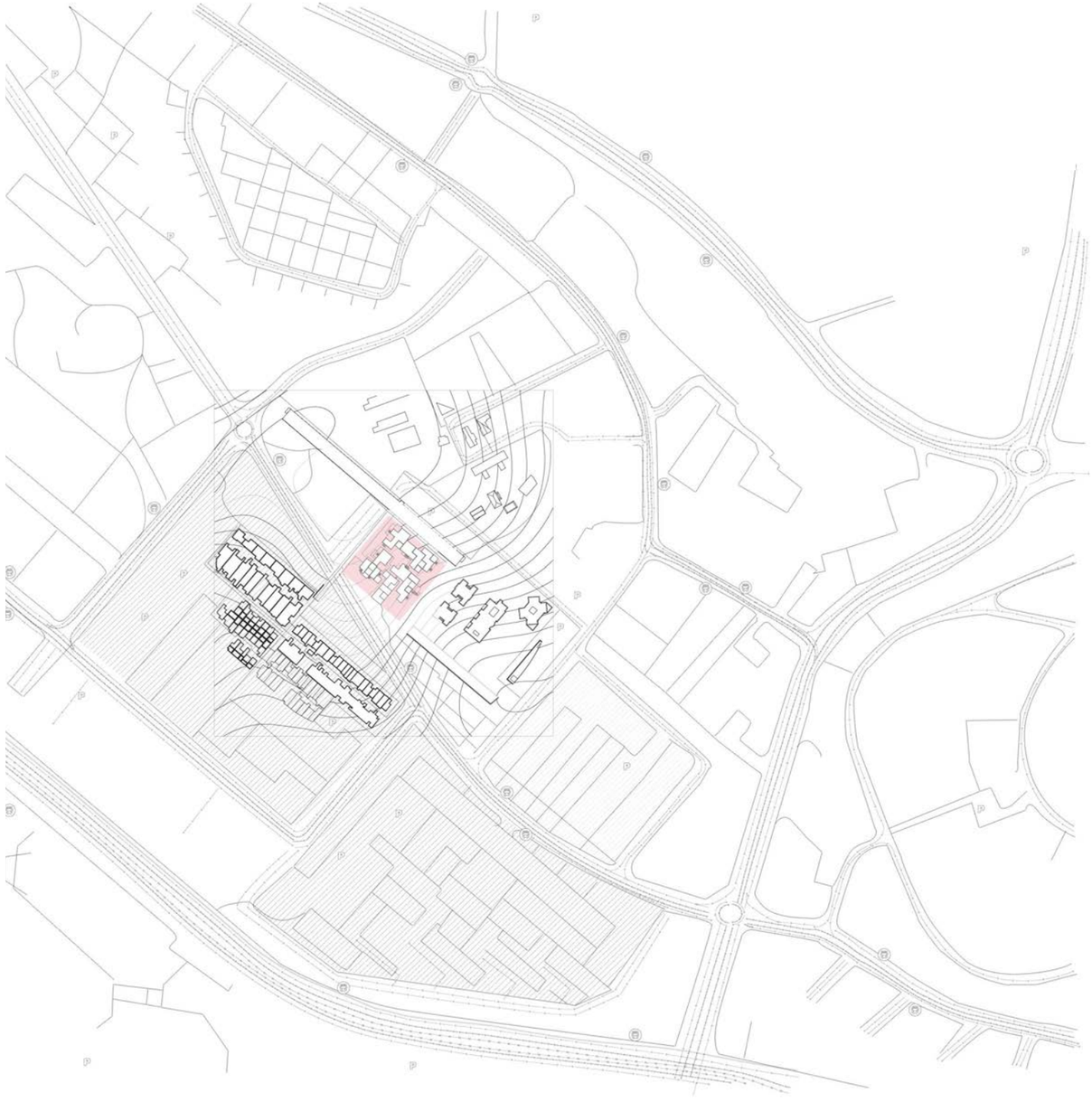
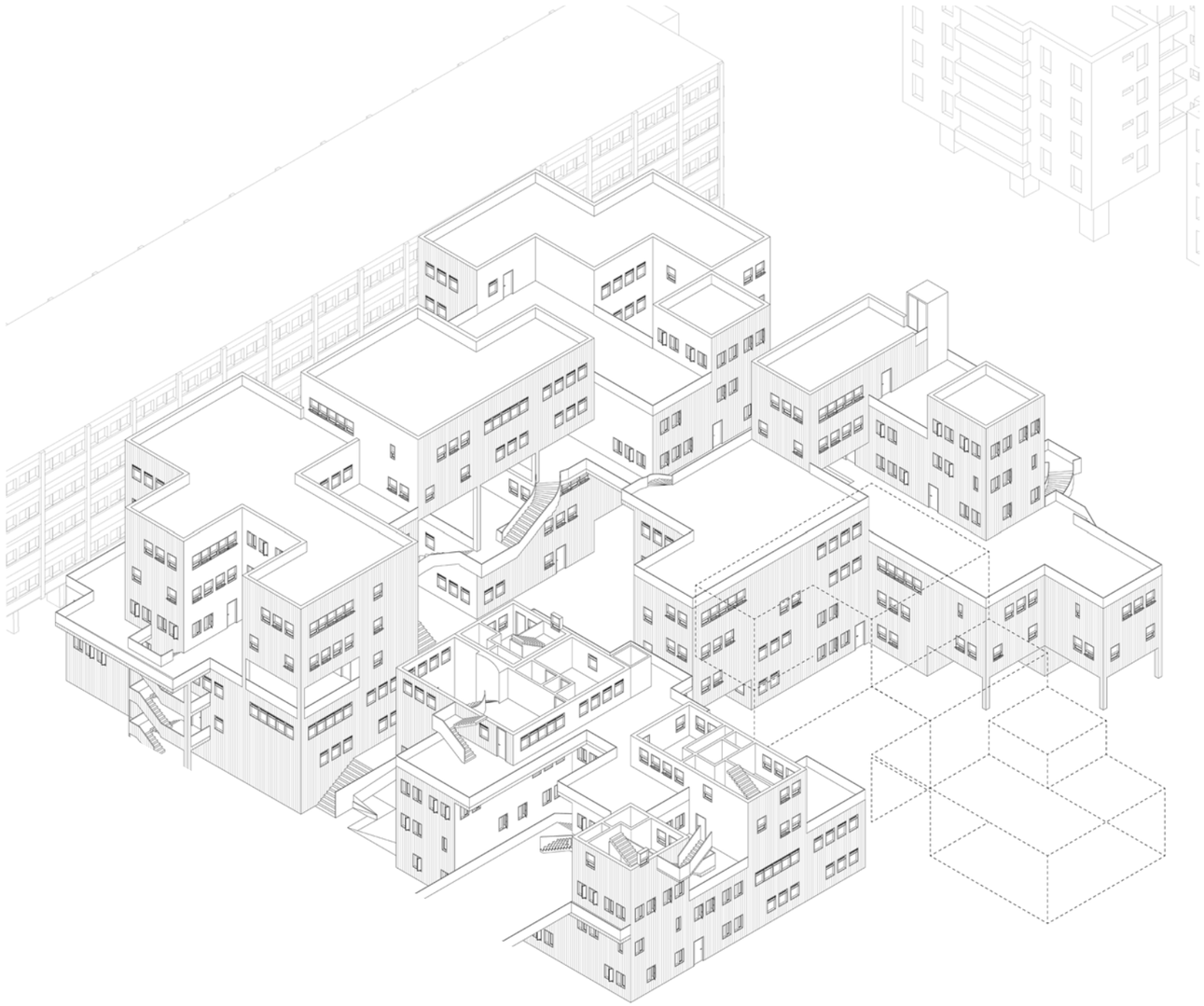
Selected Works

