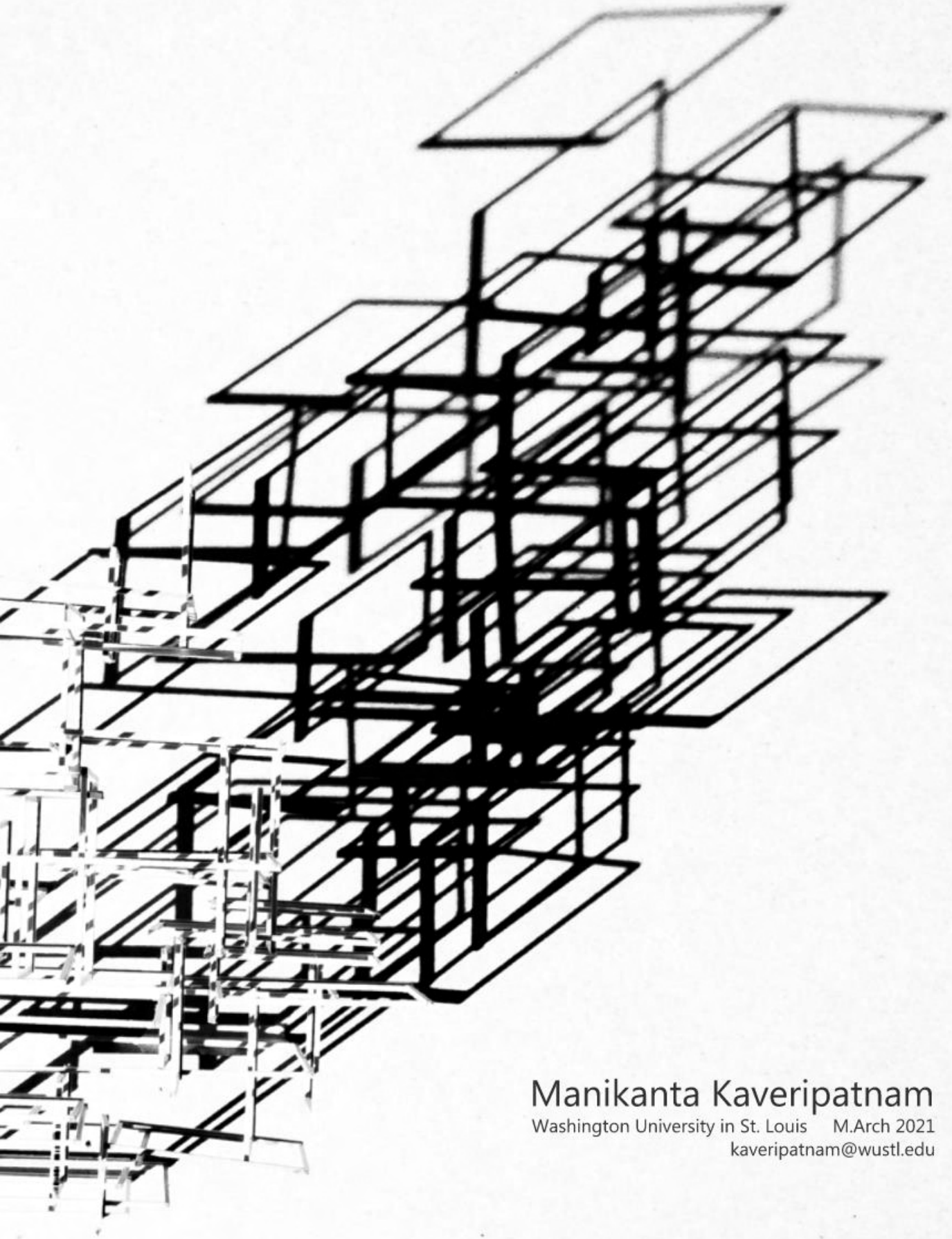
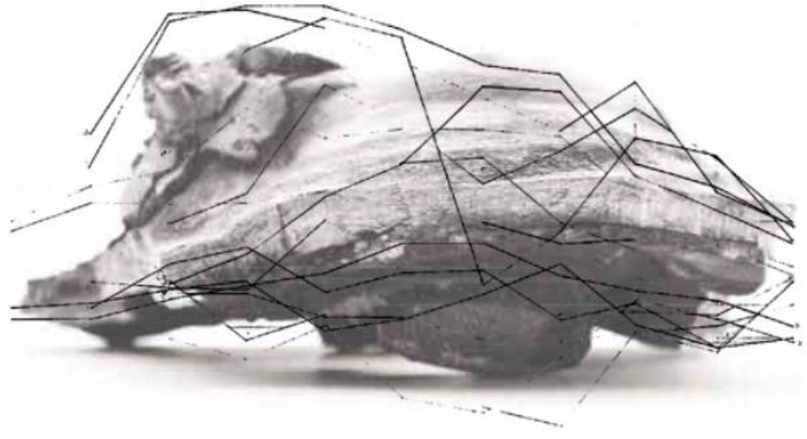


