

Kindled
A HEALING Garden

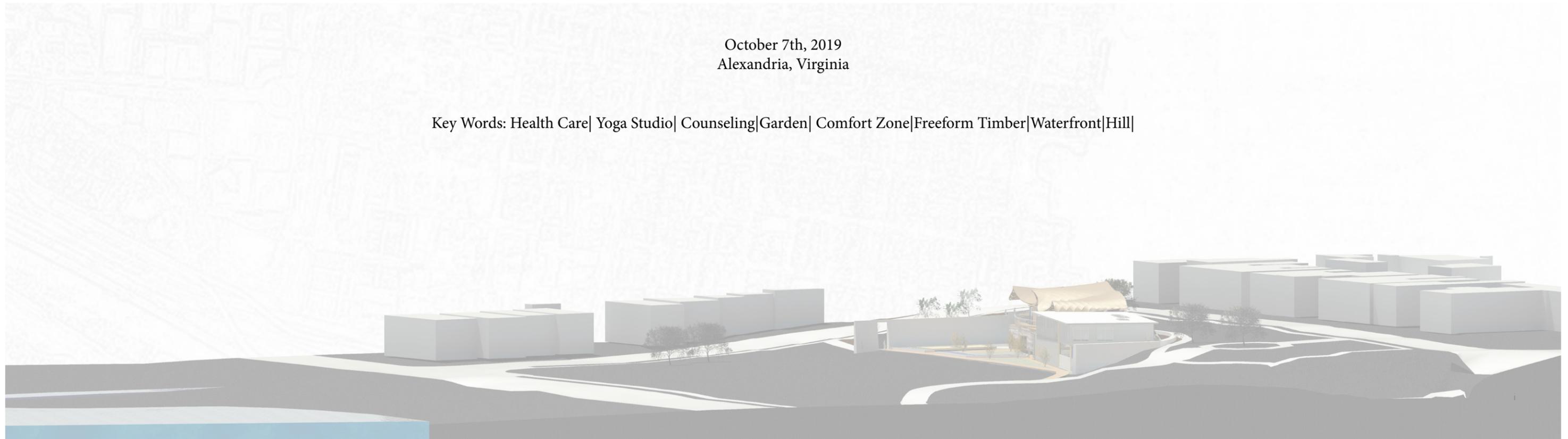
Runjie Liu

Thesis submitted to the faculty of the Virginia Polytechnic Institute and
State University in partial fulfillment of the requirements for the degree of
Master in Architecture
in
Architecture

Marcia F. Feuerstein, Chair
Susan C. Piedmont-Palladino
Jodi La Coe

October 7th, 2019
Alexandria, Virginia

Key Words: Health Care| Yoga Studio| Counseling|Garden| Comfort Zone|Freeform Timber|Waterfront|Hill|



Kindled
A HEALING Garden

Runjie Liu

Abstract

This thesis proposes a hypothetical building that intends to provide a relatively “private space” while in a public park to facilitate a conversation with therapists, small group-talk sessions, and classrooms to practice yoga. People are encouraged to walk and talk, and exercises are methods of psychotherapy. The architecture plan of this thesis encourages people with depression to evolve with others, and all programs have at least two people as a group. The distance between the two is the main key for all the designing of space. In other words, this thesis is also about a study of human psychology about “comfort zones.”

The thesis site is an existing area, a hill, at the Windmill Hill Park in Alexandria, Virginia. The site location belongs to a region that all four seasons can be experienced with their distinctive characteristics over the year. Therefore, the challenge is to make the building be able to handle all kinds of weather conditions. Especially, the site is located by the Potomac River, it is very necessary to keep the building away from humidity. By responding to the site condition on the major aspects such as light, air, and sound, the thesis projects intend to achieve the hospitality to the users with comfortable experience.

Kindled
A HEALING Garden

Runjie Liu

General Audience Abstract

This thesis proposes a building that aims to help people with depression feelings in an urban environment by providing places for physical and mental improvement programs. It includes yoga studios, counseling rooms, and gardens for visitors to practice activities with other individuals. It is also considered a renovation of the existing Waterfront Parks in Old Town Alexandria.

FROM HUMAN BODY TO ARCHITECTURE

Counseling Room | Garden | Yoga Studio

iii ACKNOWLEDGMENTS

INTRODUCTION

- 1 On healing
- 4 The Distance in Between

FROM CONCEPT TO PLAN

- 6 Case studies and Architecture program
- 10 Site location
- 12 Photos, sketches and study models
- 13 Conceptual plan and section

HEALING GARDEN

- 21 Site plan and landscape
- 24 Wind, solar and Humidity
- 29 Plan and section

48 BIBLIOGRAPHY



I want to offer my deep thanks to my thesis committee and my mentors Marcia F. Feuerstein, Susan C. Piedmont-Palladino, and Jodi La Coe, for their continuous support and critical help of this project. Without their strong encouragement and patience, the book would not exist.

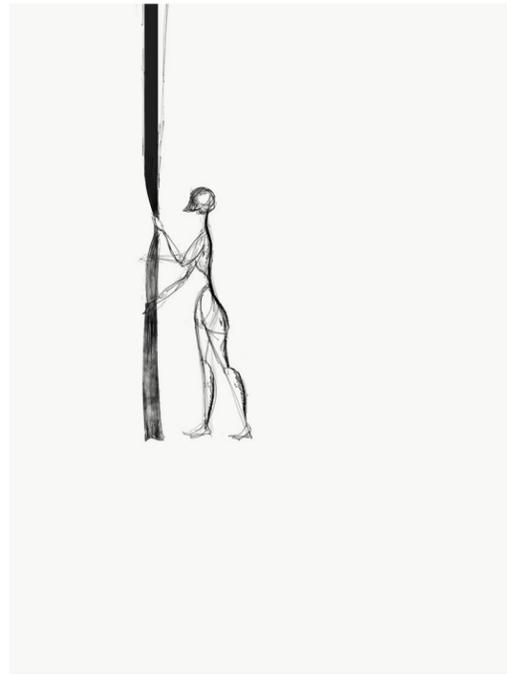
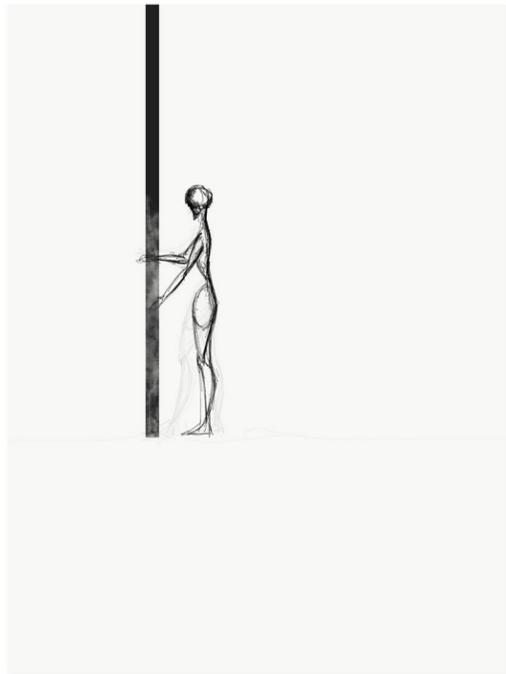
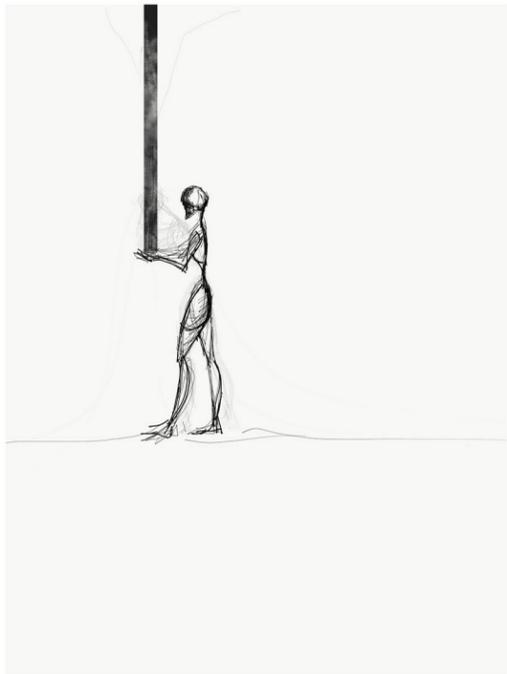
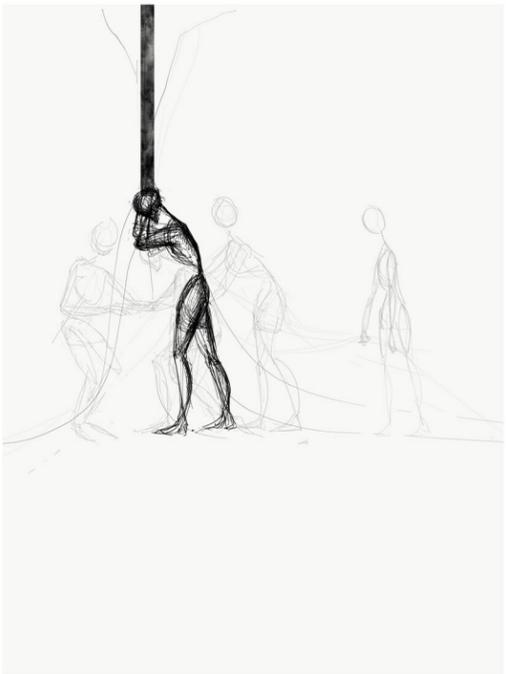
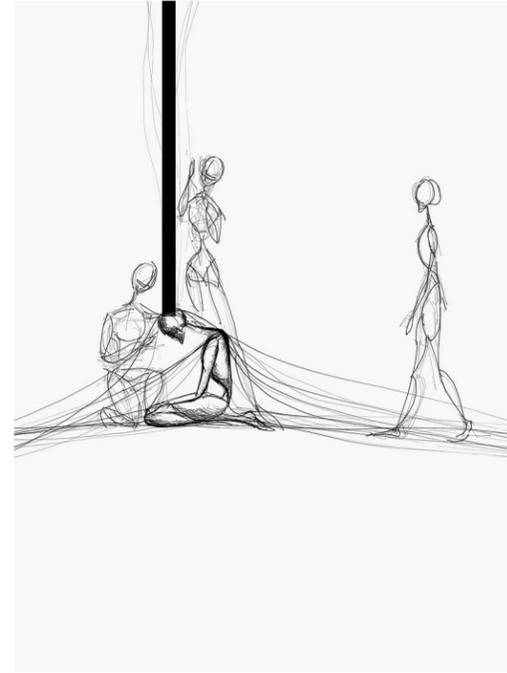
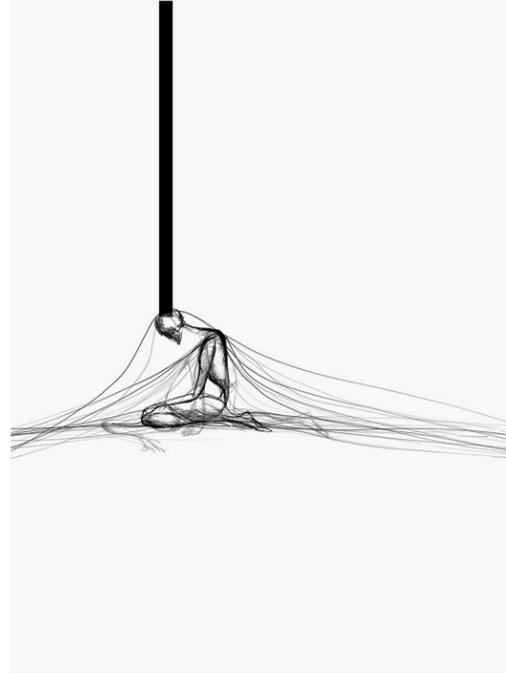
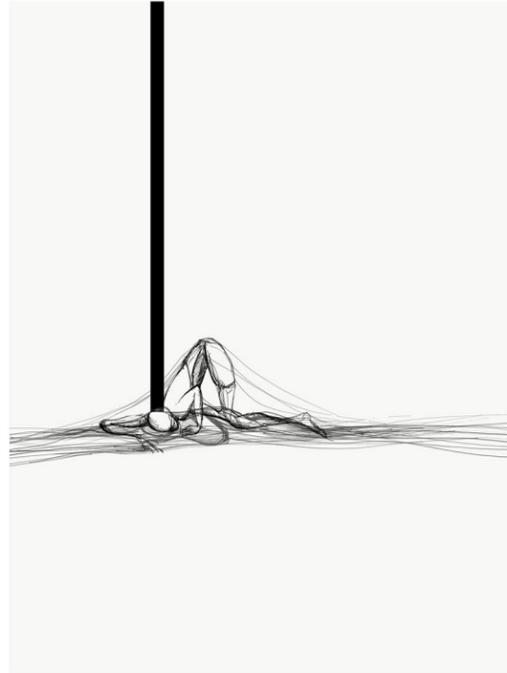
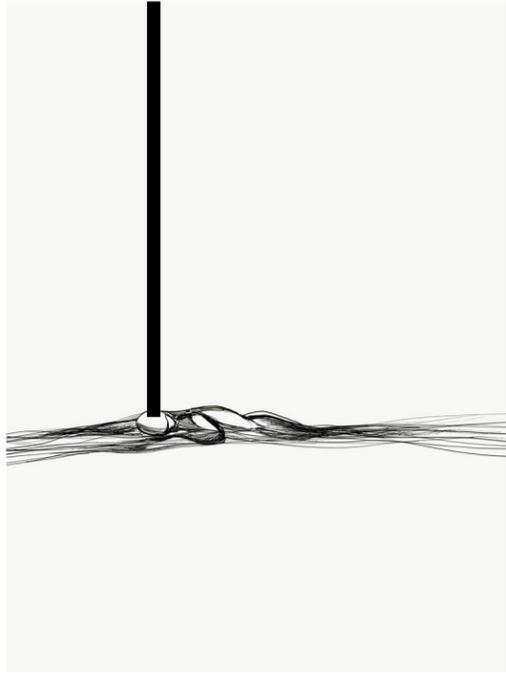
I also want to thank to Hunter Pittman, David Dugas, Hans Rott and Frank Weiner for leading me into the understanding of architecture, and offering help, when I had a difficult time during my first two years of study in the school of architecture.

The following people have been important in shaping the book in different ways: My dear friends, Bo and Wang, for their warm support and Bonny Dyer for her great work of editing and help on writing.

INTRODUCTION

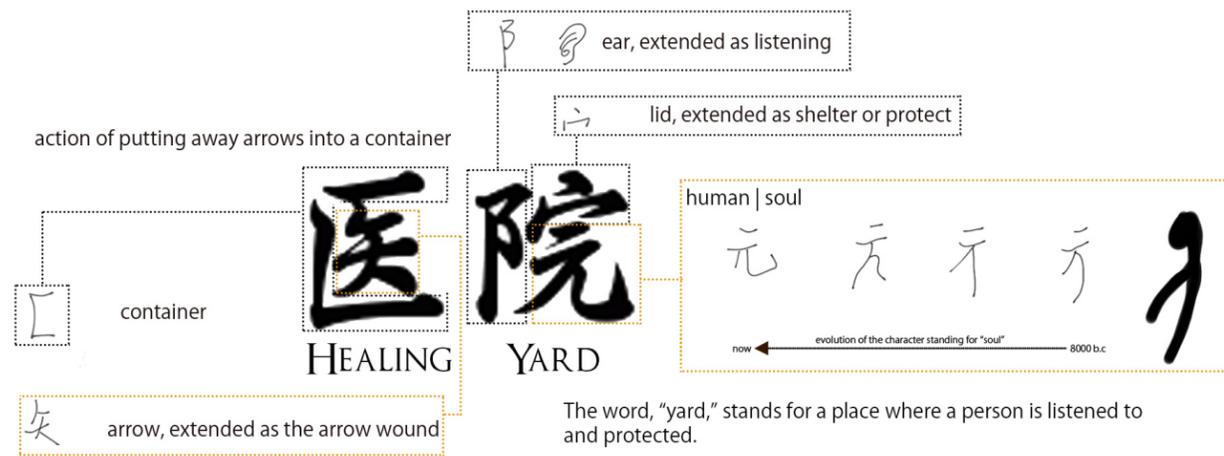
On Healing

Process of healing: Pull up and put down



INTRODUCTION

On healing



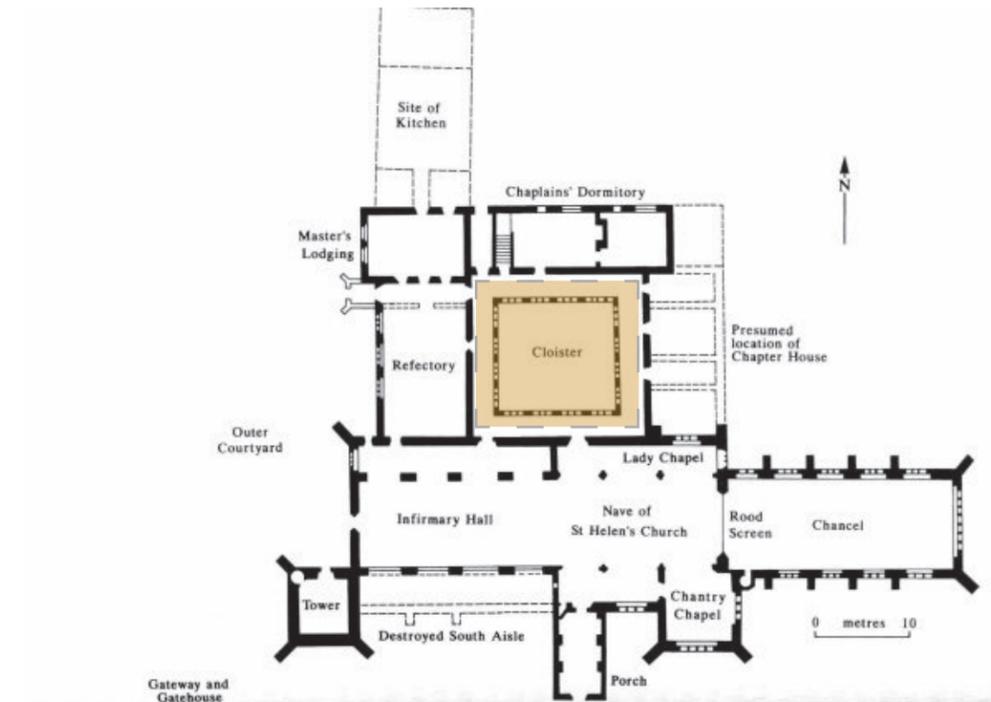
The word, "hospital," in Mandarin Chinese, "医院," is composed of two characters. The first character, "医," which can be pronounced as Yi, means healing. The second character, "院," which can be pronounced as yuan, is a place where people can get revitalized. The concept of self-suggestion concerns the belief that the only people who trust and accept the treatment can be healed (Roman 2017). It's obvious in the modern world that this is a misconception. However, socio-historical facts of a different time and place would make it appear more plausible. People who suffered from mental disorders usually refused the treatment (Irimia 2016). The depression that often accompanied illness, made them unable to believe in the effectiveness of treatment. Even though most people live a happy life, people with depression are less likely to believe that happiness is possible. They often tried to make themselves appear psychologically normal, avoiding any treatment that would expose their depression. None of them want to be seen as abnormal (Irimia 2016).

To avoid an overly "institutional" hospital, my thesis design is to change the hospital back to a garden that heals people both physically and mentally. The project embraces the ideas of healing and garden, which will create an environment that will make people happy. In the healing garden, the idea of "kindling" relates both to the physical warmth of a fire and the psychological effects of this warmth. The word "kindle" means "enlightenment" and "light". For people who are suffering from depression, this design will hopefully alleviate the pain and disperse the darkness and therefore improve the physical and mental conditions.

Hospital Cloisters at the Middle Ages



Scottish Women's Hospital - in the Cloister of the Abbaye de Royaumont.



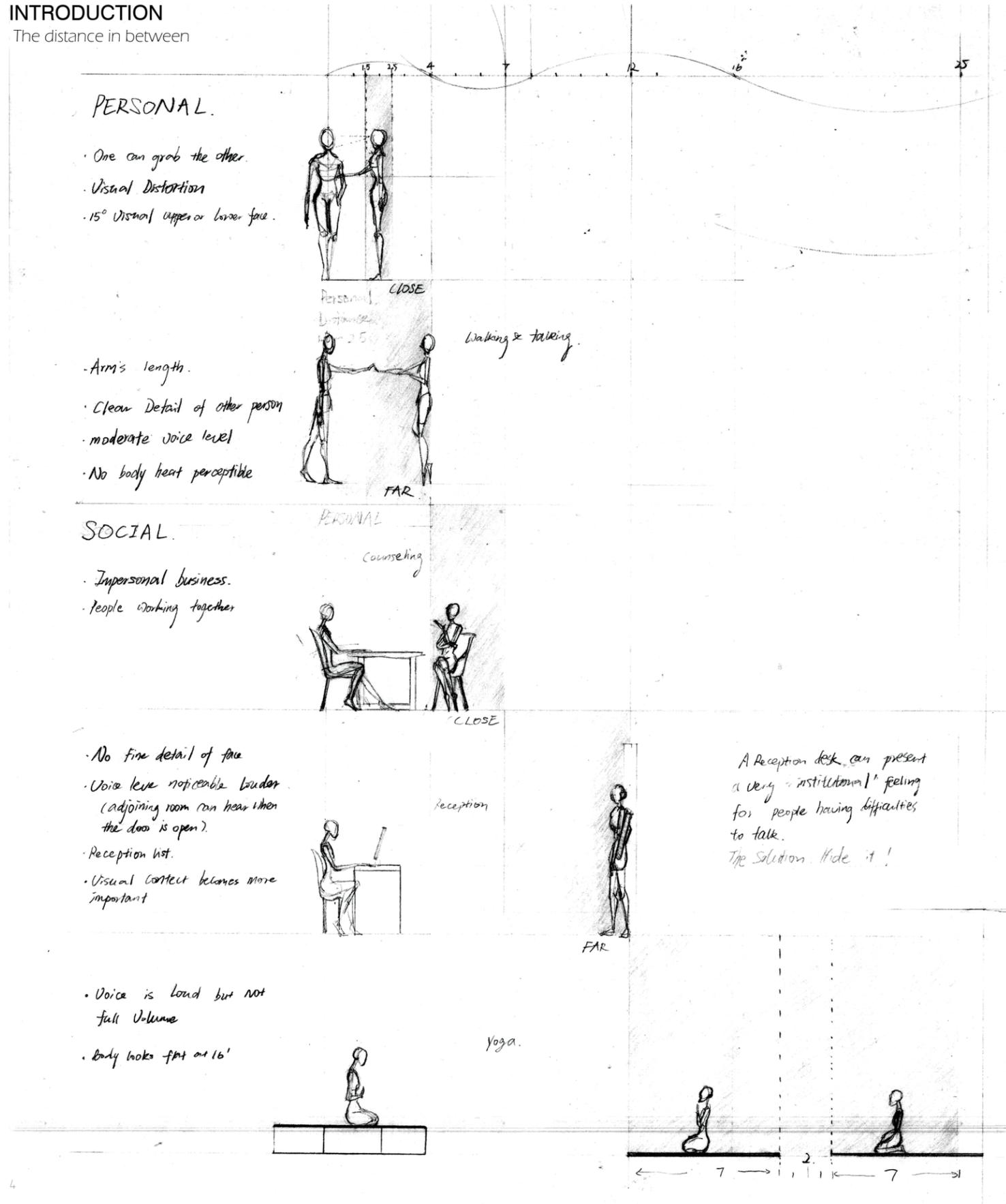
Cloisters built by John Selot (master, c. 1455-1479), with assistance from Bishop Walter Lyhart (c. 1446-1472).

 The location where patients are surrounded and taken care of.

Image Credits: "Great Hospital Online." Great Hospital Online - Home, <http://www.thegreathospital.co.uk/resources/look.html>.

INTRODUCTION

The distance in between



THE DISTANCE IN BETWEEN

To decide the space arrangement inside of the building, I read the book "The Hidden Dimension," I chose to use the "Distance in Man" which was presented by Edward T. Hall as the major inspiration for the designing of my thesis. According to Hall, there are four types of the distance between individuals: intimate, personal, social, and public. Each of them also has degrees of nearness and distance. He also pointed out that these numbers may vary in different cultures in different countries. The distances he suggested here are applicable to the United States of America (Hall, 119). Based on the need of the program, intimate distance is not considered.

Personal distance and short phase of social distance

Social distance gets more extensive use than personal distance. Personal distance is between four to seven feet. At this distance, "head size is perceived normal; as one moves away from the subject, the foveal area of the eye can take in an ever-increasing amount of the person (Hall, 121)." As Hall suggests, the details of a person on the other side are still clear, even clearer than in the personal space, which is less than four feet. This is because the eyeballs gain a sharper focus of the entire face and body, while staying too close, some area of the vision is blurred. This phase is suitable for people to sit down and talk, and therefore it is appropriate for confidential conversation. So, in some of the counseling offices and fireplaces, I would consider the room size allowing two to sit down and talk at this distance, with or without a small desk.

Social distance

Social distance is between seven to twelve feet. The far phase of social distance presents more formal characters (Hall, 122). At seven feet, there are no more fine details of the face, the voice needs to be louder to be heard clearly, and people in the adjoining room can hear a conversation if there is no door. Vision becomes more important than contact because, at this distance, two people will have to look at each other to show their attention and disclose their intentions. The entrance to the reception desk can use this distance. Five to six feet in diameter is also the minimum space for an individual practicing aerial yoga. The distance between two individuals practicing yoga in this project is also considered using social distance. Generally, yoga mats are seven feet long and two feet wide. With center to center at least seven feet apart, the performers will be less likely to knock each other and still have the sense of being in a group.

Public distance

The last one considered is the close phase of public distance, which is twelve feet to twenty-five feet. At this distance, "The voice is loud but not full-volume" (Hall, 123), and the motion of a body is discernible, but fine details will be lost. Therefore, when designing the classrooms, I intend to maintain the space not exiting the twenty-five feet boundary. In this way, even people sitting the farthest distance from the teacher in the yoga room will hear the teacher talking in a normal voice.

