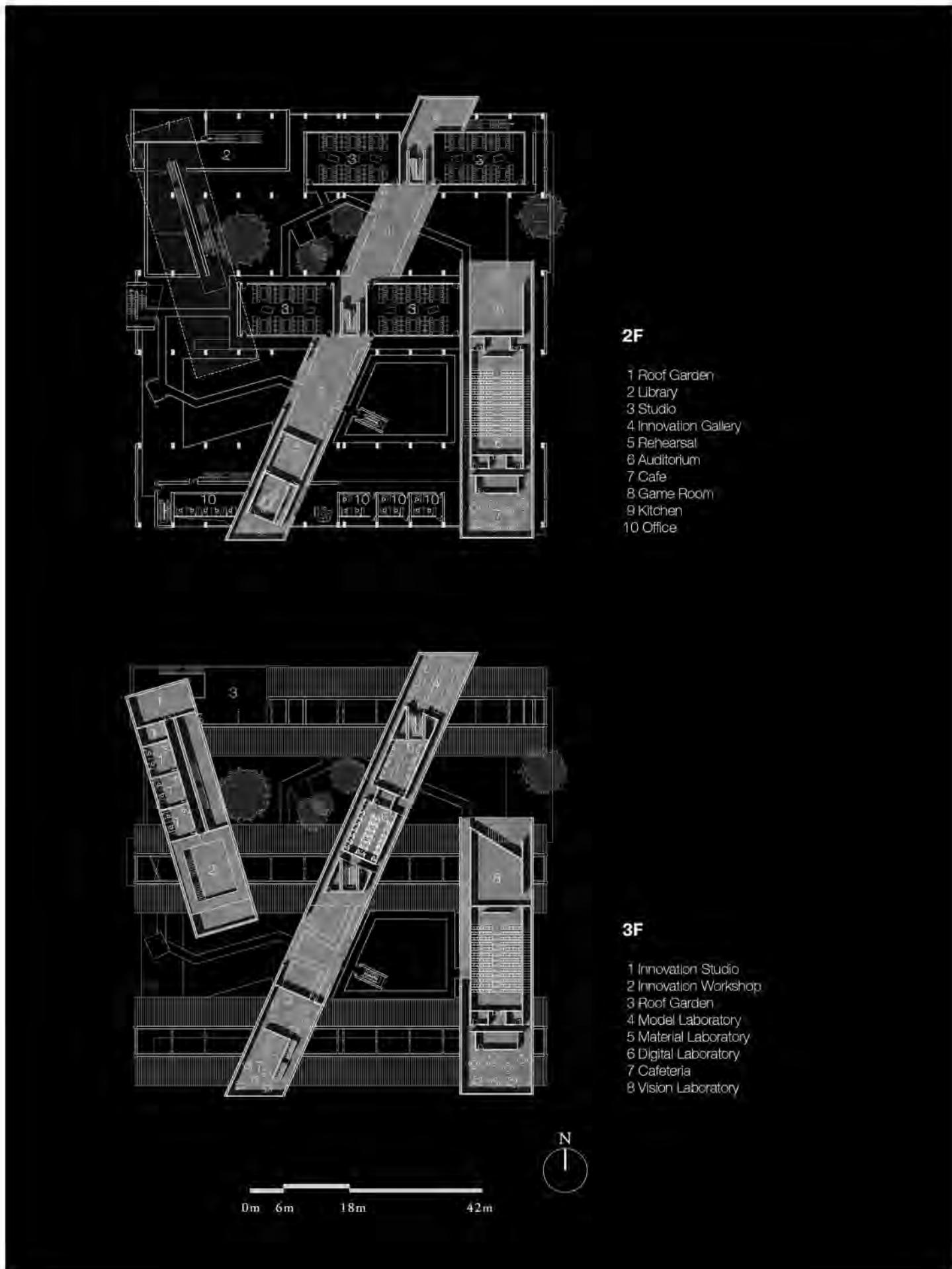
**Original Roof Structure**  
Steel Truss  
Wooden Purlins

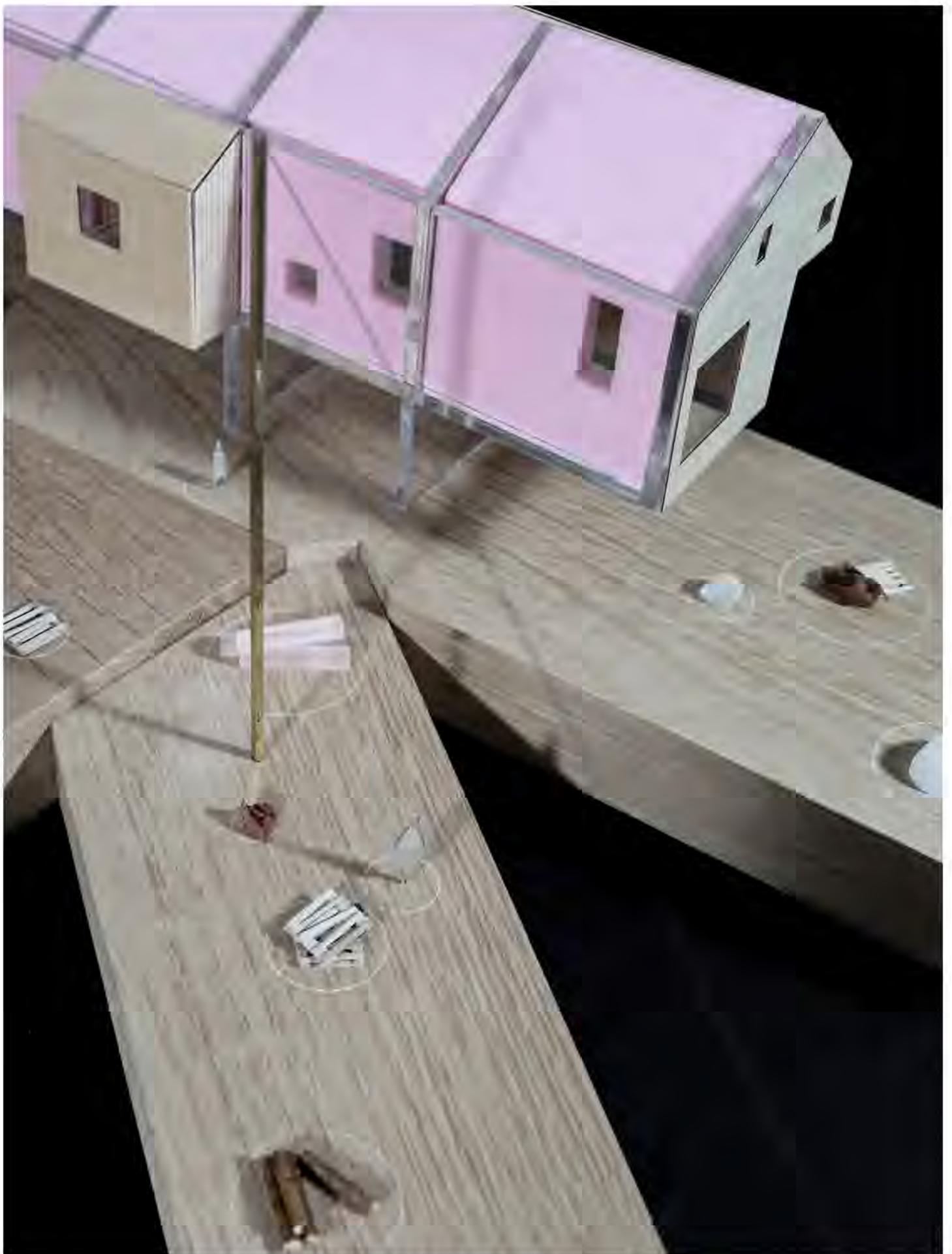
**Traditional Programs**  
Studios  
Offices  
Meeting Room  
Study  
Library



The interlaced arrangement is also the result of comprehensive analysis of required functions. Layout of Traditional Architecture department building is constrained in routine functions such as studios, offices and other public spaces. Such functions are usually isolated and lack of connection, which resemble the factories. The inserted innovative functions including modernized labs and innovation workshops can be regarded as chaotic factors that interlace with routine functions and break the traditional vigorless layout.







