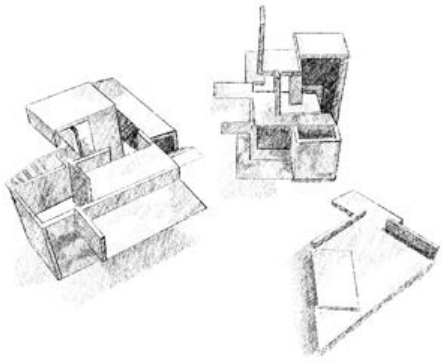

Architecture Portfolio

BAILEY HALL

Bachelor of Arts in Architecture ‘24

University of Pittsburgh
Dietrich School of Arts & Sciences

Bailey Hall

240 678-4598
baileyhallkuro@gmail.com
https://www.linkedin.com/in/baileyhallarchitecture/

EXPERIENCE

2024 MAY - JULY | TOKYO, JAPAN

Junior Architect, Mosaic Design Inc.
During my on-site architecture internship in Japan, I contributed to diverse projects emphasizing innovative urban design and sustainable architecture solutions. I proposed design concepts and actively participated in client meetings as an integral team member.

2024 JULY | TOKYO, JAPAN

Volunteer, Fuchu City Elementary School
Actively engaging with students to enhance English language skills and foster cultural understanding. Implemented interactive lessons, promoting cross-cultural communication through language activities and cultural presentations.

2024 - PRESENT | PITTSBURGH, PA

Scenic Design, University of Pittsburgh's Department of Theatre Arts
Assisted the University's theatre department for eight hours weekly, focusing on set design, assembling major set pieces, and employing power tools for construction tasks.

2023 - PRESENT | PITTSBURGH, PA

The American Institute of Architecture Students, University of Pittsburgh Chapter
Involvement in lectures, seminars, and events with the aim to empower and advance architectural knowledge among undergraduate architecture students at the University.

2021 - 2022 | ROCKVILLE, MD

Architecture Club Member, Montgomery College
Participation in group design projects and presentations using AutoCAD, SketchUP, and Twinmotion. Involvement in lectures and workshops on architecture-related projects.

2021 - 2022 | WASHINGTON, DC

Associated General Contractors of DC Young Constructors Forum
Involvement in the Pathways to the Top program which expores the success of major architects andconstruction professionals, providing their advice to aspiring industry professionals. Participation in online seminars, programs, and networking to build meaningful connections with architects in the DC area.

EDUCATION

UNIVERSITY OF PITTSBURGH (2022-2024)

Bachelor of Arts, Architecture
PITTSBURGH, PA

MONTGOMERY COLLEGE (2020-2022)

Architecture Program
ROCKVILLE, MD

SKILLS

DIGITAL DRAFTING AND MODELLING

- AutoCAD
- Rhino
- Sketchup
- Grasshopper
- ArchiCAD
- Twinmotion

PHYSICAL DRAFTING AND MODELLING

- Hand-drafting
- Epilog Zing Lasercutter and Engraver
- Ultimaker 3 3D Printer

ADOBE SOFTWARE

- Photoshop
- InDesign
- Illustrator

SCENERY SHOP TOOLS

- Circular Saw
- Table Saw
- Miter Saw
- Pneumatic Nail Gun

APPLIED SKILLS

- Utilizing archival resources
- Conducting interviews regarding lived experience of locals
- Conducting research of the built environment

AWARDS

Dean's List Spring 2024, University of Pittsburgh
Dean's List Fall 2023, University of Pittsburgh
Dean's List Spring 2023, University of Pittsburgh
Dean's List Fall 2022, University of Pittsburgh

selected works 2024

architecture

01. Under One Roof
spring // 2024

02. Museum of Computing
fall // 2023

03. Sustainable Wellness Center
spring // 2023

04. Ohiopyle Private and Pubic Spaces
fall // 2022

05. Cathedral of Learning Study Space
fall // 2022

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scenic carpentry

06. Spring Awakening
spring // 2024

drawing composition

07. Frick Fine Arts Lobby
spring // 2023

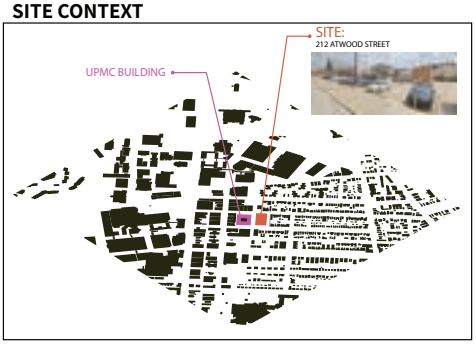
01 UNDER ONE ROOF

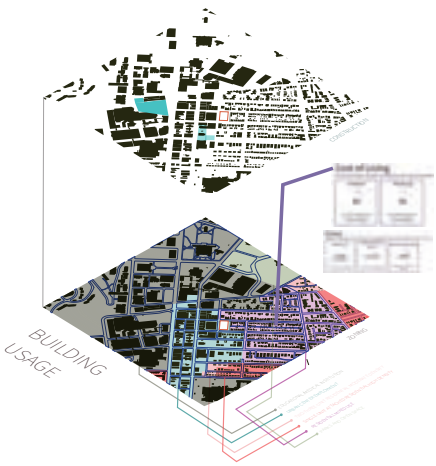
Architecture Design Studio III | University of Pittsburgh
2024

Under One Roof is a low-rise, high-density housing project situated in the heart of Oakland, Pittsburgh, PA. This innovative project is designed to accommodate a mix of refugees and graduate students, emphasizing six core principles of sustainability: passive heating, passive cooling, natural ventilation, daylighting, water conservation, and an efficient building envelope.

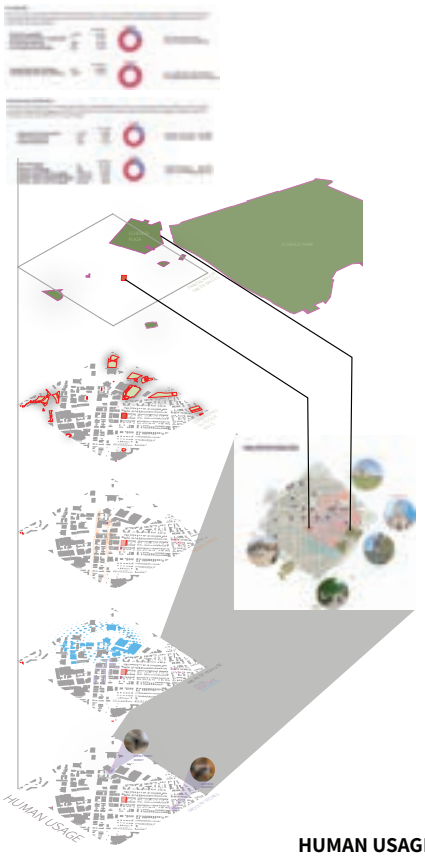
The design process began with a thorough site analysis of South Oakland. The final design emerged through a series of operative design moves, each tailored to the site's specific climate. Material selection played a crucial role in ensuring both sustainability and aesthetic appeal. Overall, the project aims to meet the needs of the community while respecting and protecting the environment.

Coursework for this studio is completed in pairs, fostering collaboration and organizational skills and enhancing our ability to work effectively in a team managing complex projects.

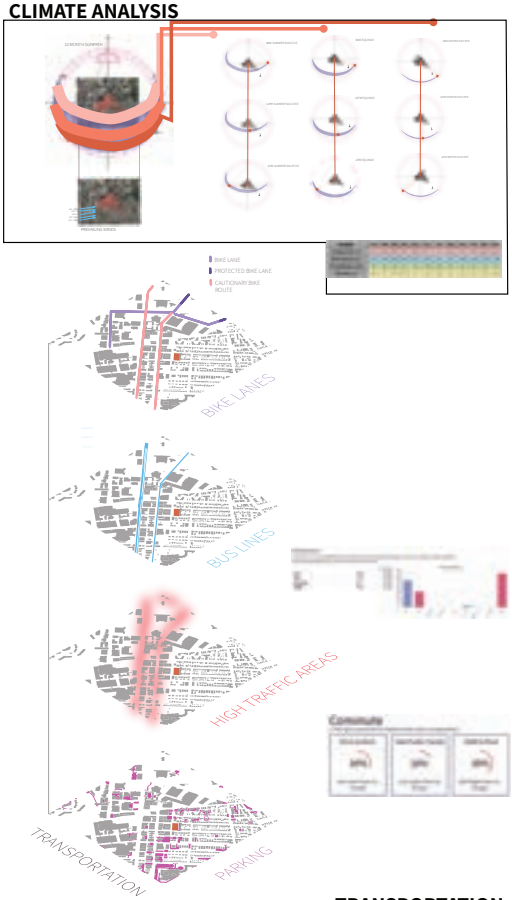




BUILDING USAGE



HUMAN USAGE



CLIMATE ANALYSIS

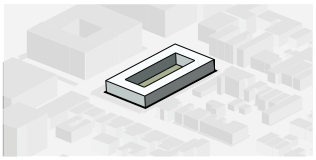
TRANSPORTATION

212 ATWOOD STREET, SOUTH OAKLAND
PITTSBURGH, PA

SITE ANALYSIS

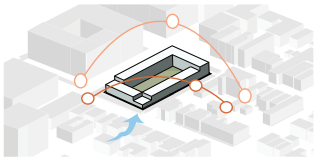
SITE ANALYSIS

Our site, situated in South Oakland, is directly on the University of Pittsburgh campus. It benefits from its proximity to the bustling Fifth and Forbes streets while maintaining a relatively quiet environment. One primary issue we aimed to address is the fact that South Oakland is a food desert. Ensuring our residents have access to fresh, locally grown food became a priority, leading to our decision to incorporate a green roof into the design. Furthermore, the site's distance from green spaces reinforced our commitment to integrating ample green areas within our project.



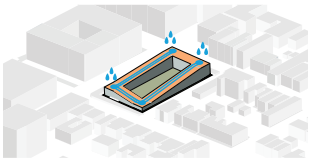
CENTRAL COURTYARD

OPEN all interior spaces to face into a semi-public central courtyard.



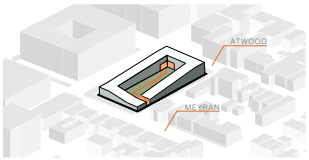
VARIED BLOCK HEIGHTS

PUSH blocks to optimize for solar gain in the winter and prevailing winds in the summer.



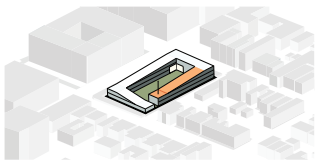
CONTINUOUS ROOF

SLOPE to connect corner nodes to accommodate for rainwater collection and house each unit under one roof.



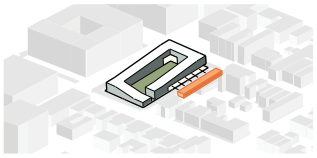
INTERIOR SITE ACCESS

OPEN the privatized access point on residential Meyran Ave, and the larger more public entrance on commercial Atwood St.



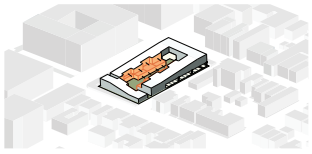
UNIT SUNLIGHT ACCESS

PULL southern unit block up to prioritize sunlight into the 2 floors of units.



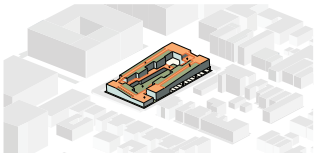
PARKING ACCOMMODATION

CARVE out parking space for cars and bikes.



UNIT INTEGRATION

PUSH and **PULL** individual units to intersperse the units types and encourage interactions between user groups.

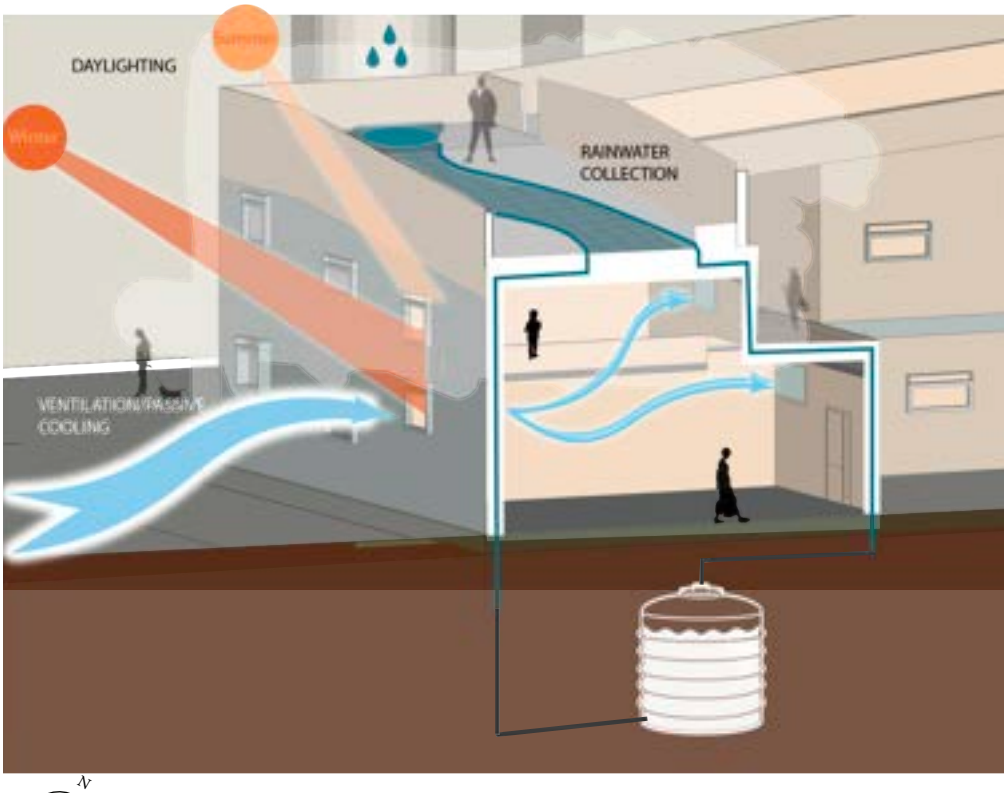


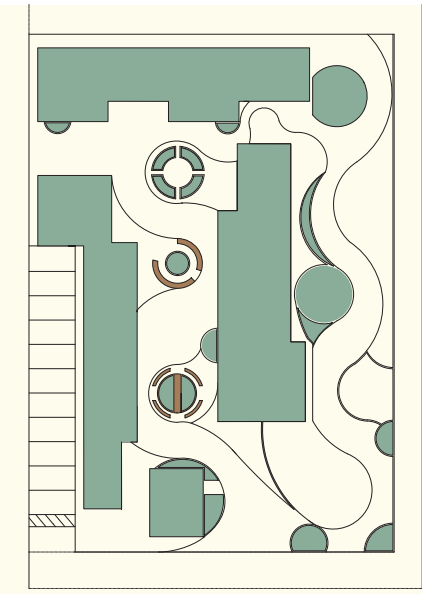
COMMUNITY CONNECTION

CONNECT the community with bridge circulation to the community spaces and the accessible rooftop urban farming project.