KINDLED

A HEALING GARDEN

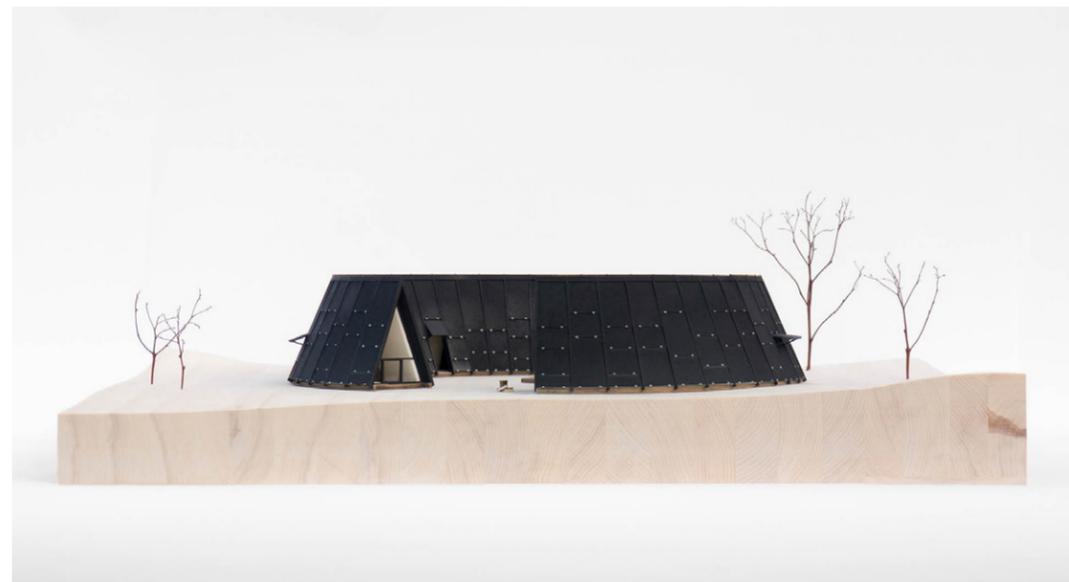
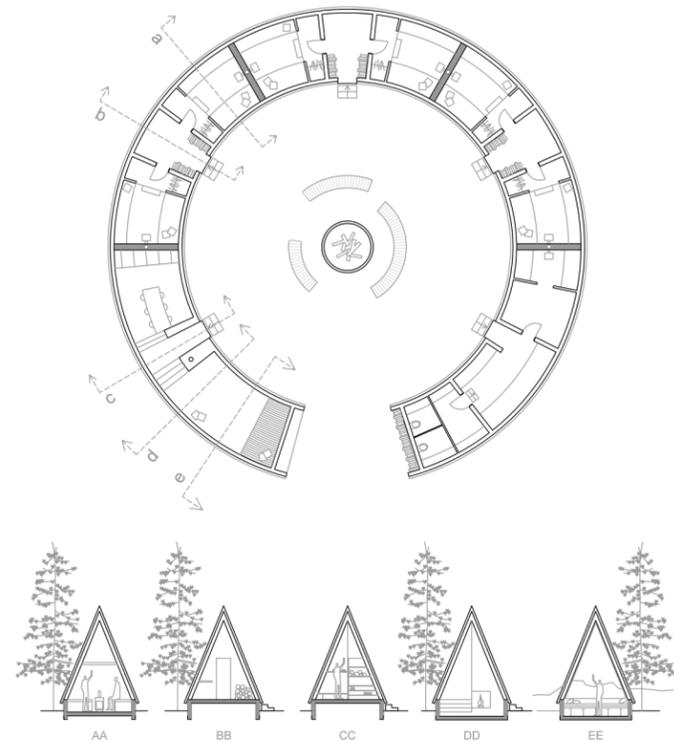
FROM HUMAN BODY TO ARCHITECTURE

Counseling Room | Garden | Yoga Studio



FROM CONCEPT TO PLAN

Case Studies



Plan, sections and a model of entrance of the Hunters Retreat

Image Credits: "Vardehaugen AS Hunters Retreat." Vardehaugen AS, <http://vardehaugen.no/hunters-retreat/>.

Hunters Retreat

Designed by Vardehaugen, an architectural studio based in Oslo, Norway

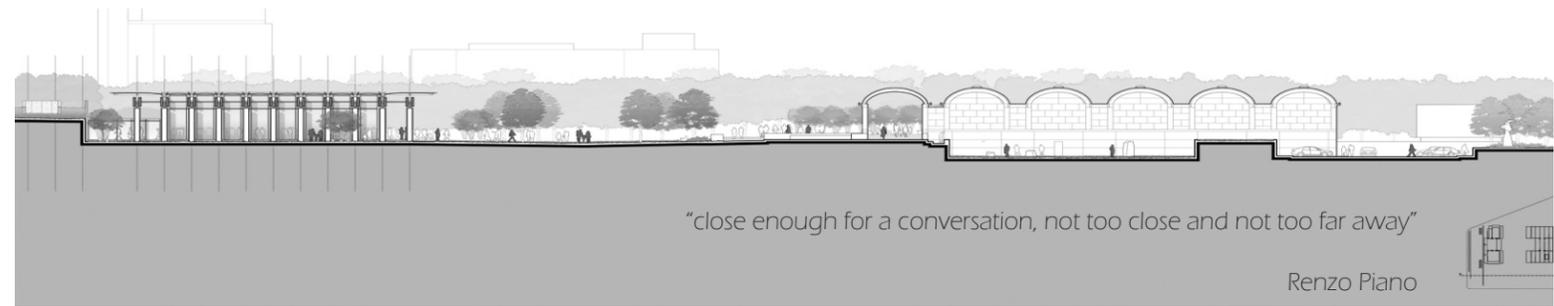
The core element of the thesis and the thesis project is about connection. Based on my previous study of the distance between people, I started to think about the methods to strengthen the connection between individuals. The very first architecture project I was studying on is the Hunters Retreat by a Norwegian architectural studio. Quoted from their description on the Hunters Retreat, "It is a common perception that the campfire is the origin of modern society: when humans learned how to control fire, we gathered around it and started developing language, traditions, and community." As J.A.J Gowlett, an Archaeology scholar, wrote in his research, " Fire has played a major role in transforming human diet, and apart from its major impact on environments, it has become socially embedded, even to the point of having religious significance and being incorporated in ritual."(Gowlett 2016).

The fire serves not just as a metaphoric meaning of bringing people together, but it also has the power of connecting people to sit together and tell stories. It's a human instinct to gather around the fire and gain the energy from fire, resting well, and then starting another day of hunting. The Hunters Retreat reveals the design radiating out from a campfire that covers the most fundamental of all human traditions. All the human activities are around the campfire, even though it is a modern life pattern of people having dinner at the rectangular table and enjoying a hot water bath in the public sauna. When the needs for everyday life are satisfied, the feeling of happiness resonates with the soul naturally. Therefore, I considered including fire as one of the influential elements in the designing of the counseling part of the building.





Kimbell Art Museum Expansion
 Renzo Piano Building Workshop, 2013, Fort Worth, United States



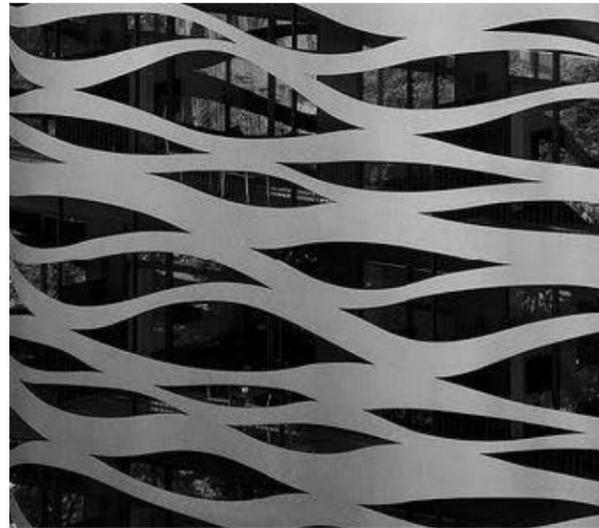
Left Interior of Kimbell Art Museum Expansion, photographed by Robert Polidori

Upper Right Section of Kimbell Art Museum Expansion

Image Credits: Fracalossi, Igor. "Kimbell Art Museum Expansion / Renzo Piano Building Workshop Kendall/Heaton Associates." ArchDaily, ArchDaily, 14 Nov. 2013, <https://www.archdaily.com/448735/renzo-piano-pavilion-at-kimbell-art-museum-reno-piano-kendall-heaton-associates>.

Bottom Right Sketches about "connection" inspired by case studies

The second reference for the main concept of the thesis is the Kimbell Art Museum designed by Louis Kahn and its expansion which was designed by Renzo Piano. These two buildings are interestingly similar in plan and both introduce natural light into the museum. Piano's design appears to be light and modern, while the older one appears to be heavy and calm. The contrast of the different materials presented by the two buildings is what I will reference while designing my project that involves different human body motions that unify steady and active motions.



Facade Renovation "Suites Avenue Aparthotel", 2009, Barcelona, Spain. Photographed by Iwan Baan



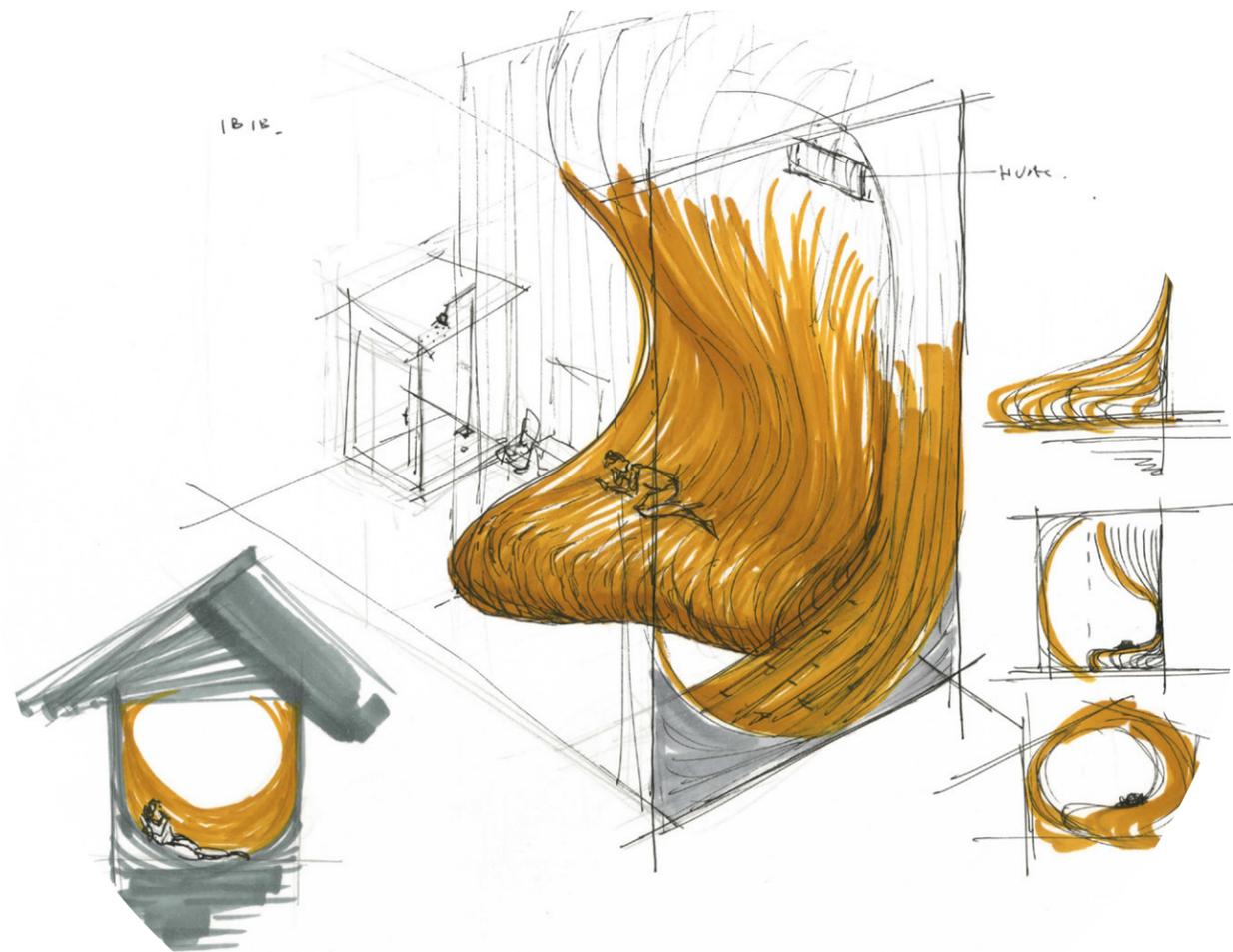
Tama Art University Library (Hachioji campus), 2007 Tokyo, Japan. Photographed by Ishiguro Photographic Institute



Minna no Mori Gifu Media Cosmos, 2015, Gifu, Japan Photographed by Iwan Baan

All architecture is an extension of nature."
Toyo Ito

Constructed Projects
Designed Toyo Ito & Associates, Architects



Sketches inspired by Toyo Ito projects

Early sketches inspired by Toyo Ito's architectural philosophy: all architecture is an extension of nature

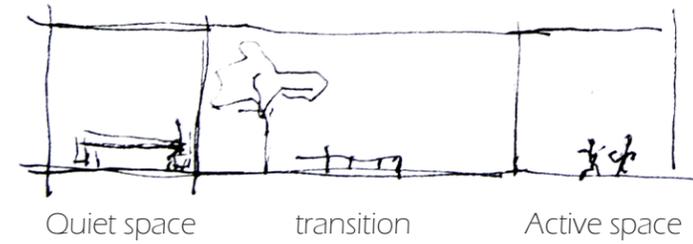
Using bent wood to simulate a space where humans feel hugged by nature. And thus, creating space to make people feel comfortable and safe. The contrast of material and color influence emotion. For example, the Tama Art University library's main tone is gray concrete, making the place suitable for reading and giving a quiet atmosphere. The lower one with free-formed timber ceiling, the color, and its material presents ease and relaxation, and better for children. As its name suggested, Minna no Mori which means "everyone's library", it is a place more for the public instead of academic.

The two sketches (the one at the lower left of the current page and one at left on the following page) are concept ideas for counseling rooms. The bench is also crafted under the inspiration of Toyo Ito's architecture project.

Lower Right "L-shaped" bench model, a seat for two. Made by wood.



Counseling Room | Garden | Yoga Studio



This thesis proposes a building that provides a “private space” for inner healing in a public park. The three major functions it serves are: Counseling room, a garden and yoga studios.

Counseling Room

A place for facilitating people under stress to have conversation with therapists, having small group talking sessions

Garden

A place where people are encouraged to walk and talk, and exercise as methods of psychotherapy.

Yoga Studio

A place for aerial yoga and meditation yoga classrooms

The distance between two people is a main key for all the designing of space. In other words, this thesis is also about a study of human psychology and “comfort zones” by providing space for three states: quiet, active and the transition between quiet and active.



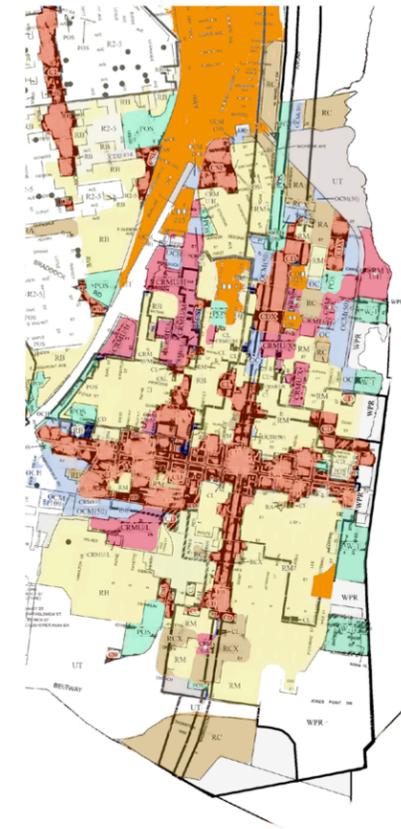
FROM CONCEPT TO PLAN

Site Location



Left Old Town Alexandria Map
Middle Waterfront Parks at Alexandria

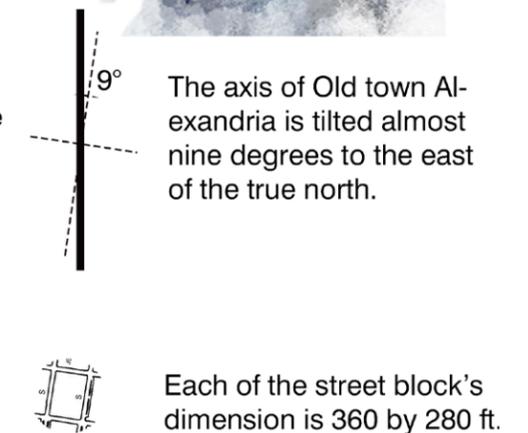
The thesis site is located at the Windmill Hill Park in Alexandria, Virginia. The park is part of a series of waterfront parks in Old Town Alexandria along the Potomac River. It is in the south of the main commercial area of Old Town Alexandria. This neighborhood is surrounded by residential buildings, and because it is away from the busy area, it is quieter than the other city parks. On the 2019 zoning map of the City of Alexandria, it is now planned as one of the "Commercial Cordinated Development Districts".



ZONING

- Commercial
- Commercial Residential Mixed Use
- Residential Low
- Residential Medium
- Residential High
- Public Open Space
- Waterfront Mixed-Use
- Utility and Transportation
- Coordinated Development Districts

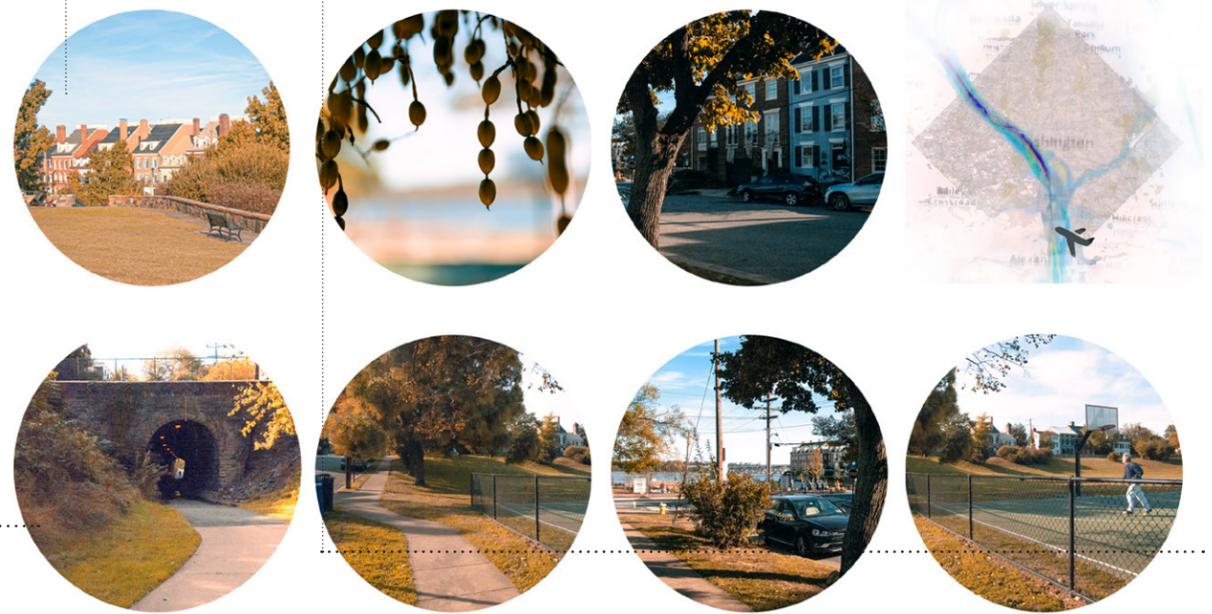
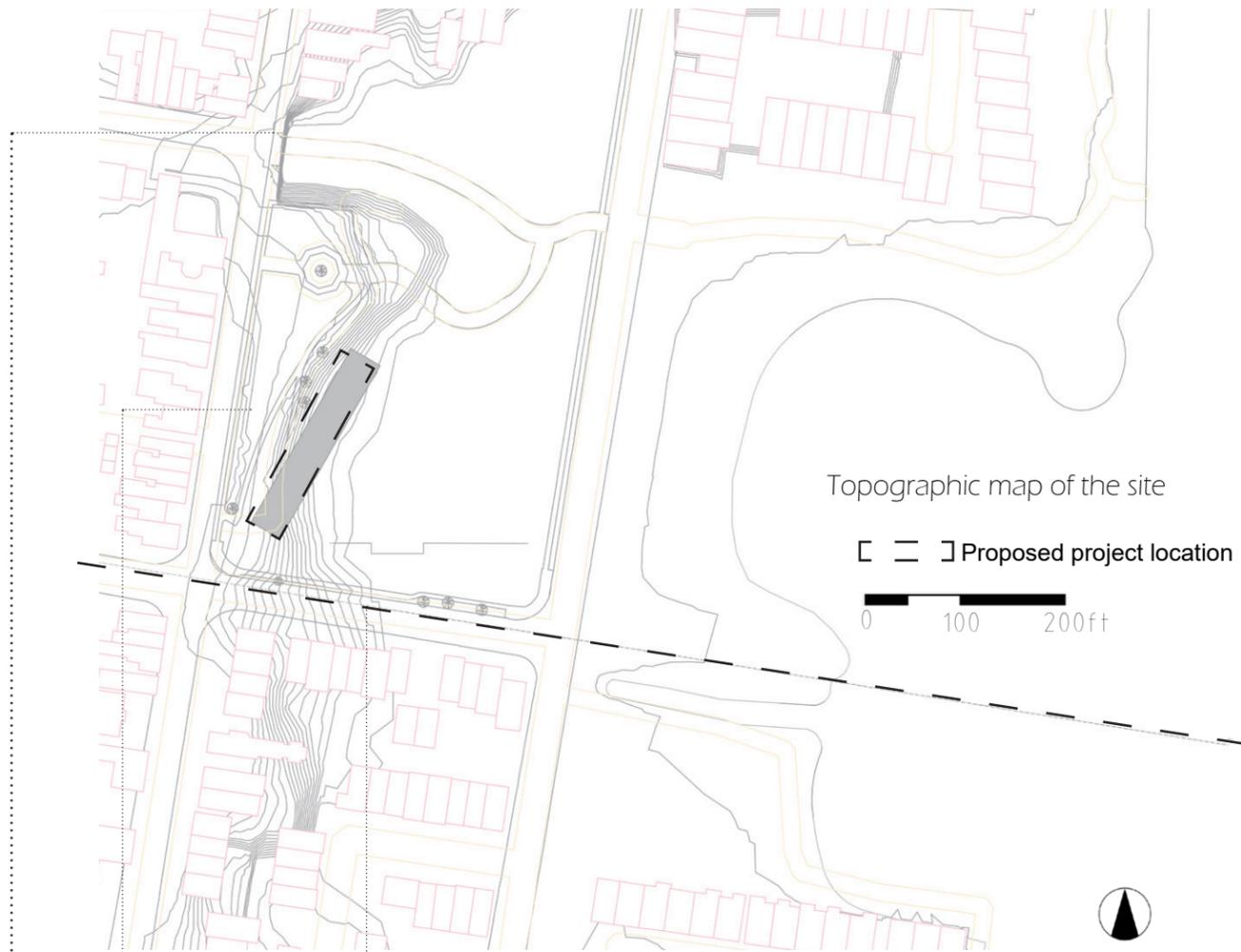
STREET



Each of the street block's dimension is 360 by 280 ft.
 Site Location

The landscape of Windmill Hill Park extends across the road and to the Potomac River shoreline. It is one block away from the river. Surrounded by 3-story townhouses, there are still opportunities to improve this park for its neighborhoods.

Because of the landscapes of the hill, the thesis project is imaged as a person laying down and having the landscape supported and surrounded by the back like a quilt.

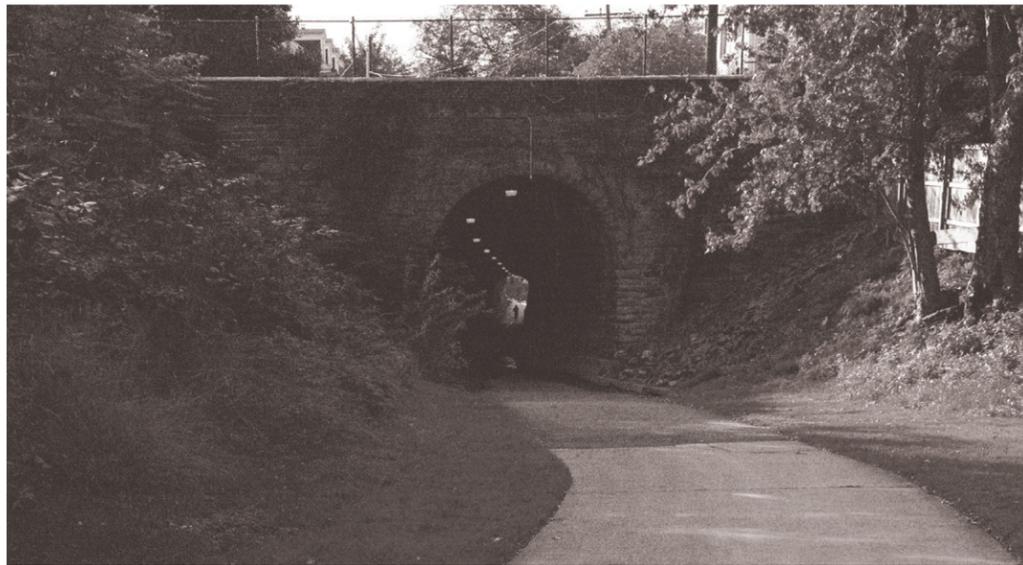


Left Site Map with surrounding photos and a simplified section

Right Contour map with proposed project location highlighted

FROM CONCEPT TO PLAN

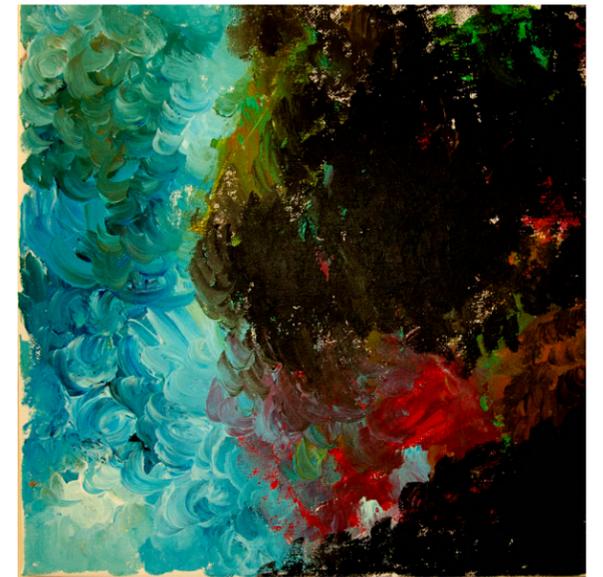
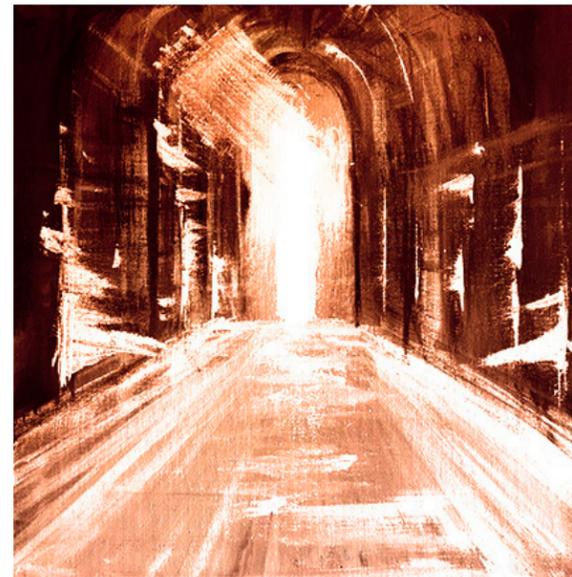
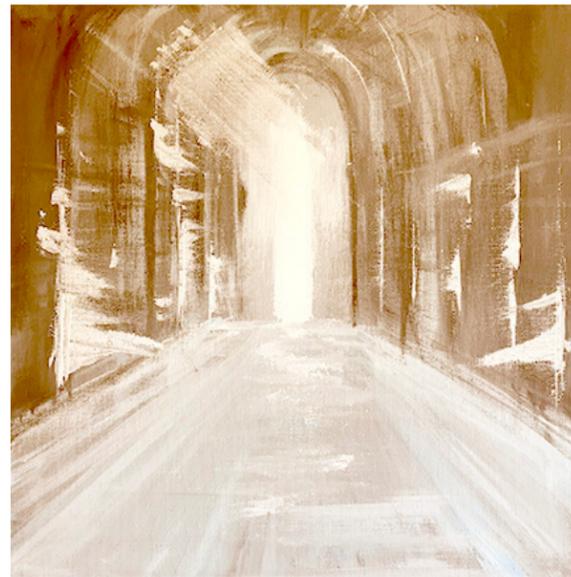
Photos, sketches and study models



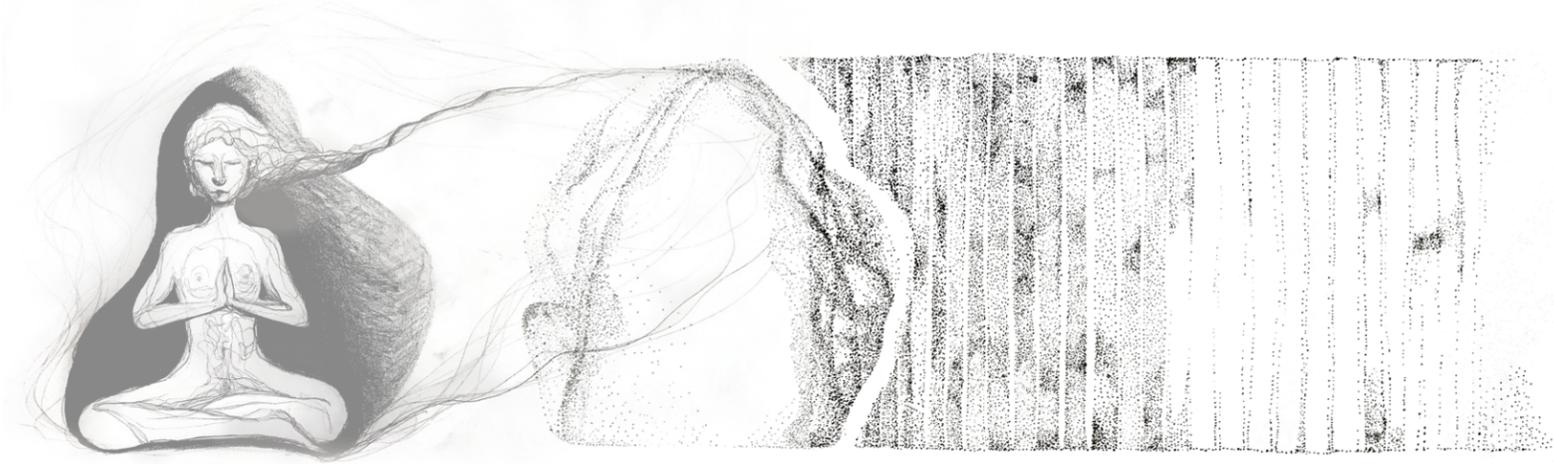
There is a tunnel on the site. The experience of walking through tunnels reminds me of the feeling of being depressed. I designed a path inside my proposed building that is also a “tunnel.” But it transforms the familiar experience of moving through a passage like this. The tunnel experience as it relates to depressive feelings is dark, wet, and scary. It smells of mold. Therefore, I started to think of design features that would change these qualities of experience. I first thought about changing color, because of color influences emotion. I have considered blue and gray for calm and cold, yellow and red for brightness and the image of fire--which are somewhat subjective, varying to a degree among different people. From here, I moved on to the form and material.