04

## FRAMING LOGICS ADAPTABLE ARCTIC HOUSING PROTOTYPE

UVa 2016 Research Studio

AIA Unbuilt Merit Award

Instructor: Leena Cho, Matthew Jull

Collaborator: Tyler Mauri, Austin Edwards, Ben DiNapoli

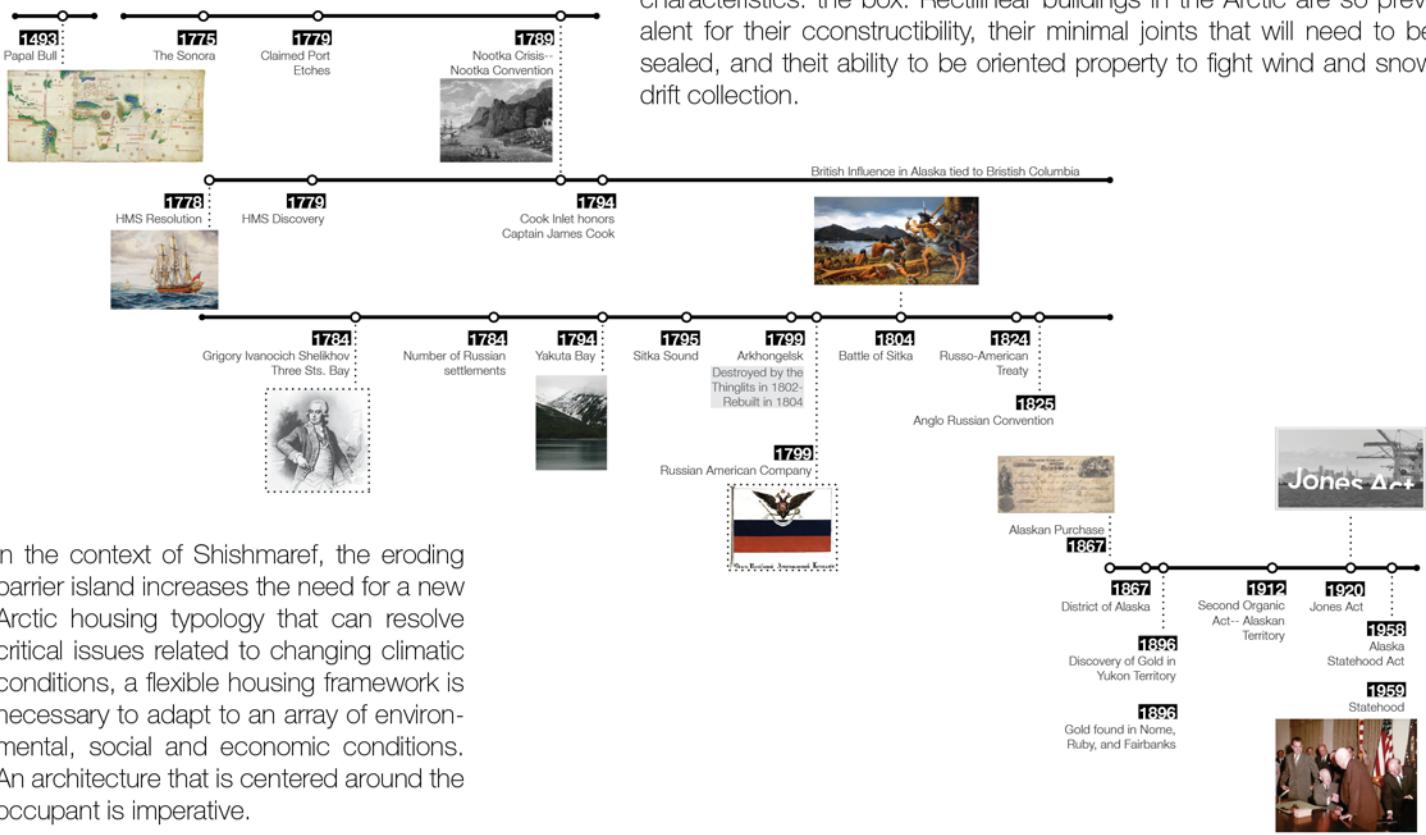
Site: Shishmaref, Alaska, US

The acceptance of a new Arctic typology is a gradual process in the Alaskan Native context. A vernacular architecture is established only when the occupants of the built environment are as integrated into the process of building as the building is to their needs. In the context of Shishmaref, Alaska, an indigenous community located on an eroding barrier island, the need for a new Arctic housing typology is derived from the lack of an existing dialogue with the changing context and needs of Shishmaref. Addressing a failure to resolve critical issues related to changing climatic conditions, a flexible housing framework is necessary to adapt to an array of environmental, social and economic conditions. An architecture that is centered around the occupant is imperative.

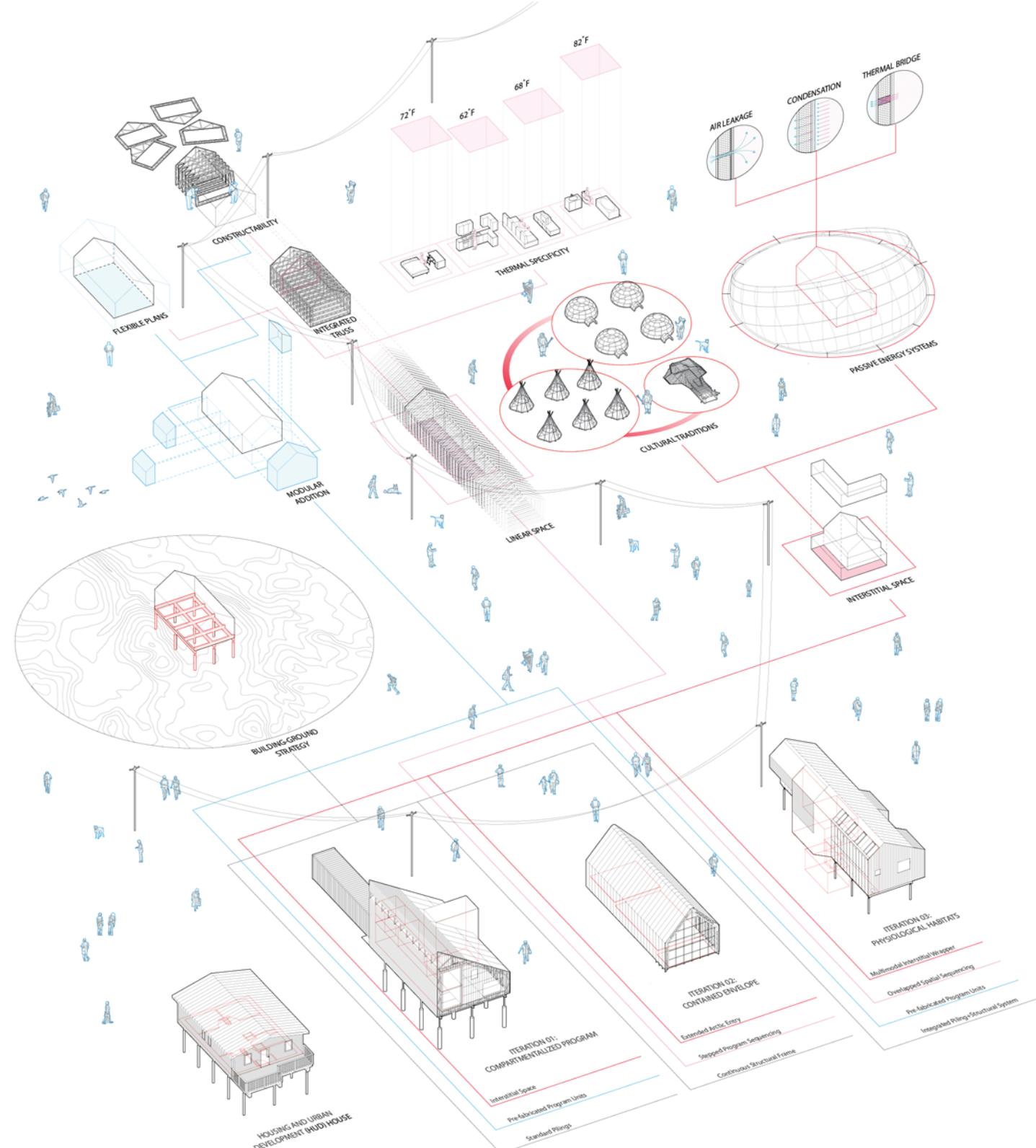
While the western-implemented solution to housing in the Arctic introduced rigid mechanical systems that waste energy, ignore their environmental impacts and neglect cultural values, the imagined mode in which housing is operating in the relocation of Shishmaref creates internal microclimates – new typologies of habitation from sensory and physiological treatments of building technique. Can the house itself operate in a way that embraces and embodies the extreme climate of the western Arctic region, replacing the need for expensive technical solutions? The prototype house regulates program sequence from cool to warm; air filters from fresh to stale; humidity is channeled from dry to wet; light becomes accessible even in winter months; insulation is a result of form, not system. The primary activity across all spaces is a direct result of the confluence of seen and unseen phenomenological forces. Designed considering pressure, heat, humidity and human occupation, the proposed Arctic housing typology produces a new vernacular form that restores authority and ownership to the native Shishmaref population, while addressing multiple environmental, socioeconomic and cultural challenges.



