

# **P O R T F O L I O**

**S h u y a n g      H u a n g**

M. Arch at GSAPP (2020 - 2023)

# CONTENT

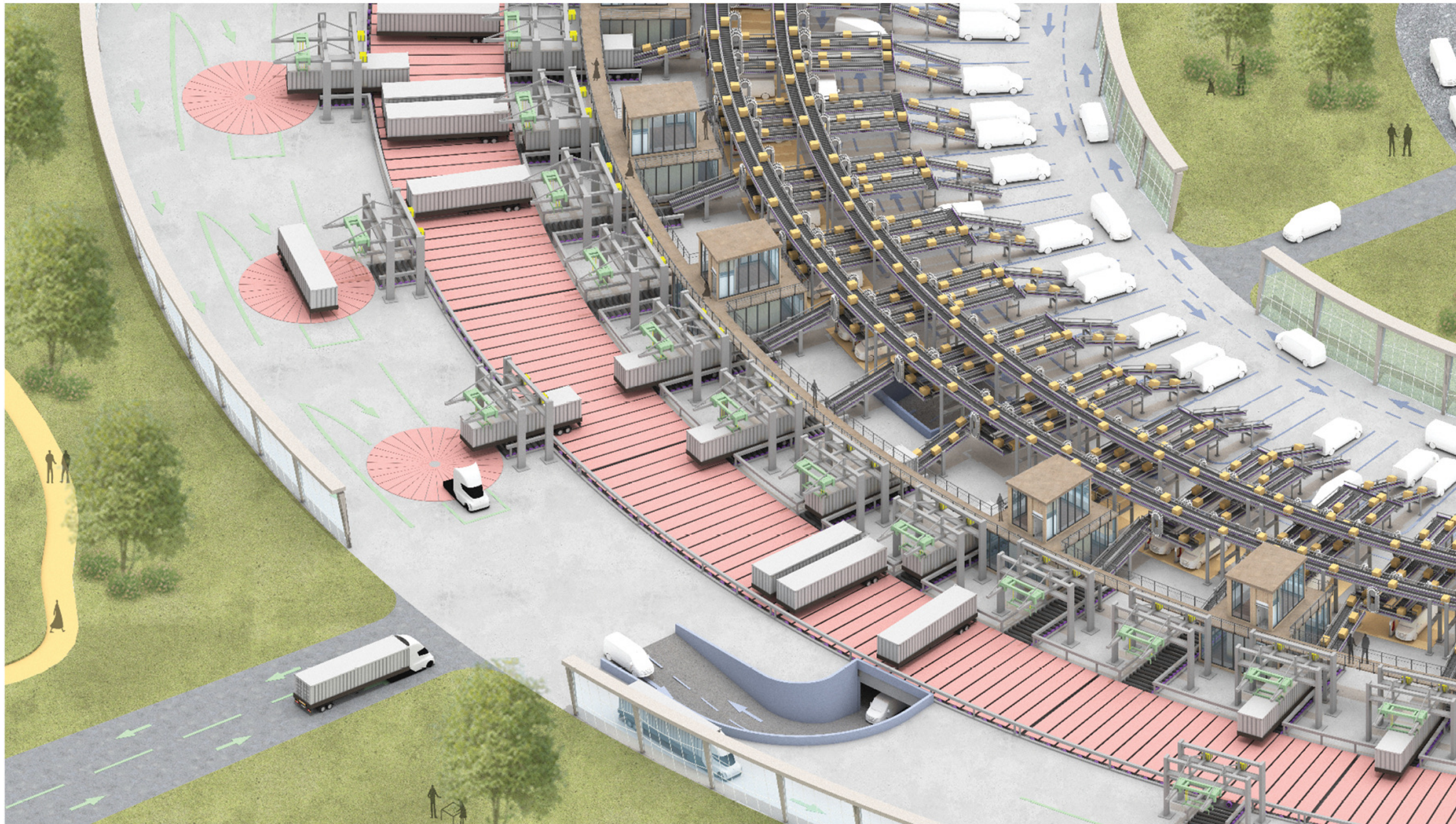
COURSE NAME	PROJECT NAME	INSTRUCTOR
<b>Advanced Studio VI</b> Everything Must Scale 7	Truck Stop: Truck, Stop	Michael Bell
<b>Advanced Studio V</b> Reproductive Justice Network	L. U. N. A. - Link, Unfold, Nest, Advocate	Bryony Roberts
<b>Advanced Studio IV</b> Sanctuaries	From Prisons to Communities: A Re-entry Network in Poughkeepsie	Nahyun Hwang
<b>Core Studio III</b> Nest, Nesting, Nested	Open Air Home	Eric Bunge
<b>Core Studio II</b> Grounds for Play	The Breathing School	Erica Goetz
<b>Core Studio I</b> Broadway Stories - W184th	Re-imagining Public School Playground	Josh Uhl

# TRUCK STOP: TRUCK, STOP

Advanced Studio VI  
Everything Must Scale 7

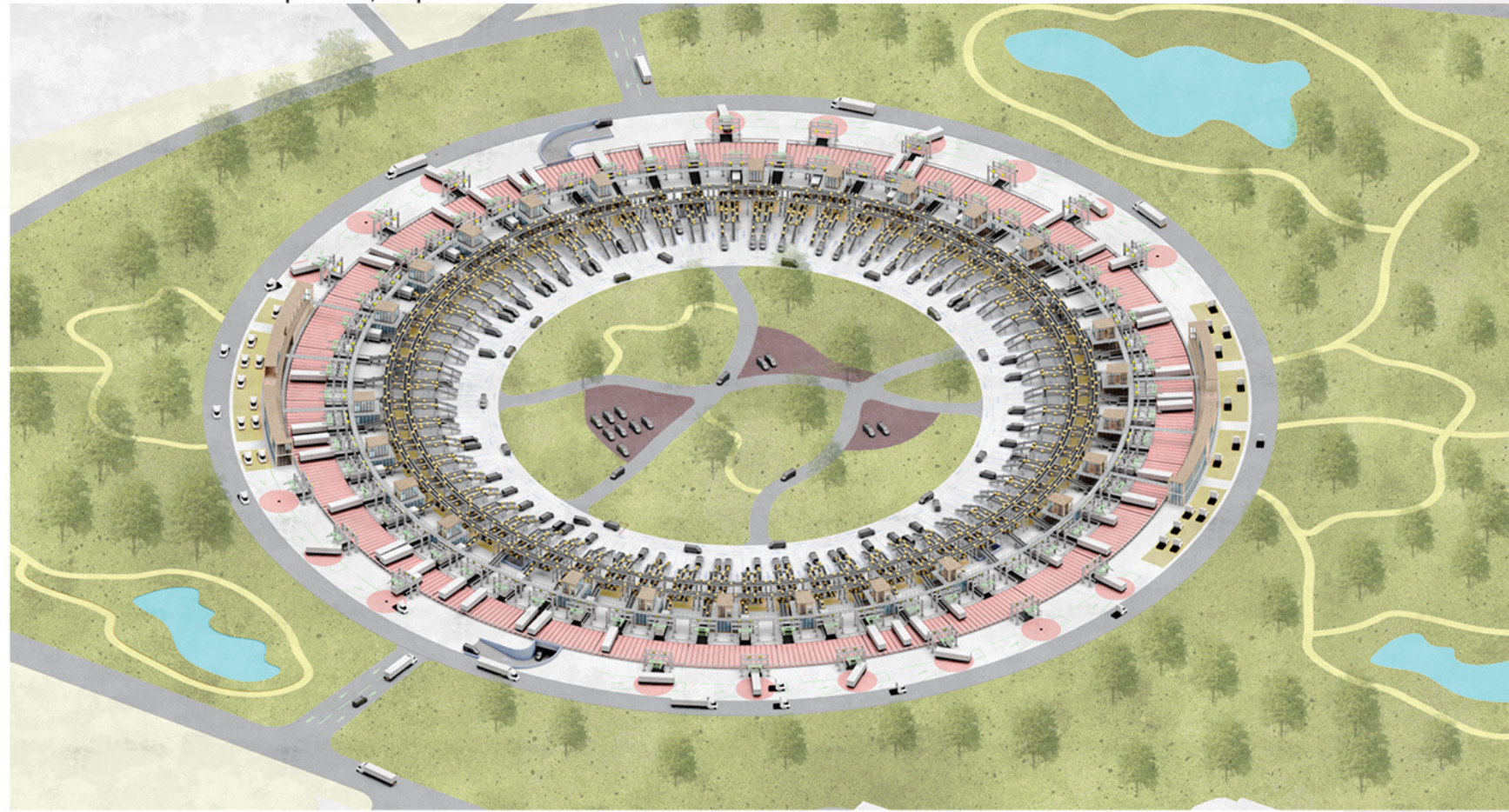
Instructor: Michael Bell

Spring, 2023



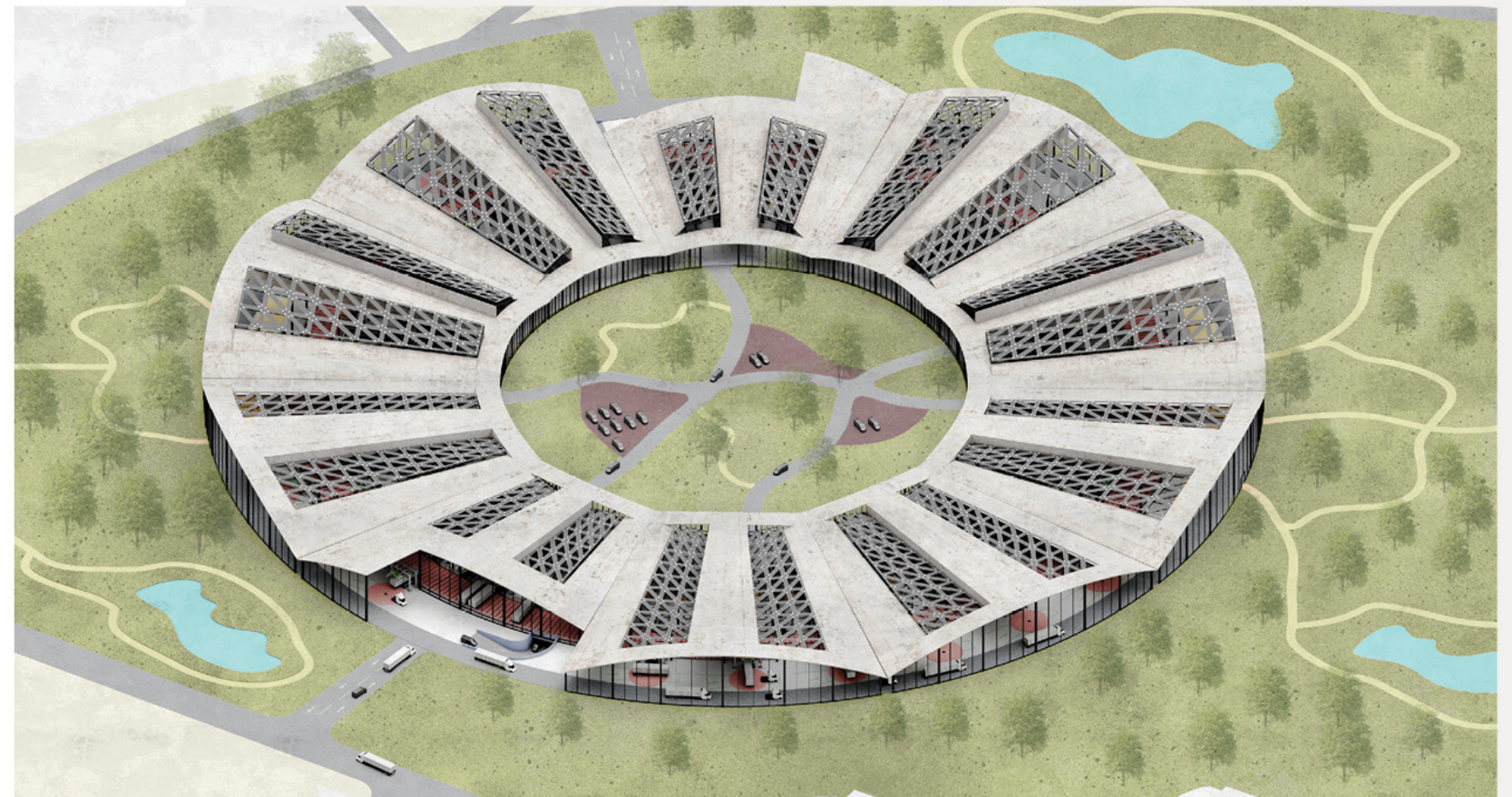
Truck Stop: Truck, Stop is a visionary project aiming at reducing traffic congestion and accidents in urban areas by establishing designated stops for trucks, creating virtual barriers for safer navigation. The concept is inspired by the functionality of truck transporters, which can assemble and disassemble themselves into multiple cars.

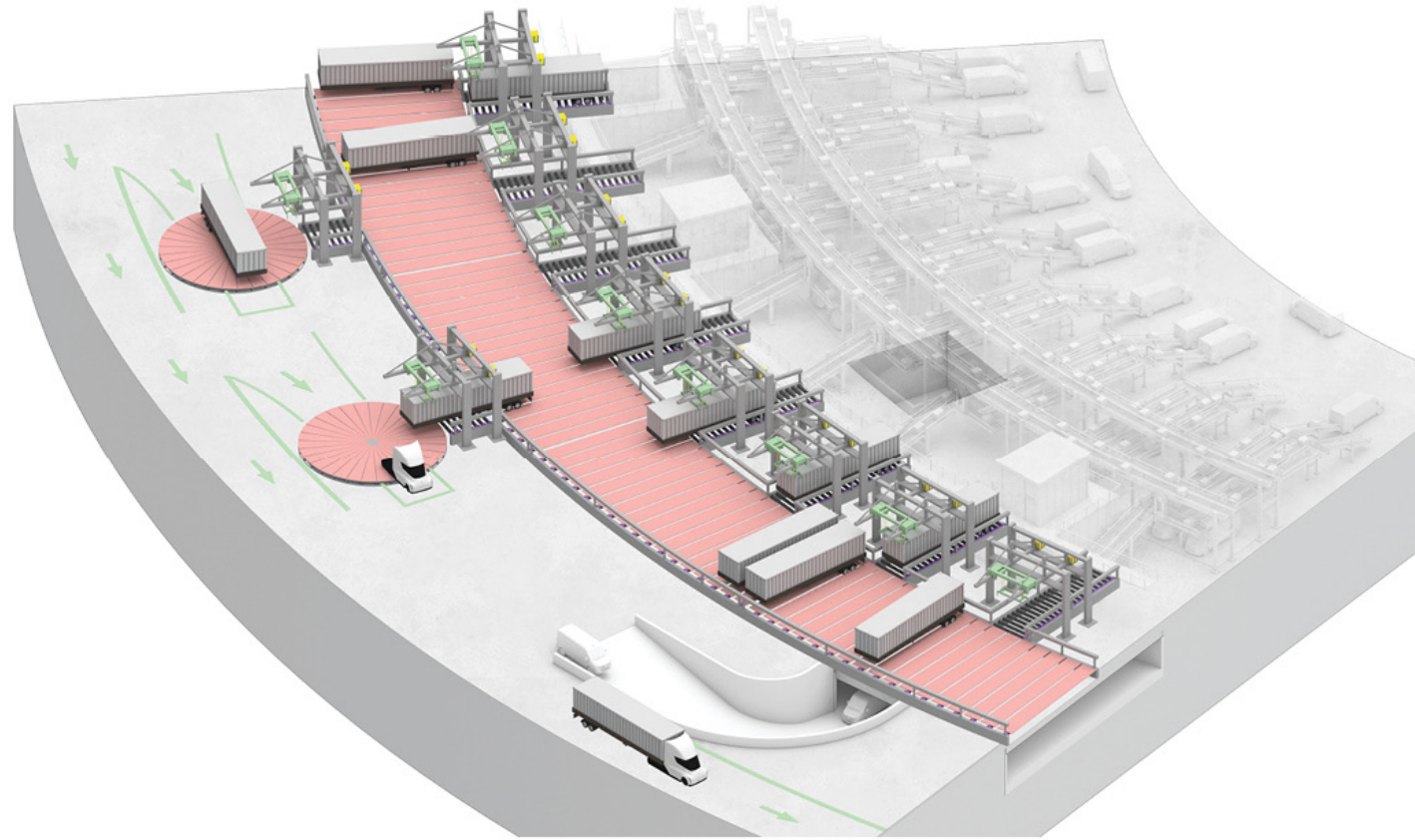
The future truck stop envisions trucks as mobile warehouses, eliminating the need for separate storage centers. By creating truck stops for fueling and redistribution in each city, the system will efficiently serve urban areas, reducing the number of trucks on the road and minimizing traffic congestion.