OPERATIVE DESIGN

Each design intervention aimed to address specific aspects of Pittsburgh's environment. Our objectives included maximizing green space, optimizing solar gain in winter, harnessing prevailing winds in summer, and providing both private and public access points. Additionally, we designed a covered parking lot to protect vehicles from precipitation. Our overarching goal of fostering community connectivity was emphasized by creating a continuous looped roof, allowing direct pedestrian access to the urban farming project from the ground.



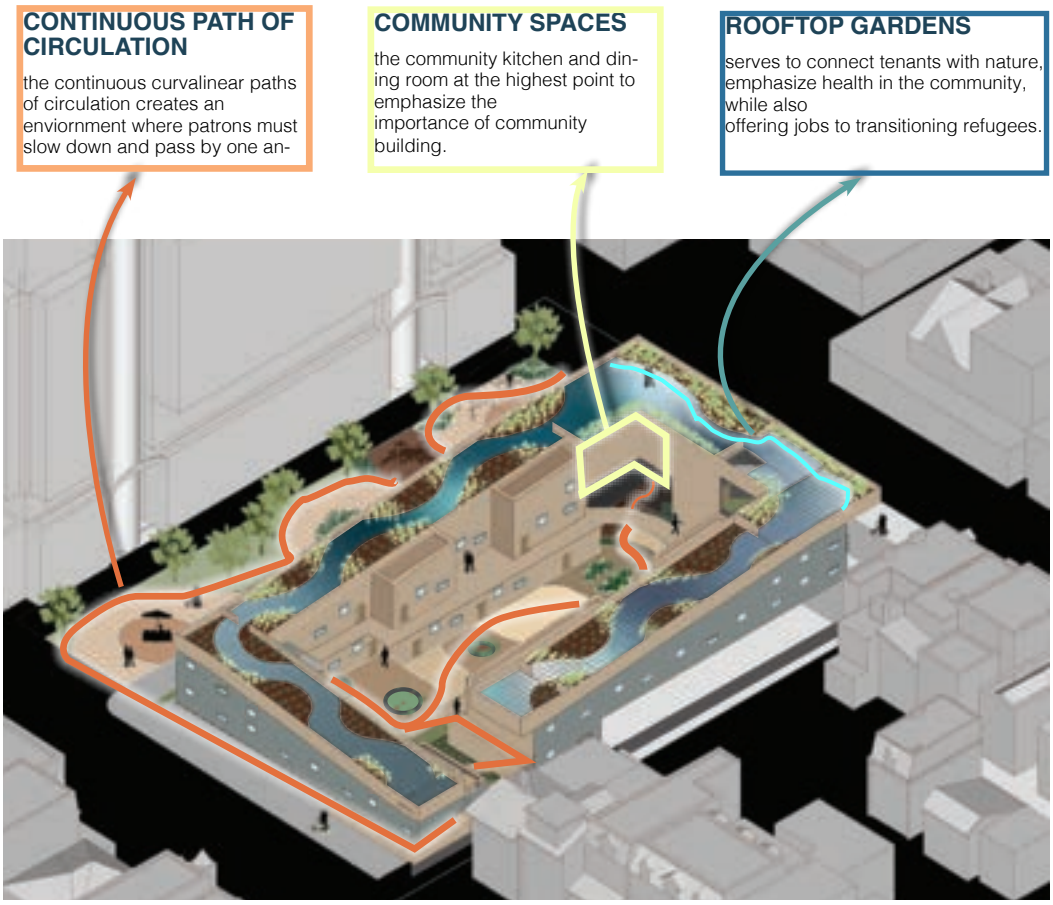


ON SITE GREENERY

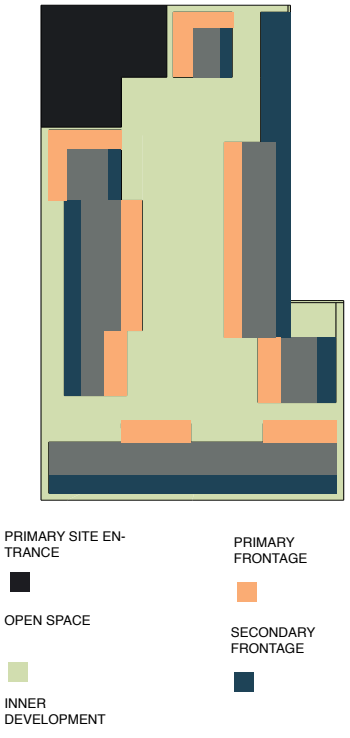
SUSTAINABILITY STRATEGY

SUSTAINABILITY

Daylighting was optimized through strategic window placement and programming, prioritizing natural light in key areas such as bedrooms and living rooms. Extensive greenery, including a green roof, enhances temperature regulation, air quality, and community engagement. The use of double-stacked windows maximizes energy efficiency by facilitating cross ventilation, drawing cool air from the bottom and expelling warm air from the top. Additionally, our rainwater collection system benefits from the sloped roof design, where rainwater is filtered through the vegetation and soil before being stored for future use.



FRONTAGE



AXONOMETRIC

A continuous circulation path begins at Sennott Street, flowing through the central courtyard and ascending the green roof path. The winding, circular geometry mitigates the building's boxy shape. We positioned the community kitchen and dining area at the highest points of the site, emphasizing the importance of community building and providing views of the University of Pittsburgh's Cathedral of Learning. The rooftop gardens, managed by tenants, offer job opportunities and fresh produce to be shared at the café. Access to the residential units is exclusively from the interior courtyard, away from the communal Sennott Street.

UNIT A-1
SCALE: 3/32" = 1'
1 BEDROOM
500 SQ FT

UNIT A-2
SCALE: 3/32" = 1'
2 BEDROOMS
690 SQ FT

UNIT B-1
SCALE: 3/32" = 1'
2 BEDROOMS
700 SQ FT

UNIT B-2
SCALE: 3/32" = 1'-0"
3 BEDROOMS
890 SQ FT

FLOOR 1

Scale: 1/16" = 1'-0"

N

FLOOR 2

Scale: 1/16" = 1'-0"

N

PLANS

UNIT A-1
SCALE: 3/32" = 1'
1 BEDROOM
500 SQ FT

UNIT A-2
SCALE: 3/32" = 1'
2 BEDROOMS
690 SQ FT

UNIT B-1
SCALE: 3/32" = 1'
2 BEDROOMS
700 SQ FT

UNIT B-2
SCALE: 3/32" = 1'-0"
3 BEDROOMS
890 SQ FT

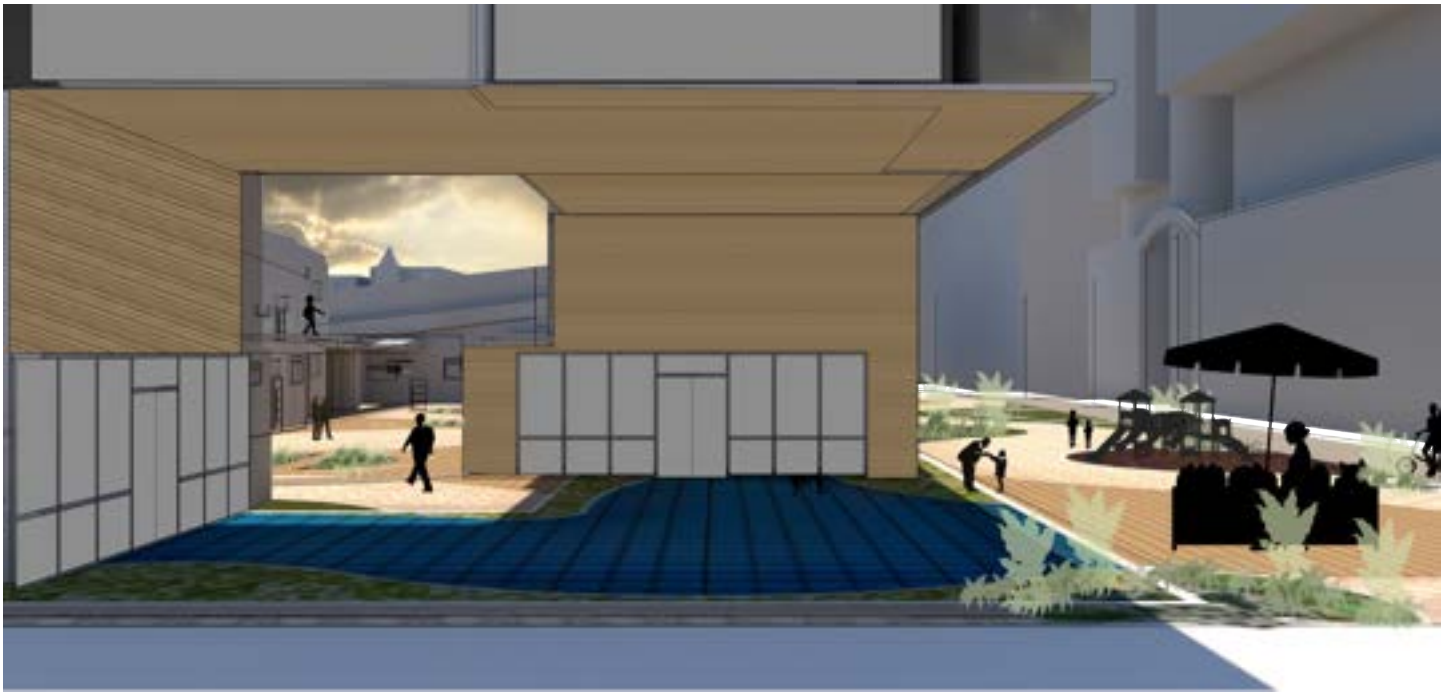
FLOOR 3

Scale: 1/16" = 1'-0"