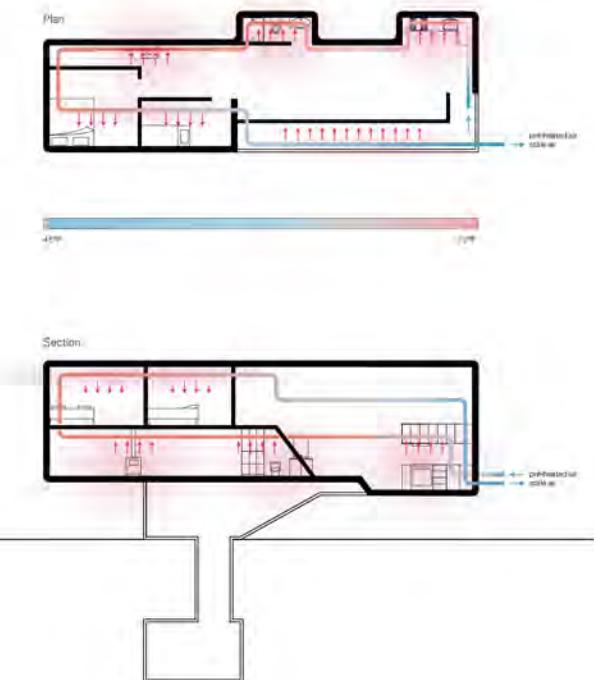
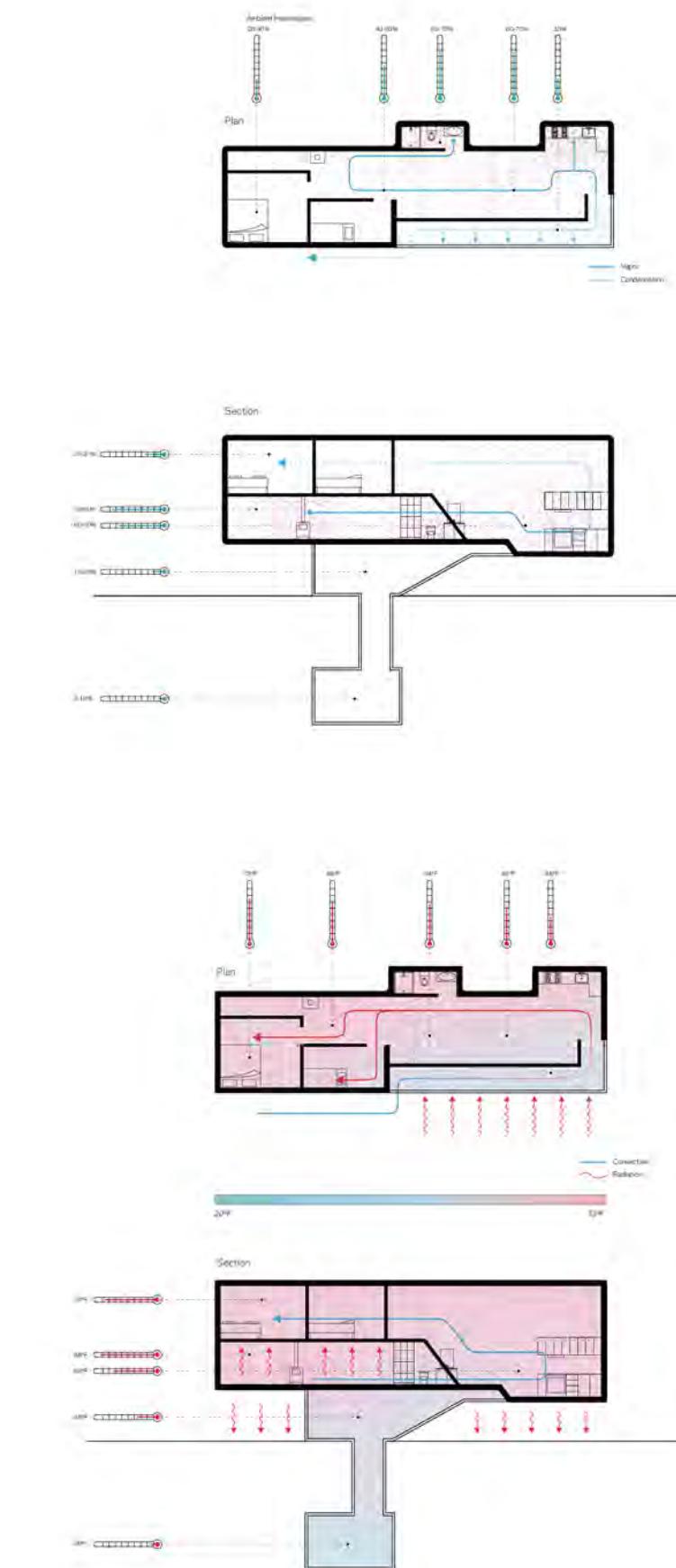
An examination of buildings in Arctic regions will show one common characteristic: the box. Rectilinear buildings in the Arctic are so prevalent for their constructability, their minimal joints that will need to be sealed, and their ability to be oriented properly to fight wind and snow drift collection.



In the context of Shishmaref, the eroding barrier island increases the need for a new Arctic housing typology that can resolve critical issues related to changing climatic conditions, a flexible housing framework is necessary to adapt to an array of environmental, social and economic conditions. An architecture that is centered around the occupant is imperative.



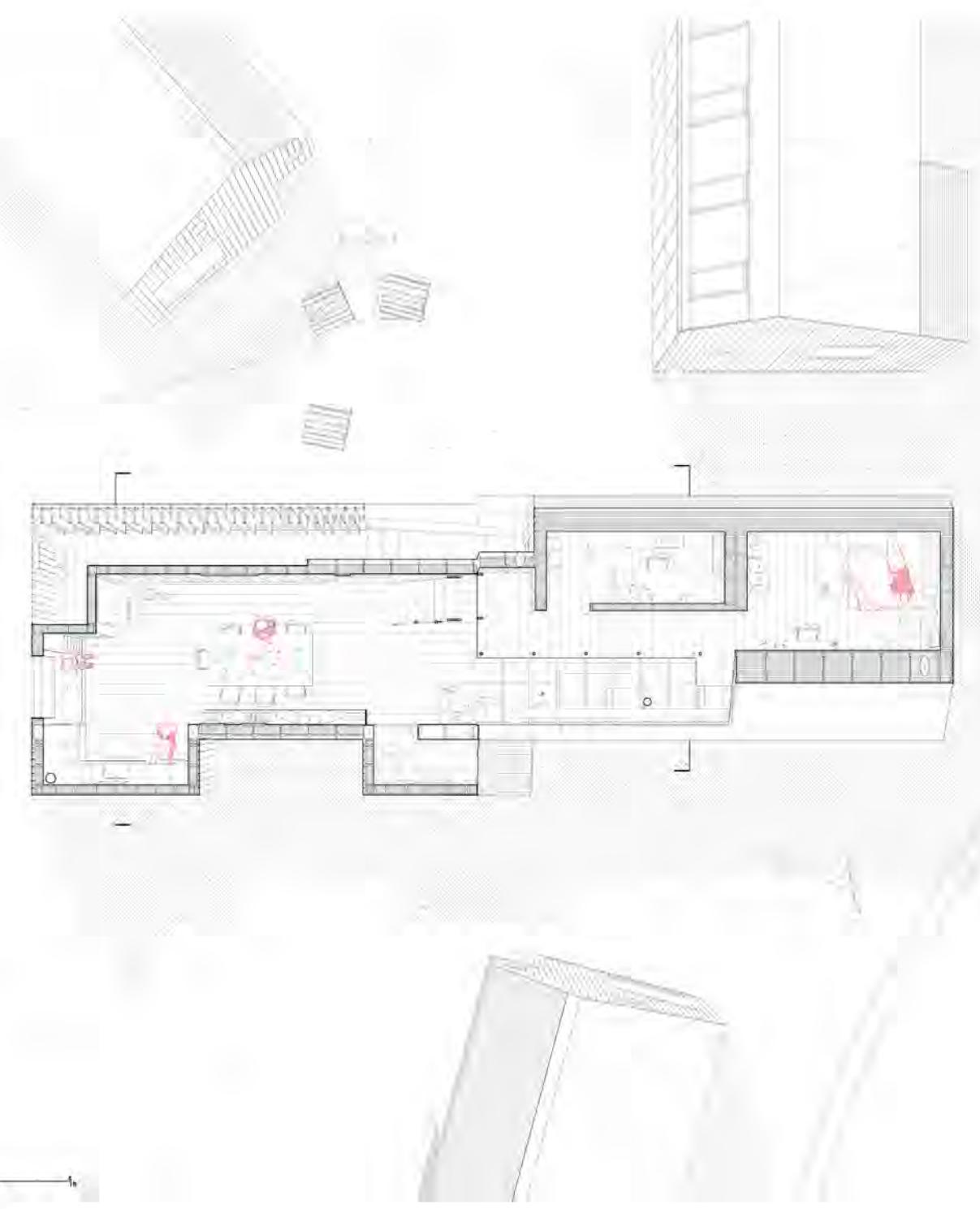
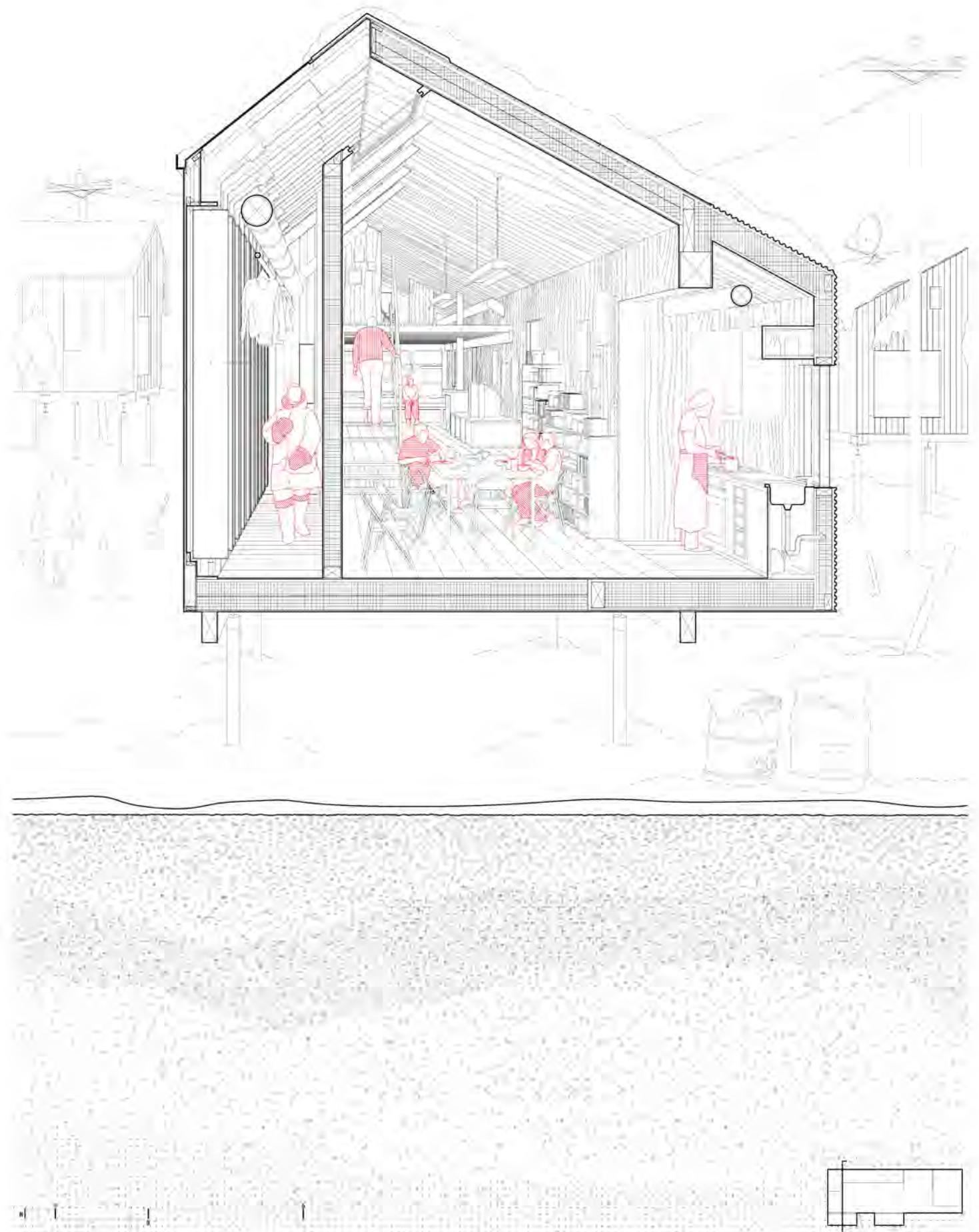
While a housing prototype must meet from which a more developed prototype house could grow from, the wants and needs of Shishmaref, it must also follow strict rules of economies and efficiencies. In order to create a housing typology that embraces a flexible, cheap, and easily constructed structural framework, with the ability to grow and shrink depending on family needs, a strategy for add-on prefabricated units was established. A series of form iterations and two comprehensively developed schemes that utilize an integrated truss(a combined wall system and structural framework that provides space for utilities and insulation) helped establish rules and lessons



