

# PORTFOLIO

GSAPP 2024-2025

ZEQUANYU

THE CITY ISLAND

Summer 2024  
Instructor: David Moon

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The City Island

Studio Work  
Speculative Island of the City

The City Island at Floyd Bennett Field emphasizes cohabitation with the site through a phased development timeline. Our program includes transportation systems, affordable housing, flood prevention, and the preservation of recreation areas. Mass Timber serves as the primary structural material for our modular buildings.

Floyd Bennett Field, a former airport for the metropolitan area and later a military air base, is now largely open, with expansive parklands supporting local recreation, police facilities, and historical buildings. Located adjacent to the wetlands of Jamaica Bay and with its remaining airport infrastructure, its potential for reuse has been explored recently with some difficulty as a refugee facility.

As a small island alongside its larger counterpart, "City Islands" offer both a conceptual and literal framework for architectural experimentation, addressing some of the most pressing challenges of the contemporary environment. Throughout history, islands have been sites of speculation, from Thomas More's Utopia to Rem Koolhaas' Delirious New York, where places like Coney Island function as miniature prototypes for Manhattan itself.

Project Team: Zequan Yu & Wenyi Xu  
Project Time: Summer 2024  
Project Location: Brooklyn, New York  
Instructor: David Moon





The north side features a sports center and football field, while the center contains existing housing. Near the waterfront, there is a marina for weekend fishing and boating. The site also includes abandoned buildings, historical structures, and new educational institutions, including a high school on the south side. As the site is lack of transportation infrastructure, we plan to incorporate new transport systems connecting to existing train lines, sea routes, and bus networks. As the site was formerly an airport, we aim to utilize its flat terrain, remove toxic asphalt, and build with modular units to preserve and integrate with the natural environment.



**Aviator Sports & Events Center**

The Center is a premier sports and entertainment complex. It offers a wide range of activities and facilities, including indoor basketball, ice skating rinks, gymnasiums, rock climbing walls, and outdoor sports fields. As one of Brooklyn's largest recreational centers, Aviator hosts various events, from sports tournaments and fitness classes to concerts and corporate functions. Its diverse amenities cater to individuals and families seeking active lifestyles and leisure activities.



**Moonbeam Gateway Marina**

Moonbeam Gateway Marina in NYC is a picturesque haven nestled along the waterfront, offering a serene escape from the bustling city life. As you approach, the marina greets you with a panorama of sleek yachts and sailboats gently swaying against the backdrop of the iconic New York skyline. The air is imbued with a sense of adventure and relaxation, enticing both seasoned sailors and casual visitors alike.



**Fishing at National Recreation Area**

With its stunning views that seem to go on forever and the promise of hooking onto a prized catch, Sandy Fishing Beach has captured the hearts of locals and visitors alike. It's more than just a destination; it's a sanctuary where you can escape the hustle and bustle of everyday life and reconnect with the natural world. Also, fishermen have impressive views by looking at the other side shore.



**Fairchild PT-26 Cornell at H.A.R.P**

The Historic Aircraft Restoration Project (H.A.R.P.) is a unique museum and active workshop in an old hangar at Floyd Bennett Field. The volunteers there are a friendly bunch, passionate about American aviation history and eager to share their knowledge with visitors. It's quite something to see those historic planes being brought back to life.



**Flooding Prevention**

Flooding is a big concern for places like Floyd Bennett Field, especially with its low-lying spots that are prone to water damage. To tackle this, building ramps can help raise key areas, keeping them safe from rising water. Also, setting up water traps or retention basins can catch and hold extra rainwater, stopping it from flooding the area. These traps work by slowing down the water flow and letting it soak in or be redirected somewhere safer. By using these methods, we can make sure Floyd Bennett Field is better protected against future floods and remains as usable land.



**Affordable Housing**

In a city where rent/sell prices are so expensive, affordable housing is more important than ever. With so many people struggling to keep up with the high costs, options like living in Floyd Bennett Field can seem like a breath of fresh air. It's not just about finding a place to live—it's about giving people a fair shot at a stable, comfortable home without breaking the bank. Affordable housing isn't just a nice-to-have; it's a must for keeping our communities diverse and giving everyone a fair chance. It helps keep people from being pushed to their limits and makes sure everyone has a place to call home.



**Mass Timer**

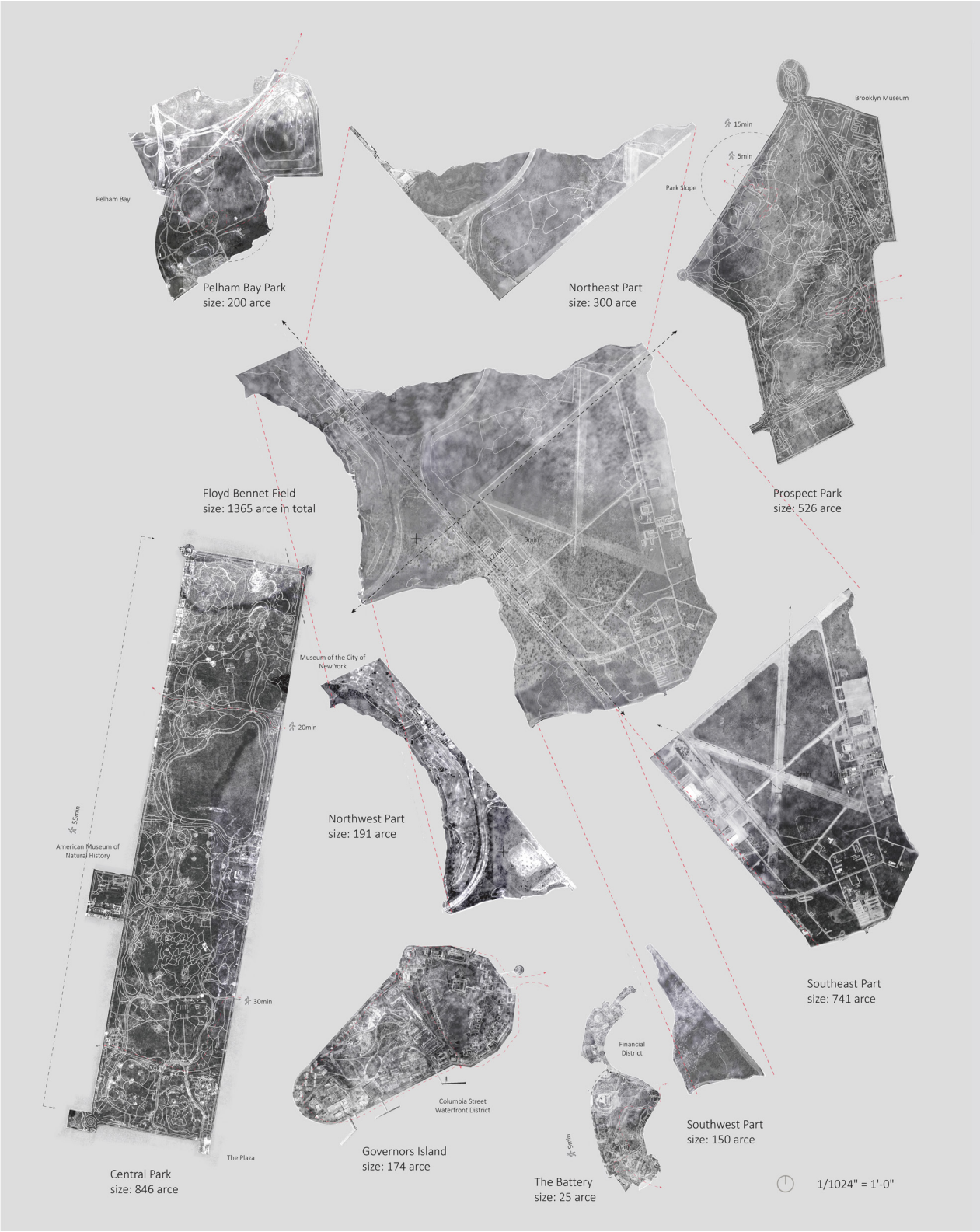
Mass timber structures, including columns, are a standout choice for sustainable and durable building. By using wood, which is a renewable resource, these structures help cut down on carbon emissions compared to traditional materials like steel and concrete. The wood used in mass timber also acts as a carbon sink, storing CO2 and reducing the overall carbon footprint of the building. Plus, with advancements in engineering, mass timber products such as Cross-Laminated Timber (CLT) and Glue-Laminated Timber (Glulam) are built to last, offering impressive strength and resilience. This makes mass timber a smart, eco-friendly option for creating long-lasting, beautiful structures.