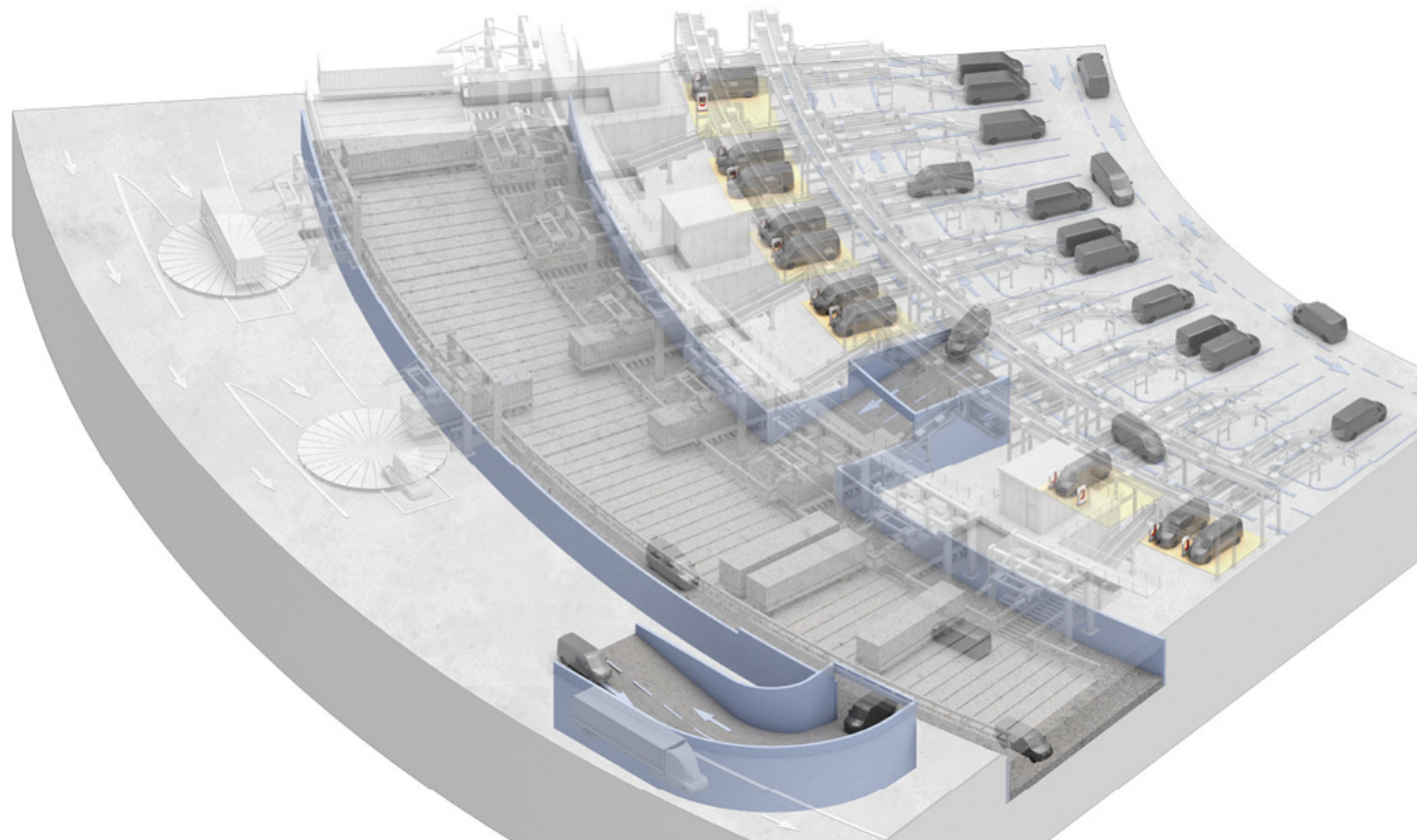
Trucks and vans enter the building through separate entrances, with distinct circulation spaces for each. The building features box conveyor belts for interchange and redistribution of packages, as well as resting spaces for drivers, including all-gender restrooms, sleep cabins, and a gym.

Located near Highway I80 and serving the cities of Reno and Fernley, the proposed ring-shaped building ensures efficient circulation and eliminates the need for warehouses. All goods will be stored in moving trailers, with vehicle activities taking place inside the building and green spaces outside for people to enjoy.