## INTERSTITIAL SPACE

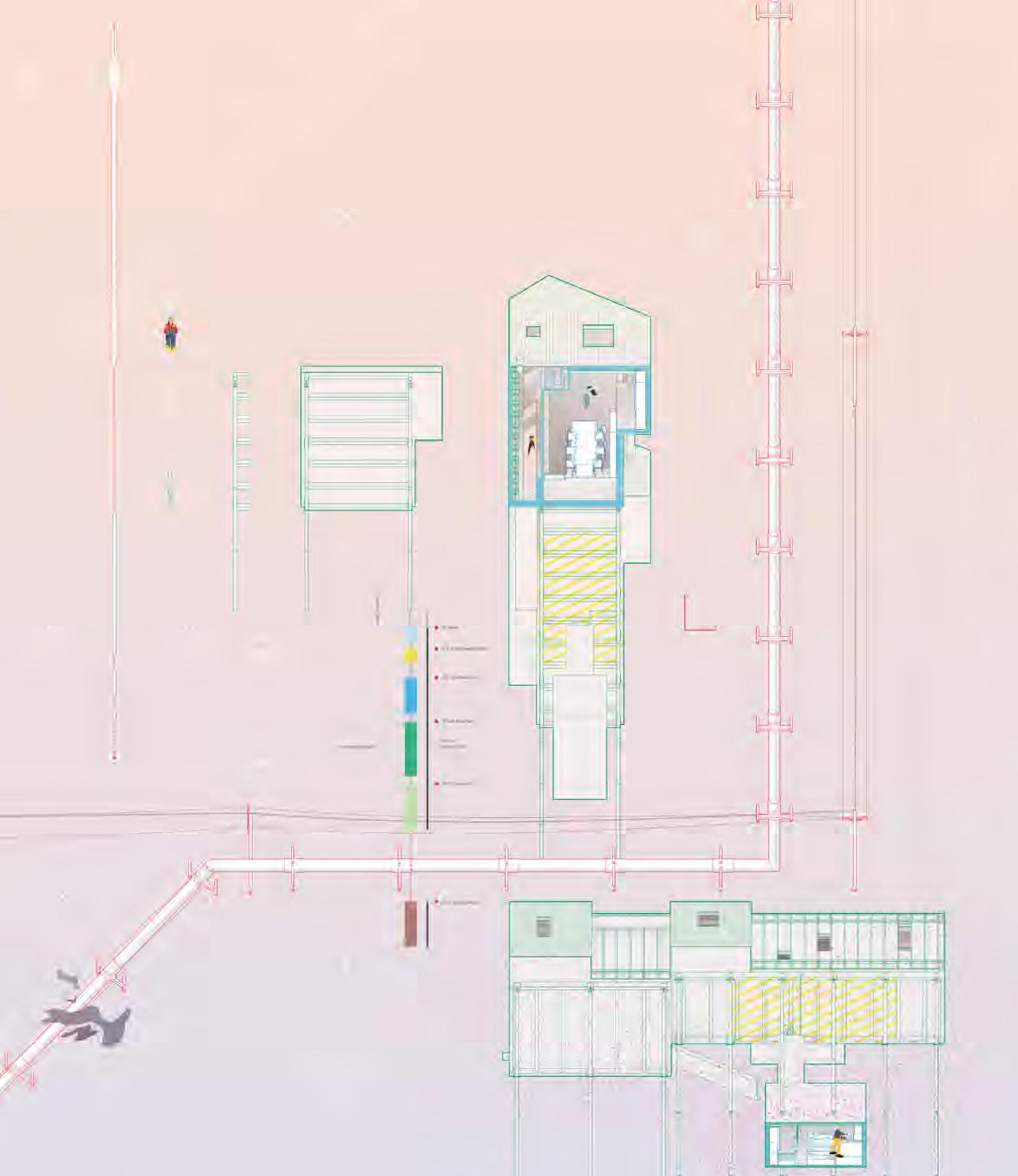
A major inefficiency with the current available housing is the spatial and programmatic sequencing within the house. It is not suited for the cultural needs of the villagers, and does not provide a space for subsistence activities to occur. By introducing a new programmatic function, an interstitial semi-climatized space, and by re-sequencing the programs within the house to follow their natural thermal hierarchies, the house becomes integrated within both function and climate.

In addition to the thermal order, the interstitial space also acts as a driver for humidity and pressure systems. This allows the addition of the interstitial area to drive three related but distinct physiological systems, and contribute to increase passive ventilation, moisture reduction, heat exchange, and comfort.



## GROUND

After performing a soil analysis of the site using bore hole sample data taken during a relocation study by AECOM in 2016, we determined that the ground condition allowed for the possibility of returning to a vernacular method of storing cold goods—the ice cellar. The cellar is buried deep into the permafrost layer and acts as an insulator. By including this preferred method of storage, the prototype house furthers its thermal regime, both in plan sequence and in its extended section. The ground condition also requires building to be lifted onto pilings to minimize heat transfer from the building to the ground. The house steps from its coldest point, the arctic entry, where heat transfer is minimal where the house is closest to the ground, to the bedrooms which are raised the highest off the ground to help prevent permafrost thawing resulting from human activity.

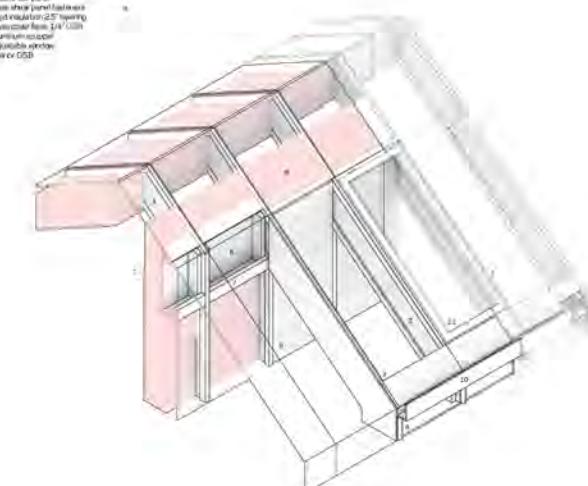
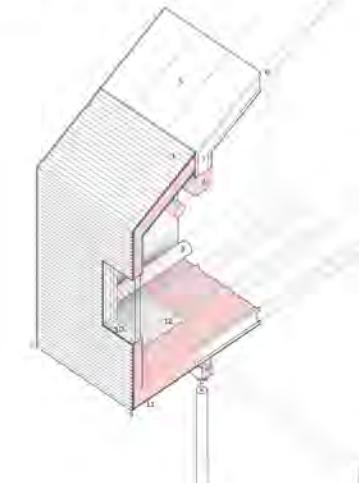


1	2
3	4

1 Kitchen Addition  
 2 Interstitial Space  
 3 Seasonal Wall  
 4 Bedroom Addition

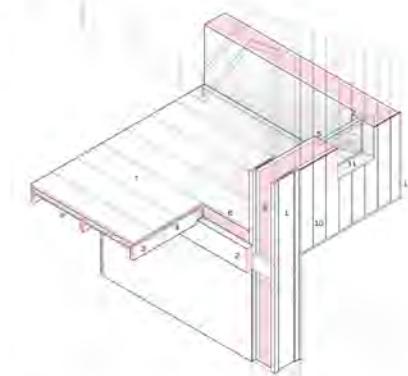
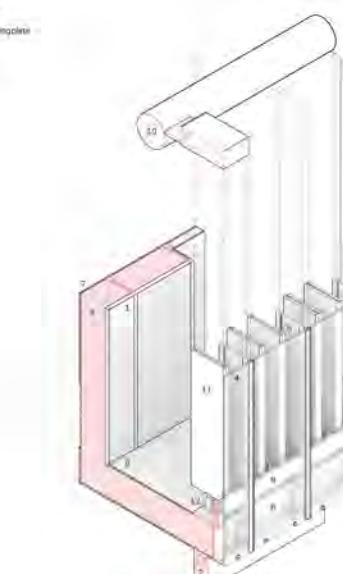
1. Compartmentalizing  
 2. Metal framing  
 3. 2x4 lumber  
 4. 4x4 timber  
 5. 1/2" polycarbonate  
 6. Truss webbing with mesh facing sheet  
 7. 8.34" x 1.67" aluminum  
 8. 70mm frame with 20mm double glass units  
 9. Weatherhook via timber  
 10. Island rock  
 11. Island rock  
 12. Island rock

1. Insulated base  
 2. 2x4 lumber  
 3. 4x4 timber  
 4. 2x4 lumber  
 5. 1/2" polycarbonate  
 6. Truss webbing with mesh facing sheet  
 7. 8.34" x 1.67" aluminum  
 8. 70mm frame with 20mm double glass units  
 9. Weatherhook via timber  
 10. Island rock  
 11. Island rock  
 12. Island rock



1. Insulated base  
 2. 2x4 lumber  
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 8. 70mm frame with 20mm double glass units  
 9. Weatherhook via timber  
 10. Island rock  
 11. Island rock  
 12. Island rock



## ADAPTABILITY

A flexible frame work that allows for expansion depending on family size requires attention to material systems and constructibility. The rigid frame creates a linear system, where additional trusses can be flipped up as needed. The structure rests on a piling foundation, driven into the permafrost. Material layers of polycarbonate sheathing, plywood sheathing, and rigid foam insulation create different thicknesses of insulation.



