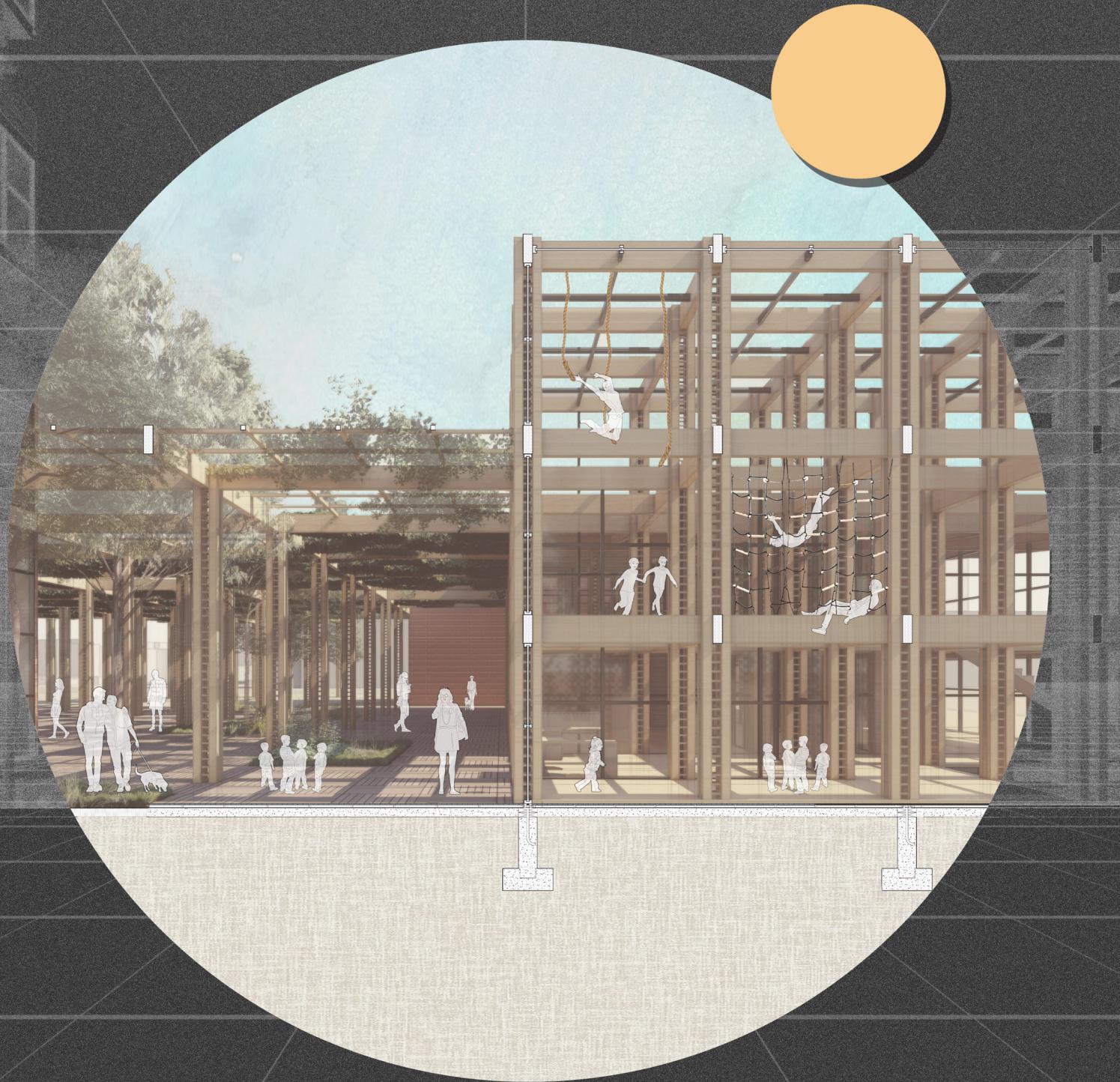
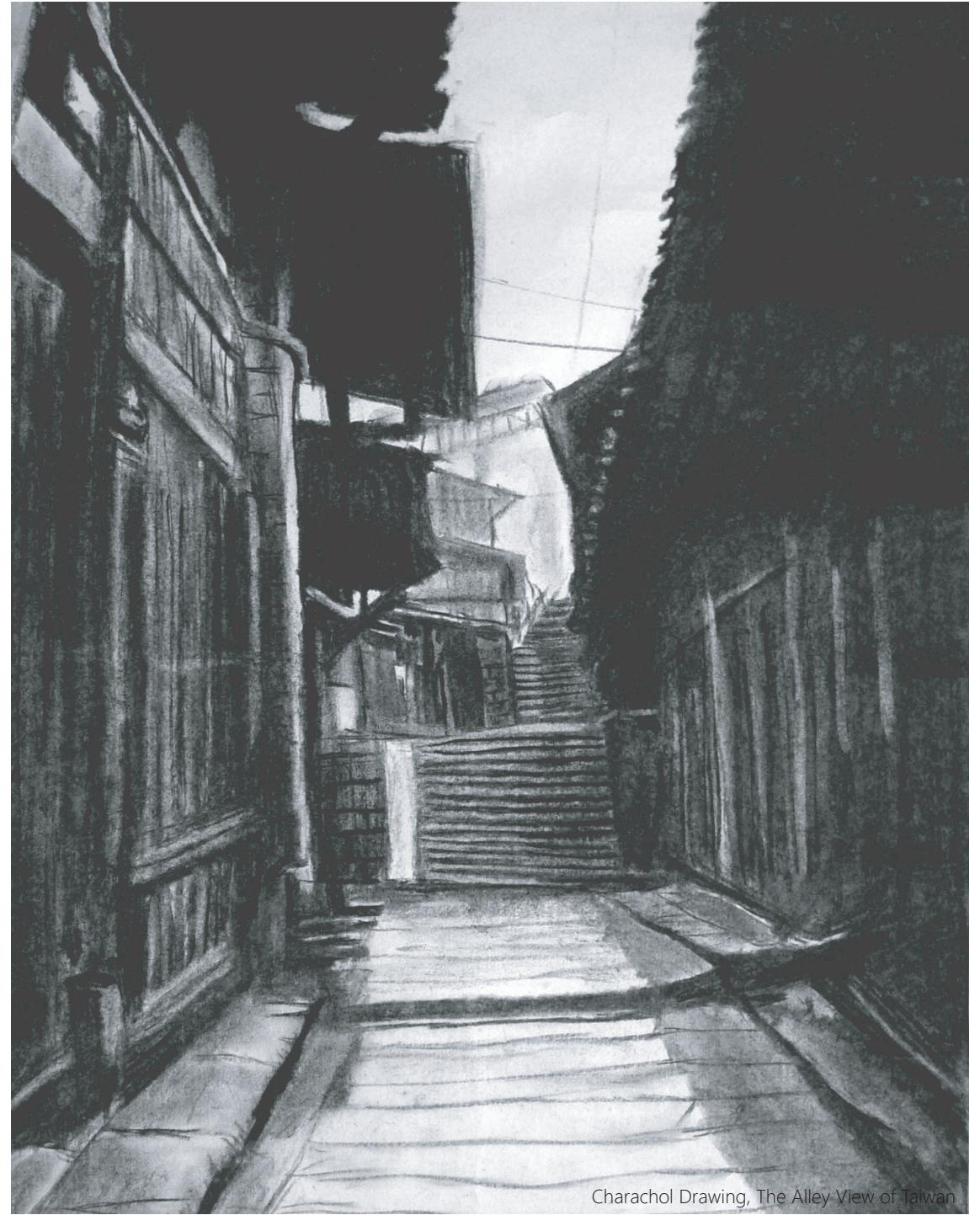


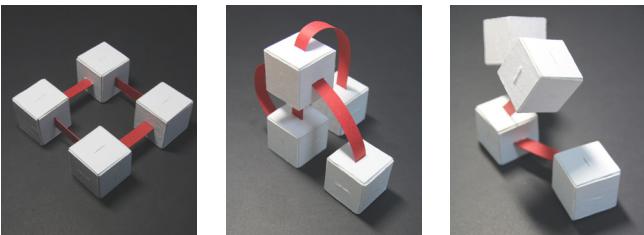
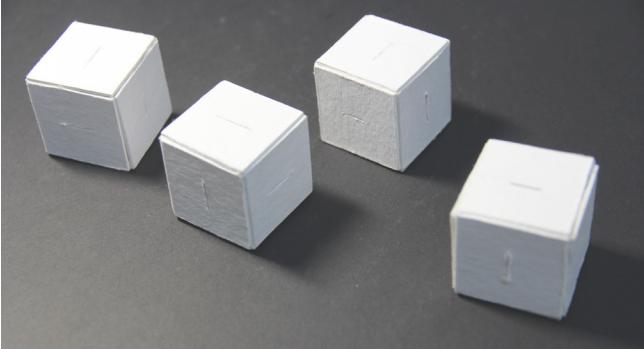
WEI-CHE CHIANG
PORTFOLIO



WEI-CHE CHIANG
PORTFOLIO



Charachol Drawing, The Alley View of Taiwan



Modula Composition Testing, personal exercise

Wei-Che Chiang has a master degree in architecture from the University of Illinois with a background in civil engineering and is currently working at PDI Design Group as an architectural designer. Wei-Che views practical functions, spatial experience, and architectural constructability as the foundations of his designs because they are easily comprehensible to the general public. He also integrates his designs with collective memories, site conditions and sustainable features.

PROFESSIONAL EXPERIENCE

- **ARCHITECHTURAL DESIGNER**
PDI Design Group, Minneapolis, USA Aug. 2019 - Now
- **GRAPHIC DESIGNER**
Tourism and Travel Bureau of Taichung City Government, Taiwan Oct. 2014 - Nov. 2015
- **TESTING ASSISTANT**
Center of Quality Assurance for Civil Material, NCU, Taiwan Jan. 2013 - May. 2014

EDUCATION

- **MASTER OF ARCHITECTURAL AND BUILDING SCIENCES**
University of Illinois at Urbana-Champaign, IL, USA Aug. 2016 - May 2019
- **INTRODUCTION TO ARCHITECTURE STUDIO**
Columbia University, NY, USA Jul. 2014 - Aug. 2014
- **BACHELOR OF SCIENCE**
Civil Engineering Major, National Central University, Taiwan Jul. 2010 - Jun. 2014

ADDITIONAL EXPERIENCE

- **PROGRAM DIRECTOR**
Taiwanese Student Association, UIUC, IL, USA Aug. 2017 - May. 2018
- **EDITOR OF DEPARTMENT**
College Yearbook, NCU, Taiwan Jan. 2014 - Jun. 2014
- **TEACHING ASSISTANT**
Freshman Service Learning, NCU, Taiwan Jan. 2012 - May. 2013
- **PRESIDENT**
Taichung Students Volunteer Association, NCU, Taiwan Aug. 2011 - Feb. 2012

COMPETITIONS

- **TIMBER IN THE CITY: URBAN HABITAT COMPETITION**
Association of Collegiate Schools of Architecture, team of 4 May 2019
- **RE SCHOOL ARCHITECTURE COMPETITION**
Volume Zero, team of 3 Jan. 2019
- **MARSCPTION ARCHITECTURE COMPETITION**
Volume Zero, team of 2 Jul. 2018

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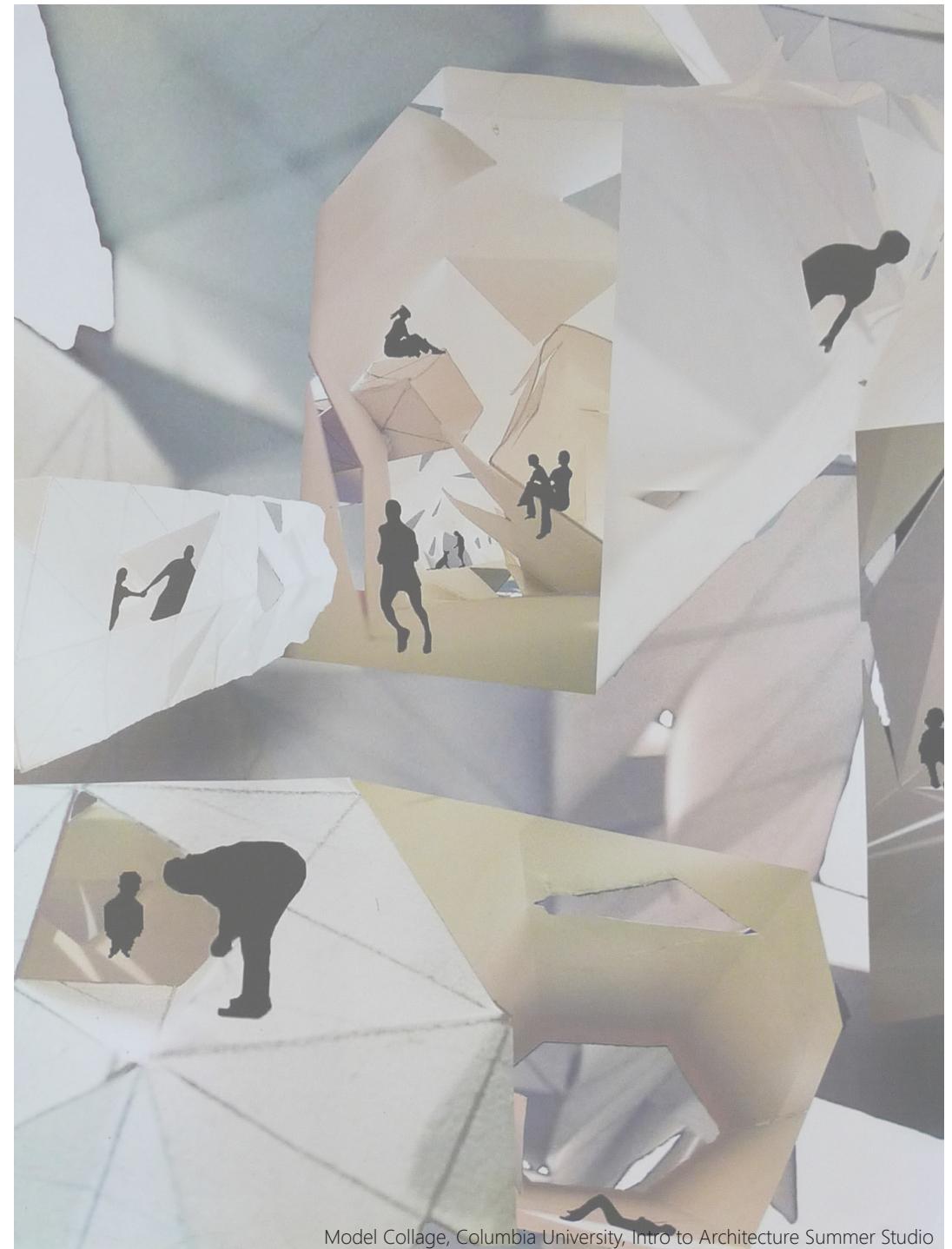
05 SECLUSION HOUSE
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06 MARSCEPTION SEED
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07 FRAME MARKET
URBANISM

08 HOME HOTEL
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09 Z-TABLE
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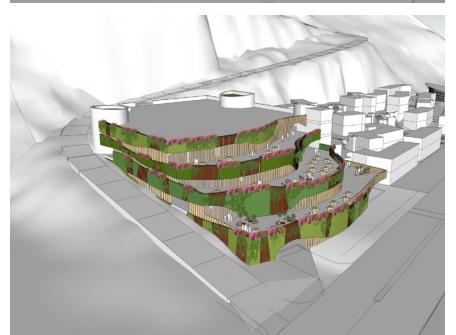
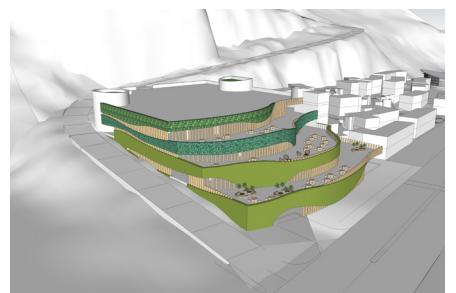
Model Collage, Columbia University, Intro to Architecture Summer Studio