Because my architecture program for the thesis is about meditation and yoga, I drew a seated person. The wave of molecules represents emotions. These elements transform into a bentwood model for my new tunnel.

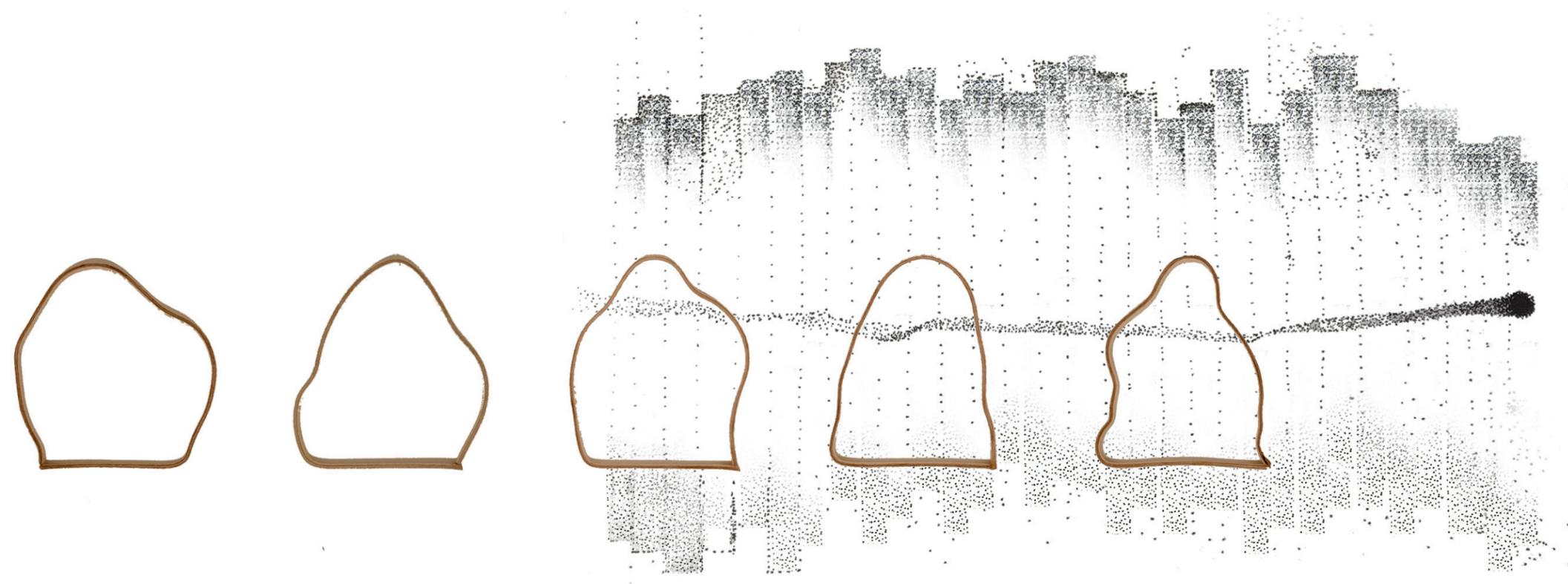
Tunnel
The journey of seeking light
A photo shoot on site



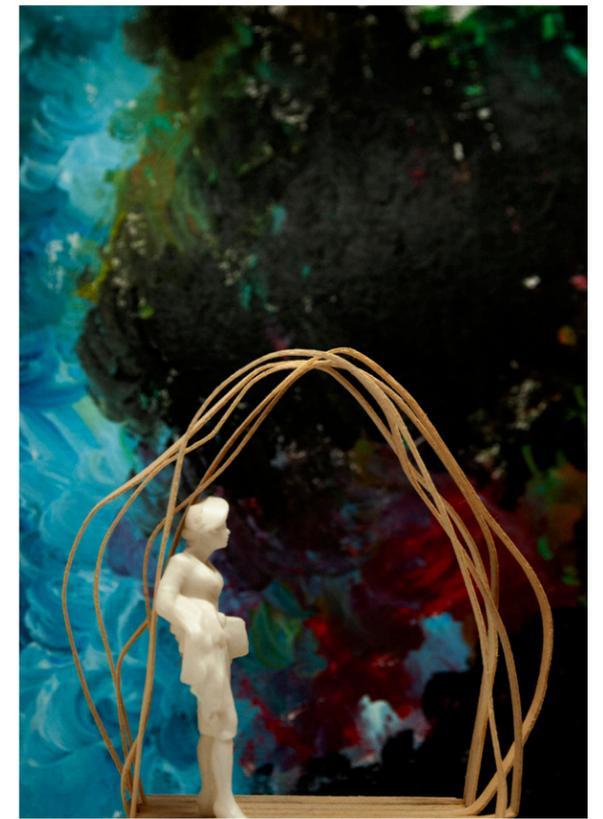
Tunnel
Oil on Canvas | 12x12



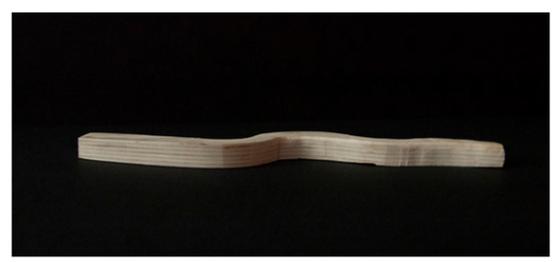
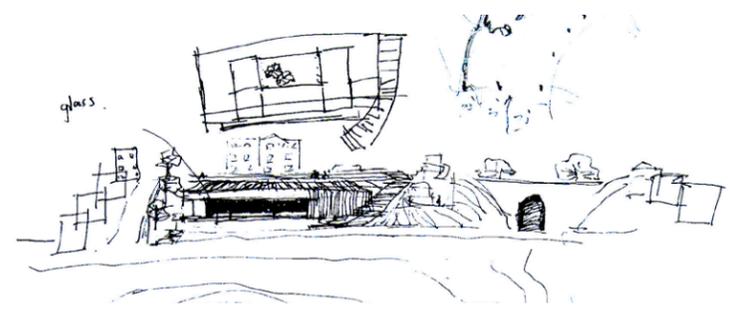
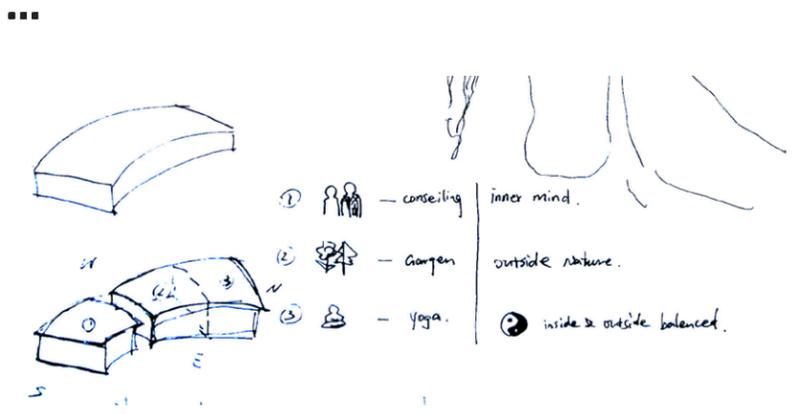
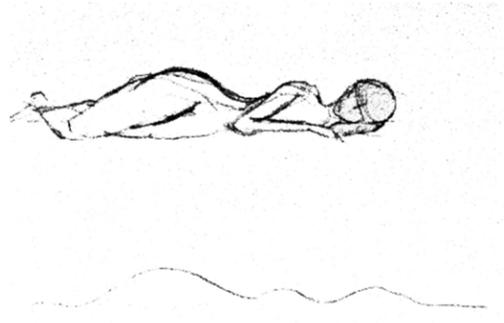
Tunnel
basswood | 1/2"=1ft



Variations of model based on Tunnel



Form development

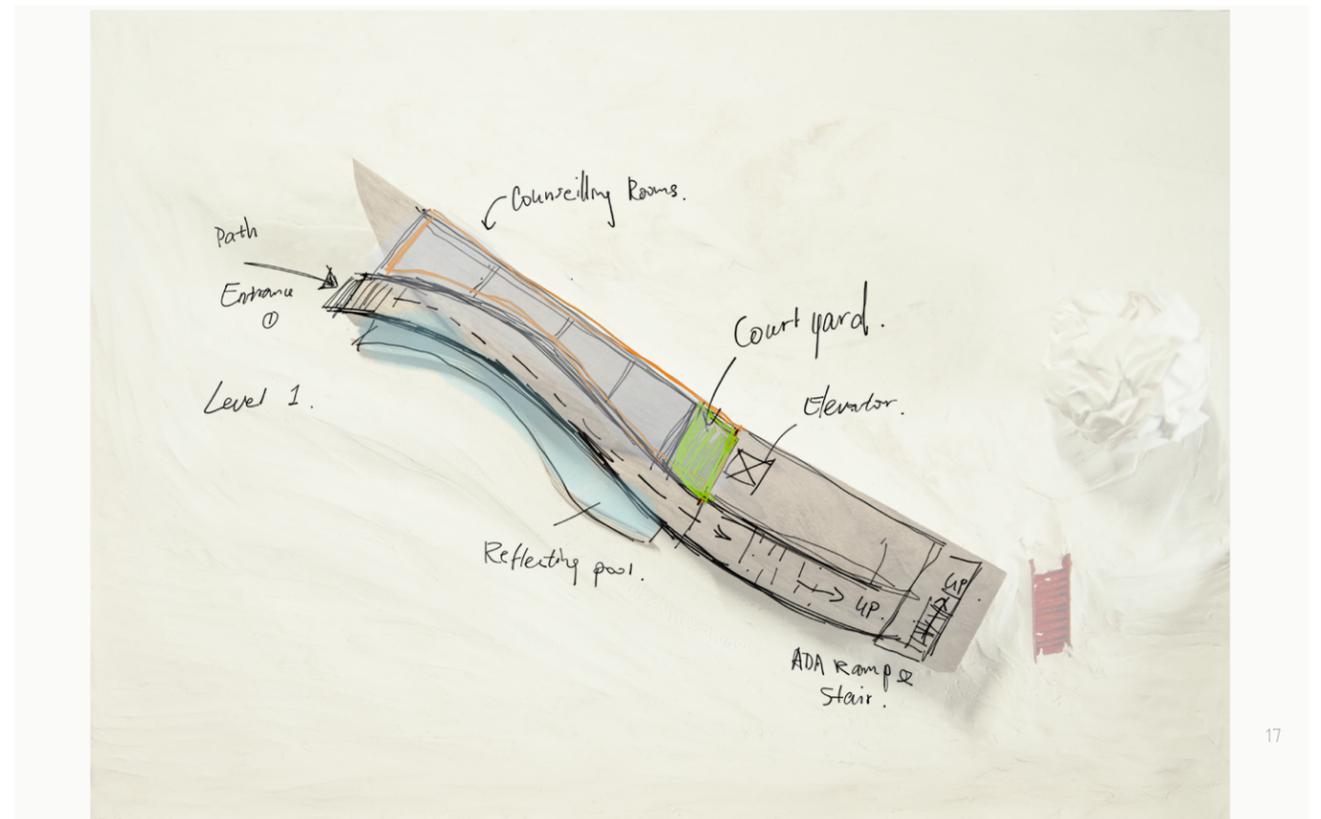
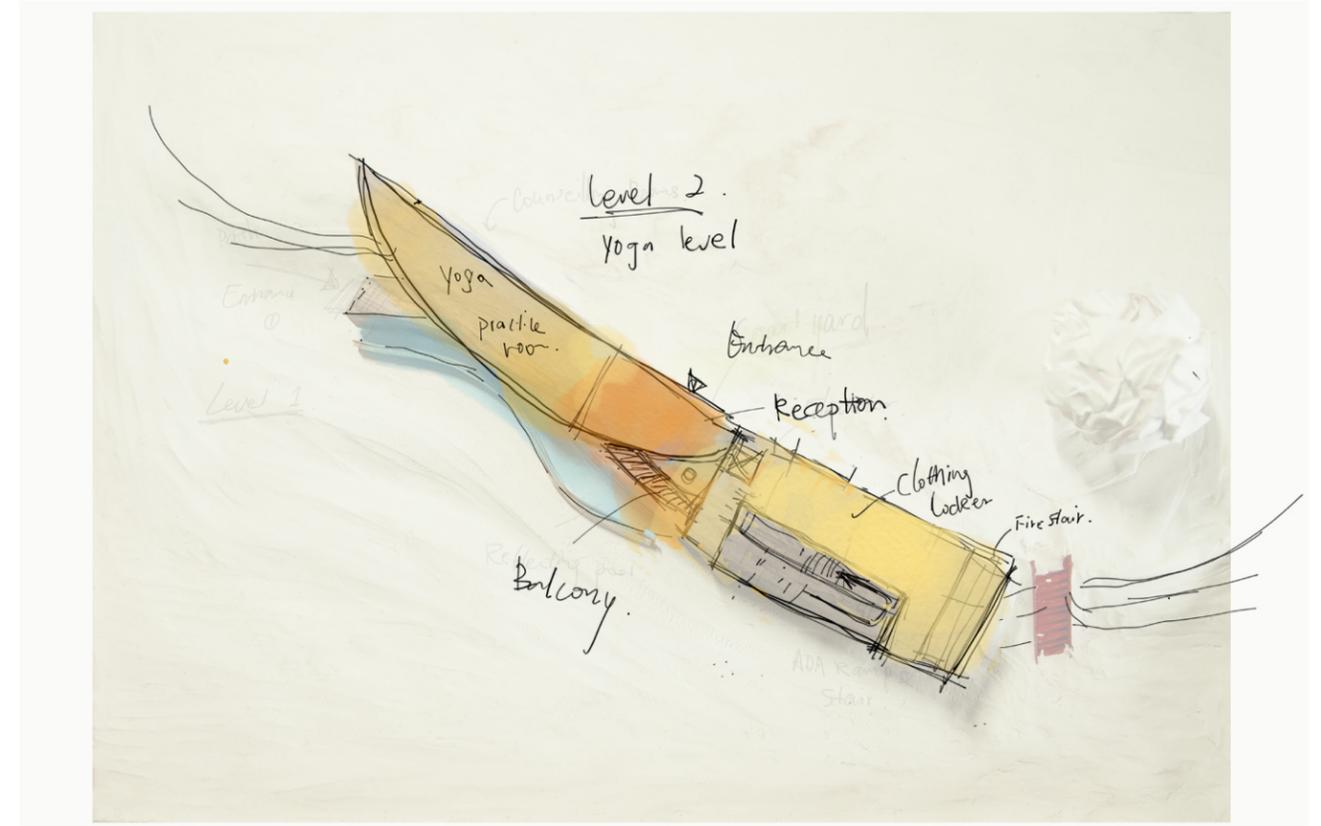


Site model
Laser-cut on paper board



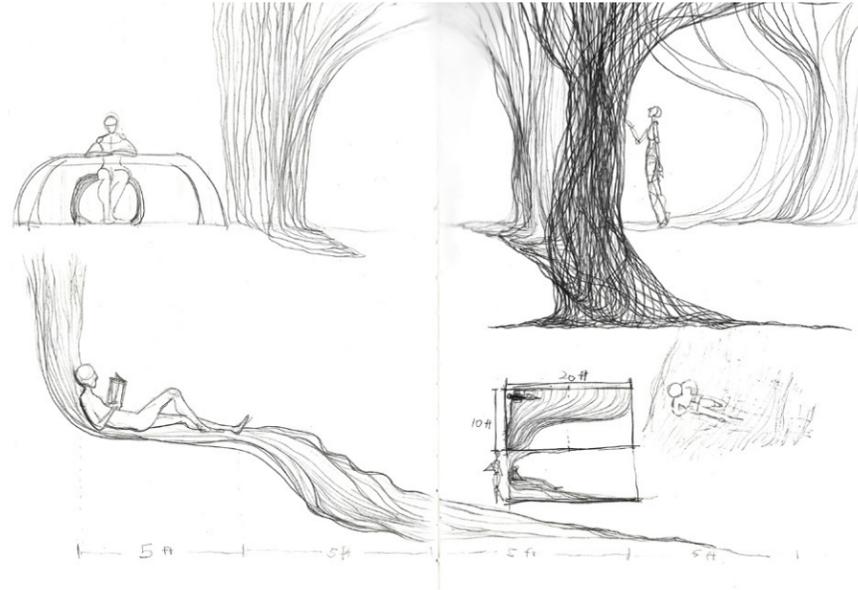
Form model in site made by clay

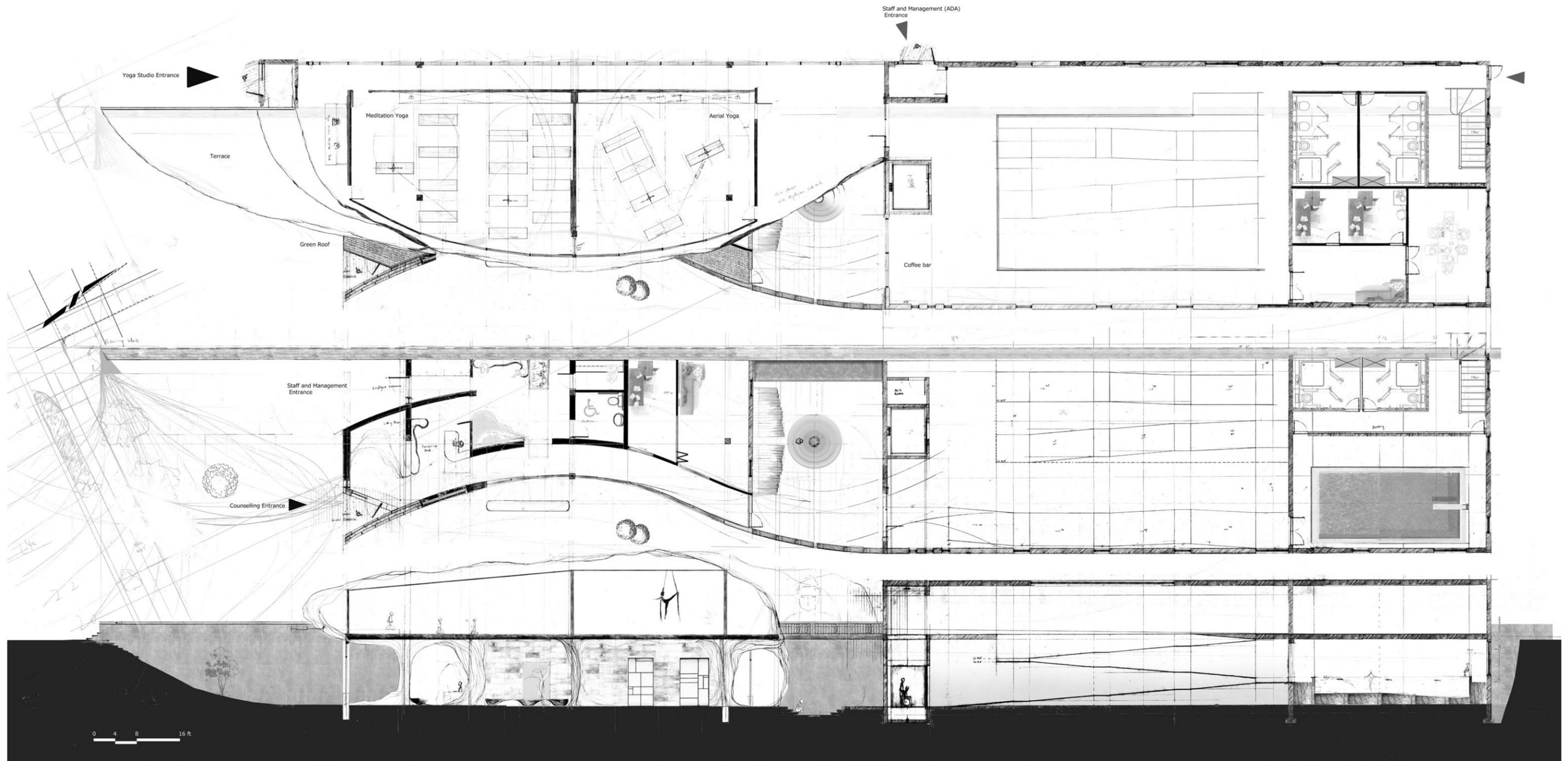
Site model made by clay
 $1/16" = 1'-0"$





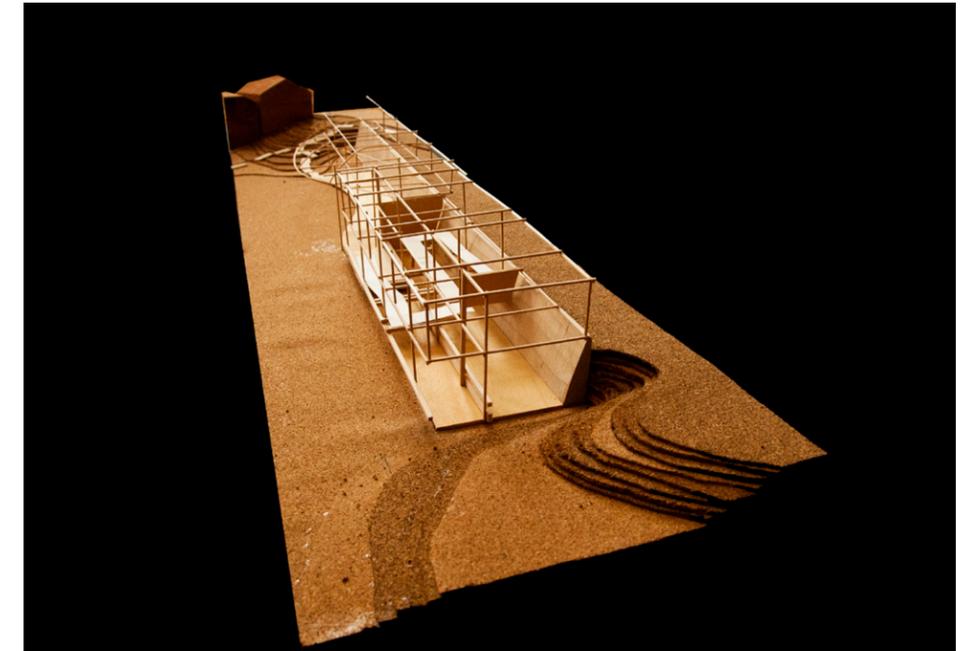
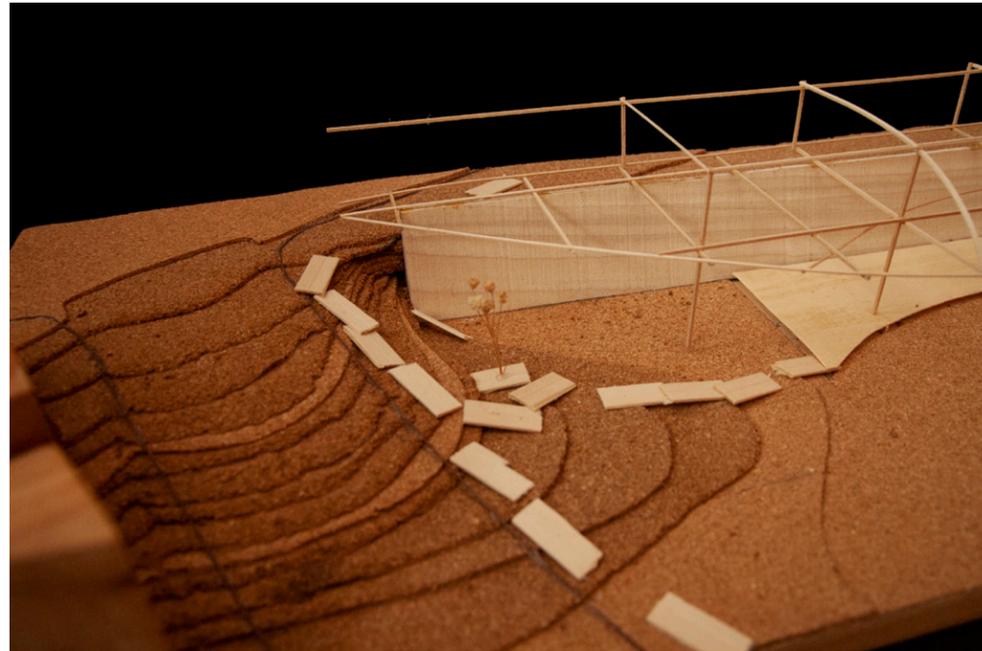
Form development of the Left side of the building





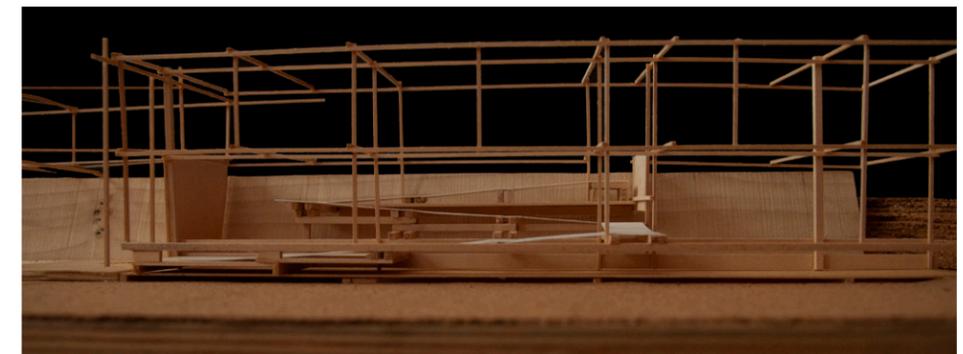
FROM CONCEPT TO PLAN

Photos, sketches and study models



First Scheme model and sketches

In the first scheme, the bottom level is mainly supported by a straight retaining wall. Reflecting pools are considered to create a scenic reflection to fit in the site.