## HILL CHAPEL MOVABLE SHADING SYSTEM AND SPACE DUALITY

Design Development Course Work  
Instructor: Ted Jones  
Collaborator: Zeyu Liu  
Site: Madison County, Virginia, US



The project is the Design Development course work. The course aims on the detailing level design of a small size building. The site is located on a wide north-facing slope, adjacent to a farm with several small houses. The project functions as a little chapel, basically for farm owner's personal use, and gathering people during special events.

The project also introduces a central symmetrical ellipse plan that conceptually connects three of the major landmarks around the site: the Labyrinth at the left, the Frame Barn at the right, and two old pine trees on the far front. The structure concept aims to pursue the harmony and contrast between the light and warm vibe of wooden inner structure, and a floating heavy outer concrete shell.

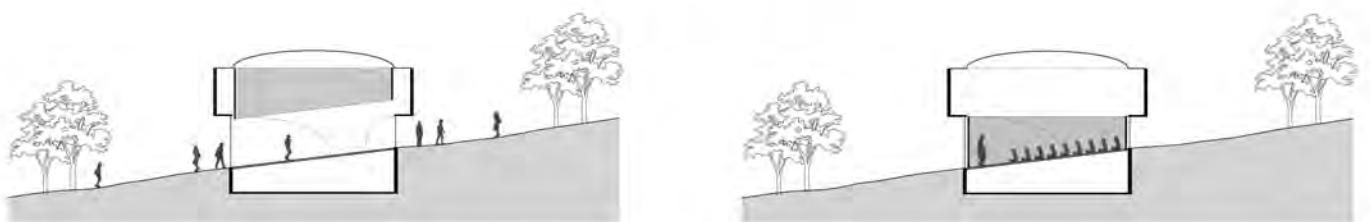
The curve of concrete form rises to reveal an open transparent facade to the north front, which brings a breathtaking view across the valley into the building, while the humbly small entrance at the south facade prevents the excessive sunlight at summer. The movable vertical panels inside the chapel creates a bright, open pavilion-like space when it's open, and a tranquil meditative space when it's closed.

We imagine the appearance of the project can be shifted according to different events, presenting both the extravert and introvert atmosphere in different time. To achieve this requirement, we applied the operable shading system that can be vertically moved, being able to block the light and view from the outside when lowered, or presents an open image when lifted.