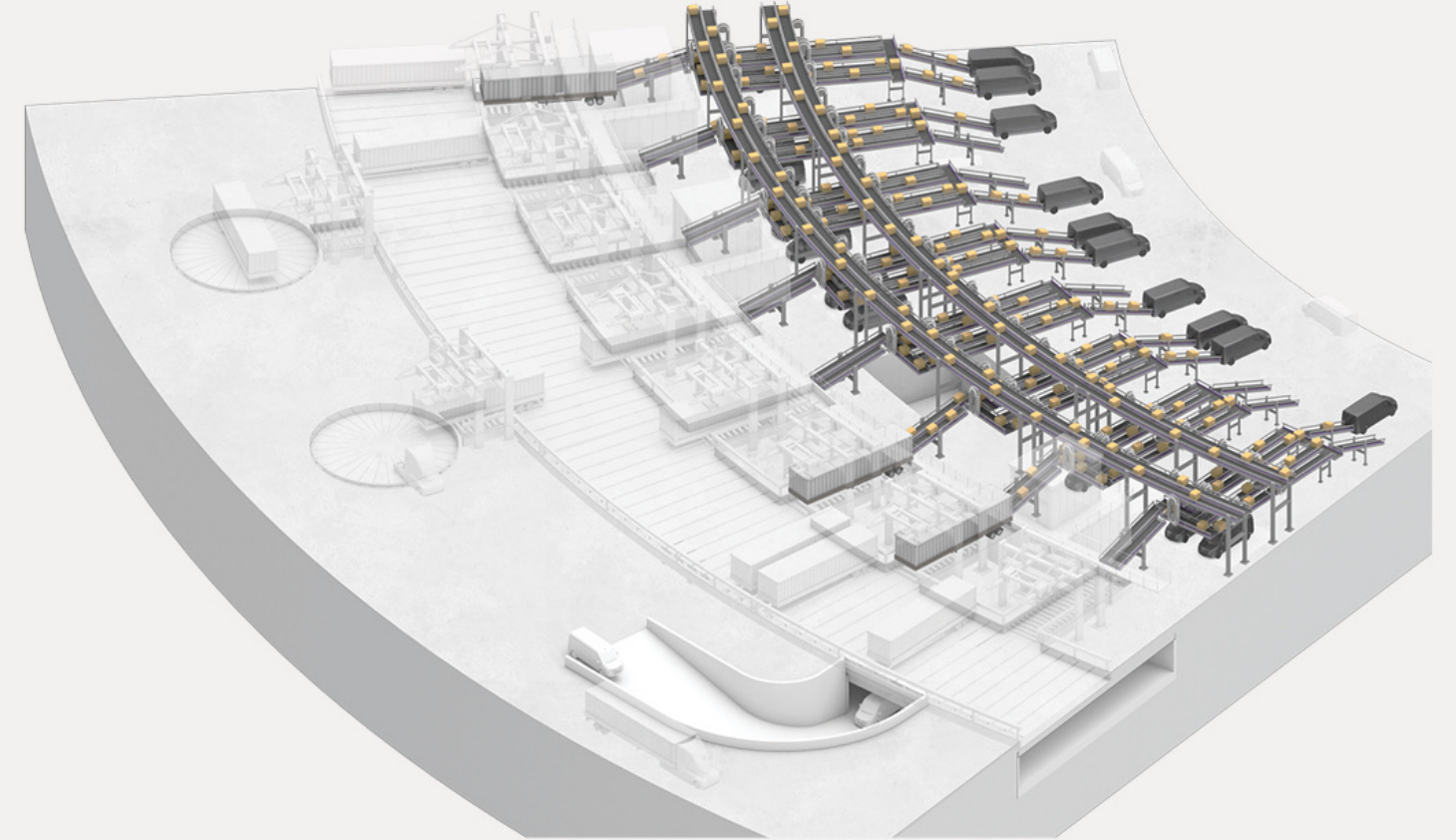




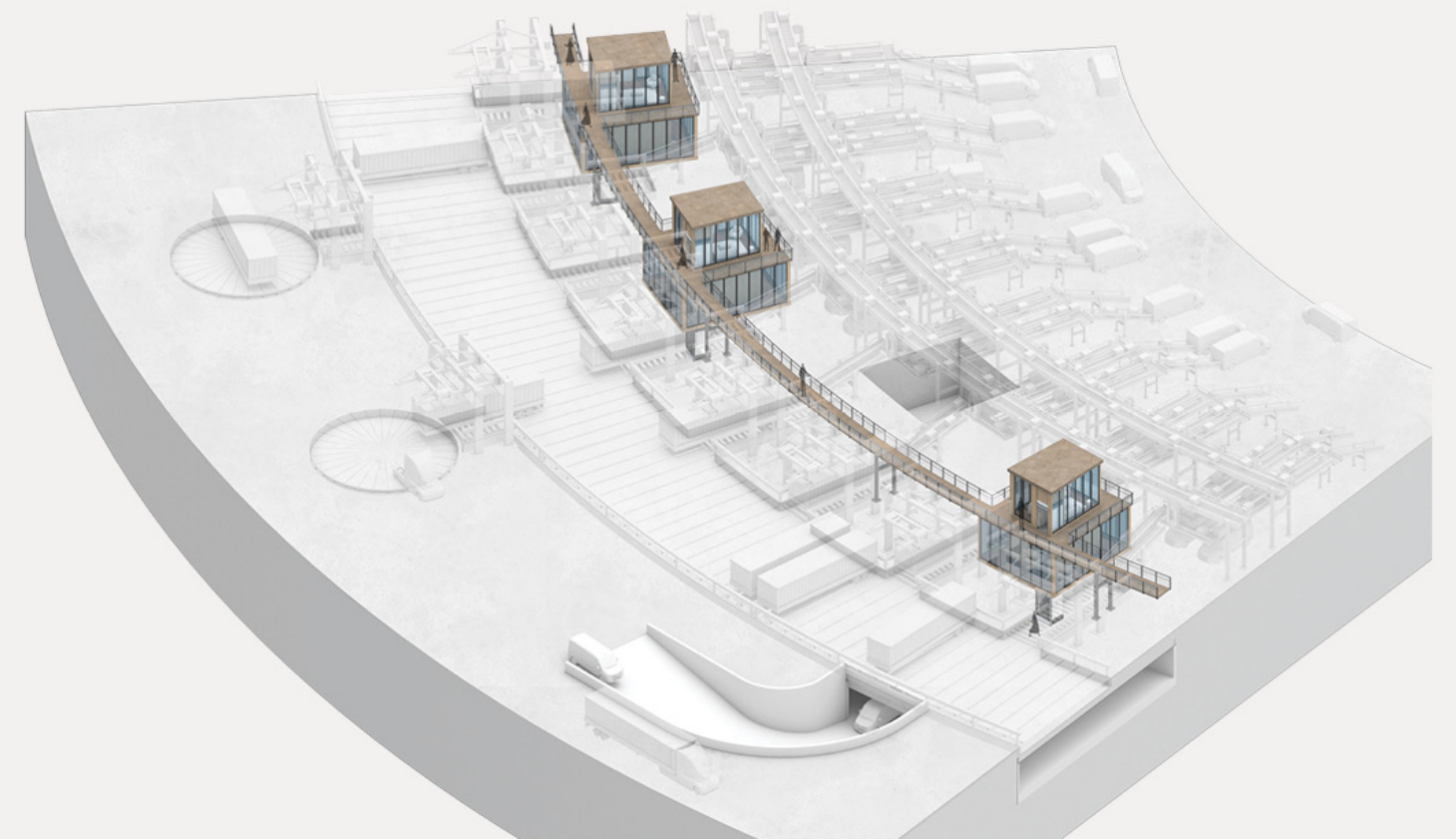
ROUTES FOR THE TRUCKS



ROUTES FOR THE CARS



PACKAGE CONVEYOR BELT

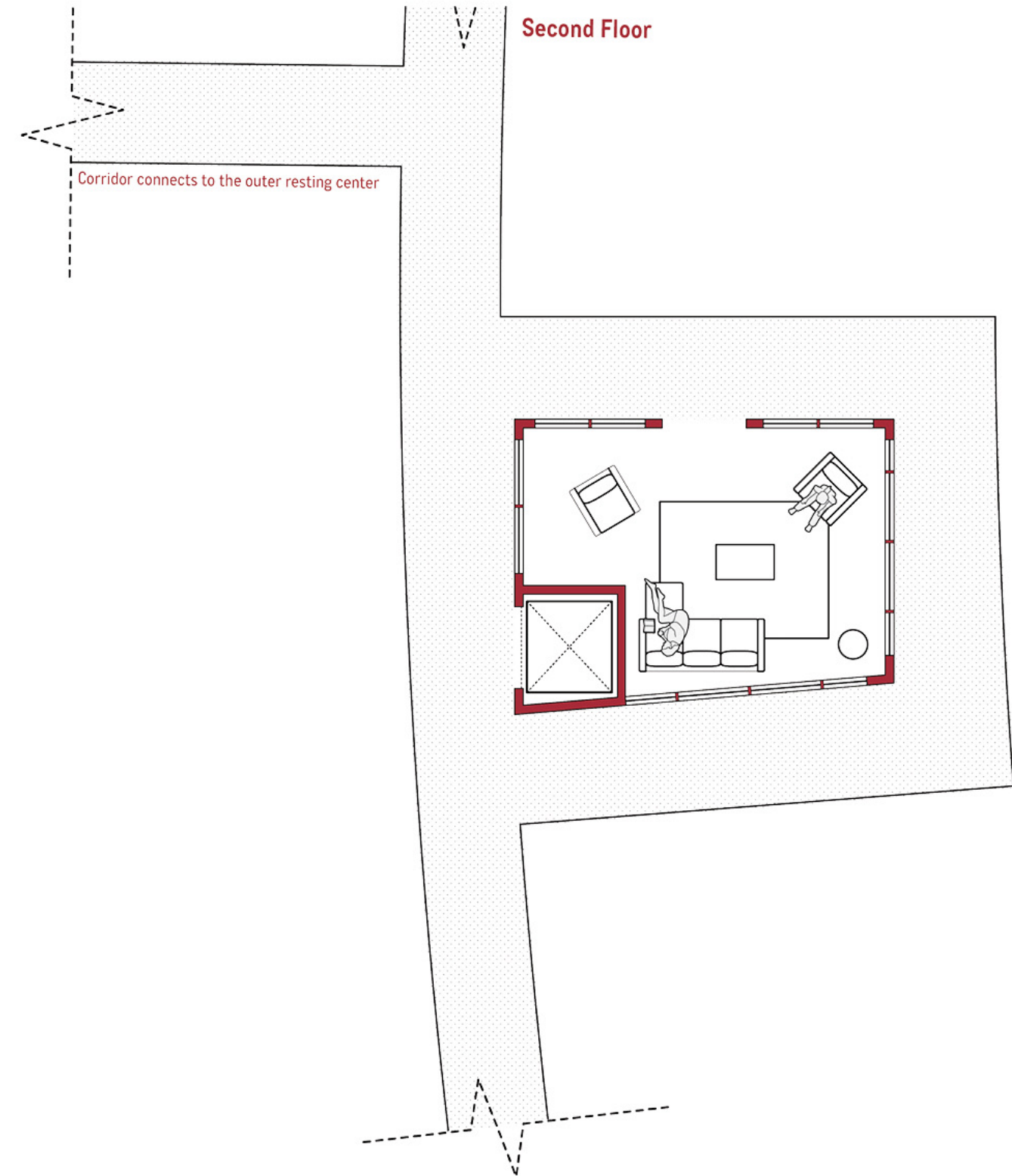
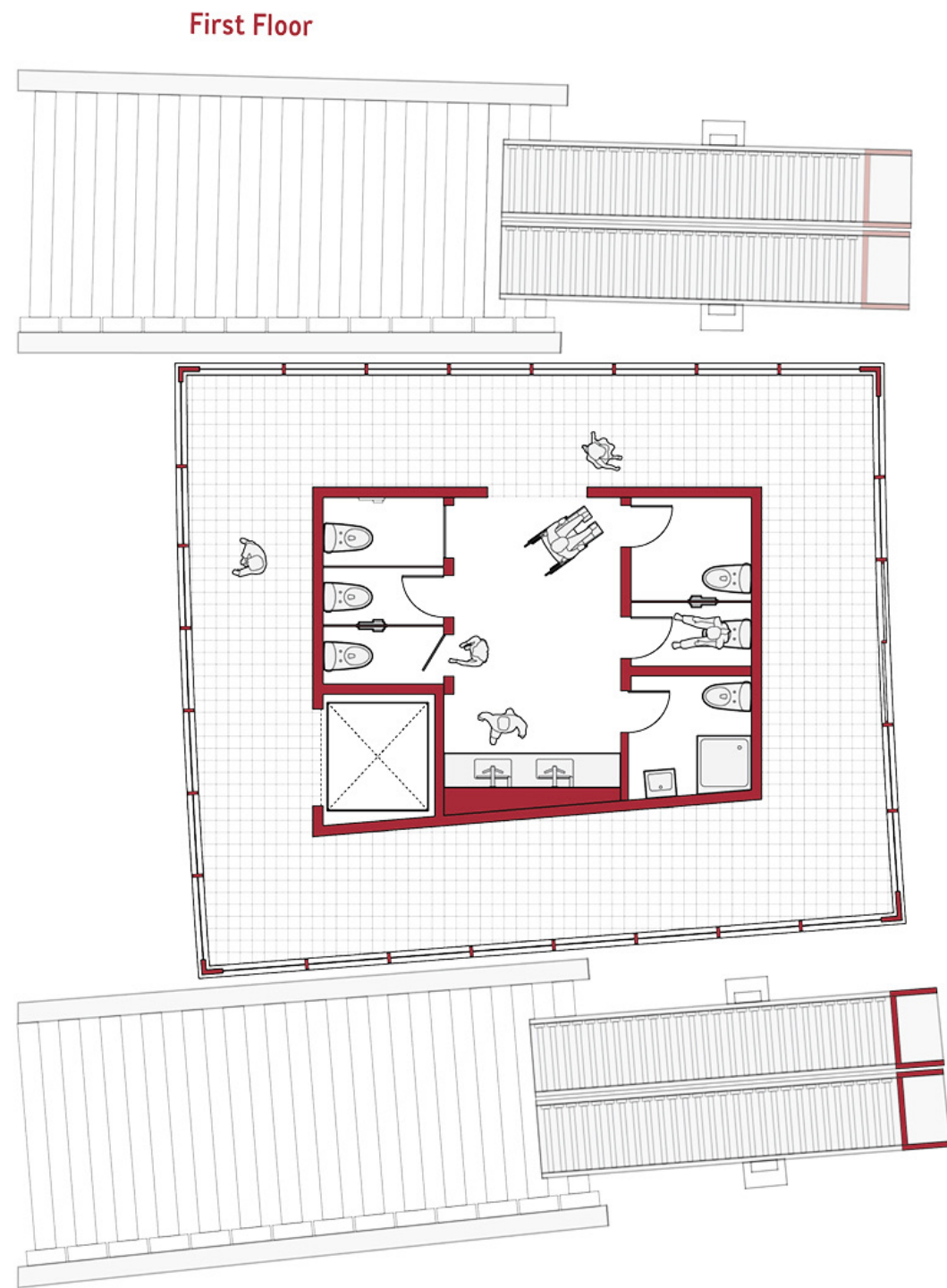


RESTING PODS FOR PEOPLE

Everything Must Scale 7

Everything Must Scale 7

PLAN FOR INNER RESTING PODS

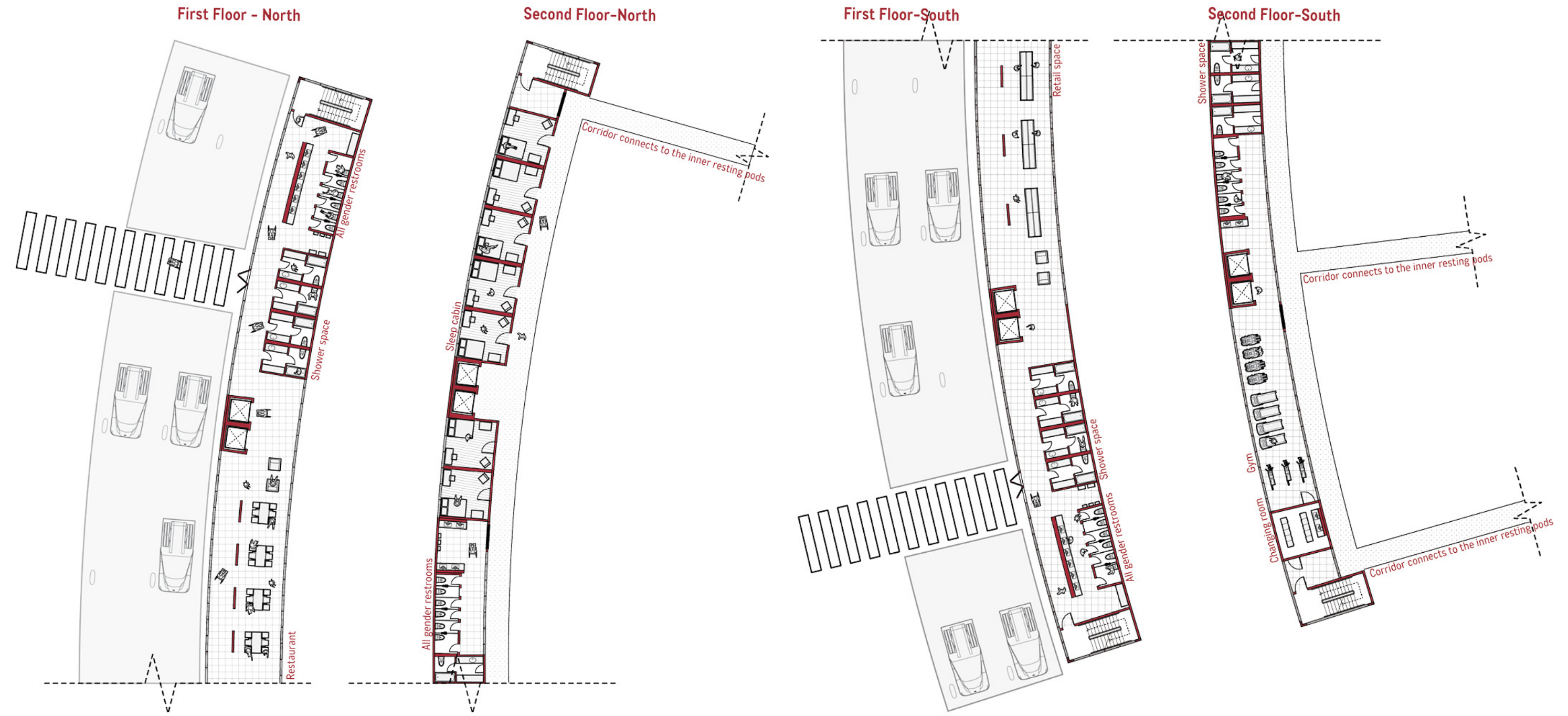


Corridor connects to the outer resting center

Everything Must Scale 7

Everything Must Scale 7

PLAN FOR OUTER RESTING CENTER



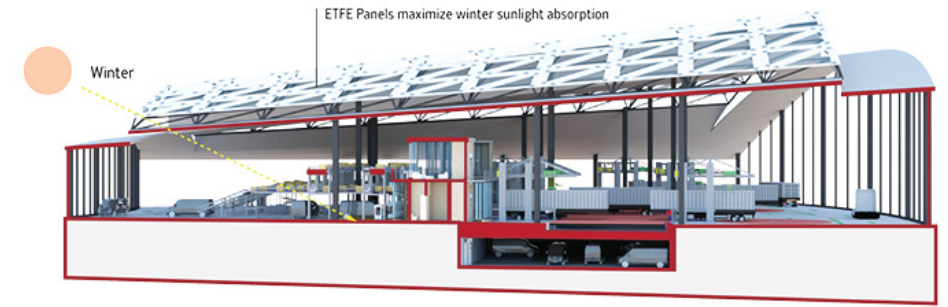
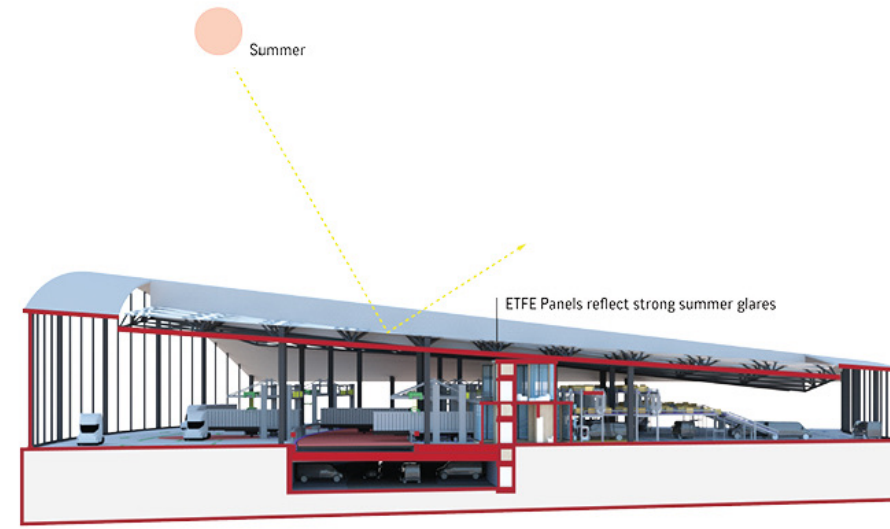
Everything Must Scale 7

Everything Must Scale 7

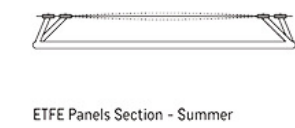
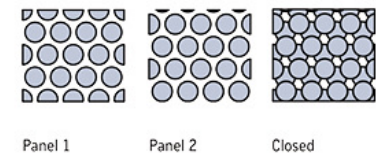
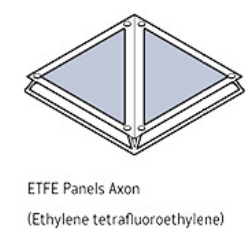
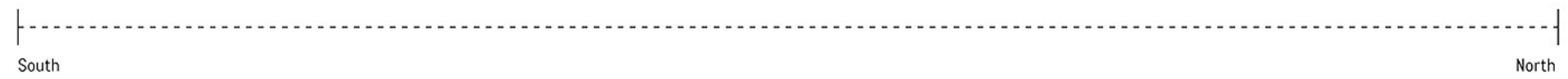
Everything Must Scale 7



SITE PLAN



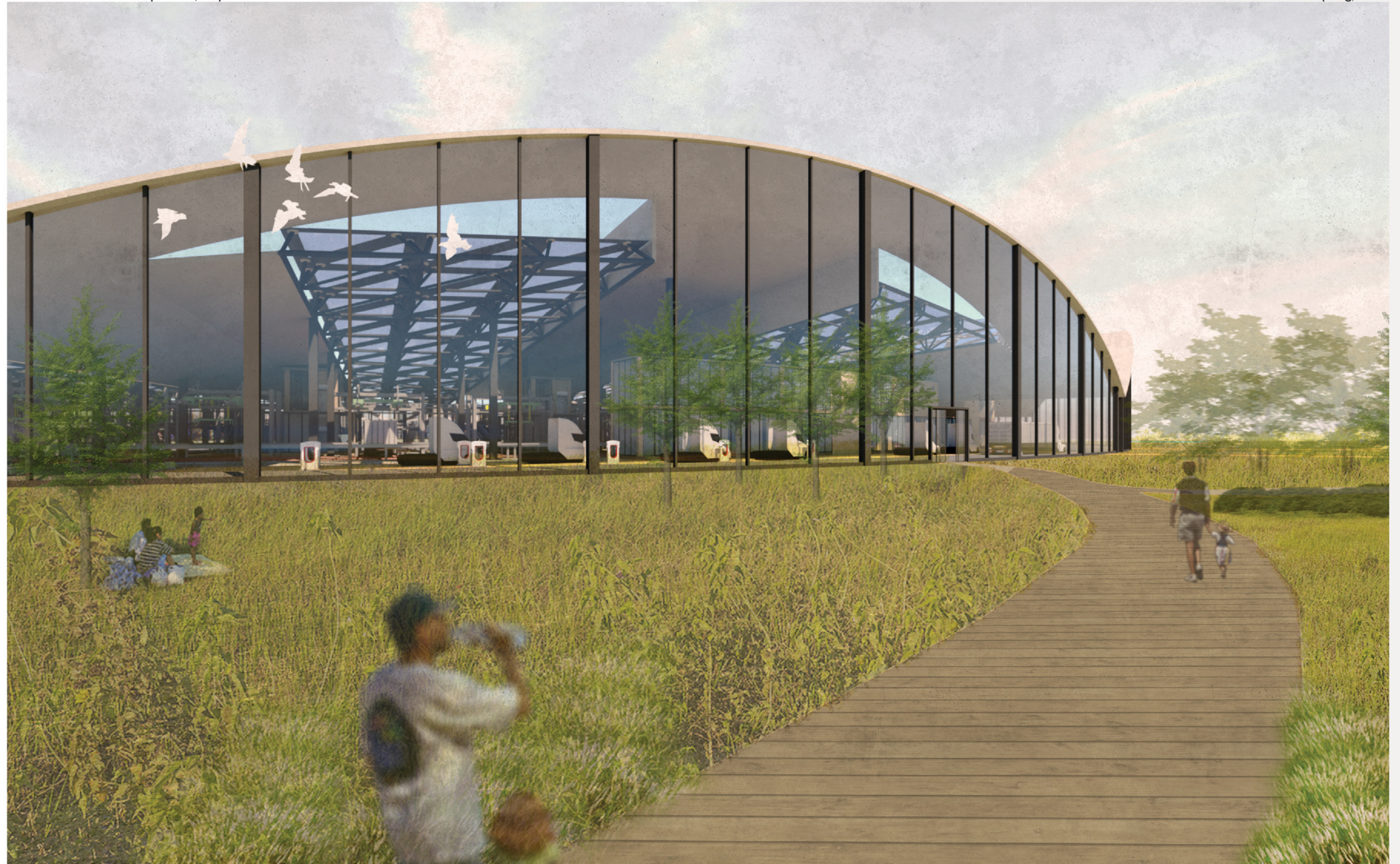
Everything Must Scale 7



SECTION AND ETFE PANELS

The building envelope incorporates two different skylight designs for optimal sunlight exposure while preventing glare. ETFE panels are used for durability and cost-effectiveness, with adjustable layers to control sunlight absorption based on seasonal needs.