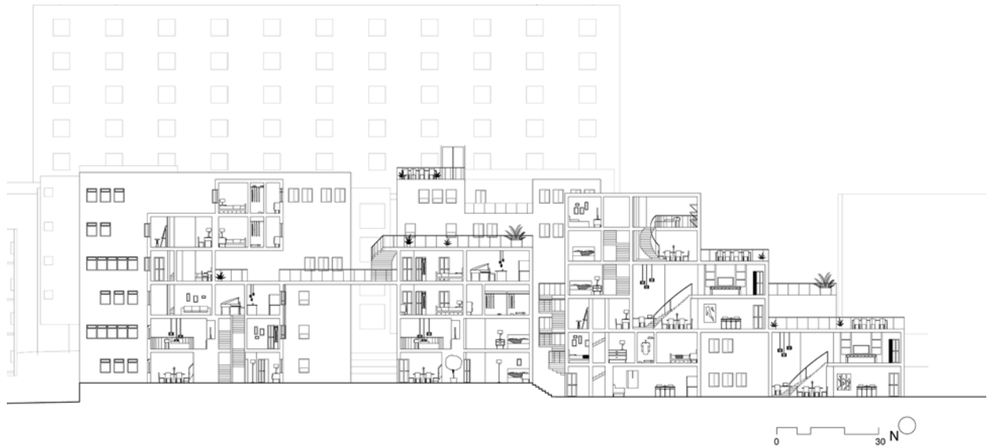
Tony Cautilli
Parsons the New School, James Madison Univerity
2018 - 2024



This project focuses on the facades of buildings and explores how facades, meshes, and skins can create an additional protective layer. The primary functions of this second layer are to regulate incoming solar radiation, thereby adjusting the building's interior temperature for enhanced occupant comfort, while still allowing for outside views. As my process has evolved, I have begun to design overhanging slabs or portions of the building that extend over the sides to provide additional shading.

The design process aims to align with the existing architectural trends in Be'er Sheva, Israel, directly across from our site, and to create shaded avenues for the community's circulation. By incorporating narrow pathways, the design allows taller buildings to cast shade on others, depending on the sun's position. My goal is to develop a natural cooling system for these buildings, reducing reliance on mechanical systems. Additionally, I propose an extra facade or mesh protection layer on the exposed sides of the buildings to increase shading for both the structures and the circulation areas, especially towards the existing shops.

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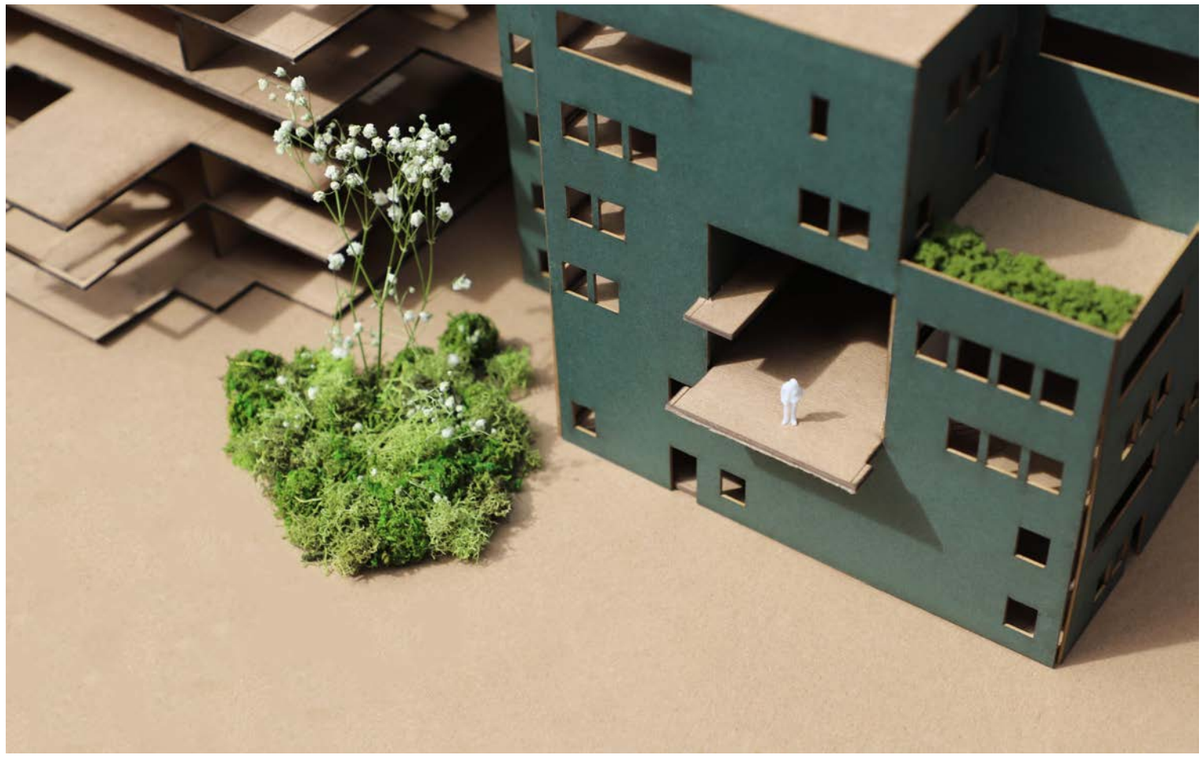

Following our adjacent studio project in Be'er Sheva, Israel, Jordan Shanel and I recognized the urgent need for additional shading shelters in the region due to its hot and arid climate. The area's sun patterns create a harsh environment, necessitating protective barriers for pedestrians. Our objective was to design a modular, flexible pavilion that could provide this much-needed shade.

Utilizing our skills in Rhino and Grasshopper, we developed a repetitive module that could be easily replicated and adapted to various forms. This allowed us to create a pavilion with warping flexibility, ensuring it could effectively shield pedestrians from the sun. Our innovative approach enabled us to design an efficient assembly system, successfully completing the pavilion and enhancing the comfort and safety of the area's inhabitants.

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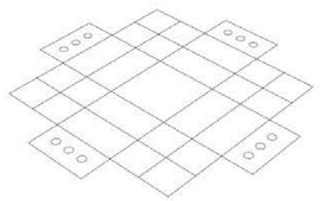

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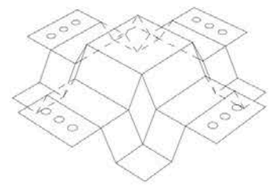

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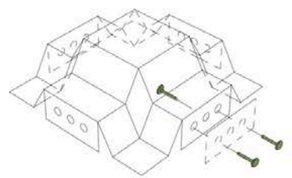

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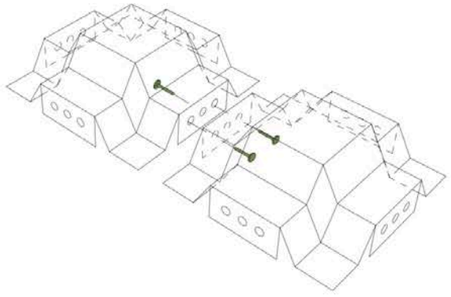

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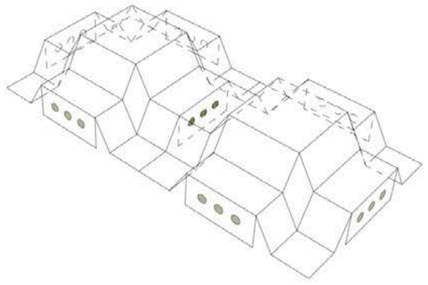