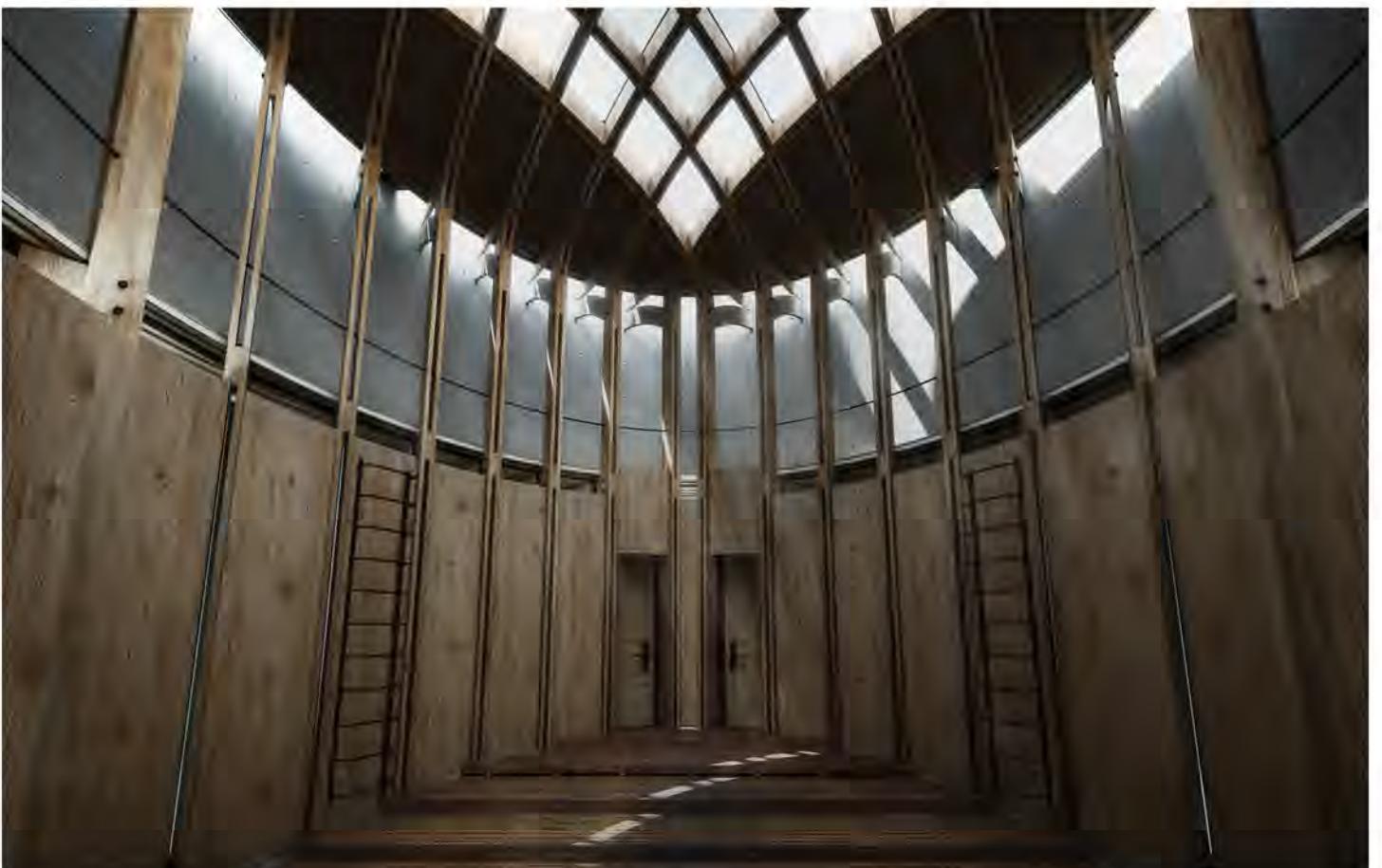
## SITE LOCATION

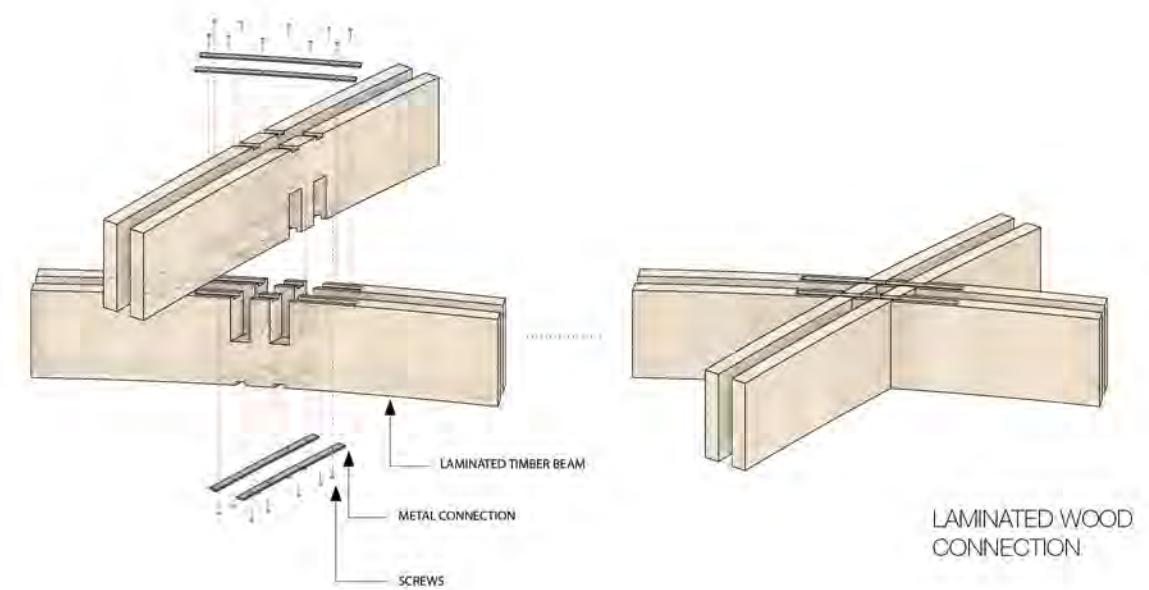
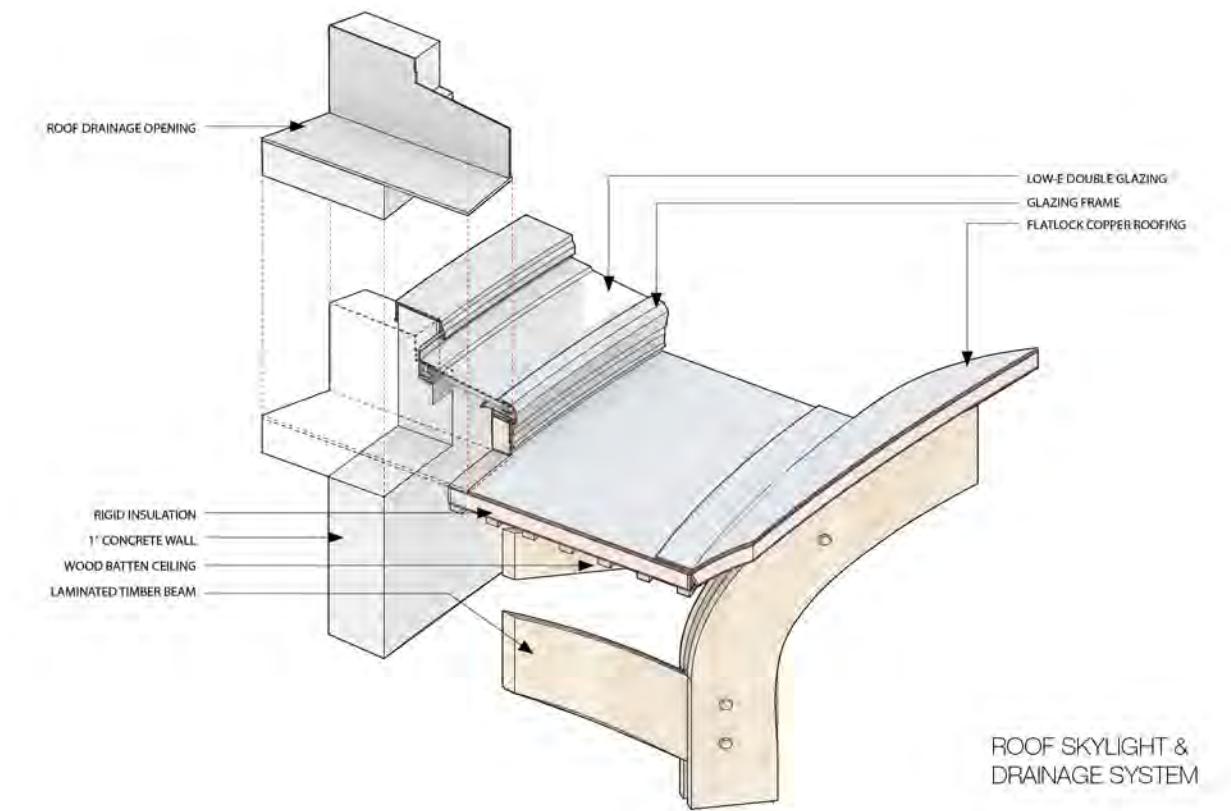
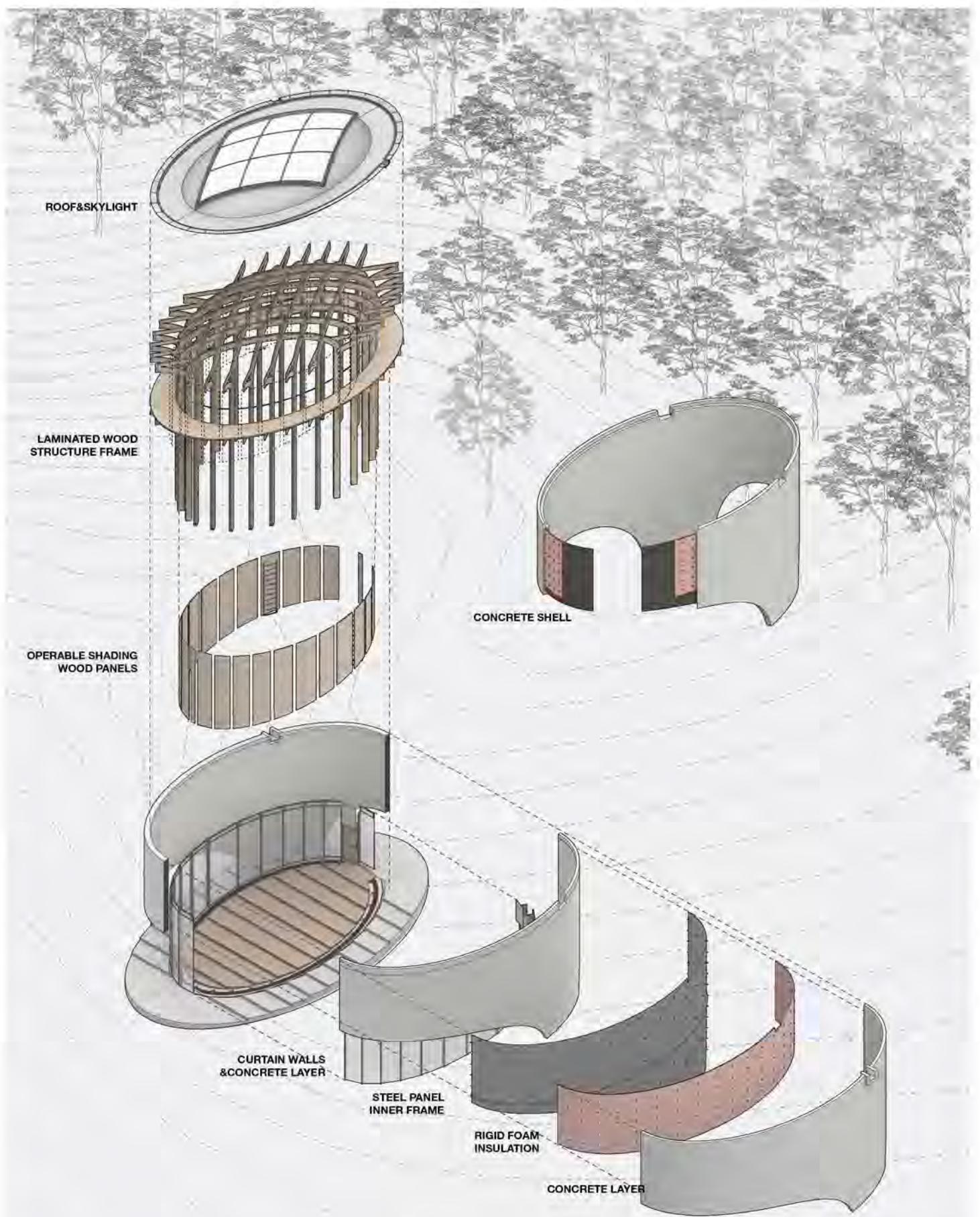