N

ROOF PLAN RENDER

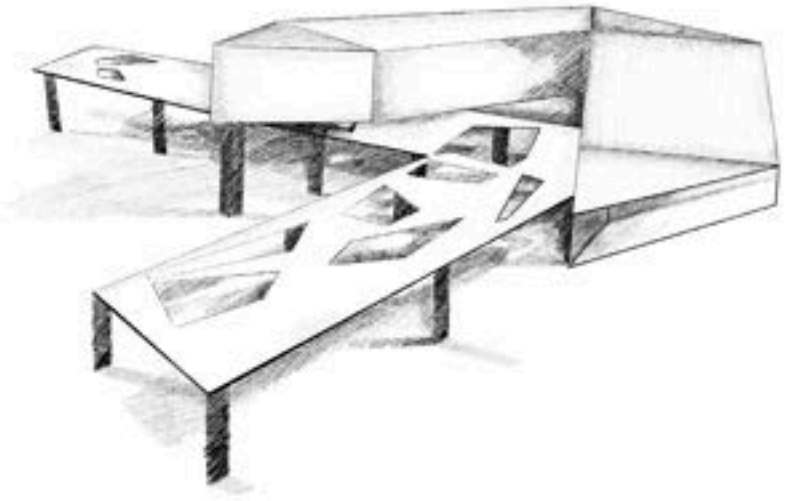
PLANS



ATWOOD STREET ENTRANCE

ROOFTOP VIEW

PERSPECTIVE RENDERINGS



02 MUSEUM OF COMPUTING

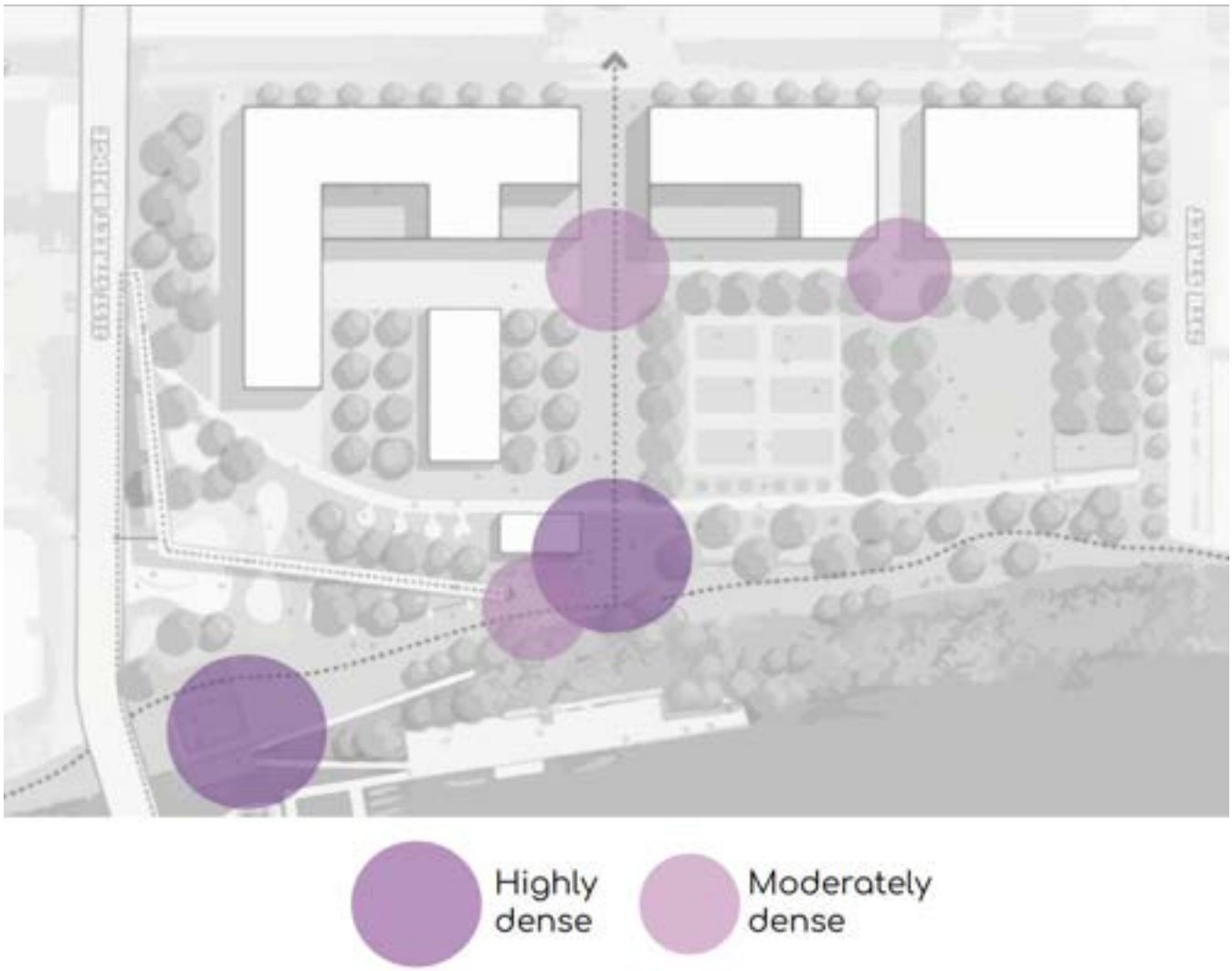
Architecture Design Studio II | University of Pittsburgh
2023

The Museum of Computing is situated in Pittsburgh's Strip District alongside the Allegheny River. Its design was created in conjunction with River Life's 31st Street Project, a mixed-use design vision proposal intended to repurpose the existing conditions of the site.

The primary goal of this project is to emphasize the city of Pittsburgh's sucess built on the networking of materials and ideas, as well as its current role in facilitating a booming tech scene.

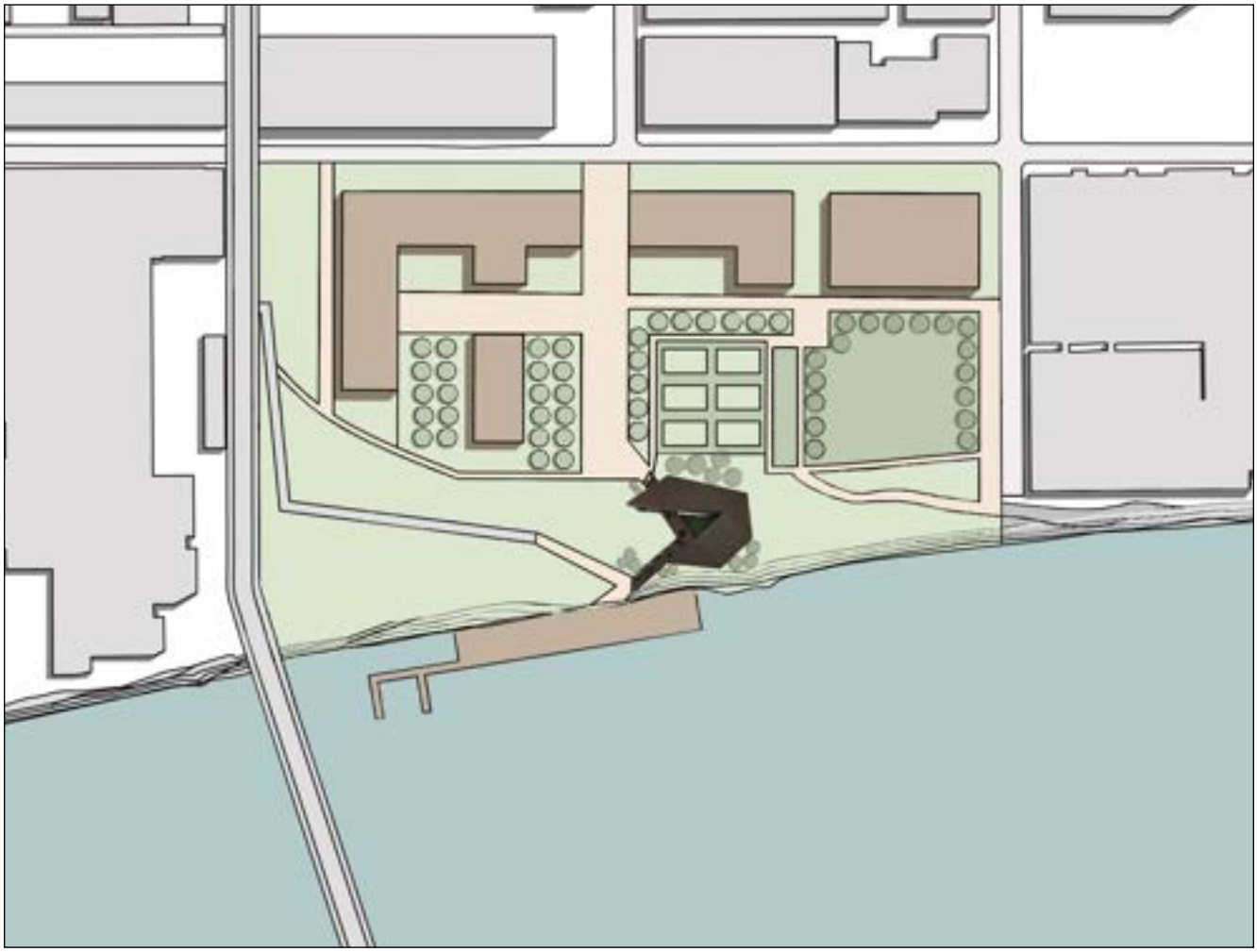
This project draws inspiration from the city of Pittsburgh's investments in technoloical innovations and it's history as a "networking city". The design prioritizes connections to three crucial vessels of networking located in close proximity to the site - river, city, and bridge. Listed in order, these three innovators build upward on top of one another.

This course is designed to provide a sophisticated conceptual framework for thinking about three-dimensional composition and architectural problem-solving known as 'system-based design'. The course is also intended to emphasize the necessity of graphic and technical skills in model-making to communicate design ideas.

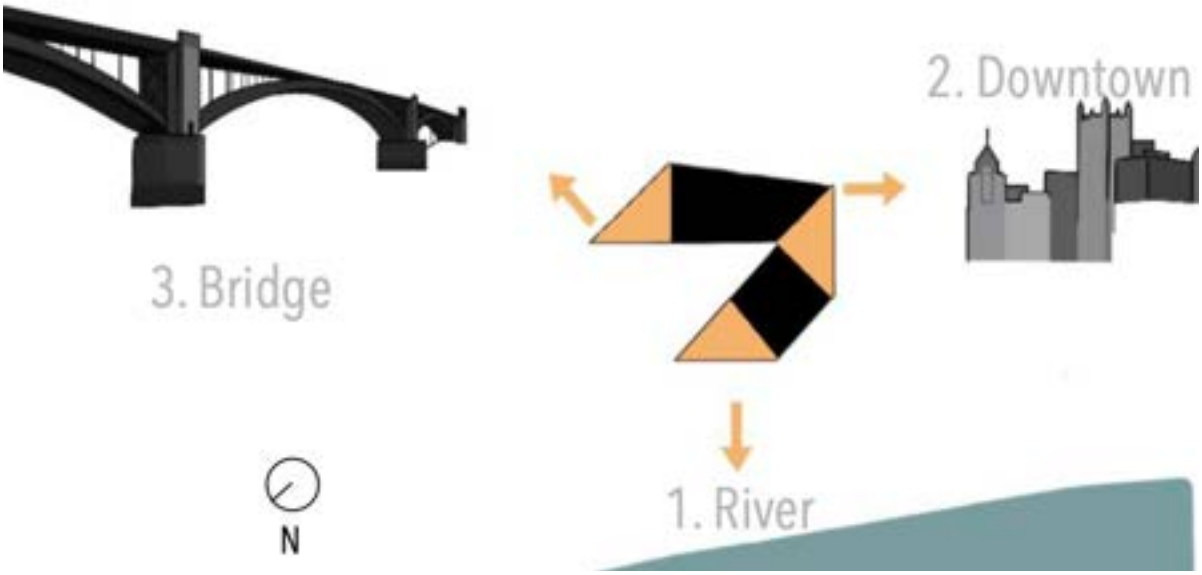


SITE ANALYSIS

Beginning with research of both the existing site and River Life's proposal, I identified conditions that would shape my design. A driving element of my design were connections with what I referred to as the "three innovators" - the Allegheny River, the 31st Street Bridge, and the view of Downtown Pittsburgh, particularly the US Steel Tower. Each of these three innovators has facilitated the networking of ideas and materials throughout history in the advancement of the city. Additionally, heavy site foot traffic patterns dictated the position of the museum on the site, as well as my decision for processional movement through the space.

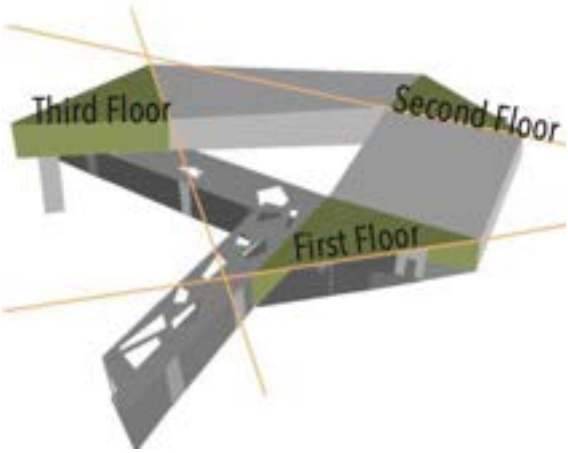


SITE PLAN
SCALE: 1/32” = 1’-0”

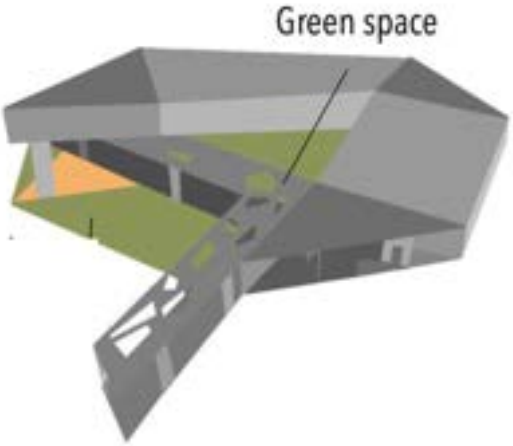


FORM-MAKING

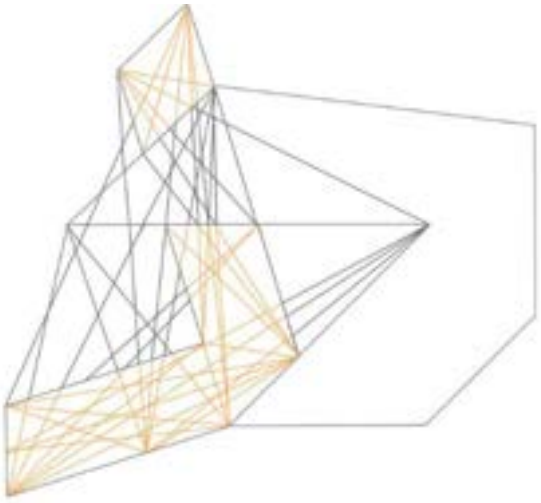
The design's repetition of a simple (triangular) shape reflects the connection to the three innovators. Each level provides a view to each innovator with a curtain wall. Occupants enter at the foundational level, providing the view of the Allegheny river. The second floor provides a view of Downtown's skyline, while the third floor provides the view of the 31st Street Bridge. The outdoor walkway connects the most frequented paths of the site, and features geometric "nodes" exposed to the environment. These nodes were created with tessalations, networking each corner of the building envelope to create unique geometry. With its overall simple geometric shape, the structure frames communal spaces.