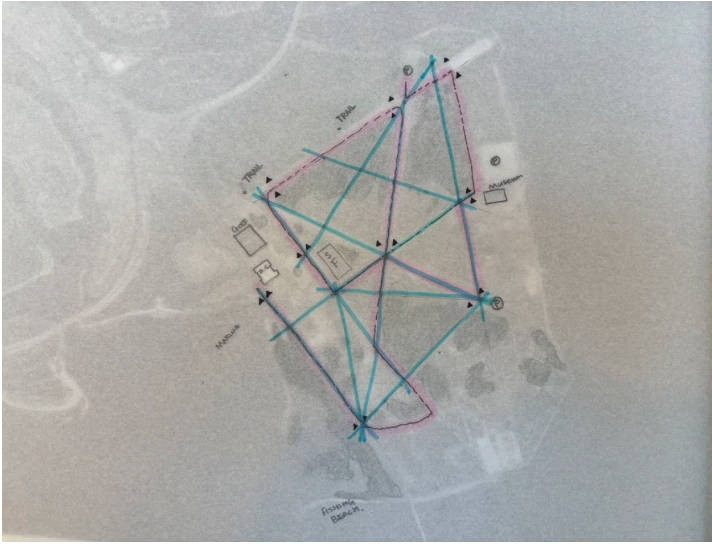
**Preserving Recreation Areas**

To maintaining community well-being and providing spaces for outdoor activities. As urban areas expand and environmental pressures increase, keeping these open spaces intact ensures that residents have access to parks, sports fields, and natural areas for relaxation and exercise. Floyd Bennett Field, with its diverse facilities and scenic spots, offers a valuable escape from the hustle and bustle of city life. By investing in maintenance and flood prevention measures, such as building ramps and water traps, we can protect these spaces from environmental threats and keep them enjoyable for future generations. Preserving such areas not only supports physical health but enhances the quality of life, fostering a sense of community and connection with nature.





This comparison shows the size difference—Floyd Bennett Field is quite large, covering an area of about two Central Parks. The city parks effectively serve their surrounding neighborhoods, such as Prospect Park serves the Park Slope. Currently, communities like Sheephead Bay and Flatlands, located north of our site, lack convenient access to a city park which we can propose incorporating some of the functions of a city park to make it more accessible and attractive to nearby residents. Walkability and path planning are crucial factors in shaping visitor experience. The flow of visitors in different city parks varies significantly due to road layouts. Some parks allow visitors to pass through as a shortcut simply. Larger parks may feel overwhelming, causing visitors to turn back after a short walk. On Governor’s Island, visitors often drive around instead of walking. These factors help us understand the scale of the site and inform our design approach.



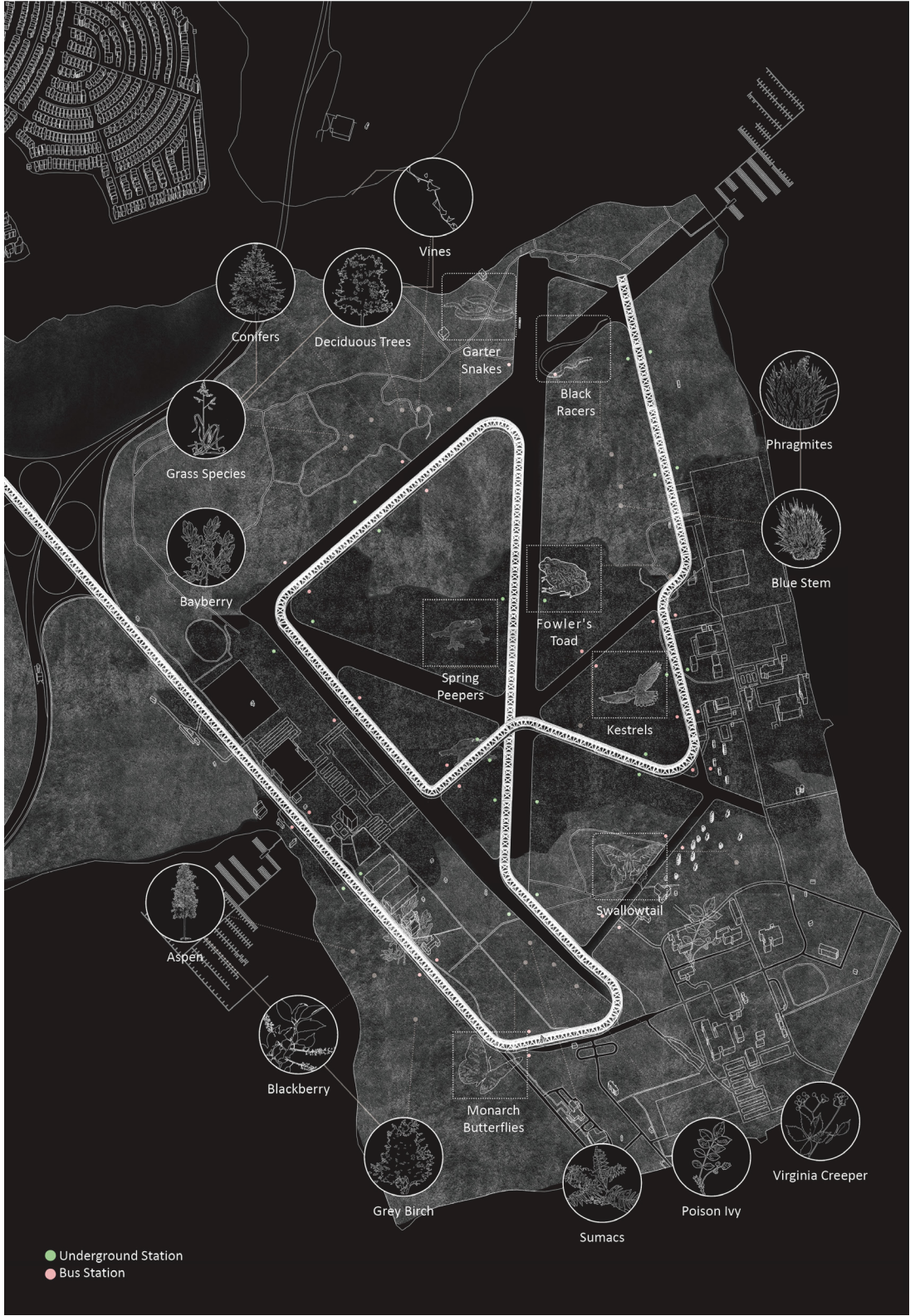
We can divide the site into four sections using the main road and compare each section to famous city parks of similar size. This allows us to envision how the site can be planned to serve both tourists and local communities, including immigrants. In our plan, we referenced city park layouts to create a well-connected network of pathways. For sections preserving more of the national park, we introduced walking trails, while a bike route encircles the site, ensuring accessibility for the whole site.