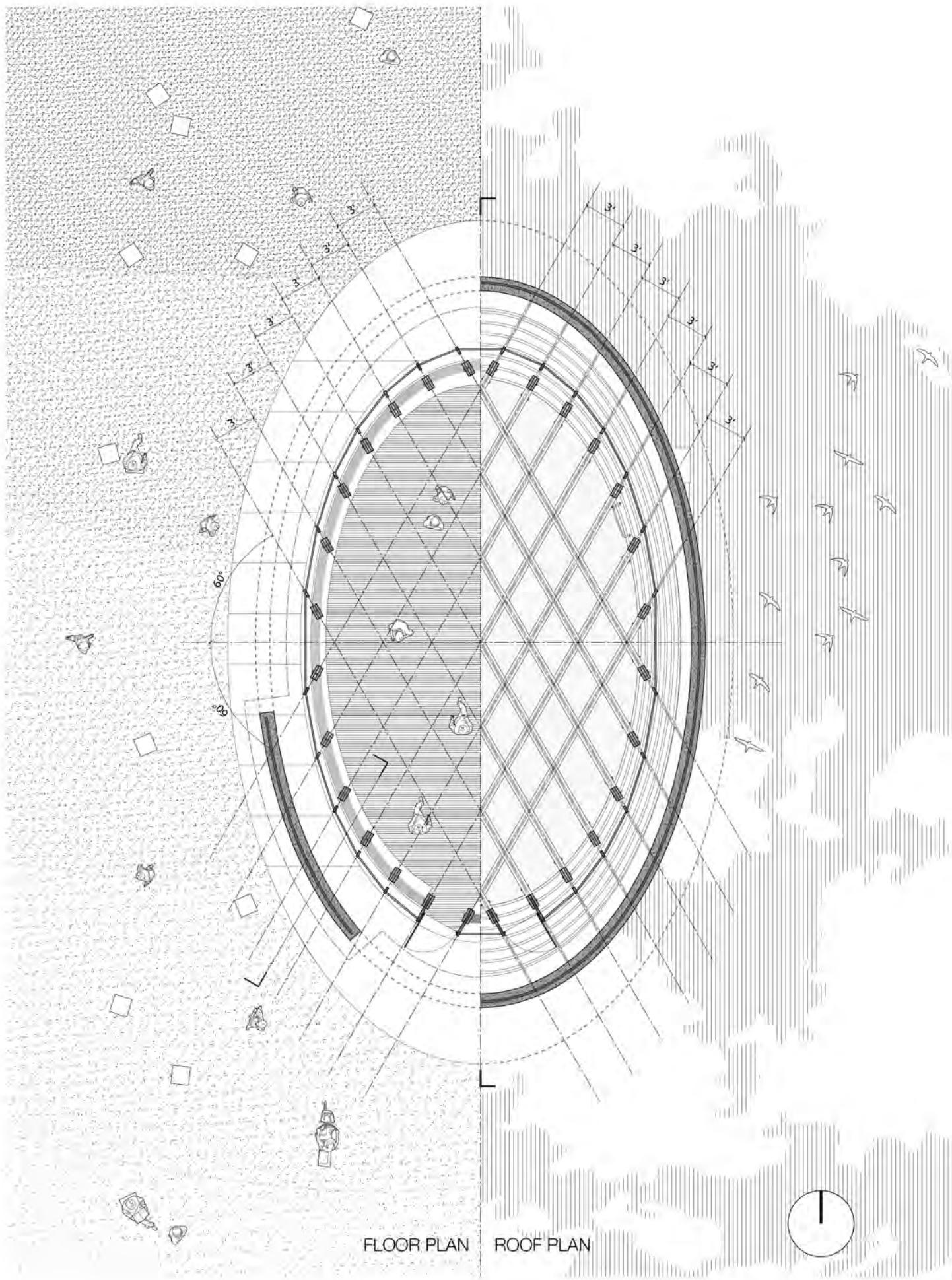
## SPACE DUALITY

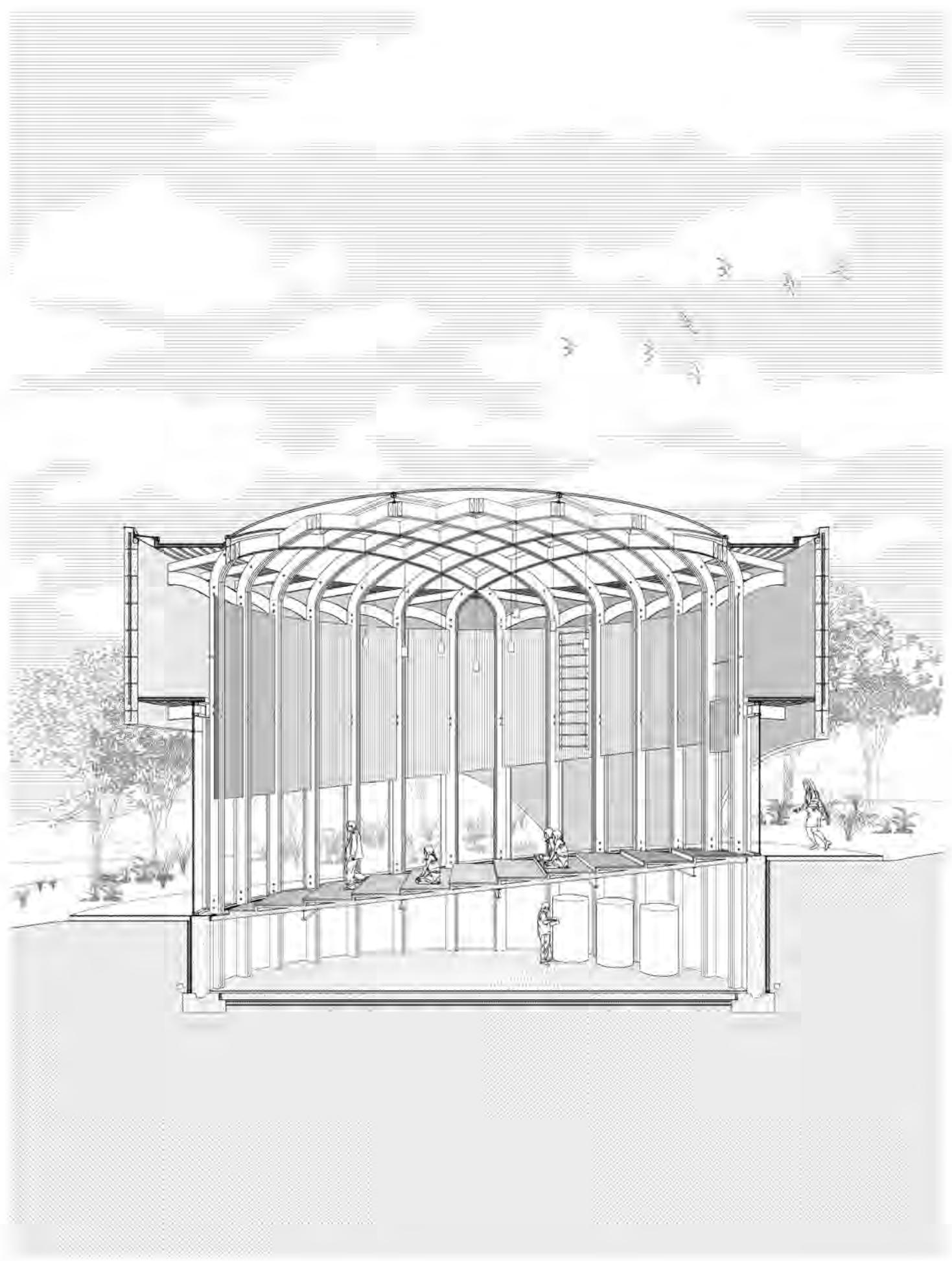
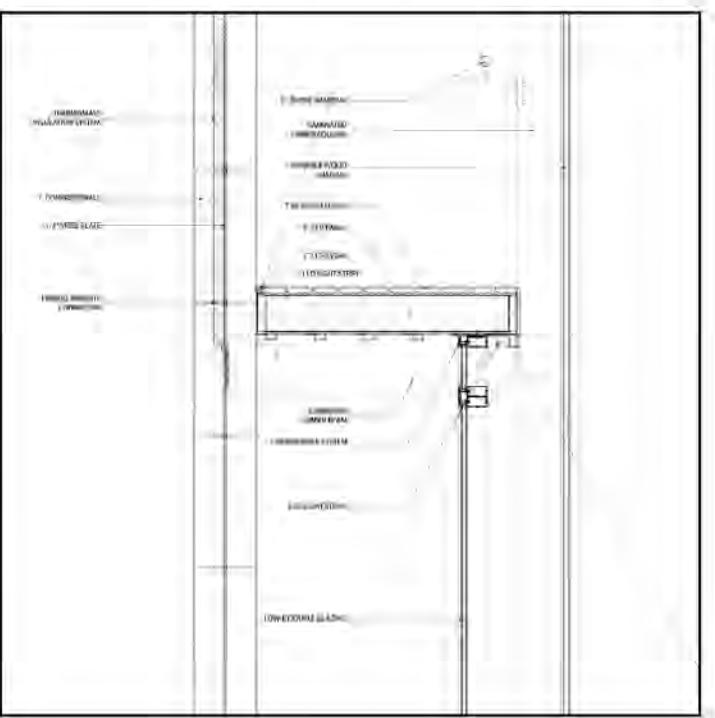
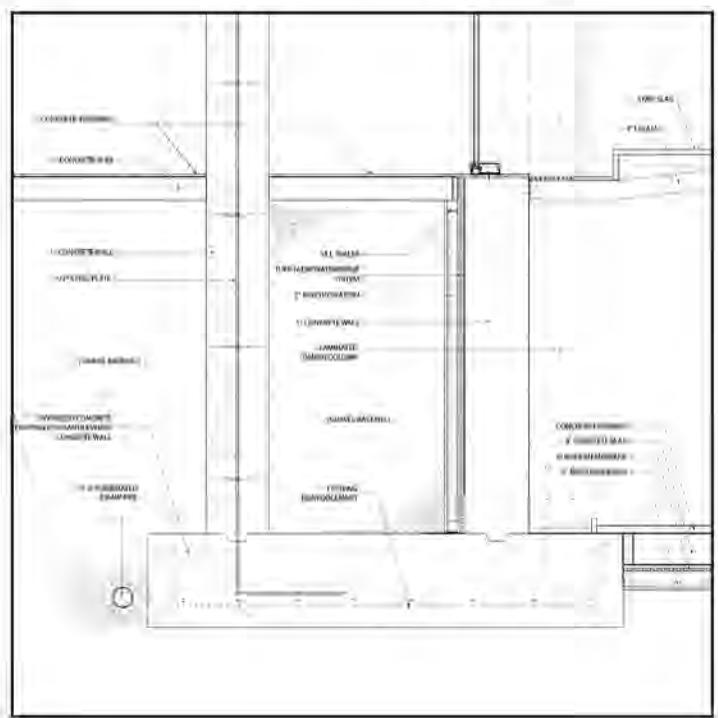
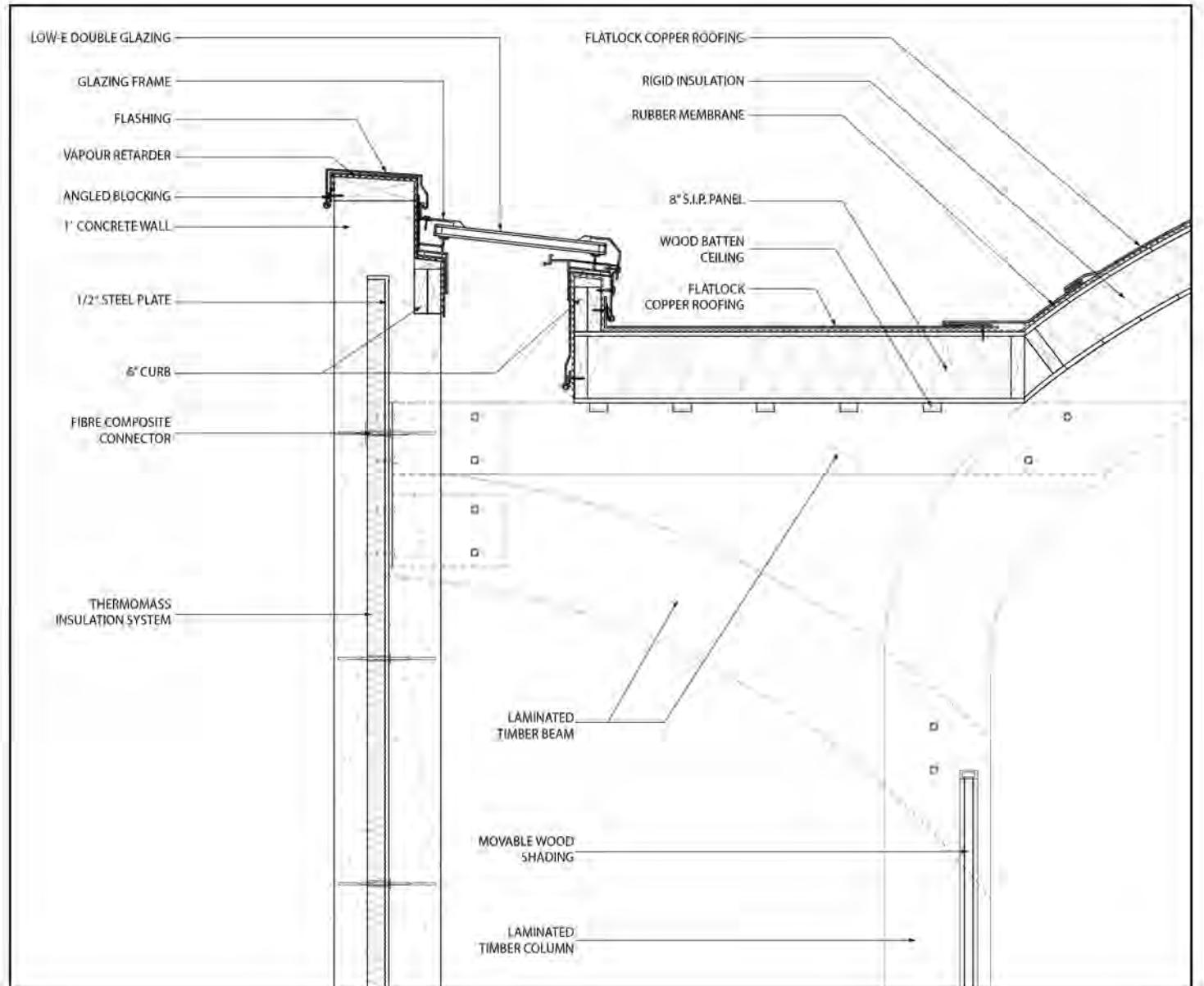


The client of the project wanted the chapel to be able to adapt to different events. It should be an introvert place for the owner to meditate as well as an extrovert place for the neighborhood to gather for special events. To achieve this requirement, the space needs to be shiftable. An operable shading system that can be vertically moved was applied to the project. The system is able to block the light and view from the outside when lowered, or presents an open image when lifted.