Manikanta Kaveripatnam

Washington University in St. Louis M.Arch 2021

kaveripatnam@wustl.edu

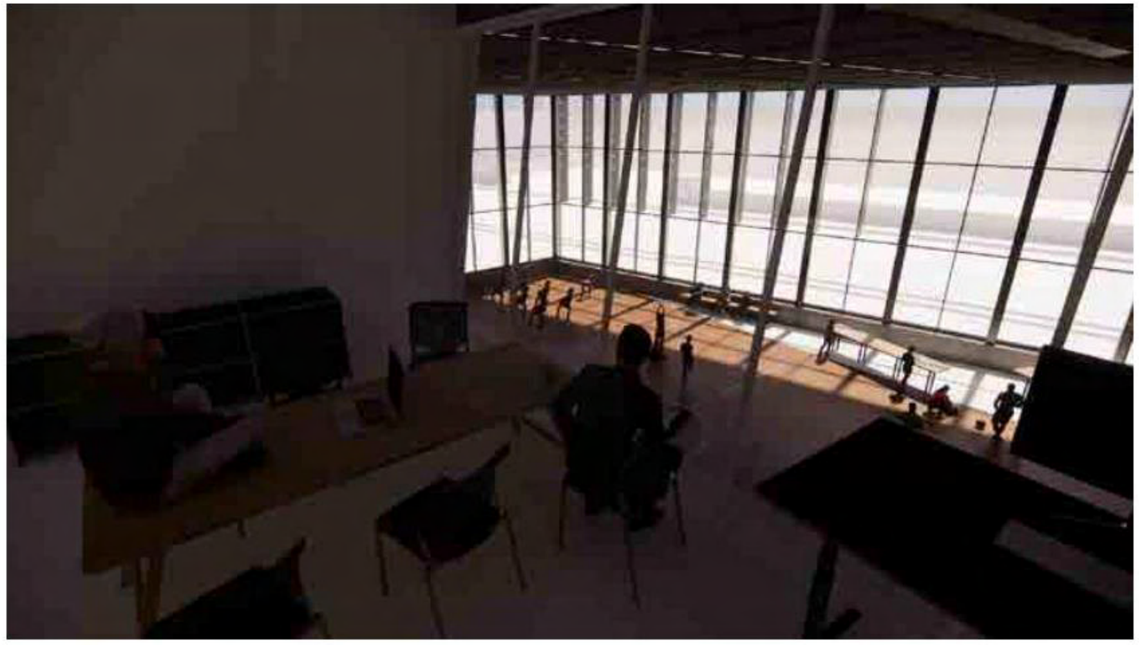
content

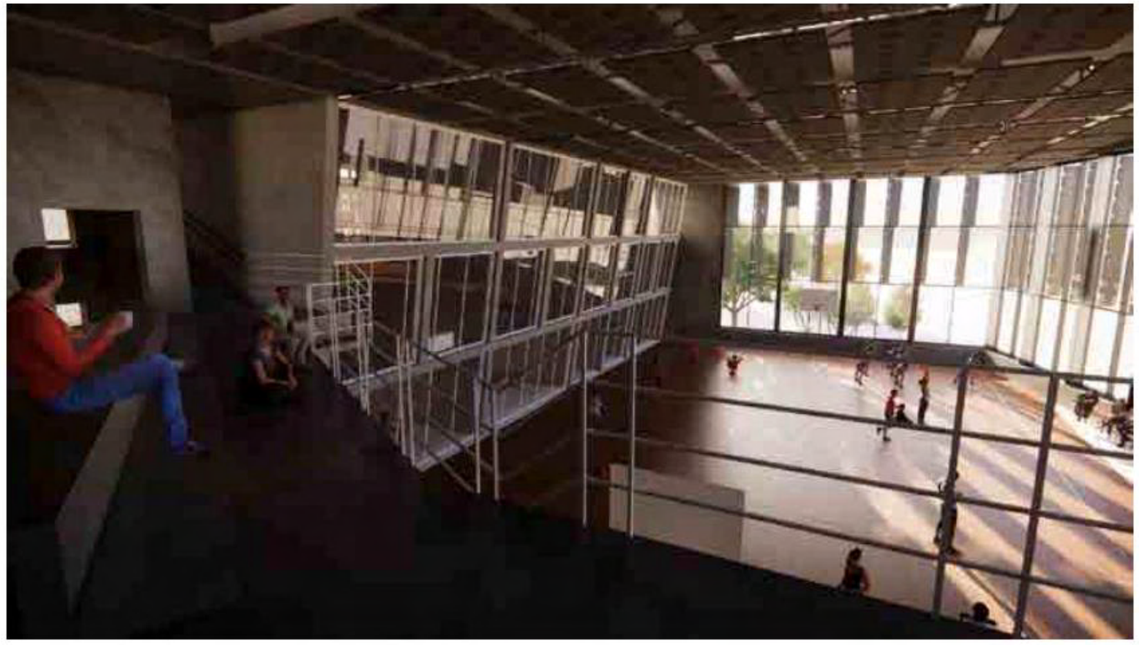


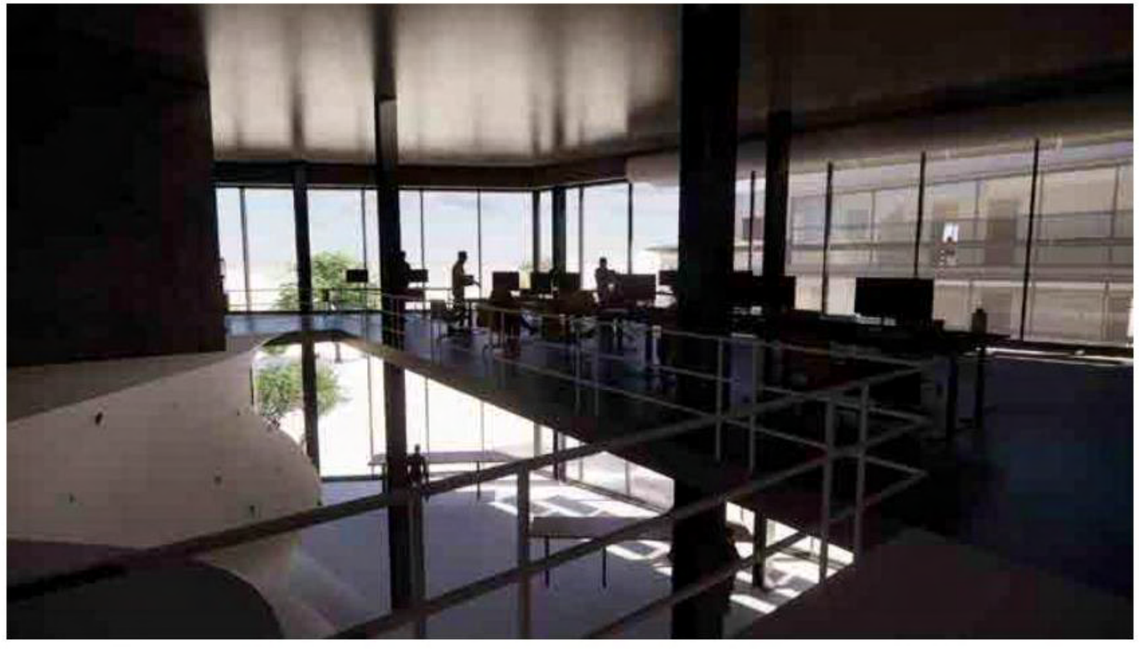
Lounge STL

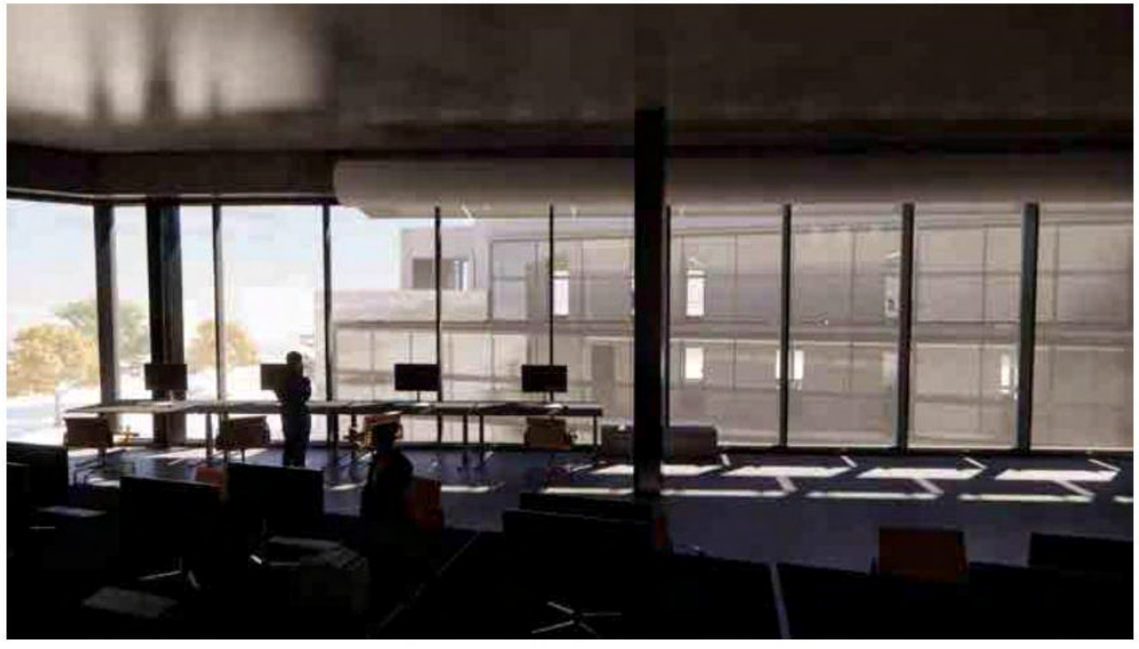
Anna Ives - Degree Project 2021

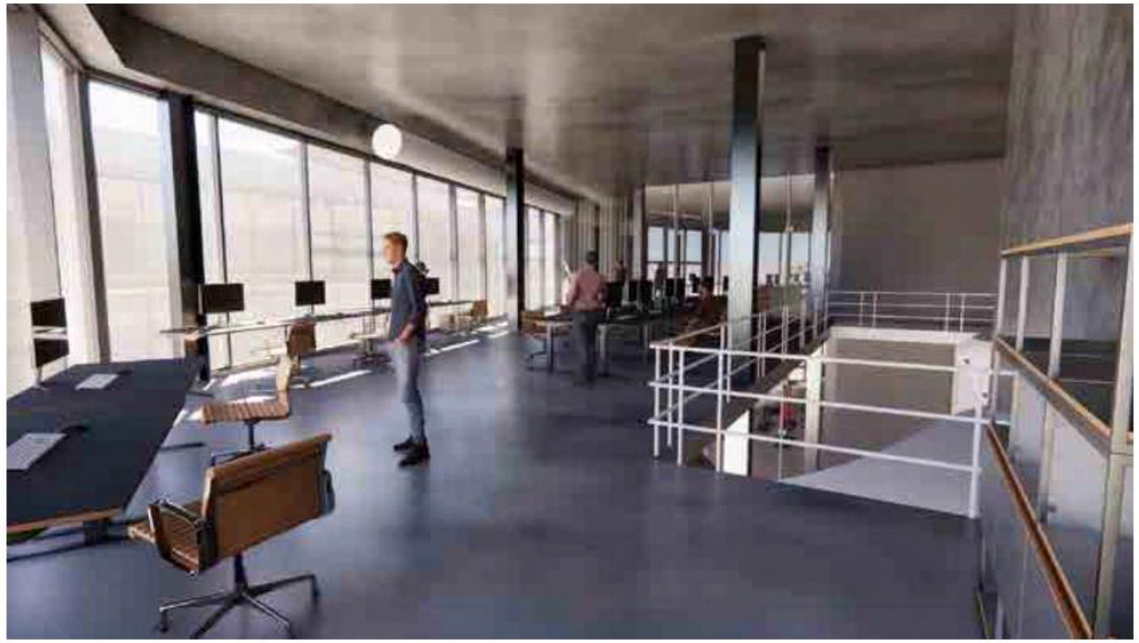
My project focuses on the integration of co-working spaces and recreational areas, where individuals can come together to work, play, and connect. The location, situated on Delmar and De Bolivar, offers an ideal setting to unite people from diverse backgrounds into a vibrant community. The design is driven by three core concepts: 'work,' 'play,' and 'connect.'

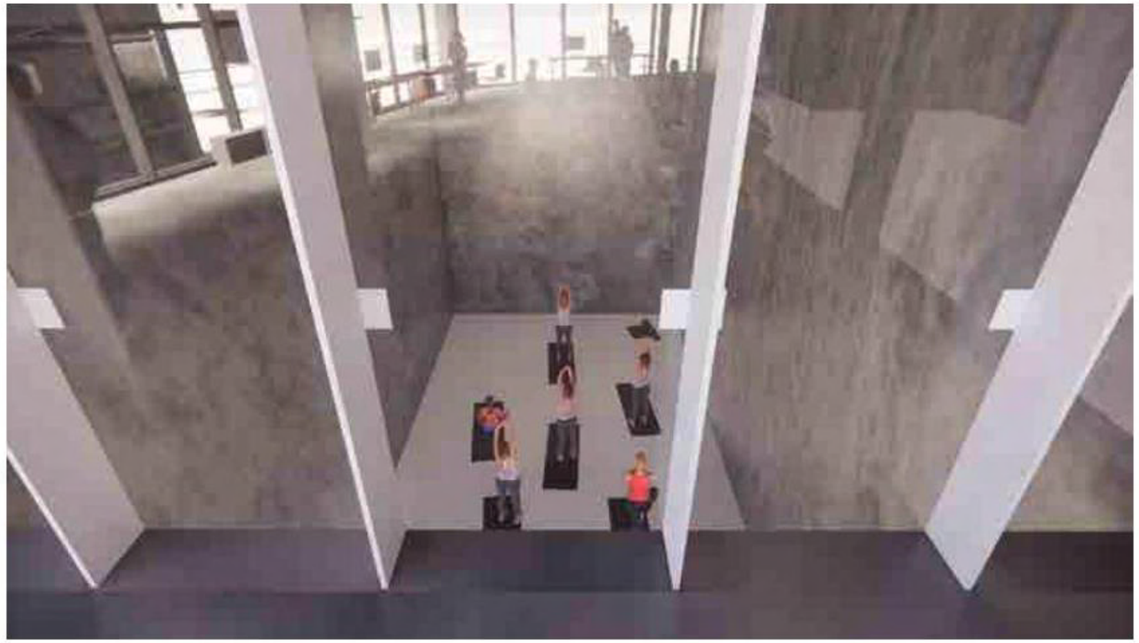


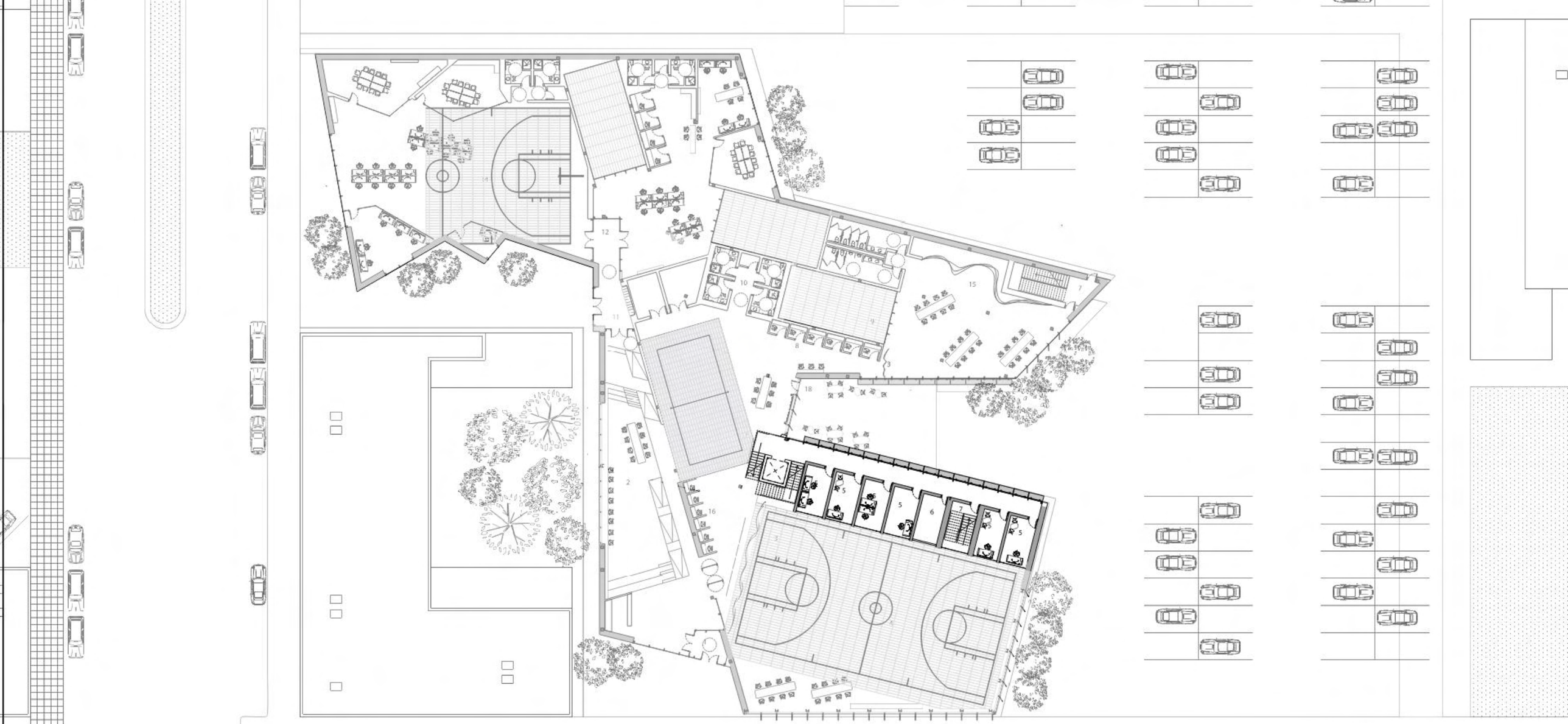












1. main enterance
2. loby
3. curtain wall
4. court- basketball
5. rentable - office spaces
6. storage
7. fire exit
8.private meeting rooms for public
9. court - racquet ball
10.shower
11. member entrance
12. entrance to private incubator
13. incubator - racquet ball
14. incubator - half basket ball
15. court- rock climbing wall
16 . private reading room
17. court- badminton
18. entrance through parking

1/16"= 1'

10' 20' 50'

The co-working spaces feature a thoughtful arrangement of private, semi-private, and semi-public areas, seamlessly intertwined with various play zones. These recreational areas cater to a range of activities such as basketball, badminton, racquetball, and even a rock-climbing area. By incorporating these elements, the project aims to foster a sense of community and camaraderie among its occupants.

In addition to the work and play components, Lounge STL serves as a hub for hosting events and fundraisers of all sizes. These gatherings take place both within the building and its surrounding areas, further reinforcing the sense of togetherness. The diverse occupants of the workspace, from small companies to independent entrepreneurs, provide opportunities for networking, collaboration, and mentorship, creating an environment where individuals can connect and support each other.

Upon entering the main lobby on De-Bolivar, visitors are greeted by a cozy café, offering a tranquil space to enjoy a cup of coffee or delve into a good book, all while being immersed in a lush view of dense shrubbery. Other entrances are exclusively accessible to members, ensuring a secure and exclusive environment.

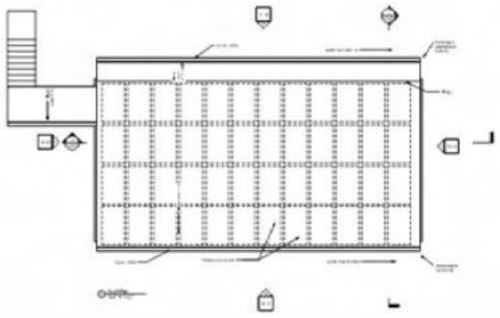
One striking feature of the design is the tower of office spaces that leans into the basketball court, integrating work and play seamlessly. This unique configuration encourages occupants to actively participate in the game, blurring the boundaries between work and recreation. Lounge STL is a space that fosters a sense of belonging and companionship, ensuring individuals are never alone and can always find company—whether they are engrossed in their work or seeking someone to shoot hoops with.

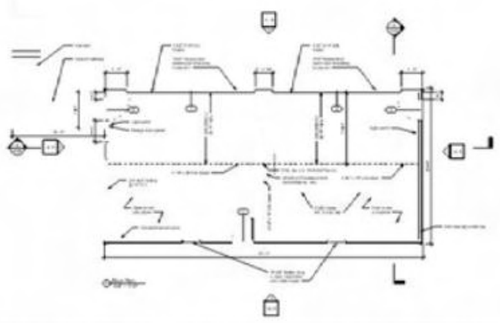
Overall, Lounge STL is a dynamic architectural design that harmoniously combines co-working and recreational elements. It provides a platform for collaboration, social interaction, and personal growth, while also creating a visually captivating and functional space.

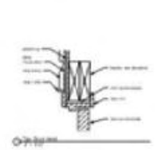
Residential garage project

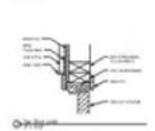
Chandler Ahrens - 2023

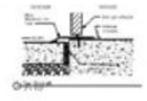
Using Revit, I produced construction drawings for a residential garage project in St. Louis. The drawings detailed an extension to an existing house, specifically designed to accommodate four cars. Throughout the design process, I iterated on the plans to ensure compliance with residential and neighborhood codes. The construction drawings served as a comprehensive guide for the implementation of the garage extension, ensuring seamless integration with the existing structure while meeting all necessary code requirements.