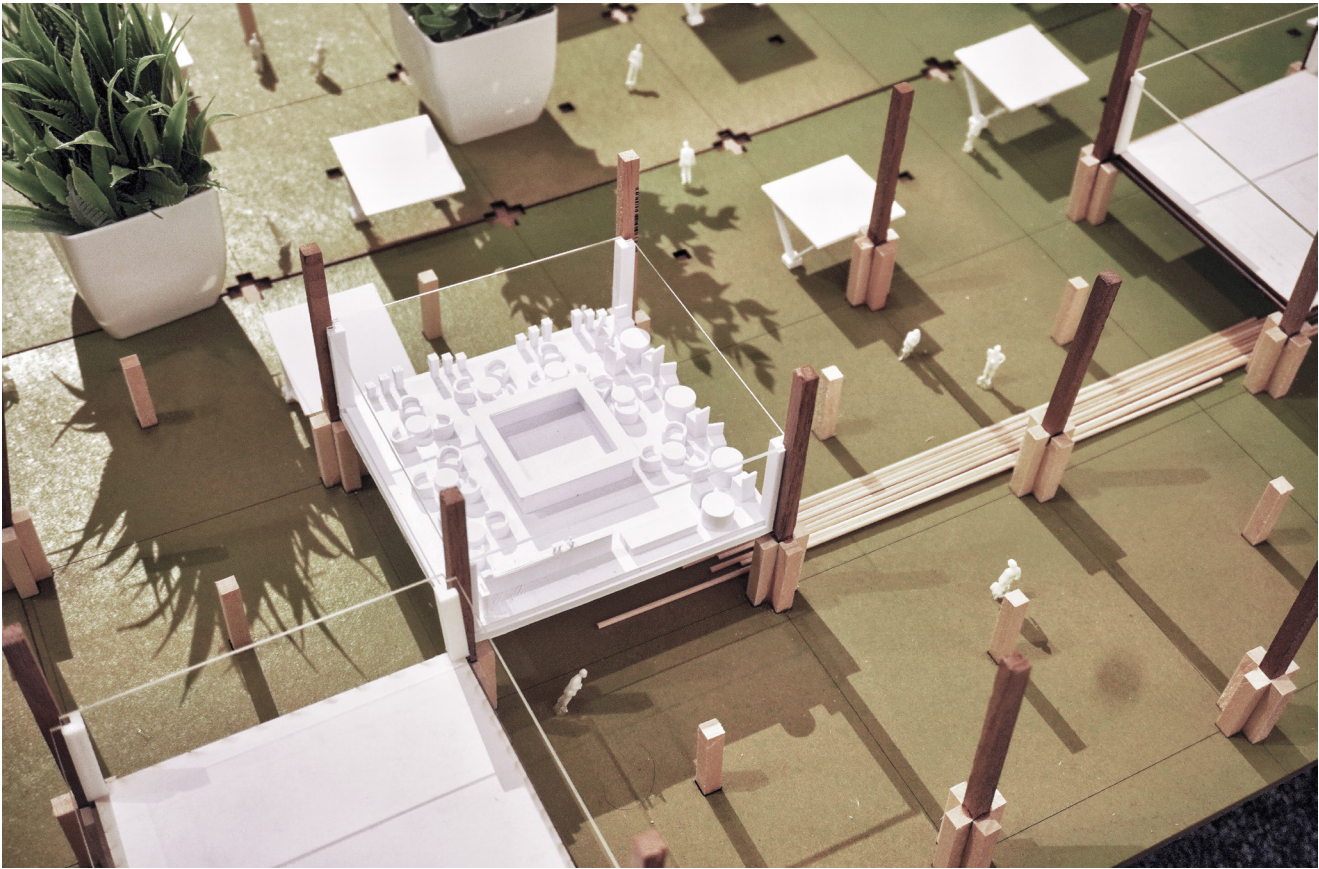
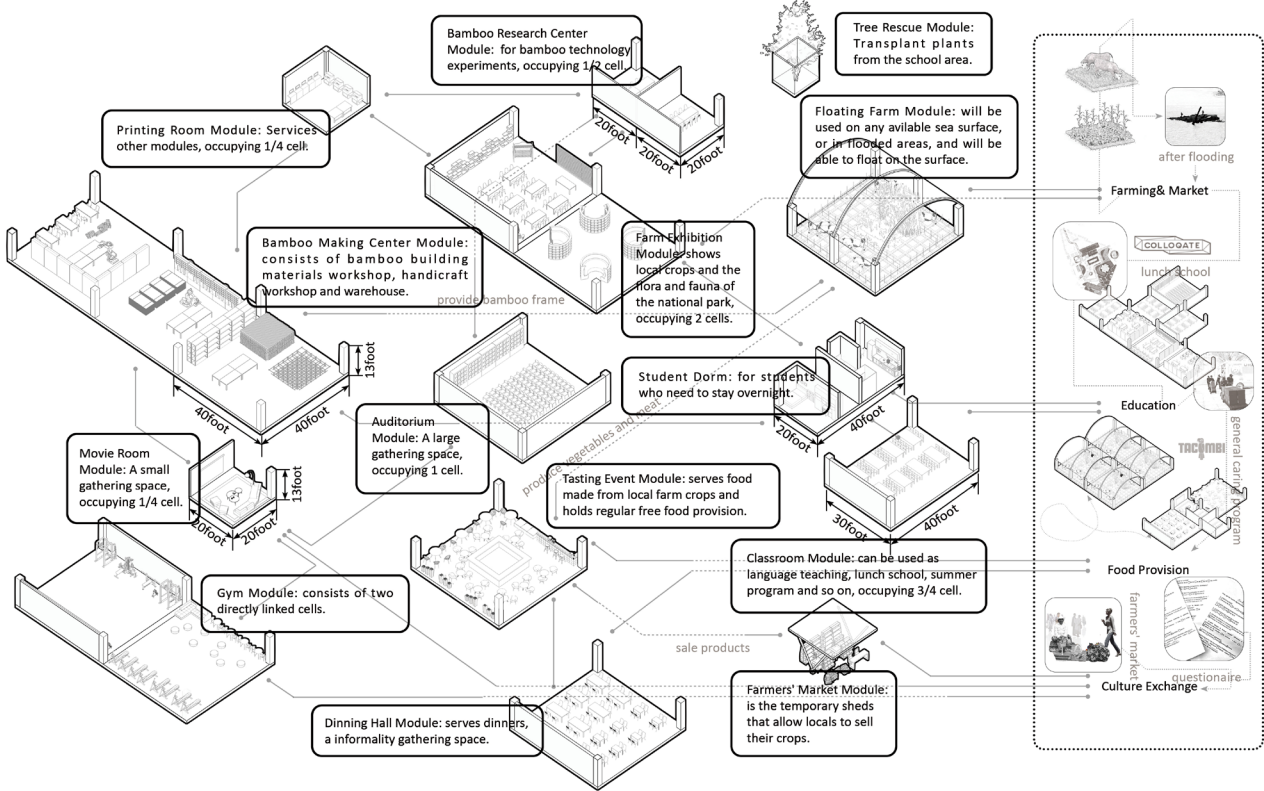
The first two diagrams above shows the imagination of the site future development, including activities on the ground level for biking, playground, farmers market and community center at the early phase. The last rendering showing the view from taking public transit to the site, where visitors are immediately greeted by the lively energy of farmers market booths and mass timber structure. This welcoming scene encourages people to pause, explore, and engage with both the architecture and one another.

The collage on the left depicts a sectional view of our envisioned transit system within the first five years. The underground level will feature a train line directly connected to our buildings. At the ground level, transit will be more diverse, incorporating buses, walking paths, and bike lanes to accommodate different programs and users. The bridges will become essential as the site develops, further enhancing site connectivity and accessibility.