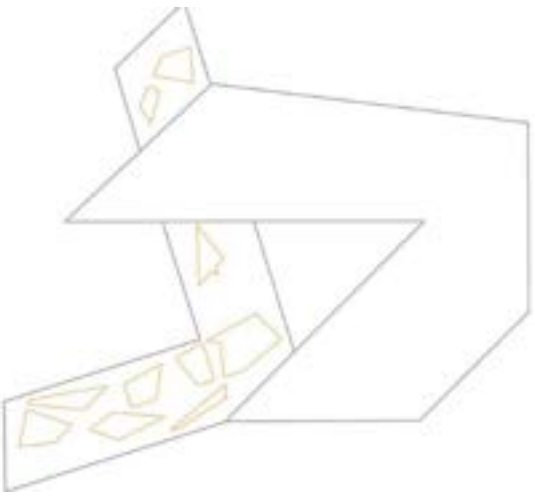
SIGNIFYING VIEWS WITH CHANGE IN ELEVATION



FRAMED GREEN SPACES



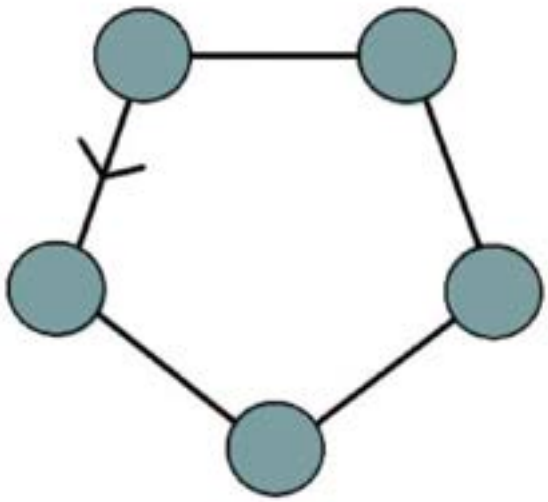
NETWORKS OF TESSELLATIONS



REMAINING GEOMETRY

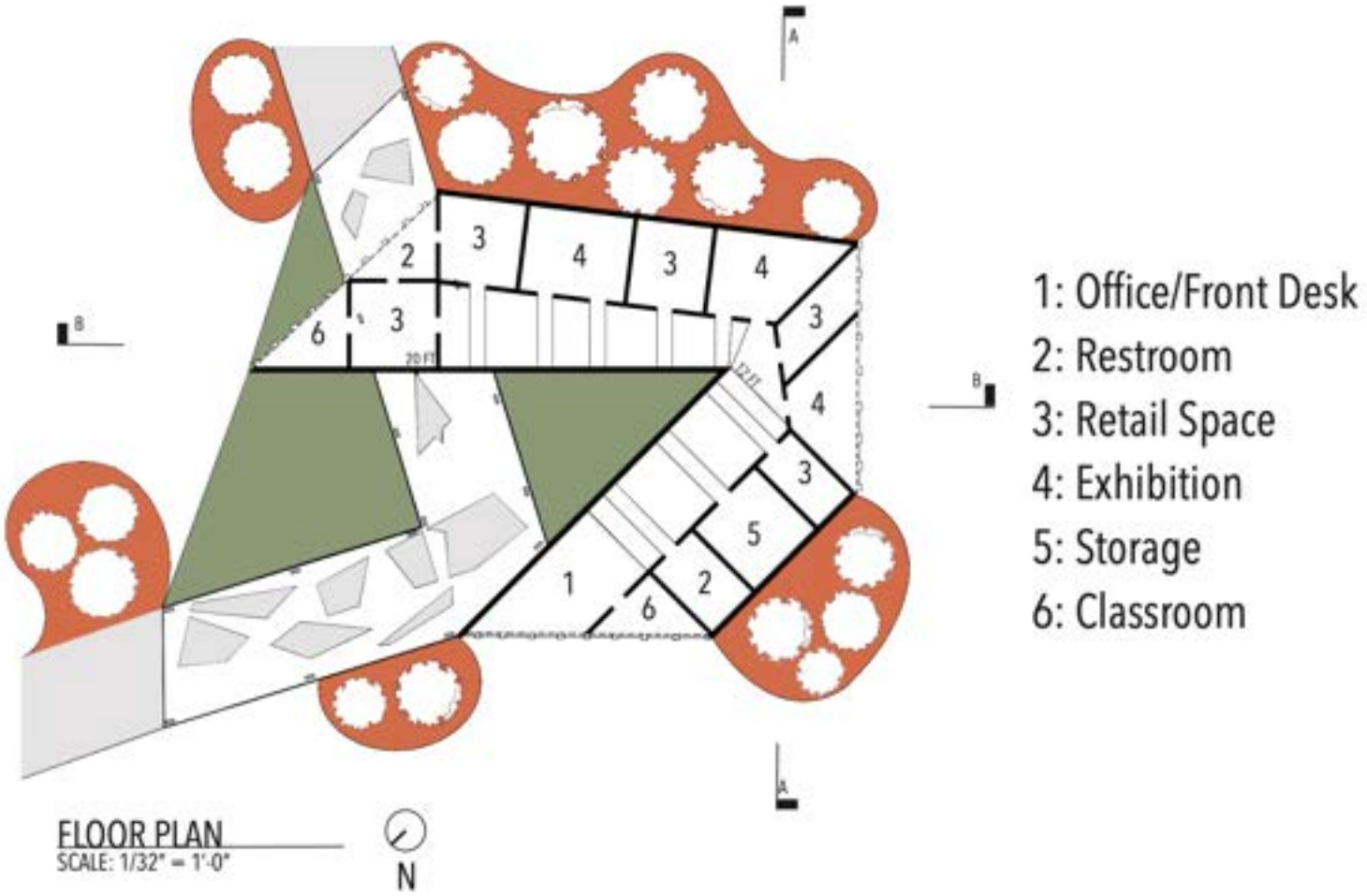
CIRCULATION

Foot traffic patterns are heaviest where the bike path, boat dock path, and central site path meet. This traffic convergence inspired the placement of the museum on the site, as well as my decision for processional movement through the space. As to not compete with the existing buildings, the museum is placed to the right of the three paths' meeting point. Modelled after a ring network topology, the interior circulation is processional, flowing from one point to another,



CIRCULATION PATTERN

Ring Network Topology



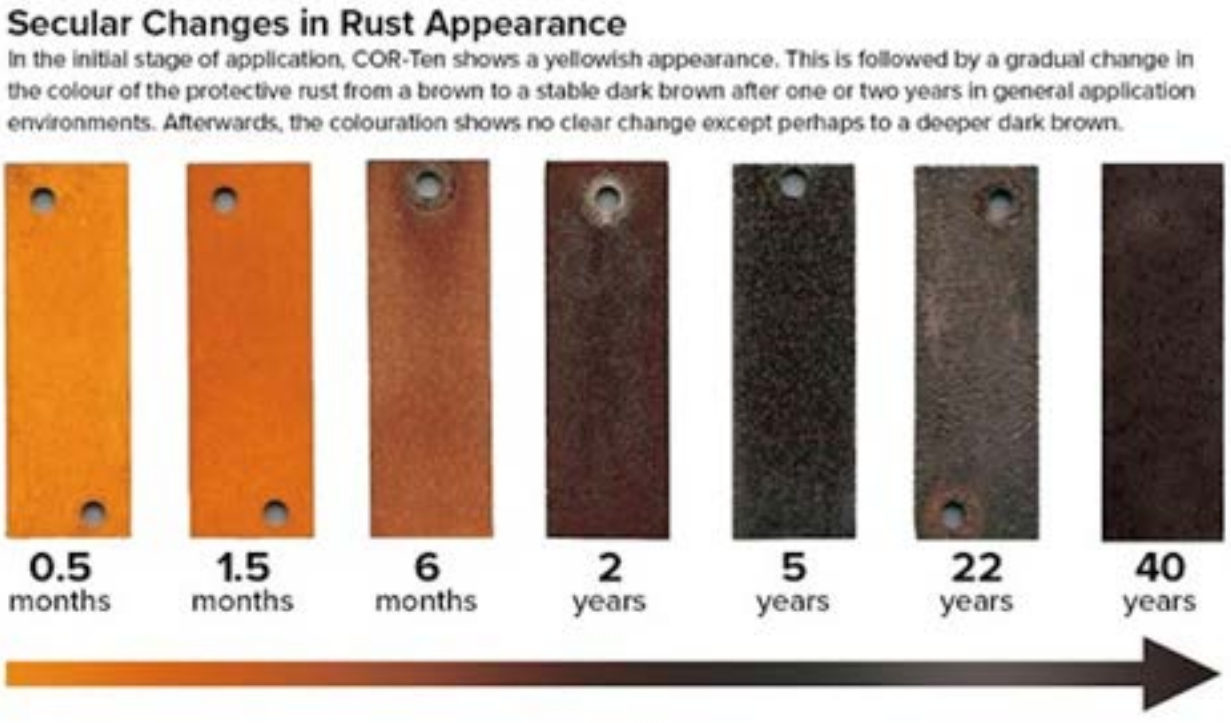


Image source - The Nippon Steel Corporation

MATERIALITY

Drawing connections with Downtown Pittsburgh's US Steel Tower, the building material is COR-TEN Steel®, intentionally rusting as time progresses. Depicted in my final model is COR-TEN Steel® between six months to two years of rusting. Tempered glass is used for the curtain walls.

MODEL-MAKING

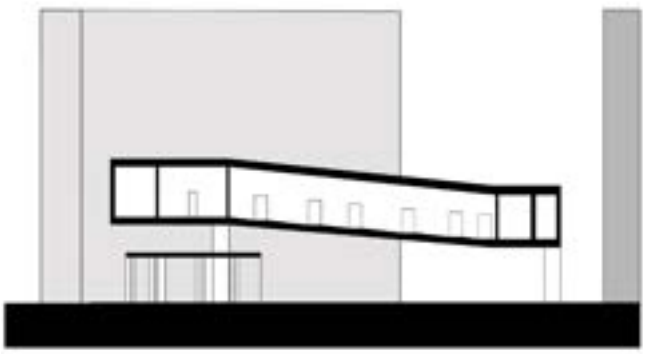
Mapping out the planes in Adobe Illustrator, each piece of basswood, plexiglass, and chipboard was lasercut using an Epilog Zing 50W CO2 laser. To reflect the appearance of the COR-TEN® steel, the basswood was first painted black, then applied stippled brown paint and cinnamon for the rusty appearance. The building model was constructed at a scale of 1/8” = 1’-0”, while the site model was constructed at a scale of 1/32” = 1’-0”.

BUILDING MODEL
Scale: 1/8” = 1’-0”

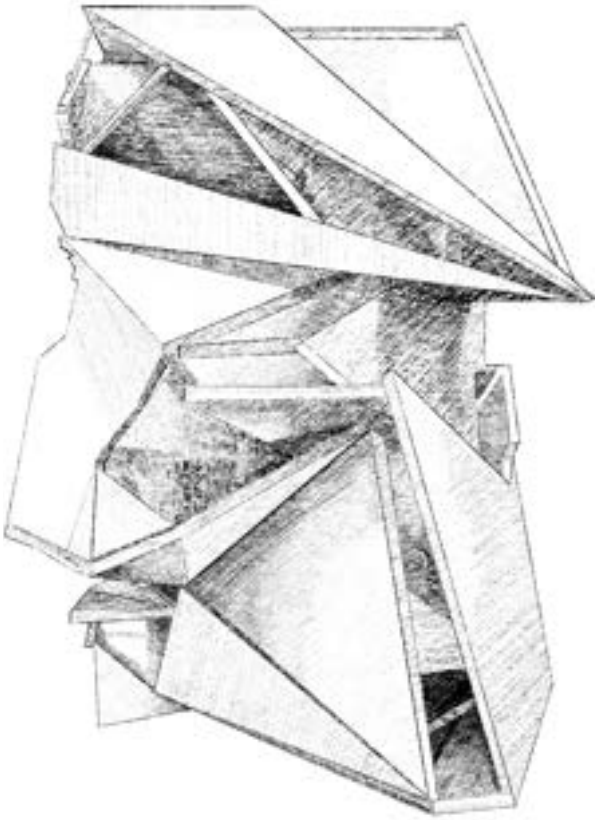
SITE MODEL
Scale: 1/8” = 1’-0”

SECTION A · A
Scale: 1/32” = 1’-0”

SECTION A · A
Scale: 1/32” = 1’-0”



SECTION B · B
Scale: 1/32” = 1’-0”



03 SUSTAINABLE WELLNESS CENTER

Architecture Design Studio I | University of Pittsburgh
2023

The Sustainable Wellness Center is located on an existing vacant lot on Second Avenue in Hazelwood. Being an under-represented neighborhood of Pittsburgh, research of Hazelwood's built environment was a crucial foundation of the project.

The primary goal of this project is to recognize and address the existing issues of Hazelwood through a design of an environmentally-horminious community center. Both the programming and building envelope aim to emphasize harmony with nature.

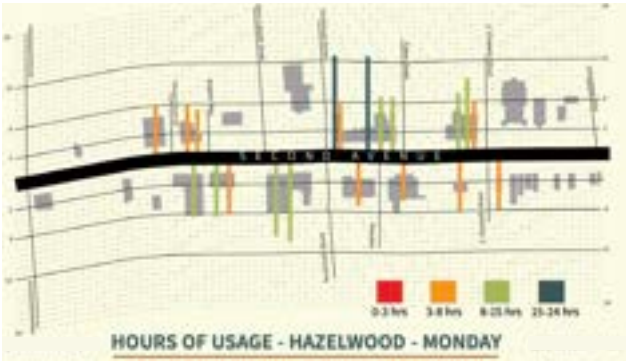
The wellness centers' folded building envelope is directly designed from tessellations created from data found through first-person research. Following the folds of the tessellated lines intersecting the site, the overall geometry aims to prioritize connection with the environment and mimic natural forms.

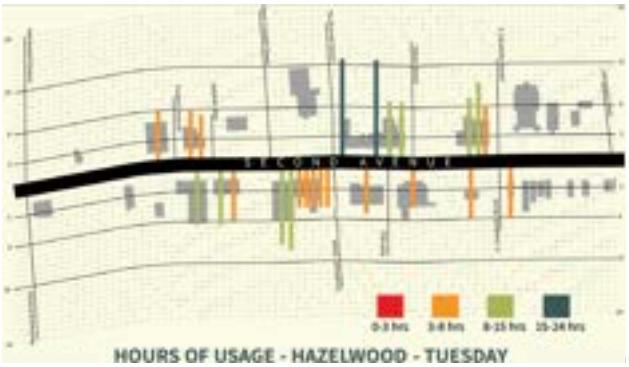
This course aims to demonstrate students' profficiency in Rhino, Grasshopper, AutoCAD, and SketchUp, as well as emphasize the necessity of graphic and technical skills in diagram and model-making to communicate design ideas.