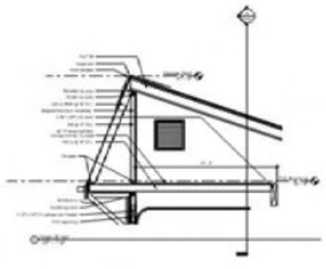


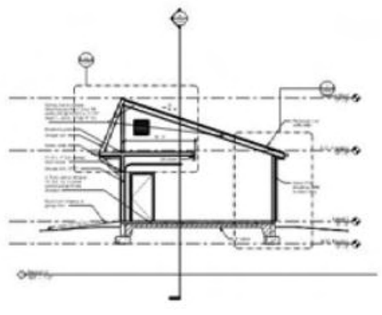


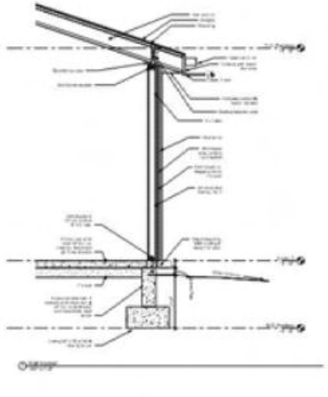


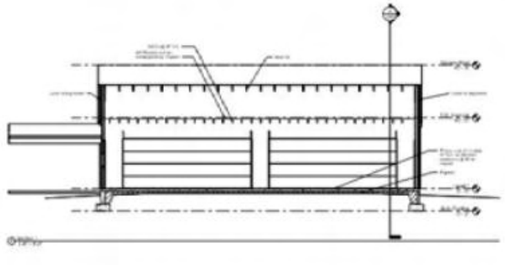


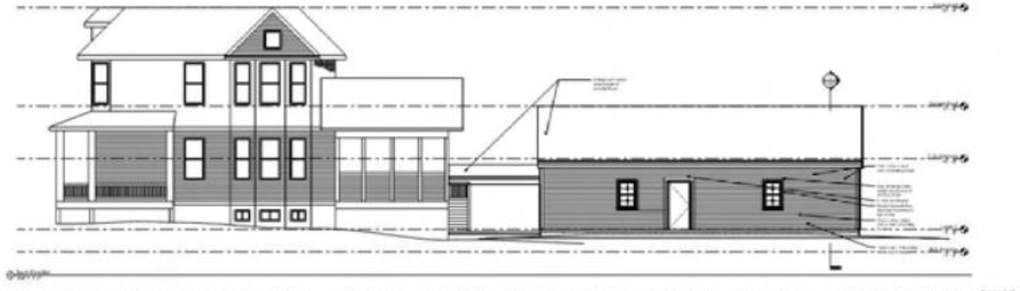


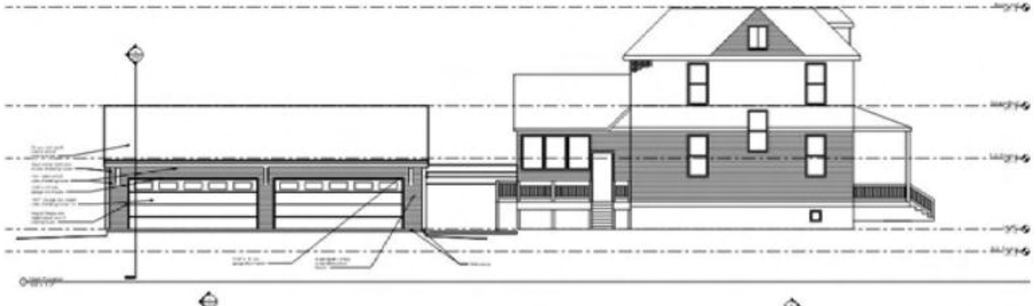


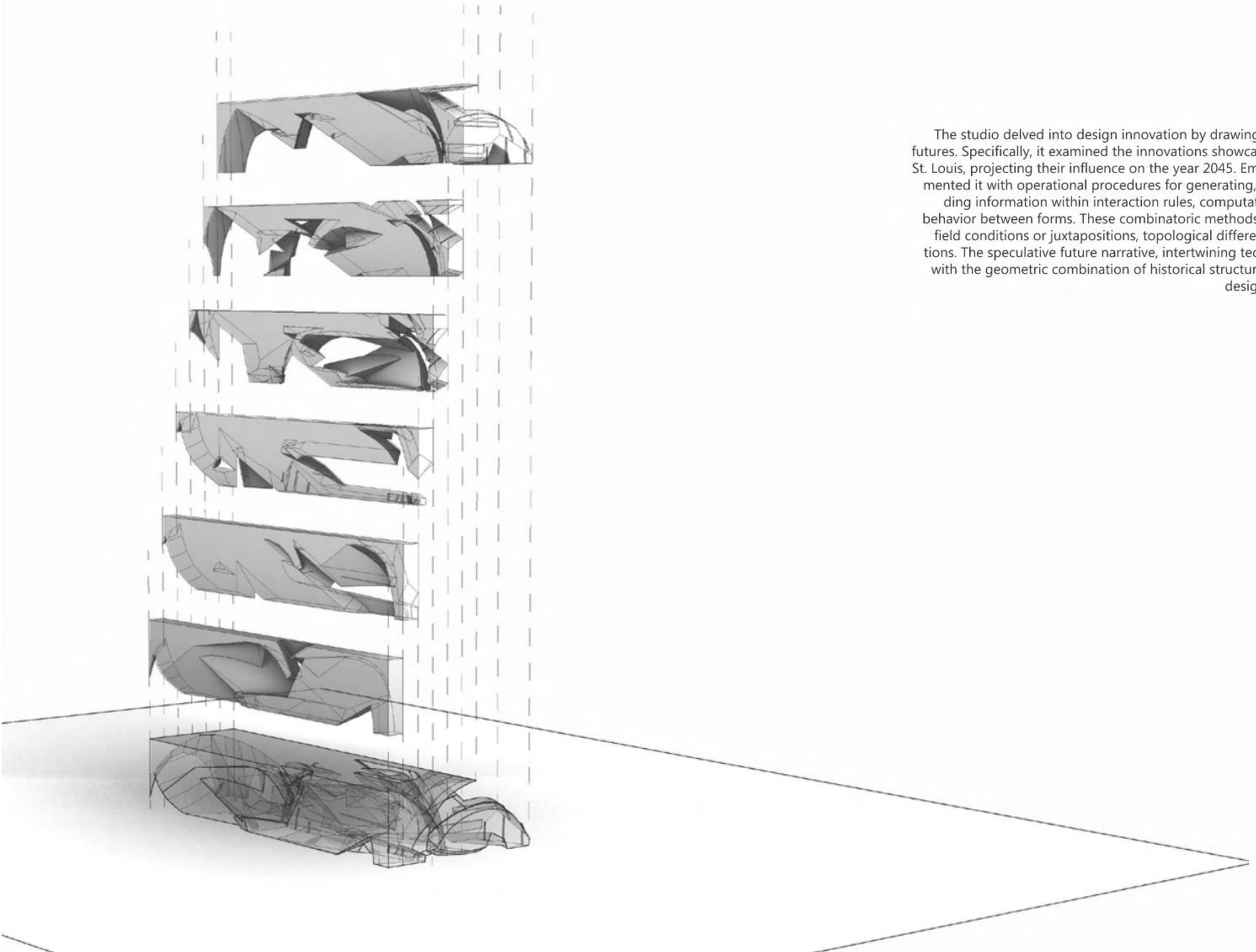










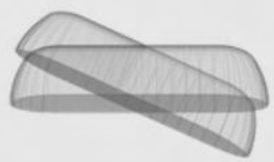


Bat cave

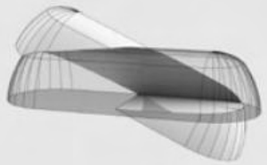
Chandler Ahrens - summer 2020

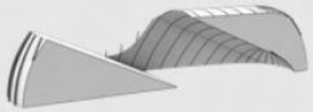
The studio delved into design innovation by drawing inspiration from the past to envision alternative futures. Specifically, it examined the innovations showcased at the 1904 Louisiana Purchase Exposition in St. Louis, projecting their influence on the year 2045. Employing a narrative approach, the studio supplemented it with operational procedures for generating, managing, and merging geometries. By embedding information within interaction rules, computational techniques unveiled patterns of connected behavior between forms. These combinatoric methods encompassed additive aggregations that create field conditions or juxtapositions, topological differentiations, and subtractive collisions and intersections. The speculative future narrative, intertwining technology and buildings from the 1904 exposition with the geometric combination of historical structures and alternative future concepts, propelled the design process's evolution and stimulated innovation.

1. original bird cage

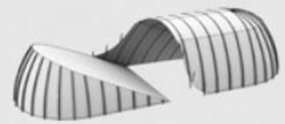


2. starting with booleaning itself



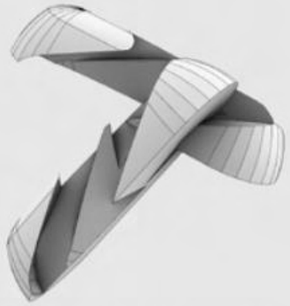


understanding the volume through a section cut and repeating the process to carve out spaces

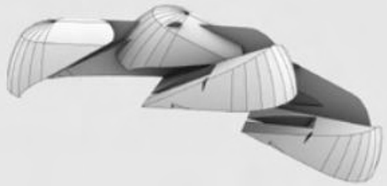


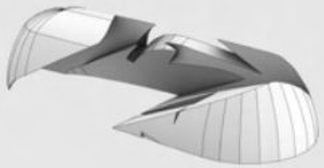
the operation with ribs in it

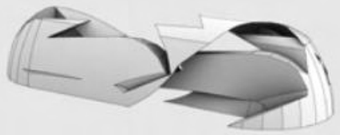
study with ribbed engraving



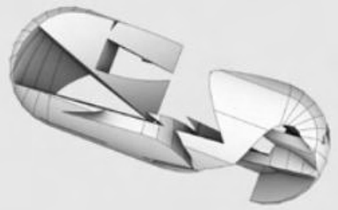
3. repeating the process of booleaning itself by itself

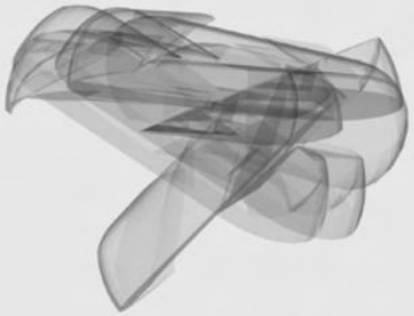




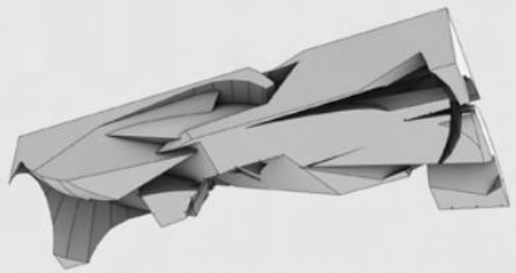


carving spaces throught the same process to place program and circulation





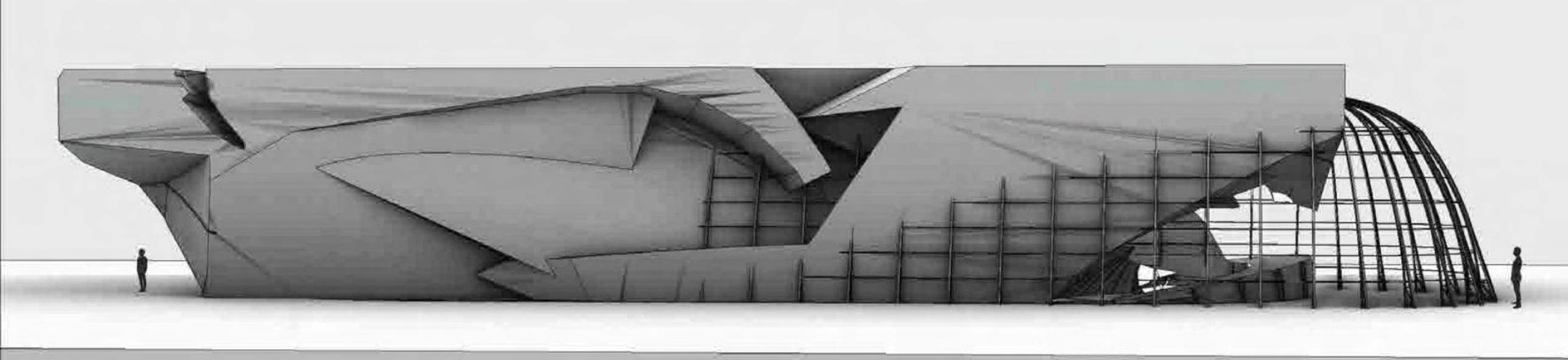
all of the Boolean operations happening at the same time



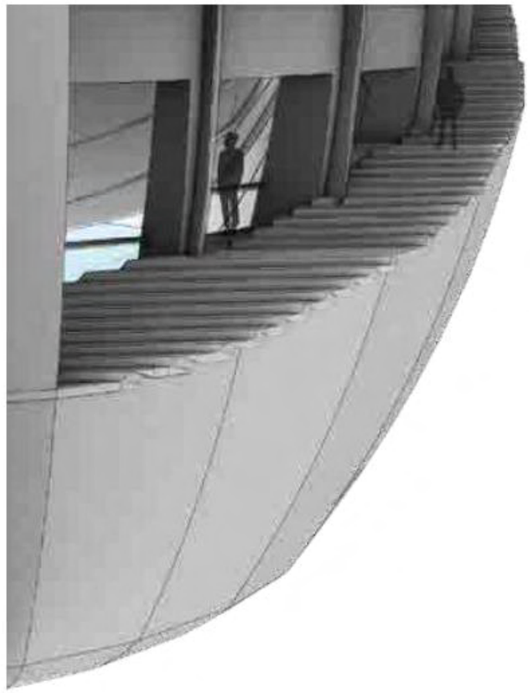
4. the final transformation with a bounding box slicing it down

the crumbs left out after the operations

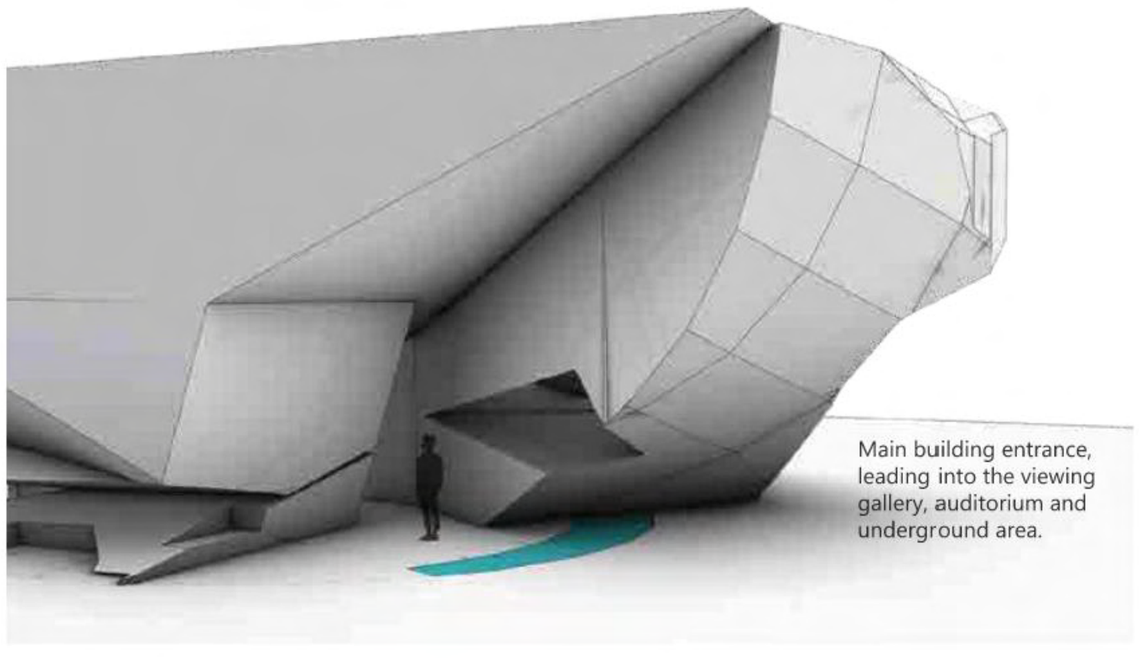
Some of the exploration into getting the geometry to create using Boolean commands in Rhino and grasshopper. Combining and eating itself freating spaces and voids. This process helped in creating a consistent language throughout the project



Elevation of the final project. Walking underneath the overhang will lead to the main building entrance.