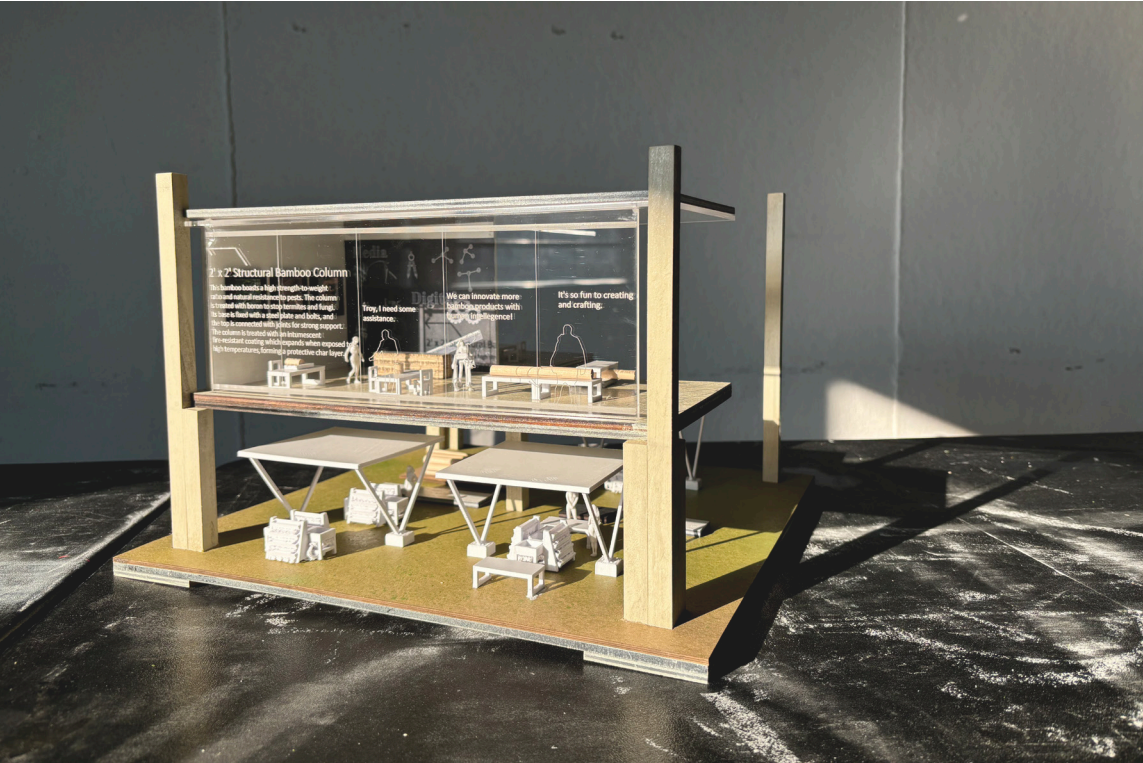




The "Flora & Fauna Bubble Map" illustrates the relationship between new infrastructure and existing and future recreation areas. The transit system will initially reach the entry of our first building before extending into a network of bridges constructed along the existing asphalt pathways, supported by bamboo columns. Over time, as the asphalt is removed, a new community will emerge, designed to preserve and integrate with nature.







The first model illustrates our approach to restoring and preserving nature. Asphalt will be removed, and the land will be returned to the soil for new plantations. Simultaneously, the flood prevention system is demonstrated, where collected water will be redirected to school farms, floating farms, bamboo plantations, and on-site agricultural areas. The second model presents one of our modular structures—a bamboo creative center dedicated to researching and innovating bamboo applications. This center will introduce various bamboo-based products into daily life. Under the module, the ground floor will accommodate a farmer’s market, storage spaces, and sitting/gathering areas, fostering a dynamic communal environment.



The site model, built at a 1/8 inch scale, differs from the 1/4 inch scale model and represents the project’s first phase. This phase includes bamboo planting, structural construction, and tree relocation efforts. Since the site is expected to be flooded in 100 years, we aim to rescue lower-height plants and create green spaces to support other species on-site.







In the first 10 years, we plan to plant bamboo in the first triangle and excavate around the coast to install flood prevention units. Simultaneously, asphalt removal will prepare the ground for modular building construction. Regarding the new high school, existing trees and bushes will be cleared for the proposed school farms, and we will relocate the vegetation to the second triangle.

In 20 years, the train line will extend to the entrance of the first modular building. The farms will be fully operational, featuring an on-site farmer's market and tasting events to attract visitors and cultivate a diverse community. Also, floating farm units will be introduced in the parking lot on the south side to prepare for future flooding.

In 50 years, a new bridge and transport system will be integrated into the site. The community will develop along the former asphalt pathways as the modular buildings expand. The bridge, constructed from bamboo harvested from the initial bamboo farm, will enhance connectivity across the site.

In 100 years, the entire site is expected to be flooded, with the floating farm functioning in tandem with the modular buildings. The first floors of the buildings, elevated 10 feet above ground level, will remain above the projected 5-foot flooding level, allowing people to navigate the site using the bridge system. Over time, the asphalt will be removed entirely, creating a new community that coexists with the evolving natural landscape.





## CoCare Living

Studio Work  
New Programs, New Technologies + New Topologies

This studio examines three historically significant architectural works from the past century, each rooted in local experience while addressing new urban and social concerns. Though shaped by their historical context, these projects anticipated futures not yet realized, proposing ambitious programs and spatial strategies that redefined architecture’s role in society. They experimented with new forms of enclosure, challenged hierarchical organization, and confronted failing social structures with architectural imagination. In doing so, they moved beyond disciplinary boundaries to shape new communal possibilities, sustaining the identity of architecture while expanding its reach.

While the studio engages these works collectively, my focus centers on transcribing the Salvation Army building, analyzing its formal and programmatic structure as a foundation for transformation. Building on this transcription, my project introduces a pairing system as a new architectural program—one that connects healthy older adults with peers experiencing illness or disability. The goal is to foster mutual care, reduce isolation, and integrate affordability, healthcare, and aging-in-place into a cohesive spatial system. Through this proposal, I aim to reinterpret the Salvation Army’s mission of social support within a contemporary architectural framework rooted in dignity, interdependence, and wellbeing.

Project Team: Zequan Yu  
Project Time: Fall 2024  
Project Location: Paris, France  
Instructor: Michael Bell





In 1935 the first modifications were made, the architects creating openings to reduce temperatures behind the fully glazed south facade.

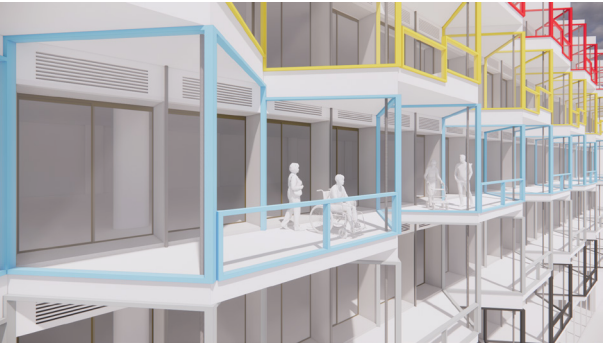
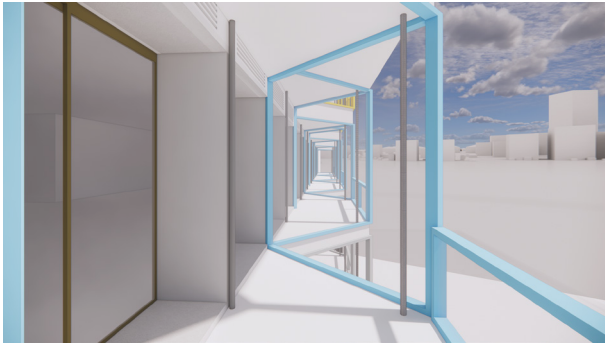
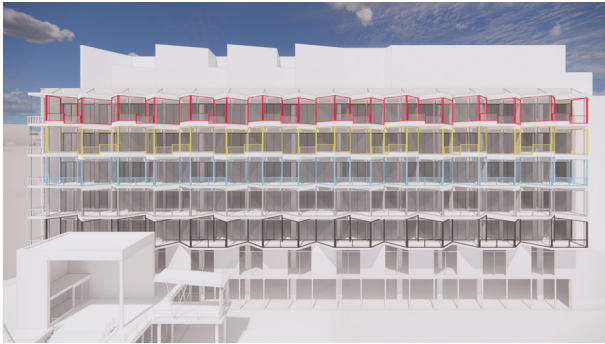
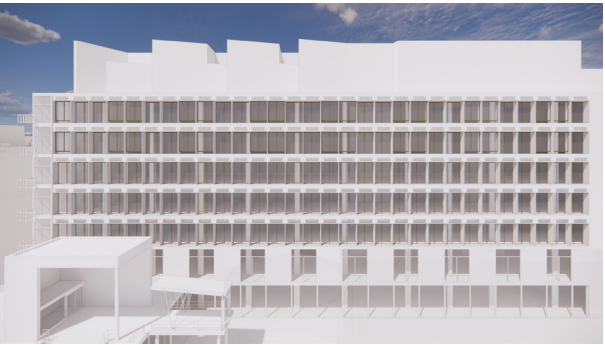
Le Corbusier again modified this facade after the war, the Cité de Refuge having suffered significant bomb damage. Between 1948 and 1952, the curtain-walls were completely replaced. Le Corbusier's new project provided for the creation of a brise-soleil in front of the polychrome joinery.