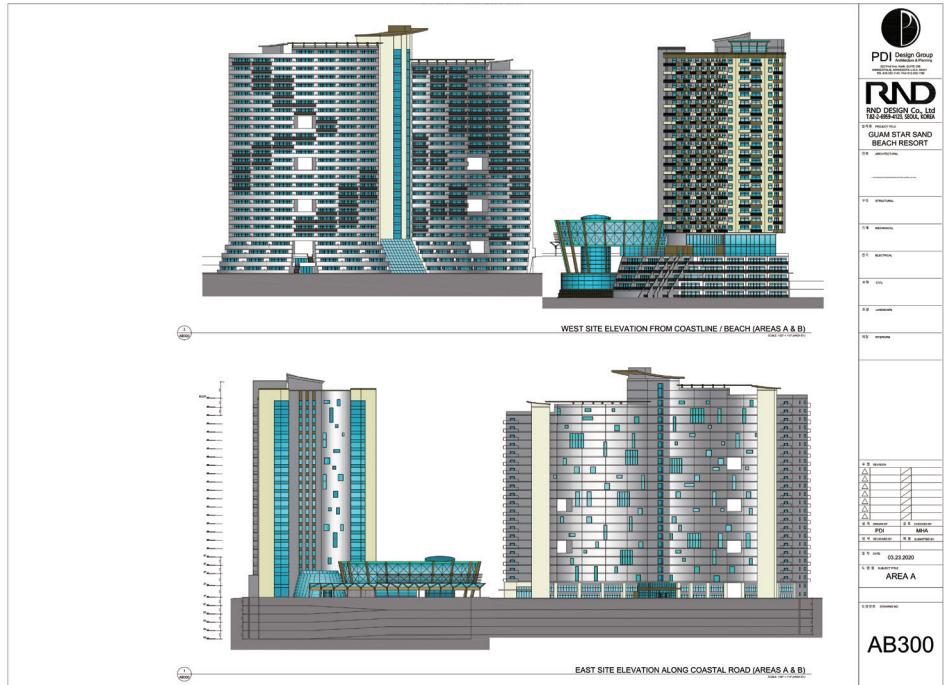
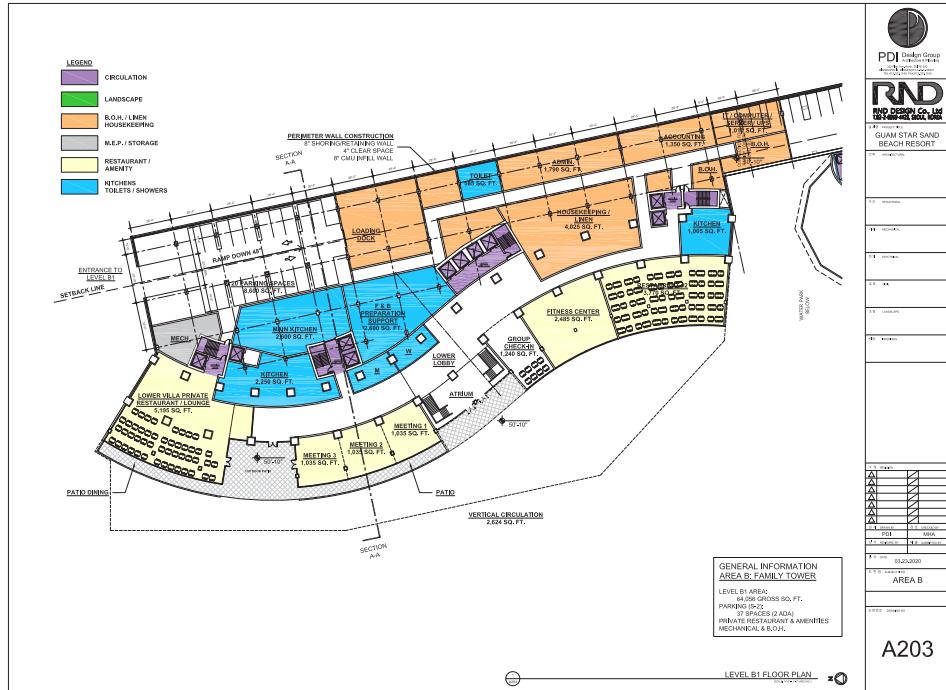
01 STAR SAND RESORT

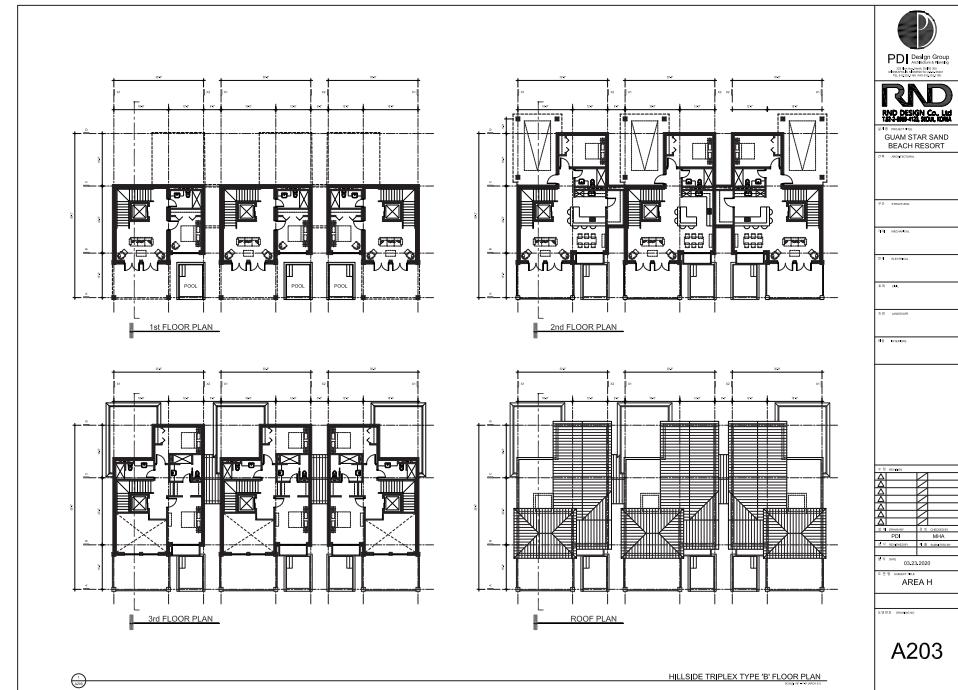
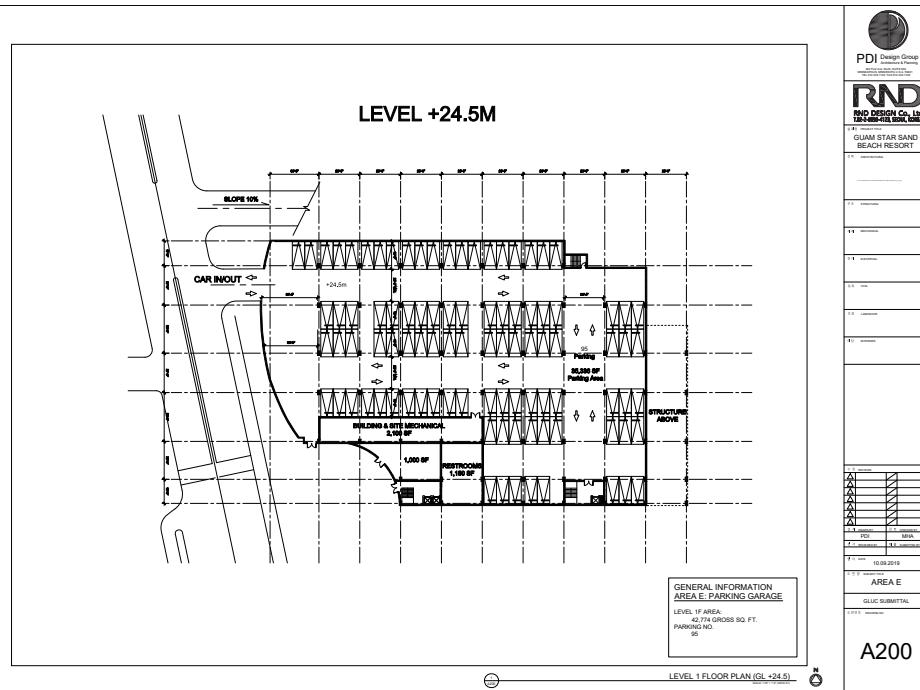
2020 SPRING
PROFESSIONAL



This professional work is the master planning resort project located at Guam island. The master planning program includes a welcome center, retail stores, villas, hotels, and a water park. We utilize the hill's topography to create the best view for single villas, separating by the retail stores with the main connection road in order to create different privacy. The water park is surrounded by two high-rise hotels that allow direct access for tourism as well as enjoying the view of the ocean.







02 TIMBER LIVING

2019 SUMMER
COMMUNITY

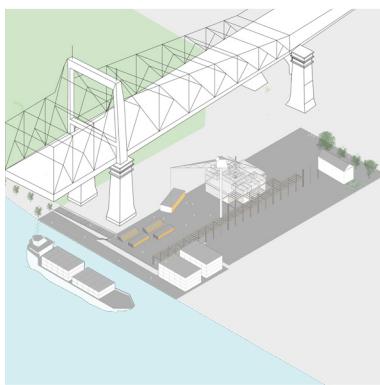
Program: AutoCAD, Revit, Lumion, Adobe Suite, Rhino, Sketchup



This project invites the community into the site along with a central pedestrian parkway that facilitates socially-focused civic spaces and organizes the new buildings. Arranged as a spine, a heavy timber trellis system along the parkway connects three buildings which demonstrate the creative potentials of timber technology: 1) A residential tower built of cross-laminated timber (CLT) walls and floors utilizing a vertical tension cable fastening system, locking the residential units into a tall stack at a height surpassing CLT towers currently underway. 2) A community wellness center featuring curved glulam beams overhead, gesturing to views across the river and reflecting the waves of the pools within. 3) An early childhood education center built with traditional post and beam timber construction as an extension of the post and beam trellis system along the pedestrian way.

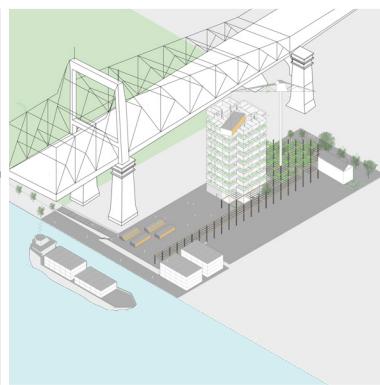
Phase 1: Trellis

- Mass Timber delivered to the site by Container Ships
- The construction of the trellis to be used as an assembly line for construction



Phase 2: Tower

- Pre fabricated CLT panels delivered by container ships
- Use the unbuilt area to store shipments and assemble modular units.
- Green spaces commence to be developed in finished floors



Phase 3: Day-Care Center

- Pre fabricated plywood panels delivered by container ships
- Day Care construction commenced
- Residential open to street
- Green spaces open to street



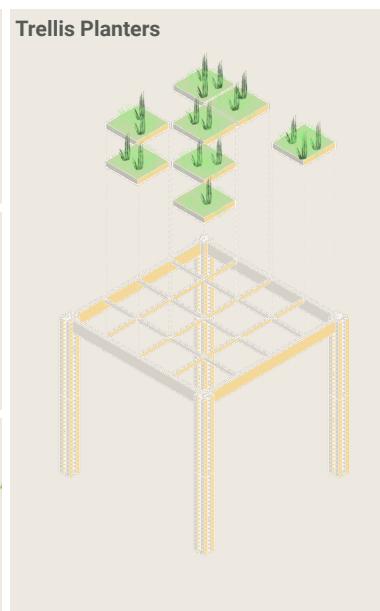
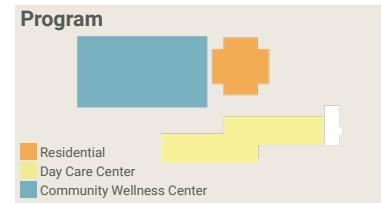
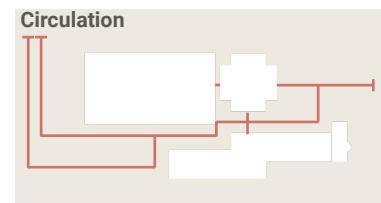
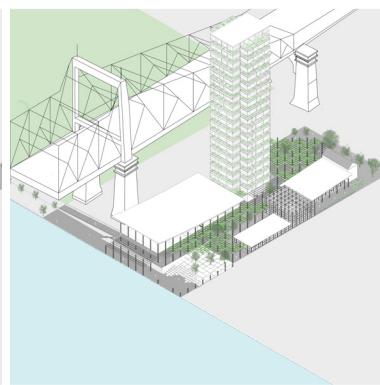
Phase 4: Community Wellness Center

- Pre fabricated Glulam panels delivered by container ships
- Community Center construction commences
- Residential and Day Care open to street
- Green spaces integrate further into trellis



Phase 5: Timber Living

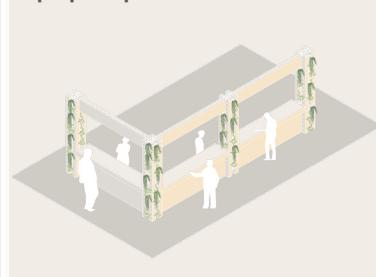
- Community Center completed
- Connection to the park and river walk
- Implementation of biophilic throughout the site.
- Trellis converted into green pathway.