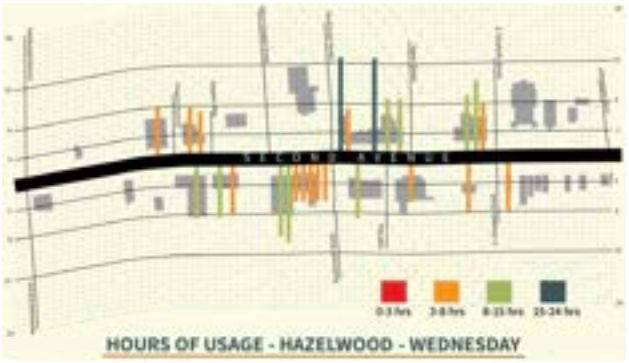
RESEARCH

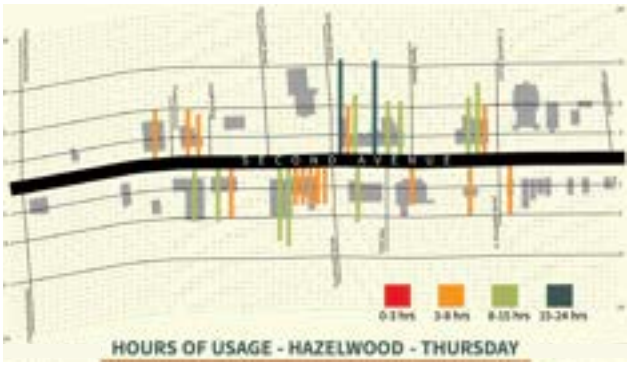
Firsthand research of Hazelwood's built enviornment was the foundation of this design. By visiting the site, interacting with residents, and heavily documenting experience, data was then used to create diagrams that would directly influence form-making.

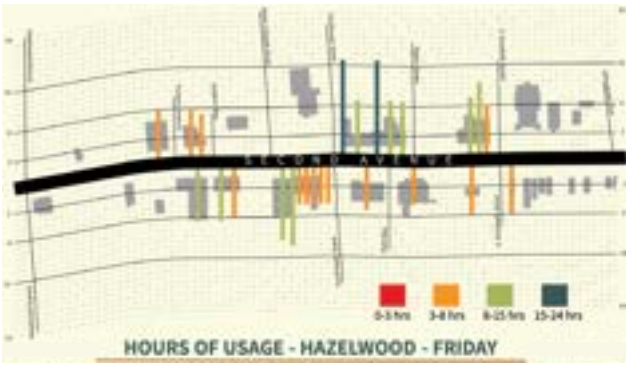

USAGE HAZELWOOD
Residential
Commercial/Service
Food
Public Facilities/Institutions
Health
Municipality
Industrial