Transcripting on the right:  
By studying full curtain wall back before 1935, and transcripting brise solei back in 1952, I have come up with a design proposal that also followed the same architecture language.

The first layer is the full curtain double door and top replaced with HVAC system. The second layer is the brise solei. The third layer is the add-on balcony which gives multiple view angles and provides exterior activity space. It is also functioned as another layer of the shading system.

The balcony that anchors into the floor slab, and also supported with the suspension system. I focused on mix using the materials in an economical, environmental friendly way. I mainly use Mass Timber combined with less steel and glass.

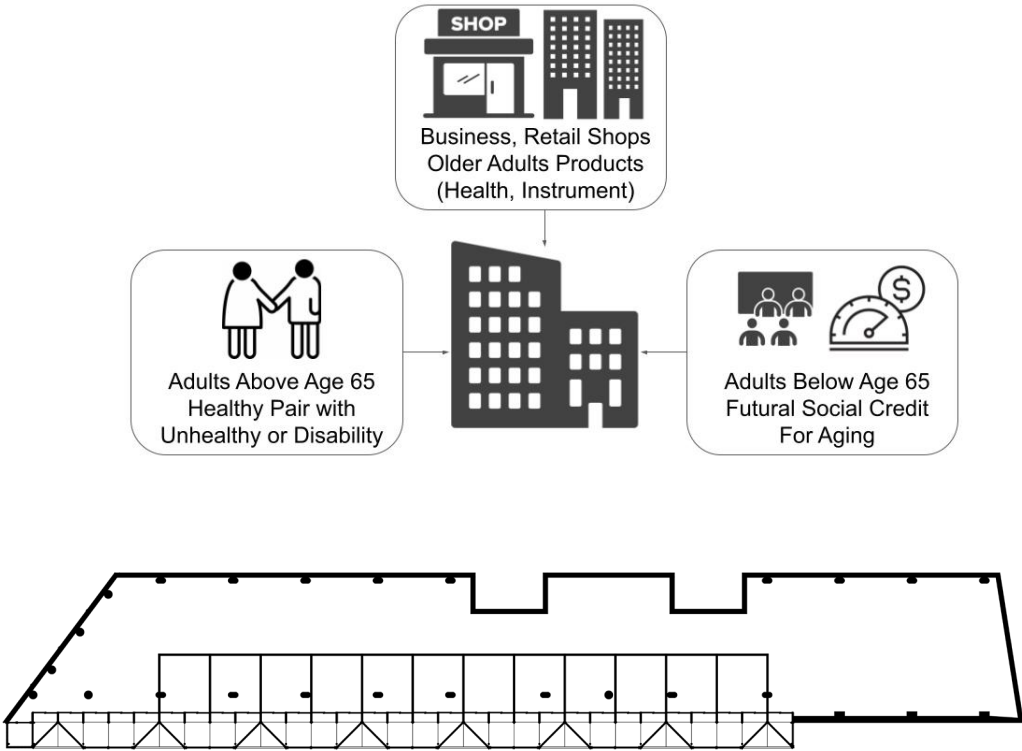
Comparison with the Salvation Army, it provides not only wider view angles and also people can looking up and down through the facade.







Nowadays, we're seeing a rapid increase in the aging population. At the same time, more and more people are becoming homeless because of the high housing cost and the lack of proper social security after their retirement. Also, people are getting harder to afford expensive medical care.



The building itself is a new community, the residents contribute to the community to cover the living expenses, so living in this building is a job.