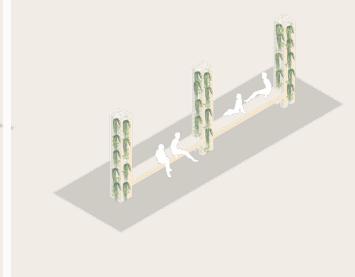
Biophilic Column



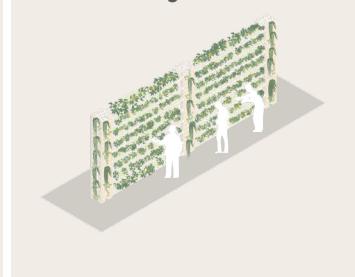
Pop-up Shops



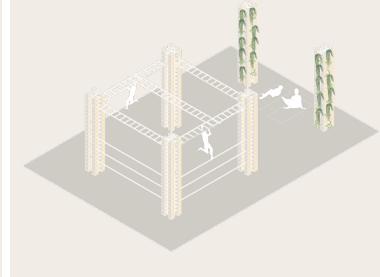
Urban Furniture

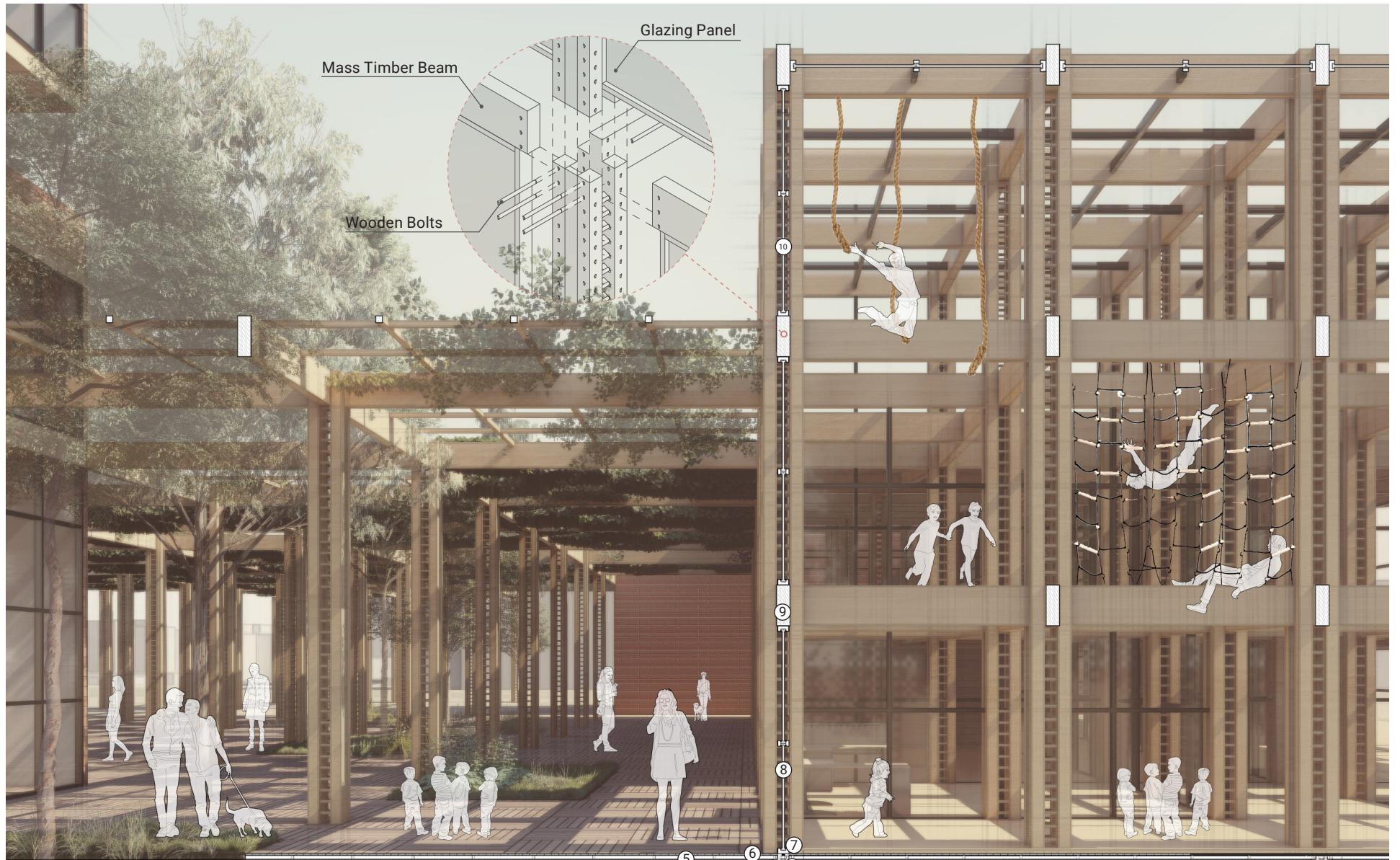


Vertical Farming



Outdoor Recreation

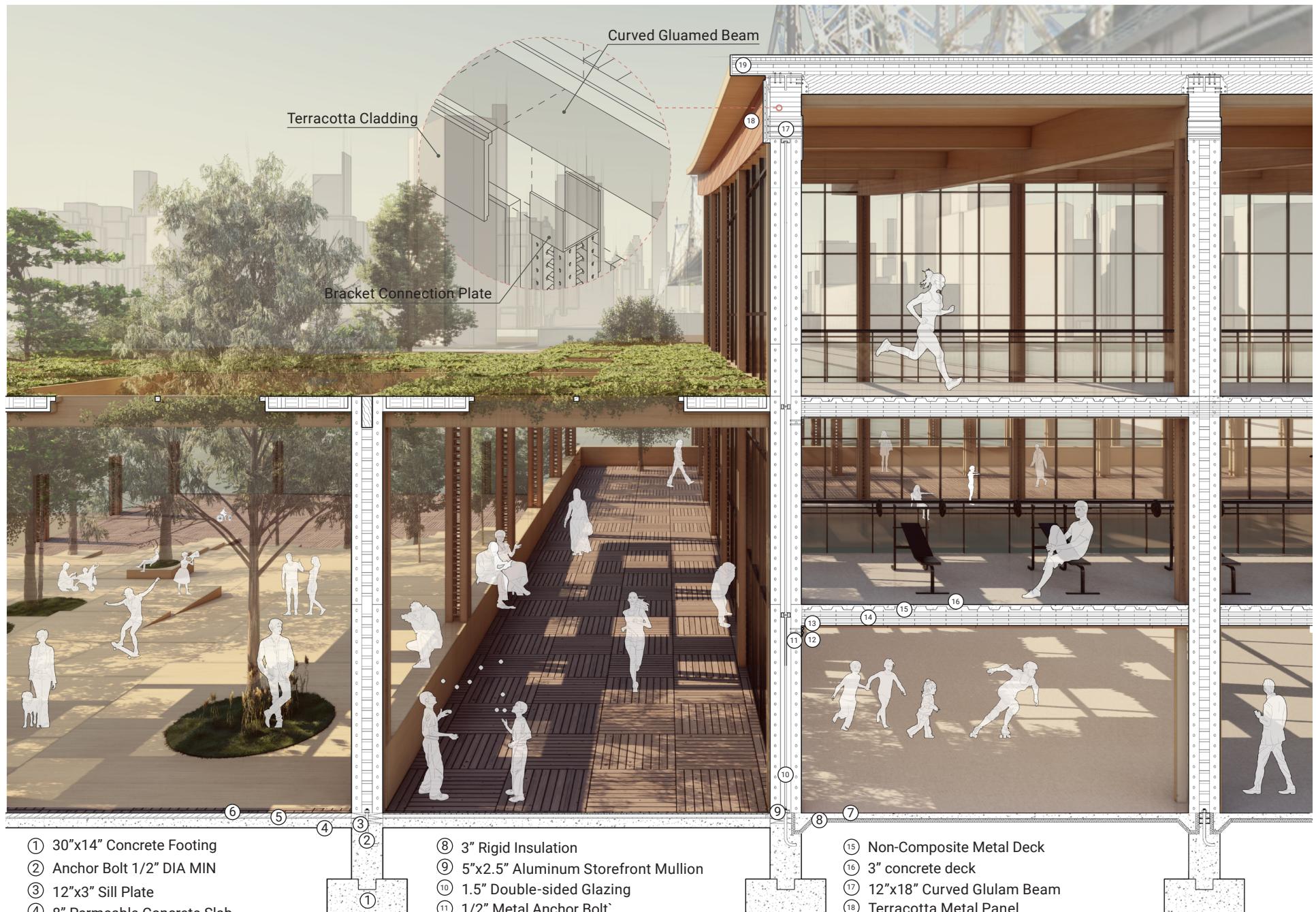


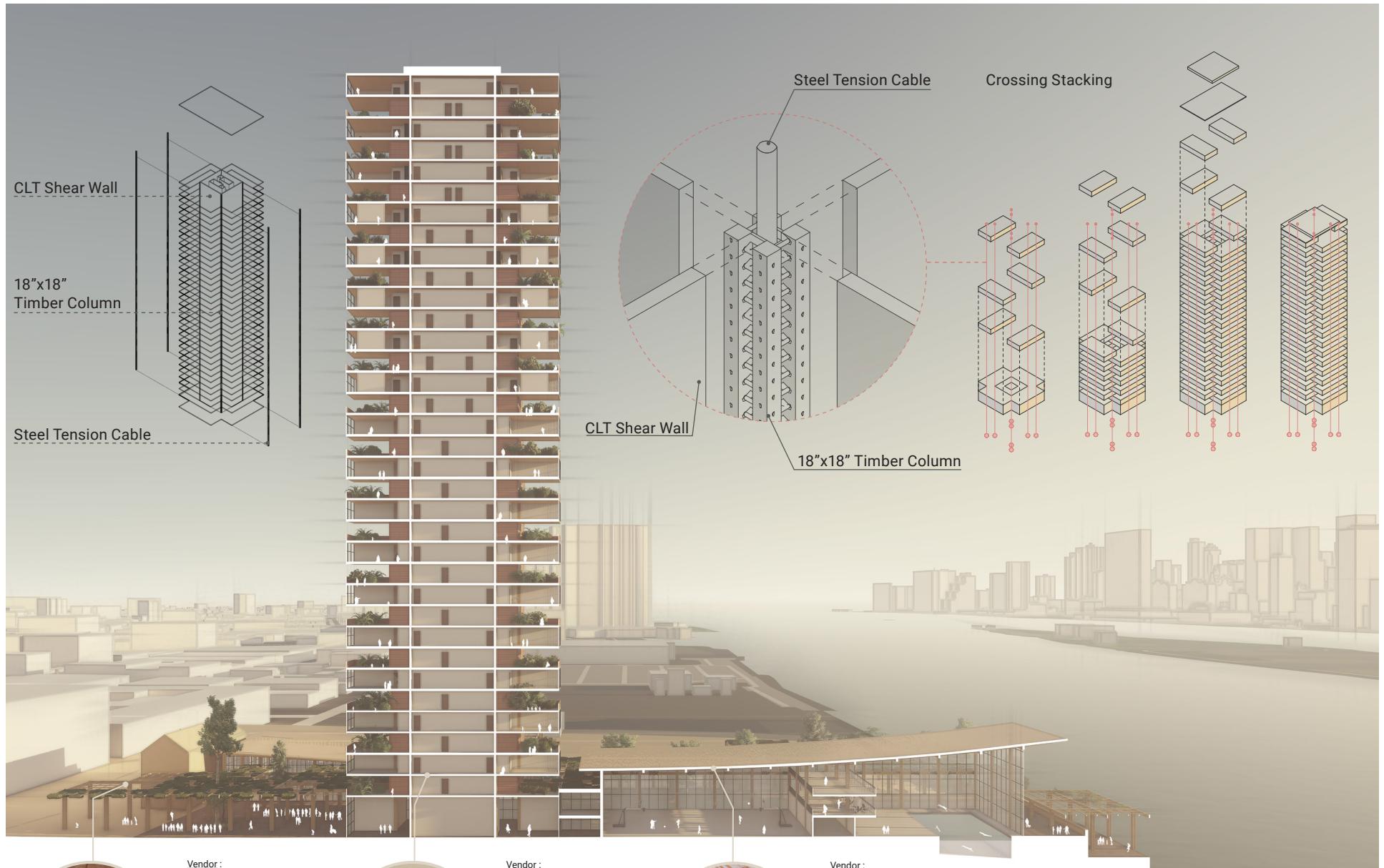


- ① 30"x14" Concrete Footing
- ② Anchor Bolt 1/2" DIA MIN
- ③ 12"x3" Sill Plate
- ④ 8" Permeable Concrete Slab
- ⑤ 1" Water Protection Layer
- ⑥ Wooden Strip Flooring 1"x4"
- ⑦ 5"x2.5" Aluminum Storefront Mullion

- ⑧ 1.5" Double-sided Glazing
- ⑨ 6"x18" Glulam Beam
- ⑩ 2" Birdsafe Double-sided Glazing







Mass Timber

Vendor : Nordic Structures, Montreal
Distance from Site : 1600 miles via Container ships
CO2 Emission 2 kg
Sizes Thickness: 1.5in to 12 7/8 in
 Width: upto 8ft
 Length: upto 80ft



Cross Laminated Timber

Vendor : Nordic Structures, Montreal
Distance from Site : 1600 miles via Container ships
CO2 Emission 676 kg
Sizes Thickness: 3.5 in to 10.5 in
 Width: upto 8 ft
 Length: upto 64 ft

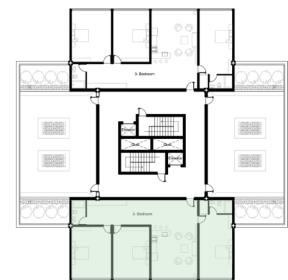
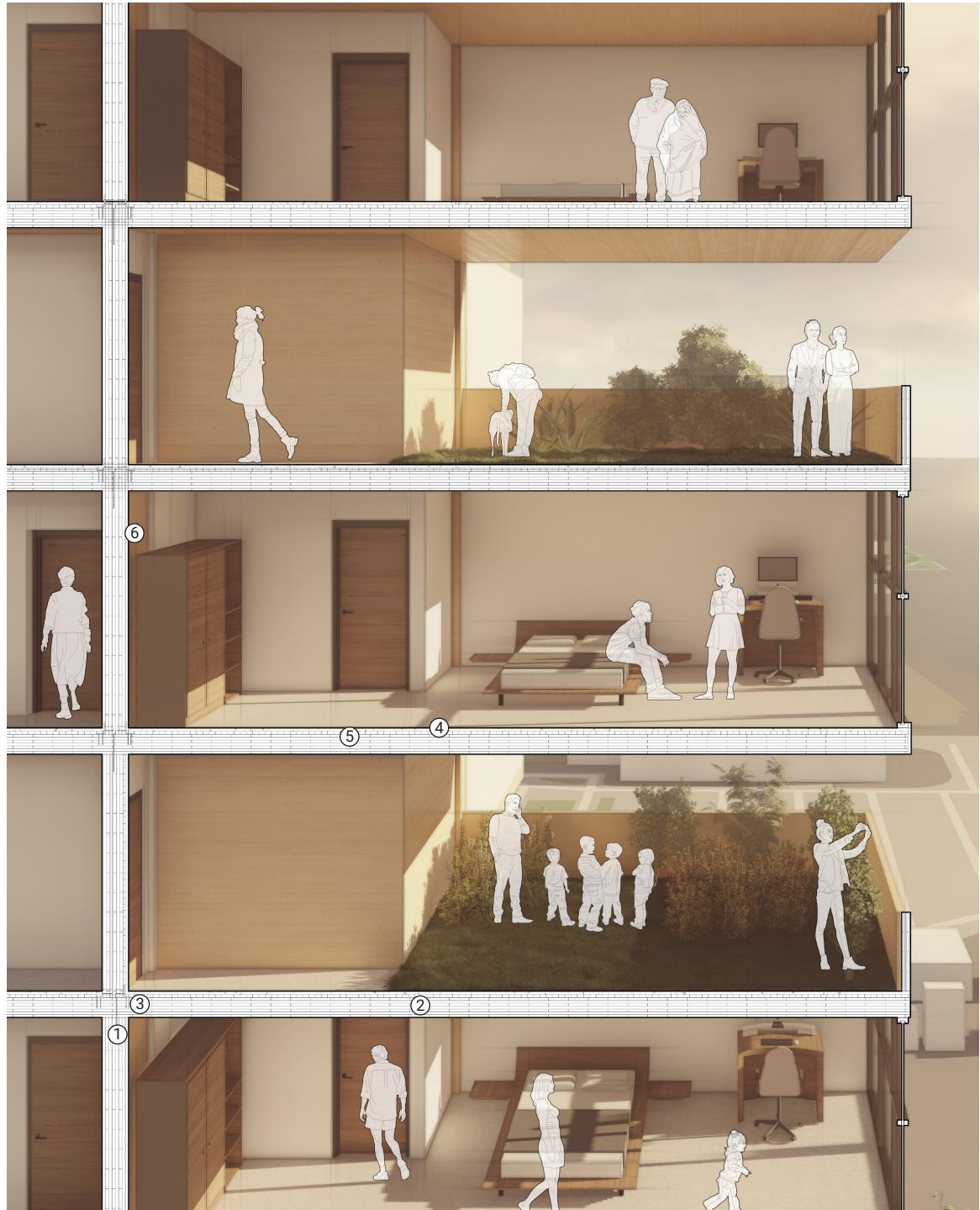


Glue Laminated Timber

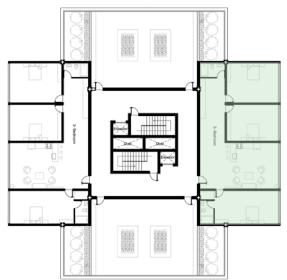
Vendor : Nordic Structures
Distance from Site : 1600 miles via Container ships
CO2 Emission 78kg
Sizes Thickness: 1.5in to 12 7/8 in
 Width: upto 8ft
 Length: upto 80ft



Transportation Map



2nd - 17th
Typ. Floor Plan A



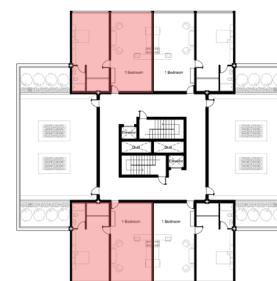
2nd - 17th
Typ. Floor Plan B



19th - 29th
Typ. Floor Plan A



19th - 29th
Typ. Floor Plan B



18th, 30th, 32nd, 34th
Typ. Floor Plan A



18th, 30th, 32nd, 34th
Typ. Floor Plan A

- ① Self - Tapping Screws
- ② 9 Layer 12" CLT Floor Slab
- ③ 1/4" Steel Bracket
- ④ 1.5" Concrete Floor Finish
- ⑤ 2" Rigid Insulation
- ⑥ 1.5" Gypsum Board - Interior Wall Finish

- 3 Bedroom
- 2 Bedroom
- 1 Bedroom
- Micro-unit

03 SKY SEED BANK

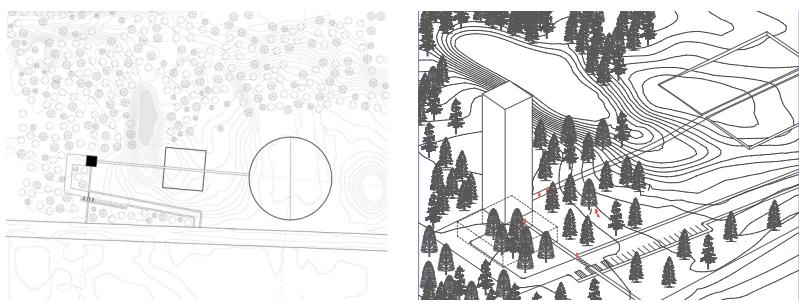
2019 Spring
CIVIC

Program: AutoCAD, Revit, Lumion, Adobe Suite, Rhino, Sketchup

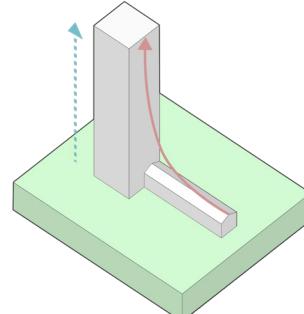
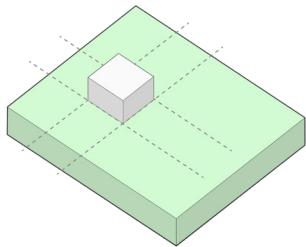
The main idea are the integration of both ancient Cahokia and the expression of the cycle of plant life. This can be seen from its form which not only expresses this modern reinterpretation of "Reaching for the Sky", which is apart of Cahokian belief, but it also represents the transition from traditional to future greenhouse design. The integration into the landscape accents the Cahokian grid through the atrium, and it also creates a visual narrative of the life cycle of plants. Furthermore, by building up vertical rather than horizontal, we reduce the build space on site and reclaim the rest to nature.



While the first time I saw the site, it was heavily occupied by industrial activity. I want to give this historical site back to nature, their culture, and their memory...