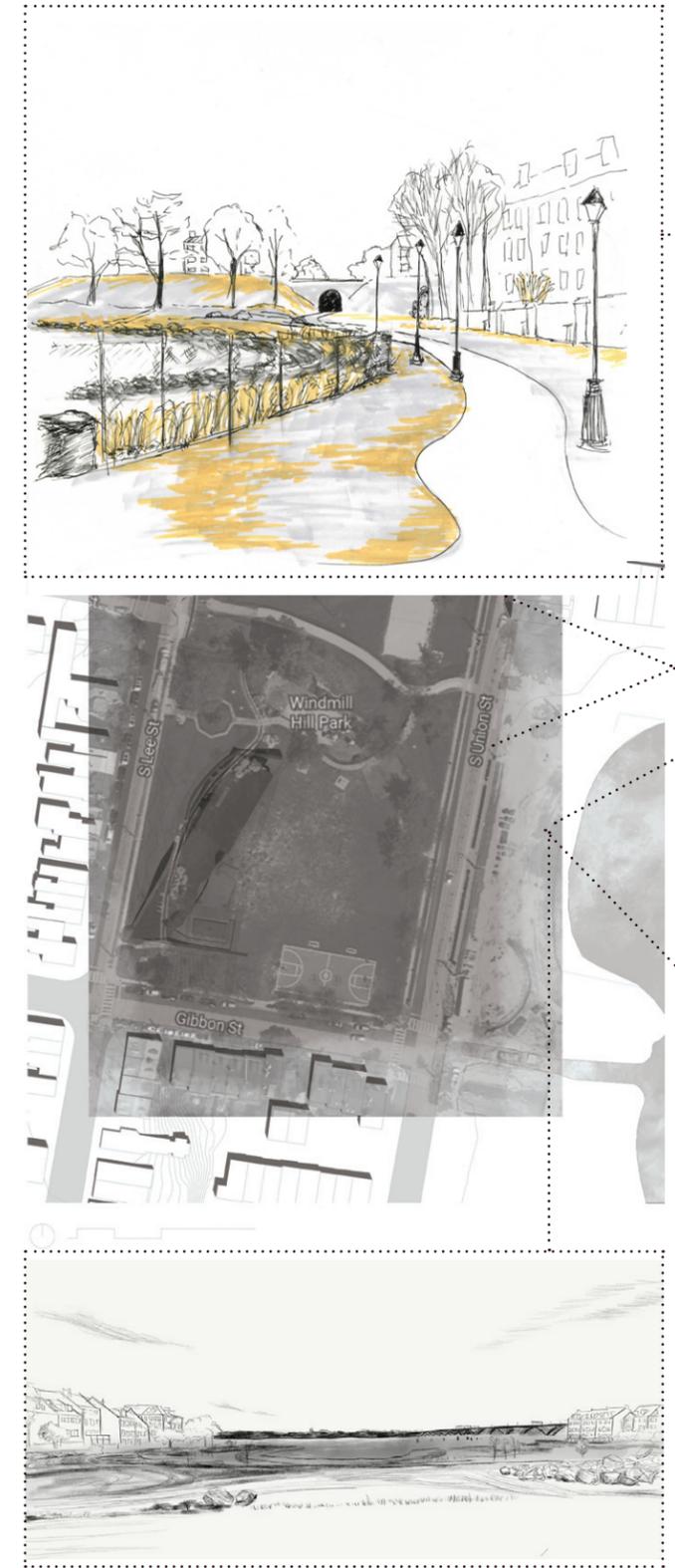
SITE PLAN AND LANDSCAPE



SITE PLAN AND LANDSCAPE



Left SITE PLAN with the project



Right Original site photo with the shadow of the project and site view sketches



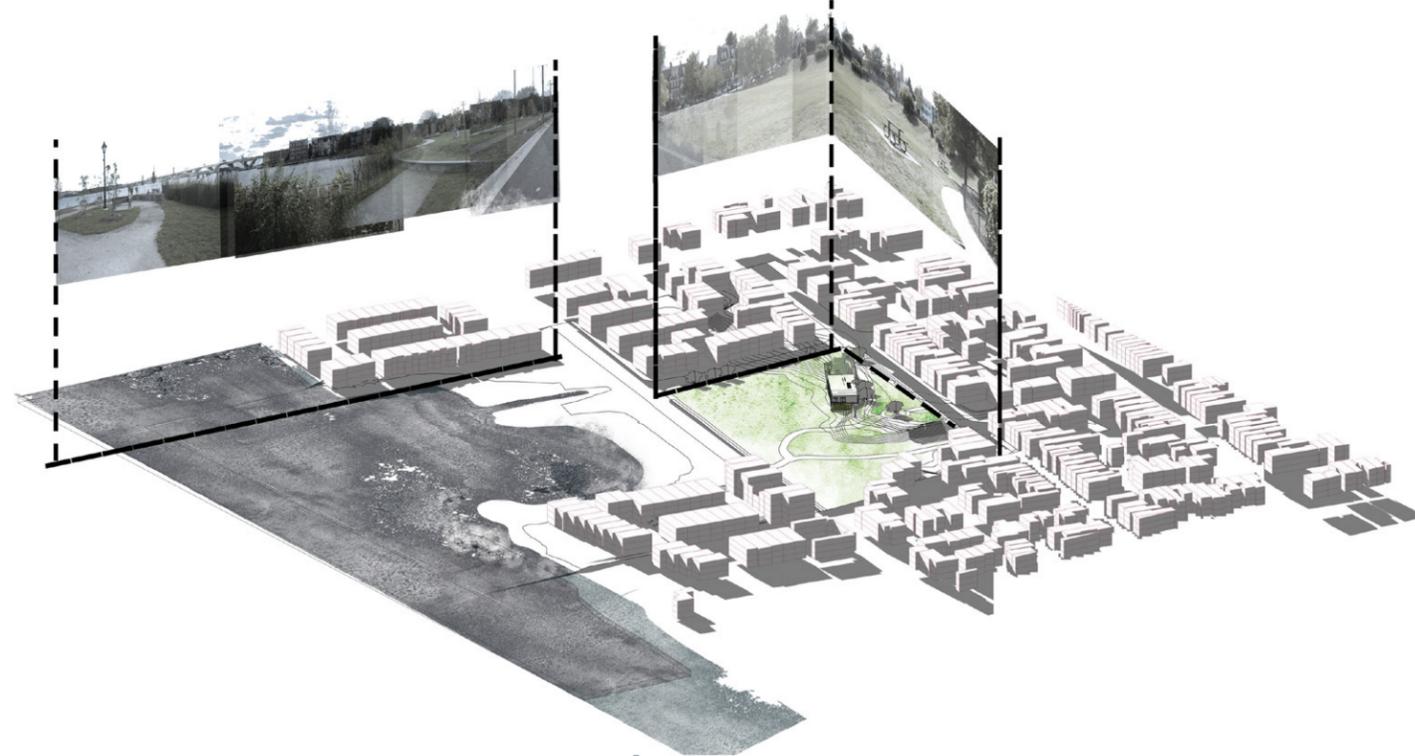


Top Site view at the upper level entrance looking toward the river

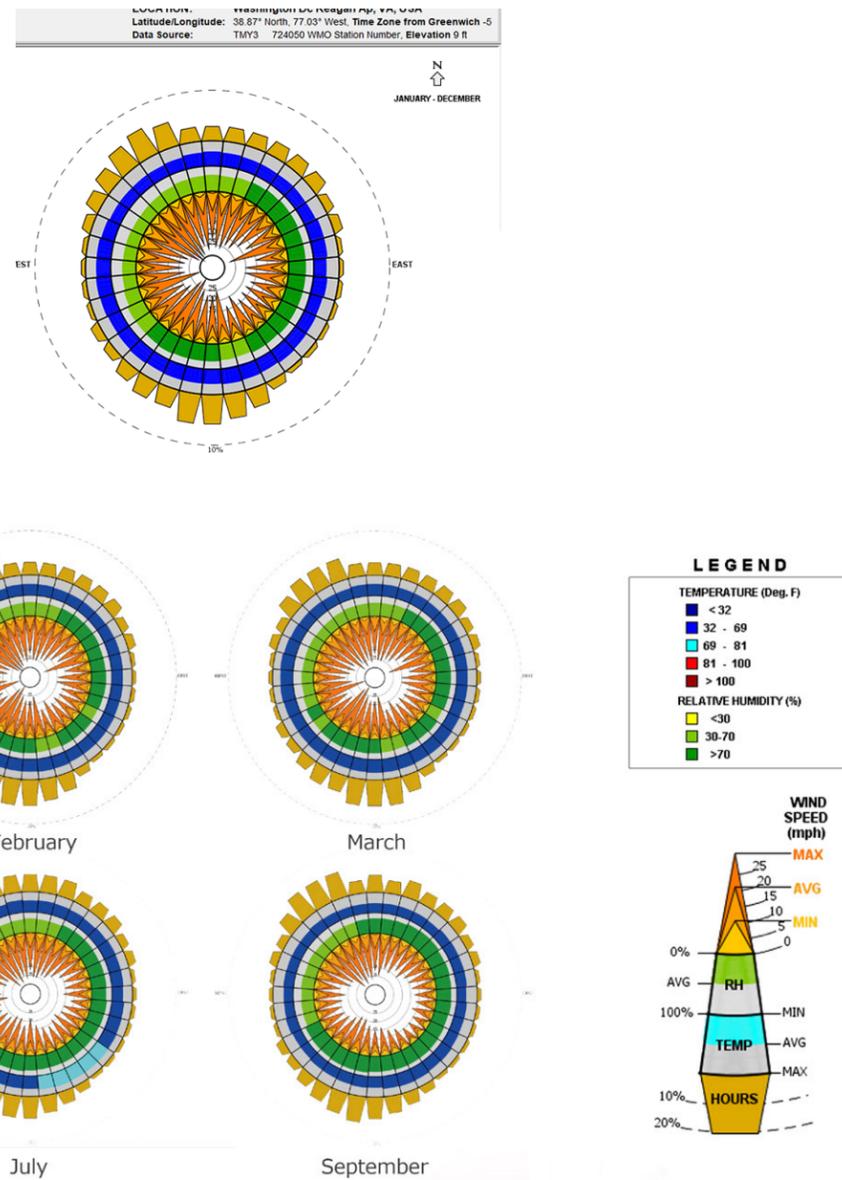
Left middle Site section.

Right middle Conceptual building on-site 3D model showing the location of the panorama

Bottom panorama of the existing site condition



WIND, SOLAR AND HUMIDITY



WINTER
Humidity Low
Wind speed High

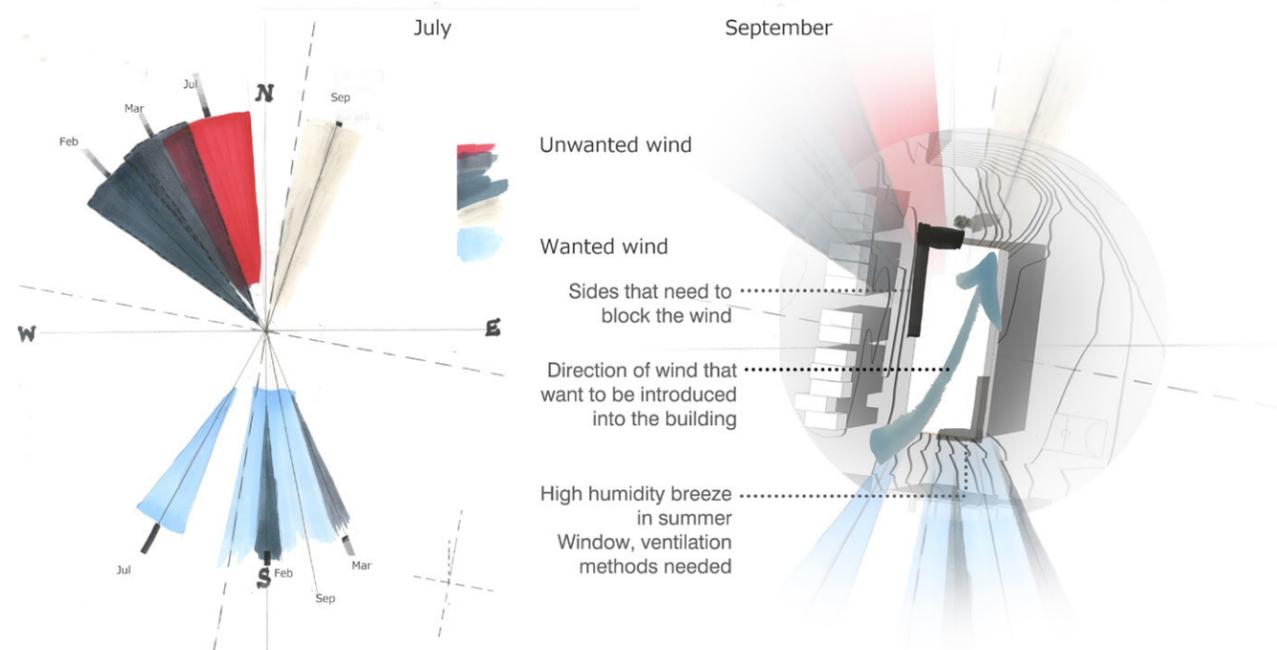
SUMMER
Humidity high >60%
Wind speed low

Wind and Humidity

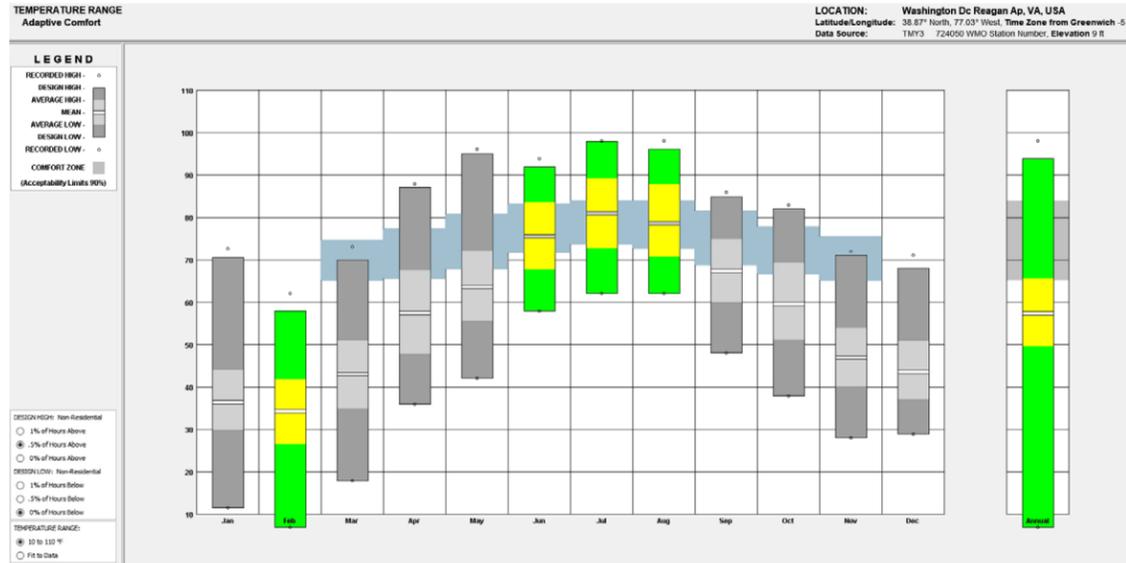
For climate analysis, the data and models are generated by Climate Consultant 6.0. using Washington, D.C as the main target location.

In the original diagram, from inside to outside there are 3 rings, which are the wind speed, humidity, and probability of wind direction. The orange shape pointing to the center represents the highest wind speed. The dark yellow trapezoids represent the hours in percentage that the wind comes from its direction. The bigger the area, the higher the chance the wind comes from the direction.

As the diagram on the left shows, wind temperature is generally low with medium to high humidity(10%-20%). The north-west and southern wind are dominated, the wouthern wind brings more humidity. High humidity from the east exposure, attention to the site which east side is facing the Potomac River. After comparing the annual wind models, 4 months' conditions are expected to compare. Each of the selected models represents an extreme condition over the year when: the lowest and the highest temperature, and wind speed.

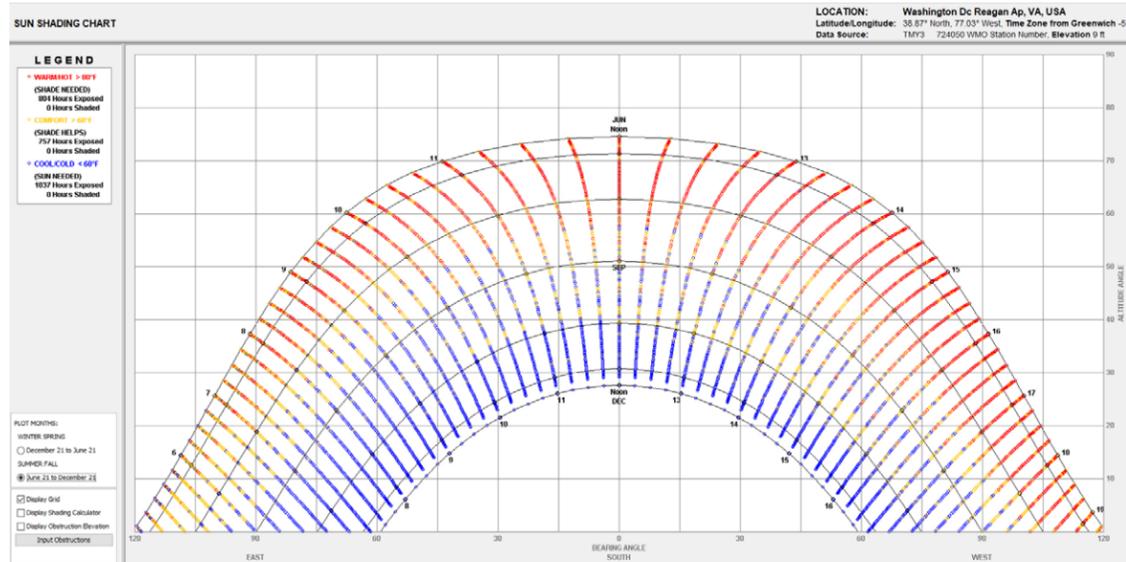


Simplified wind and temperature chart that represents the weather conditions in February, March, July, and September.

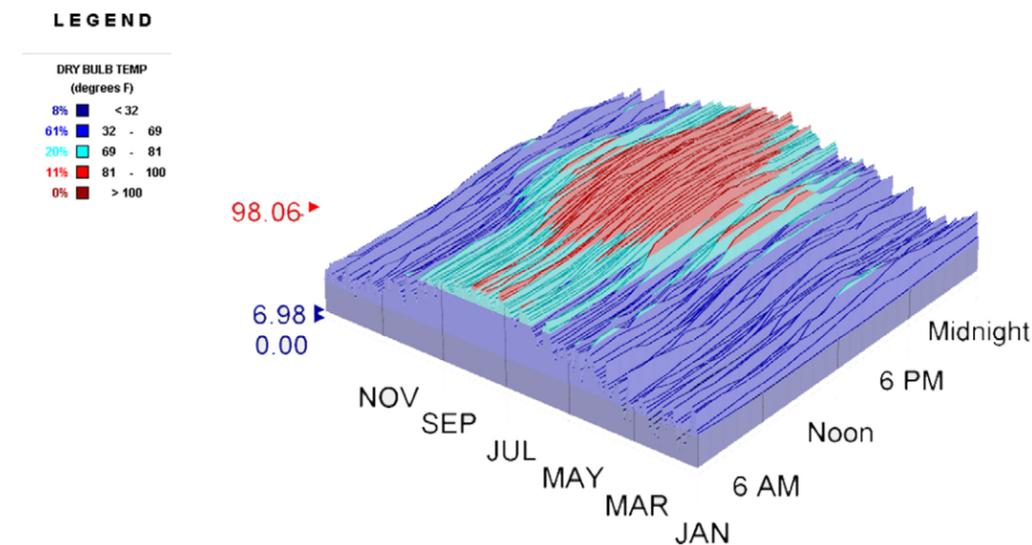


Annually, the mean temperature is below the comfort zone. During the most time of the year, buildings in this region encourage natural light. During the summer, the light shading system is necessary to keep the building from overheating.

Comfort temperature - 68°F -75°F

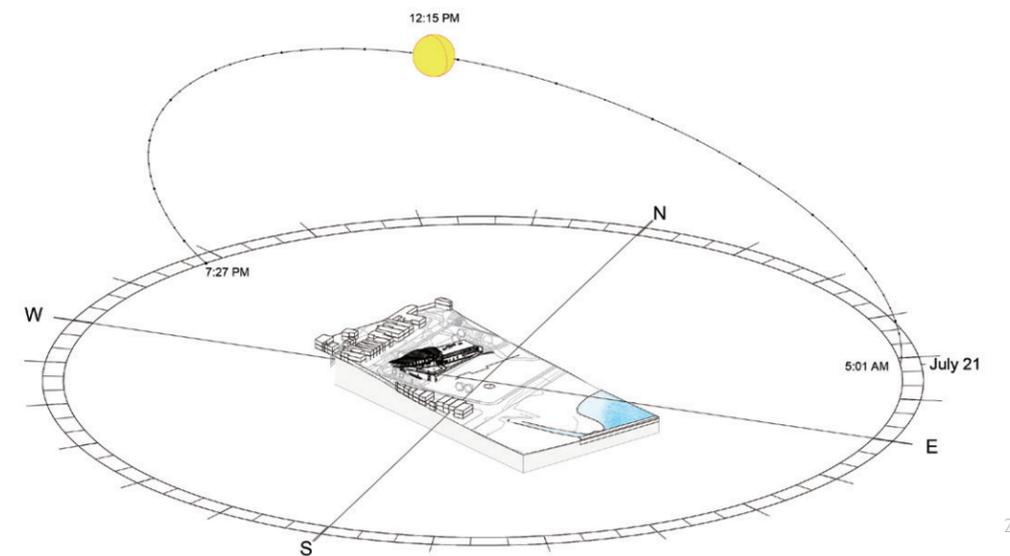
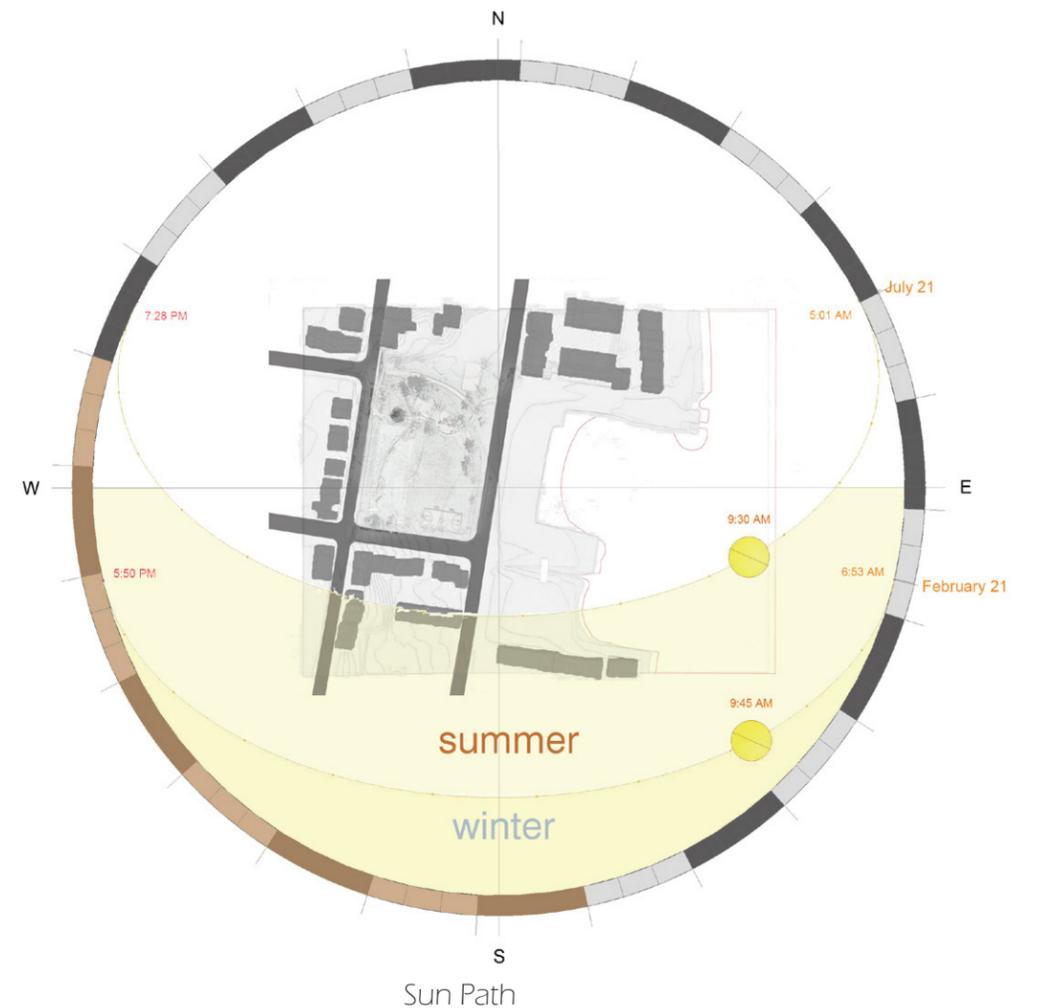


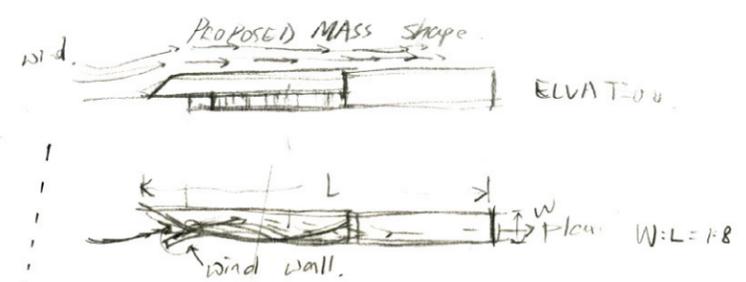
The Record High and Record Low temperature typically happen in July and February. As the yellow bar is shown, the average temperature is about 5°F exceeds the comfort zone during July and August. So July and August are considered the hottest months.



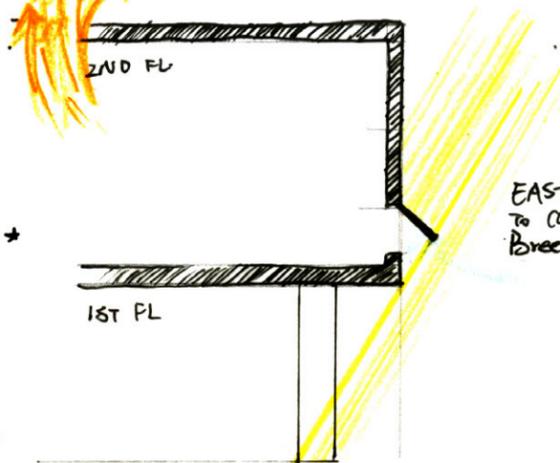
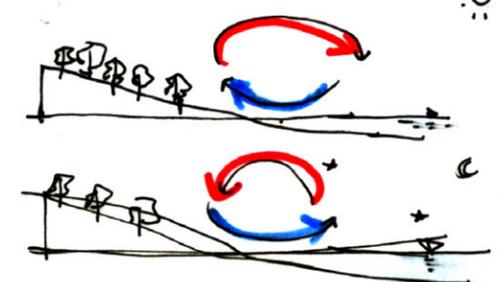
When analyzing the thesis site solar conditions, the sunlight path of February and July is used for extreme conditions. In the annual 3D temperature diagram, it tells that in the summer afternoon, the temperature is high due to sunlight from the west. Therefore, shading devices are mainly needed for west and south exposure.