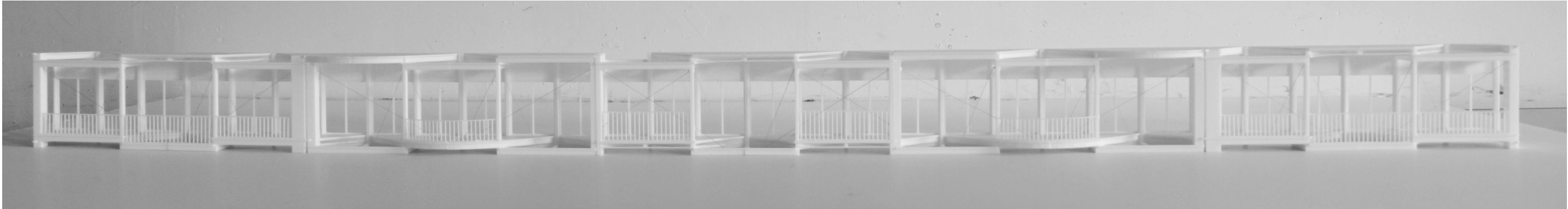
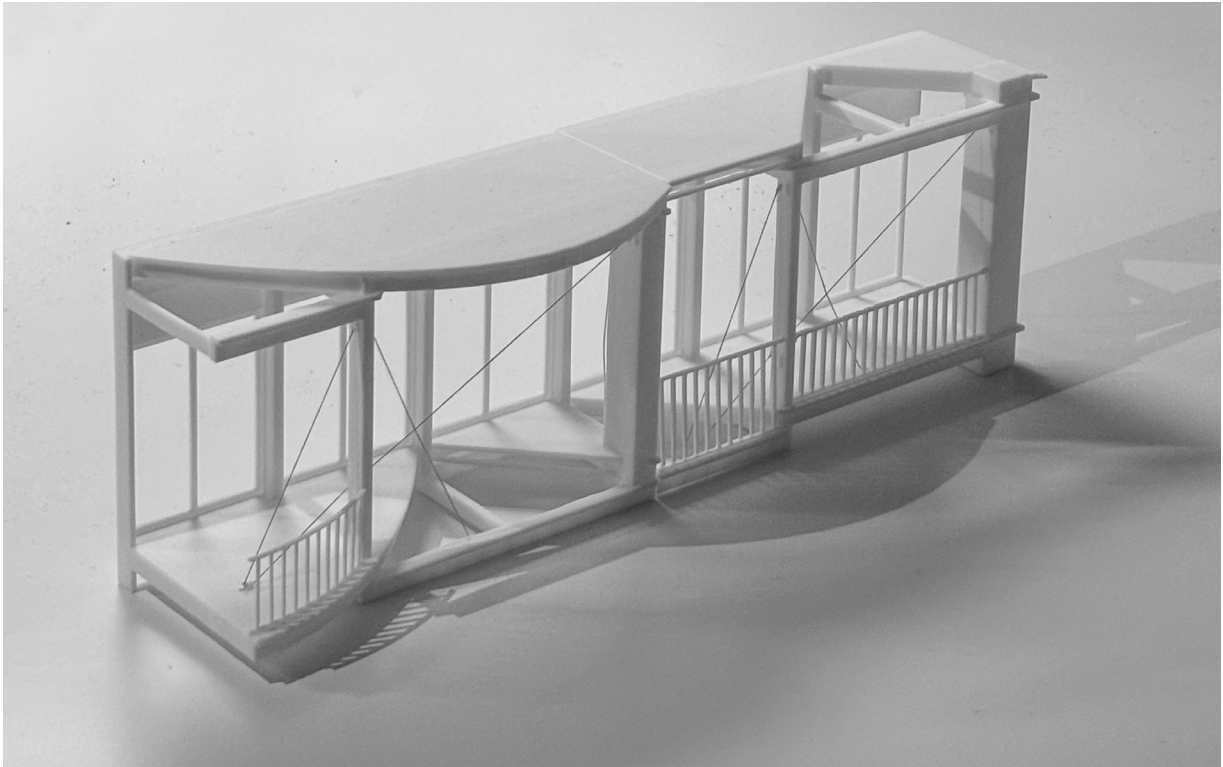
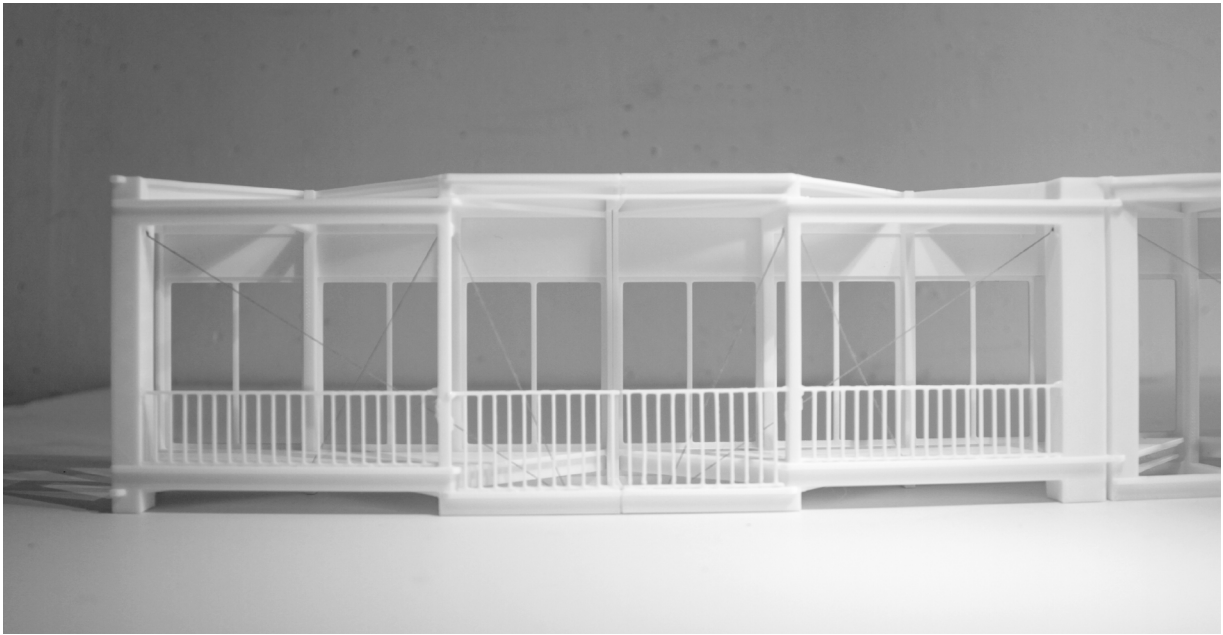




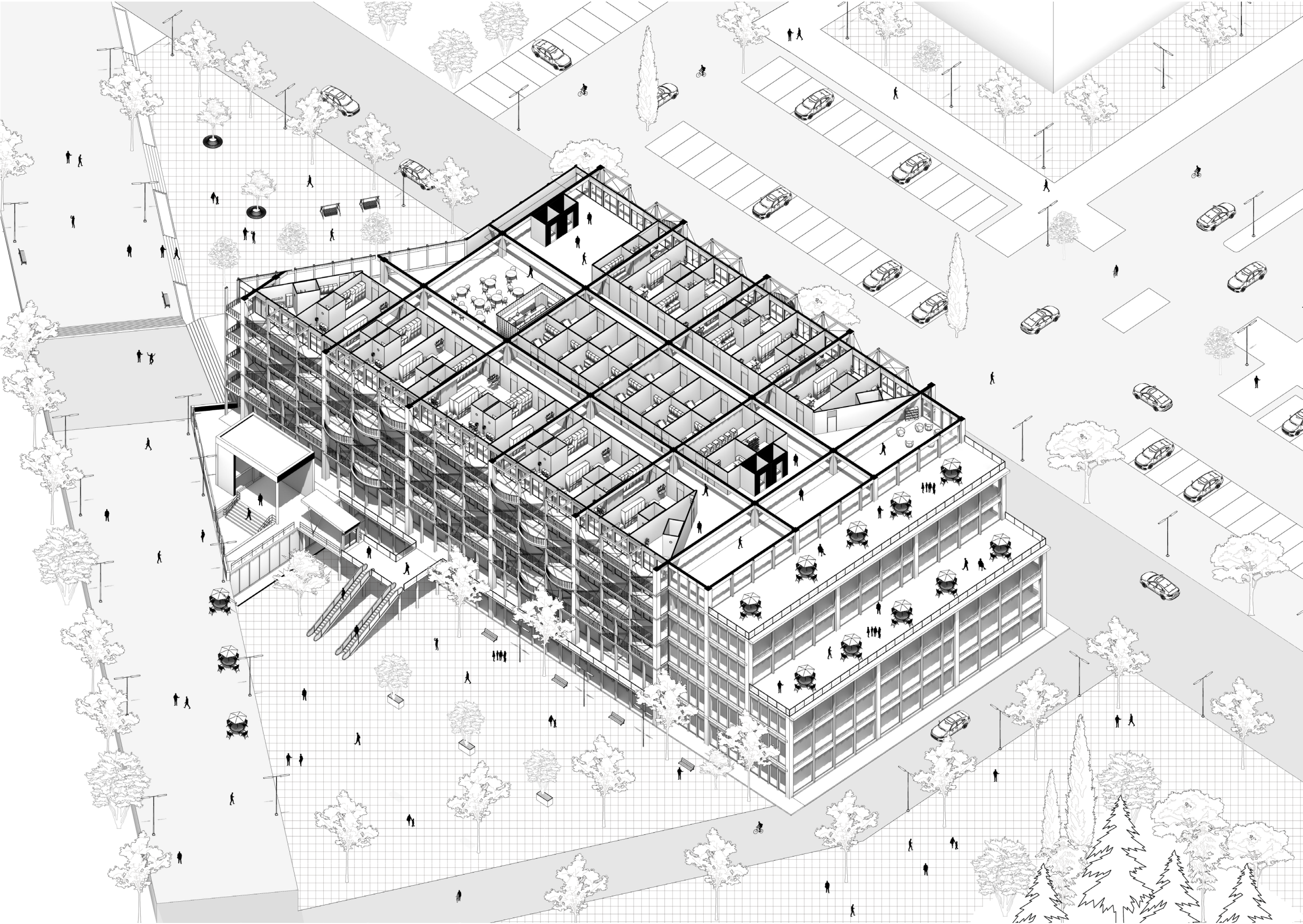
This section shows how the program is distributed in this building. The first two floor would be commercial areas and a reception Area. Third to sixth floor would be the housing units for the pairing system, and on the top 7th, would be affordable housing for families to prevent poverty.

This project is also related to music. This facade can be regarded as a musical score. All vertical columns are its melody. These platforms are jumping notes, not only in their shapes such as straight lines or curves, but also in their structural materials. , interplay between steel timber and glass.

