



WEIWEI WANG

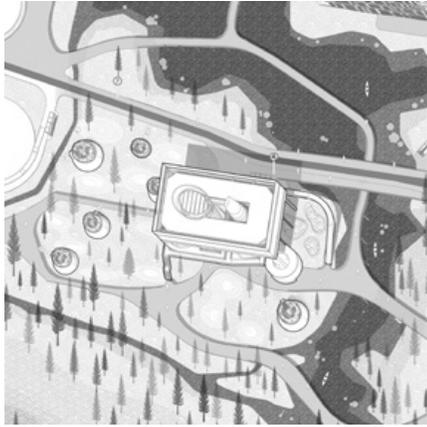
PORTFOLIO

G S A P P

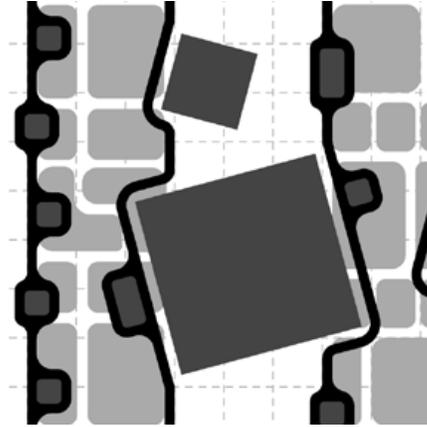
W O R K S

2022 - 2023

**A Collection of work
that focuses on
Spatial experiment,
Materiality, and
Social impact**



The Least We Can Do
page 04



Thickness of Retreat
page 28



Permeable City
page 48



Other Work
page 68

THE LEAST WE CAN DO

Planting Lab for Climate School in 2035

Summer 2021 Advanced Studio, GSAPP

Collaborator: Liwei Guo/ Eleanor Yuan

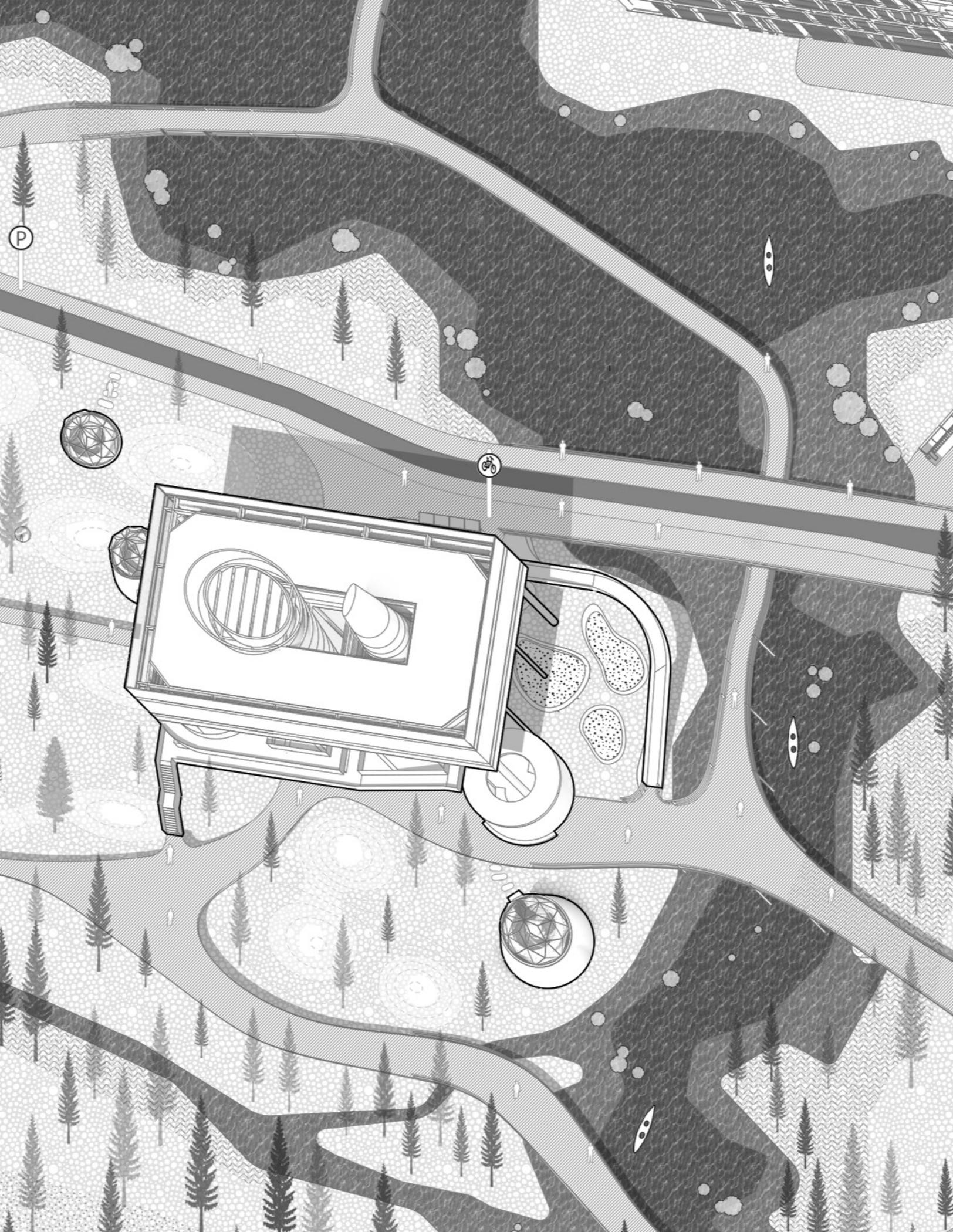
Instructors: Emmett Zeifman

This architecture project is located in West Windsor, which is near Princeton University. The design focus on both urban and architectural scale. We designed a climate