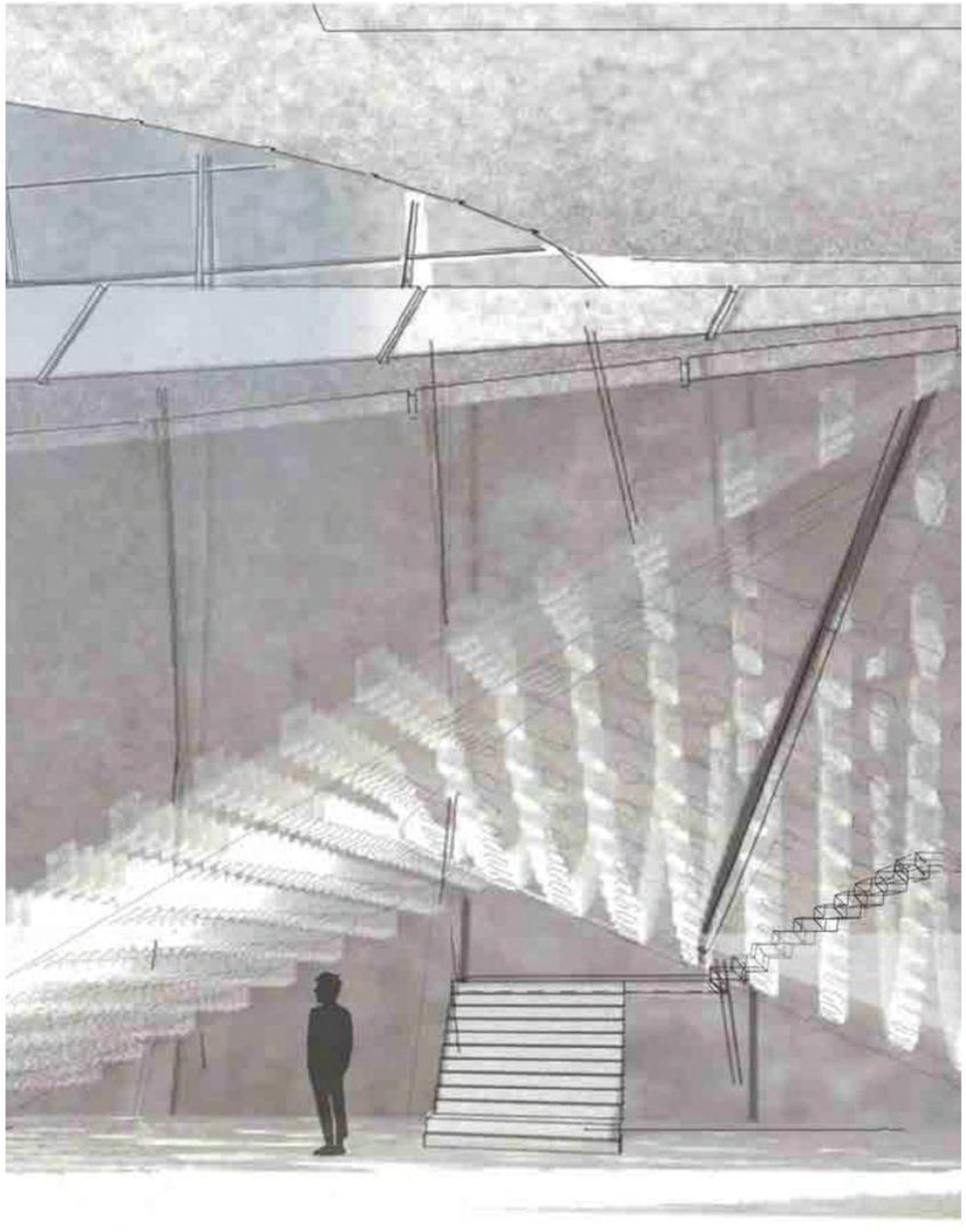


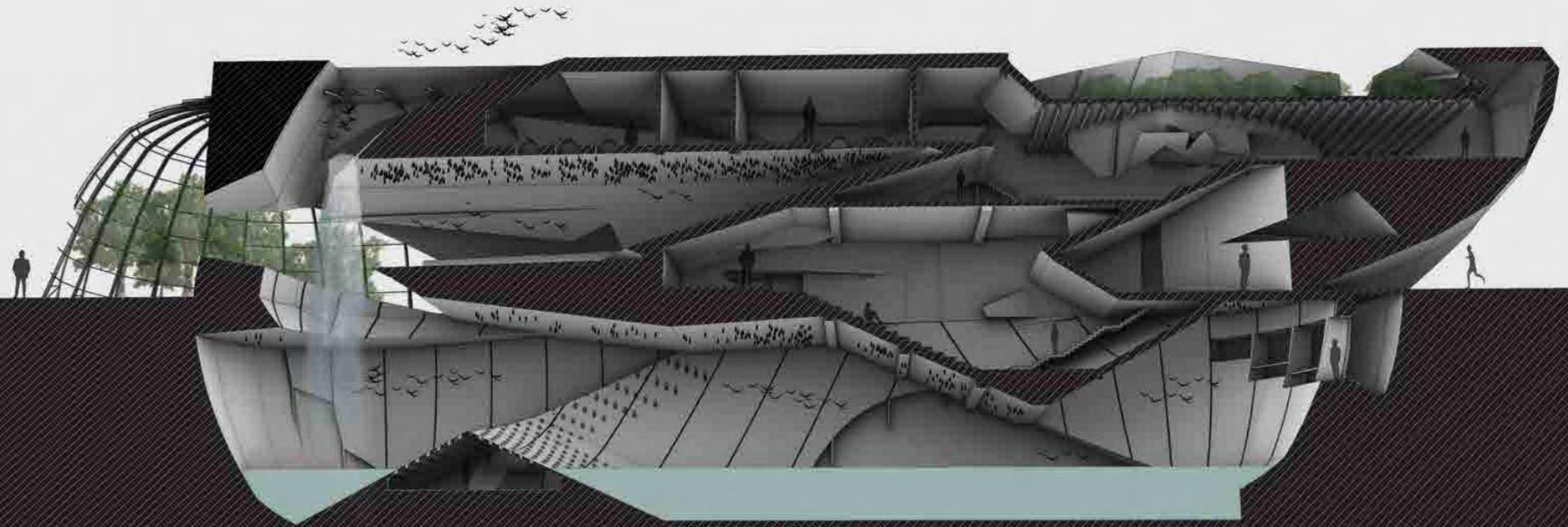
Entering into the underground viewing gallery of the water reservoir, the bats hang on to the ceiling.



Main building entrance, leading into the viewing gallery, auditorium and underground area.

Viewing experience of the underground water reservoir gallery space at water level.





Section perspective of the final project with bat colonies.
This project was selected to be published in the upcoming WashU student magazine "Approach".

studio concrete skins: mixed-use complex

Pablo Moyano Fernandez - spring 2020

In this studio, we embarked on an exploration of concrete, employing speculative testing, innovative formwork techniques, and constructing large-scale mockups. Our objective was to investigate, comprehend, and push the boundaries of concrete as a versatile building material. Building upon this understanding, our focus remained on concrete's architectural applications, particularly by devising a façade inspiration for the design of a substantial 300,000 sq. ft. structure. Through this process, we sought to challenge both the possibilities and limitations associated with concrete, ultimately fostering innovative and imaginative architectural solutions.

Concrete Making

The project involved a detailed process of mixing and pouring self-consolidating concrete, incorporating a variety of aggregates to create a customized concrete mixture. The primary objective was to push the boundaries of casting techniques and gain a comprehensive understanding of design strategies.

The process commenced with precise mixing, ensuring the accurate proportions of cement, water, and aggregates to achieve the desired consistency. The selection of different aggregates played a pivotal role in determining both the visual and tactile qualities of the concrete. By carefully choosing aggregates with varying sizes, shapes, colors, and textures, we sought to create a concrete composition that exhibited unique and expressive characteristics.

water	240 g
GFRC admix	30 g
plasticizer	10 g
silica fume	100 g
silica sand	1000 g
accelerator	20 g
cement	900 g

'Mise en place' to make concrete

mixing different aggregates in its proportion to make concrete

pouring in moulds to cast

Concrete Casts

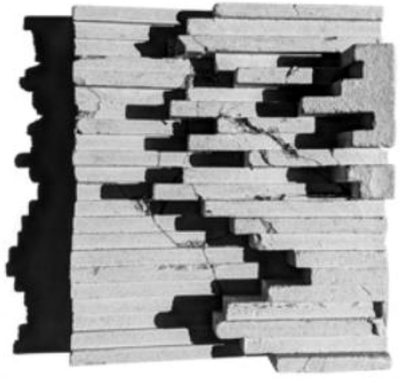
Once the concrete mixture was prepared, the focus shifted towards the pouring phase. Self-consolidating concrete, renowned for its exceptional flow and self-leveling properties, facilitated the efficient filling of intricate molds and formwork. This allowed us to experiment with complex shapes, intricate details, and unconventional geometries, thereby pushing the boundaries of what was conventionally achievable with concrete casting.

Throughout the process, the utilization of casts played a vital role in informing design strategies and understanding the limitations associated with the chosen design. By creating and utilizing casts, we were able to visualize and evaluate the concrete's behavior as it interacted with the formwork. This enabled us to gain valuable insights into how the concrete flowed, settled, and ultimately cured, providing essential information for refining our design strategies and making informed decisions regarding the final outcome.

By pushing the limits of the cast and comprehending the design strategies associated with self-consolidating concrete, we aimed to unlock innovative possibilities in terms of form, texture, and structural expression. This comprehensive exploration process allowed us to better understand the limitations inherent in our designs, ensuring that the final architectural elements were both aesthetically pleasing and structurally sound.

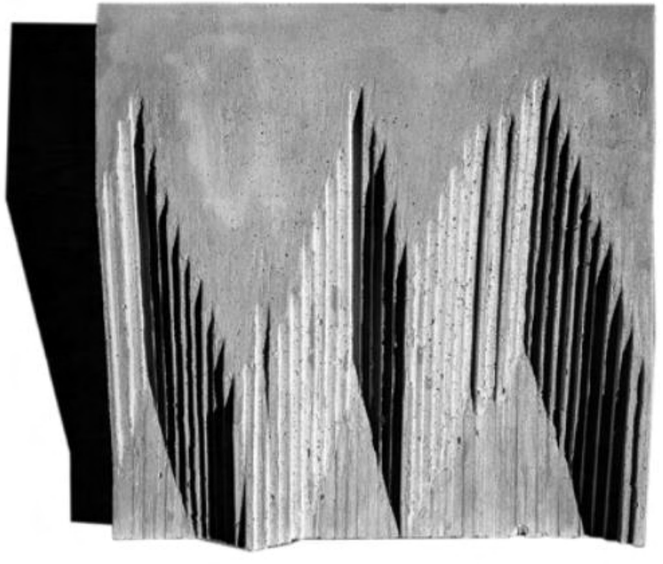
cast# 02
18" X 12"

cast# 03
18" X 12"



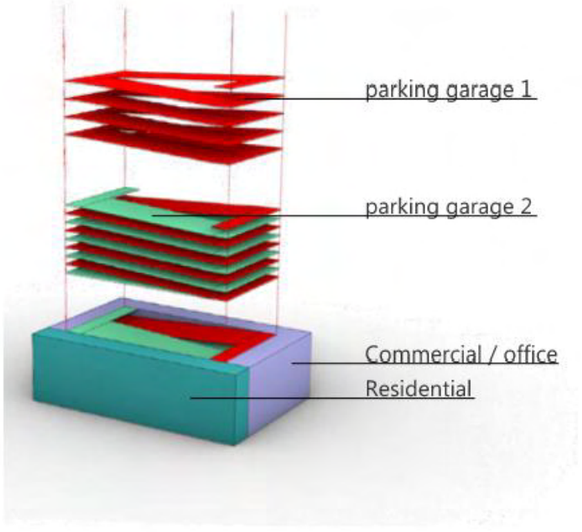
cast# 05
20" X 20"

cast# 06
24" X 24"

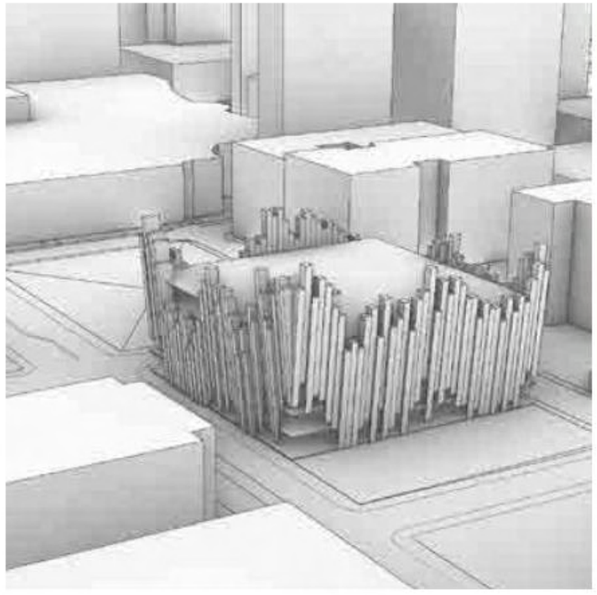


Design Strategy

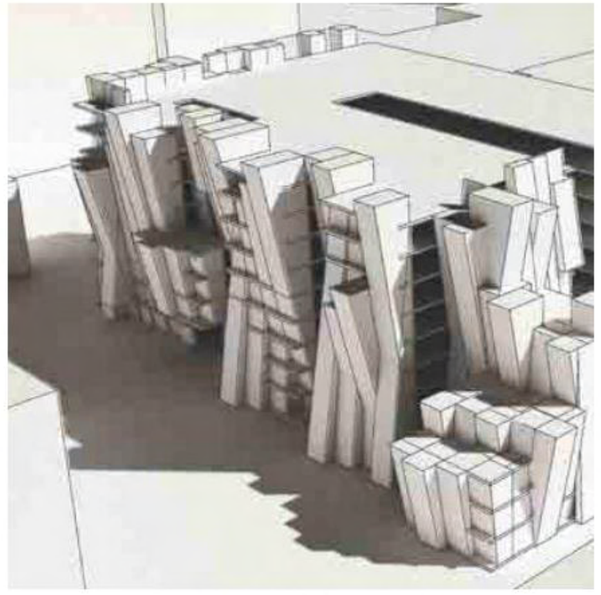
Casts inspired the massing strategy and neighborhood understanding in this project. They provided unique shapes, textures, and spatial qualities that influenced the design approach. The casts informed the creation of dynamic volumes and intriguing voids. Insights into positive-negative spaces and light-shadow interplay guided the massing strategy. By considering the neighborhood context, elements from the casts were incorporated, striking a balance between innovation and contextual sensitivity. The design achieved a harmonious blend of innovative elements and local character.