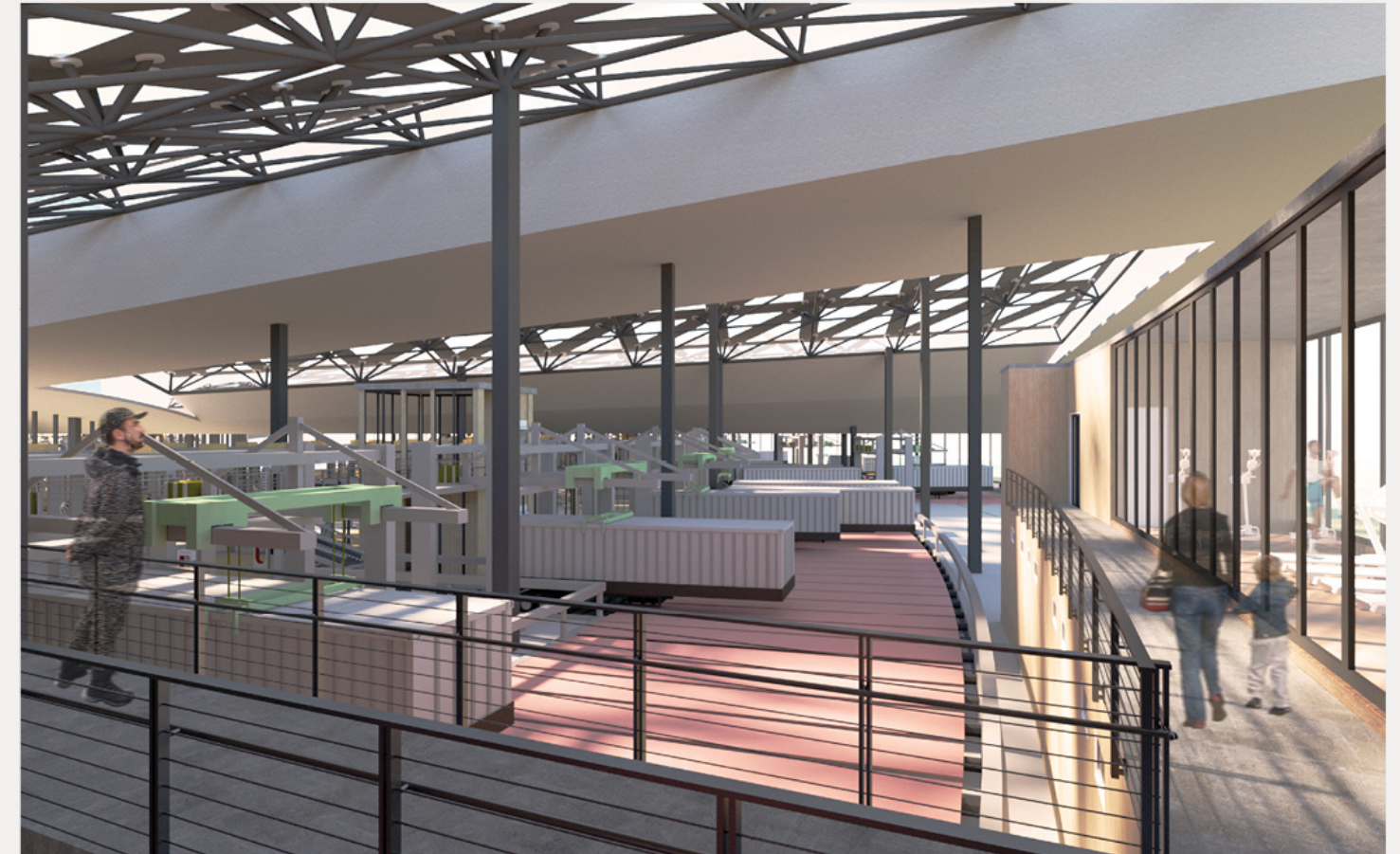


Everything Must Scale 7

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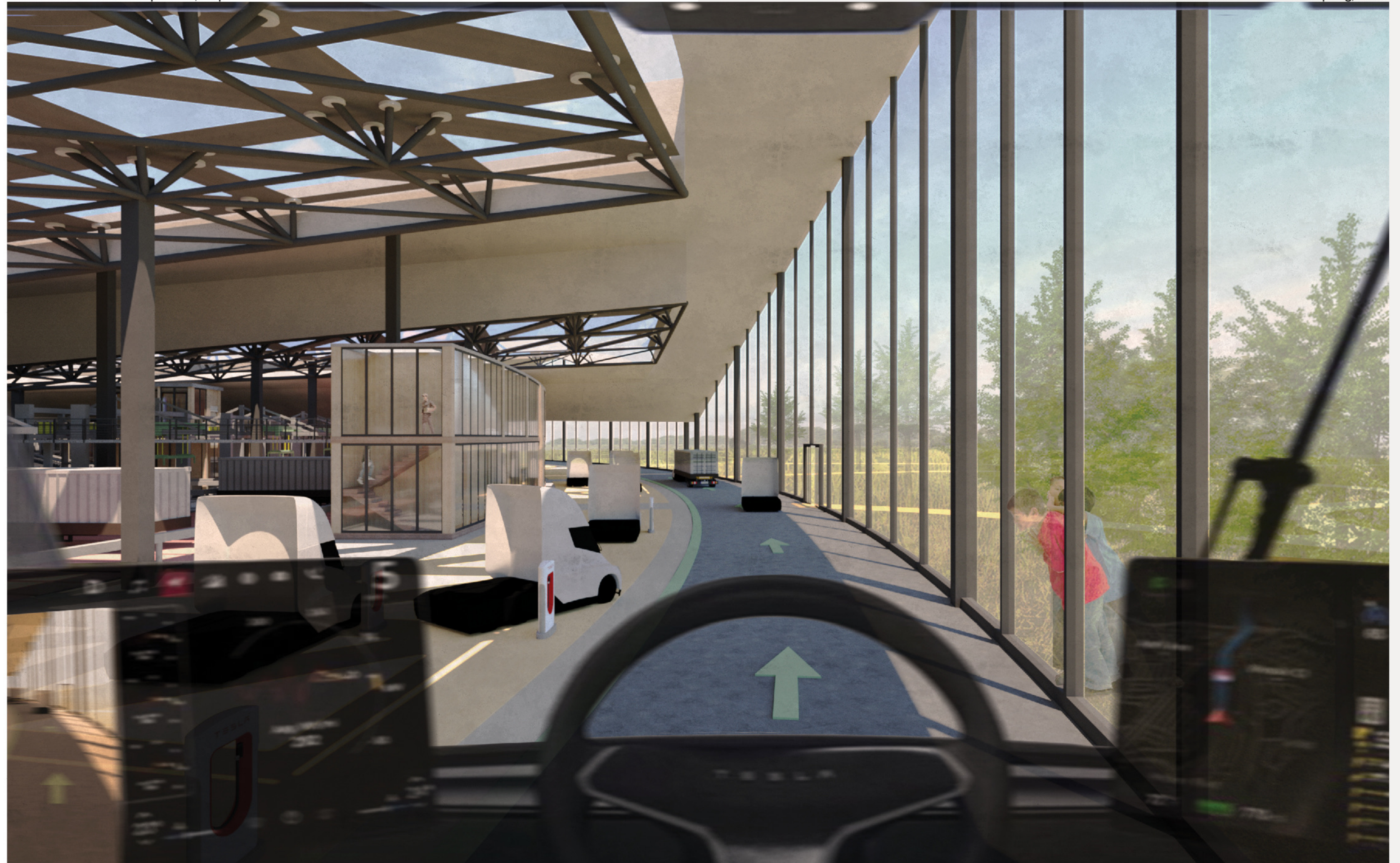
VIEW OUTSIDE THE INNER RESTING POD



VIEW OUTSIDE THE OUTER RESTING CENTER

Everything Must Scale 7

Everything Must Scale 7



Everything Must Scale 7

Everything Must Scale 7

# L. U. N. A. - Link, Unfold, Nest, Advocate

Advanced Studio V  
Reproductive Justice Network

Instructor: Bryony Roberts

Fall, 2022



LUNA is a transformative project aimed at addressing the lack of abortion services in low-income communities in NYC, specifically in Flushing, Queens Community District 7. With a majority Asian population, the community experiences a significantly lower abortion rate than other groups, partly due to fear of husbands and a high incidence of intimate partner violence.

LUNA aims to break the silence of women by merging domestic violence support services with pro-choice abortion programs. The project is situated in a former Flushing Female Association School site, which is now a parking lot. LUNA envisions an inclusive space with various services, divided into four categories: advocacy, health, shelter, and support.

COLLAGE FOR A SPACE MORE FRIENDLY TO WOMEN



More Police Force



Cargo Ferries

Telecommunication Towers



Highrises



Aircraft



More Surveillance Cameras

Nuclear Power Plants



Petroleum and Oil Power Plants



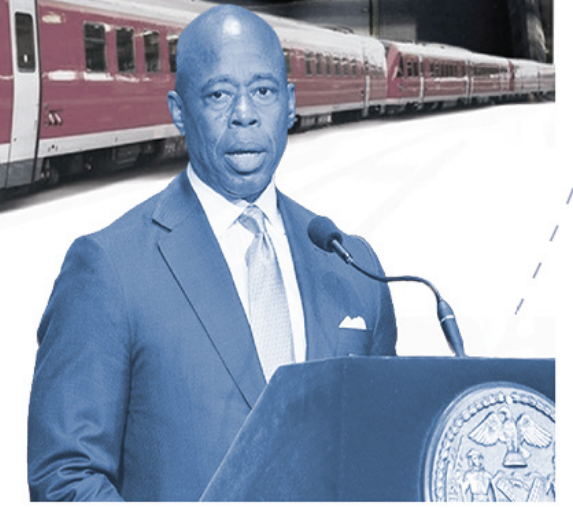
Highway



Railway



More Fences

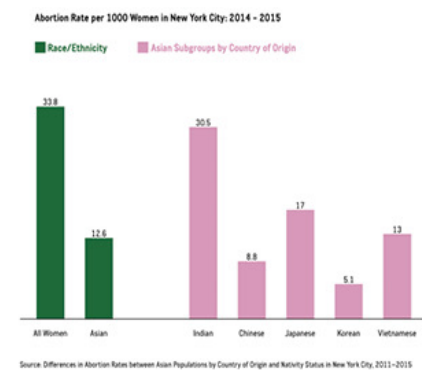
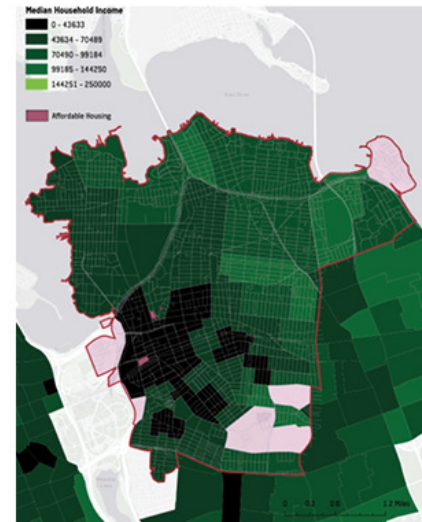
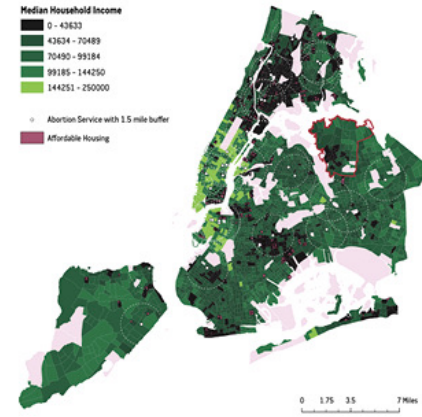


More Male Politicians

Reproductive Justice Network

Reproductive Justice Network

A MAN-MADE WORLD



SITE CONDITION

**1814**  
18 public-spirited Quaker women banded together and founded the "Flushing Female Association".  
It was the oldest non-religious organization in Queens County and one of the oldest charitable associations in the nation.

**1819**  
The women aggressively pushed for donations and soon were able to buy two lots on the 38th Avenue site.

**1840s**  
In 1847, the school officially became the Colored School. The Quaker women continued to back the school financially, paying the salaries of teachers and doing volunteer work.

**1863**  
A brick building was built in 1863.  
Sewing and singing were taught besides reading and writing. On Sundays a Negro Sunday School met in the building.

**1887**  
The Flushing Female Association took back the building as the headquarters for a Colored Helping Association.  
During the twentieth century, various activities, most related to the Black population of Flushing, took place in the building.

**1953**  
The venerable old brick school was demolished for the parking lot.

SITE HISTORY FOR FORMER FLUSHING FEMALE ASSOCIATION SCHOOL

Reproductive Justice Network

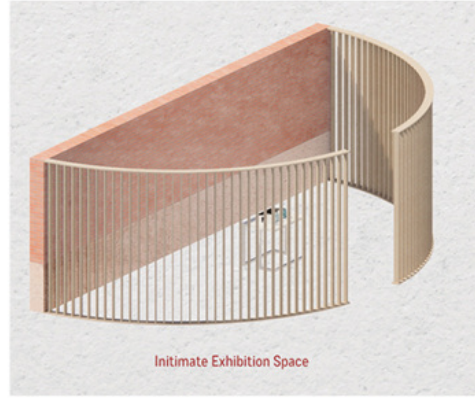
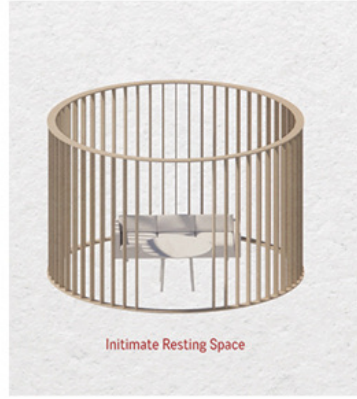
Reproductive Justice Network



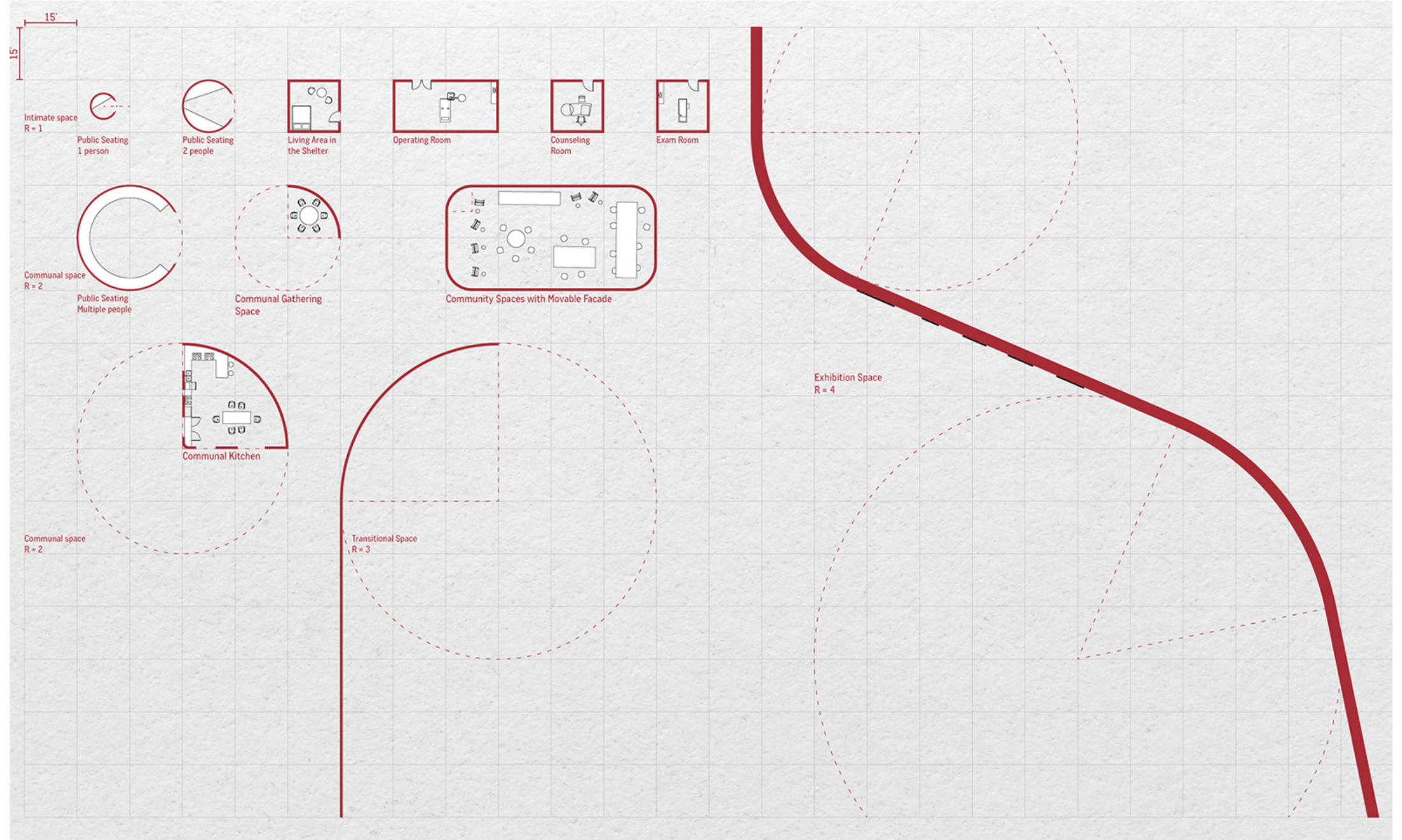
The project consists of an outward-facing advocacy center, an inward-facing abortion clinic, and a women's shelter enclosed by an S-shaped affordable housing building. The design defines intimate, communal, and public spaces, incorporating pink marble and brick facades with varying brick patterns and window sizes to identify different spaces.