Solar Study





SEE BREEZES & LAND BREEZES.



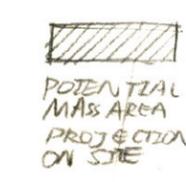
EAST SIDE OPENING.
TO CAPTURE
BREEZE FROM RIVER.

USE THE NATURAL VENTILATION TO
BRING DOWN THE TEMPERATURE ON THE
WESTERN EXPOSURE.

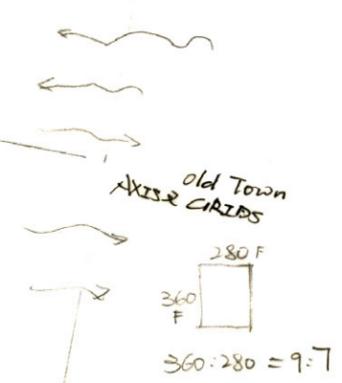
WEST SIDE UPPER OPENING
TO REDUCE (RELEASE THE HEAT).

TILT THE BUILDING TO SOUTH MORE
TO REDUCE WESTERN EXPOSURE.

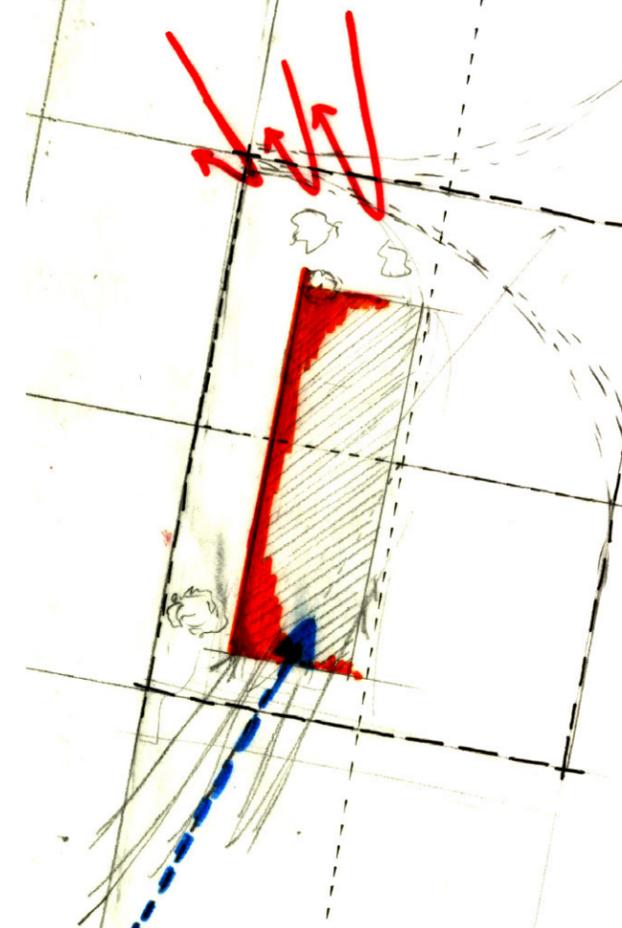
$$FAR = \frac{40' \times 280'}{280' \times 360'} = 1.9 \text{ (Estimated)}$$



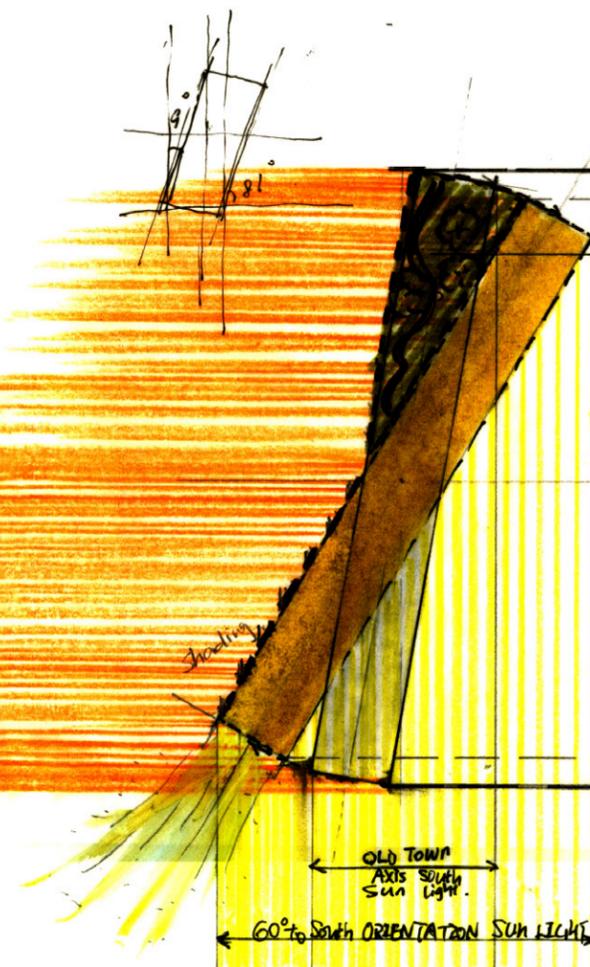
SEE BREEZE
LAND BREEZE
BY POTOMAC RIVER.



HIGH TEMP



Major Breeze want to be
introduced into the building.
July. S-W 20°.

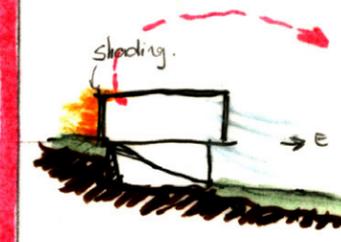


OLD TOWN
ORIENTED
WEST SUN
LIGHT RANGE

TILT TO
JULY/AUG
WEST SUN
LIGHT RANGE

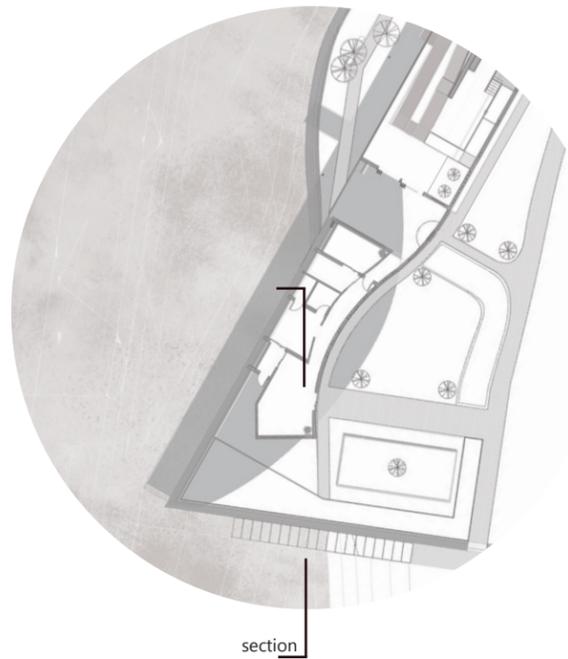
PLANTS,
LANDSCAP,
GARDEN,
SITTING PLACE.

- to
- ① MAKE THE PLAN STILL
FIT THE OLD TOWN
ORGANIZATION.
- ② BLOCK STRONG WINTER
BREEZE FROM NORTHWEST
- ③ LEAD TO THE ENTRANCE



FIRST FLOOR BUILT IN THE LANDS.
SECOND FLOOR SHADING.

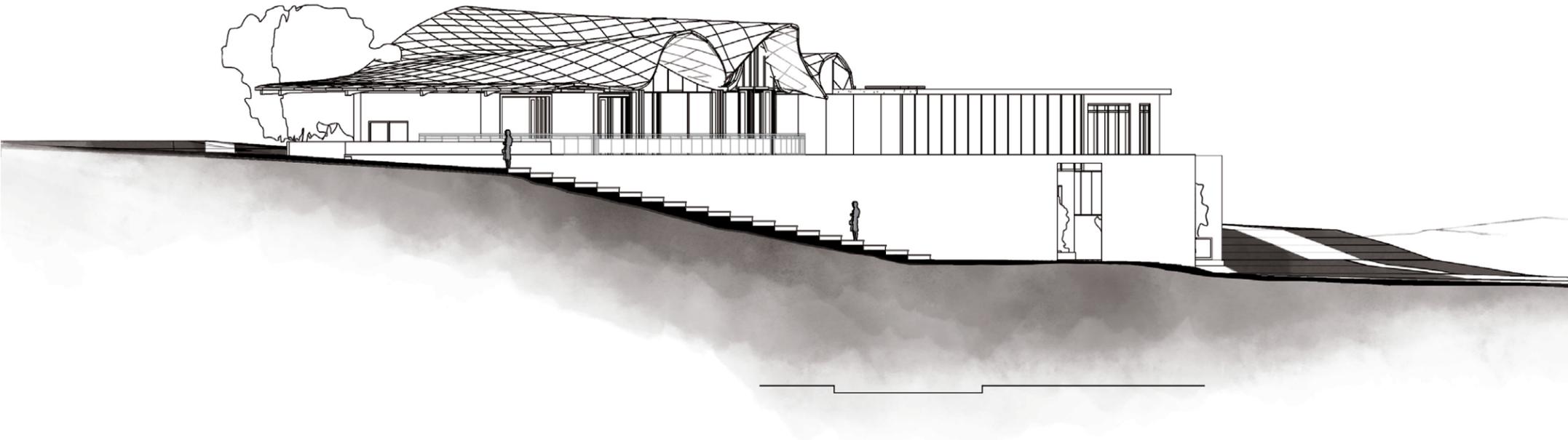
OLD TOWN
AXIS SOUTH
SUN LIGHT.
60° to South ORIENTATION SUN LIGHT



Summer



Winter



Solar considerations

Southern Exposure

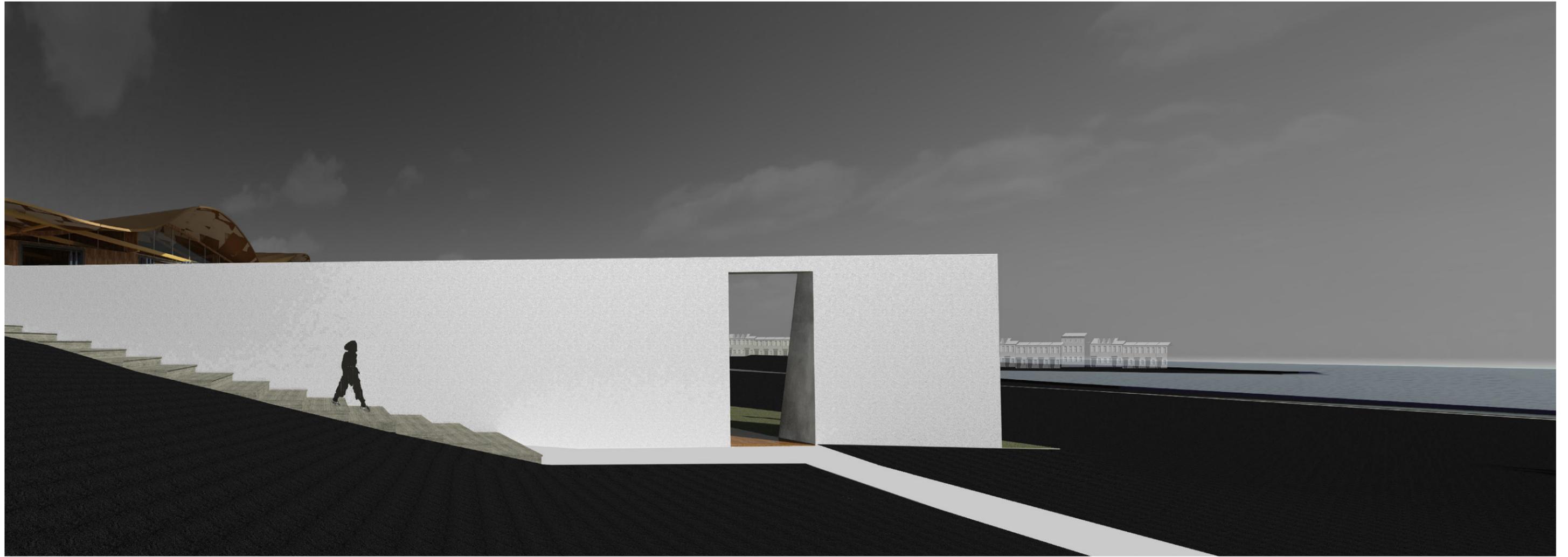
After the solar study, the main entrance is located on the southern exposure of the building. When entering the building on a sunny day, the sun is behind the visitors, this makes the building appear to be bright, while the visual experience is not affected by the direct sunlight.

The reflecting pools are for collecting rainwater, and absorbing the heat. The pool can also be a soothing experience for visitors.

The change of the retaining wall from straight to "L shape" is also for using the wall to block low angle afternoon sunlight from south and west.

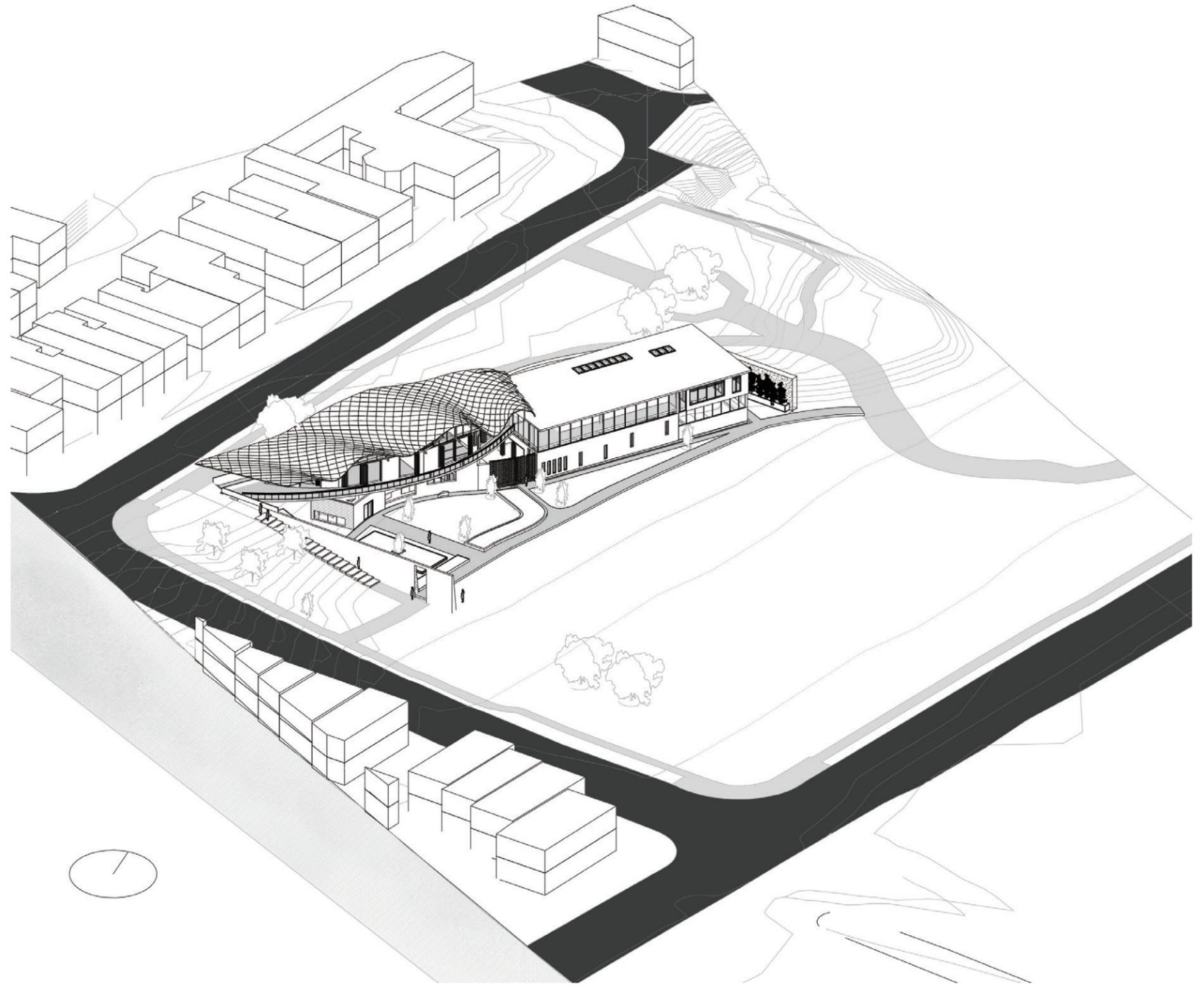
Upper Right Section of the lower level entrance

Lower Left South Elevation

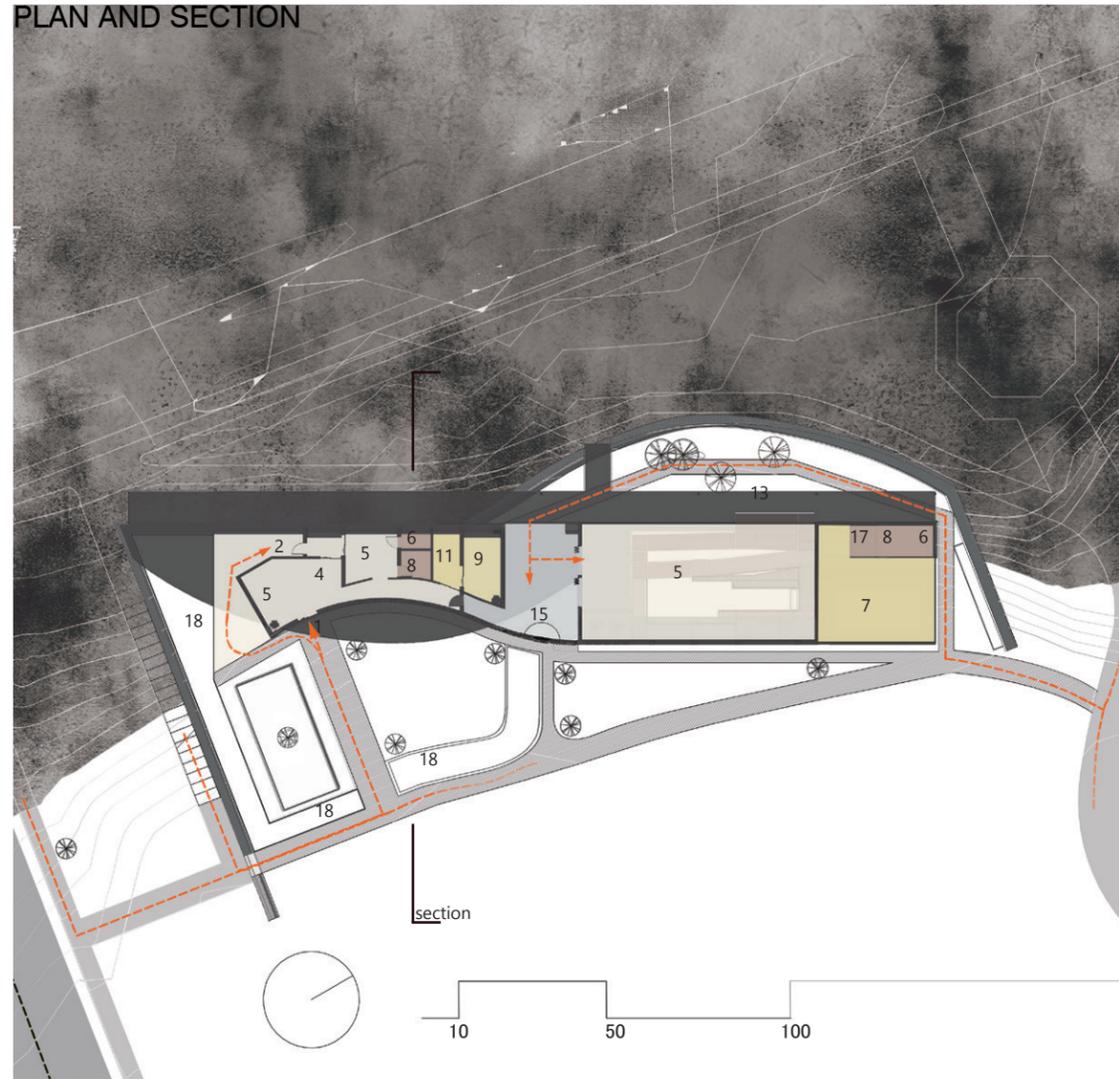


0 10 50 100 200 FT
A southward view of the Healing Garden with wall and path along Gibson Street

Plan and section



PLAN AND SECTION

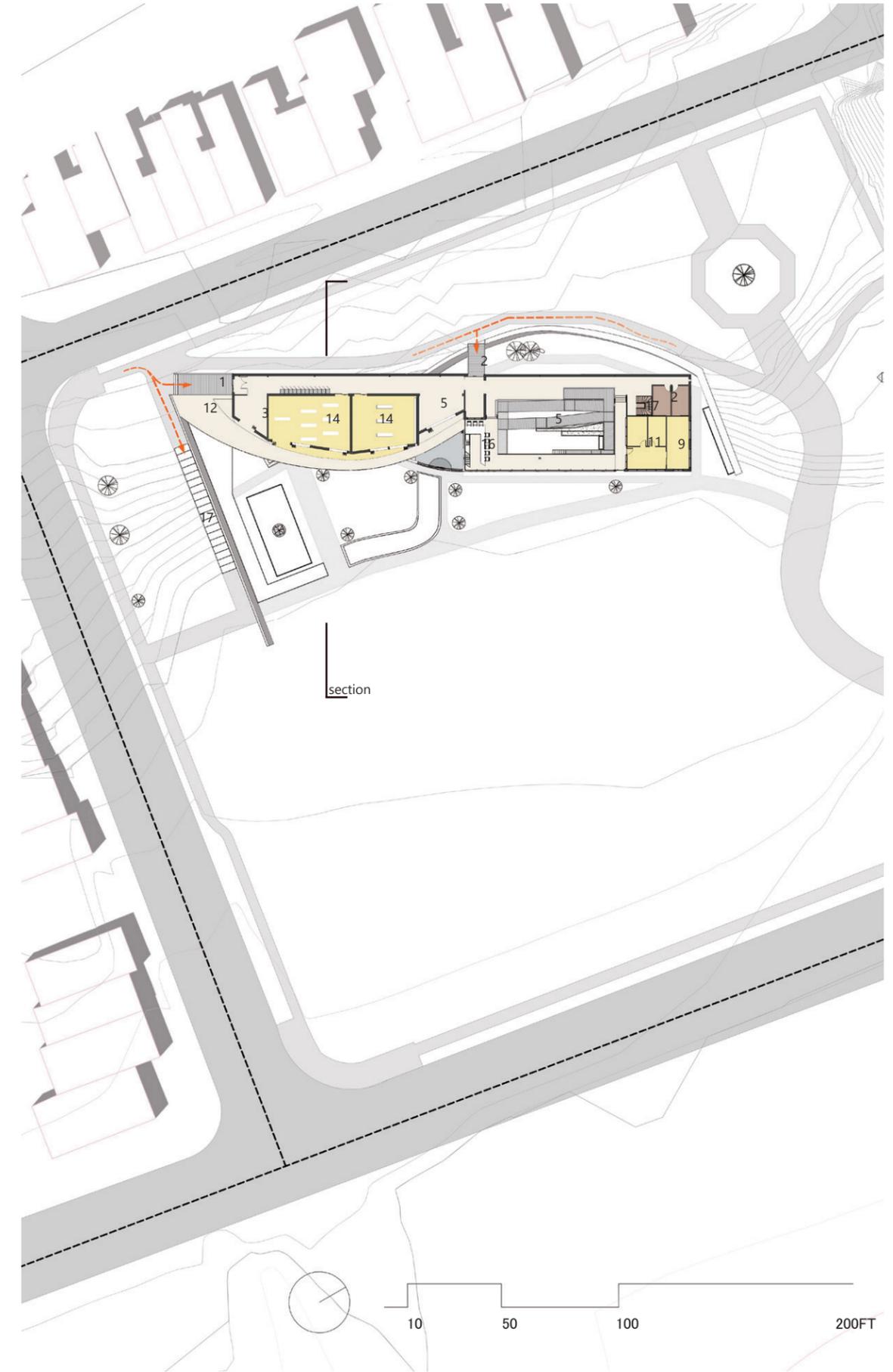
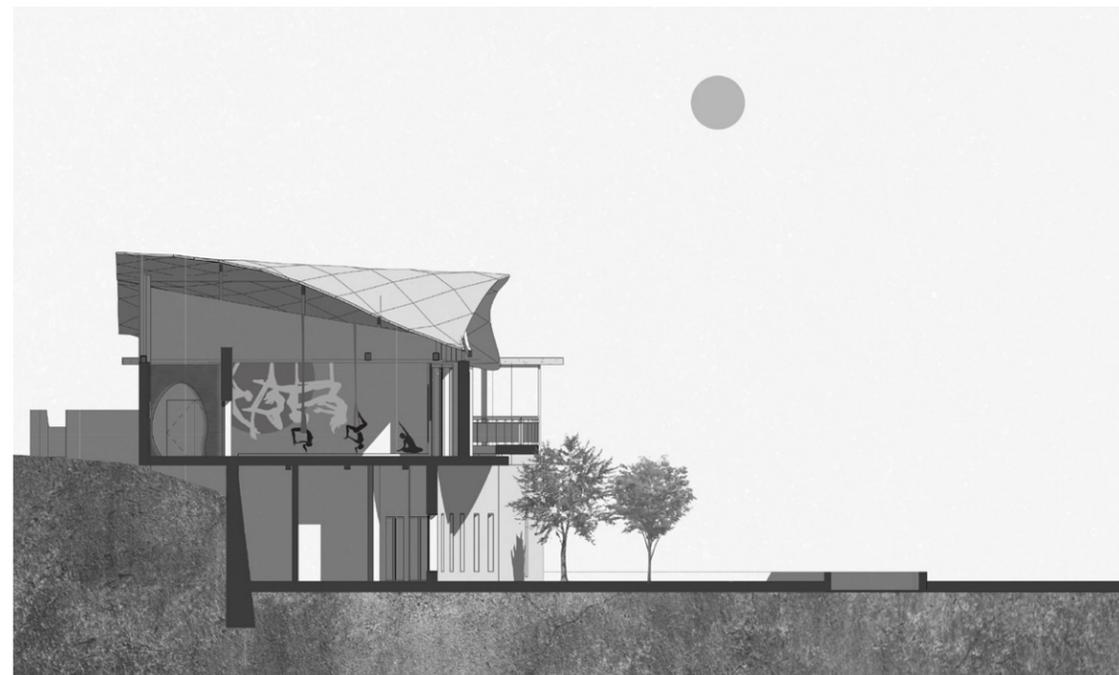