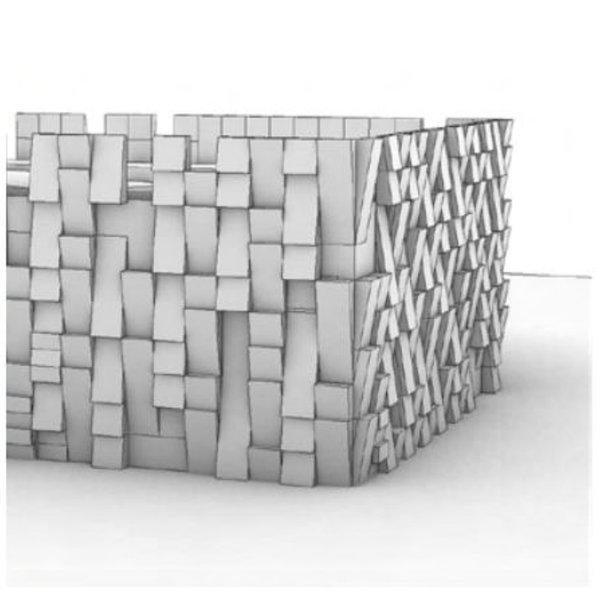
Building masing stratagy



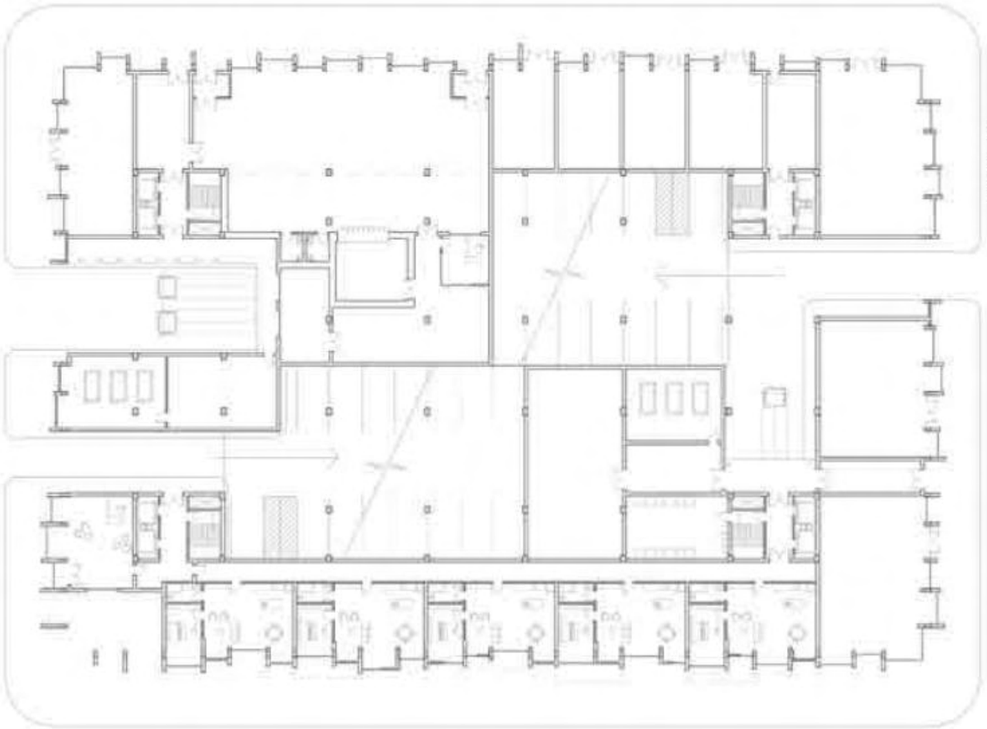
Building facade iteration 1



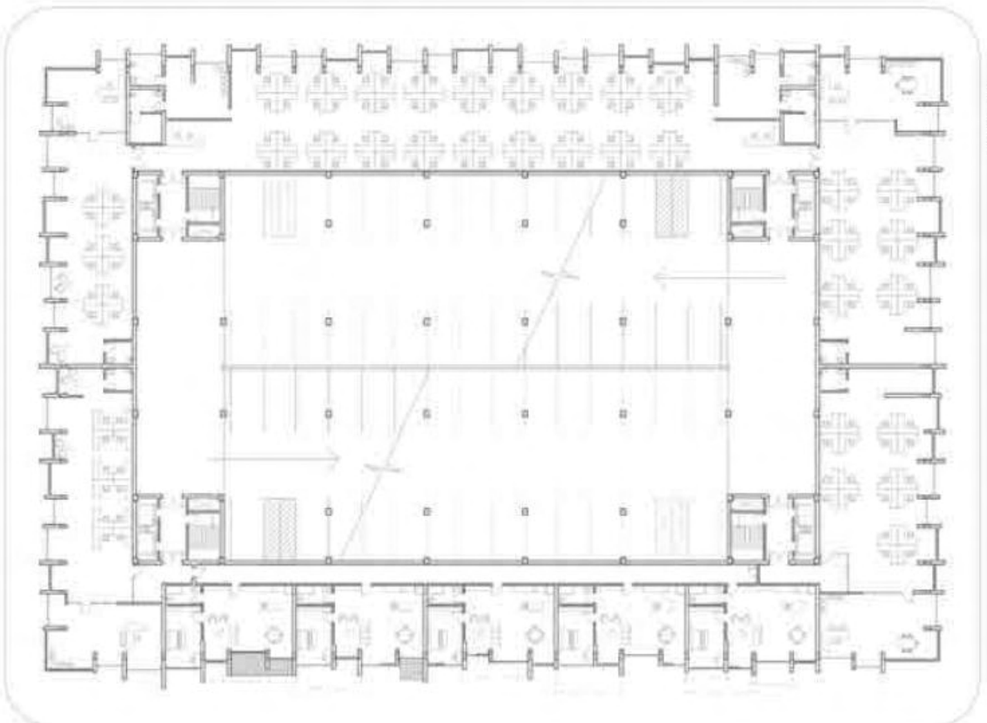
Building facade iteration 2



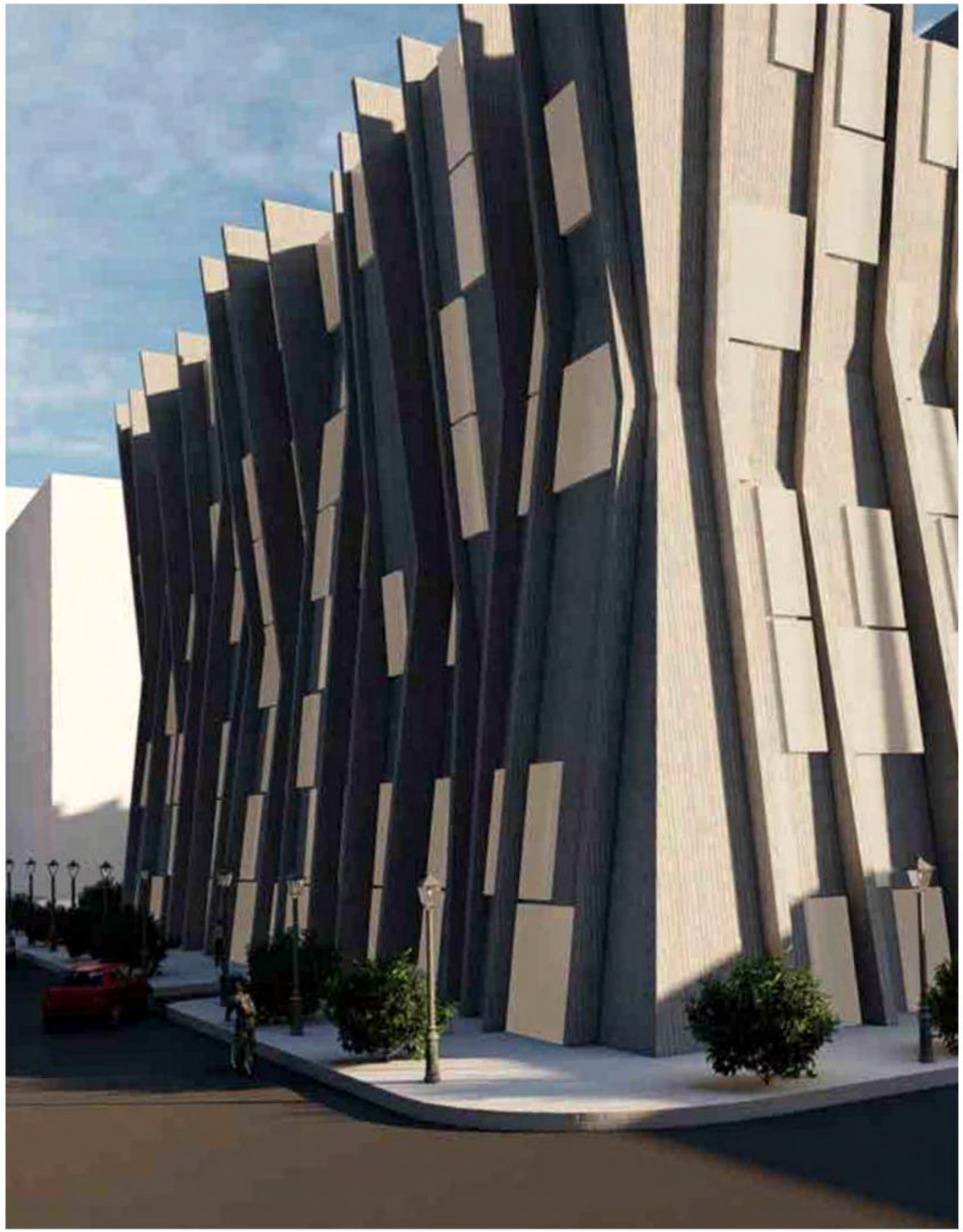
Building facade iteration 3



Ground floor plan, with different access points for public and private parking.

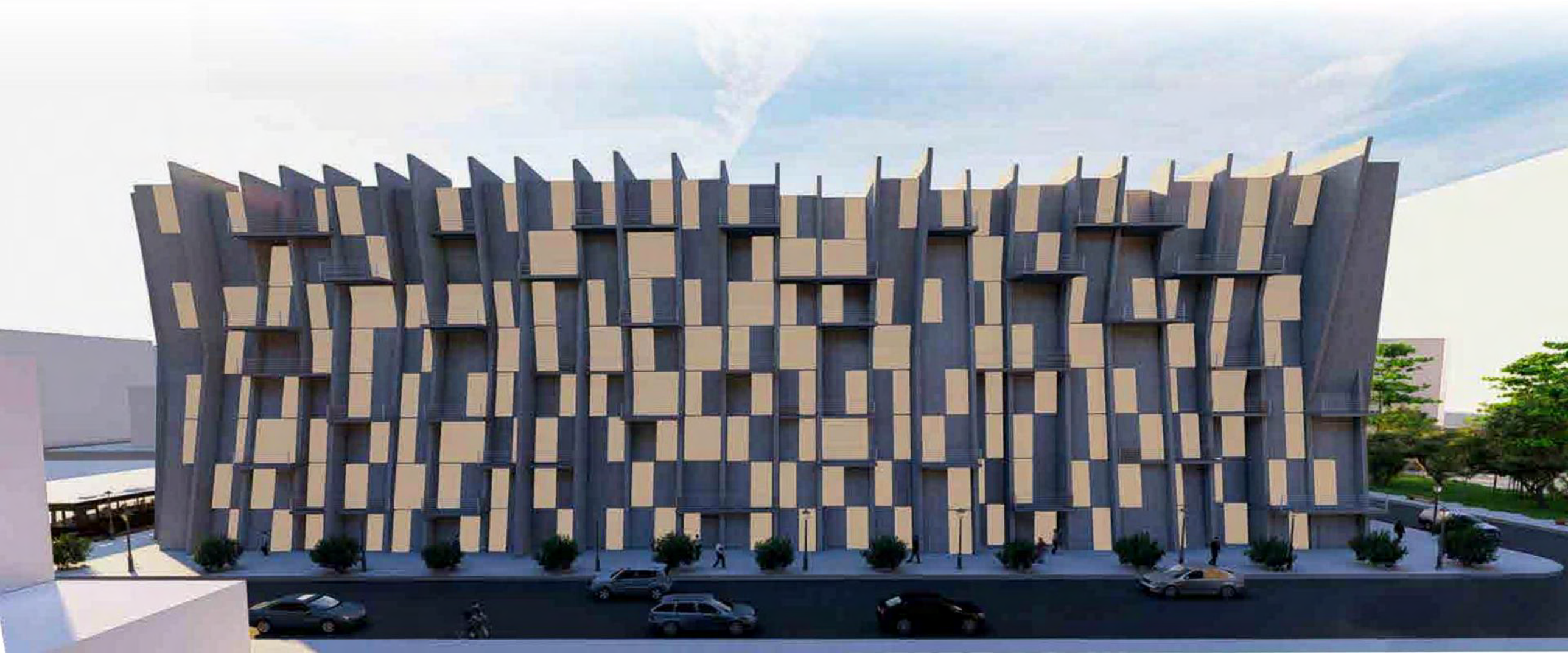


Typical floor plan of the rest of the buildling.



Perspective view of the final project facing the Cortex and the proposed park in front.

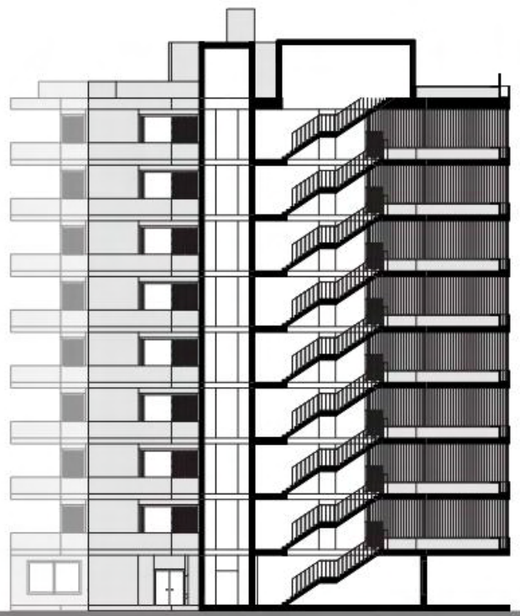
Elevation view of the final project, facing the recidential neighbourhood on the left you see the proposed park.