The abortion clinic offers one operating room, exam rooms, and private recovery rooms, while the women's shelter integrates a collective living concept with public gathering spaces, communal kitchens, and community farming. The affordable housing building provides multi-generational units and a public-facing community market.

The advocacy center includes an exhibition area, community spaces, and an outdoor auditorium, promoting reproductive justice and domestic violence awareness. The project aspires to create a safe, empowering space for women, fostering strong community bonds and addressing vital needs in an under-served community.



PUBLIC SPACE MODULES



DESIGN TOOLS

Reproductive Justice Network

Reproductive Justice Network





Reproductive Justice Network

Reproductive Justice Network

Reproductive Justice Network



VIEW BETWEEN THE AFFORDABLE HOUSING AND WOMEN'S SHELTER



VIEW OF THE EXHIBITION SPACE

Reproductive Justice Network



Reproductive Justice Network

Reproductive Justice Network

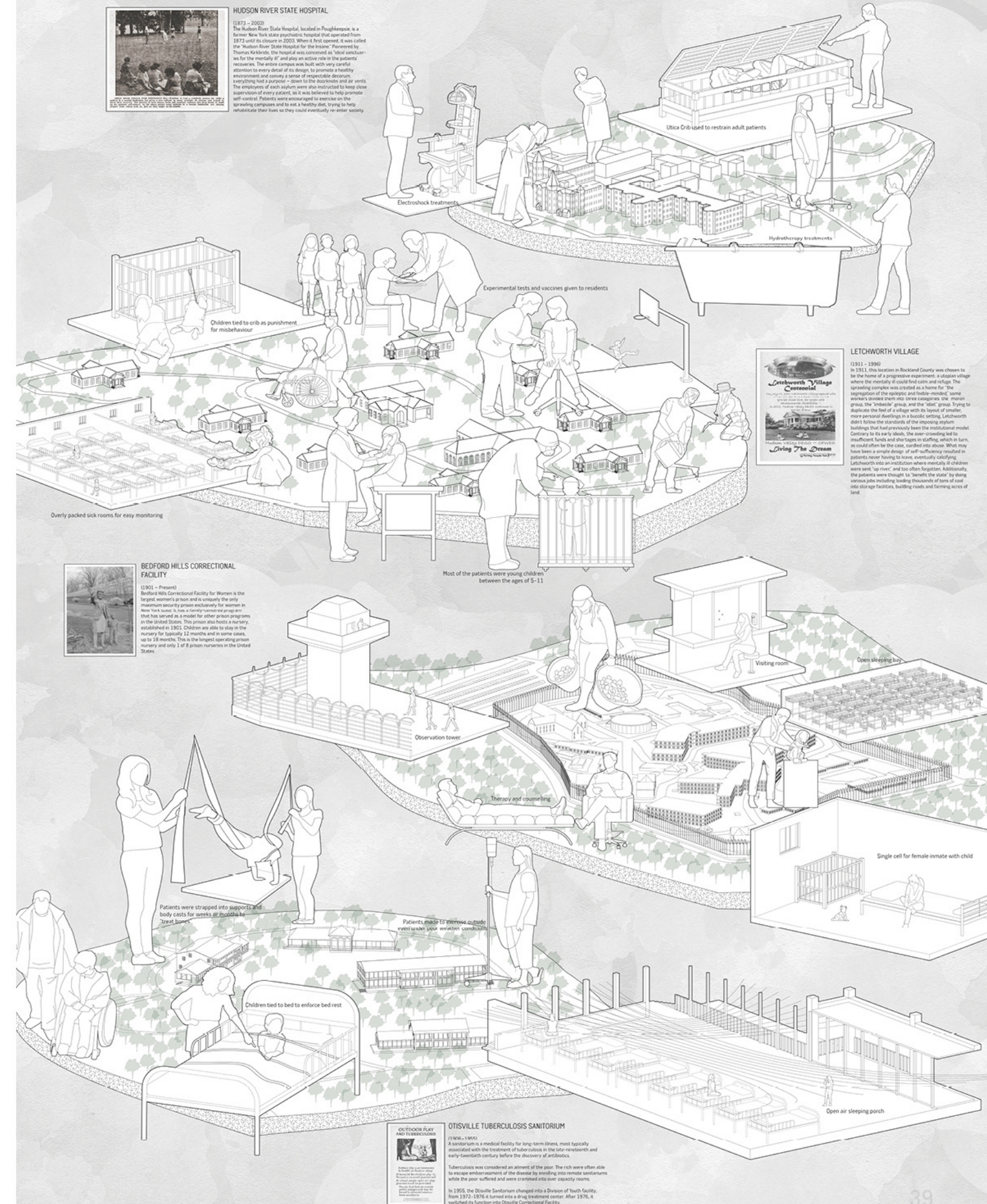
# From Prisons to Communities: A Re-entry Network in Poughkeepsie

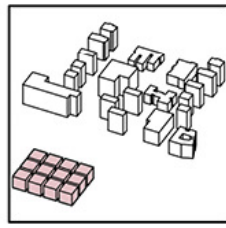
Advanced Studio IV    Instructor: Nahyun Hwang    Partner: Madeleine Sung    Spring, 2022  
Sanctuaries

The Hudson Valley has a history of using protective measures in the form of incarceration. Due to its proximity to New York City, it became a location for housing incarcerated individuals as well as patients with mental or physical challenges. Our strategy is focused on assisting those affected by the carceral system and aiding them in reintegrating into society.

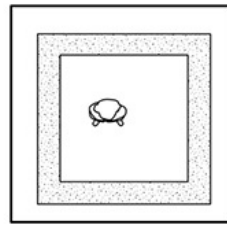
We selected Poughkeepsie City as our study area due to its emphasis on policing and economic investments in the carceral system. Furthermore, we observed that Poughkeepsie struggles with a significant number of abandoned lots and vacant buildings, despite a shortage of affordable housing and related amenities.

Our approach involves distributing our programs across various sites within the city, with the intent to serve both formerly incarcerated individuals and the broader community. We proposed a comprehensive network, integrated into the city's fabric, explicitly designed to counteract the continuation of the carceral system.

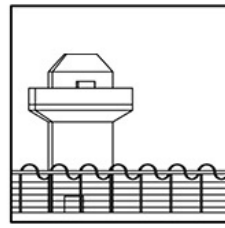




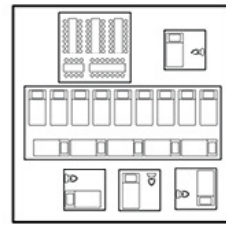
An isolated island separated from the city; low bounding with the society; a "threat" to the community



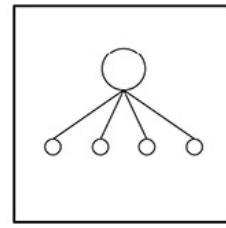
Opaque enclosure; inmates locked and controlled in a highly restricted area, and hardly exposed to the world beyond the wall



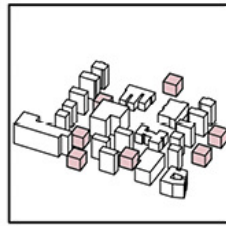
Impermeable fences with high security and surveillance; intimidation of the inmates



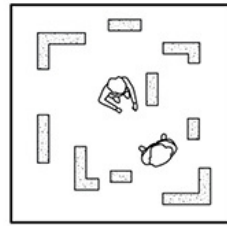
Cramped, segmented and strictly functional living spaces for the inmates



A hierarchical relationship between the guard and the inmates



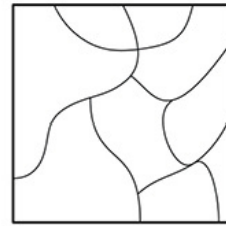
Integration with the urban fabric; strong connection with the community; a steppingstone towards the re-entry into the society



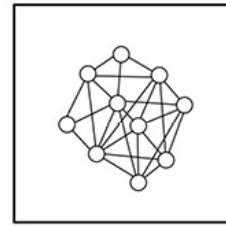
Porous space created by breaking the walls; a transparent, open-to-community collection of flexible private and public spaces



Empowering the participants to establish their own rules in the community



Organic living spaces created with a variety of functions and no confinement, aiming to cultivate safety relationship and self-reflection



A nonhierarchical social network and interaction among participants

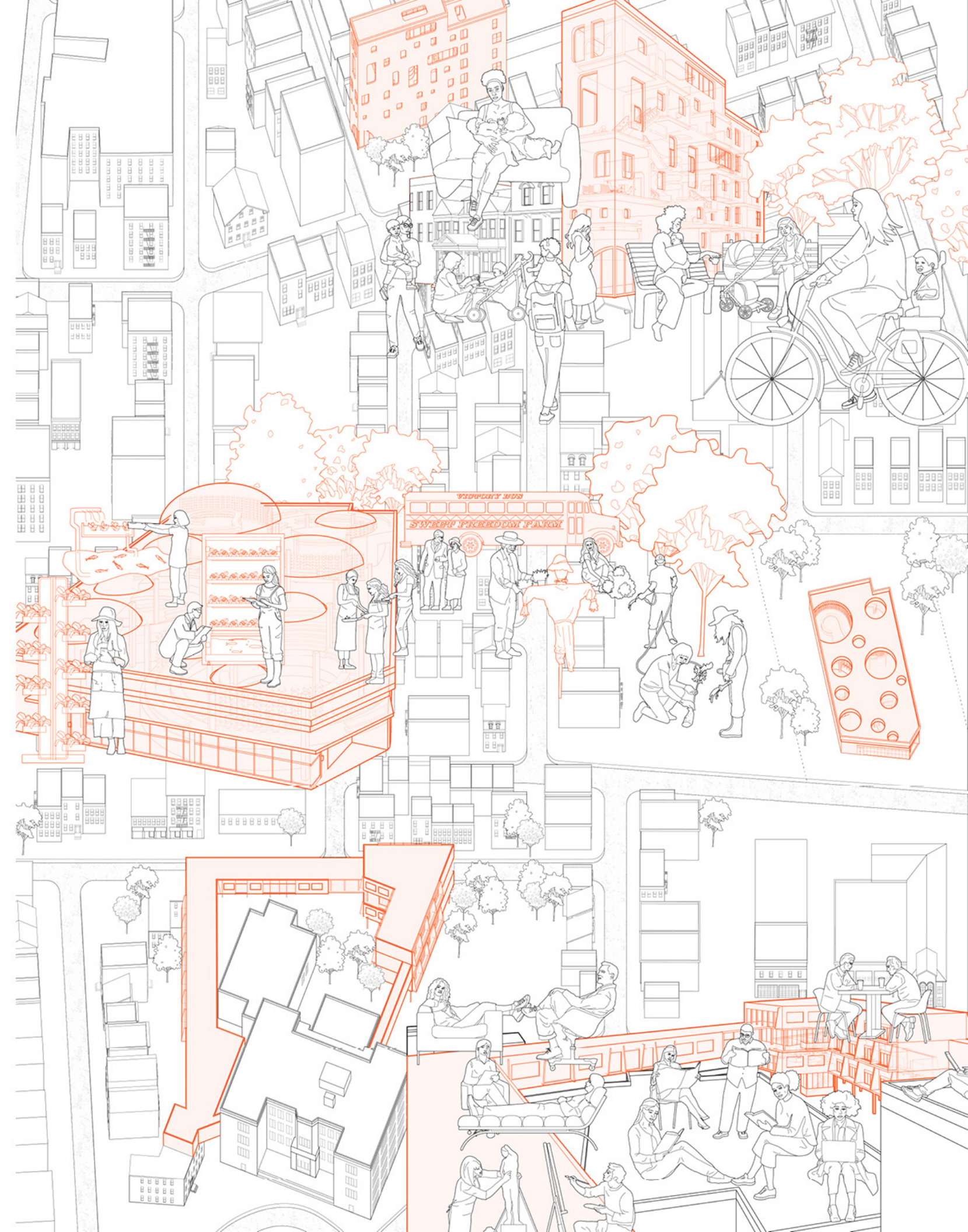
CONCEPT DIAGRAM



CONCEPTUAL COLLAGE

To ensure our project effectively serves the community, we selected a few sites as prototypes for augmenting and improving existing programs while also facilitating their expansion throughout the city.

We opted for three programs: a daycare, a community farm and kitchen, and a hybrid residential program. In the future, a more comprehensive network will be developed and incorporated into the city's fabric, with a specific focus on preventing the perpetuation of incarceration.