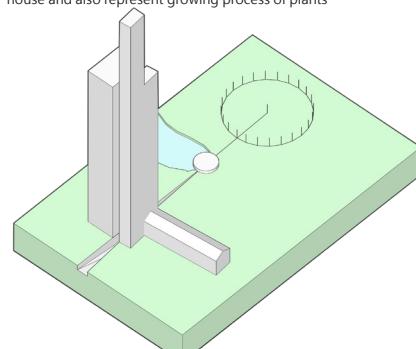
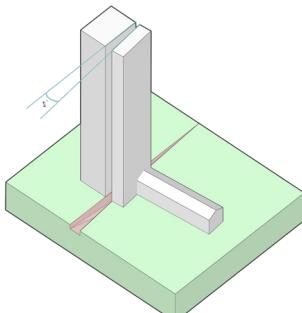


DEVELOPMENT



- Following the ancient Cahokian ancient grid line
- Minimizing the built area to give the site back to nature

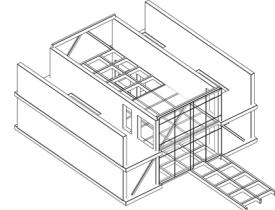
- Reaching for the sky as ancient Cahokian belief
- Transferring from traditional greenhouse into future vertical green house and also represent growing process of plants



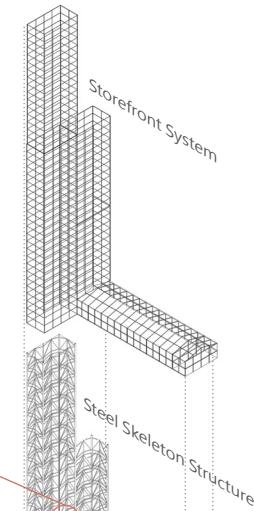
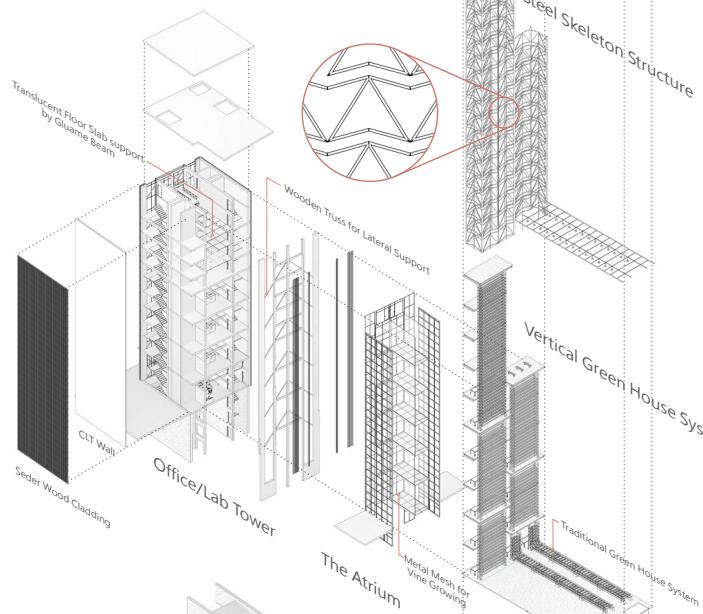
- Rotating vertical green house 5 degree to expose direct Southern sunlight
- Using the split between laboratory tower and green house to create big atrium and engaging into landscape

- Extruding green house even higher to represent the sky idea but cut off the volume at South-East corner for observatory of ancient Cahokian site
- Following the axis to connect southern point of pond, playing as a nod and continuously connecting to historical Woodhenge

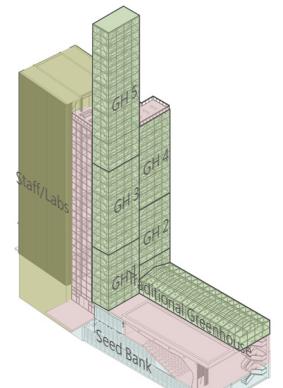
STRUCTURE



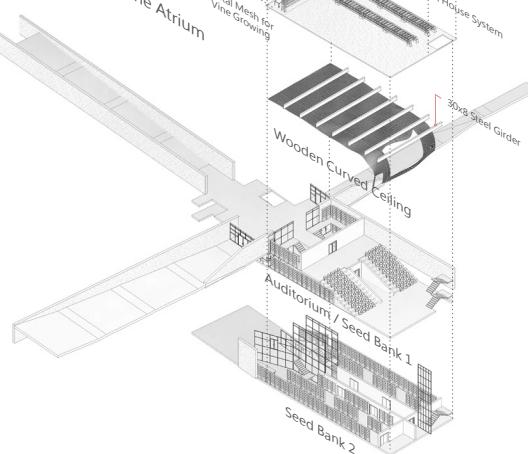
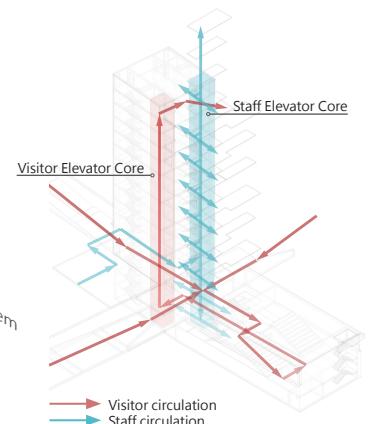
- CLT Structure used at laboratory/office tower for sustainable purpose and representation of Cahokia beliefs
- Steel skeleton structure used at vertical greenhouse for lateral support and also referring back to traditional pattern of arrow point



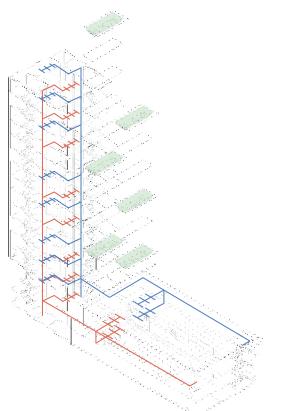
PROGRAM



CIRCULATION



HVAC SYSTEM





West Entrance



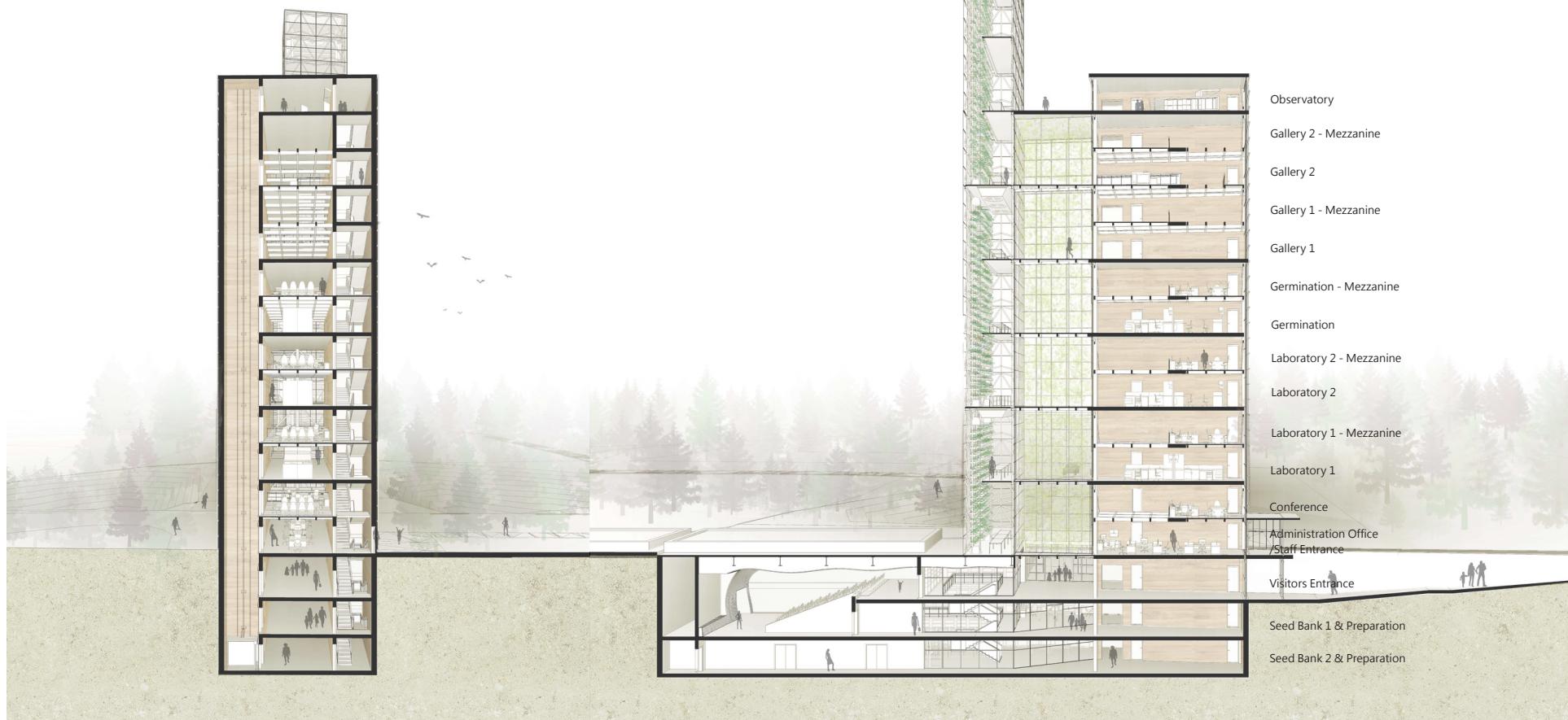
Visitor Lobby

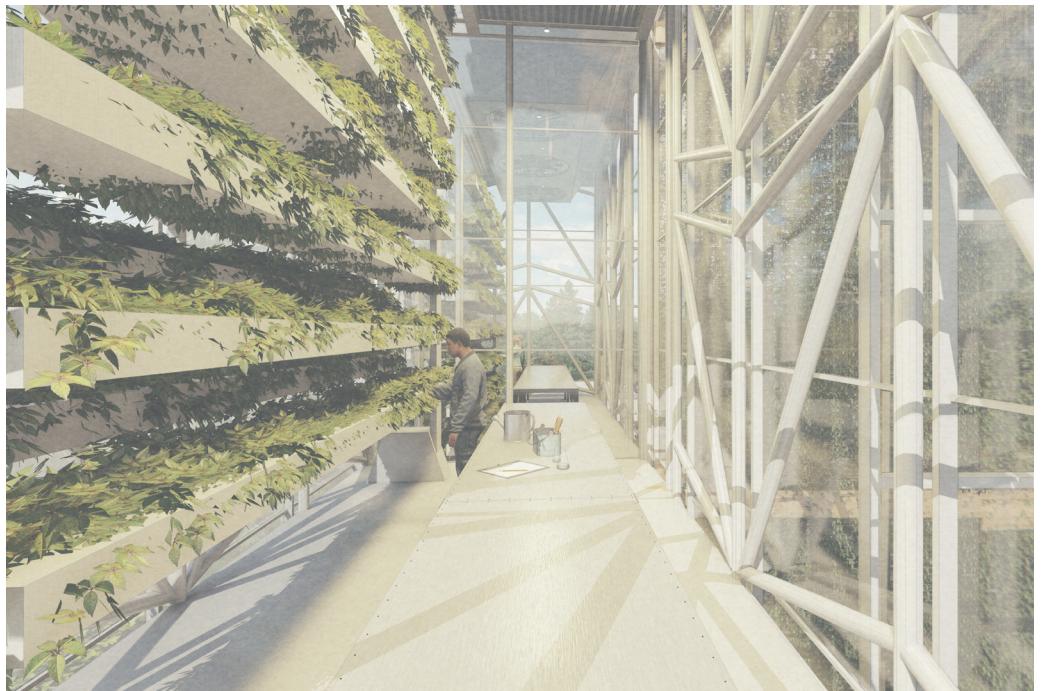
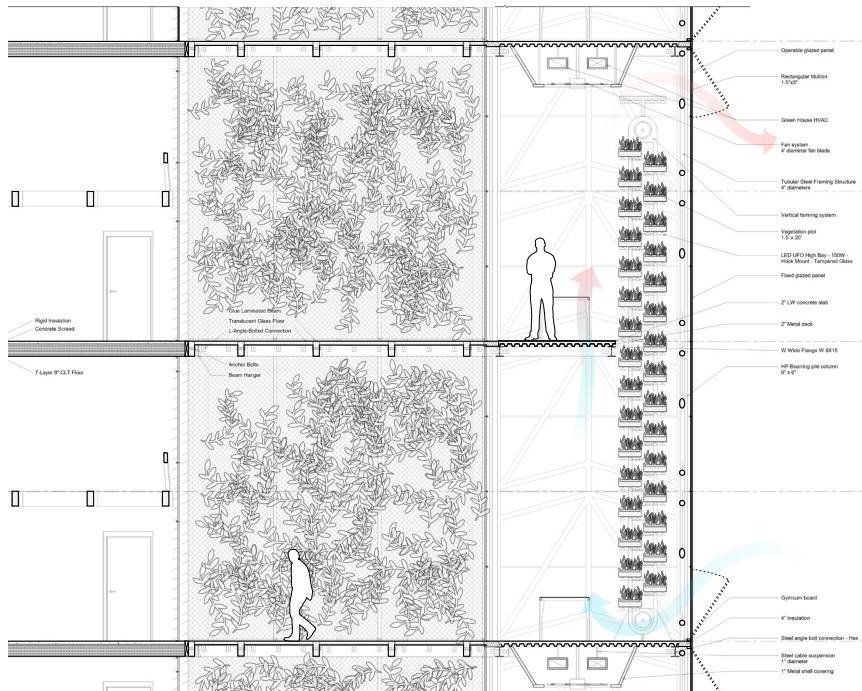
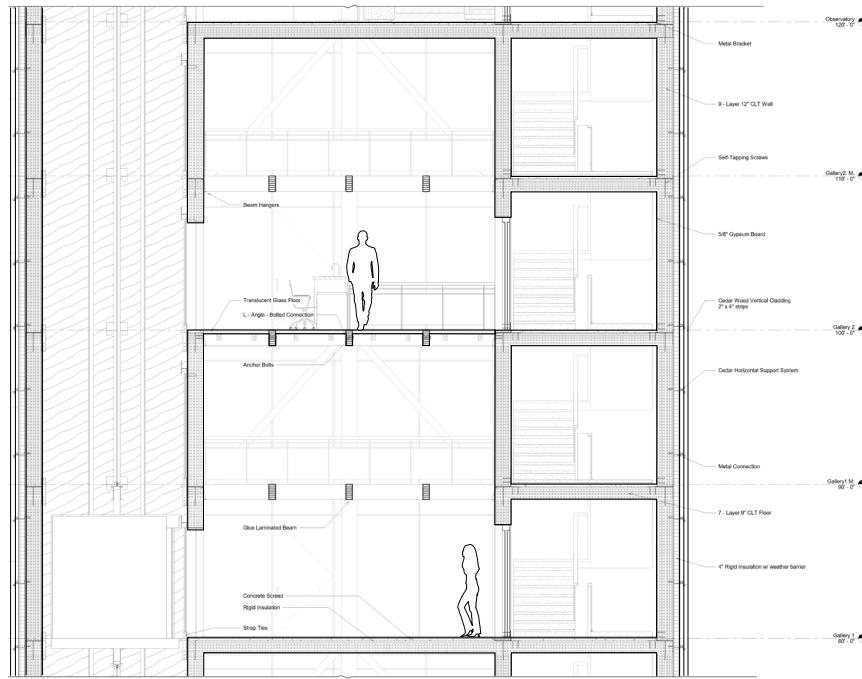