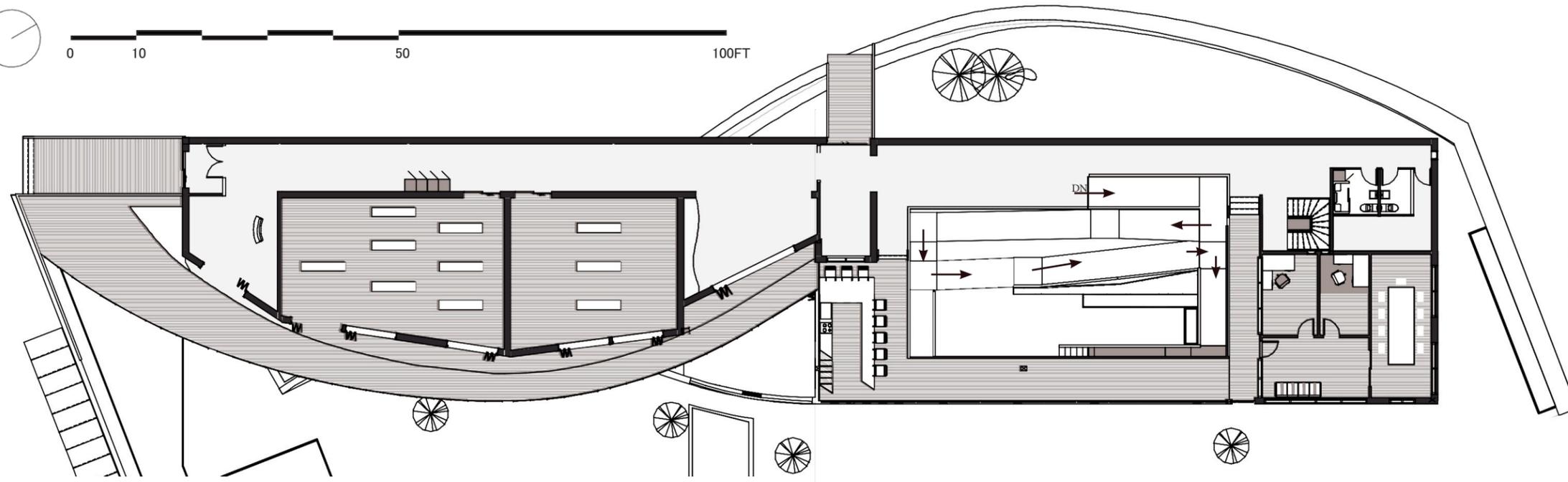
Left Lower Level
Right Upper Level
Left Bottom Section

Building Analysis Key

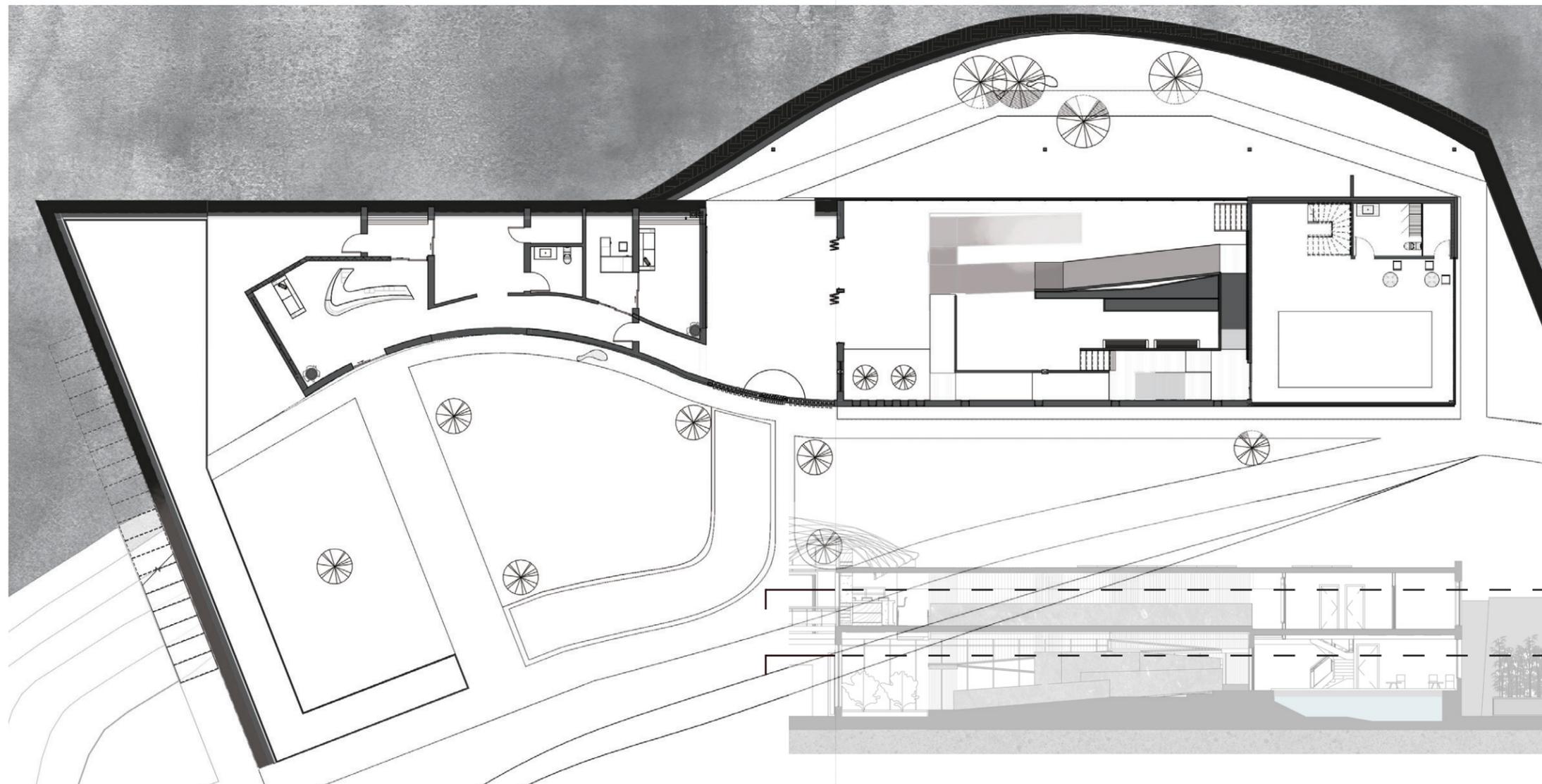
- service
- private
- semi-public
- public
- vehicular
- pedestrian

- 1 Entry
- 2 Staff entry
- 3 Upper Reception
- 4 Lower Reception
- 5 Foyer
- 6 Mechanical
- 7 Pool
- 8 Guest room
- 9 Meeting Room
- 10 Terrace
- 11 Office
- 12 Terrace
- 13 Garden
- 14 Yoga
- 15 Fireplace
- 16 Cafe
- 17 Stair
- 18 Reflecting Pool

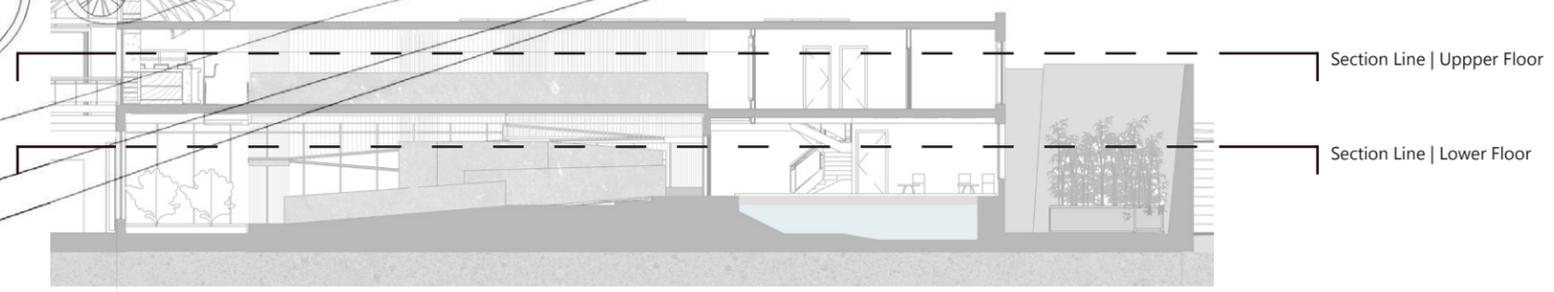




Upper Level | Yoga

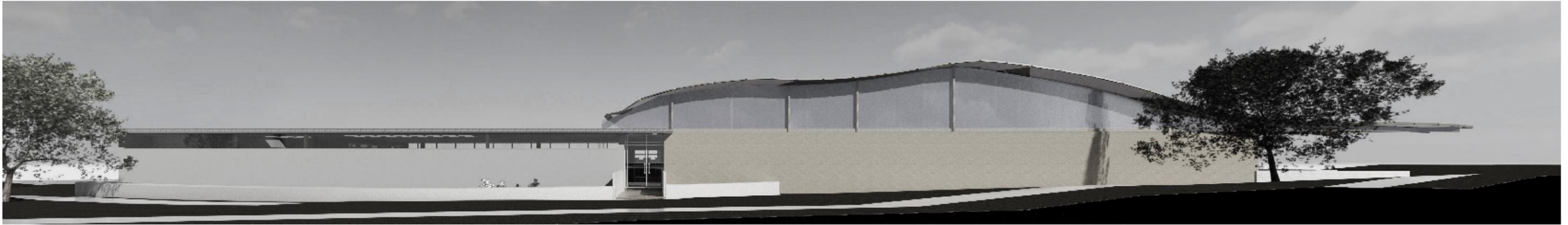


Lower Level | Counseling and Garden



Section Line | Upper Floor

Section Line | Lower Floor

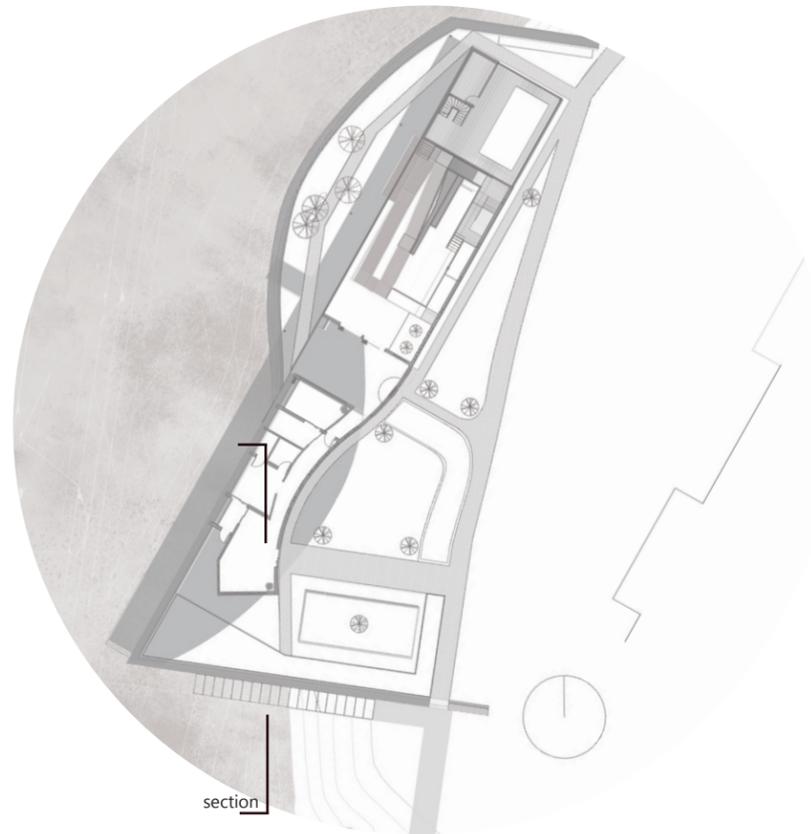


Upper Level | Northwest Exposure | Yoga



Lower Level | Southeast Exposure | Counseling and Garden

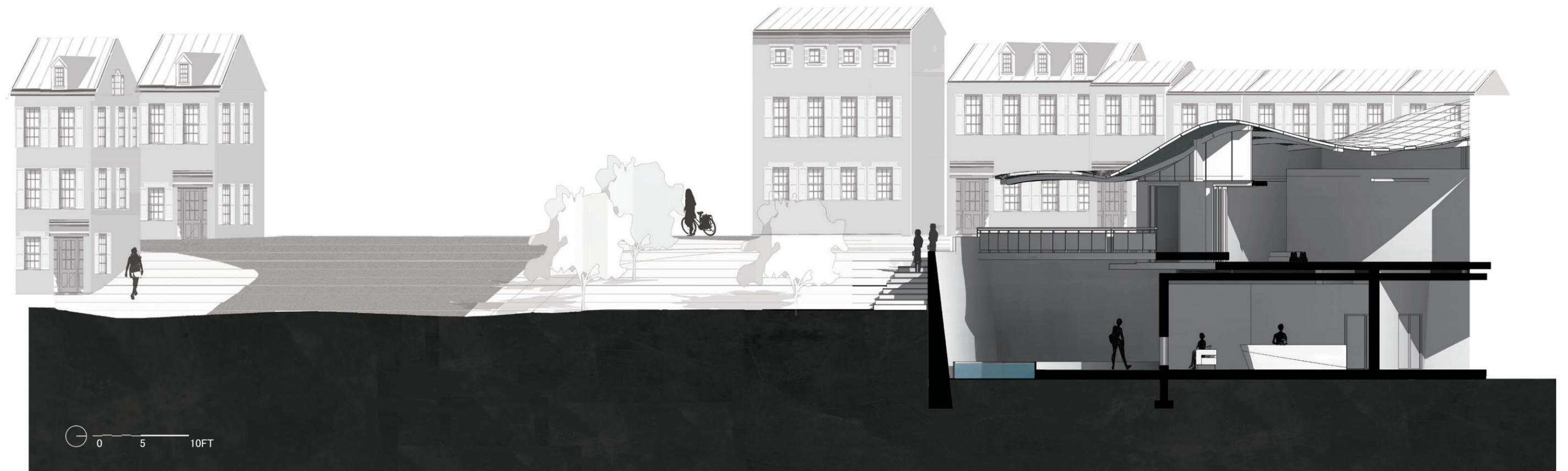




Lower Level | Counseling and Garden Main Entrance

The first floor of the building serves as the counseling place. It contains offices for counseling, indoor and outdoor gardens for taking a walk as exercise therapy, and a spa room for water therapy.

The lower level has two entrances, one for patients and one for the staff, at the southern exposure of the building. The entrance is surrounded by reflecting pools.



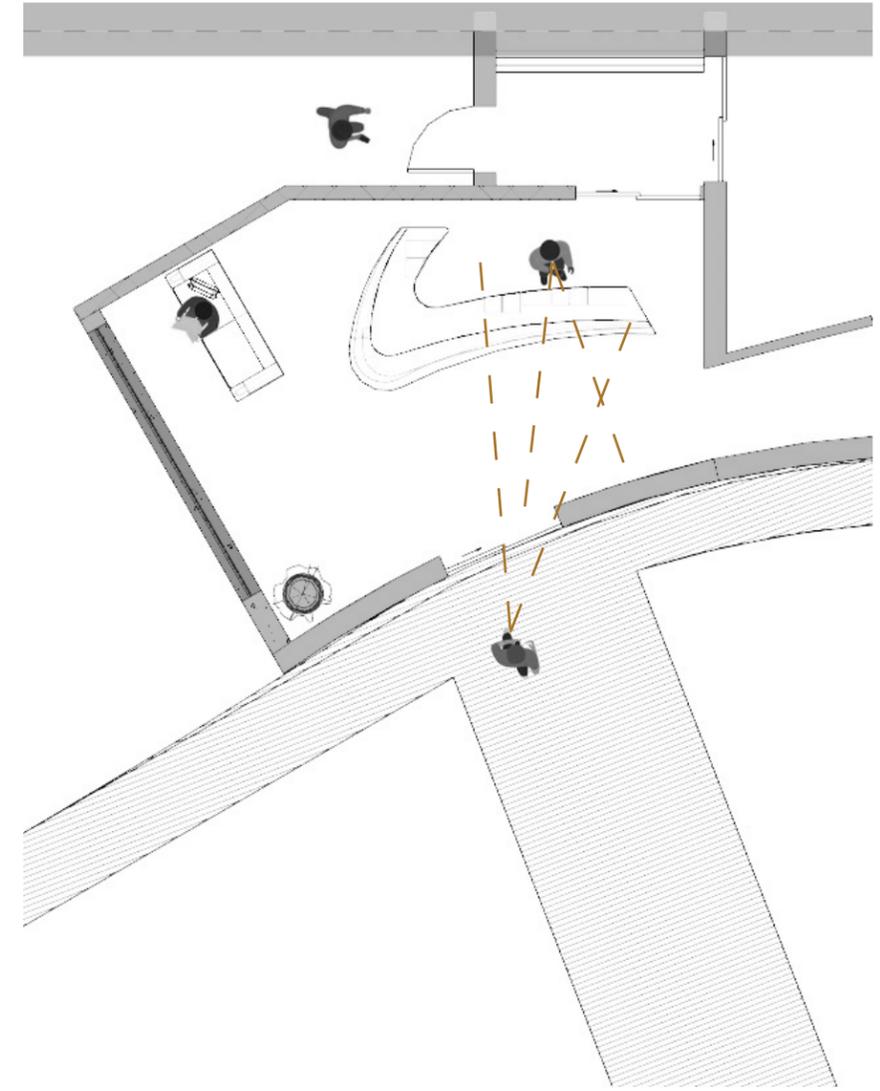


Visual line from the outside



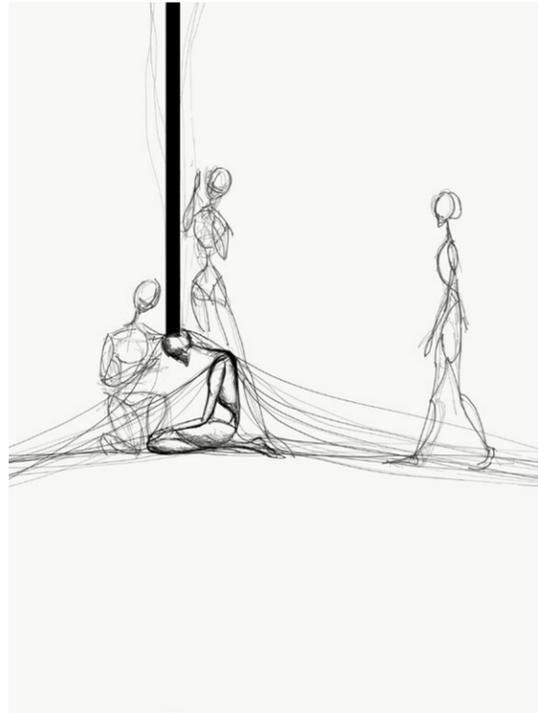
Visual line from the inside

According to Edward Hall's theory, every kind of animal has a biological comfort zone. In his book "*Hidden Dimension*", he gave an example of goldfish behaviors. The goldfish never allows any other suspicious objects near them at 1 centimeter. When one tries to touch a goldfish with a finger, the goldfish usually directly turns around. This is the biological comfort zone, it starts from the organism's center and radiates out to form an "invisible circle". For human beings, the vision comfort zone is 10 to 15ft. The number varies depending on the culture, habits and different personalities, but the behavior is similar, and that is the eye contact. For a shy person, she or he might try to avoid eye contact and thus avoid a conversation. So, the distance between the information desk to the front door is limited to be less than 10 ft. At this distance, another person's figure is noticeable, but the eye and emotion are not that noticeable, so if the person enters the building and decides not to go to the info desk, she or he can have an option of facing the window side after checked in.



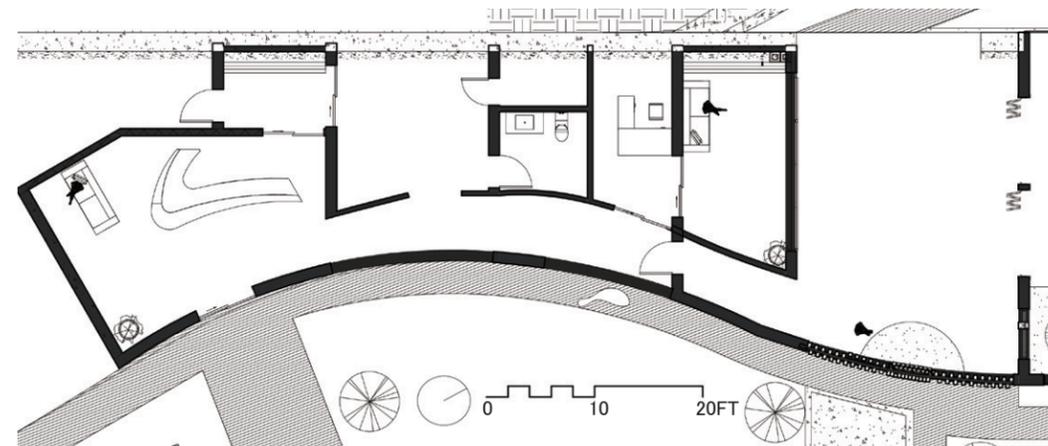
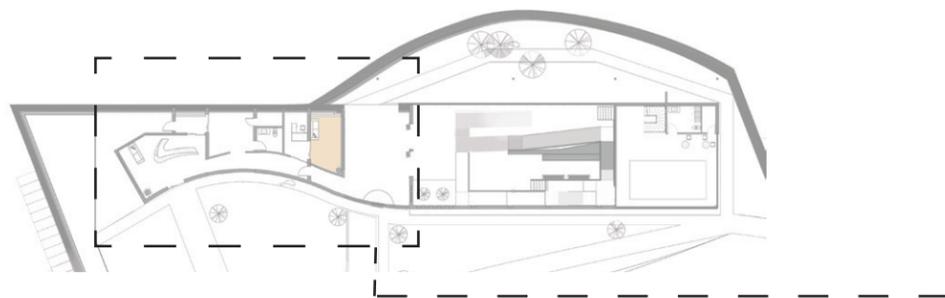
Entrance for Counselling with reflecting pool and welcoming area for sitting.





Therapist office and Counseling room

The counseling room is next to the therapist's office with a sliding door. The large window in this room allows the user to see the garden and fireplace. The retaining wall also serves as a bookshelf. This is a place that encourages people to read and talk to others to open the mind.

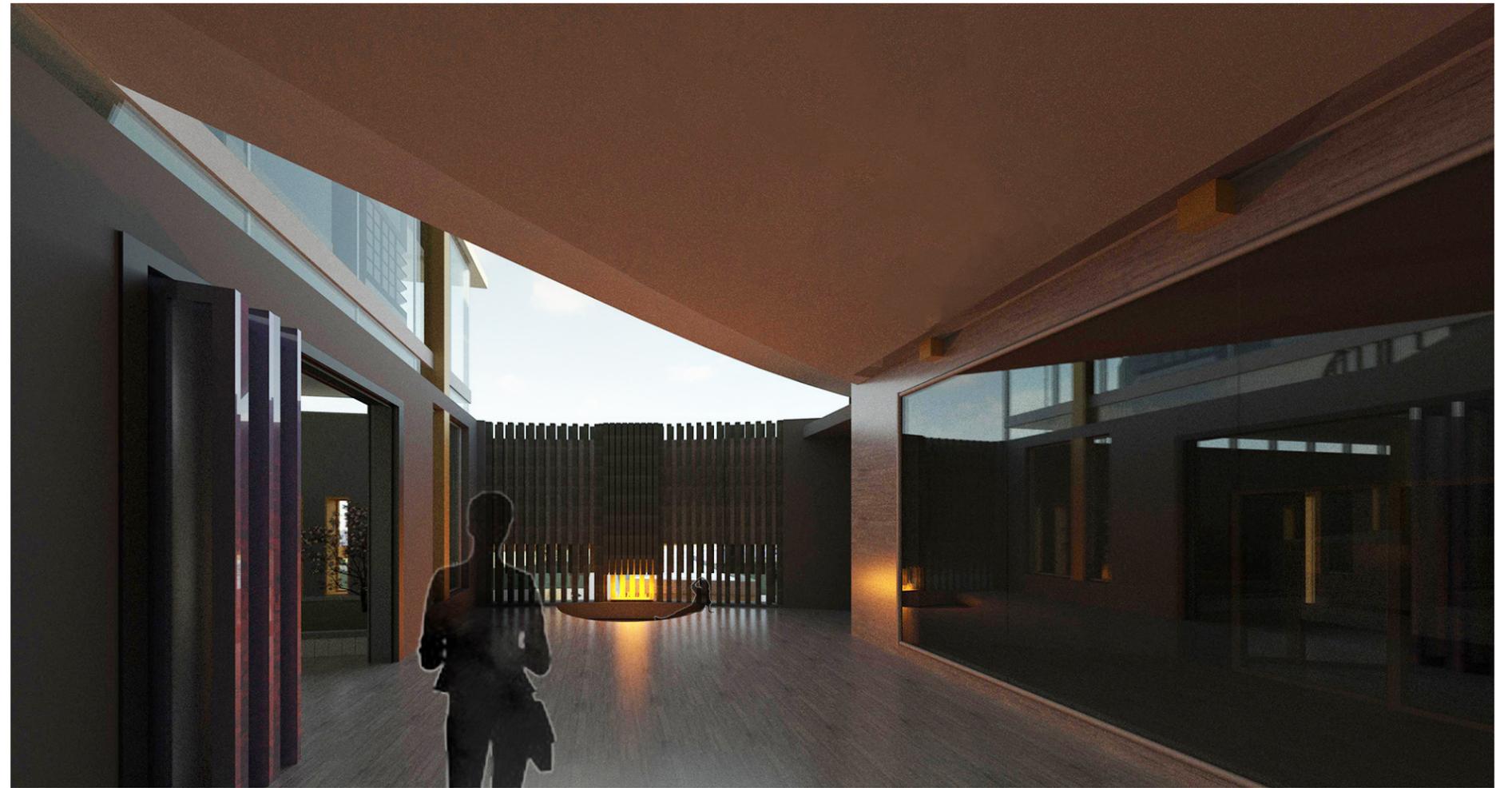
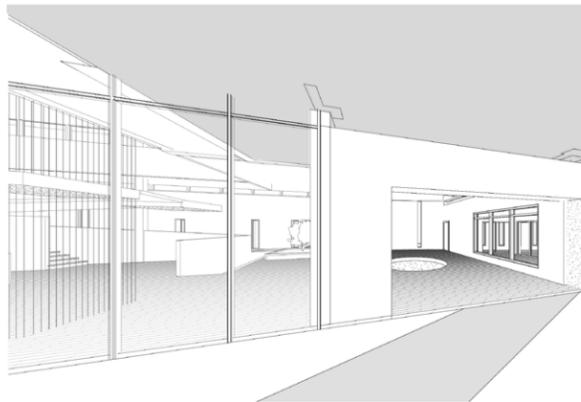