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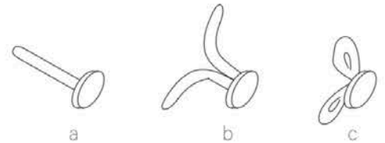
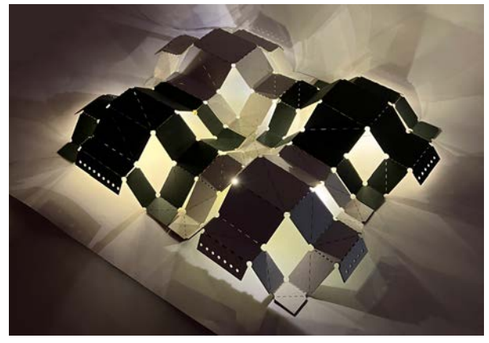
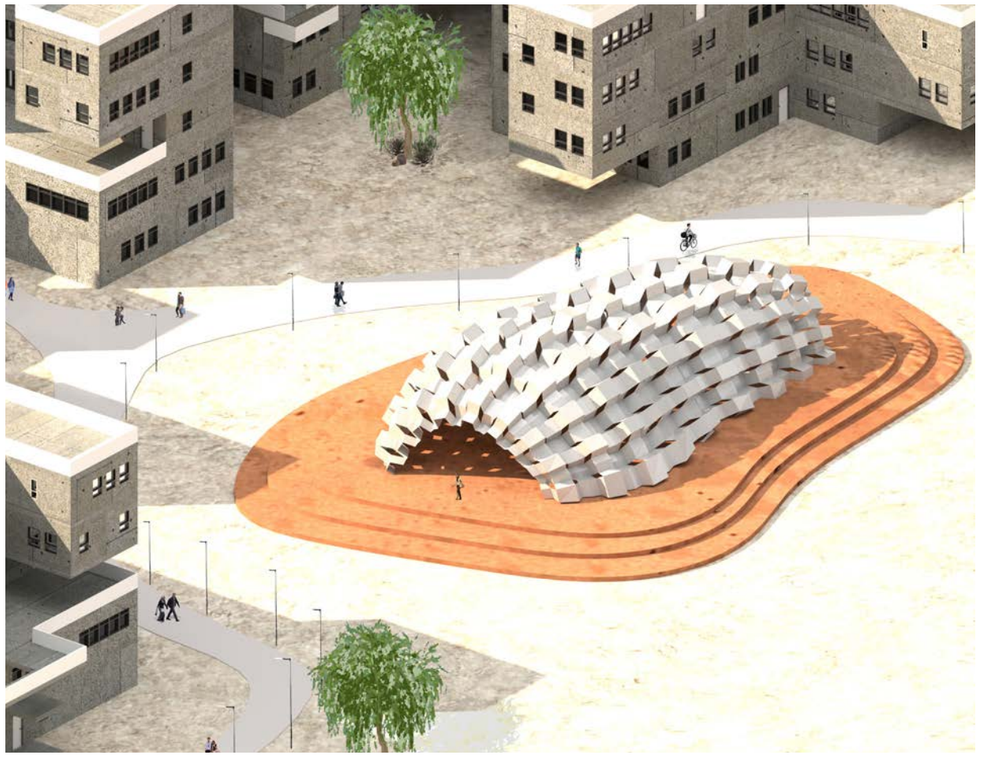
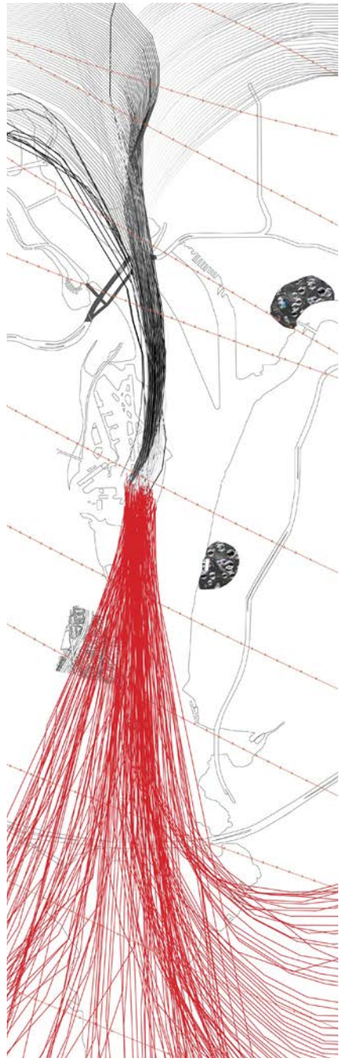
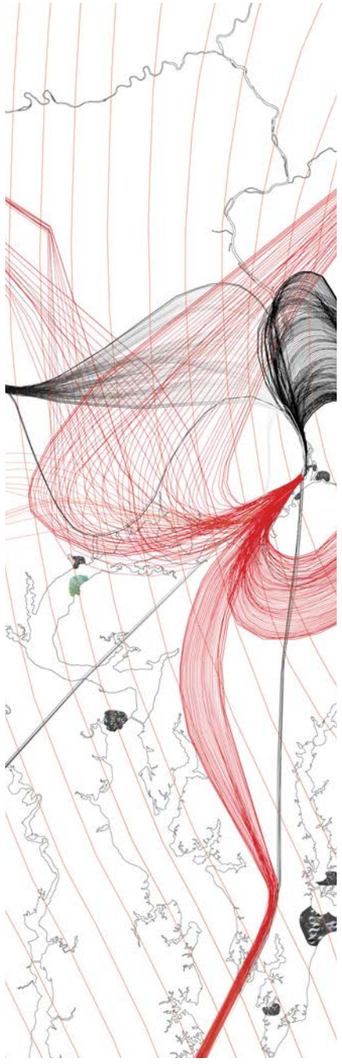
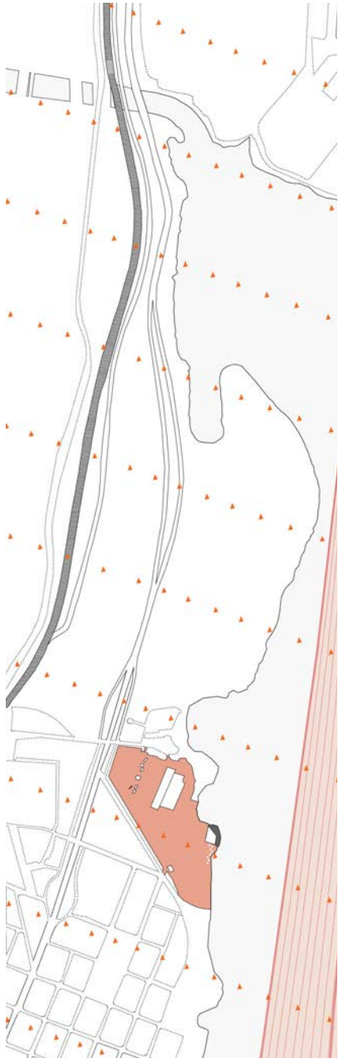












The project site is located in Alexandria, Virginia, on a 25-acre plot that once housed the coal-fired Potomac River Generating Station at 1300 N. Royal St. This area is plagued by significant noise pollution, primarily from Reagan National Airport. The objective of this project is to mitigate sound pollution using natural noise blockers, such as trees. To achieve this, I employed a technique called espalier, which involves training tree limbs to intersect as they grow, gradually forming a dense, interwoven structure. This method not only serves as an effective noise barrier but also enhances the aesthetic appeal of the area. The diagrams included in this project map the site and detail the sound waves emanating from Ronald Reagan National Airport, demonstrating how the espaliered trees will help reduce noise levels over time.

Bamboo stick model, testing strength

Metallic pieces in motion resembles trees and leaves

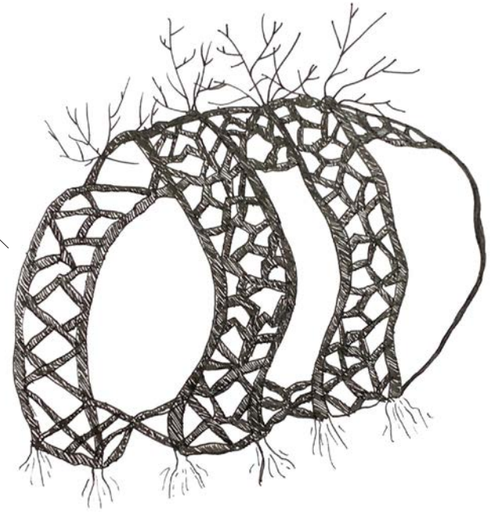
Branches established as Espalier mock up

Espalier closer model with metal piece included. Inosculation Model

Precedents

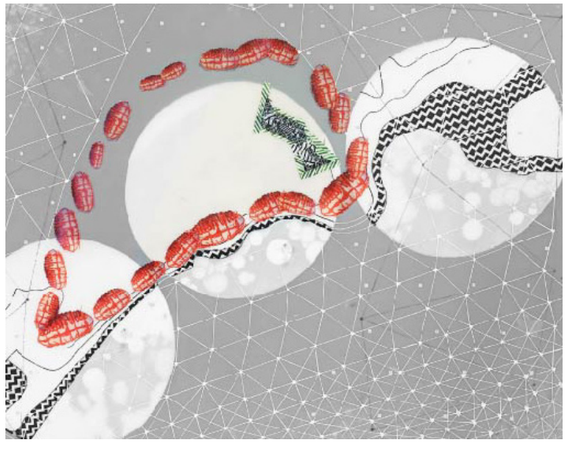
This structure is constructed from a smaller tree's nature. It is supported by a steel structure until the branches are strong enough to be on their own. The branches are welded together and inosculate it starts the process of the two branches forming together as one.