Focusing on the rhythm of columns, the transitions between spaces, and the potential for architectural openness. Another emerging direction investigates the role of light as it moves across and between materials. The shadows cast by railings, frames, and tension steel cables are not just byproducts but active elements that shape how residents experience space. These shifting patterns respond to movement and time, encouraging a deeper sensory connection between people and their environment. Proposing a design that supports interaction, calm, and mutual care, qualities essential to a pairing system where residents rely on one another.







Perspective Section









Chasing Light

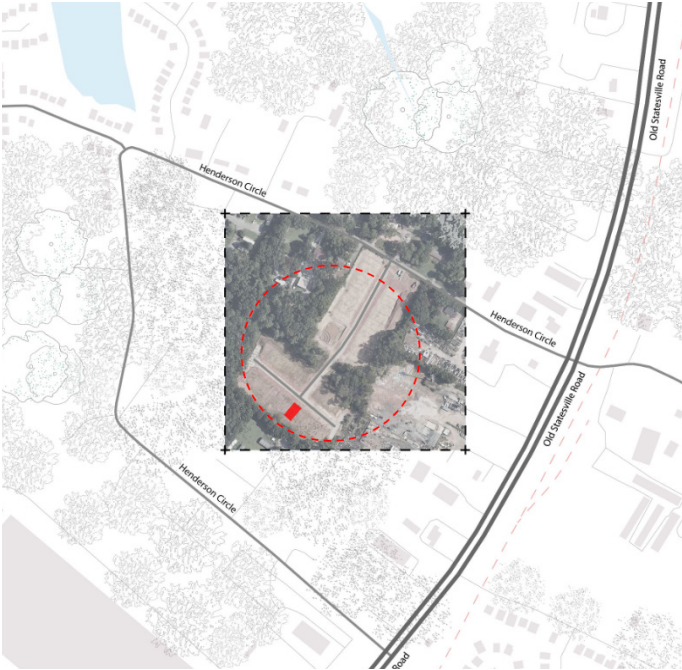
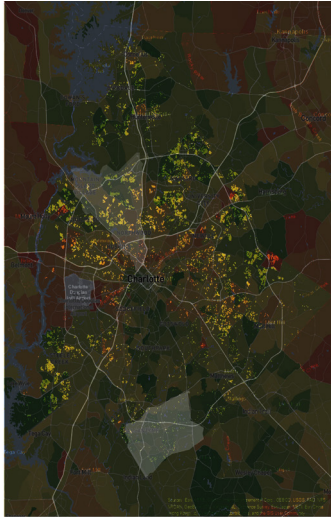
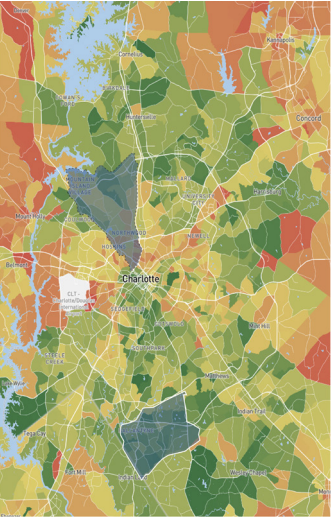
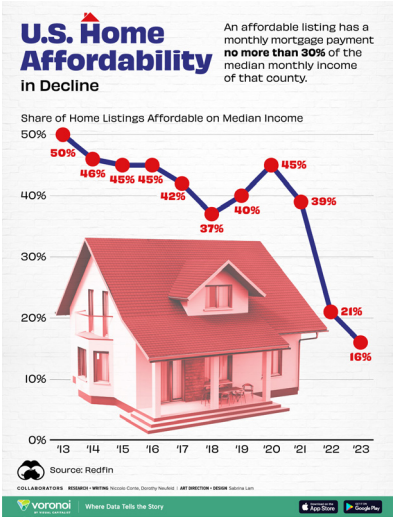
Studio Work  
Single Family Housing

This studio and seminar operate as a GSAPP Clinic, offering a critical investigation into the role of Private Equity in the Single-Family Rental housing market and its broader impact on housing scarcity. Through analysis and design, the work addresses how housing can be reimagined at scale in response to economic pressures, social inequity, and the shifting landscape of renewable energy and its emerging economy.

Our project focuses on the single-family home as a site for both spatial and environmental transformation. It proposes a new housing model that integrates solar energy not only as a source of power but as a design principle. Sunlight is used to shape how the home feels, moves, and glows throughout the day, creating a living environment defined by changing light, warmth, and atmosphere. By responding to natural cycles and embedding energy generation into the architecture, the home becomes both a shelter and a sustainable engine for the future.

Project Team: Zequan Yu & Shuyi Kong  
Project Time: Spring 2025  
Project Location: Charlotte, North Carolina  
Instructor: Michael Bell