PLAN AND SECTION | Garden of the outside

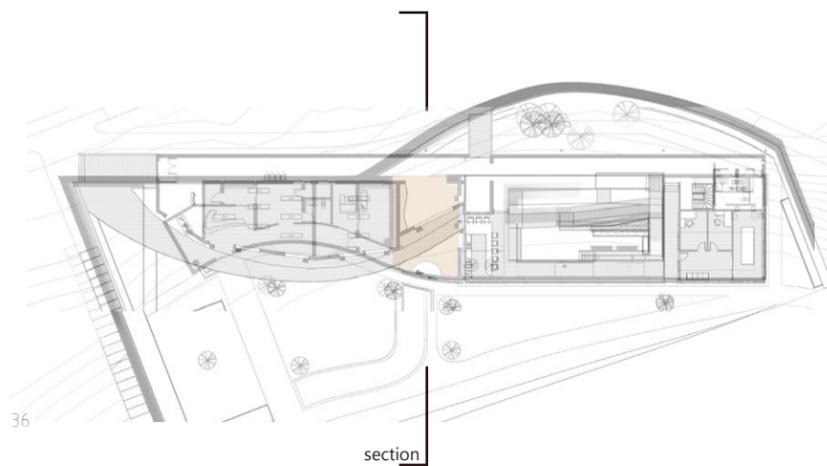
Right Afternoon fireplace Render

Left Early version of the fireplace

Opposite Hidden Garden and section

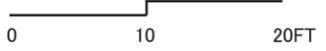
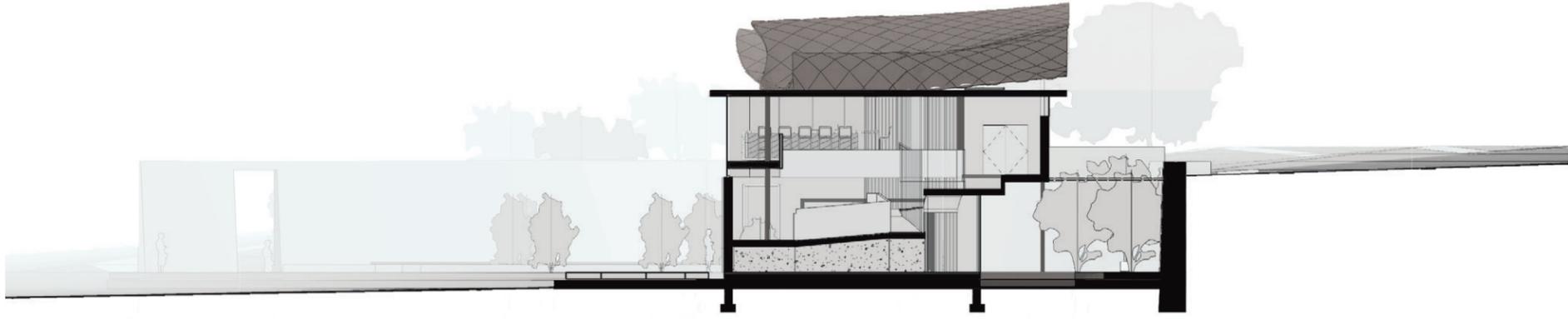
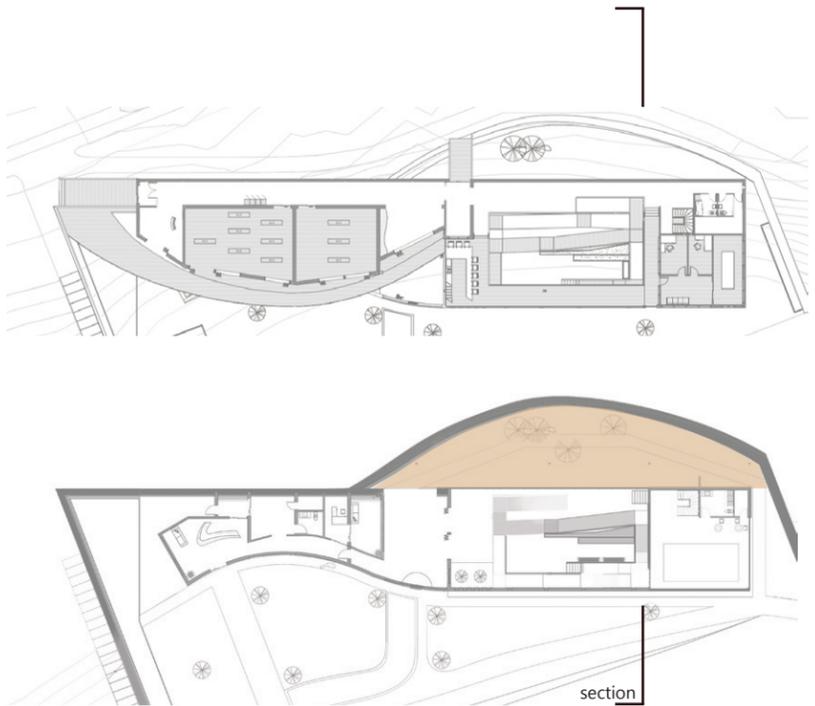


Fireplace



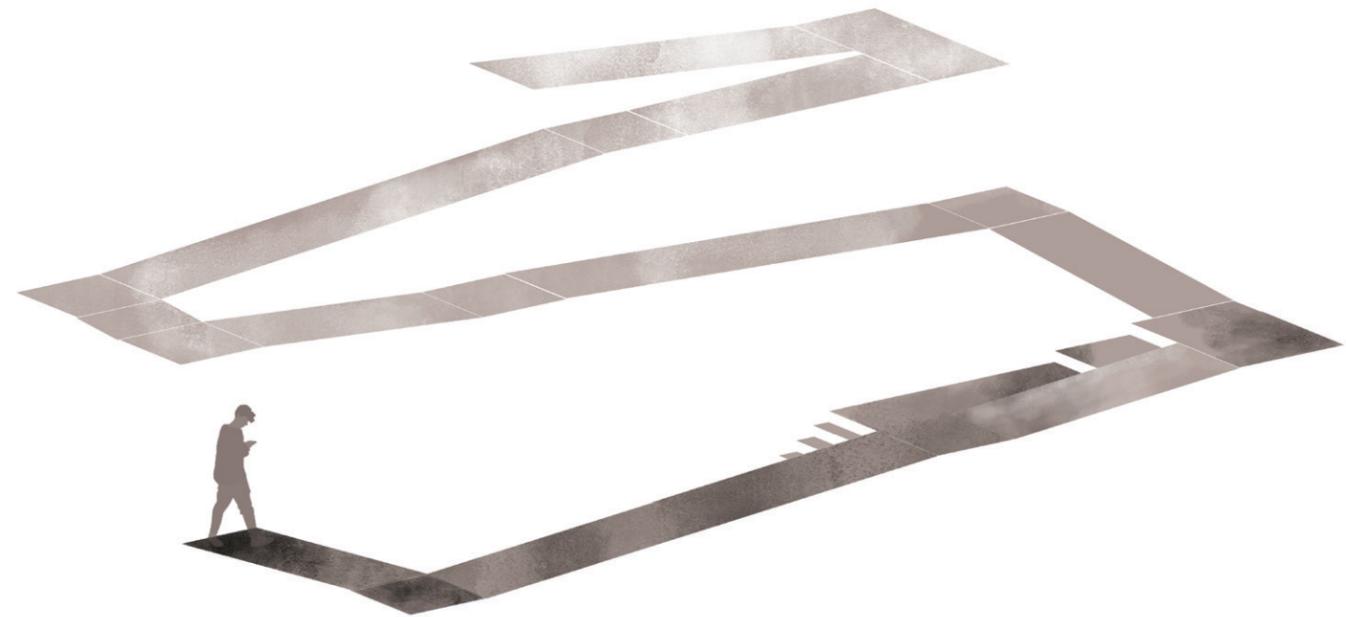


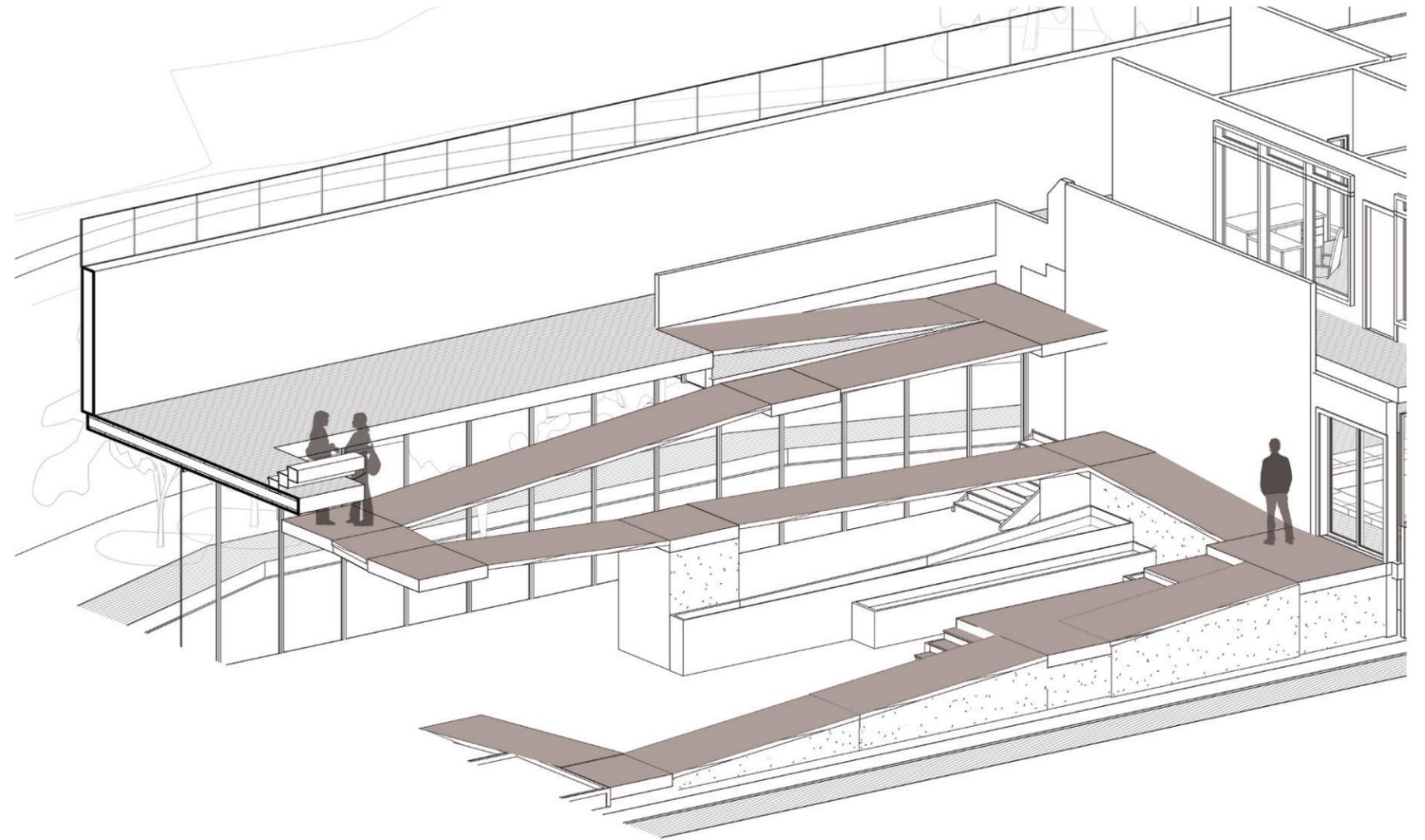
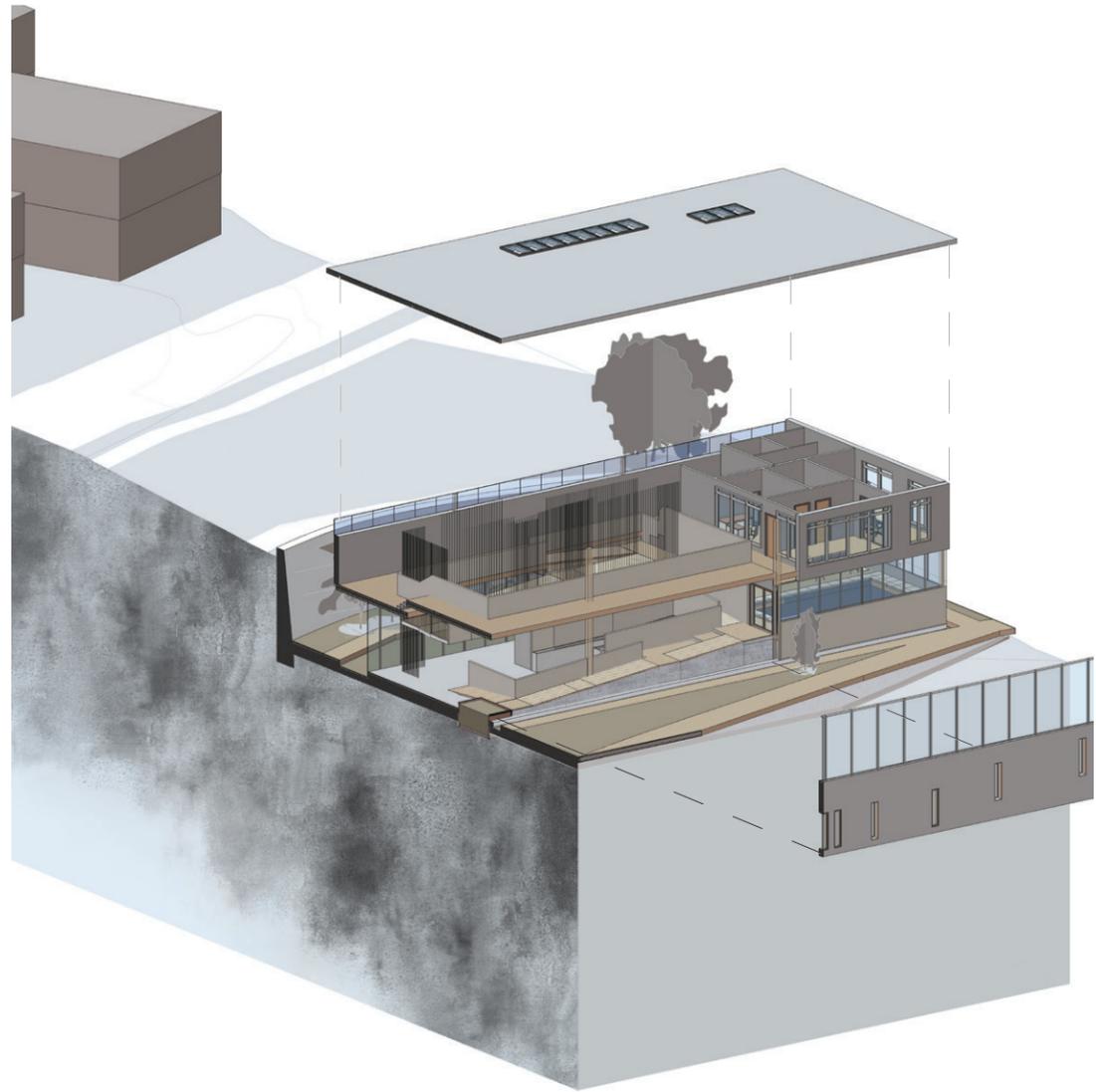
Hidden Garden



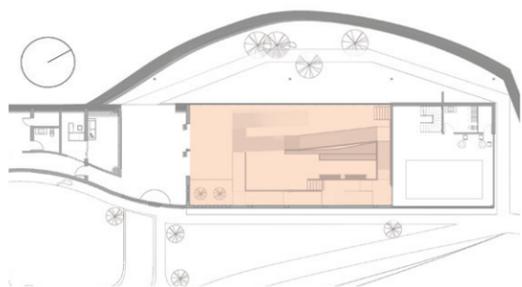


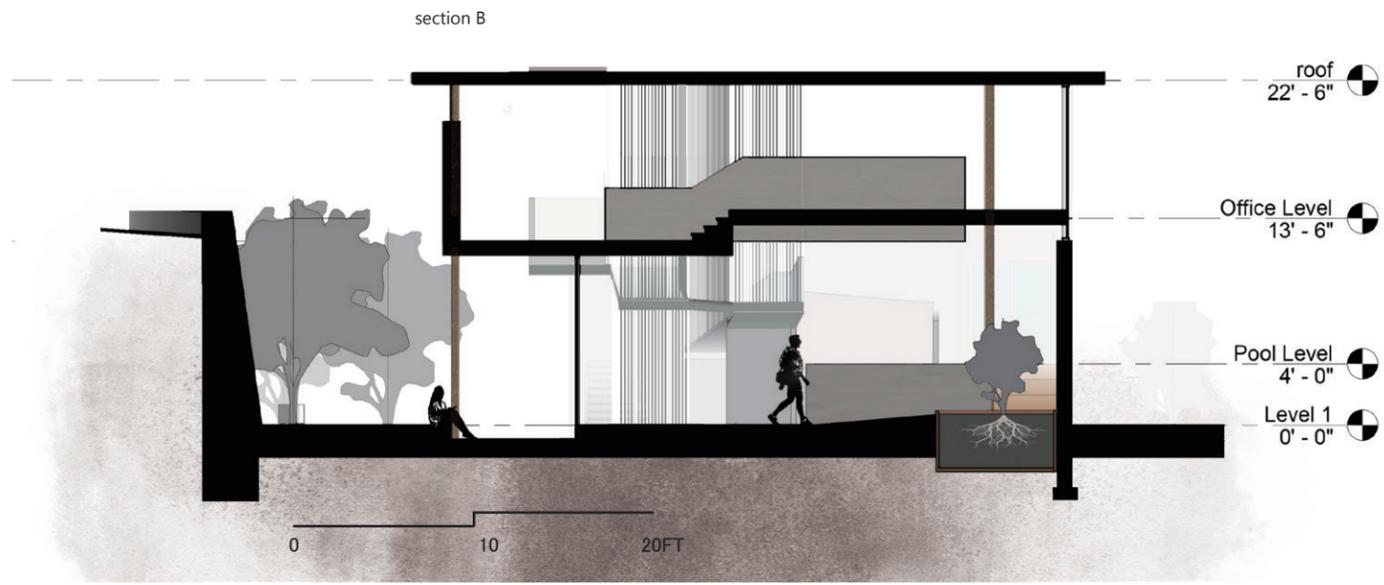
As you keep walking and look up
The column becomes lighter and stops being a burden





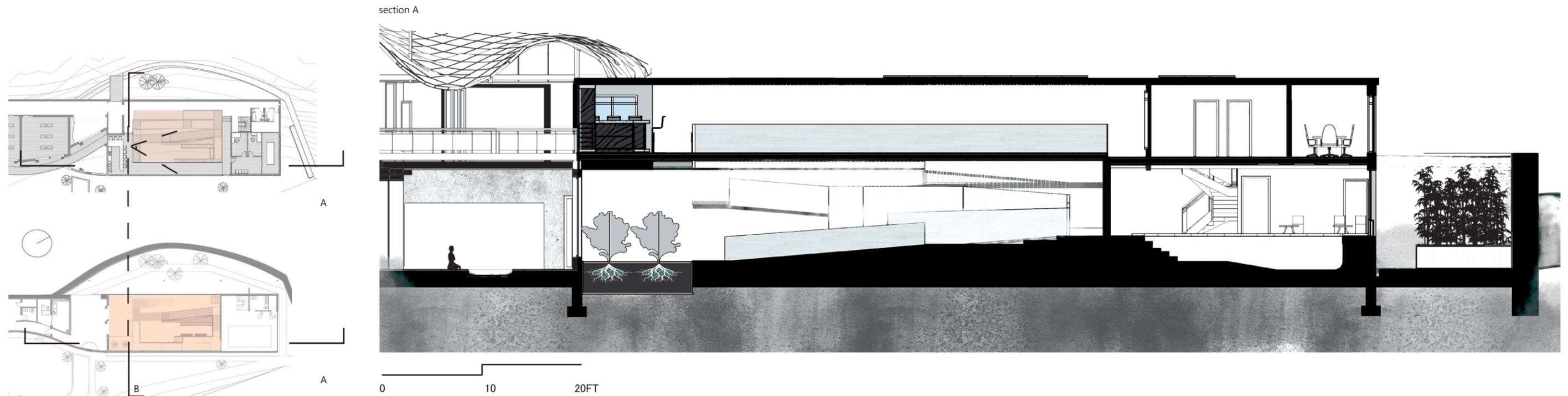
The Ramp

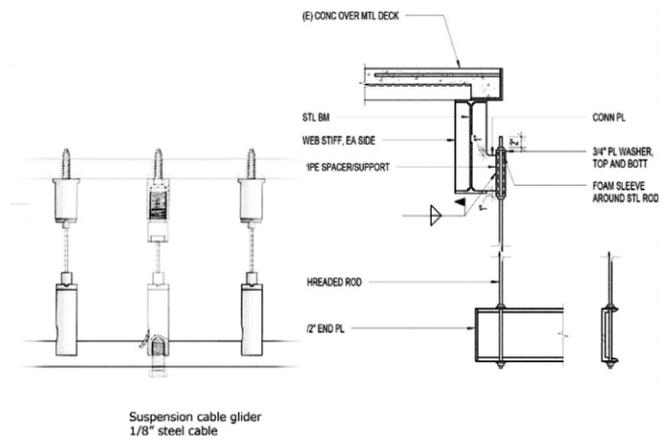




The proposed component is a response to the existing tunnel

The ramp is designed to respond with the tunnel on the site and relate it as a walking path. The bottom of the path is supported by its foundation based on the first floor. As walking upward, the path is suspended by the steel cable which hangs by the roof. The transition intends to create a transform of emotion which is from "heavy" to "light".



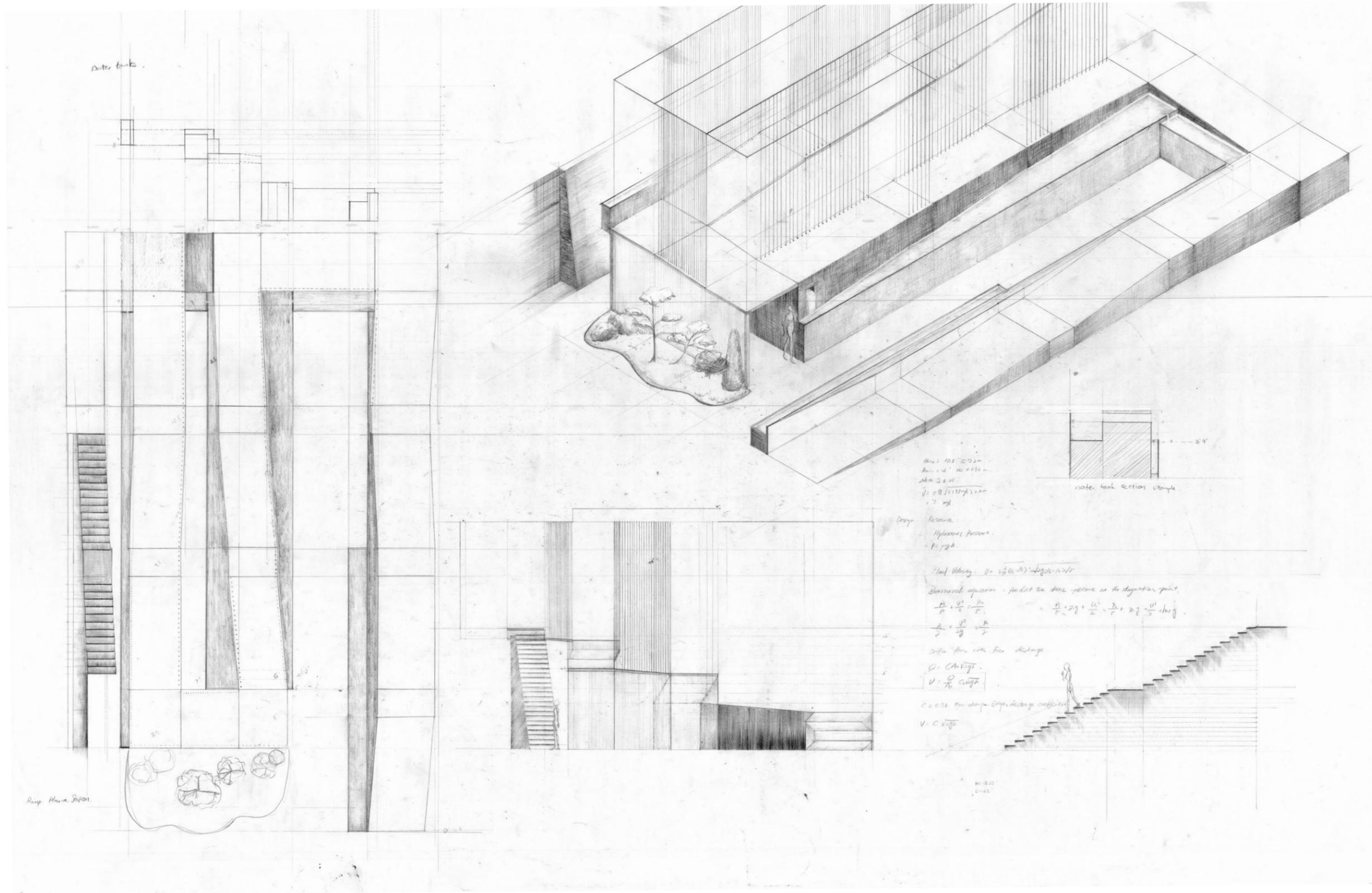


Upper Left Detail of suspension system

Right Perspective from the upper floor

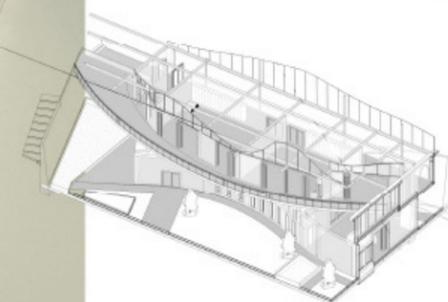
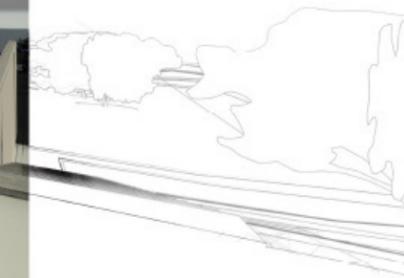
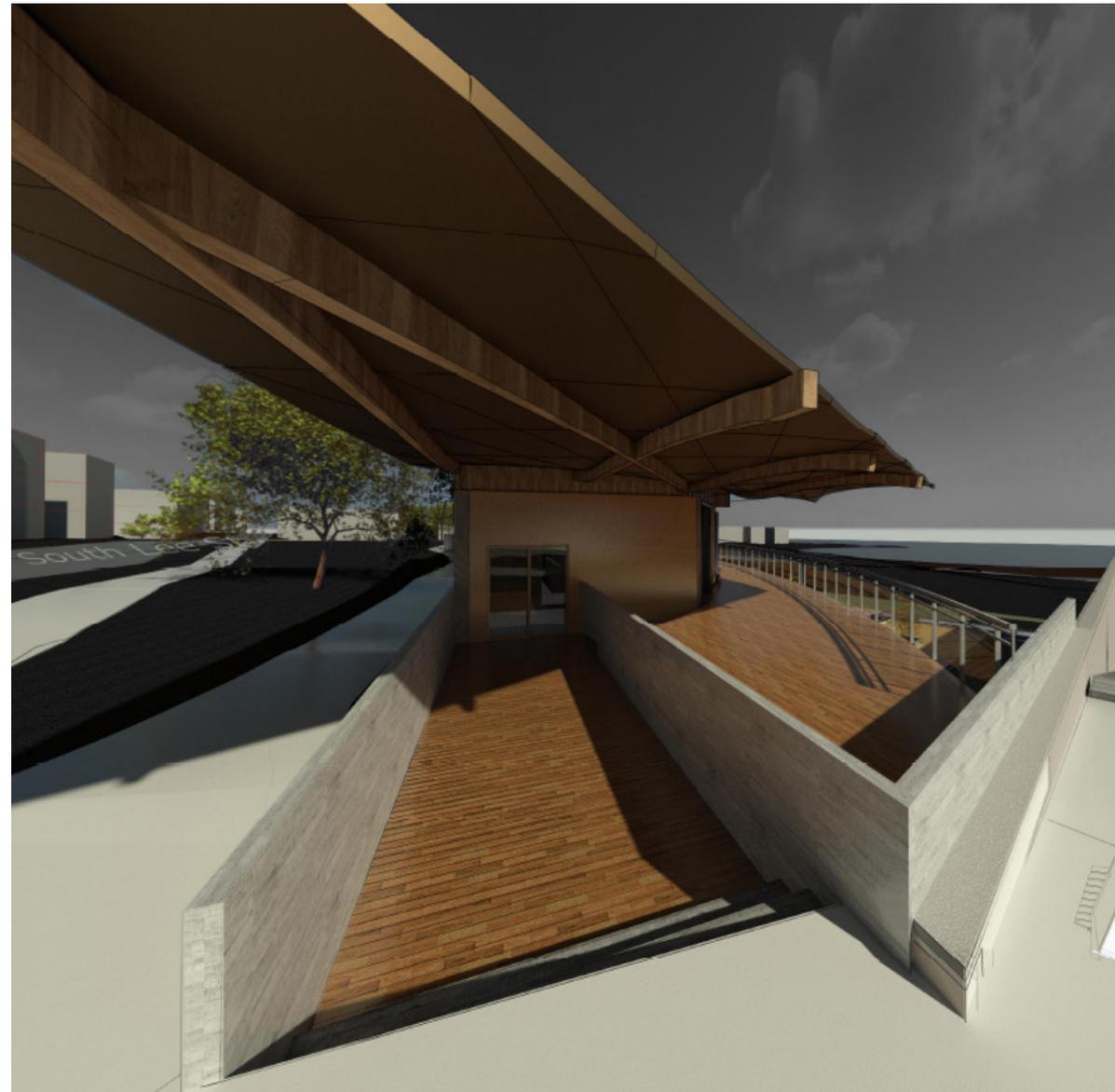
Lower Right Early version of the ramp In the early design, the retaining wall continuous through the entire bottom floor. As the design developed, the retaining wall holds back the earth and leaves an empty place for a secret garden outside which is in contrast to the garden within the building.