Observatory



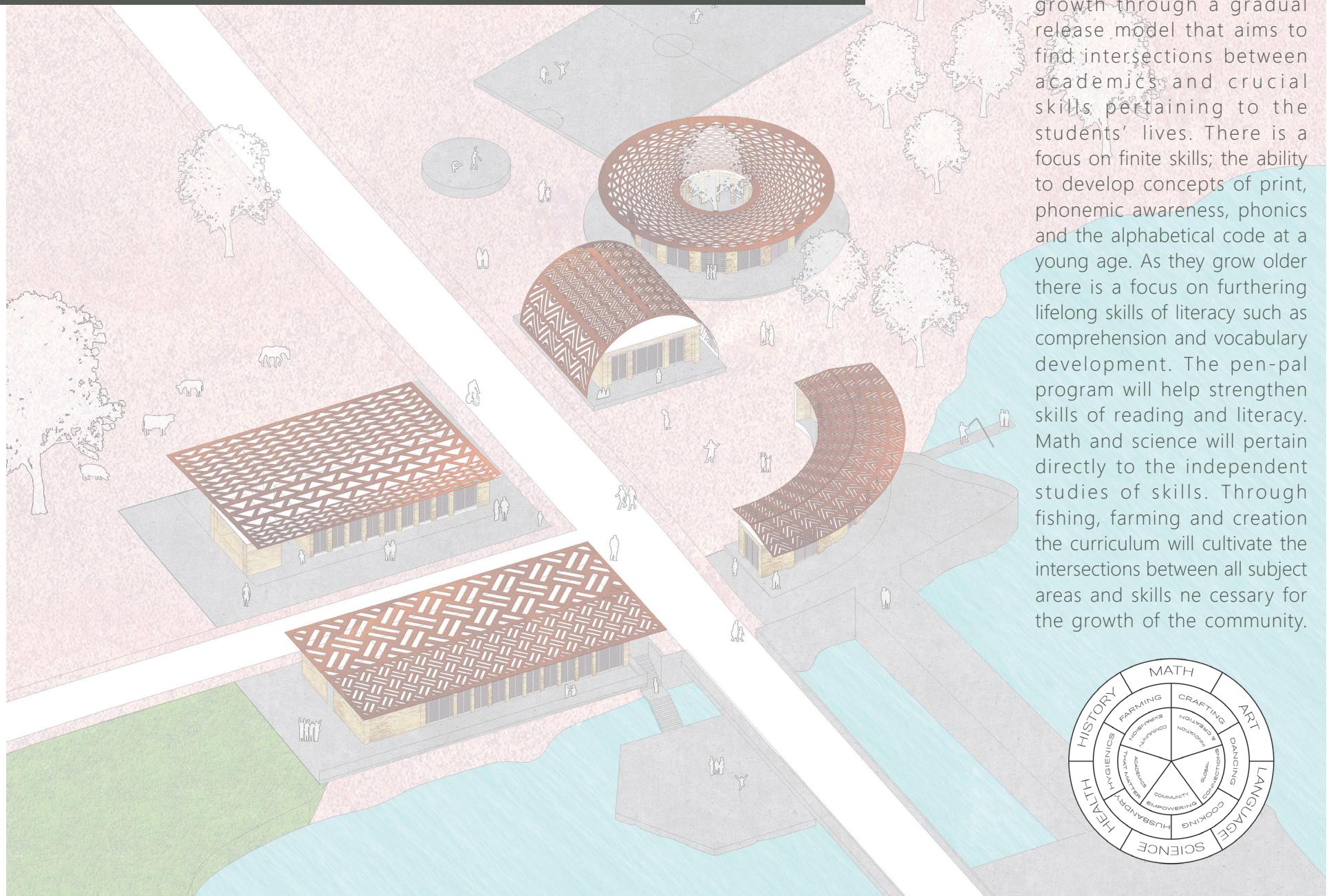
Physical section model





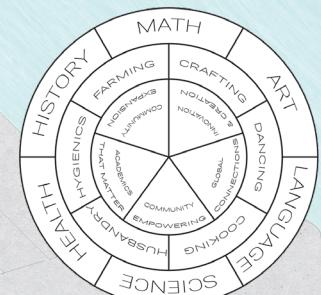
04 INFLUENCE SCHOOL

2019 Spring
EDUCATION

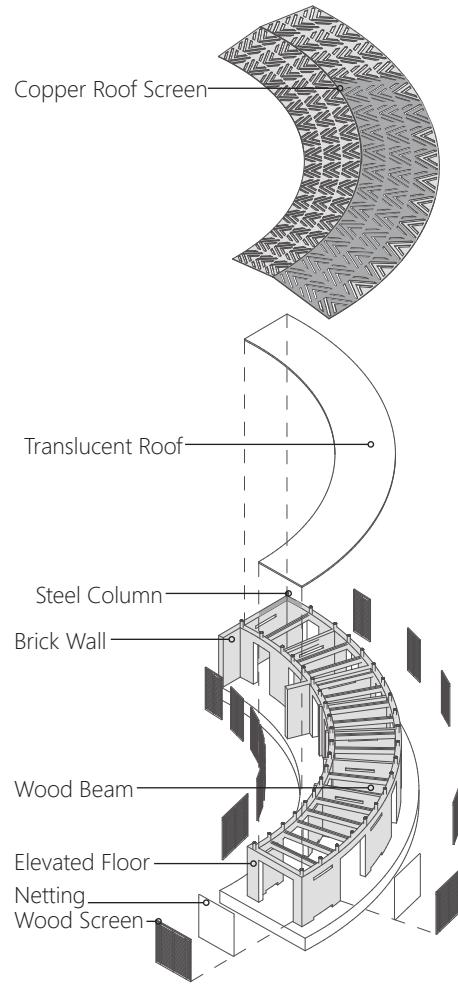


Program: AutoCAD, Lumion, Adobe Suite, Rhino

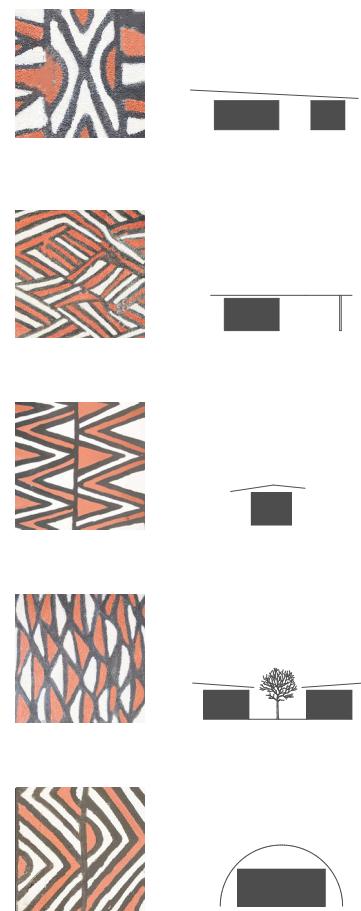
Influence strives to promote healthy community growth through a gradual release model that aims to find intersections between academics and crucial skills pertaining to the students' lives. There is a focus on finite skills; the ability to develop concepts of print, phonemic awareness, phonics and the alphabetical code at a young age. As they grow older there is a focus on furthering lifelong skills of literacy such as comprehension and vocabulary development. The pen-pal program will help strengthen skills of reading and literacy. Math and science will pertain directly to the independent studies of skills. Through fishing, farming and creation the curriculum will cultivate the intersections between all subject areas and skills necessary for the growth of the community.



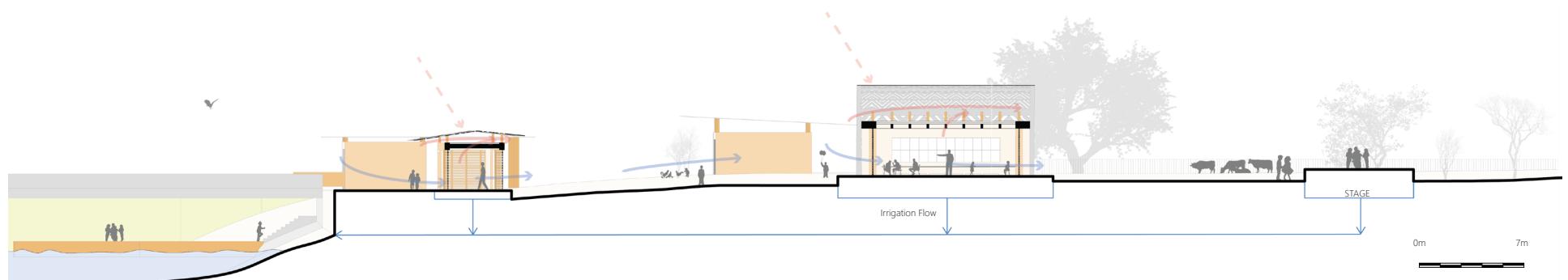
STRUCTURAL EXPLODED



PATTERN / ICON DIAGRAM



SITE PLAN







05 SECLUSION HOUSE

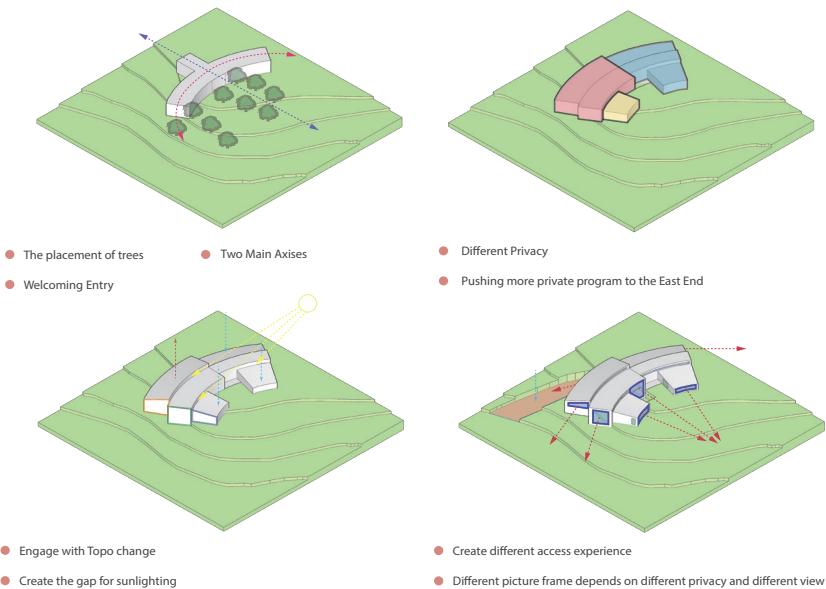
2018 Fall
RESIDENTIAL

Program: Revit, AutoCAD, Lumion, Adobe Suite, Sketchup

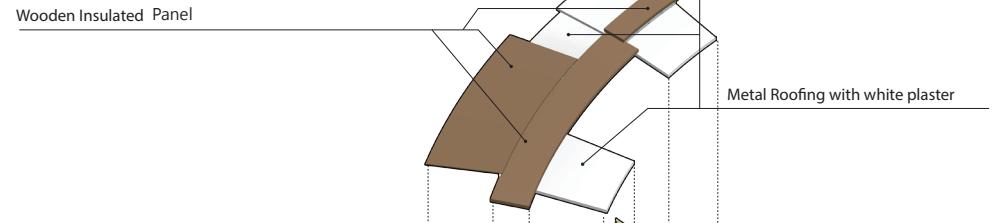


This project is designed for Dave and Amy for the rest of their life. In order to distinguish from the traditional living way, the house creates the brand-new experience for them to entry the next phase of their life. This is not the house for family, but for the seclusion and retirement which are more involved into natural environment. However, they can still interact with neighborhood as they want based on different privacy of program. In other ward, they can control their own level of exposure by themselves, increasing the flexibility.

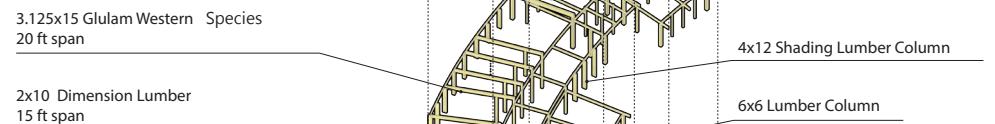
SECLUSION V.S. TRADITION



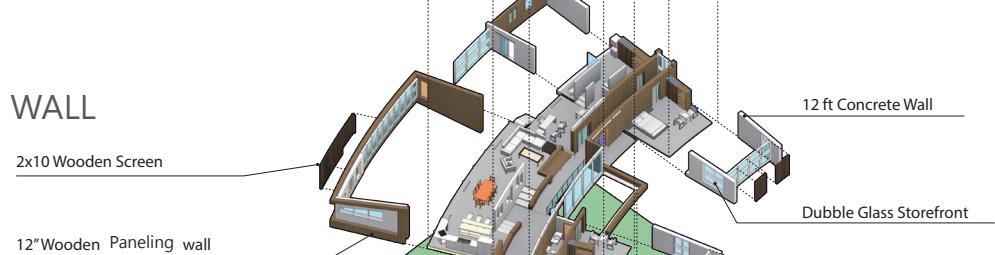
ROOF

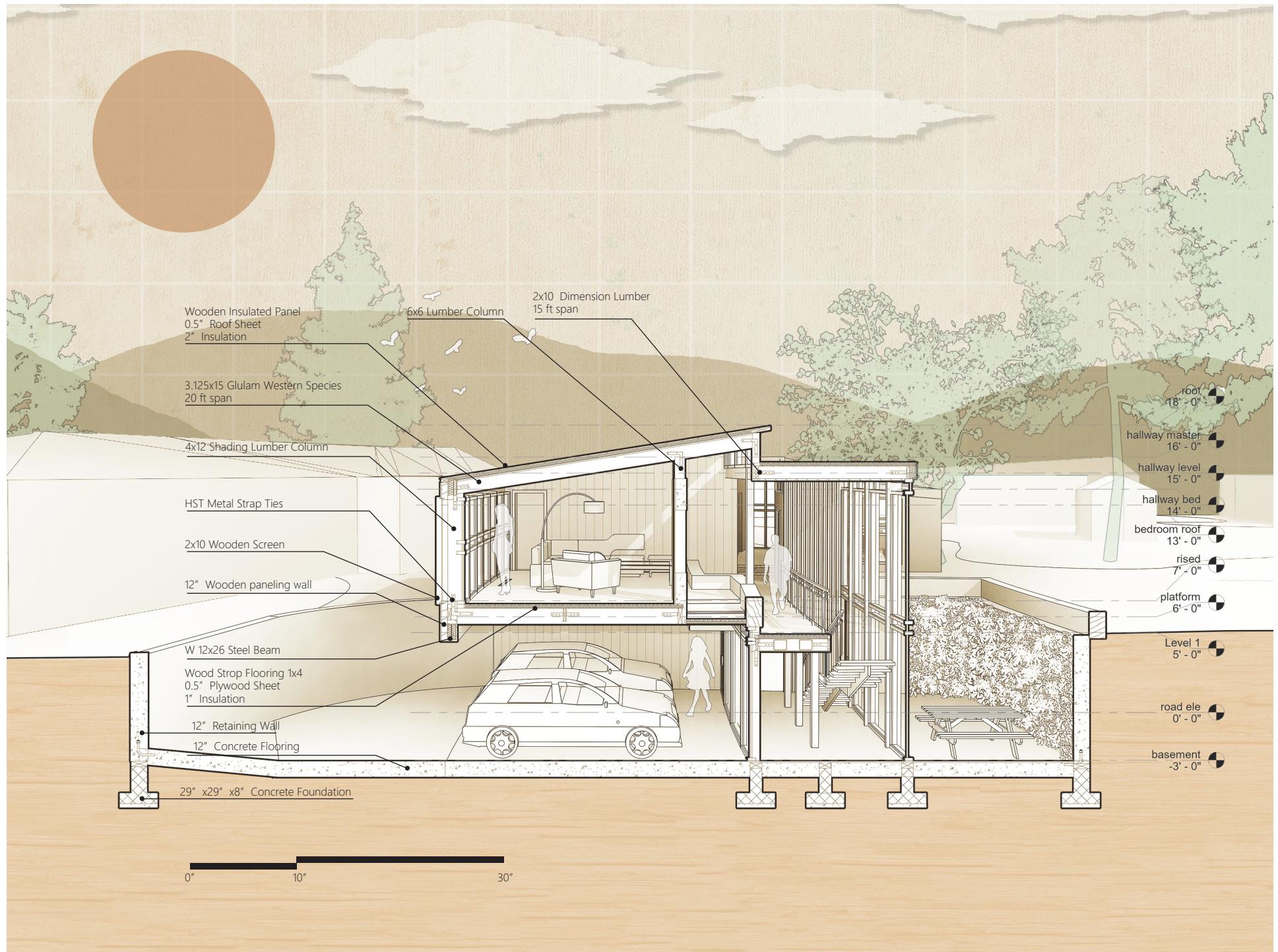


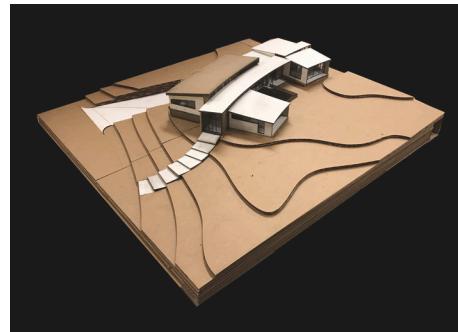
STRUCTURE



WALL







06 MARSCEPTION SEED

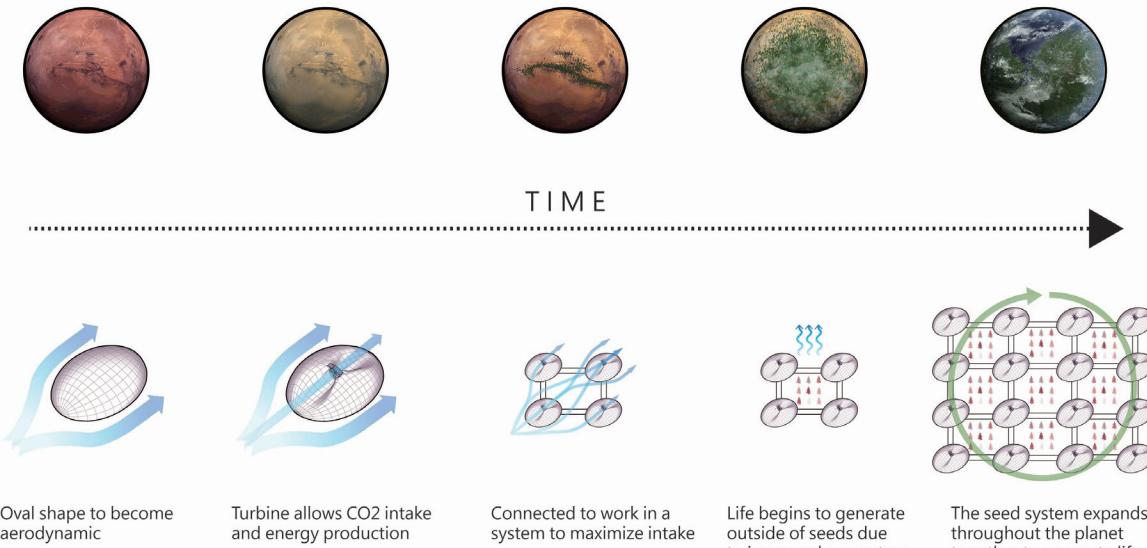
2018 Summer
SPACE

Program: Rhino, Revit, AutoCad, Adobe Suite, Sketchup

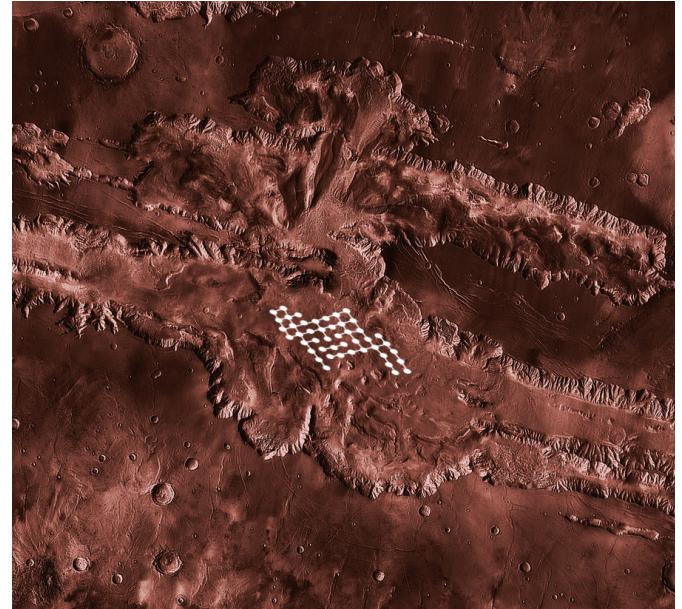
In a past life, mars contained natural resources that maintained a sustainable ecosystem for life. The goal is to someday retain a habitat adequate for life by planting a seed, that over time, nourishes the current ecosystem. The self-sustaining seed planted into mars will take advantage of the high-speed winds, increased solar radiation due to the thin atmosphere, and the soils faint water content to maintain a controlled climate indoors for the five researchers. In time, as the seeds begin to grow in numbers, the ecosystem of mars grows.