**INOVA CENTER FOR PERSONALIZED HEALTH**  
BY HDR INC. ARLINGTON

Exterior and interior Renderings  
Modeling Program: Revit, Sketchup  
Rendering program: V-Ray 3.4 for Sketchup



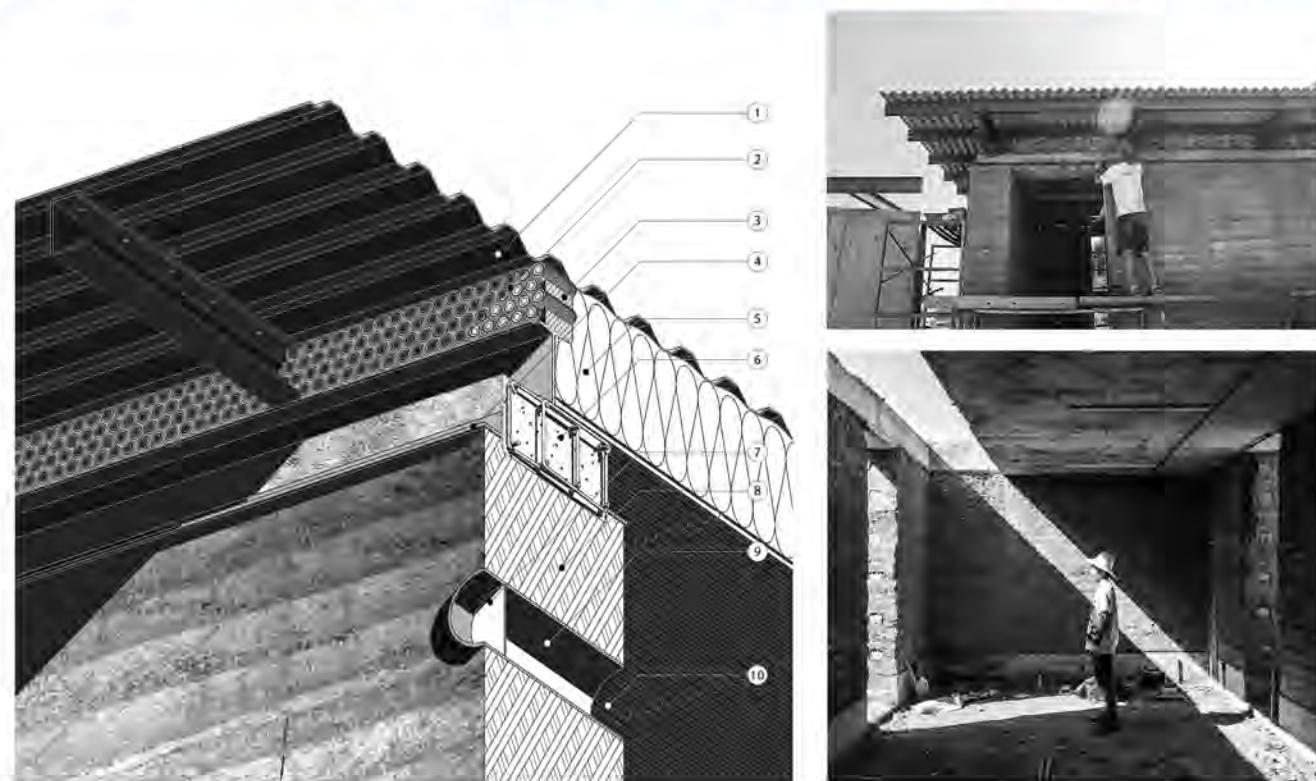
**“LUMINA” PAVILION FOR UVA BICENTENNIAL CELEBRATIONS**  
BY ANDREW KUDLESS & UVA STUDENTS

Renderings for design mockup and on-site building  
Modeling Program: Rhino, Grasshopper  
Rendering program: V-Ray 3.4 for Rhino



**MACHA COMMUNITY CENTER**  
BY BRIDGE TO CHINA FOUNDATION

Volunteer Activity  
Detail design, On-site building, Video Recording



**PENG-QIU**  
PAVILION DESING AND BUILDING COMPETITION  
2ND PRIZE

Team leading, Design, On-site Building  
Material: Bamboo, Polyester Cloth



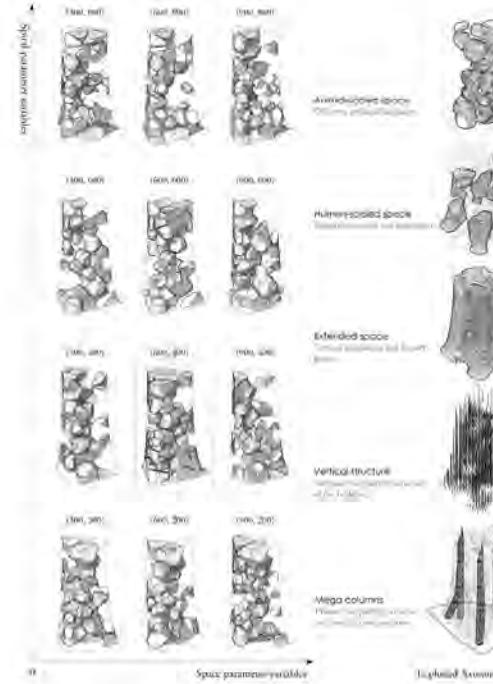
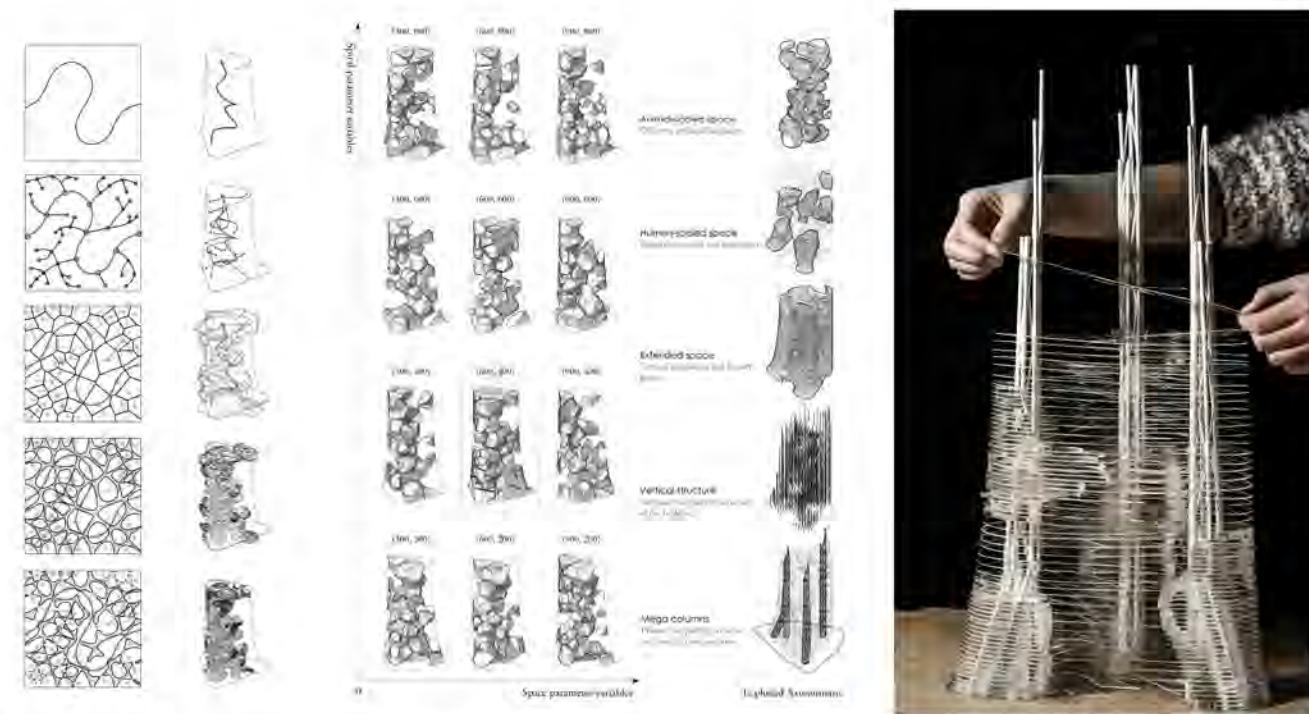
## ZOOTOPIA

UIA-HYP CUP 2014 INTERNATIONAL STUDENT DESIGN COMPETITION  
FINALIST

Design, Modeling and Rendering

Modeling Program: Rhino, Grasshopper, 3ds Max, Z-brush

Rendering program: V-Ray 2.0 for Rhino



**THE PIXEL**  
XJTU 2015 DESIGN STUDIO

Design and Modeling  
Modeling Program: Sketchup