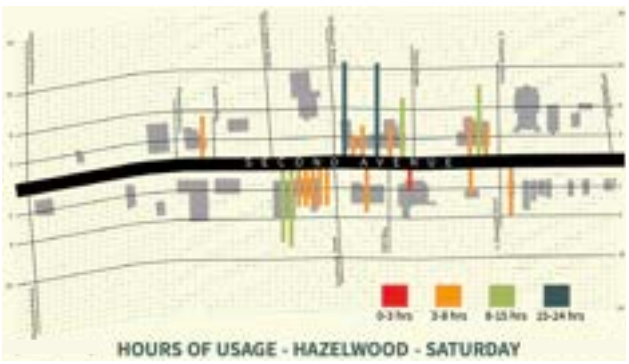

HOURS OF USAGE - HAZELWOOD - MONDAY

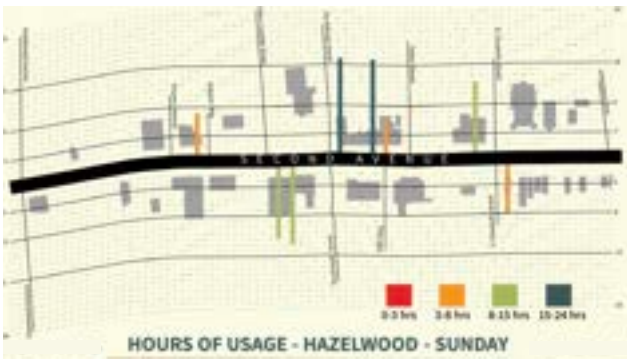

HOURS OF USAGE - HAZELWOOD - TUESDAY

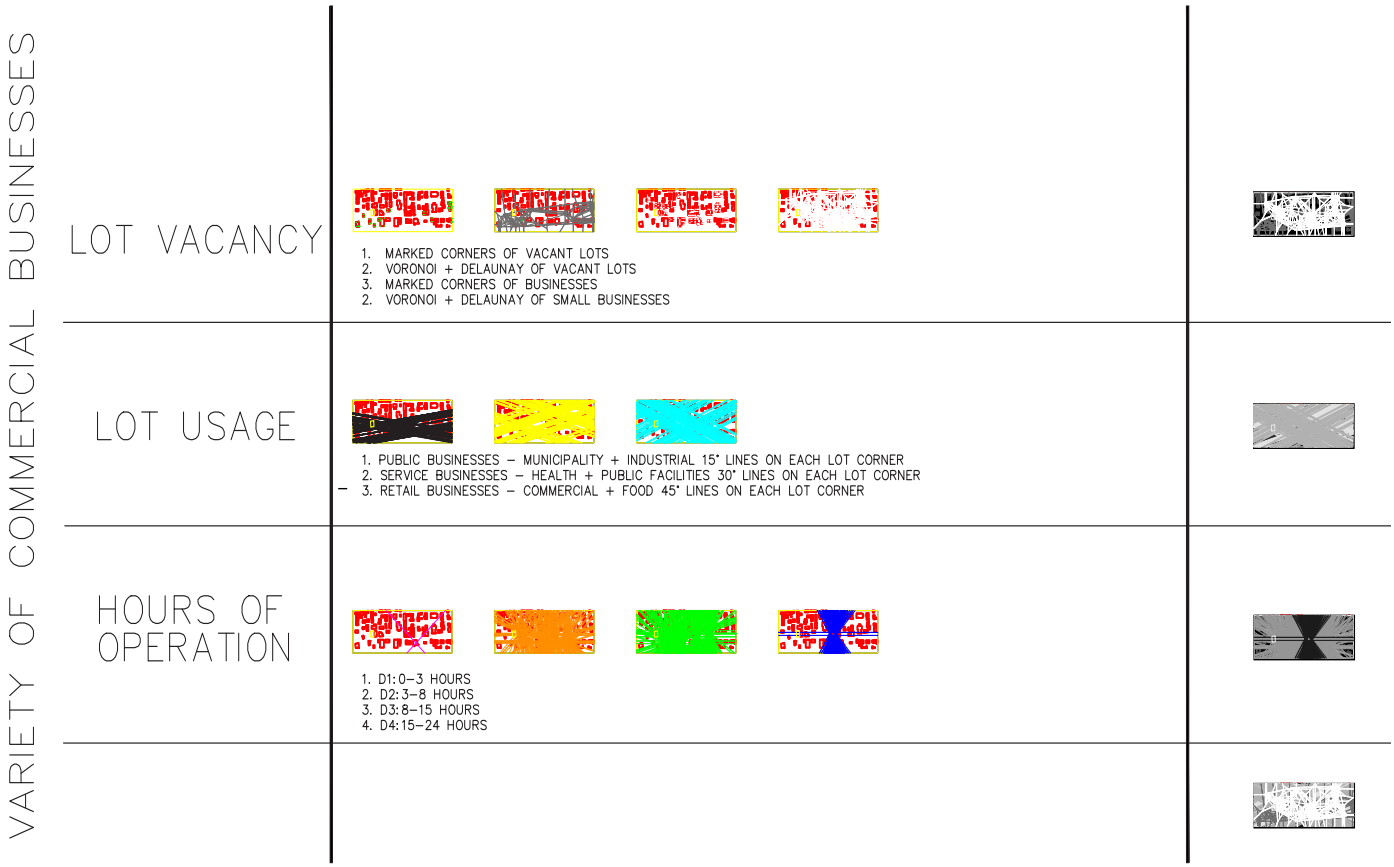

HOURS OF USAGE - HAZELWOOD - WEDNESDAY


HOURS OF USAGE - HAZELWOOD - THURSDAY


HOURS OF USAGE - HAZELWOOD - FRIDAY

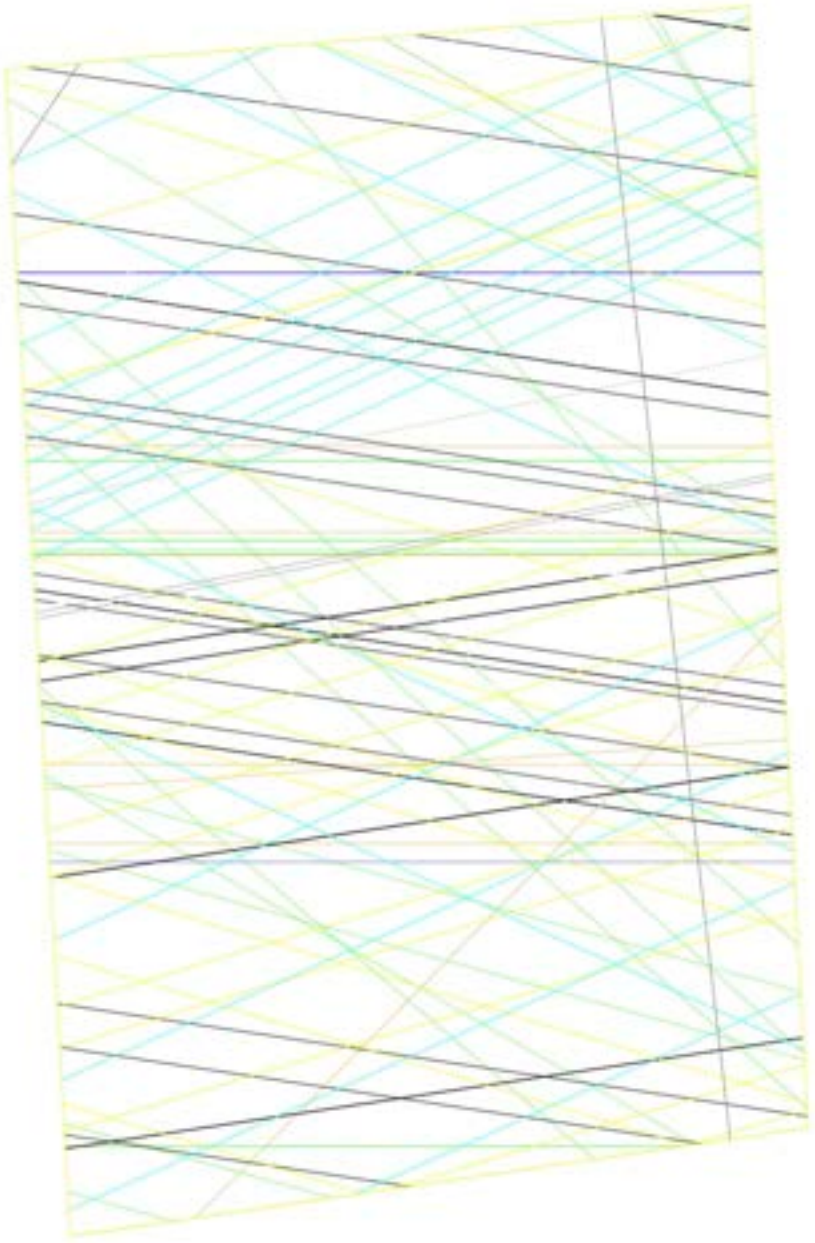

HOURS OF USAGE - HAZELWOOD - SATURDAY


HOURS OF USAGE - HAZELWOOD - SUNDAY

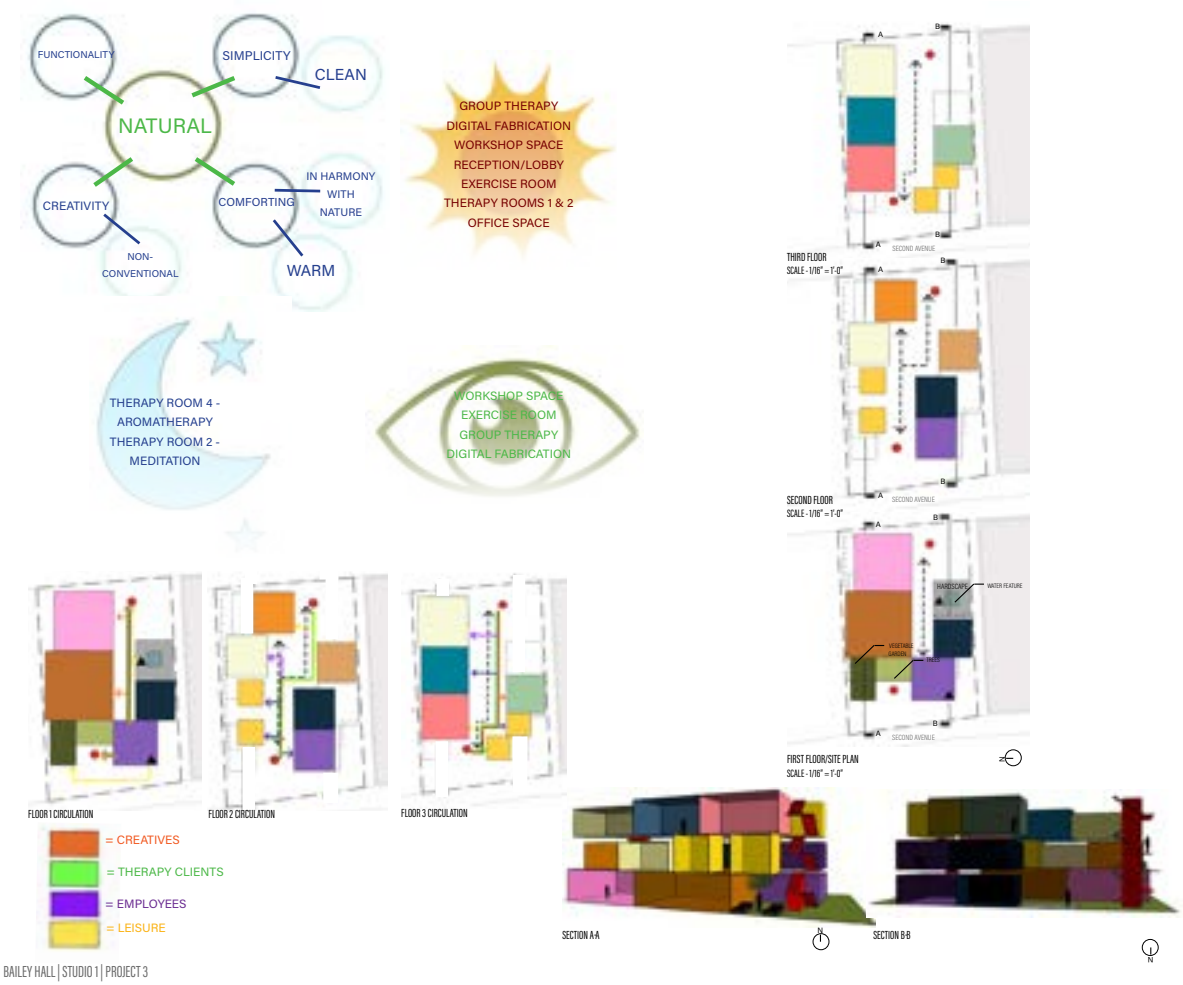


TESSELLATIONS

Focusing on three concepts, lot vacancy, lot usage, and hours of operation, the first step is to place points on the verticies of each lot on Second Avenue. For lot vacancy, through Rhino and Grasshopper, vornoi and delaunay tessellations were created. For lot usage, lines of varying angles were rendered through each point - 15° for municipality and industrial use, 30° for health and public use, and 45° for commercial and food use. Finally, hours of operation were signified using cross geometry, increasing in complexity for each degree - each degree representing the average number of hours the facility is open each day. D1 represents 0-3 hours, D2 represents 3-8 hours, D3 represents 8-15 hours, and D4 represents 15-24 hours. Ultimately, what results are the lines that intersect the site (highlighted in yellow). These lines would serve as fold lines for the folded architecture.

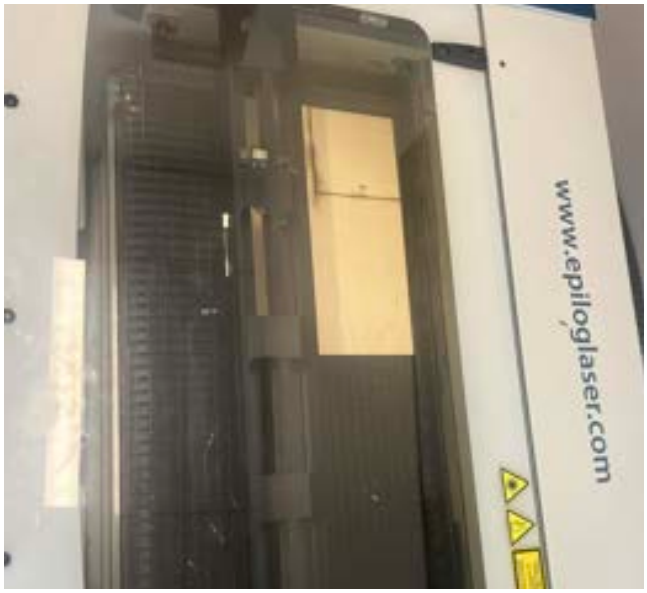


Intersecting tessellated lines over the site.



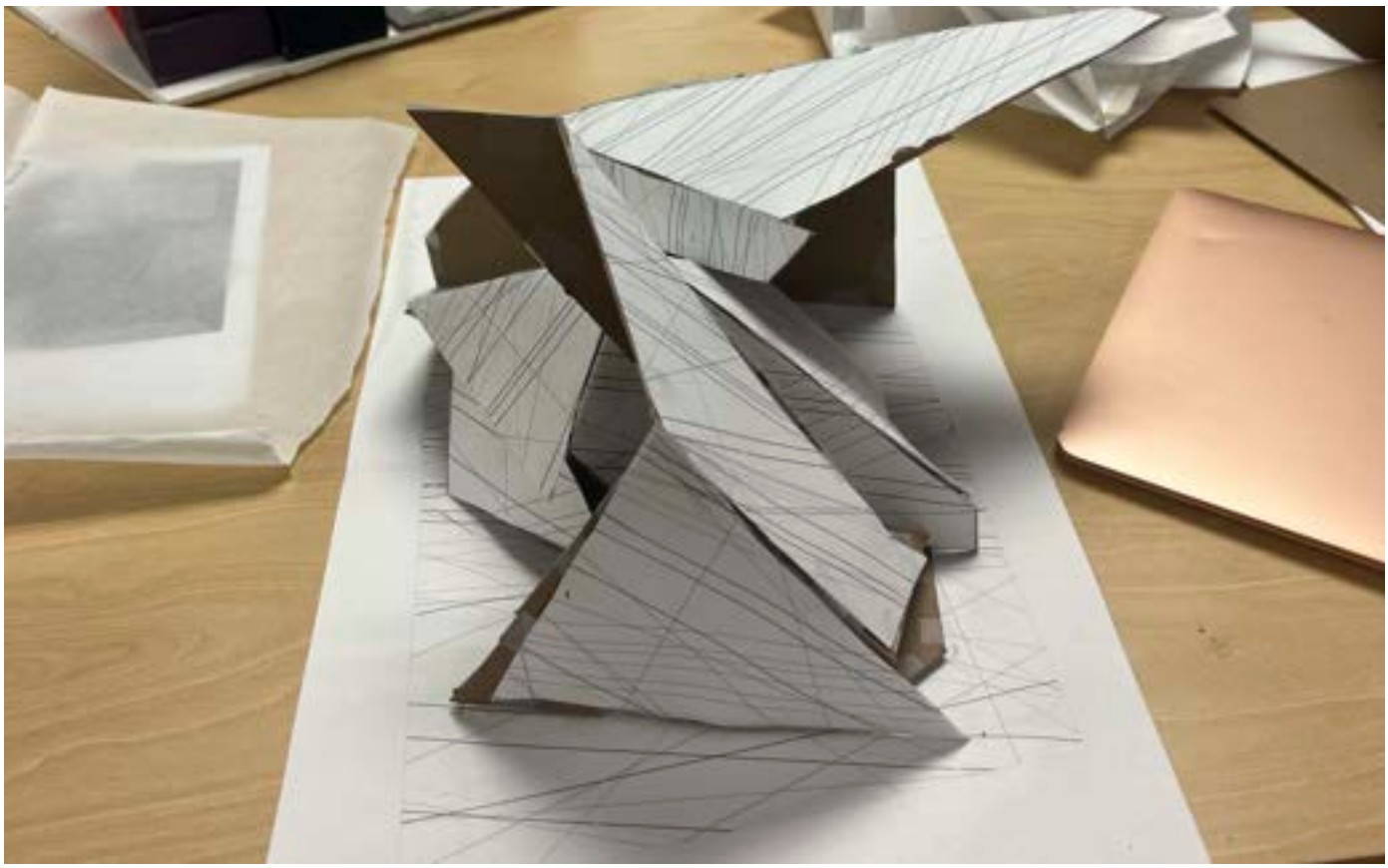
PROGRAMMING

To connect the wellness center to nature, four concepts influenced the program location: analyzing what makes a space “natural”, which rooms would receive natural light, which rooms would be shielded from natural light, and which rooms require views of the outside. Additionally, to further connect the building with nature, a vegetable garden, water feature, and greenery were placed intentionally. The rooms were planned out using SketchUp, each color associated with each room (red signifying vertical circulation). Finally, taken into account in the floor plans were the circulation patterns of different groups: creatives (visitors of creative spaces), therapy clients, employees, and leisure-seekers.



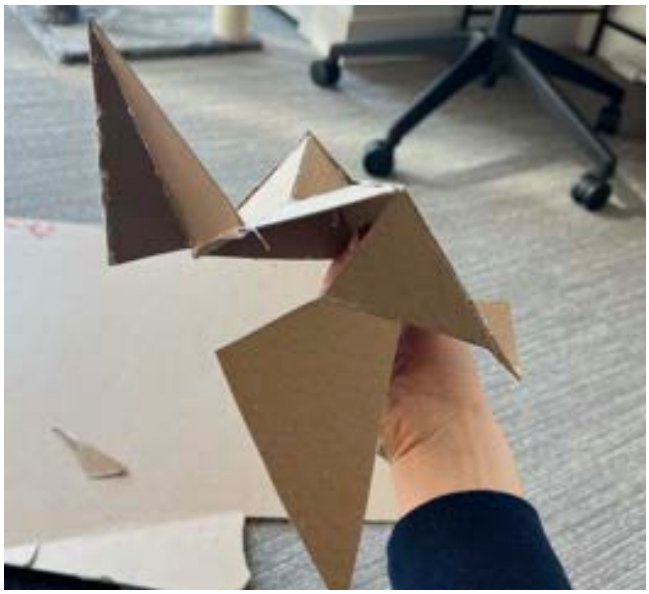
Lasercutting basswood

Programming model



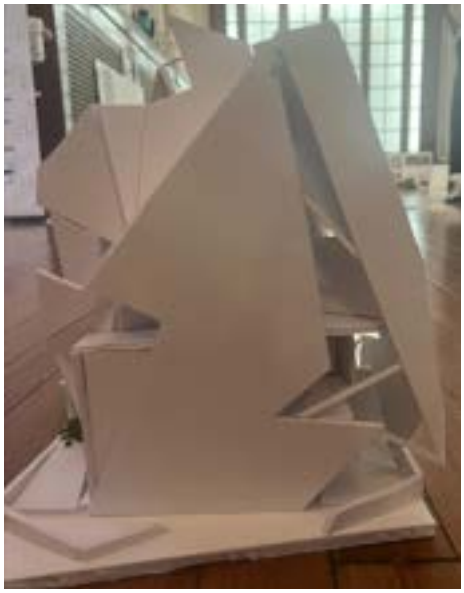
FORM-MAKING

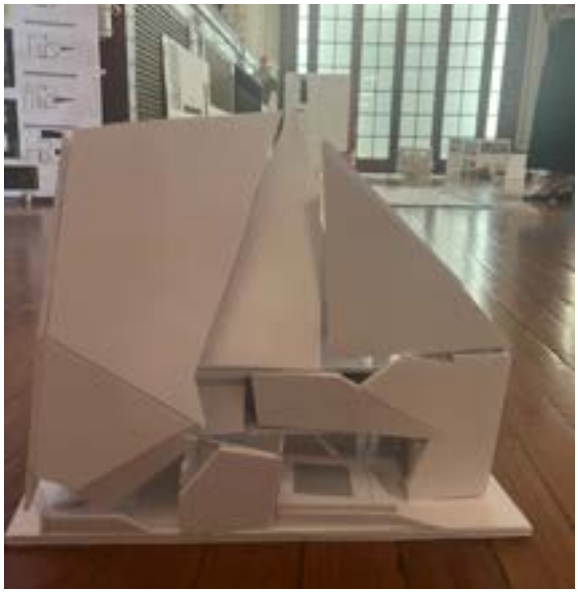
11” x 17” images of the site’s intersecting line were printed. By folding over the lines, geometry was created and placed over the programming model until the shape resembled mountain peaks. The model was first created of chipboard, then finallized in matteboard.