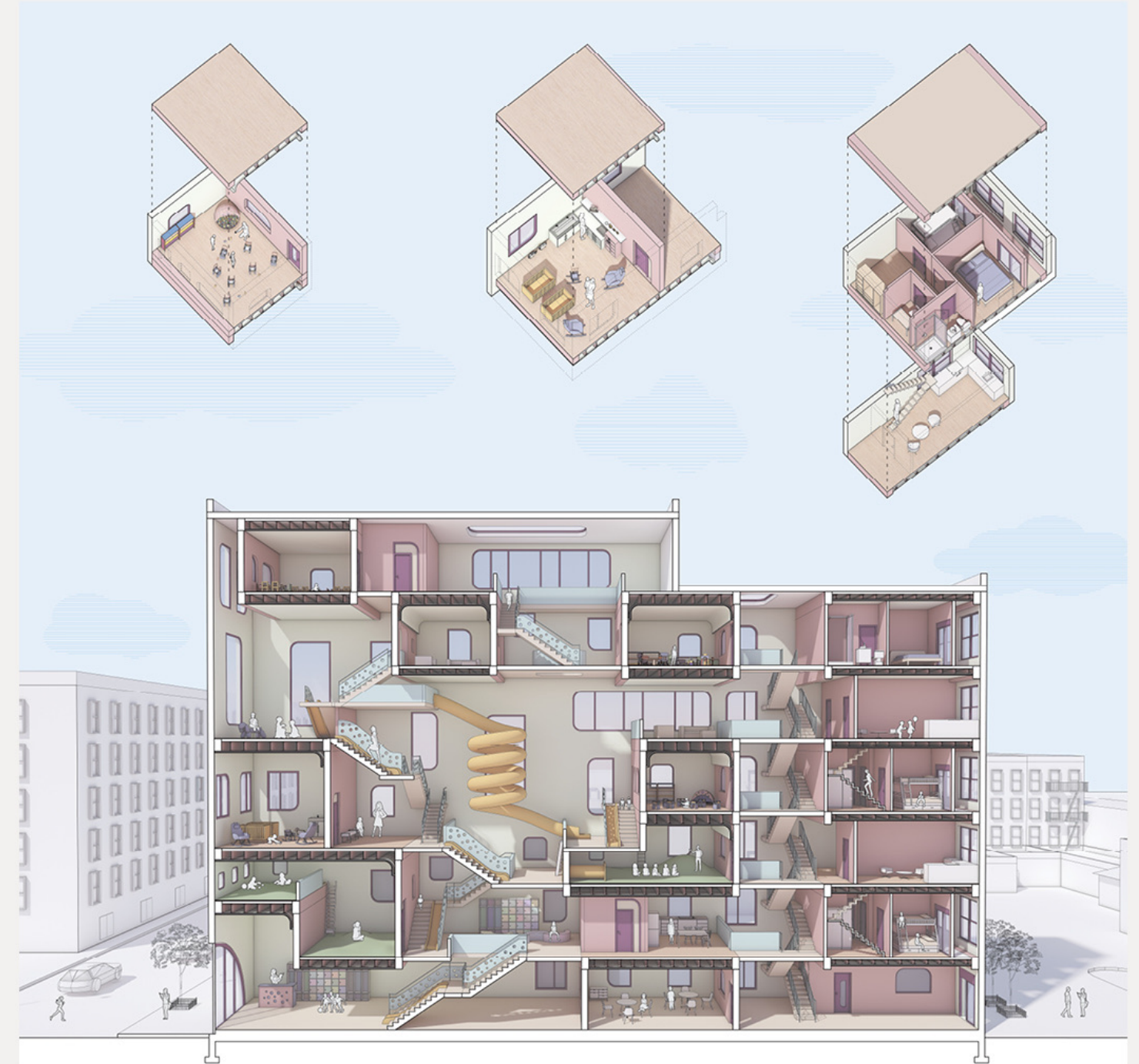


**NURSERY + SINGLE MOTHER DUPLEX HOUSING**



The left zone is also split into two halves. The upper half functions as an educational space for children, while the central area serves as nursery rooms for mothers and a play area for their children.

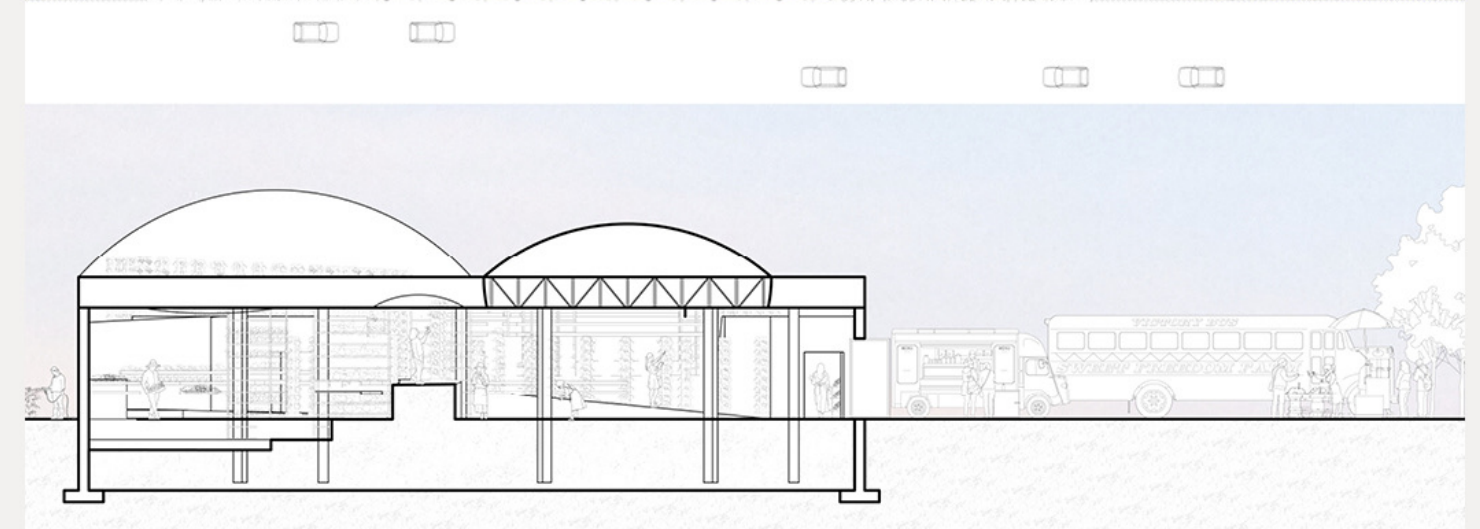
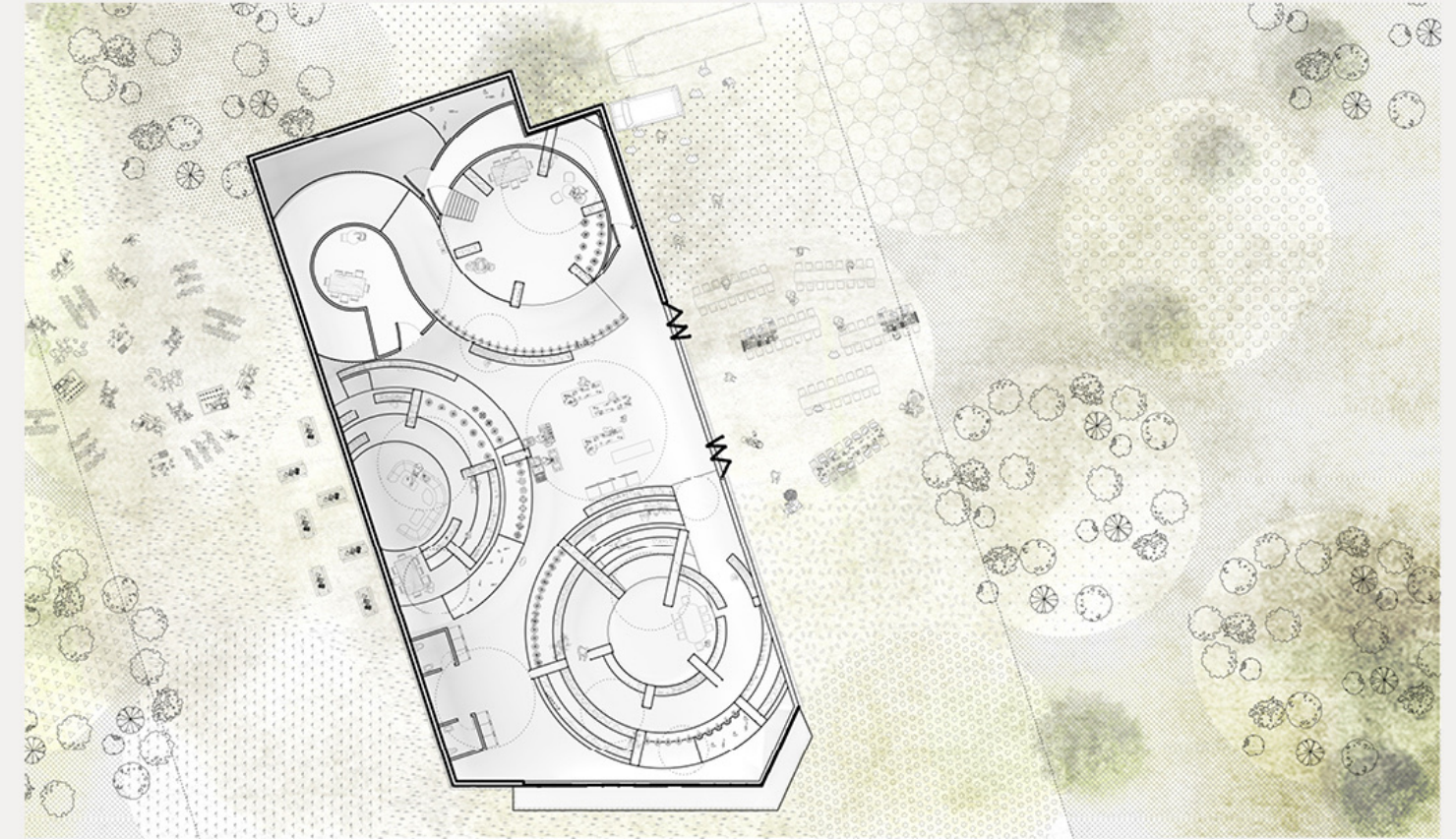
A vacant vertical building next to the Exodus Transitional Community and the Mid-Hudson Family Health Institute is divided into two sections. The section facing the street is transformed into a secure nursery space and a fun play zone for children, while the rear section is redesigned into three duplex apartments for formerly incarcerated single mothers and their children, as shown in the exploded axonometric view.



COMMUNITY FARM AND KITCHEN



This urban farm and kitchen extend from the interior to the exterior, transforming the fragmented concrete of vacant lots into thriving food oases. The space provides ample work areas for Sweet Freedom Farm and Victory Bus Project, a collective supplying fresh foods to those impacted by the incarceration system, training young BIPOC farmers, and hosting alternative-to-incarceration programs.



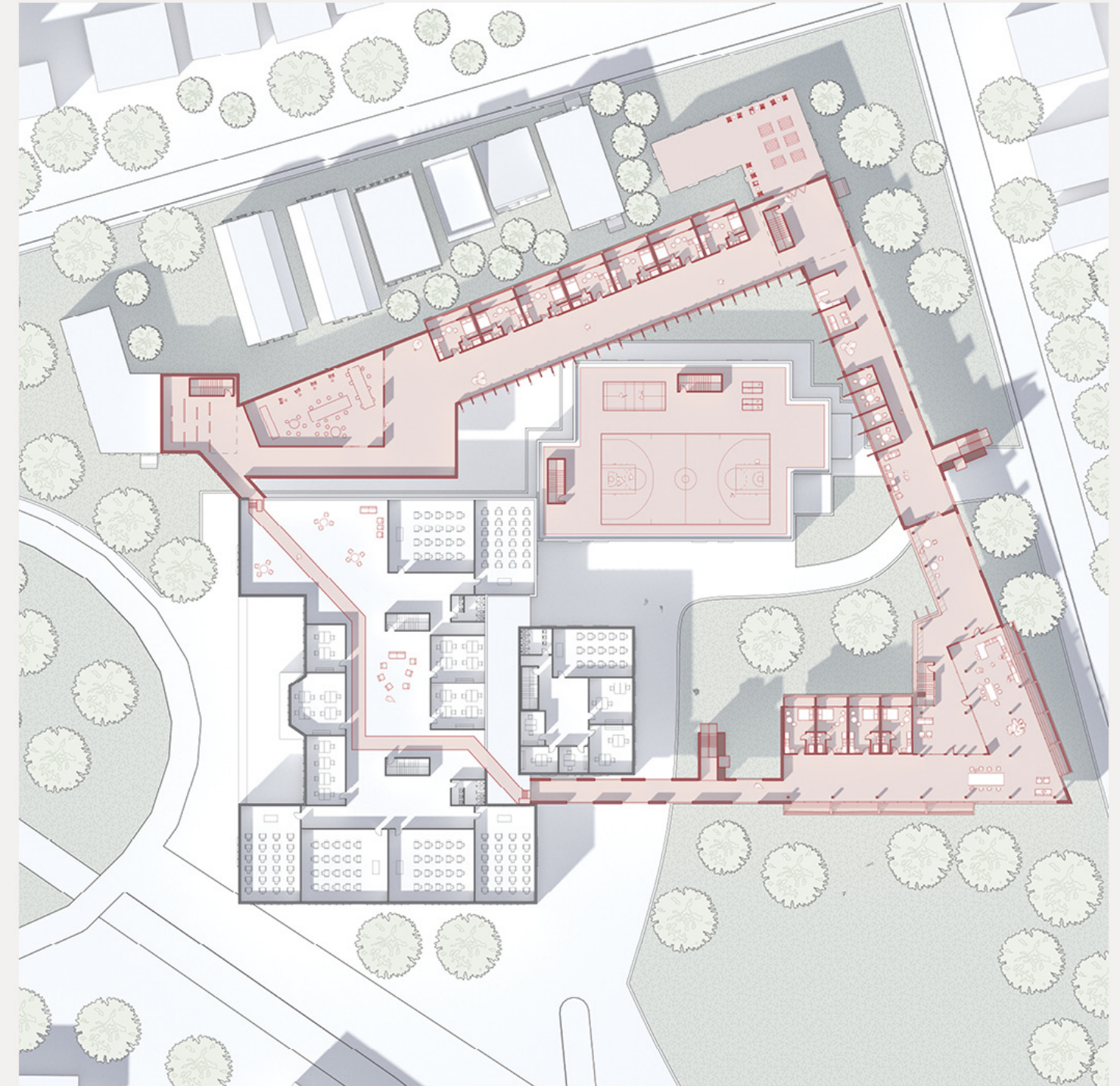
Sanctuaries

Sanctuaries



### HYBRID BRIDGE PROGRAM

A bridge is thoughtfully designed in the midst of community programs, including Dutchess Community College, family services, and advocacy for those previously incarcerated or homeless, to visually and psychologically connect all programs. This is achieved by penetrating the existing building and extending the original circulation. The bridge offers additional amenities not provided by the groups, such as residential studios, art therapy, small individual meeting and counseling spaces, and communal kitchens.



# Open Air Home

Core III Studio  
Nest, Nesting, Nested

Instructor: Eric Bunge

Partner: Anne Freeman

Fall, 2021



In Melrose community of Bronx, the project replaces outdated and inefficient buildings with a new design that draws inspiration from existing spatial elements such as airshafts, alleys, and courtyards.