Housing project

Monica Rivera - Fall 2019

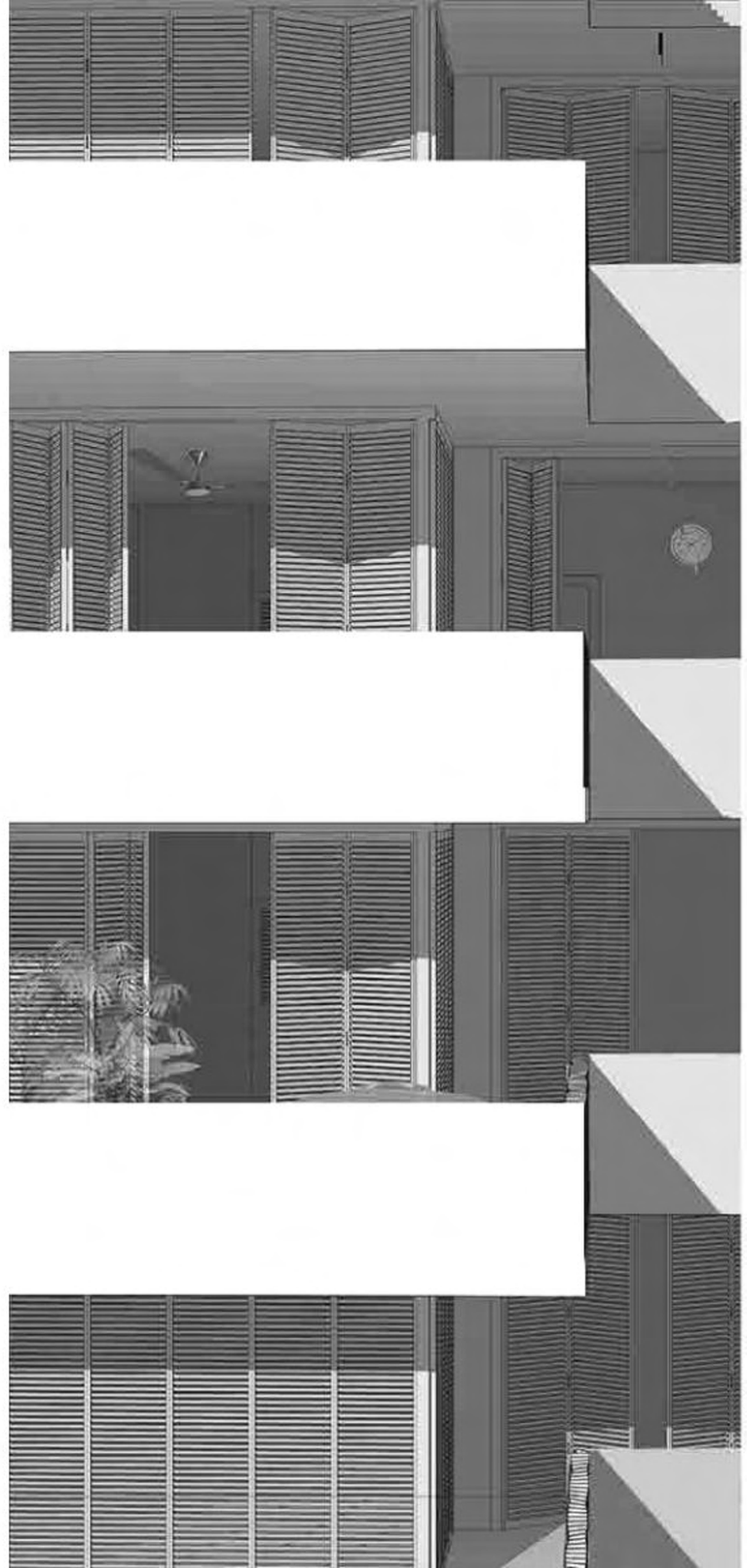
This studio mainly focusing on the dwelling and living aspects of the daily life in San Juan, Puerto Rico.



Hand built 1/8th scale model, depicting life in Barcelona as seen through the eyes of a child siting on the stairs and looking down up on the glass in the living room.

In an apartment complex, louver windows play a dual role by providing shading and facilitating air circulation, even when closed. These adjustable windows allow residents to control sunlight and airflow for optimal comfort. Additionally, strategically placed long balconies serve as shading devices for lower apartment windows, reducing direct sunlight and heat gain. This design approach enhances energy efficiency and creates outdoor spaces for residents to enjoy. The combination of louver windows and balconies ensures a well-ventilated and shaded living environment, minimizing the need for excessive artificial cooling. This sustainable design enhances residents' quality of life with natural lighting, fresh air, and comfortable temperatures.

Elevation - Perspective
Section - Perspective



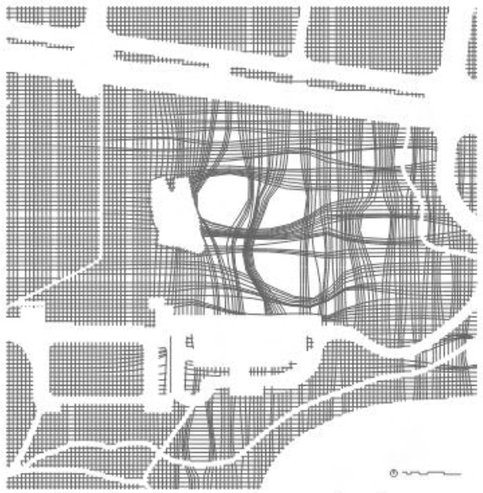
Louver doors in the apartment bring in light and air while maintaining a cooler temperature indoors. They provide natural ventilation and reduce the need for artificial cooling. The adjustable louvers allow residents to control the amount of light and airflow entering the space. This enhances the living experience with a comfortable and energy-efficient environment.

The final rendering depicts a semi-public walkway and railings that ensure resident window privacy. The walkway seamlessly integrates into the project, while the railings offer both security and aesthetic value.

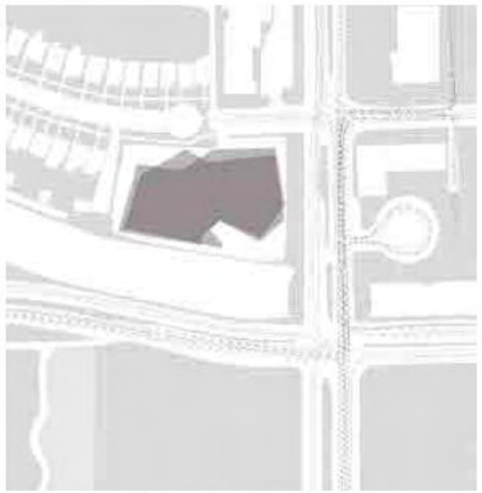
Swimming Pool in the Park

Kelley Murphy - spring 2019

Studio focusing on mapping the site. Developing a project
Public swimming pool located in Forest Park.

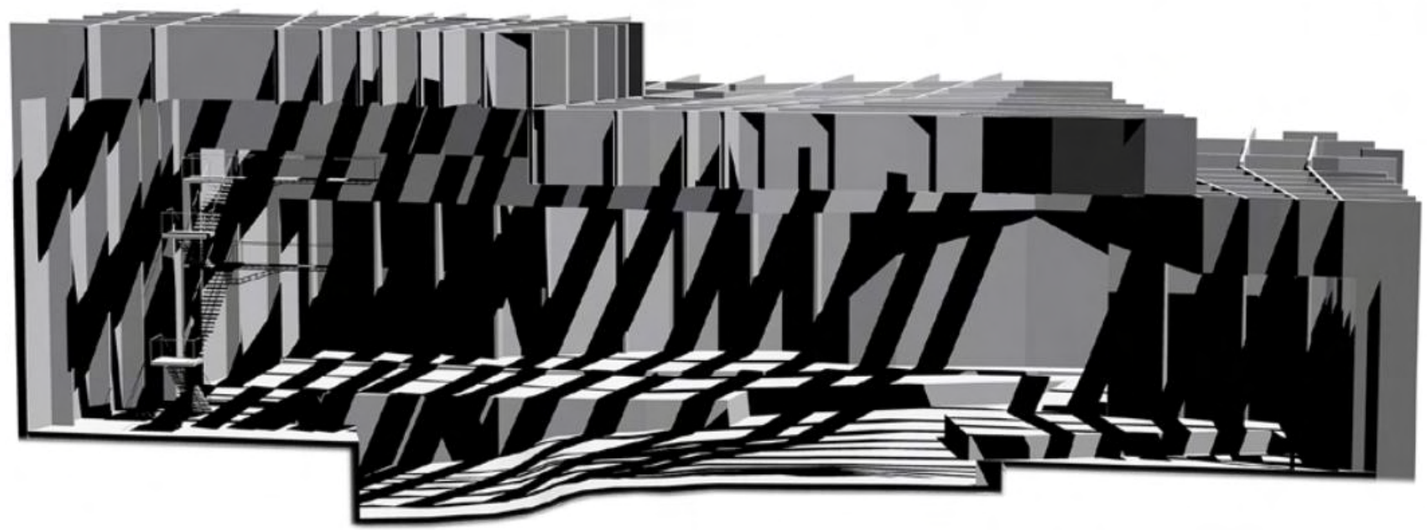


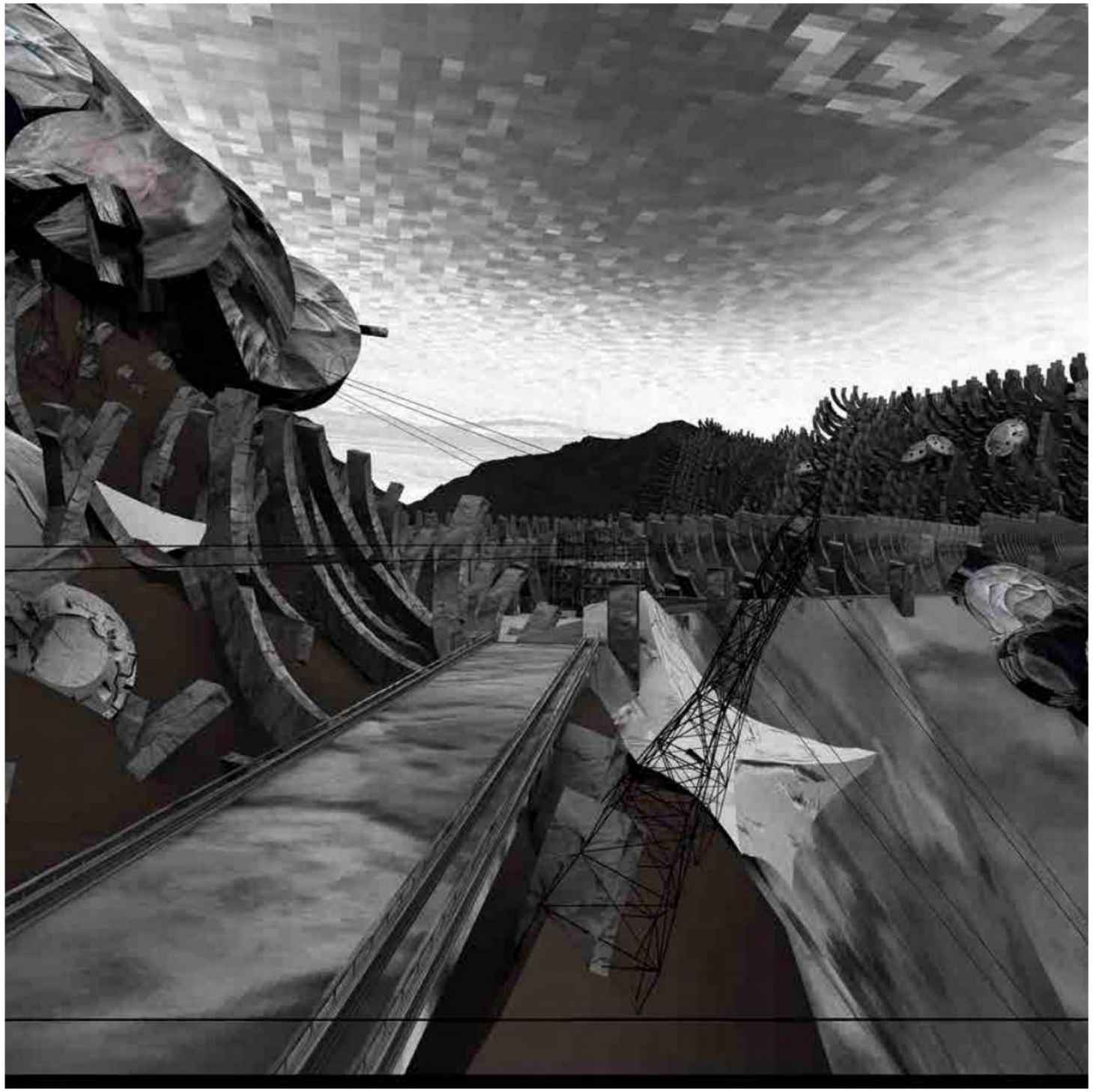
Site plan documenting tree density
and street surrounding site.

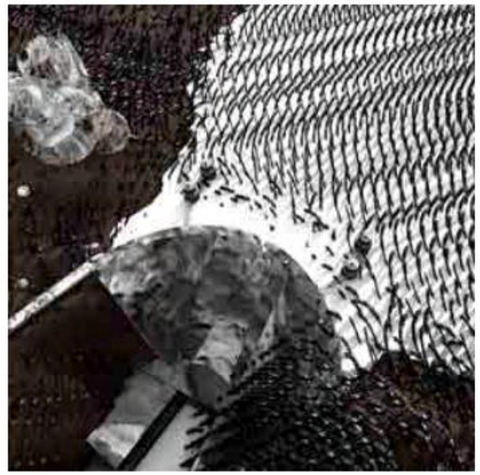


Map of vehicular density and popular street
on site.

The final project is presented through a section perspective that draws inspiration from hand-built models representing the site. The design incorporates a roof structure that serves as a shading device, creating intriguing shadows within the space while providing cooling and natural lighting. During the day, the roof structure effectively blocks direct sunlight, ensuring a comfortable environment inside. Simultaneously, it allows filtered light to permeate the space, casting captivating shadows that enhance the aesthetic experience. The interplay between light and shadow adds a dynamic element to the design, creating a visually engaging and immersive atmosphere for occupants.