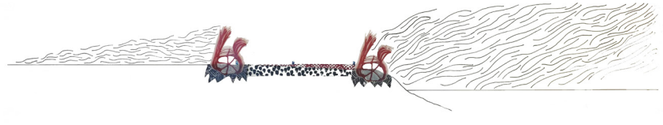
The Espalier is layered over the structure and as it grows, the community guides the branches into eachother starting the inosculation process.



Site model with topograpghy with the the water line 25', and 50'. Made of concrete with flight, highway, and train sound waves

First site model diagramming flight patterns in the nearby area

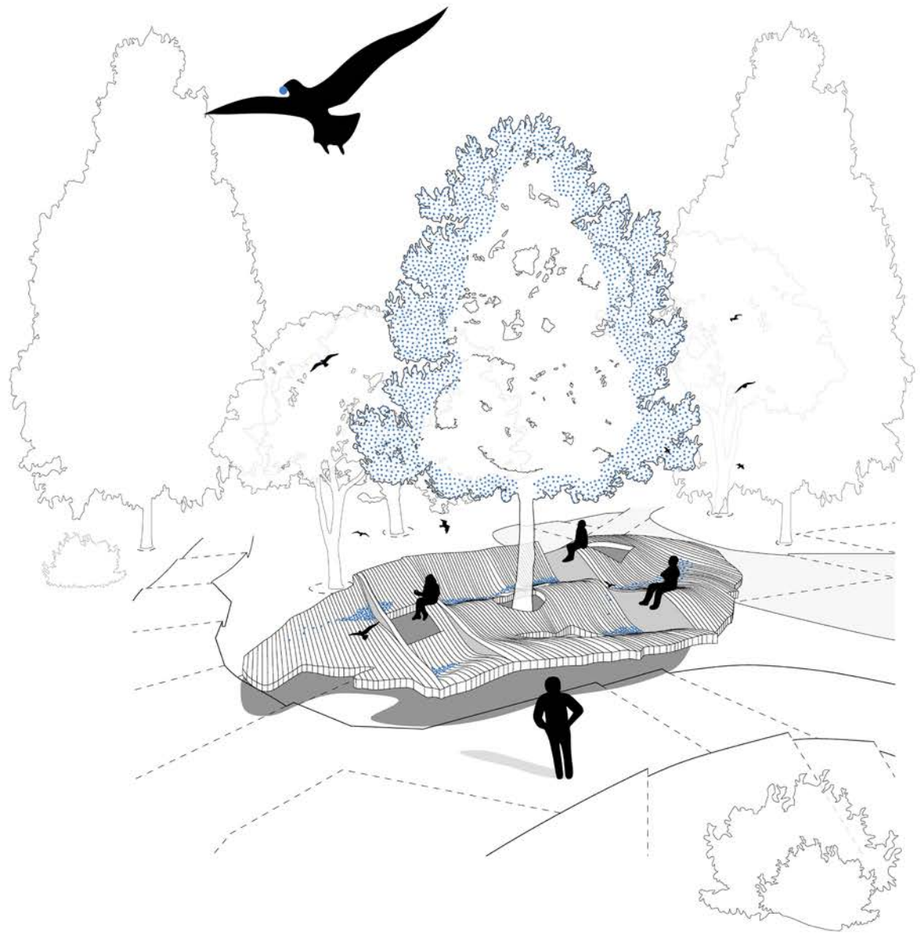


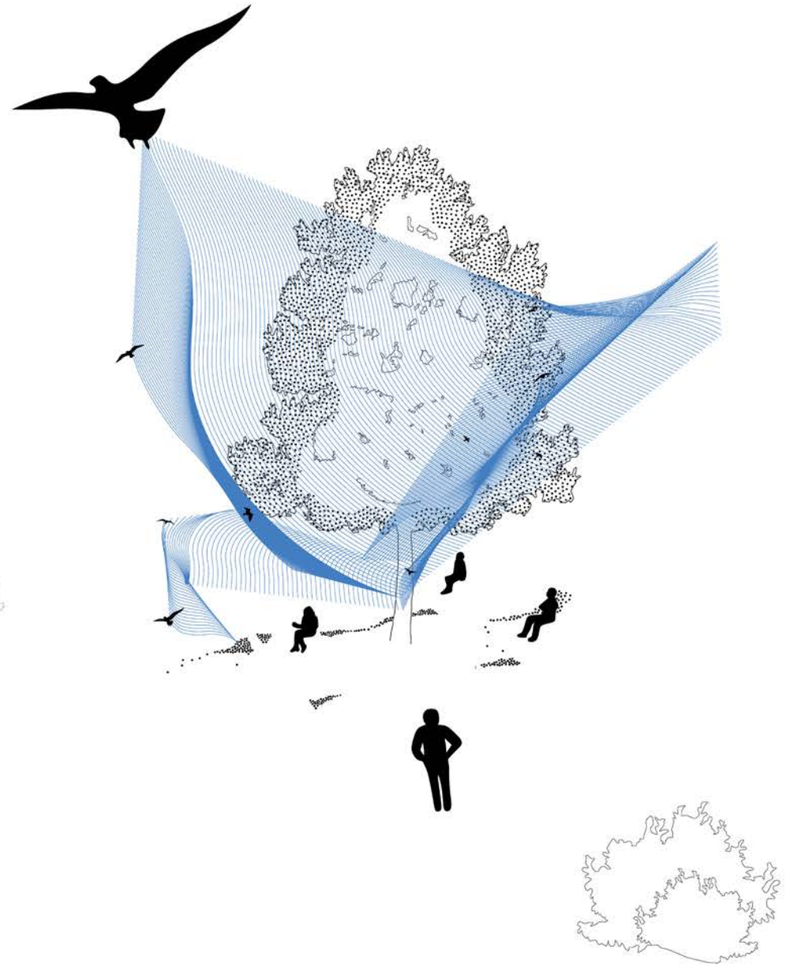


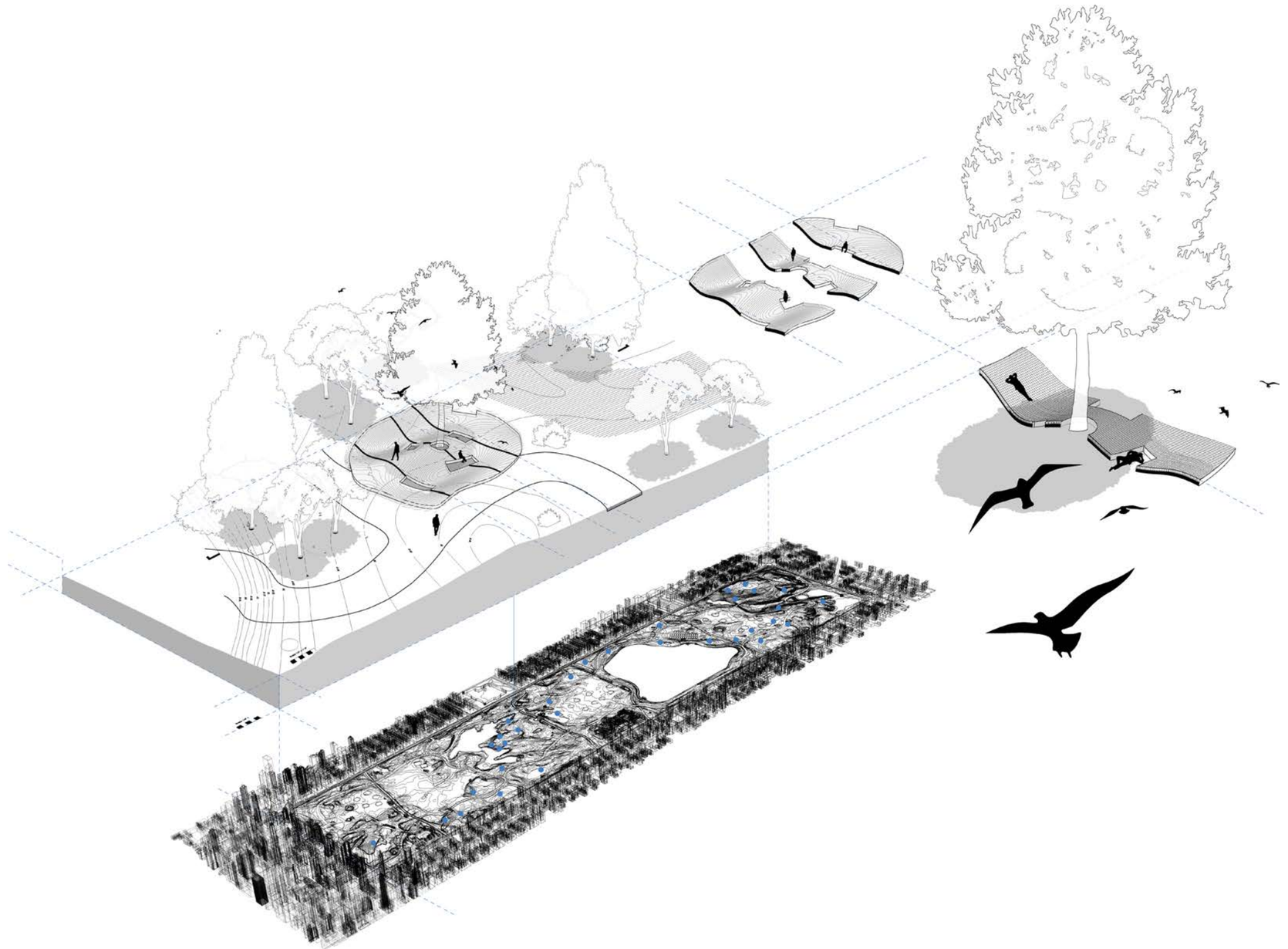
Final Model:

Living building without espalier. The model is growing onto itself to give maximum protection from the incoming sound waves coming from the river and nearby planes. This model is made of fabric layered in concrete with rods on each side. Combined together with glass (acrylic) to allow for views and a complete closure of the building.

The project aims to collect these berries falling from the end of tree branches into the rolling topography and its small divots to allow these birds that nest close to the