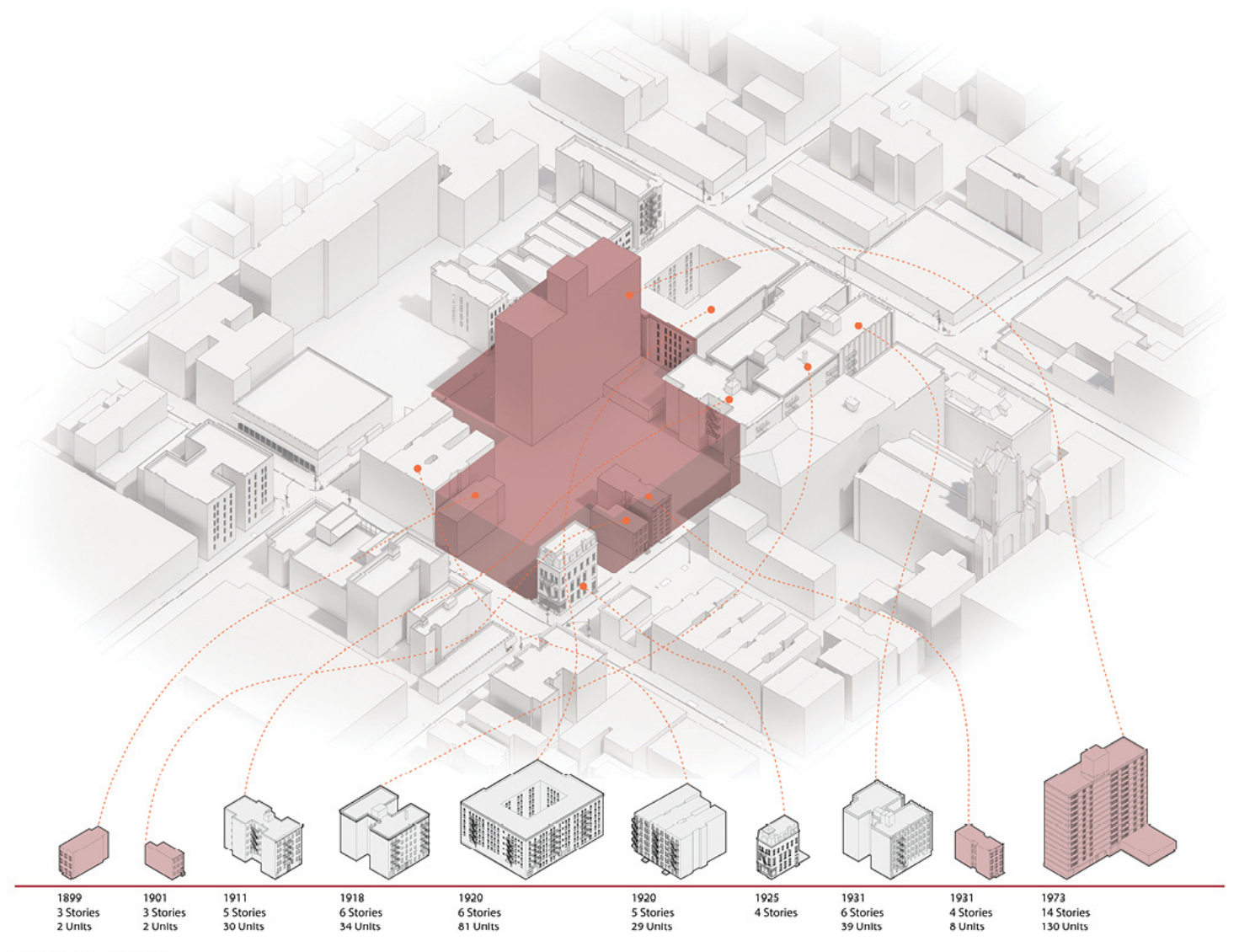
The redesigned airshafts feature an open edge, enabling natural ventilation at the bottom. This design is extended into the apartments, providing light and air to both the units and corridors. The project consists of three buildings with ground floor courtyards and basement parking. Alleys connect the courtyards and airshafts, blending the entire project into the urban context.

To encourage interaction, various activities are distributed among the three buildings, so residents engage with all of them, not just the one they live in. Units range from 550 to 750 square feet, with some two-bedroom units being duplexes. The north building features a skip-stop corridor for enhanced cross ventilation. The west building, designed for seniors, has 44 studios with private balconies and shared balconies overlooking the courtyard.

For materials, red brick found on site is integrated into the design by wrapping segmented brick walls around the exterior facades of the three buildings, adding a new level of porosity for light and air. The interior facades feature denser striation and wood for a warmer, domestic feel. CLT structural walls support the building, transitioning to color-matched concrete slabs that complement the brick. Lastly, a green roof spans the three buildings, reflecting the topography and greenery of the ground-level courtyards.



Nest, Nesting, Nested



SITE BOUNDARY STUDY



SITE MODEL

Nest, Nesting, Nested



SECTION PERSPECTIVE

Nest, Nesting, Nested



SWATH MODEL - FRONT AND BACK

Nest, Nesting, Nested



ALLEY RENDER



PHYSICAL MODEL STUDIES



COURTYARD RENDER (TOP)  
ROOFTOP RENDER (BOTTOM)

Nest, Nesting, Nested

Nest, Nesting, Nested

# The Breathing School

Core II Studio  
Grounds for Play

Instructor: Erica Goetz

Spring, 2021



AERIAL VIEW: RAINY DAY

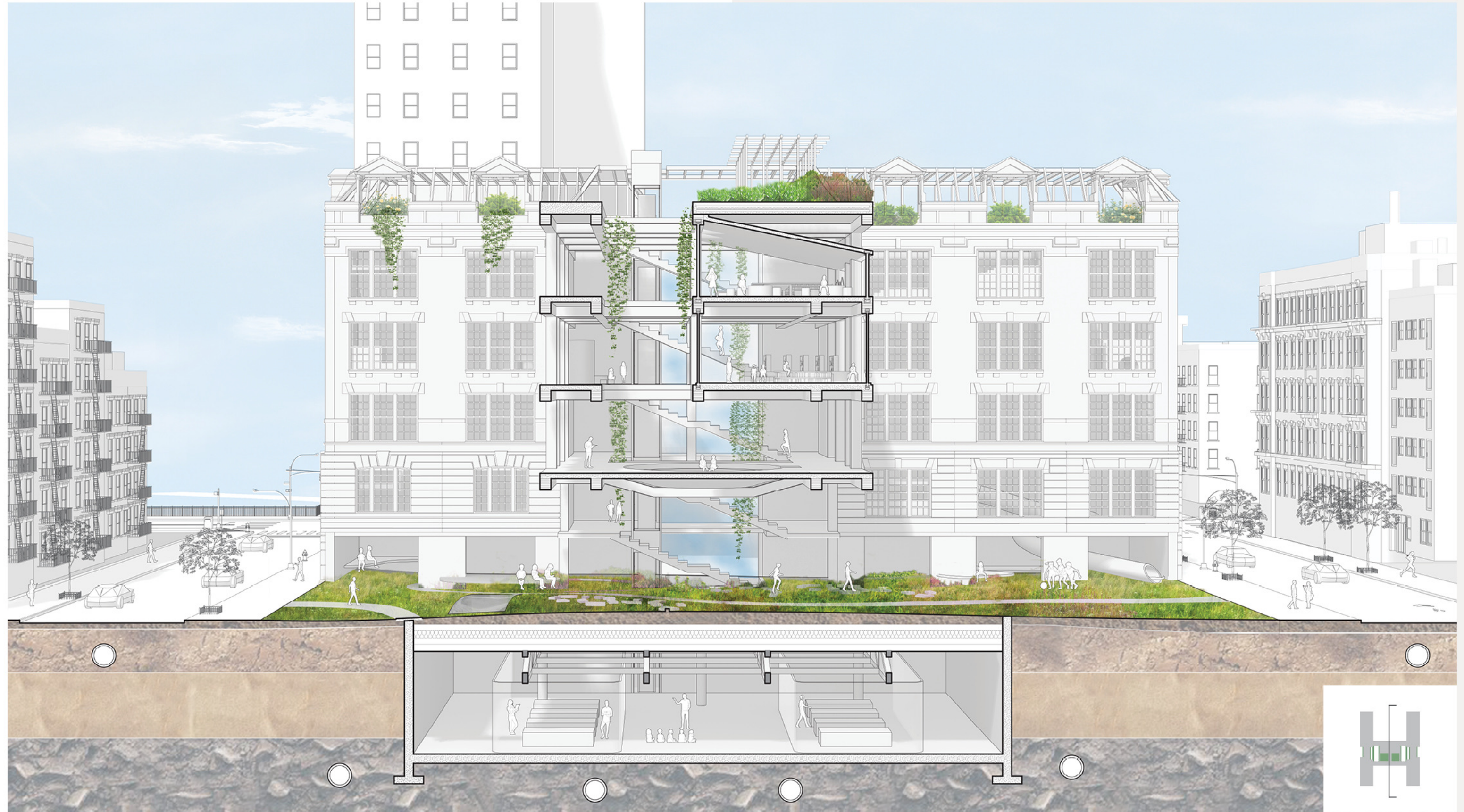
Located on the East Side of Lower Manhattan, Public School 64 faces potential flooding hazards due to its coastal proximity and the limited green infrastructure in the area. To address these concerns, the school's design aims to benefit not only the students but also the entire community and city. Guided by a philosophy centered around ecology, education, and resiliency, the school strives to become a beacon of environmental consciousness.

The first level wetland, in conjunction with the green roof, is designed to absorb and collect rainwater and floodwater, integrating them into the school's water-based features. An external continuous waterfall embodies the building's water concept and serves as an educational tool for both students and the public. Moreover, the building itself transforms into a vast scientific exploration zone, with the basement science lab allowing scientists to study the area's soil, water, and plant life.

In terms of structure, the original school's four wings are preserved, with the new building placed at the center. Four L-shaped perforated shear walls and concrete columns adjacent to the stair core provide structural support. Glulam truss systems connect to the concrete columns at the third and fifth floors, with the fourth floor remaining truss-free, adding visual dynamism to the project. Through this innovative design, Public School 64 creates an environment that not only embodies its core values but also contributes positively to the wider community's wellbeing.

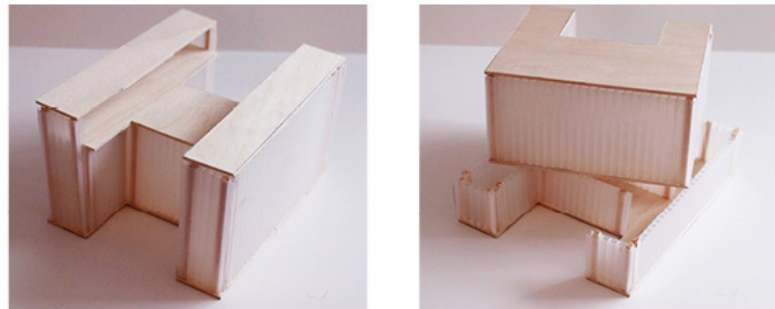
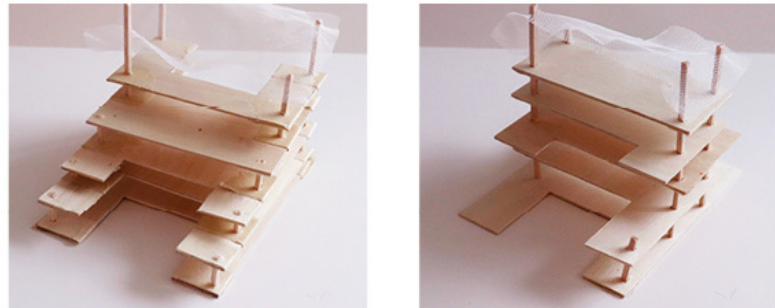
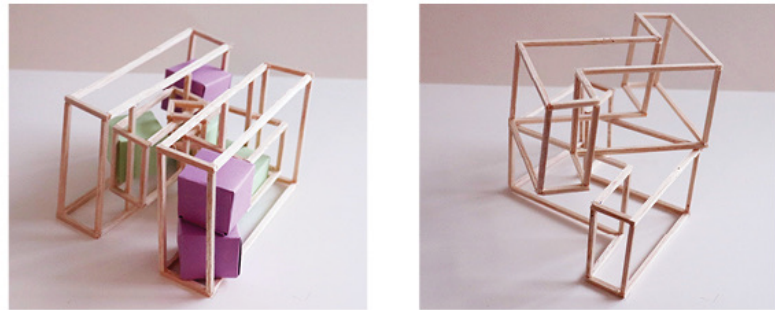
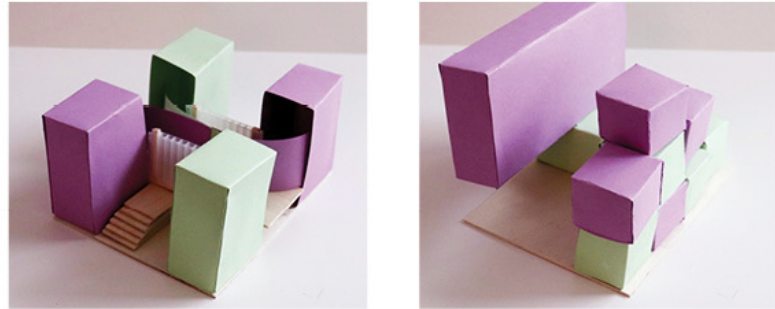
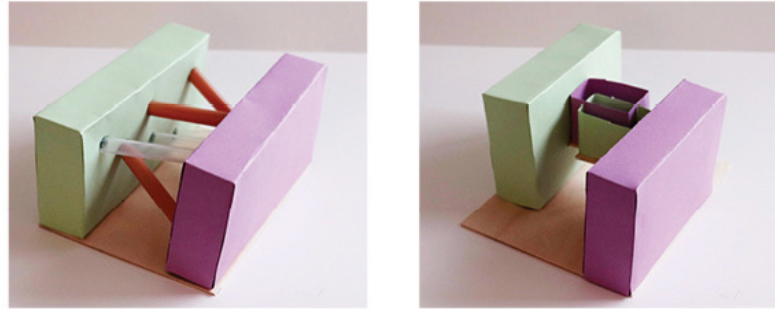