Representation

Constance Vale - spring 2019

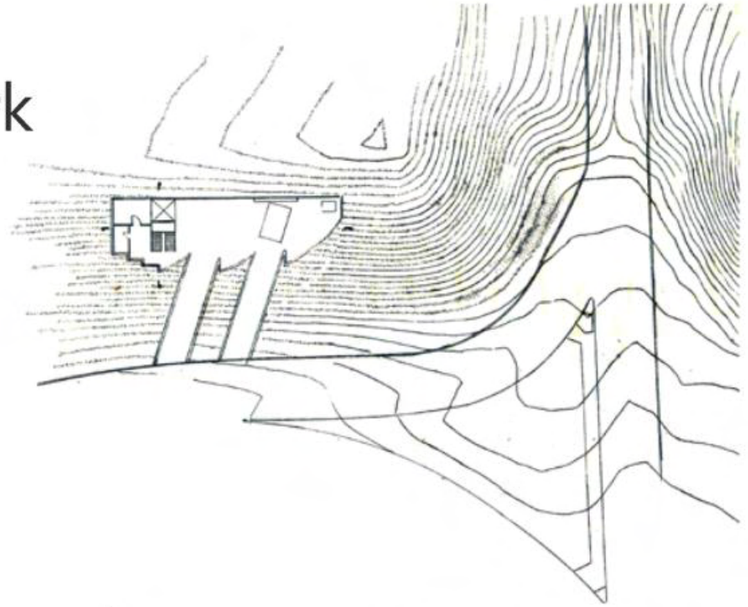
Visualizing an alternate apocalyptic future of the Hoover Dam. Certain objects rendered using smoke as material.

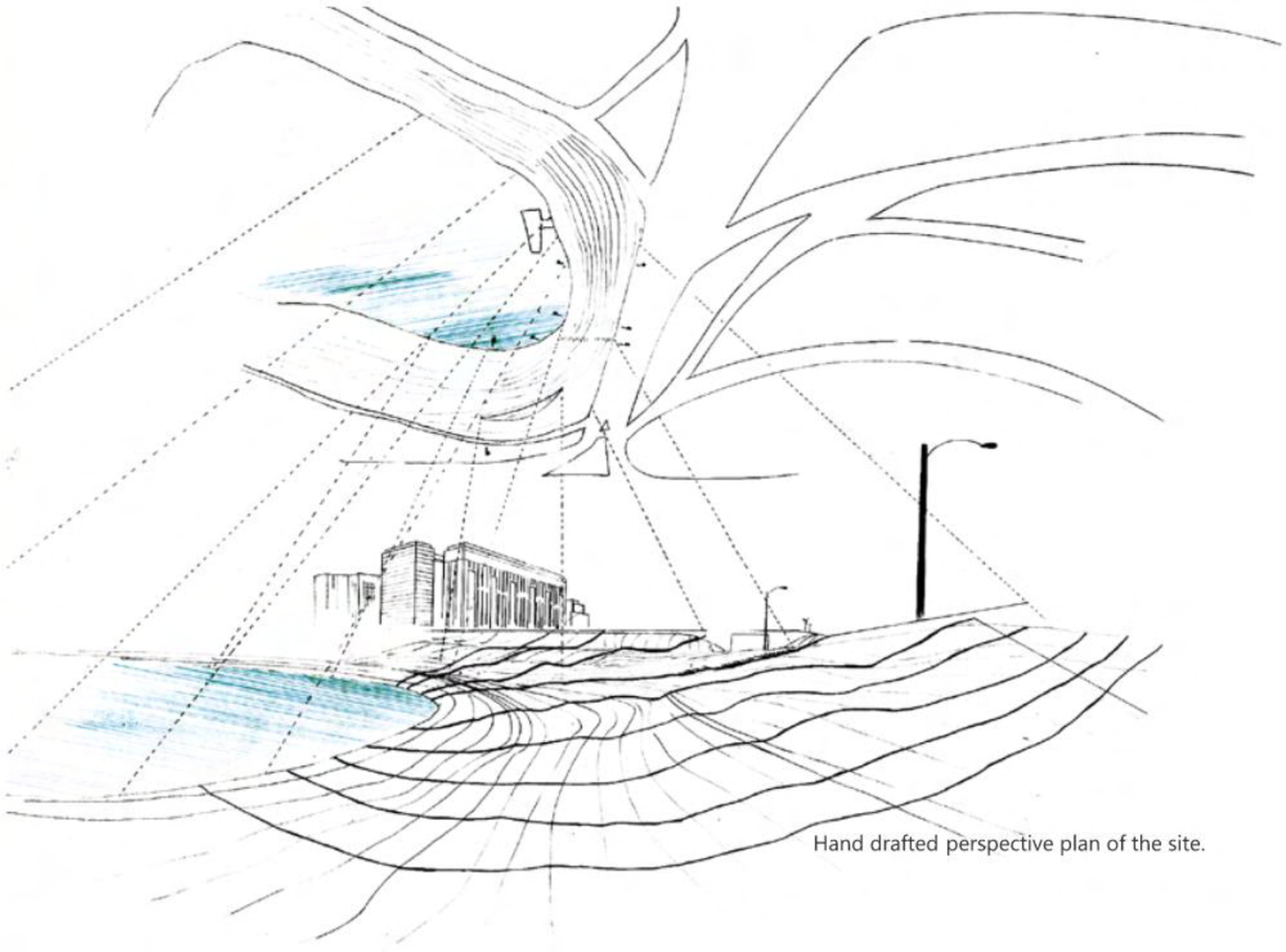
Narrative:
President Roosevelt commissioned the Hoover Dam in the Black Canyon due to its strategic location and potential economic benefits. The dam was built to protect valuable diamond deposits discovered in the area, which were seen as a resource to aid America during an economic crisis. Over time, the dam's flooding helped safeguard these resources. However, in a speculative twist, extraterrestrial beings from another planet have arrived at the site, seeking the diamonds as an energy source for their home planet. The visualizations depict the alien's advanced technology, including a machine that extracts diamonds by consuming surrounding materials and drones serving as their control center.

Facility in Forest Park

Sung Ho Kim - fall 2016

I have designed a maintenance facility situated on a steep hill in Forest Park. This facility serves as a storage and operational space for various equipment, including tractors, lawnmowers, heavy machinery, as well as for storing manure and seeds. The design takes into account the specific needs of the equipment and provides efficient functionality within the challenging topography of the site.





Hand drafted perspective plan of the site.

Pavillion on a frozen lake

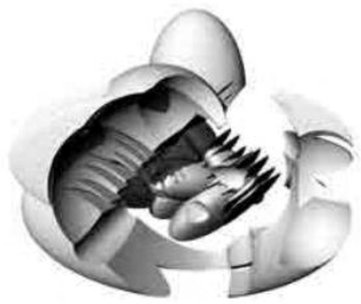
Sung Ho Kim - fall 2016

The pavilion is a unique structure designed to be situated on a frozen lake. It is constructed using basswood and wax, combining natural and synthetic materials. The design process involves hand-drafting plans and sections, meticulously illustrating the details with the use of projection lines. This approach allows for a precise and carefully crafted representation of the pavilion's architectural elements.

Jewelry Design

Constance Vale - fall 2020

Jewelry designs are created using Maya and Rhino for modeling, with final renderings processed through Keyshot. Some pieces are casted with bronze using 3D printed molds. The design process emphasizes the exploration of geometric objects, resulting in unique and visually captivating designs. Modern technology and traditional casting methods are combined to ensure accurate reproduction of intricate details. The use of digital tools and traditional techniques brings innovative jewelry to life.