ground to have easy access to this food source and allow for controlled seed distribution. The human is also included by creating a place to rest, eat, digest, do yoga, which allows to process of digestion to occur. The aim is to also create a harmonious zone/ habitat for these otherwise very different species to cohabitate with each other while positively influencing the positive Relocation of these seeds.





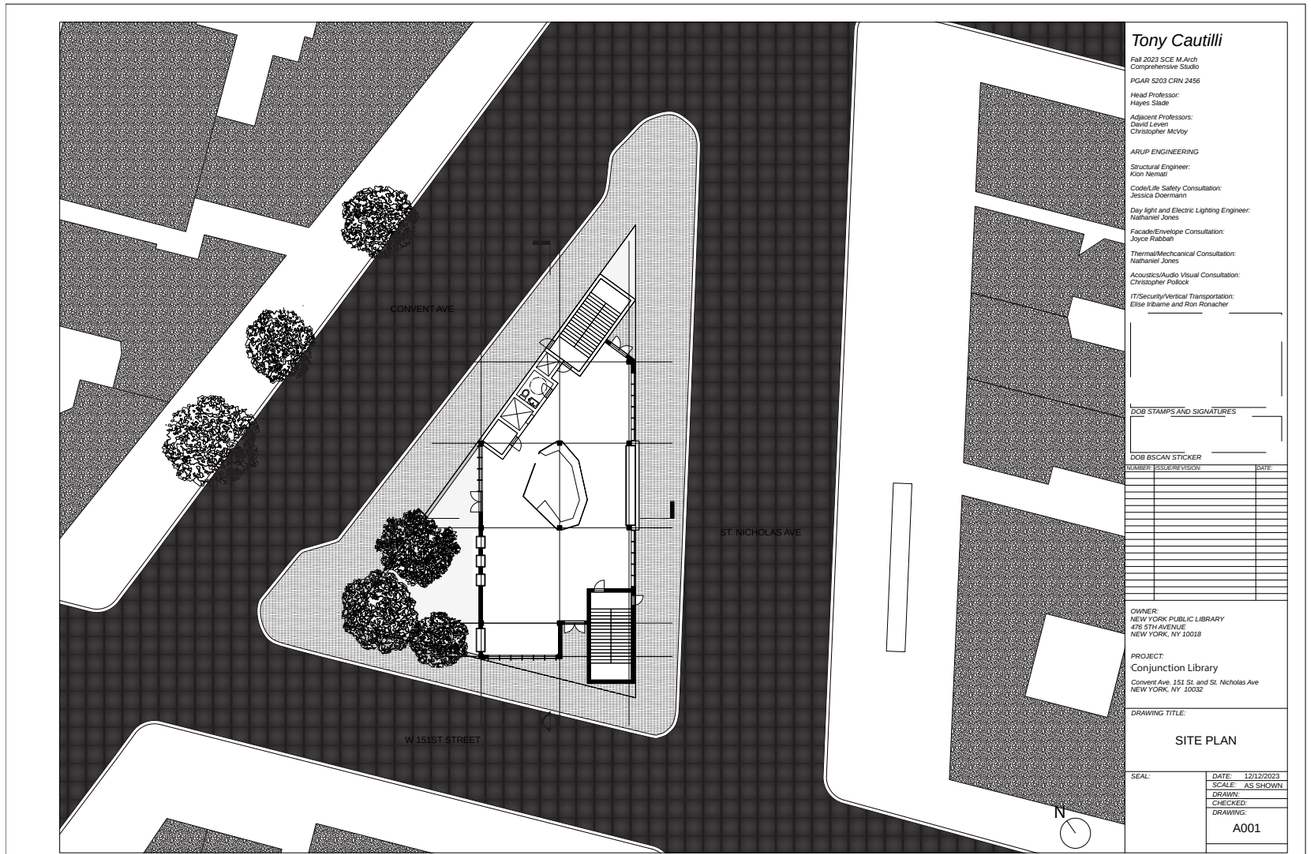


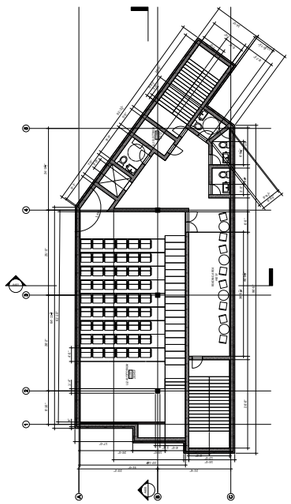
The project's original goal was to explore innovative methods for revitalizing museums using steam technology, similar to the systems powering certain Manhattan structures through Con Edison. Our group designed a completely new space that incorporates the surrounding scenery as part of the artwork, transforming it into a hub and community center. This space provides a cool, relaxing environment for passersby. Importantly, the project was conceptualized to be adaptable to various locations, rather than being site-specific.