Yoga Studio

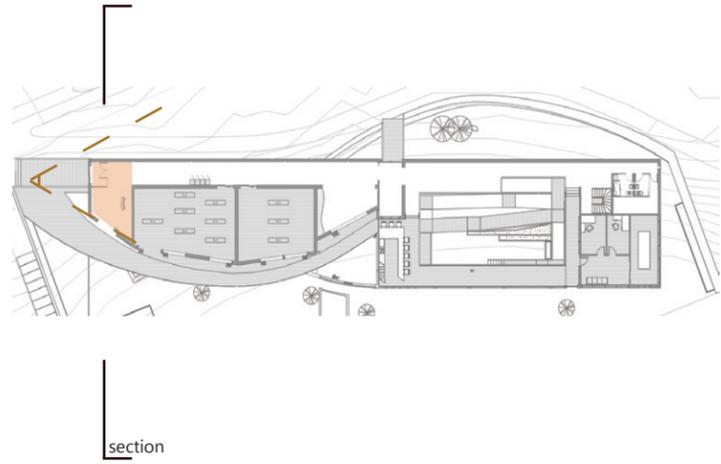


Middle Upper-level entrance from the top of the hill view

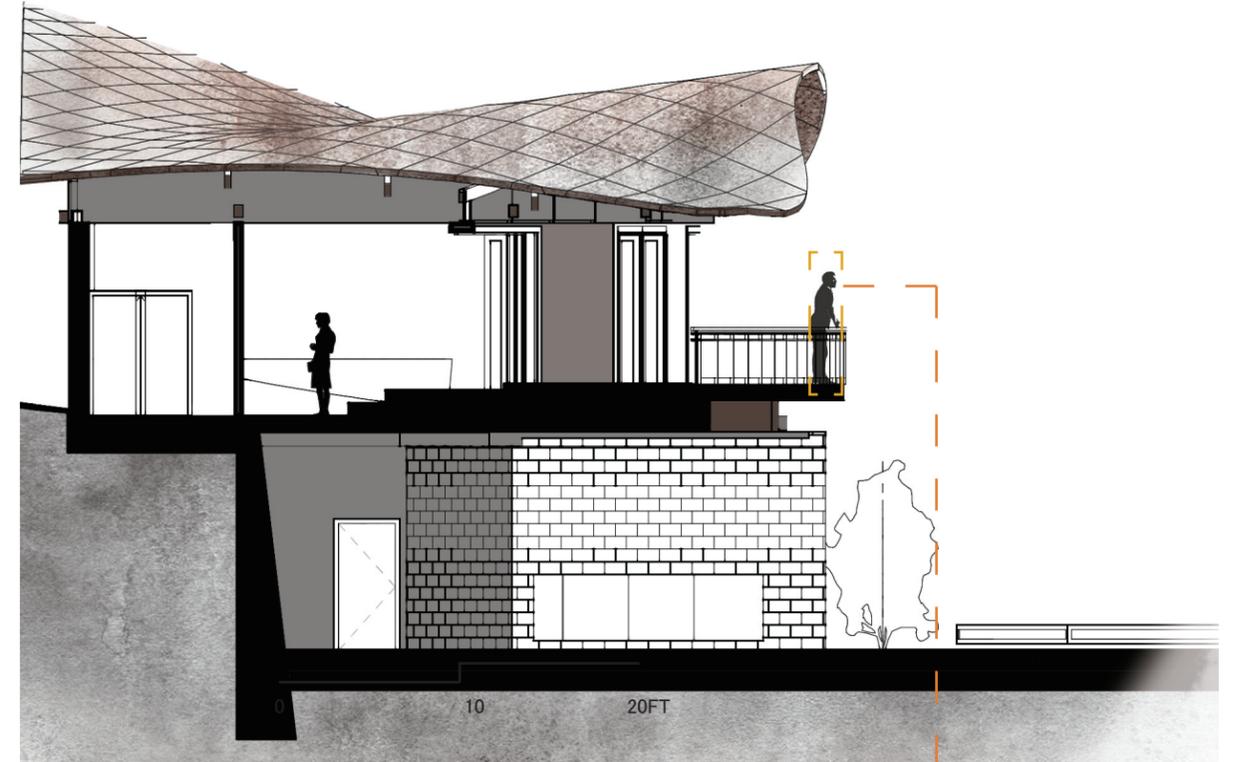
Upper Right Corner Yoga Studio hallway and storage cabinets

Lower Right Corner Yoga studio structure frame

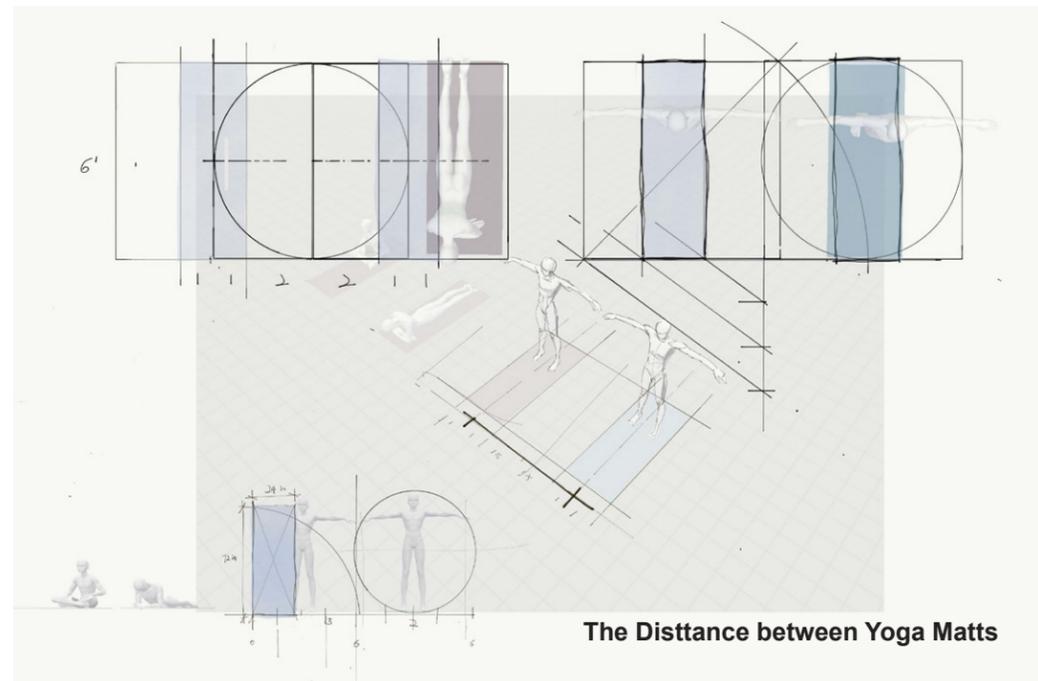
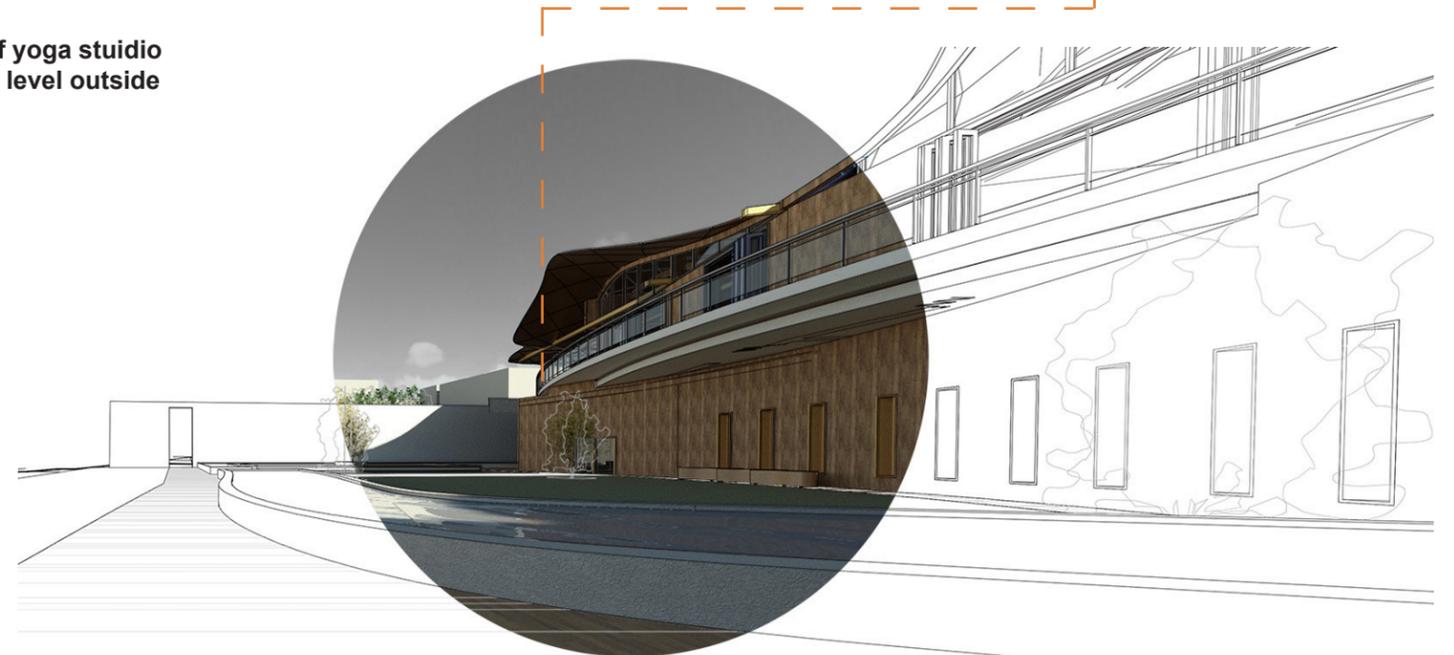
PLAN AND SECTION | Yoga Entrance

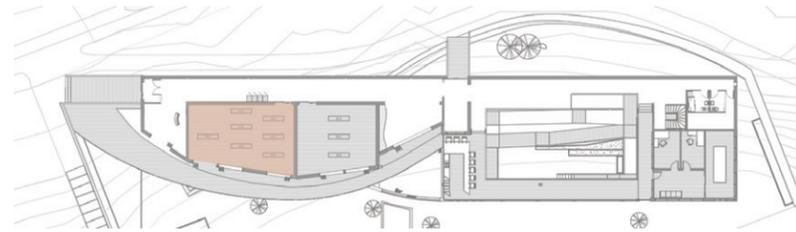


Section of entrance



A glance of yoga studio from lower level outside



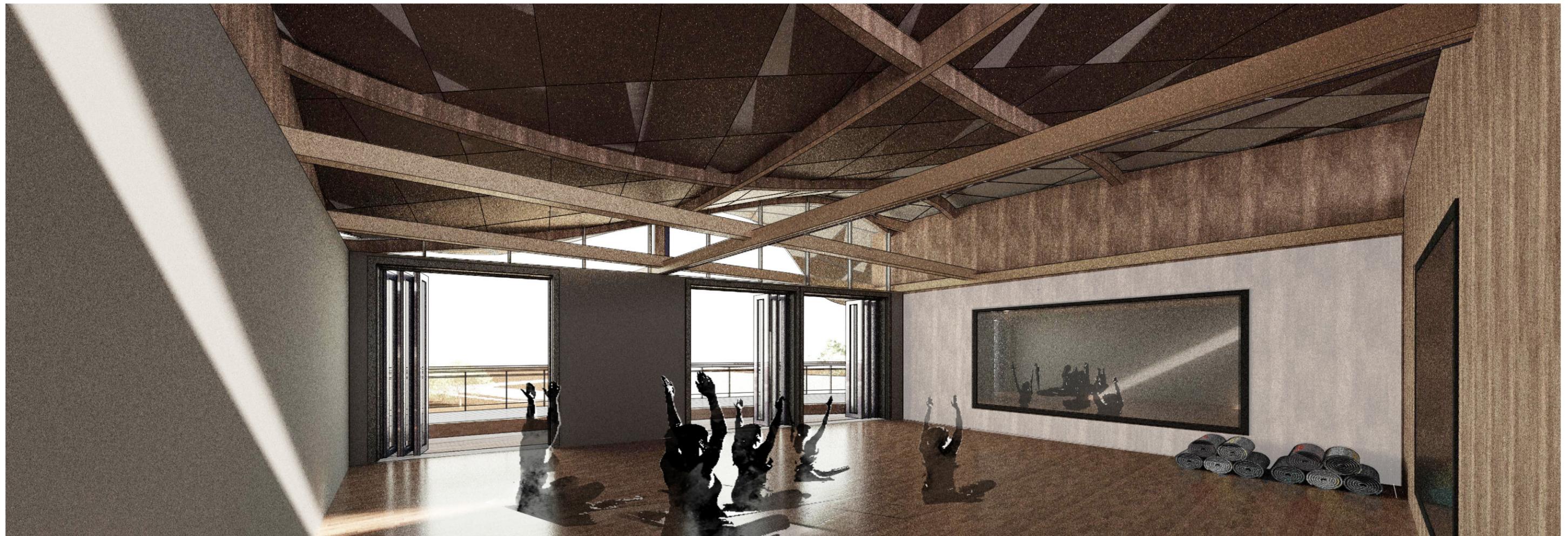


The yoga program is divided into two parts as two classrooms are needed. Considering the sunlight and heating condition, the classroom at the south end of the building is for practicing meditation yoga, which is calm and steady, and the other one is for aerial yoga, which needs vast space for body to spin and jump, and certain elevations to hang a hammock and cords. Both two yoga rooms have folding panel doors that allow approaches to the large terrace. It allows the users to catch a breath of fresh air when the season allows.

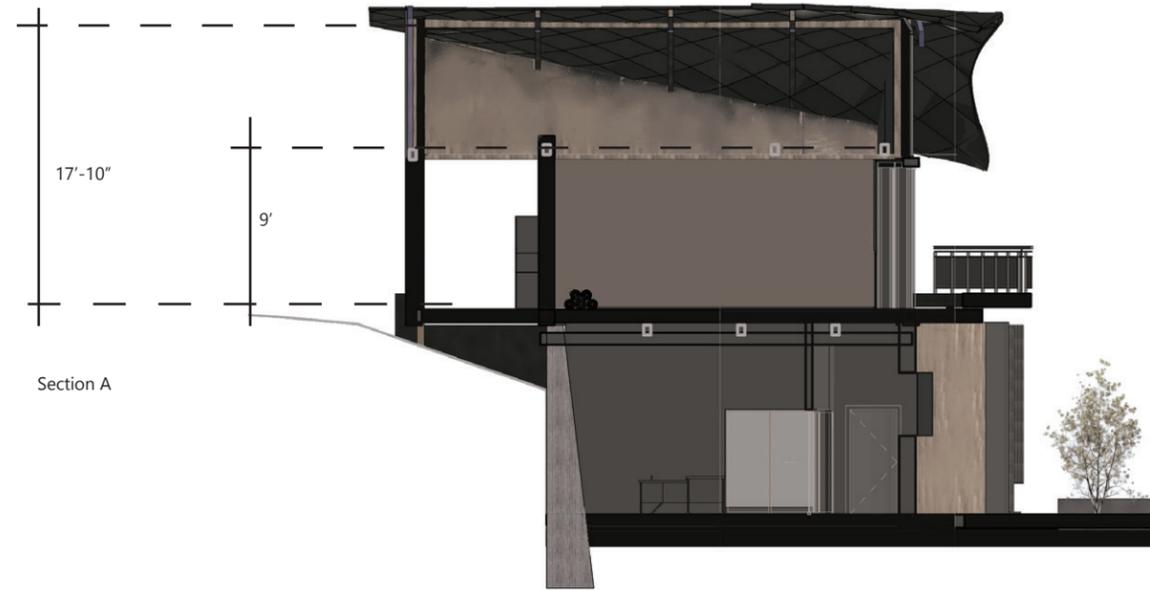
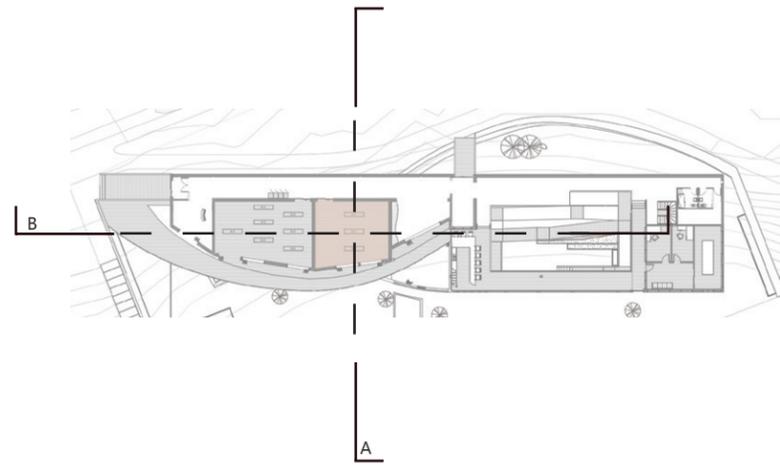
As the curvy roof waves, the Meditational yoga room has a lower ceiling height comparing to the aerial yoga room. In the yoga room, the timber structure frame is exposed, and it also functions as a place to hang the hammocks for performing aerial yoga. The allowable highest point to hang the hammock is 17ft clear height from the floor with an 8ft diameter of clear space to performance aerial acrobatics.

It uses 6 ft diameter clear space as the extreme condition, the Meditation yoga studio allows a maximum of 10 people to practice at the same time. The Aerial yoga demands more clear space than the Meditational yoga therefore fewer people are allowed to perform at the same time. When performing the aerial acrobatics it is recommended for only one students and a coach companioned.

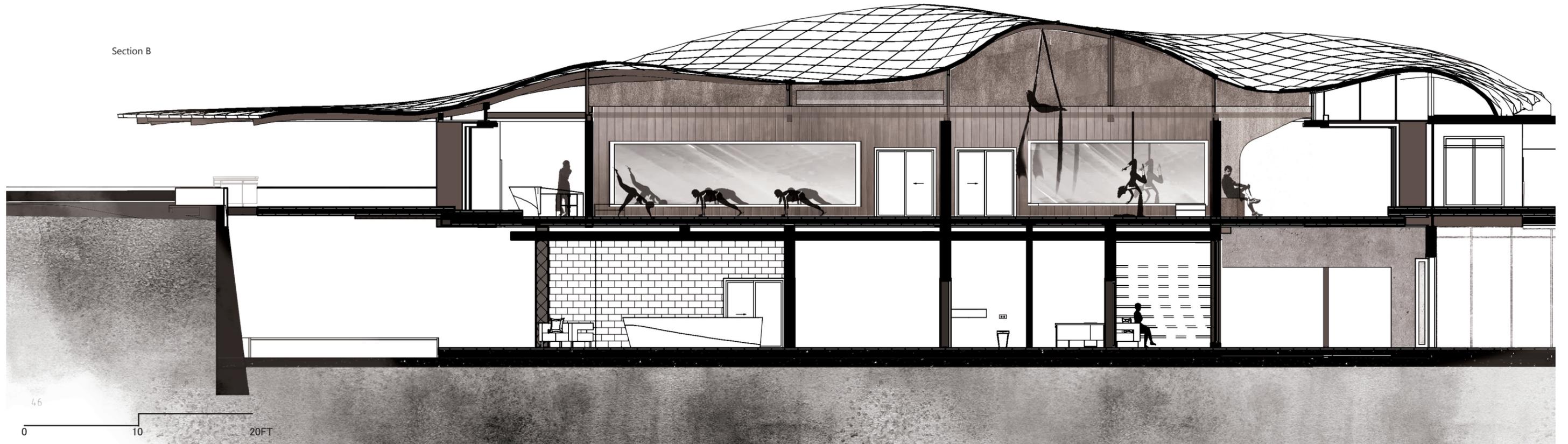
Meditation Yoga Studio

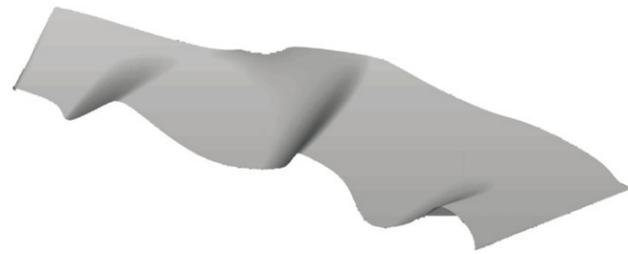


PLAN AND SECTION | Yoga Classrooms Sections



Section B

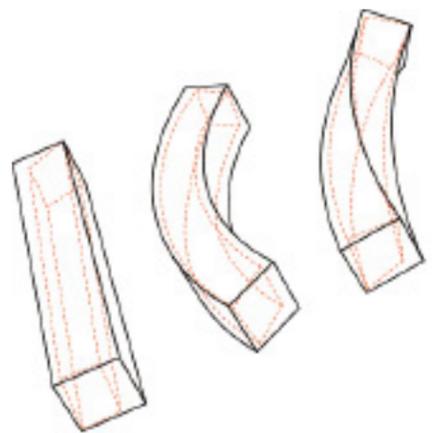
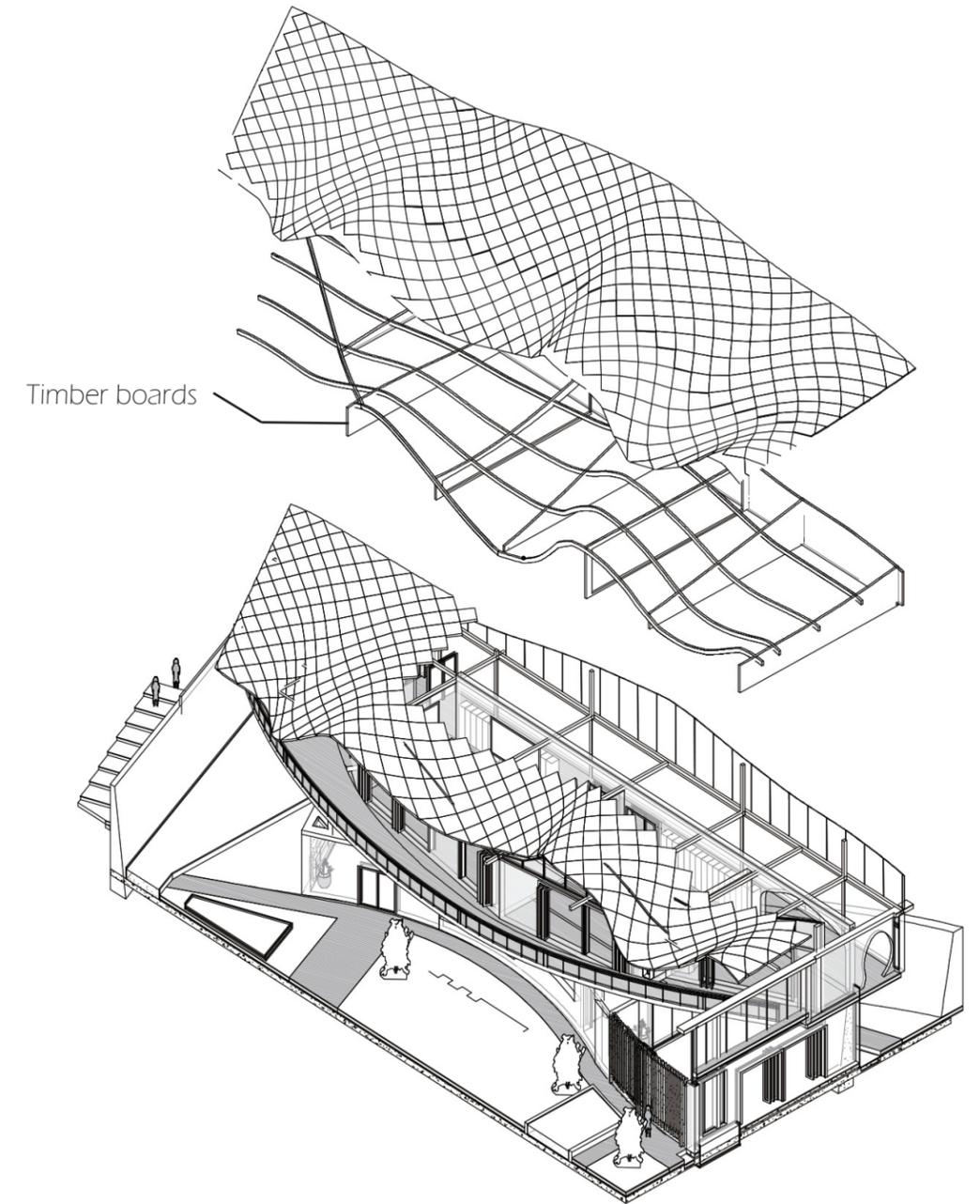




The Yoga studio intends to create a dynamic sense of space for yoga practices. The organically formed roof is inspired by the earlier study of the tunnel that introducing light inside the building in a way that seems to be random but also controllable.

Upper Left conceptual model of the roof in which presents organic flow to simulate the sense of fabrics

Right and bottom Yoga studio structure, frame and panel details



Engineered timber - Cross-laminated timber boards
 Straight, single-curved, or double-curved.
 Example image: Cross-bonded produced by Kerto LVL O company

2' x 2' curved pannel

Bibliography

Berry, Jennifer. "What Does Depression Feel like?" Medical News Today, MediLexicon International, 11 July 2018, www.medicalnewstoday.com/articles/314071.php.

Botton, Alain De. *The Architecture of Happiness*. Penguin Books, 2014.

Hall, Edward T. *The Hidden Dimension*. N.Y ed., vol. 2 3, ser. 0-385-08476-5, Anchor Books, 1990.

Jacobs, Jane. *The Death and Life of Great American Cities*. Vintage Books, 1992.

Knightsmith, P. (2015). *This Is what depression feels like -- In the words of sufferers*. Lifehack.com

Xing Fu De Jian Zhu. Translated by Feng Tao, Shang Hai Yi Wen Chu Ban She, 2009. (Chinese Version of The Architecture of Happiness, Alain de Botton)

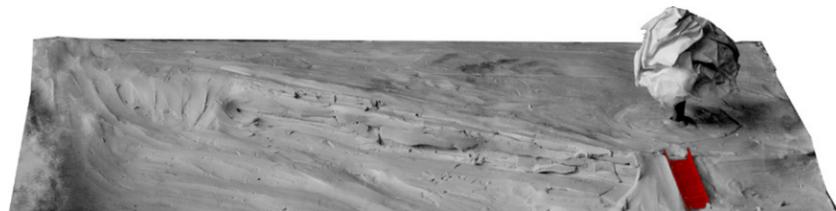
Case Study Image source: http://www.toyo-ito.co.jp/WWW/index/index_en.html

Romen, A.S. "Self-Suggestion and Its Influence on the Human Organism." Taylor & Francis, Taylor & Francis, 3 Oct. 2017, <https://www.taylorfrancis.com/books/9781315179148>.

Irimia R, Gottschling M (2016) *Taxonomic Revision of Rochefortia Sw.* (Ehretiaceae, Boraginales). Biodiversity Data Journal 4: e7720. <https://doi.org/10.3897/BDJ.4.e7720>. doi:10.3897/bdj.4.e7720.figure2f.

Gowlett, J. A. J. "The Discovery of Fire by Humans: a Long and Convolut-ed Process." *Philosophical Transactions of the Royal Society B: Biological Sciences*, vol. 371, no. 1696, May 2016, p. 20150164., doi:10.1098/rstb.2015.0164

"Great Hospital Online." Great Hospital Online - Home, <http://www.thegreathospital.co.uk/exploring/>.



MAY THE FLAME GUIDE THEE.