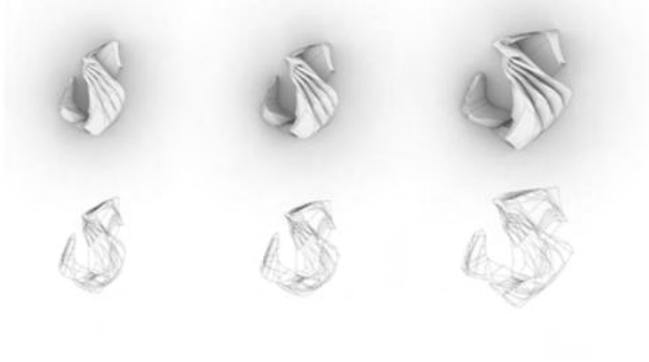


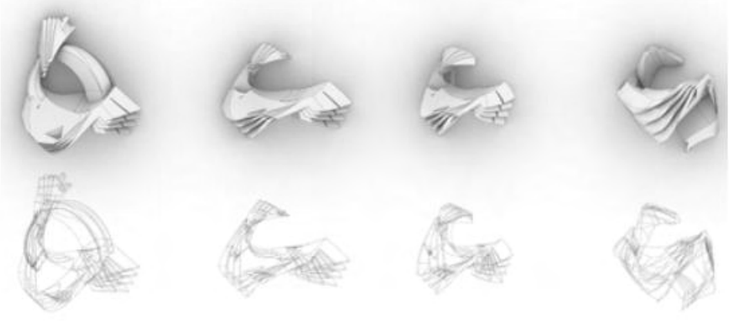
Exploration study 1

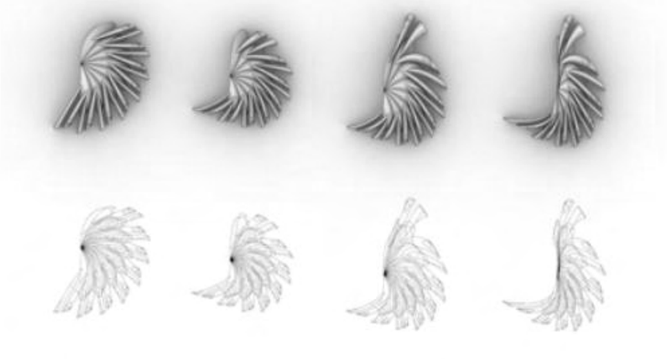
Exploration study 2

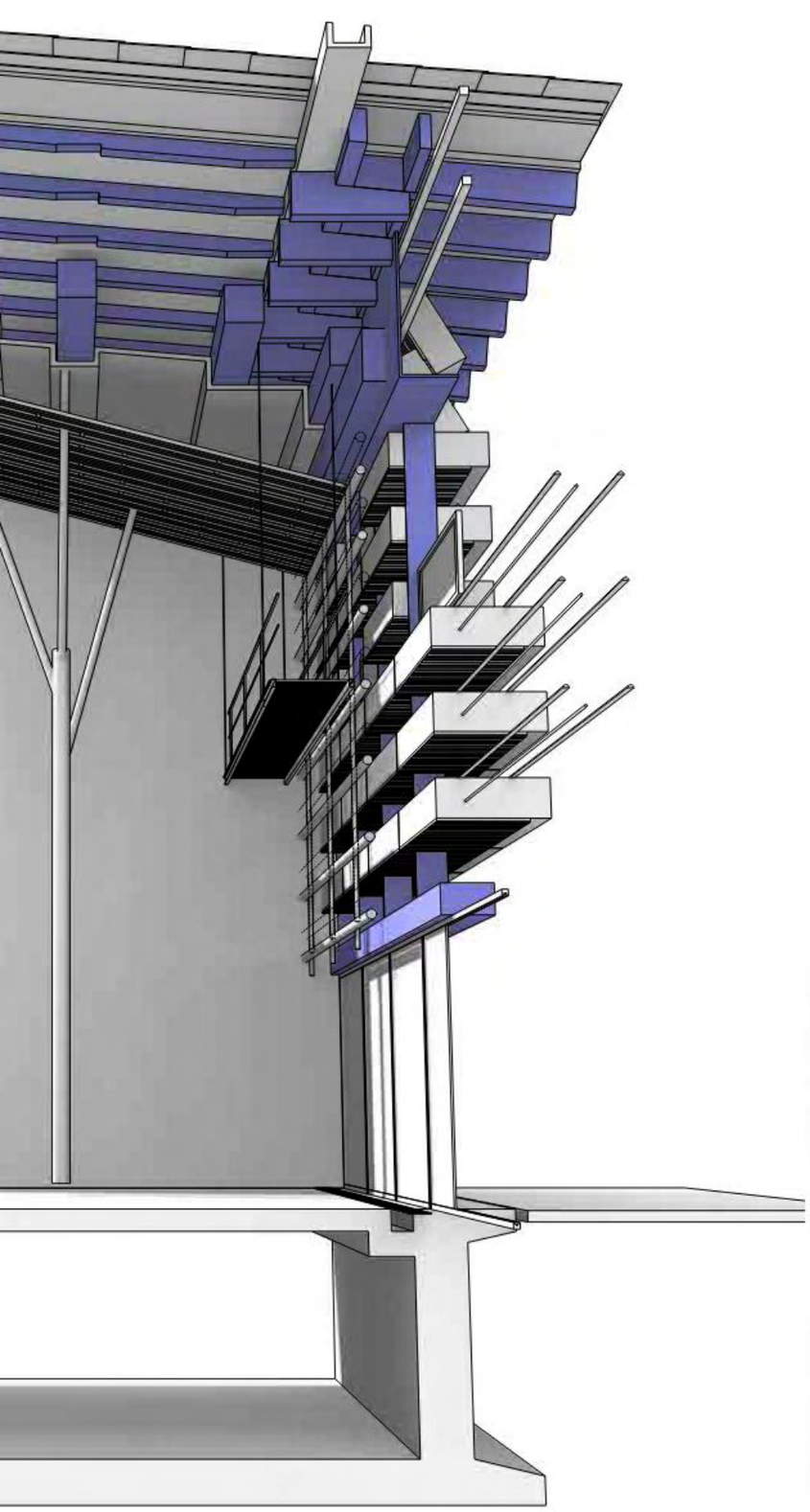
Study to 3D print

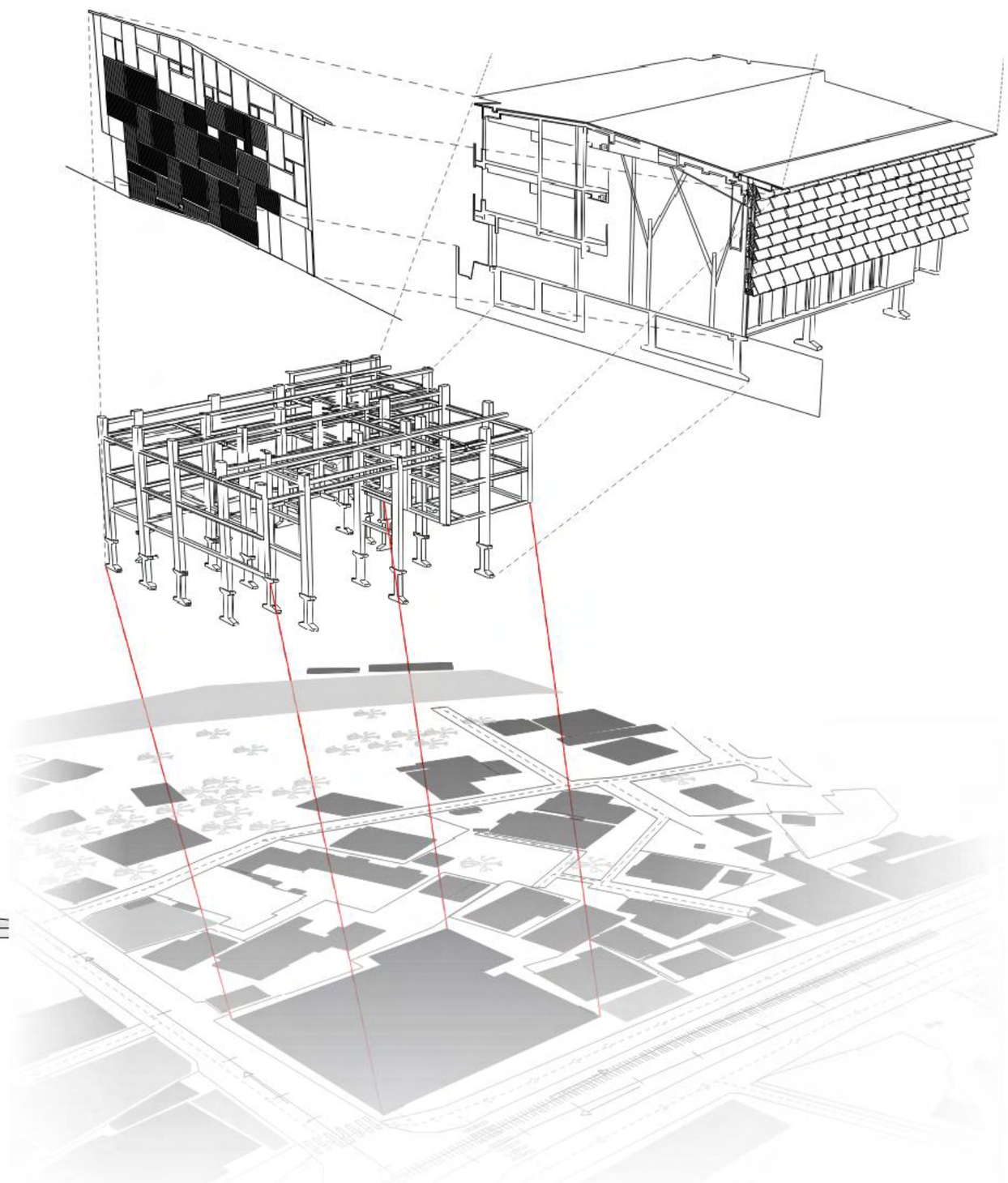
Bronze cast







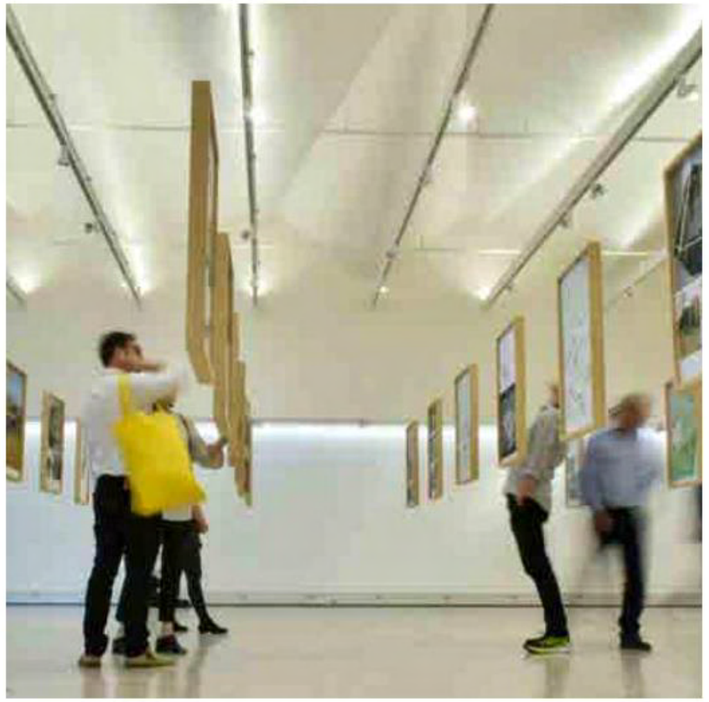


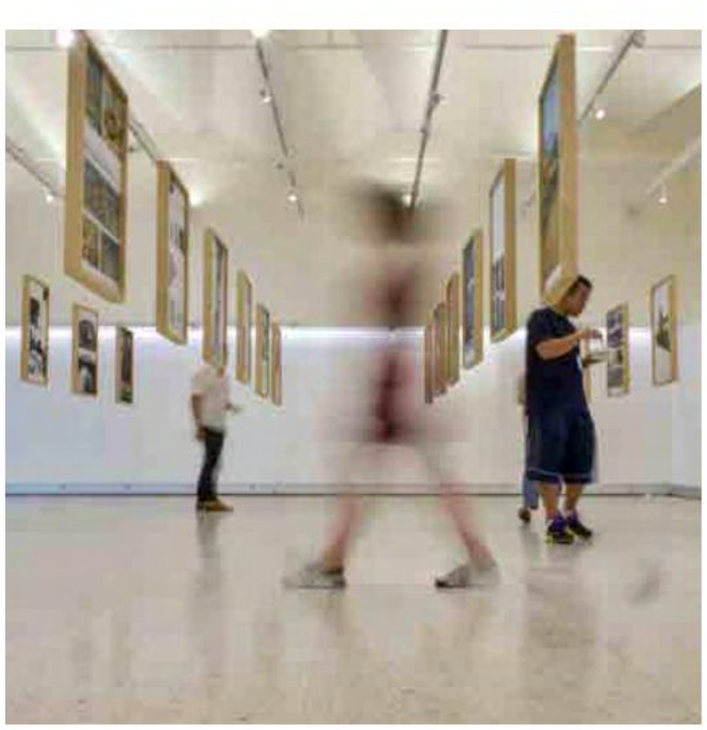


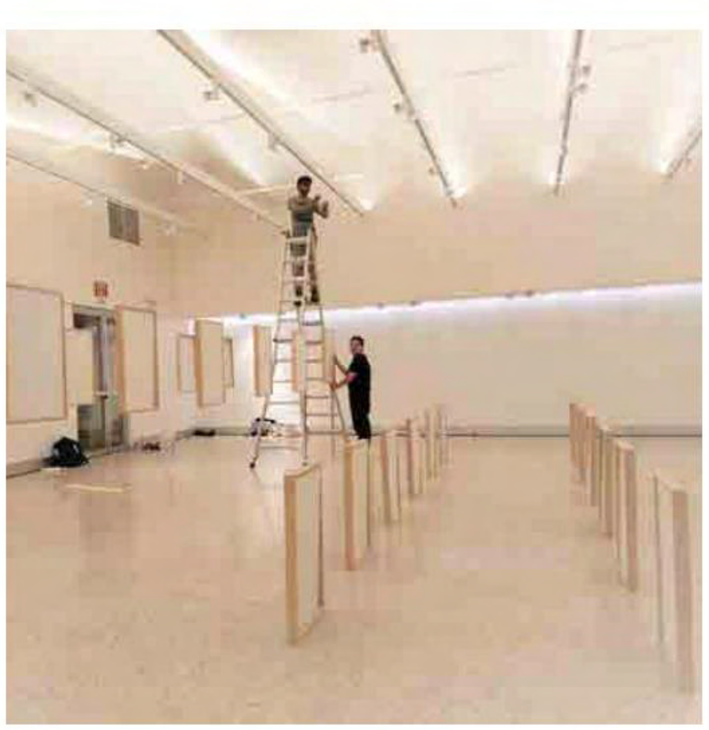
Case Study

Ross Welch - fall 2020

Yusuhara Marche designed by Kengo Kuma & Associates. In this class building systems, I explored and reaserched everything from structure and material.





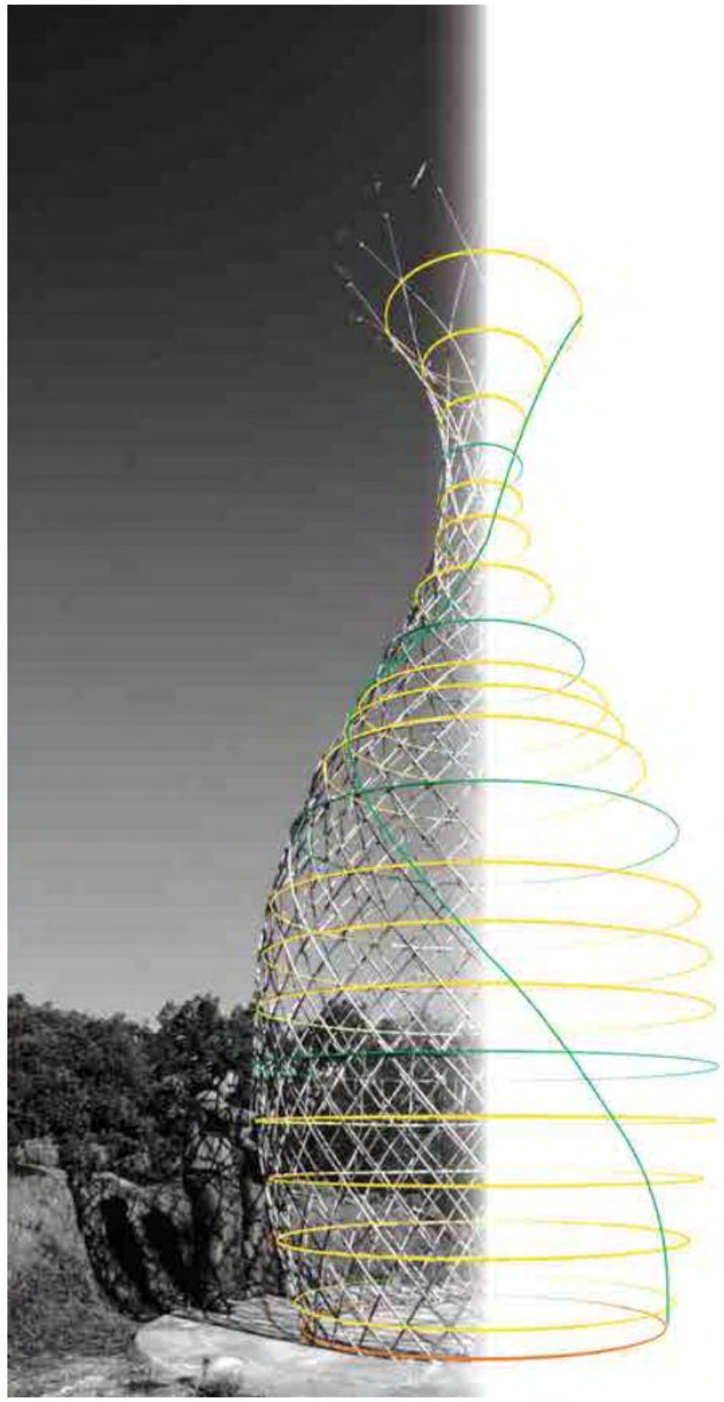


Year End Show

Off the wall

The Year End Show is a graduate student competition overseen by Jonathan Stitelman, Pablo Moyano, and Kelley Van Dyck Murphy. Our team, consisting of Natia Kapanadze, Qingshan Hu, Joel Leon, and myself, designed and built a gallery space for displaying the graduating student work of that academic year. With a budget of $3000, we created a plain and simple vernacular design using frames to suspend projects in the air.

The theme "Off the Wall" represents the purity of the work showcased. The exhibition features projects from the Master of Architecture, Master of Landscape Architecture, and Master of Urban Design programs. As a reward, we were granted $500 for our achievement.



Warka Water

Architecture and Vision, Bomarzo, Italy

Under the supervision of Arch. Arturo Vittori. Worked on two non-profit projects "Warka Water" and "Culture A Porture". Building and assembling the installation, designing and developing parts for it, which were then shipped to Ethiopia and Haiti. Creating content for marketing, website and social media. Product photography, photography of the installation and made videos for instructions to assemble the installation.

IDA

McLeod Kredell Architects- John McLeod, Alex Carver and Steve Kredell

I participated in the Island Design Assembly, a design-build project organized by McLeod Kredell Architects, led by John McLeod, Alex Carver, and Steve Kredell. Working with a team of 10 students, we successfully designed and constructed a garden house within a tight timeframe of 8 days. Through this experience, I gained valuable hands-on knowledge in creating detailed drawings and gained practical experience in the process of designing and building a complete enclosure.

Mini golf track

Constance Vale
Kelley Van Dyck Murphy

I collaborated with Professors Constance Vale and Kelley Van Dyck Murphy in constructing their proposals for a Mini Golf gallery, created for a charity event. The project utilized primarily 2x4s and plywood as building materials.

Photography

These captivating images were captured using long exposure photography techniques. One particularly remarkable photograph is a startrail image that required approximately 40 minutes of exposure, taken during an internship in Italy. The majority of the work involved in capturing these images stems from a combination of travel opportunities and a genuine passion for photography.

Wood Work

During my time as a student studying architecture at WashU, I discovered a passion for woodworking. Since then, I have enjoyed creating various pieces for myself and friends, honing my skills in craftsmanship. Building upon this passion, one of my life goals is to design and construct a complete house, encompassing not only the architectural structure but also the furniture and fixtures within it. This ambitious aspiration combines my love for architecture and woodworking, allowing me to create a cohesive and personalized living space from the ground up.

coat rack, legs built with biscuit joiner and zero nails used which is about 6' tall

laptop stand, letting air flow out underneath keeping the computer cool

mirror stand with different notches holding the mirror, it is about 6' tall with the mirror on it

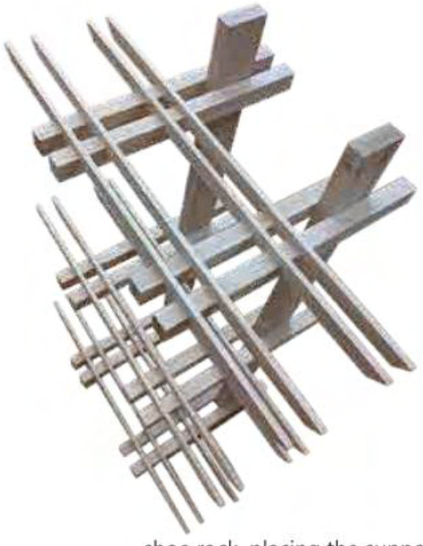
3D printed cones to enhance sound from the speakers

phone stand, the notch was made with a dado blade at an angle on the table saw

glass table, here I was trying to come up with a unique way to hold a piece of glass with one wooden leg suported by a metal 'A' shaped support.

wall mount hanger

small table built to work on the bed or sofa



shoe rack, placing the support and structure at the back for easy accessibility in the front and sides