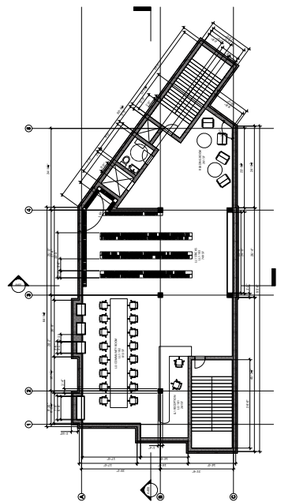

GLASS
6'
3'
WOOD

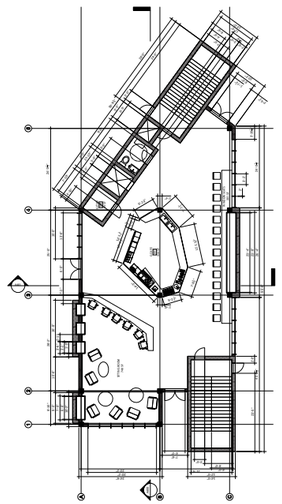
The Conjunction Library was a pivotal part of the New School's NAAB Accreditation semester. Our task was to design a library on a chosen site in Central Harlem, New York. We selected a 6,000-square-foot triangular plot, which presented unique challenges related to restrictions, codes, and zoning regulations, while also ensuring the design met the requirements of a modern library.

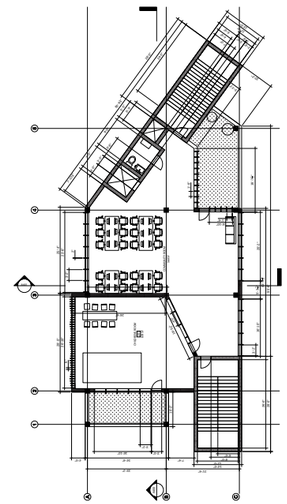
One significant restriction was the mandate for the building to have at least 20,000 square feet of usable space. This constraint necessitated a design that extended both vertically and below ground, while still preserving some ground space. The ultimate goal for the semester was to produce a comprehensive set of architectural drawings ready for submission. These included general notes, code compliance documentation, floor plans, sections, elevations, reflected ceiling plans (RCPs), and detailed plumbing and mechanical plans.