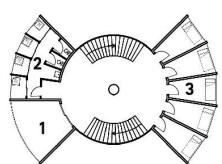
TIME DIAGRAM



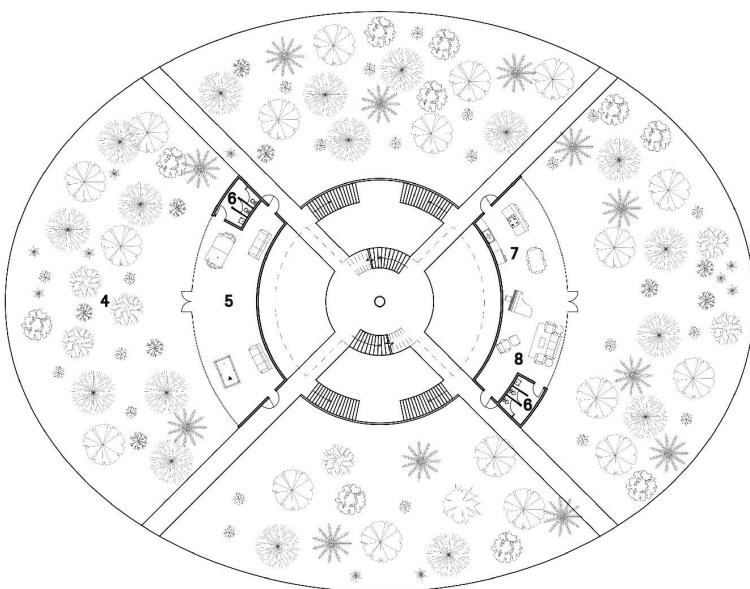
SITE PLAN



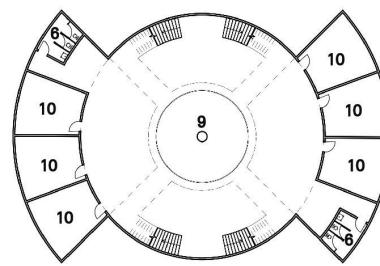
BASEMENT



GROUND FLOOR



2ND FLOOR



1. Multipurpose room
2. Bathroom
3. Bedroom
4. Control Farming
5. Recreation
6. Sanitation
7. Kitchen
8. Living room
9. Research area
10. Private office



SOLAR

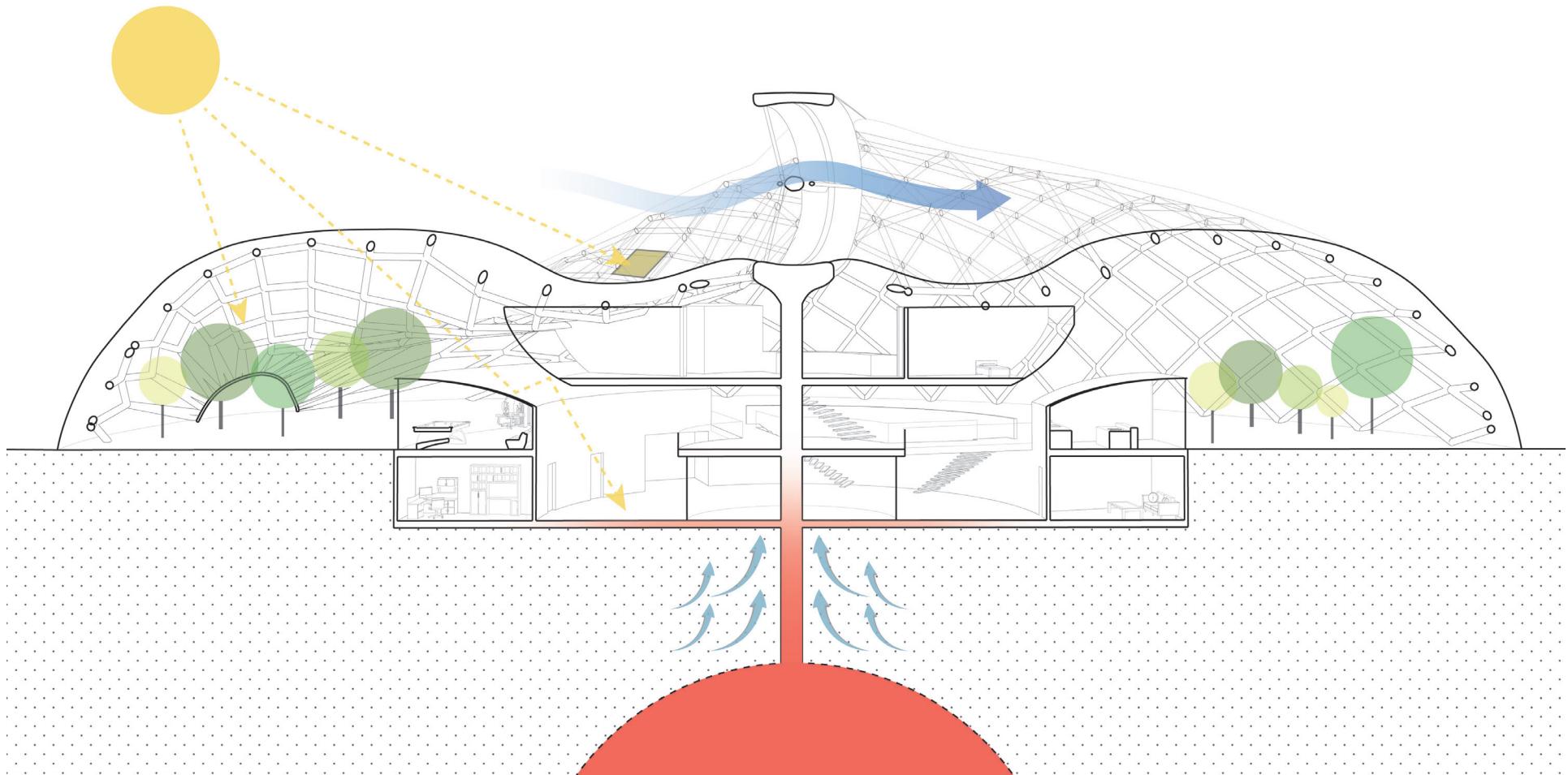
The maximum solar radiance on Mars is about 590 W/m² compared to about 1000 W/m² at the Earths surface because Mars is further away from the sun. A clear glazing facade takes advantage of the sun at various angles for plants inside, and the solar panels to generate energy when possible

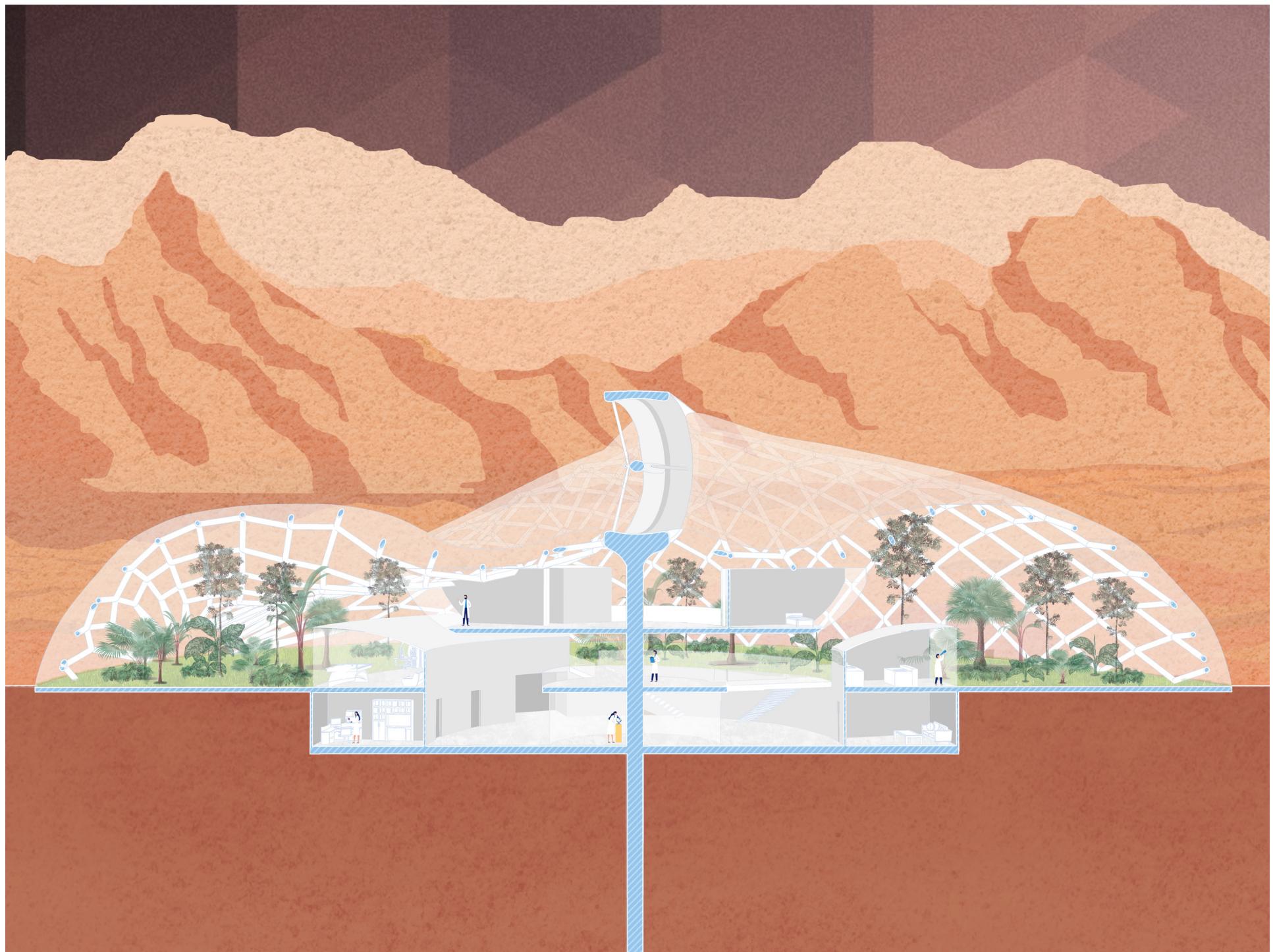
WIND

The low gravity of Mars allows for much greater wind speeds. Under the right weather conditions, the wind speed on Mars can reach up to 30 meters per sec. The turbine design takes advantage of the wind speed and generates energy for the building. Furthermore, Mars atmosphere contains 95% CO₂ which can also be reduced gradually by photosynthesis from the vegetations.

SOIL

The site located in Valles Marineris lets low-volume liquid brines easier to taken in shallow martian soil. Also, because Mars core is closer comparing to Earth, the surface temperature is more efficient to evacuate through geothermal heat, providing another source of energy.

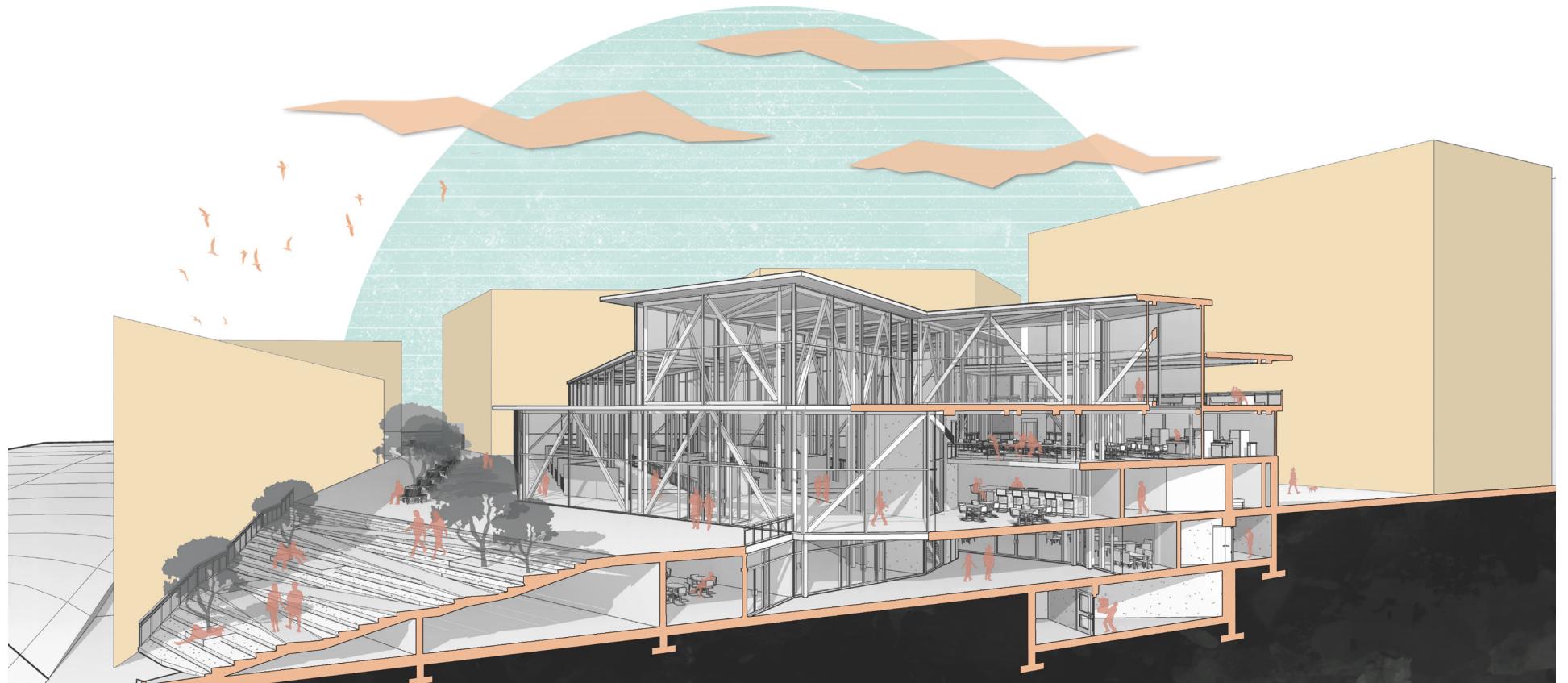




07 FRAME MARKET

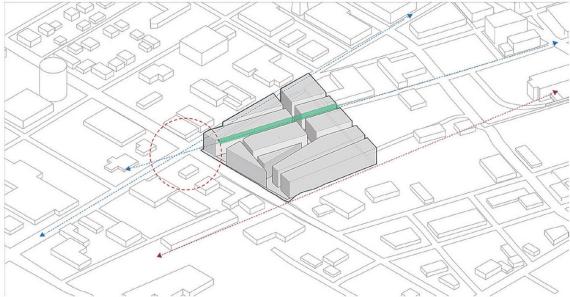
2018 Spring
URBANISM

Program: Revit, AutoCad, Adobe Suite, Sketchup

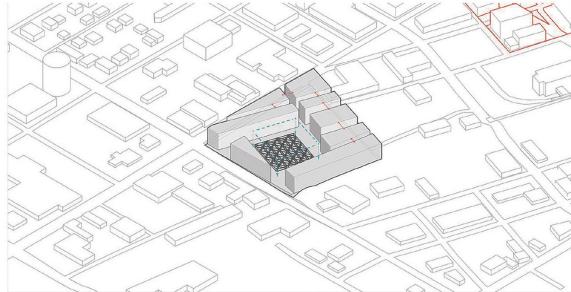


This project is about designing the whole city block located at Champaign Downtown. Not only designing for market hall itself, but the whole block have to be considered with different functional buildings under FAR and other building codes. My idea is to alignment the important axes of the city and remain the path to reconnect them to visual relationship, defining the volume of surrounding buildings and the central market hall. The market hall is composed from simple, triangular modules in both two dimensions which are stall' s layout and the wooden truss structure.