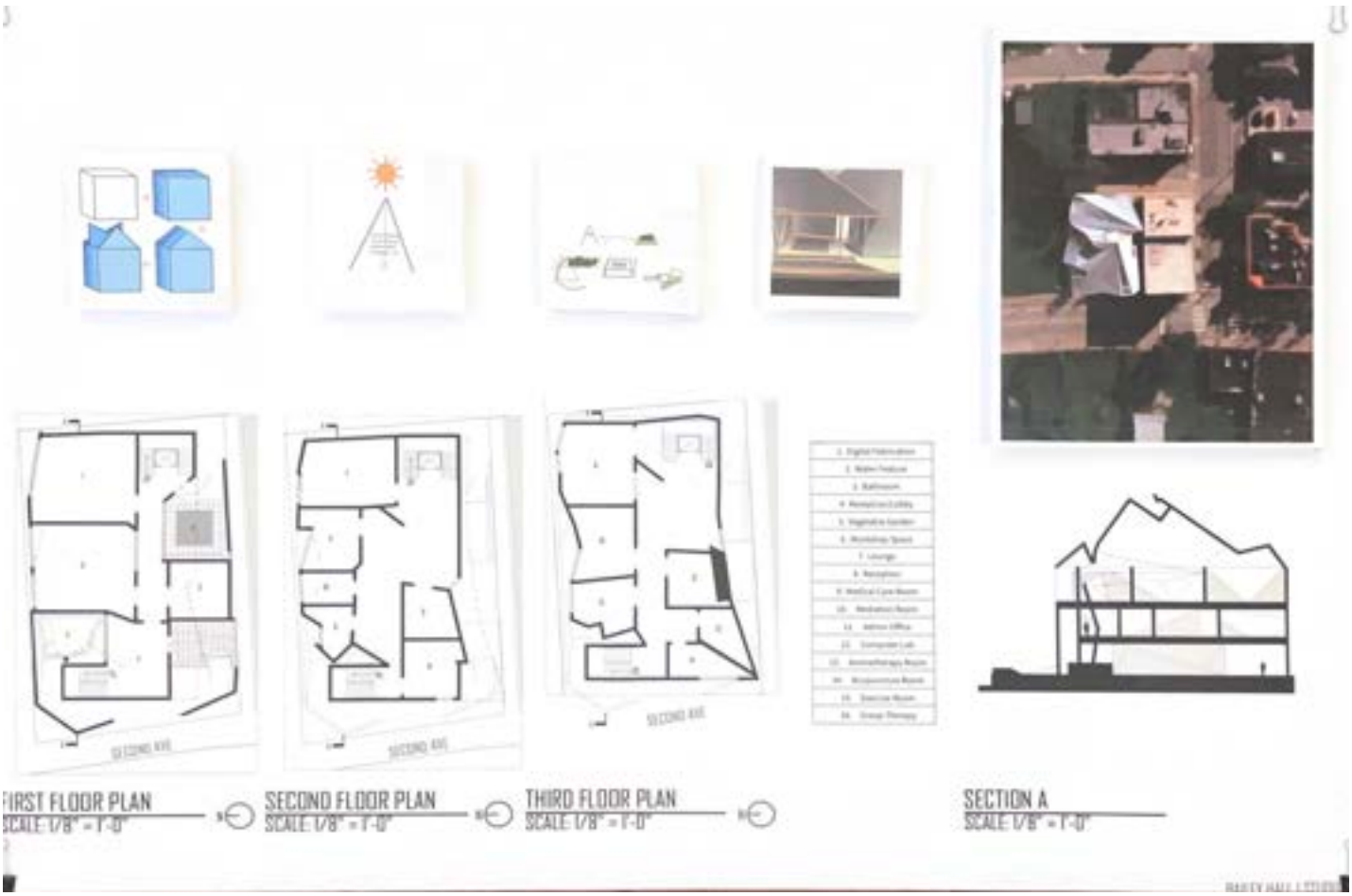
Folding to create geometry

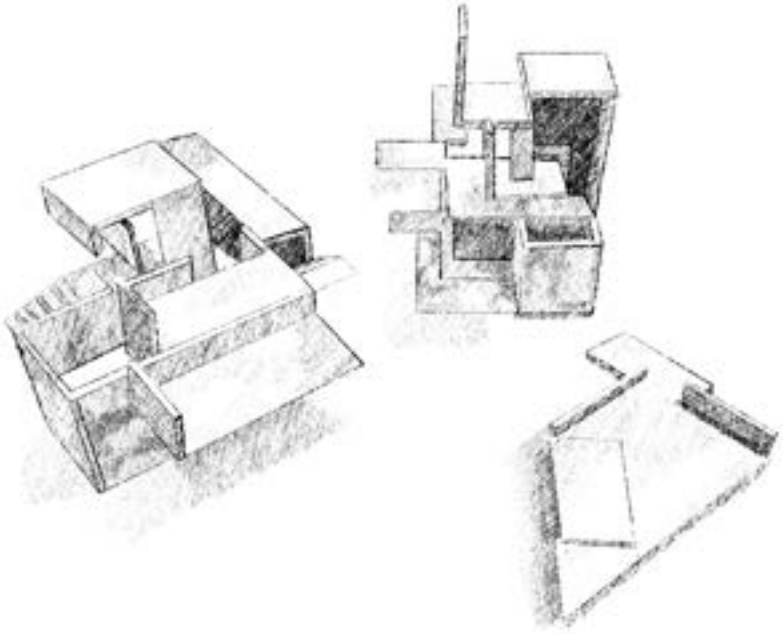
Chipboard model of the building envelope





Final model


FIRST FLOOR PLAN
SCALE: 1/8" = 1'-0"
SECOND FLOOR PLAN
SCALE: 1/8" = 1'-0"
THIRD FLOOR PLAN
SCALE: 1/8" = 1'-0"
SECTION A
SCALE: 1/8" = 1'-0"



04 OHIOPYLE PUBLIC AND PRIVATE SPACES

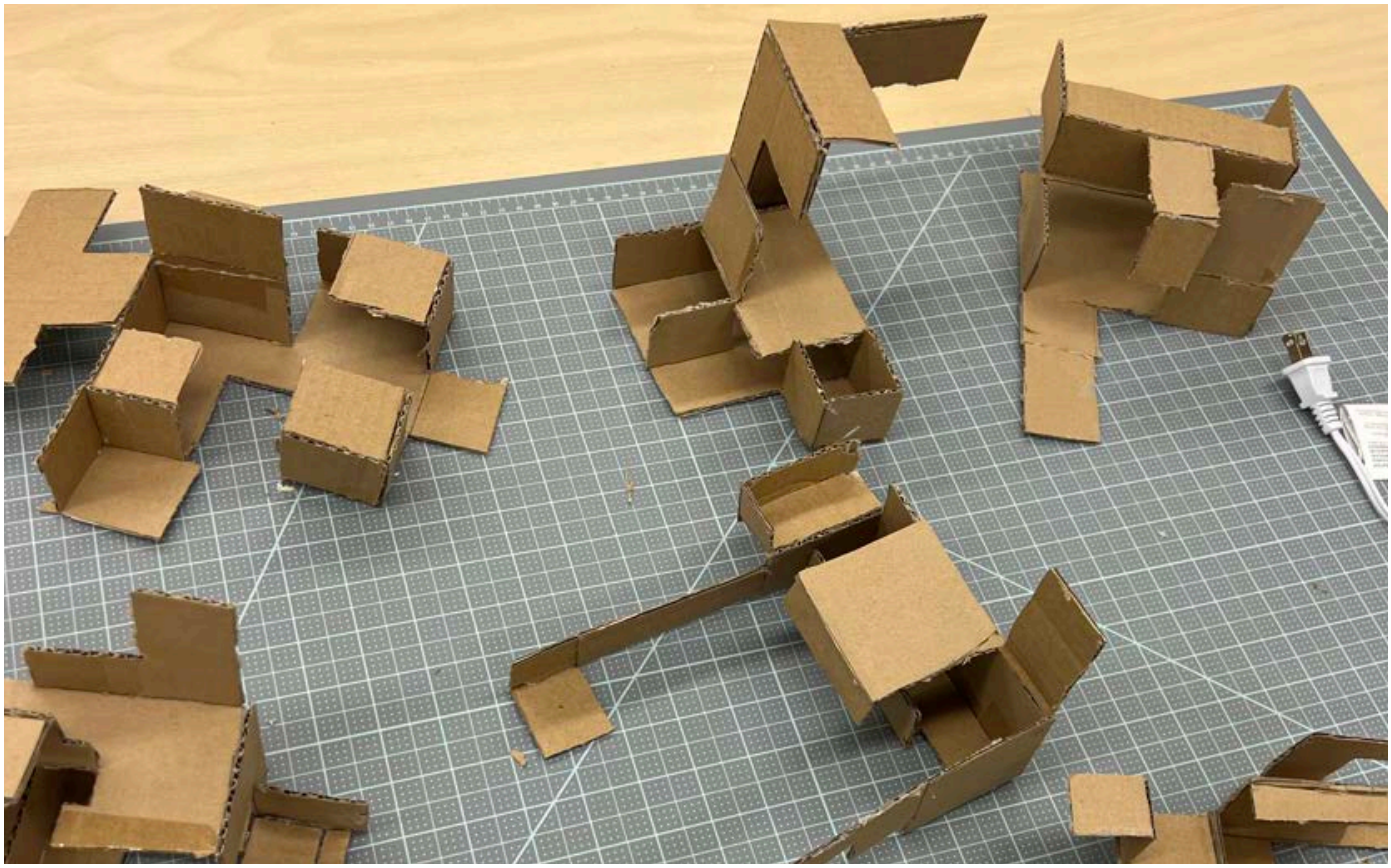
Architecture Foundations Studio | University of Pittsburgh
2022

Ohiopyle, Pennsylvania is located on the westernmost ridges of the Appalachian mountains. As a National State Park, Ohiopyle is ideal for connecting with nature.

The primary goal of this project is to designate what makes a space private versus public, and how that may manifest in a design. The structures transcend the rules and forms of a traditional building, serving more as figurative spaces.

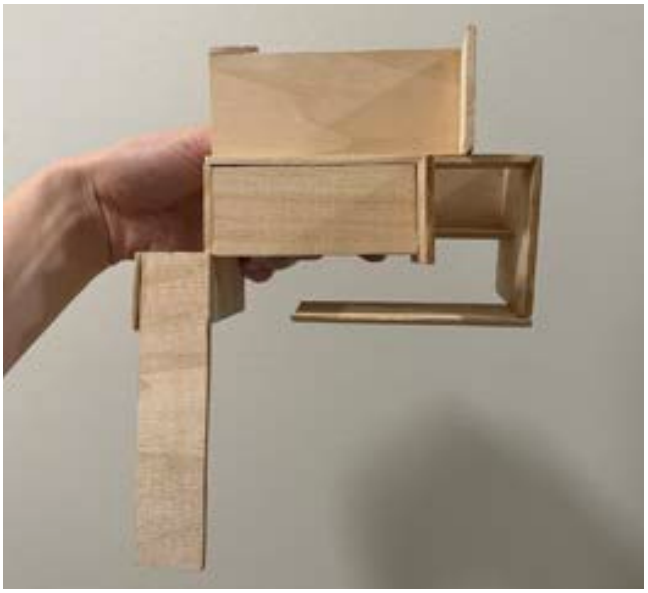
This project draws inspiration from the shieldedness of a private space, and the vastness of a public space, playing with elements of scale, temporality, and proximity.

This course focuses on several particular problems in the development of Frank Lloyd wright's career in architecture, as well as provides foundational skills in model making, diagram making, abstract thinking, and site exploration. Model-making and drafting for this project were completely done by hand.

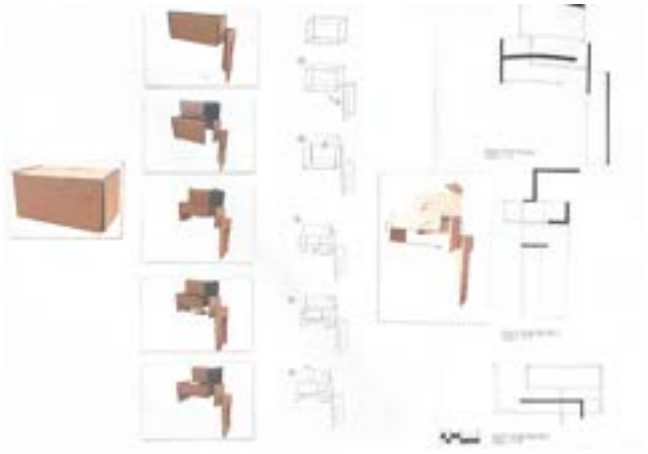


FORM-MAKING

The first step is to begin with a box, making only five movements each. Movements of planes can be sliding, rotating, or flipping. By creating many unique iterations of boxes, one will be chosen to represent privateness, and one will be chosen to represent publicness. At this point, an adjective is assigned to each form; an adjective that most closely describes the public/privateness of the space. Ultimately, “shieldedness” was chosen for the private space, while “vastness” was chosen for the public space. Once forms were finalized, they were constructed from hand-cut 1/8” thickness basswood.



Public - “Vastness”