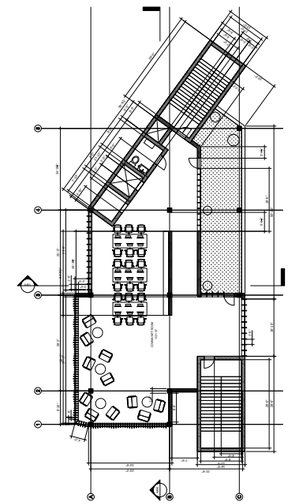


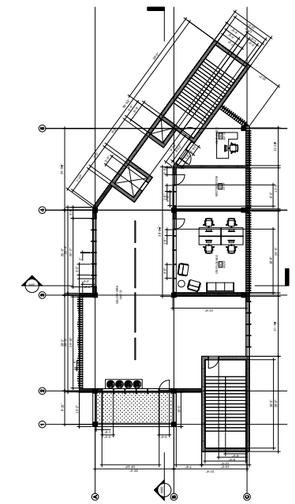


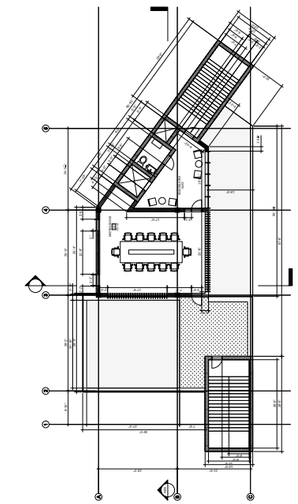


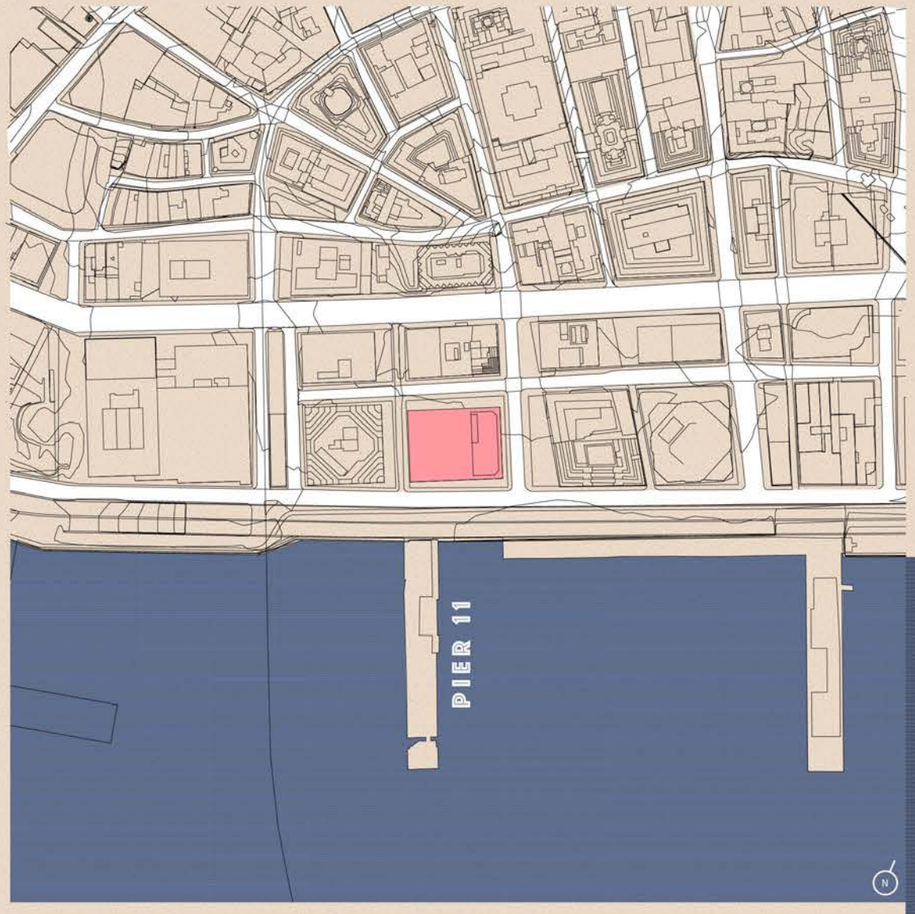


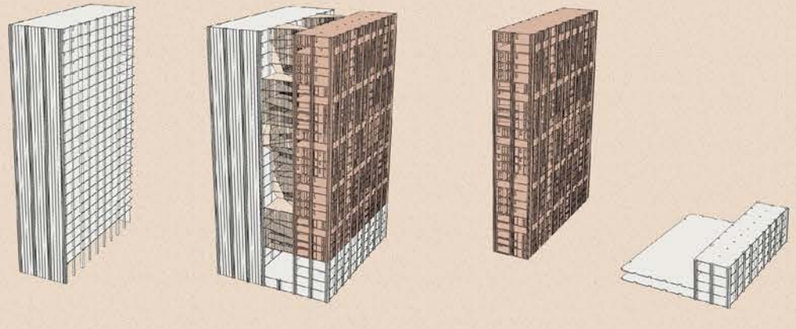


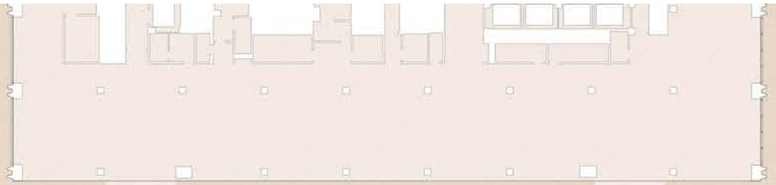


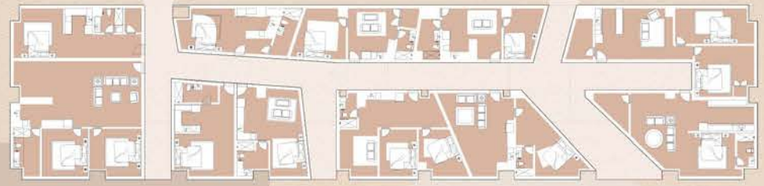


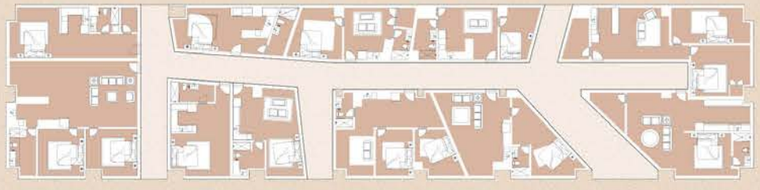


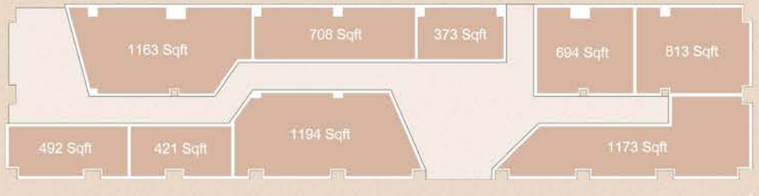


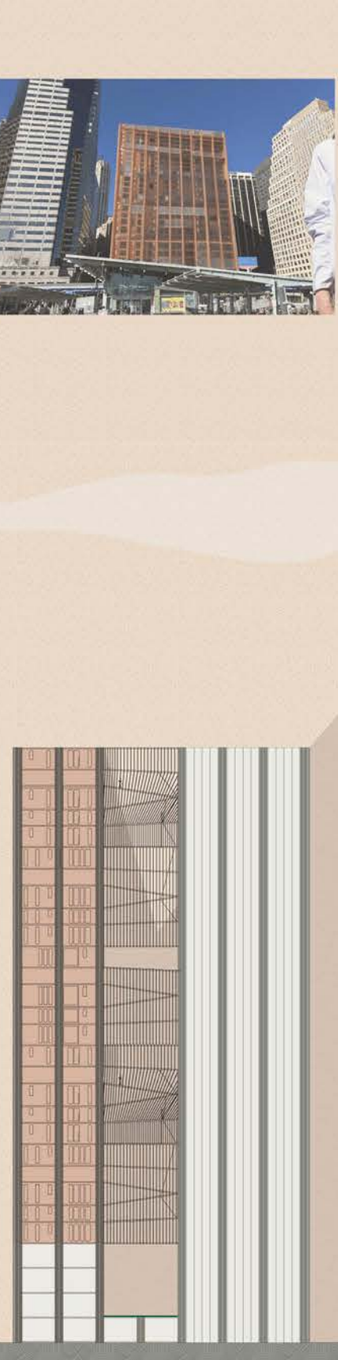






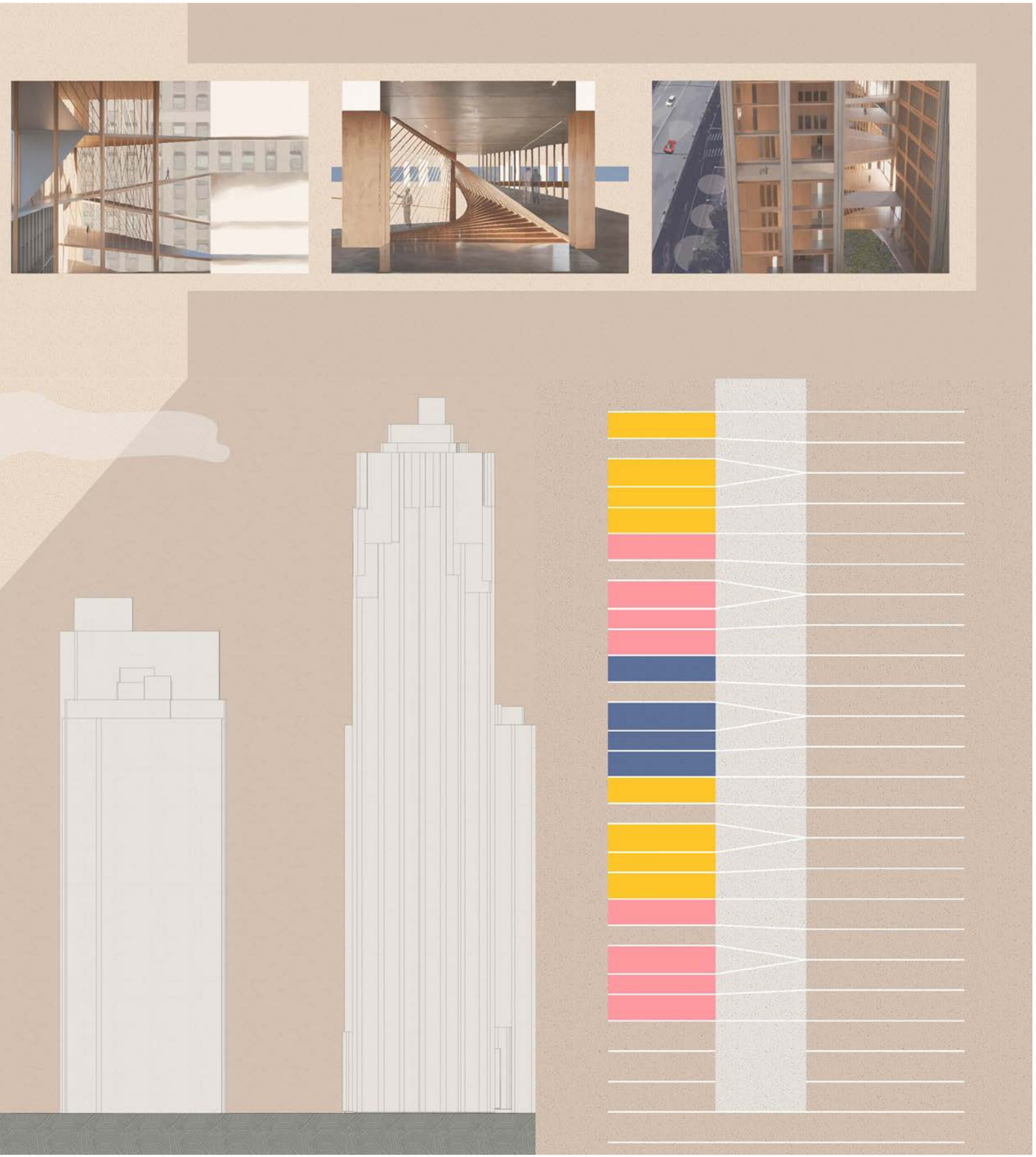






PIER 11

111 Wall Street



The pandemic has necessitated a reevaluation of urban development strategies in response to changing societal dynamics. My thesis argues for Adaptive Reuse of a specific structure being 111 Wall Street, previously regarded as an optional consideration, and must now be actively prioritized as the foremost approach in urban planning. This assertion stems from the imperative to confront the diminishing relevance of traditional in-person working environments in the post-COVID era and the demand for housing amidst population growth. My research aims to examine the feasibility of transforming working environments into residential spaces and repurposing those sites to serve as vibrant community hubs. The overarching goal is to advocate for a shift in urban development, one that harnesses vacant spaces to create productive, sustainable, and socially beneficial assets without resorting to the costly and environmentally detrimental practice of demolishing existing structures and consuming valuable land resources.

The Building I'm currently pursuing (111 Wall Street) is Undergoing a "Full Transformation", yet the transformation is purely aesthetic changes. Their aim is to update the façade and use the once commercialized/ office space and make a more updated modern version of it.

The Organization that would partner with this thesis is Breaking Ground.

Mission: to strengthen individuals families and communities by developing and sustaining exceptional supportive and affordable housing as well as programs for homeless and other vulnerable New Yorkers.

Works with individual's to provide solutions to determine what's best for them some move directly into permanent housing. Others use transitional housing to overcome life on the streets. The organization also offers:

- Offer psychiatric evaluations
- Have native language speakers on hand for their clients.
- Helps with acquiring legal documents ... Even from other states.
- Getting to sobriety
- Organization builds community and reintroduce social connections and networking

My thesis takes the existing 1 million sqft building and splits it into 3 sections, 1. Core and resident program - 2. Bridges, and 3. Affordable Housing Units (count. 120 units). The 1/3 of the building occupying the core, traversal, egress, stays nearly the same, updating the facade to the bridges and closing some spaces but ultimately a community section space containing a library, gym, laundry, office, and community space.