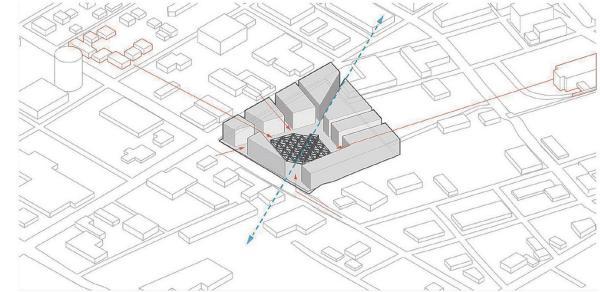
DESIGN PROCESS



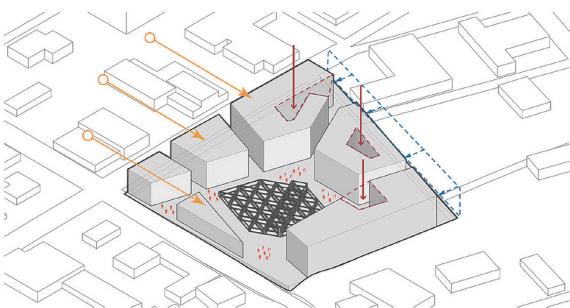
- Intersection of grid line
- Following the grid line
- Keep the existing road



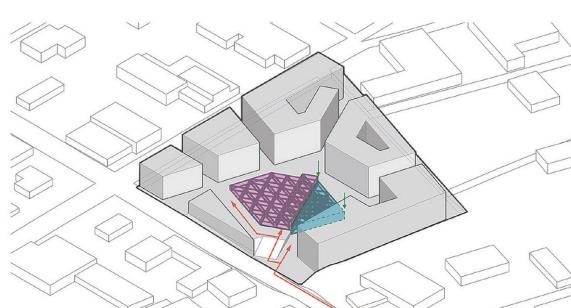
- Open up the space for market hall modules
- Adjust the street width by referring downtown Champaign



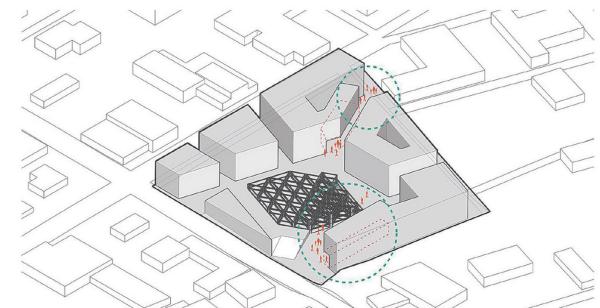
- Create the access way
- Connect the view from residential areas and train station



- Create the void spaces from residential building for sun light
- Gradually higher toward the North
- Move the service areas to the rear side of market hall

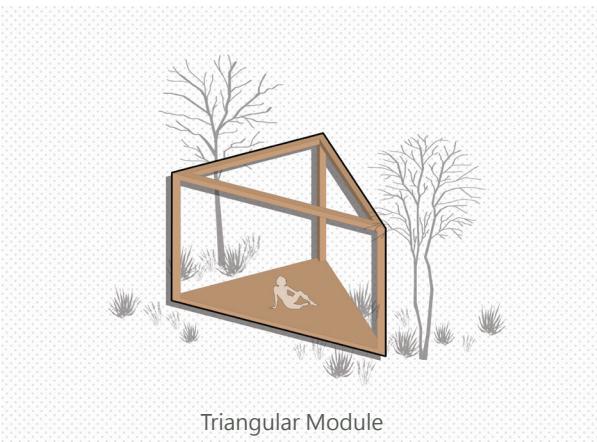


- Use elevation difference to create special experience
- Move the part of modules down to street level



- Cut off ground floor space to enlarge public area
- Redirect the direction of existing street to market hall

MODULAR DESIGN



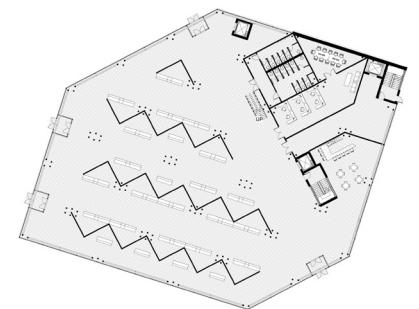
Triangular Module



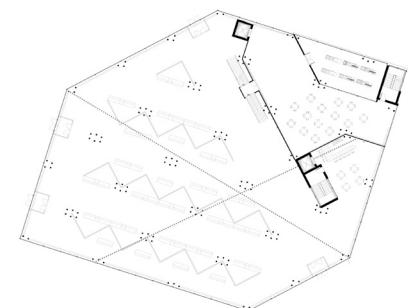
Booth Installation



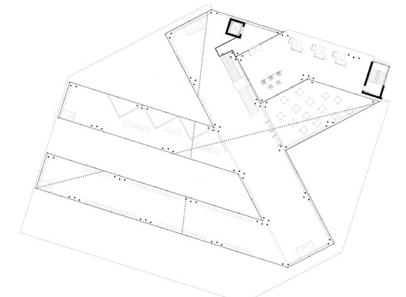
Marketplace Creation



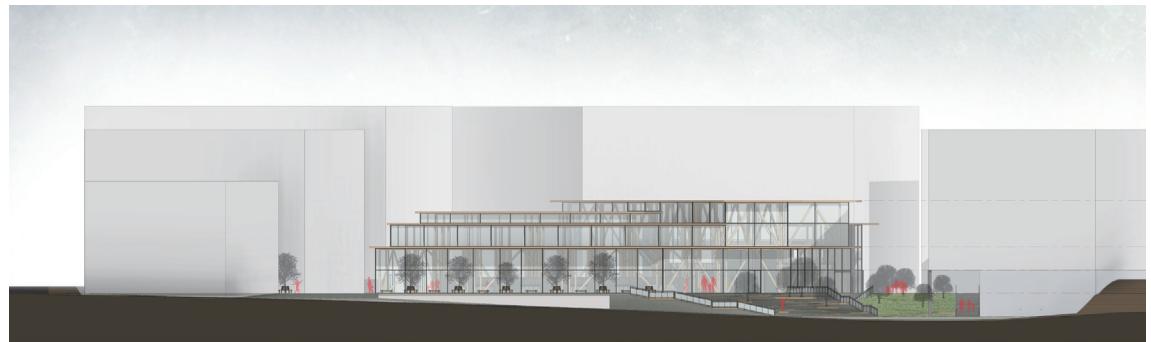
GROUND FLOOR



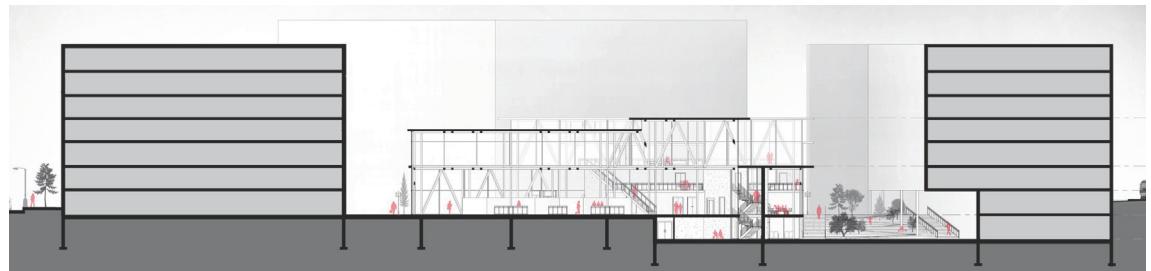
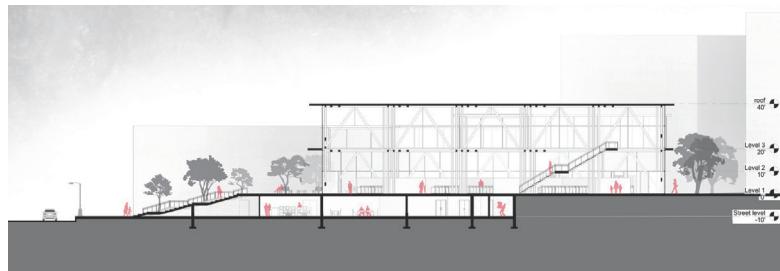
MAISONETTE LEVEL



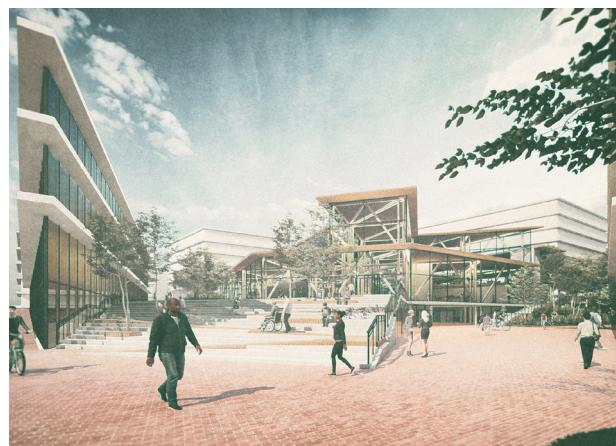
3RD FLOOR



EAST / SOUTH ELEVATIONS



EAST / SOUTH SECTIONS



08 HOME HOTEL

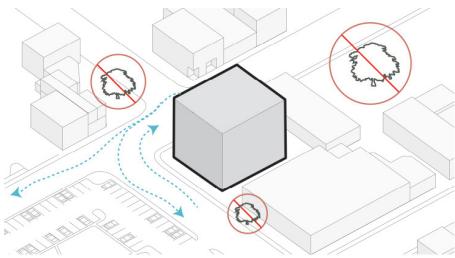
2017 Fall
COMMERCIAL

Program: Revit, AutoCad, Adobe Suite, Sketchup

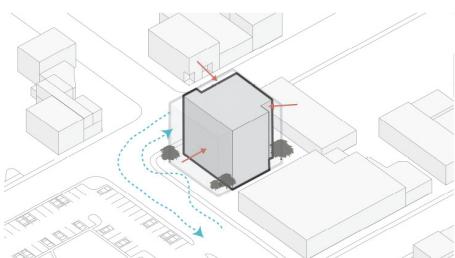
Champaign downtown has very strong connection with the university. It is not only giving the entertainment to students but also providing the living spaces for tons of families who are visiting their children at University of Illinois. However, living in hotel is still not as comfortable as living home because of insufficient space for gathering and cooking. Therefore, my goal is to create the hotel which has the program for every member in the family. It is very easy to access to the building that will not confused any age in families, creating lots of gathering space for different families at the same floor to share experience and interaction. This hotel is design for family, making new friends and intimacy.



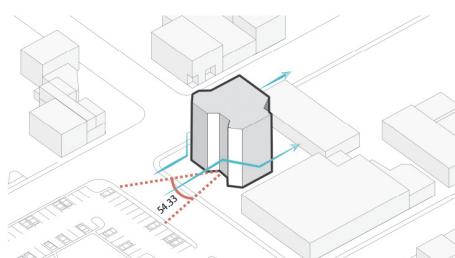
DESIGN PROCESS



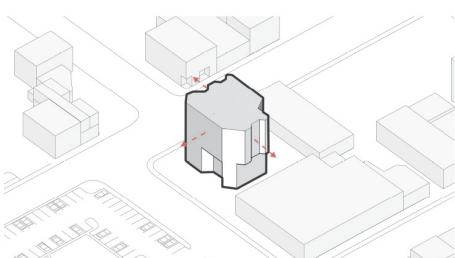
This site is suffering from the busy traffic and no green space.



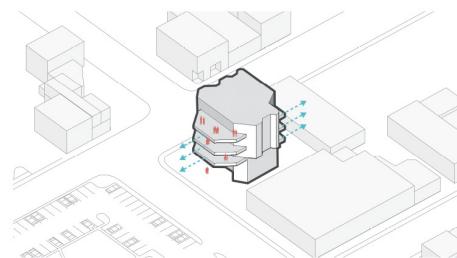
Recess for green space and car's drive way.



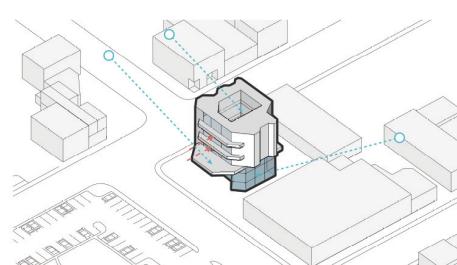
Cut the shape because of azimuth sun angle and the mostly direction of wind.



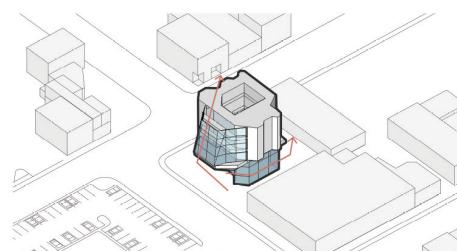
Pull the guestroom space out to have more space for visitors.



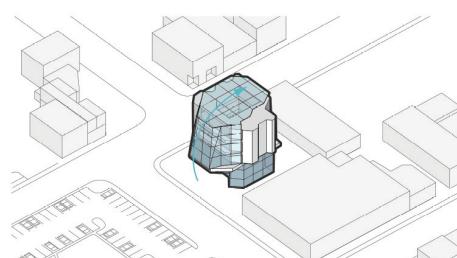
pull out floor slabs to have more gathering space.



Pushing higher floor slab, having curtain wall system in publicarea, and having huge atrium in order to gain more sunlight

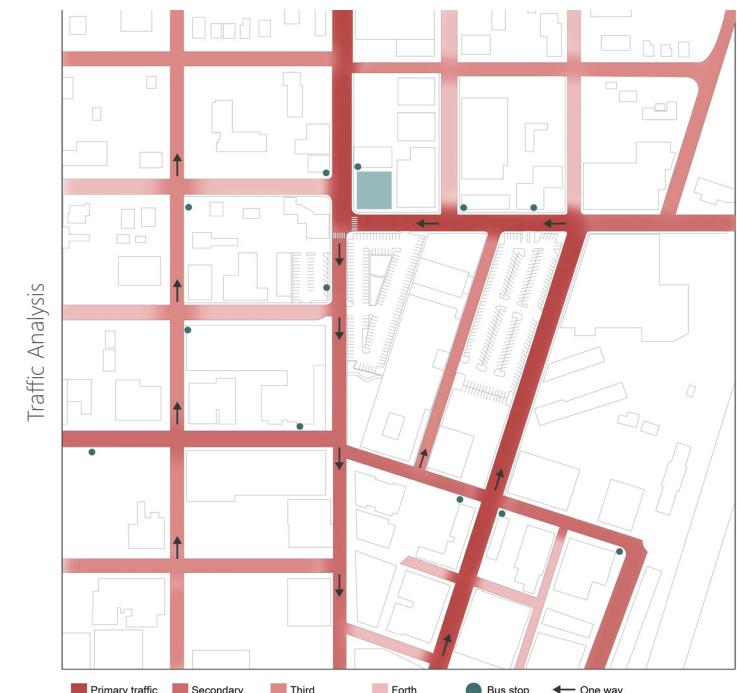
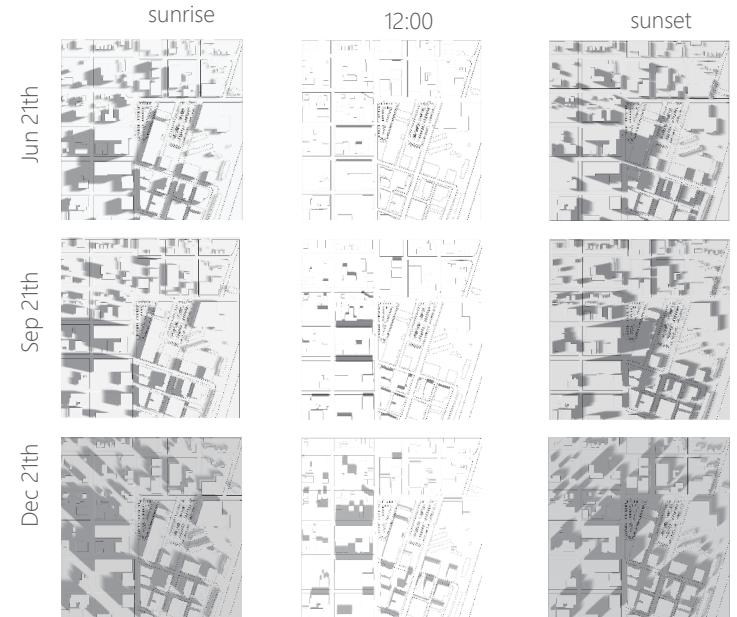


Using the same diagonal design element not only on the horizontal aspect, but also on the vertical direction.