AERIAL VIEW: SUNNY DAY



SECTION 1





MASSING MODEL STUDY

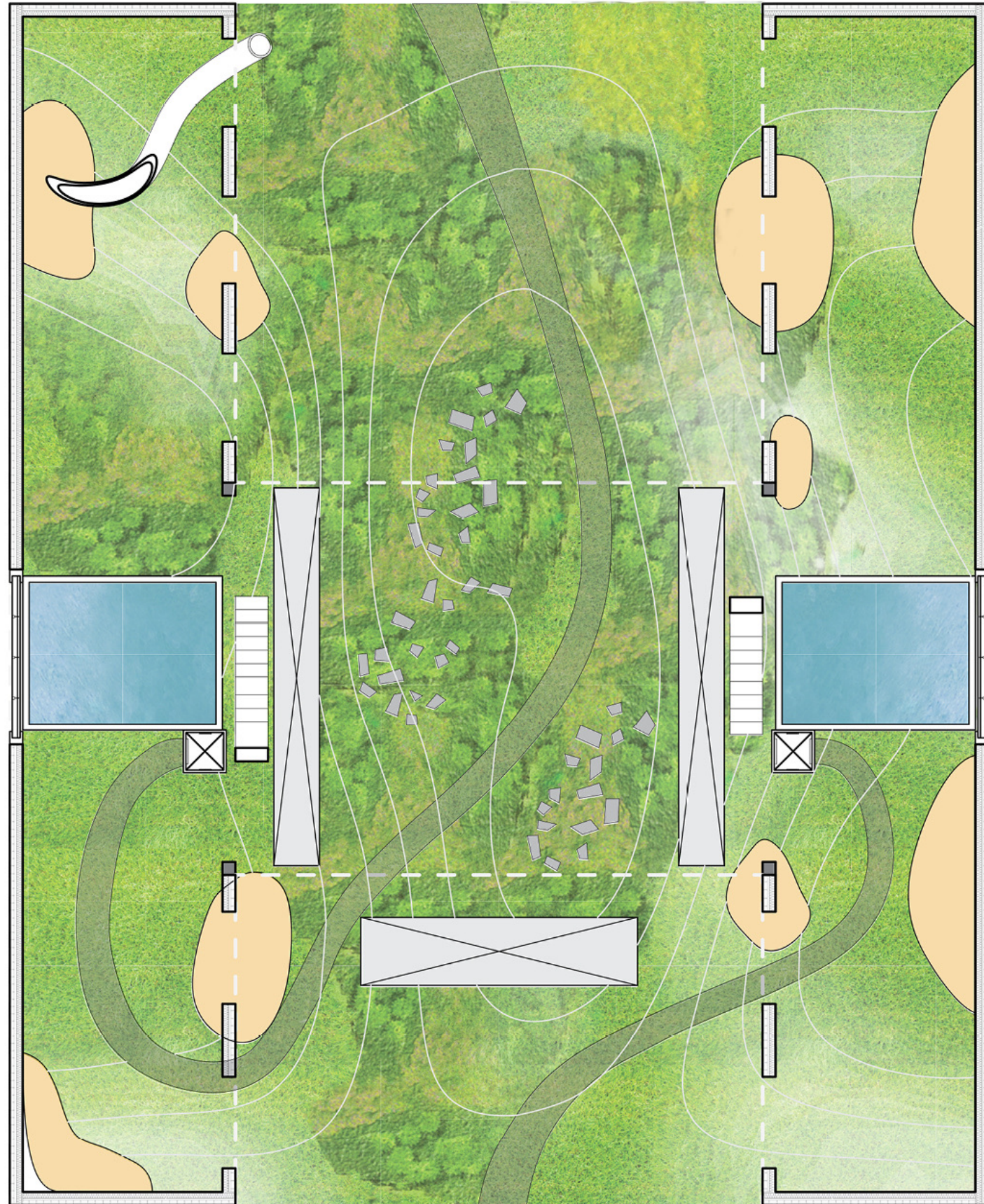


SECTION 2

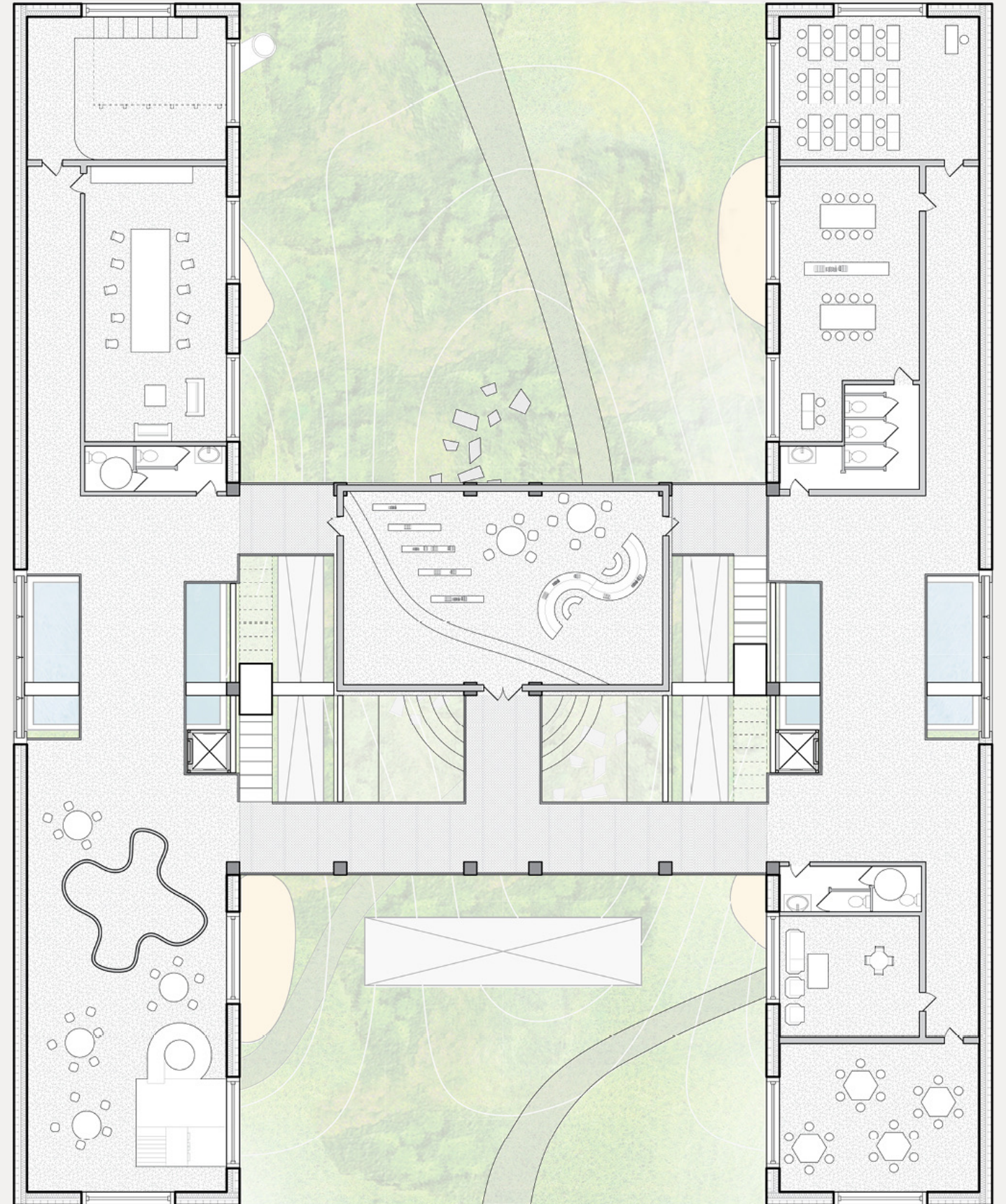


Grounds for Play

Grounds for Play



1ST LEVEL PLAN



3RD LEVEL PLAN

Grounds for Play

Grounds for Play



IMMERSIVE EXPERIENCE



IMMERSIVE EXPERIENCE: ROOFTOP

Grounds for Play

Grounds for Play

# Re-imagining Public School Playground

Core I Studio  
Broadway Stories - W184th

Instructor: Josh Uhl

Fall, 2020



PHYSICAL MODEL FOR FACADE PROTOTYPE

In the US, educational inequality is a pressing concern, partly due to public schools often being located in areas with unfavorable environmental conditions such as poor air quality and increased noise levels. As a result, students in public schools typically have less access to playgrounds, dining areas, and gyms than their private school counterparts.

Public School 98 in Manhattan, NY, highlights this problem, as it is situated adjacent to a parking lot and an auto repair shop, as well as in close proximity to a light rail station. During peak traffic hours, this poses a safety risk to students.

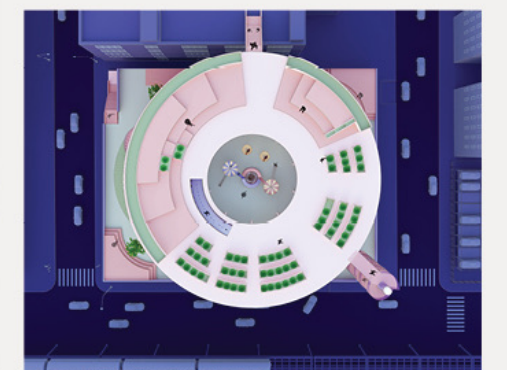
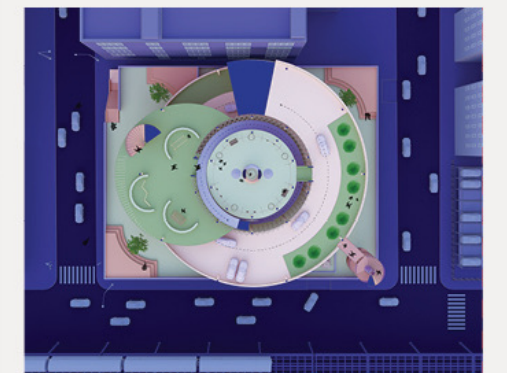
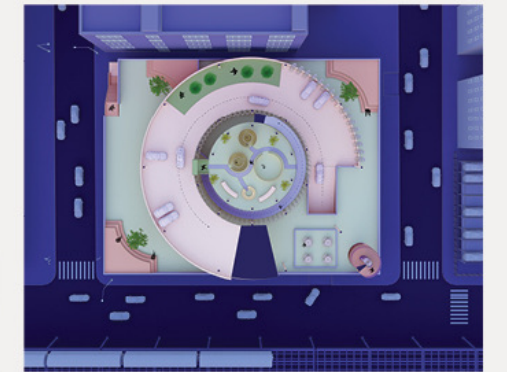
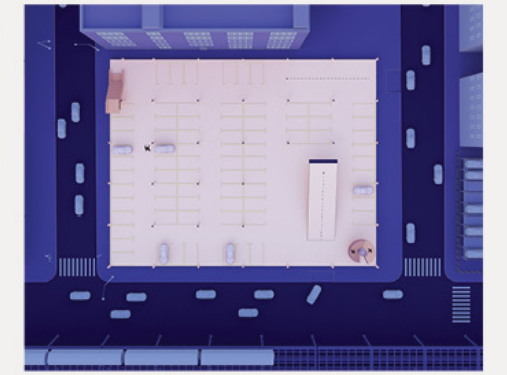
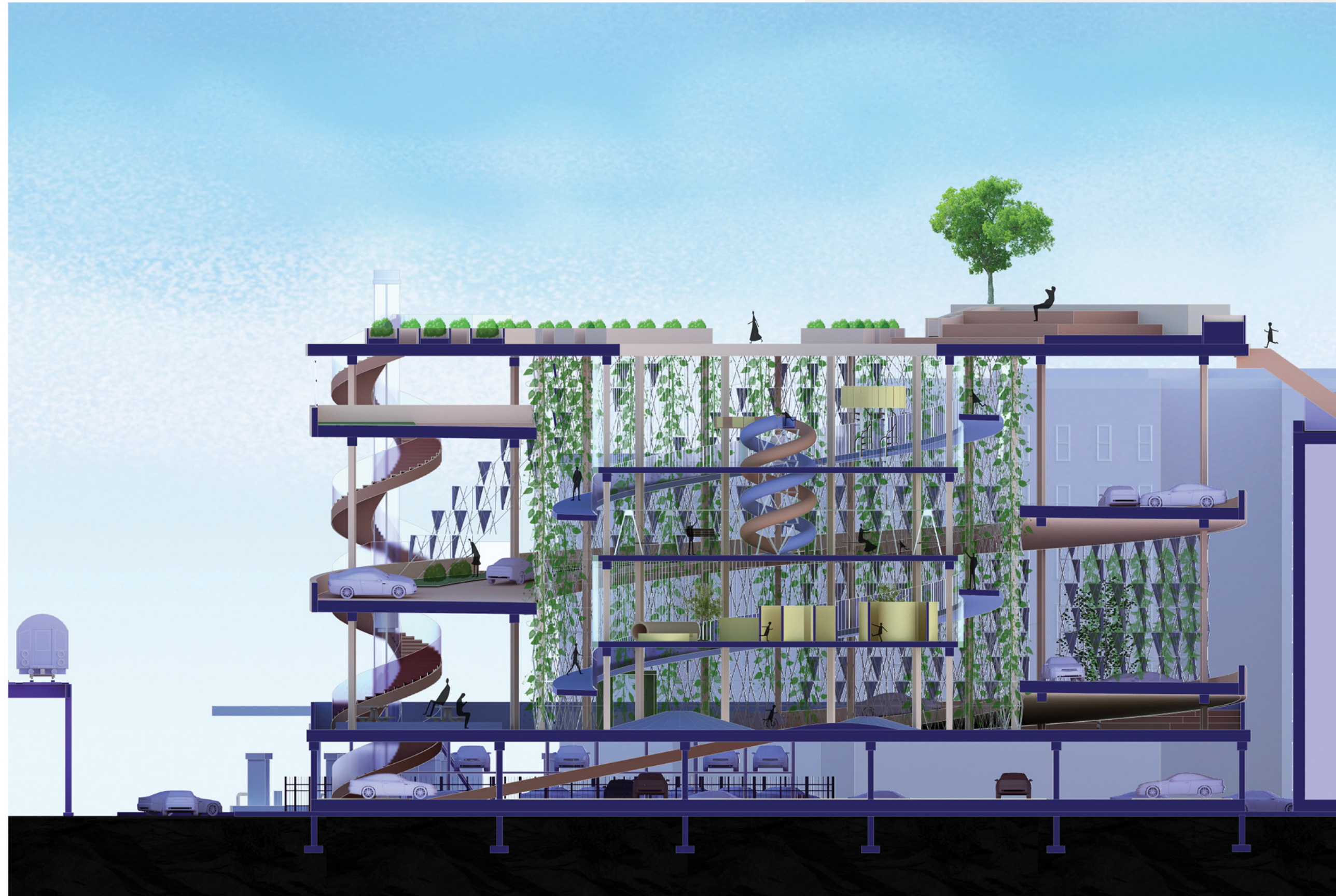
To tackle this disparity, I propose a unique hybrid model that combines children's playgrounds with parking lots. This design serves as an extension of the existing school playground while also functioning as a public space while maintaining parking accessibility.

Inspired by DNA chains, the playground-parking hybrid area features two continuous spiral ramps as its central structure—one designated for children and the other for car parking. This double helix design ensures that children remain unaffected by vehicles and preserves privacy for play areas. Additionally, solar panels installed on the upper level will contribute to charging electric cars.

The playground structure caters to various age groups. The lowest level playground is designed for children aged 3-5, incorporating wooden walls and tubes to establish a safe and intimate environment. The upper-level playgrounds cater to children over five, featuring a large double helix slide and a tensegrity structure for climbing, echoing the overall design concept of the entire structure.



AERIAL VIEW



PLAN

SECTION

Broadway Stories - W184th

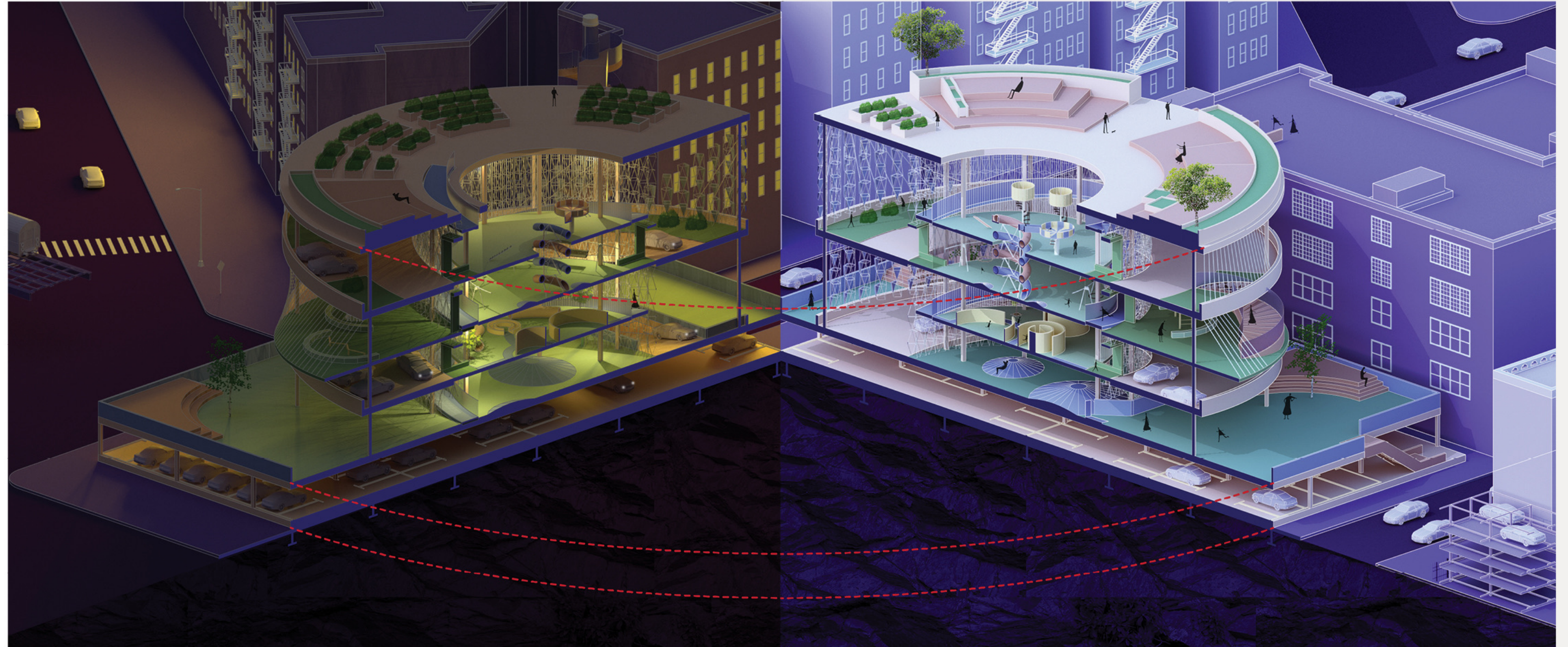
Broadway Stories - W184th



Broadway Stories - W184th

Broadway Stories - W184th

PHYSICAL MODEL PHOTOS



DAY AND NIGHT VIEW

**TO BE CONTINUED...**