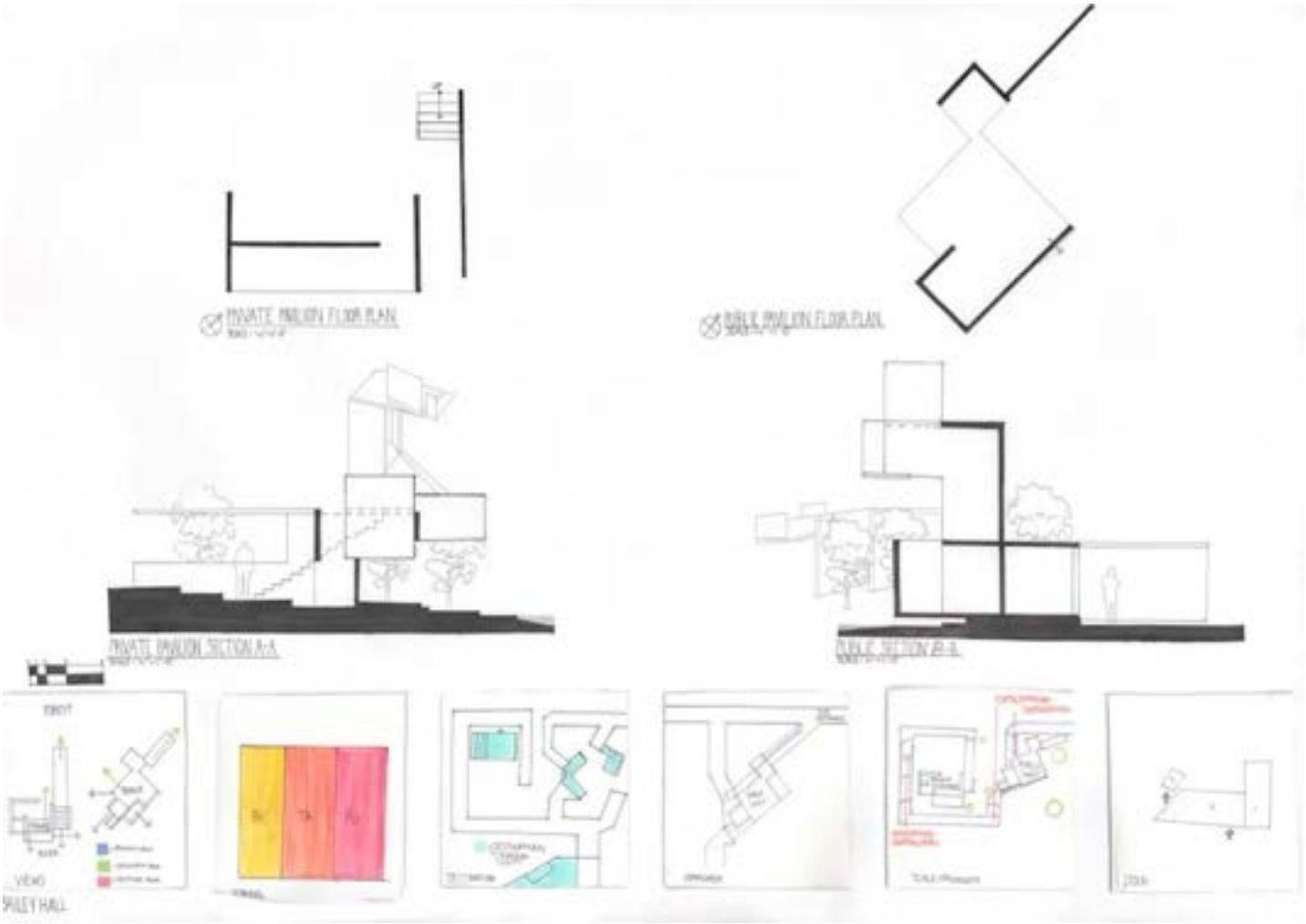


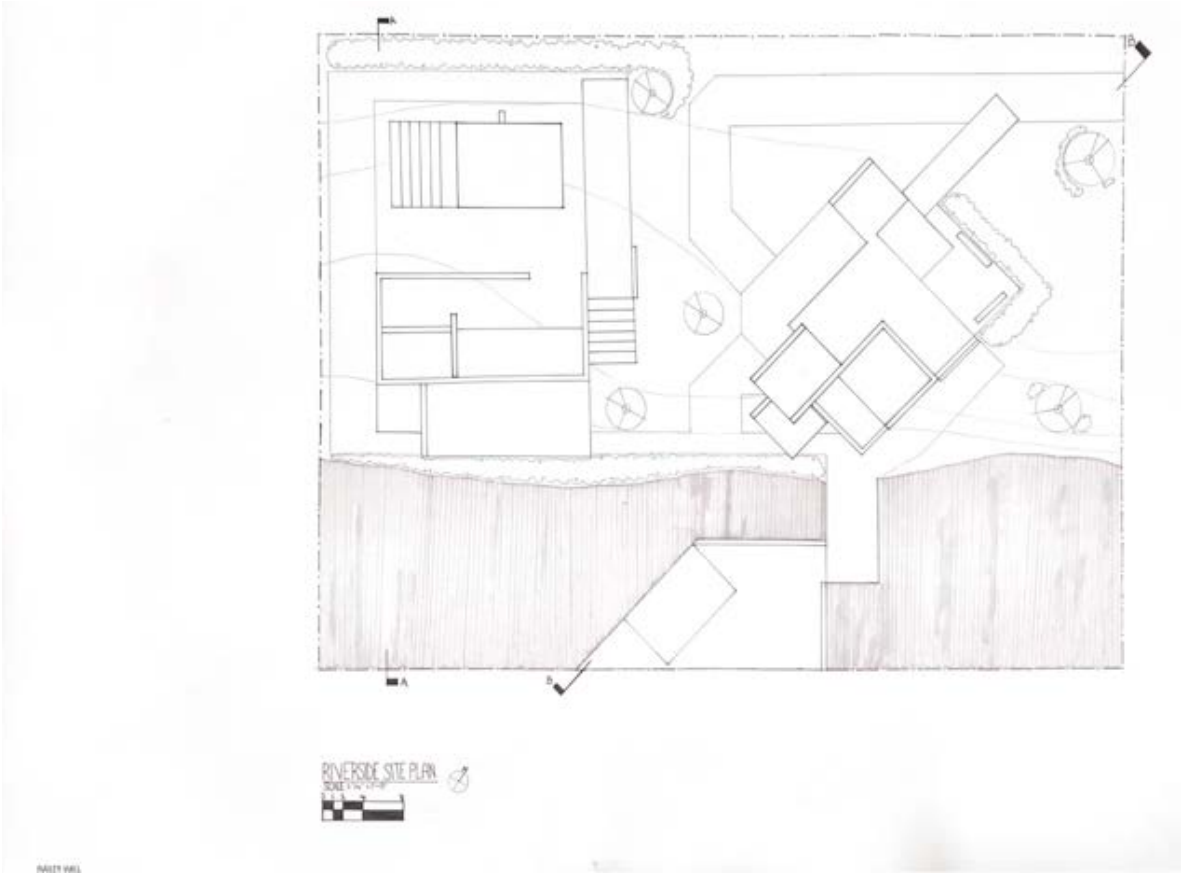
Private - “Shieldedness”

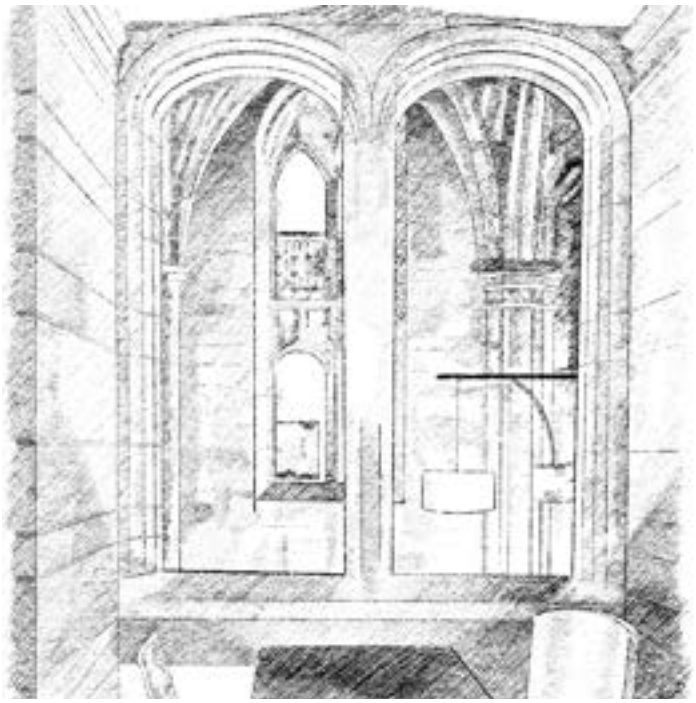
SITE MODEL

After placing the forms on the site, the next step is to further reflect the concepts of shieldedness and vastness through a dock, pavillion, greenery, and hardscaped outdoor areas. The vast public form was rotated 45° to echo the boat dock's 45° edge. Entering the site at the back-right path, the visitor is able to view the vast river directly through the structure. Tall, sparsely placed trees aim to give a sprawling effect. Finally, to make the space feel more public, two hardscaped outdoor seating areas were designated on either side of the structure. The shielded form was placed in the back-left corner, away from the site's entrance. It can only be entered by one path on the opposite side of the site's entrance. Small, denser-placed trees and bushes further shield the form, careful not to disrupt views from the inside. As a reward for entering the space, the visitor is met with a shielded pavillion. Ultimately, the vast structure aimed to make the visitor feel small, while the shielded structure aimed to make the visitor feel large.

Final model




RIVERSIDE SITE PLAN



05 CATHEDRAL OF LEARNING STUDY SPACE

Architecture Foundations Studio | University of Pittsburgh
2022

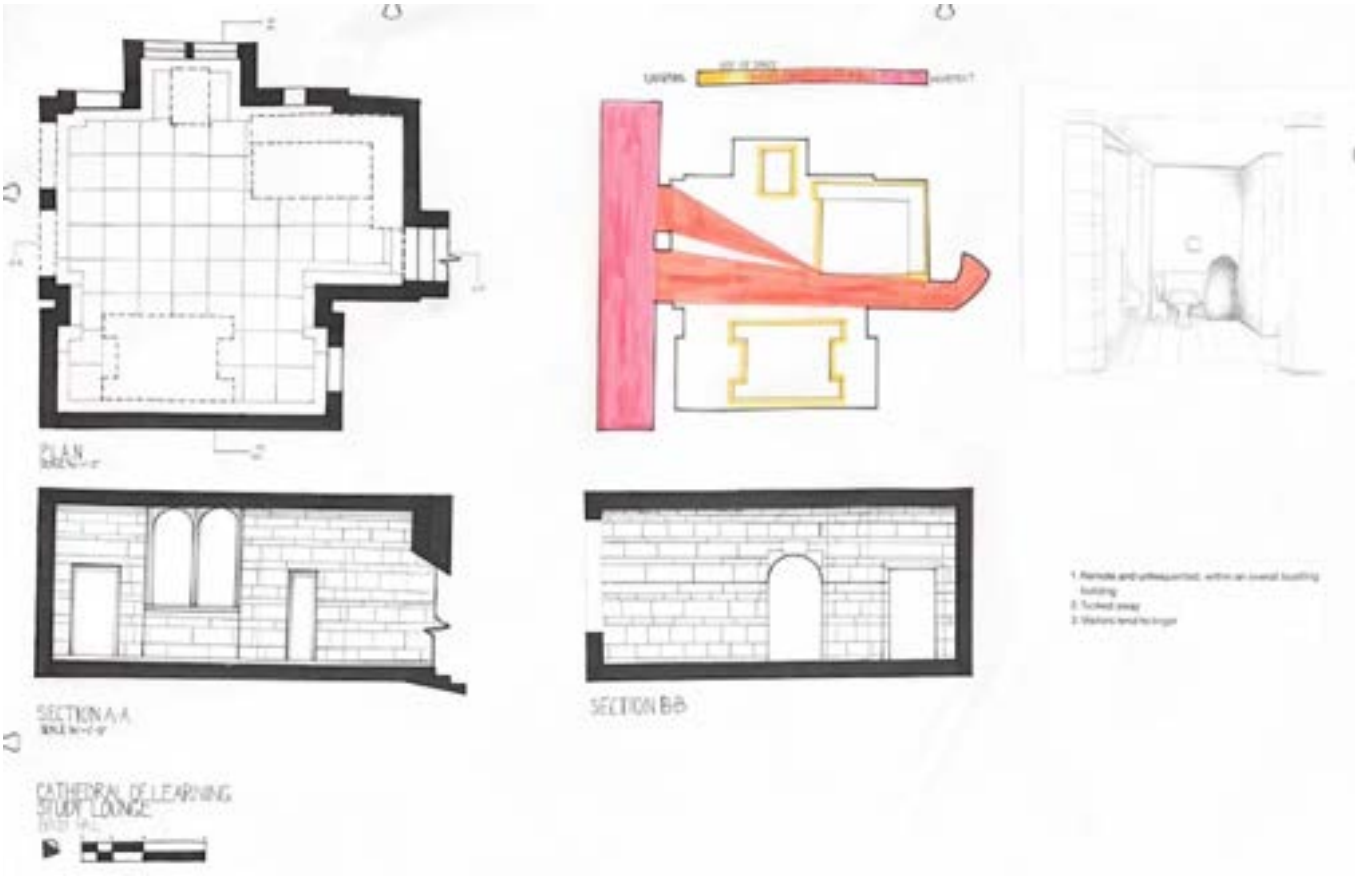
The Cathedral of Learning's grand architecture makes it a popular attraction not only on the University of Pittsburgh's campus, but in the city of Pittsburgh as a whole. The vast, ornate architecture of the first-floor lobby generates constant foot traffic, creating a bustling environment. On the second floor, tucked away is a quiet study space.

The primary goal of this project is to extensively document the study space physically, understanding how its haracteristics make it a private space

This project documents how the study space is remote and unfrequented, and why visitors choose to linger. The process provides foundational skills of site exploration and documentation of a space.

DOCUMENTATION

Documentation of the space required frequent long visits in order to fully understand how visitors interacted with the space. What makes the space feel so secluded is the contrast between the snug room size to the seemingly boundless lobby area, which windows in the space overlook. Located at the end of a hallway that steers away from the classroom-lined perimeter, the study space is a hidden gem within the cathedral. The only other way to access the room is a spiral staircase from the lobby.
The most prominant characteristics of the space are the fact that it's remote, tucked away, and a spot of lingering for visitors. The six photos served to capture the movement through the room, placing emphasis on the function of the space. The diagram aims to capture the path from the public hallway into the space, showing the option between lingering at the tables or leaving through the staircase (thus illustrating the space's function). The sketch represents that path by providing a first-person viewpoint. The majority of visitors move directly through the space to the staircase, although a small percentage stick around to utilize the desks.



Hand-drafted documentation

06 SPRING AWAKENING

Scenic Carpentry | University of Pittsburgh's Theatre Arts Department Production | Spring 2024

"Spring Awakening" is a rock musical based on the controversial 1891 German play of the same name by Frank Wedekind. Set in late 19th-century Germany, the story explores the tumultuous journey of adolescence through the lives of a group of teenagers. The musical delves into themes of rebellion, repression, and the quest for identity, portraying the struggles and angst of youth against the backdrop of a conservative and oppressive society.

The set design reflects the stark and oppressive nature of the story's setting, featuring a predominantly dark aesthetic with rusty metallic elements. A blend of woodworking and metalworking techniques was utilized to create a robust and evocative environment. Crucial elements of the church, such as stained glass windows and pillars, were incorporated to enhance the atmosphere. Additionally, the tree piece was rigged to be suspended during specific scenes, adding a dynamic and symbolic visual element to the production.

07 FRICK FINE ARTS 1-PT. PERSPECTIVE

Drawing Studio I | University of Pittsburgh
2023

Home to the Department of History of Art and Architecture, the Frick Fine Arts building is modelled after a Roman villa owned by Pope Julius III. This project is a 1-point perspective graphite drawing in the main entrance area of Frick Fine Arts, just outside of the library.

A 1-point perspective drawing will have a primary vanishing point within the frame of reference. The two most important reference lines in this drawing are the eye level, established first, and the central ray of vision. These two lines are always perpendicular to one another.

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