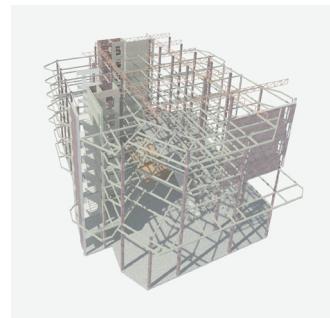
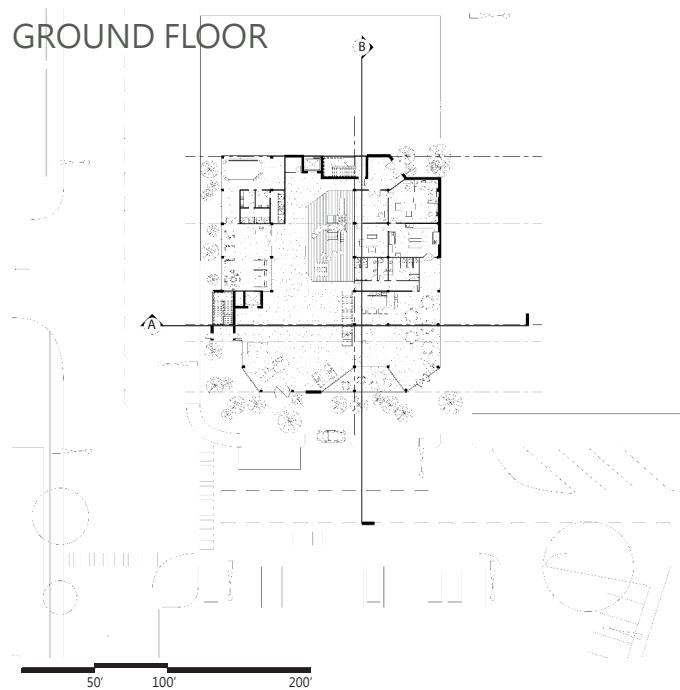


Wrapping whole building by the curtain wall system in horizontal direction to pursue continuity.

SITE ANALYSIS



GROUND FLOOR

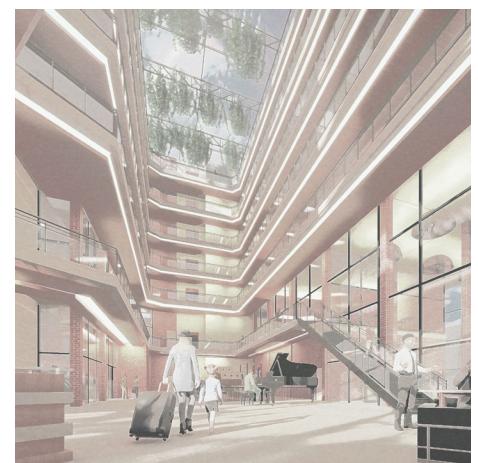
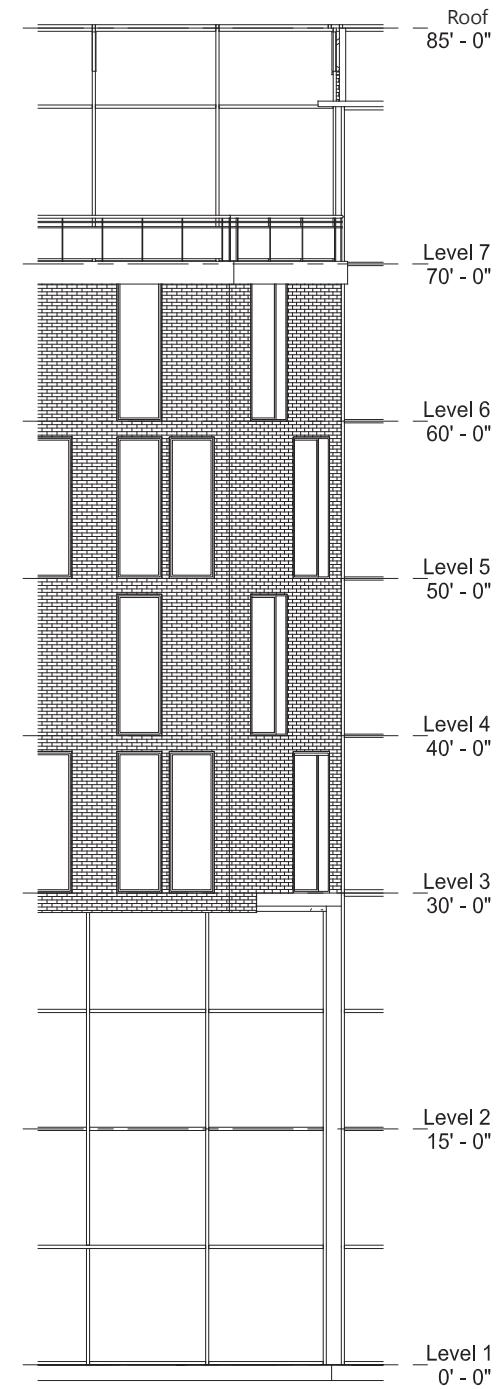
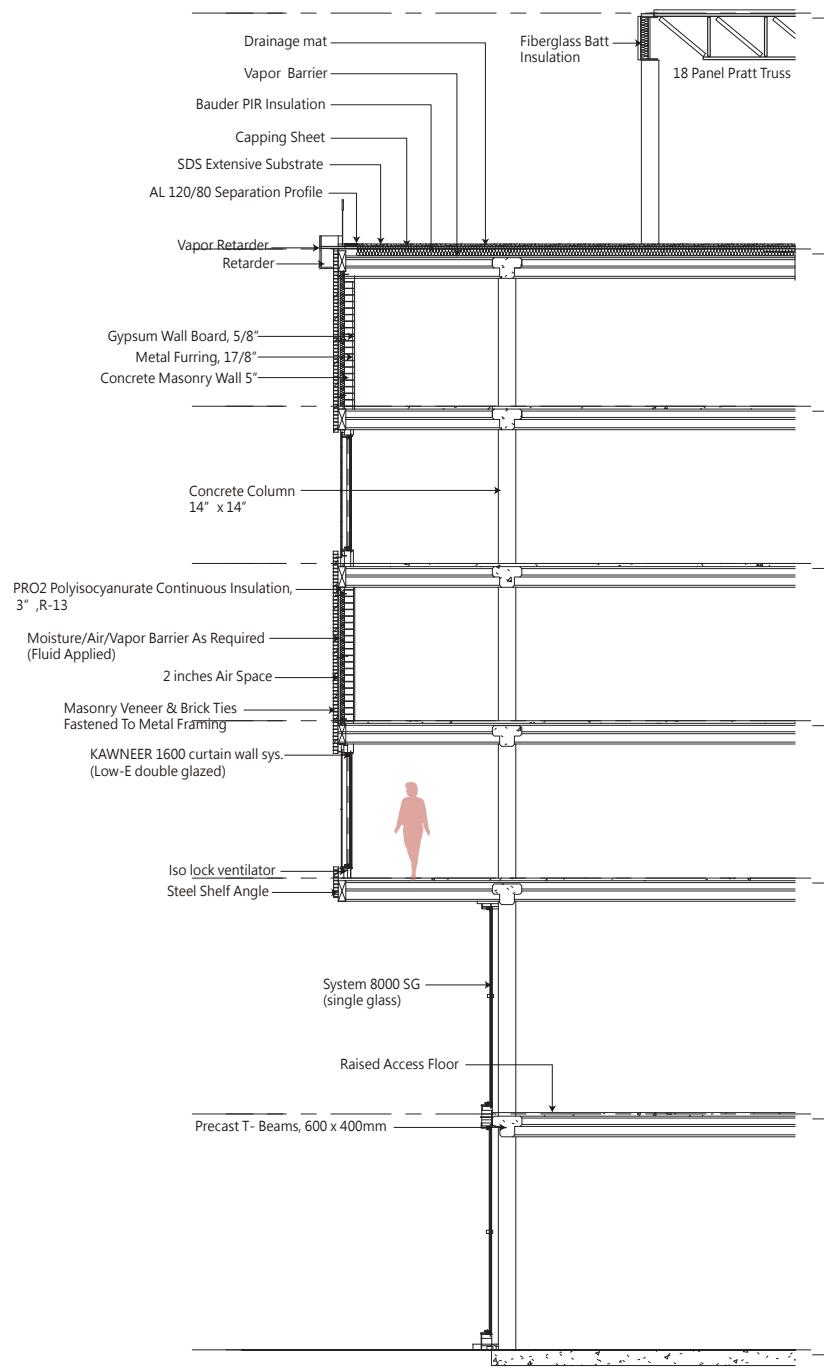


WEST ELEVATION / SECTION B



SOUTH ELEVATION / SECTION A





09 Z - TABLE

2018 Fall
FURNITURE



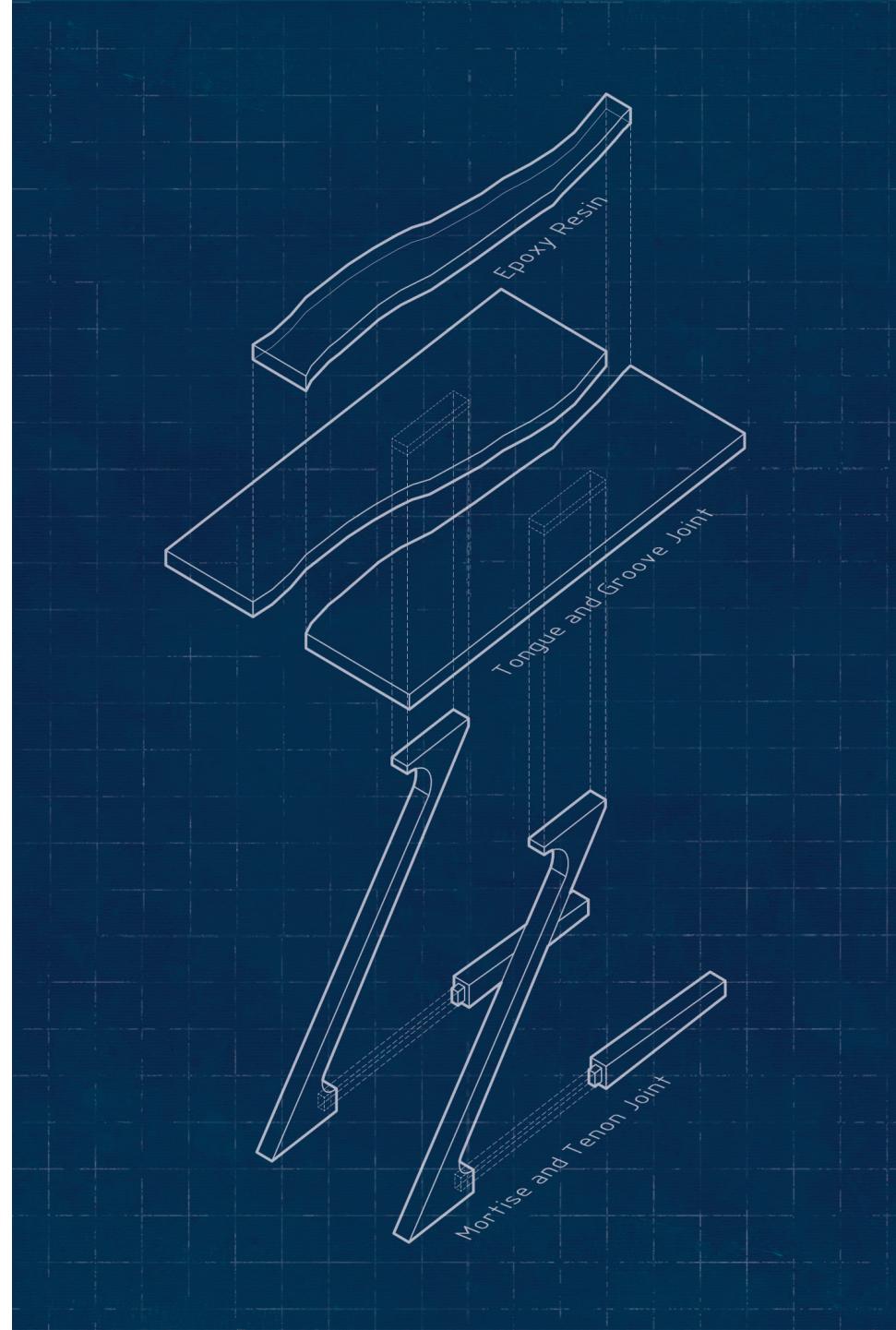
Filled the gap with clear epoxy resin

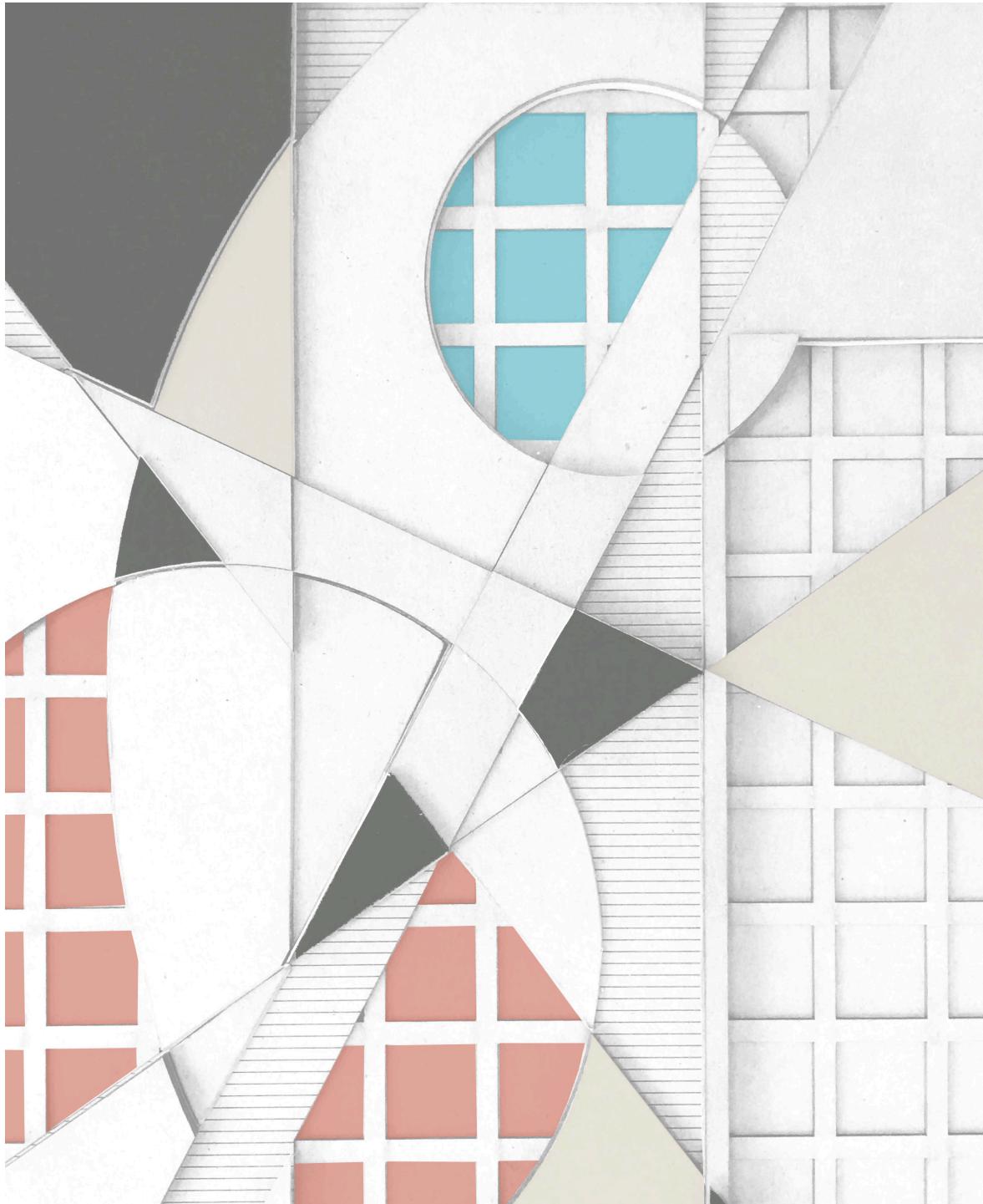


Cut and flip it to preserve the grain pattern



Material selection: walnut slab





Relief Model, intersection

WEI-CHE CHIANG LEED GA, AIA



+1 217-305-1495



weiche1117@gmail.com



535 Asbury Street Apt 1
Saint Paul, MN 55104



weicearch.com