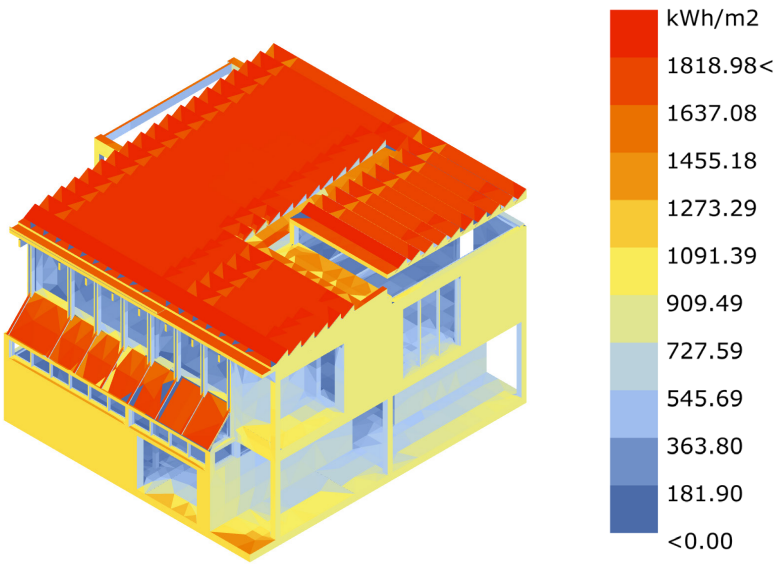
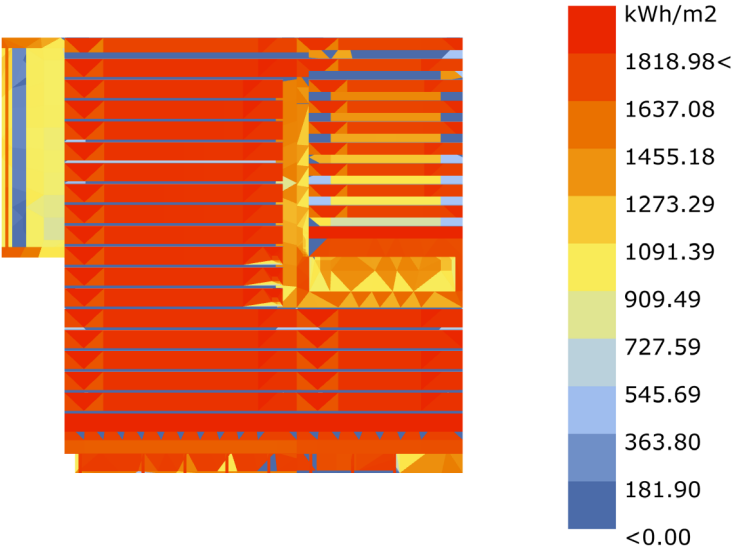
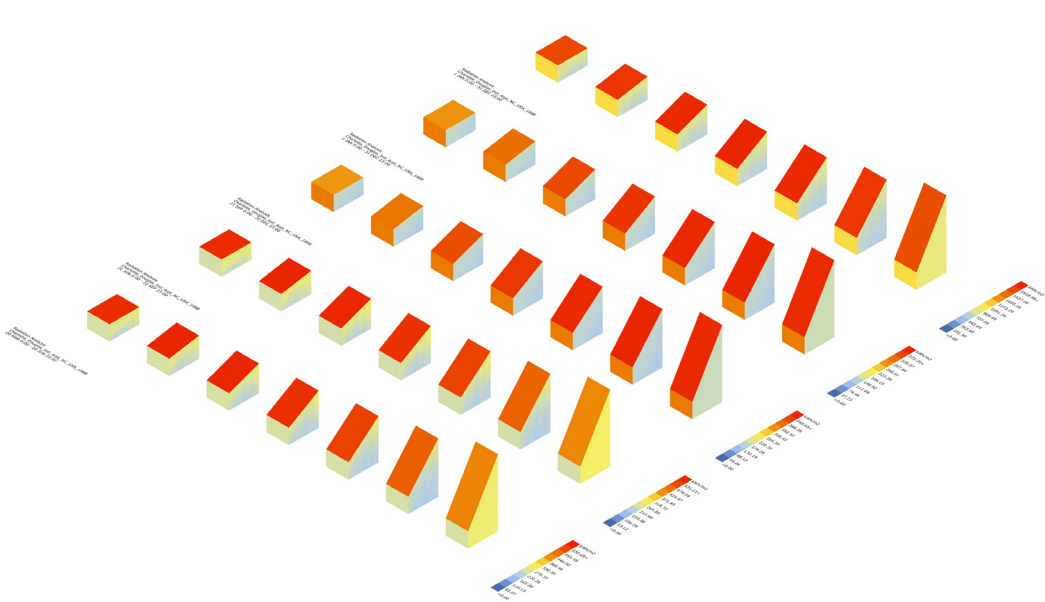
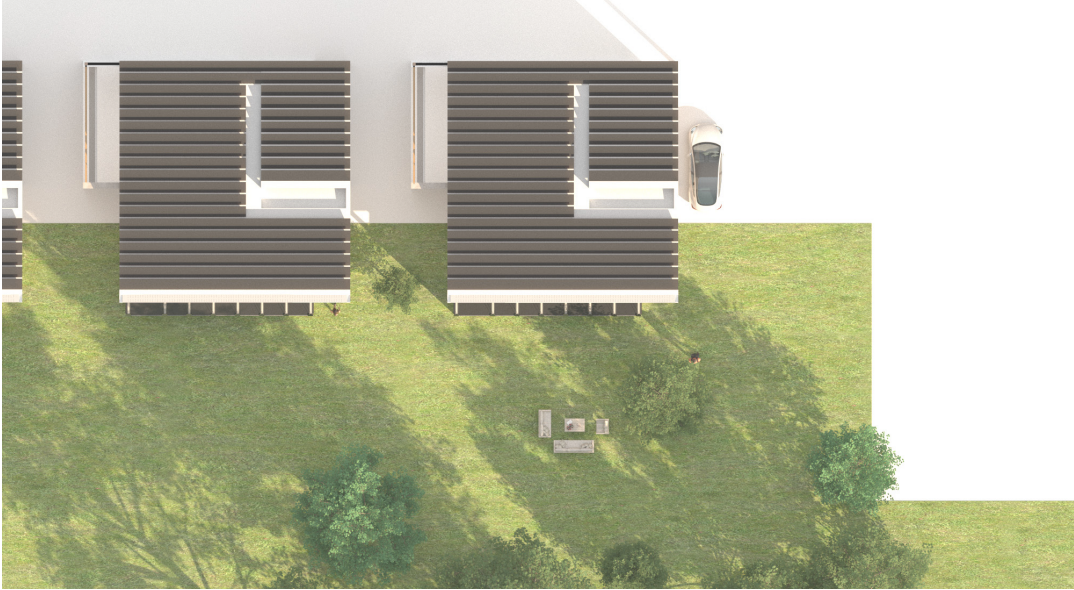




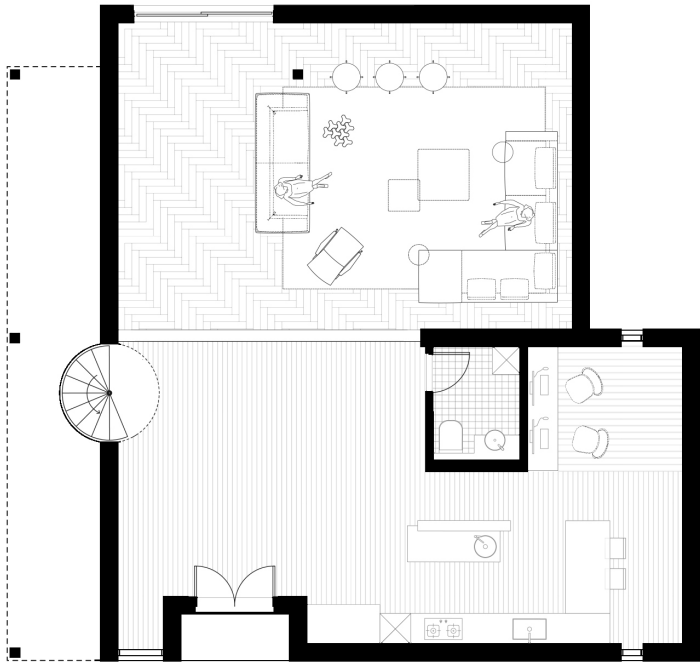
Not just about solar optimism—it's also about playing with light and shadow. How light moves through a space during the day, how it shifts, bounces, and creates moments. It's about using sunlight both as an energy source and as a design tool to shape experience.

Our program responds to the movement of light throughout the day, using sunlight to shape space and function. Communal areas are placed to capture morning light, while private spaces benefit from softer evening tones. This creates a living environment that moves in harmony with natural light.

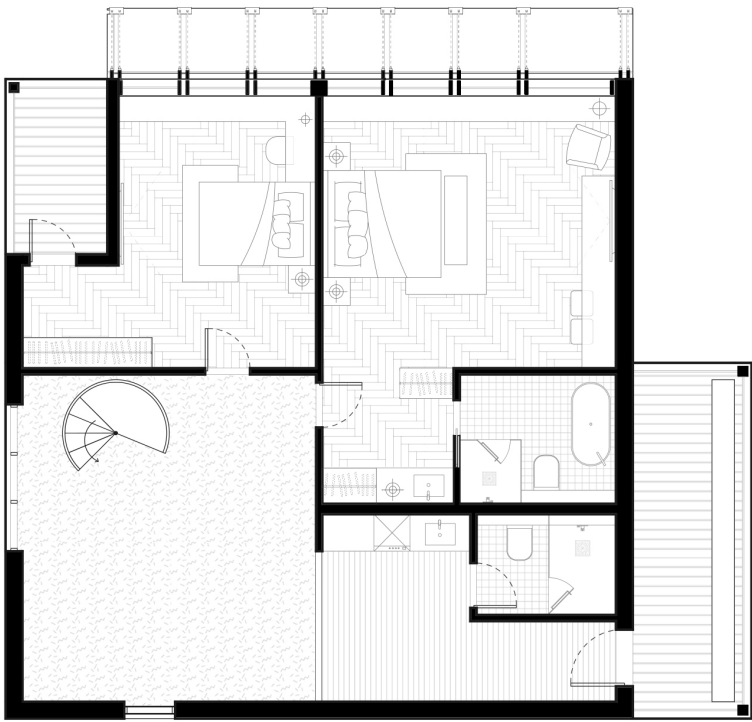
Compared to the existing housing on the property, where openings accounted for only 4.2 percent of the facade, our design increases the total opening ratio to 24.16 percent. This marks a 20 percent improvement, enhancing natural light, ventilation, and visual connection between interior and exterior spaces.







FIRST FLOOR PLAN  
N.T.S. 



SECOND FLOOR PLAN  
N.T.S. 













# PORTFOLIO

GSAPP 2024-2025

ZEQUAN YU