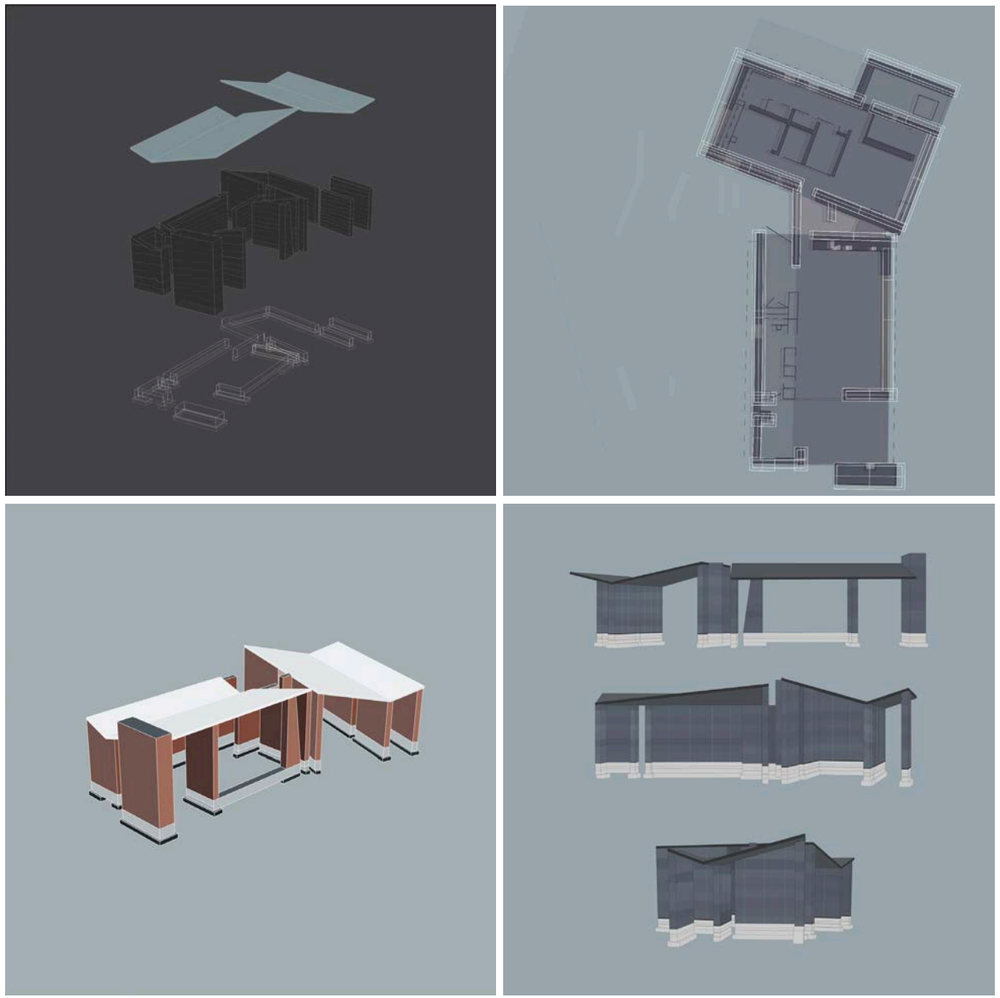
The lower ground:
Ground floor and the first few floors on the residential side are space that the public is allowed to use. The program for that section the spaces include:

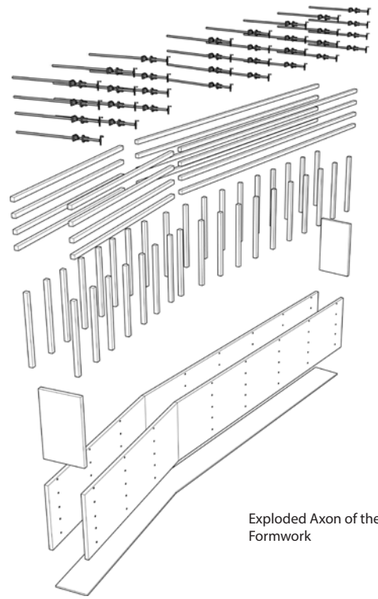
Grocery store for the building and community surrounding it that stunts the cost of inflation for food and products needed by the tenants because of the expensive area that is Wall Street - lower Manhattan even. Another portion would be a government document and career center to get the people occupying and visiting the building back on their feet and give them the necessary products to get a better standing in the city while also being in an ideal spot to find jobs and get to places at ease.

Moving to the bridges which is the biggest change to the structure. I cut the building into 2 towers by removing this portion of the existing structure which removes 250,000 sqft from the just under 1 million original sqft. The biggest issue and why I chose to do this was because the building main facade gets almost all the direct natural light and the middle to core gets almost none. By removing that portion will allow light to get to portions of structure that would otherwise be dark. The point of having the bridges the way they are is to create productive space for being. It can make space that's typically taken and forgotten quickly to a space that becomes a journey and useable space that enjoys incoming light and becomes a main focus and model for the once commercialized building.

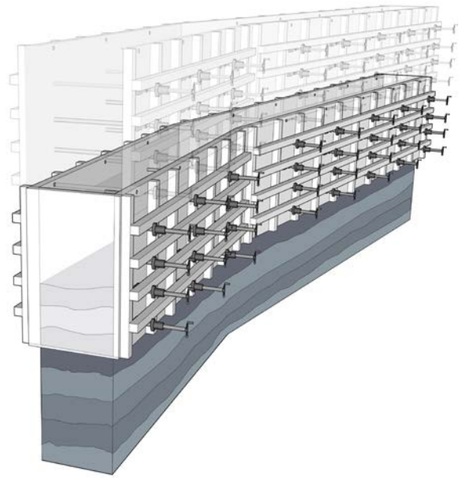
Residential side
Over to the residential side of the building the program is split into 3 different community types to add variation into the building which would change the crossover bridges to overlap and create a zig zag in between the 2 towers. The bridges act as a program to help neighbors interact, creating personalized streets that can become a hub of hangout and support the community's growth with new and old tenants. On that note…. The residential units have studios, 1 bedroom and 2 bedrooms. The units would also follow the same idea as breaking ground occupying those units with permanent and temporary tenants. The residential side has large enough corridors and routes where light pours into the space. Those corridors would also have occupiable space for the residents of that floor away from their unit. The units have everything a typical affordable housing unit might have + a little bit more space than what the city requires.

Being on the edge of a magical city and so close to Pier 11 which is a hub of transportation to other burrows of the ever-growing city. Could make the building stand out from the rest of the marketed and business driven Wall Street.

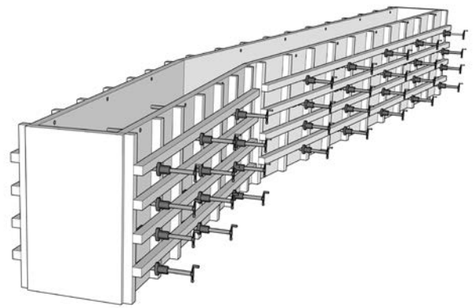




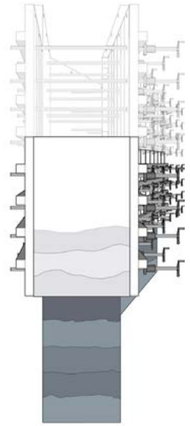
Exploded Axon of the Formwork



Rammed Earth with Formwork



Formwork with Mechanisms



Section of the Formwork with rammed earth

Catalina House:
Worked on with Hailey Ciolino

Located in Tuscon, Arizona the Catalina house designed by Studio Rick Joy had many stylisic features such the rammed earth walls, slanted windows and the butterfly roof. The model was created by both Hailey and I in sketchup and edited in illustrator/ photoshop.

Individual Component Piece:
Catalina House

Formwork for the rammed earth walls and its individual pieces used to create this formwork to mold a list of materials into a portion of the wall. It is then pounded into the formwork to create these natural looking layers.