school, which is set to be completed by 2035, with a focus on sustainability and resilience. Following the completion of the climate school, individual groups in our studio designed a planting lab and a wetland park that provides a natural and public-friendly space shared by the community.

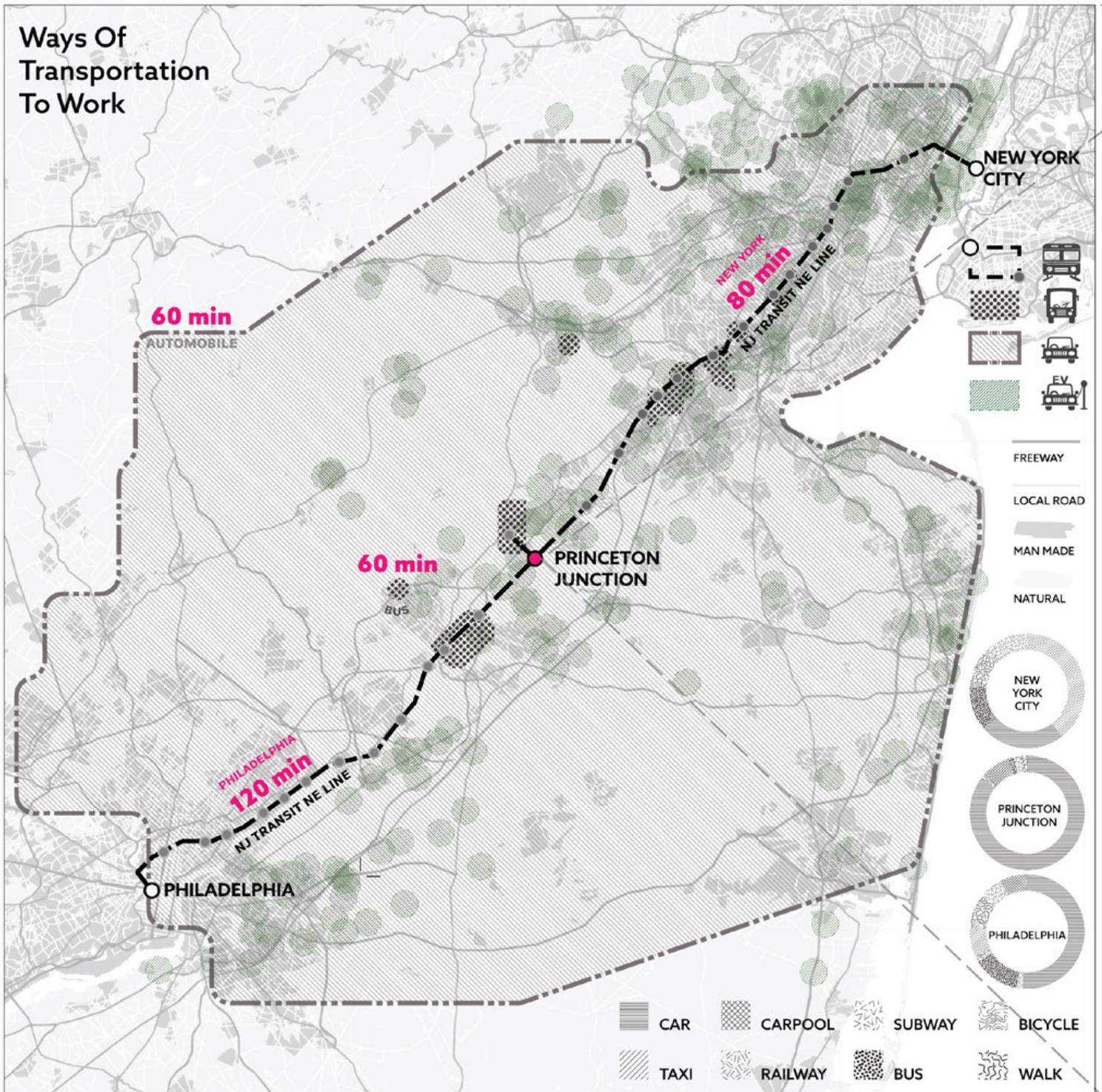
Our design prioritizes community engagement and social interaction by promoting public accessibility and incorporating natural elements. We believe that architecture has a responsibility to create spaces that encourage social connections, and our project aimed to achieve this by shifting the focus from constructing social spaces to facilitating social interaction.

This is the least we can do.





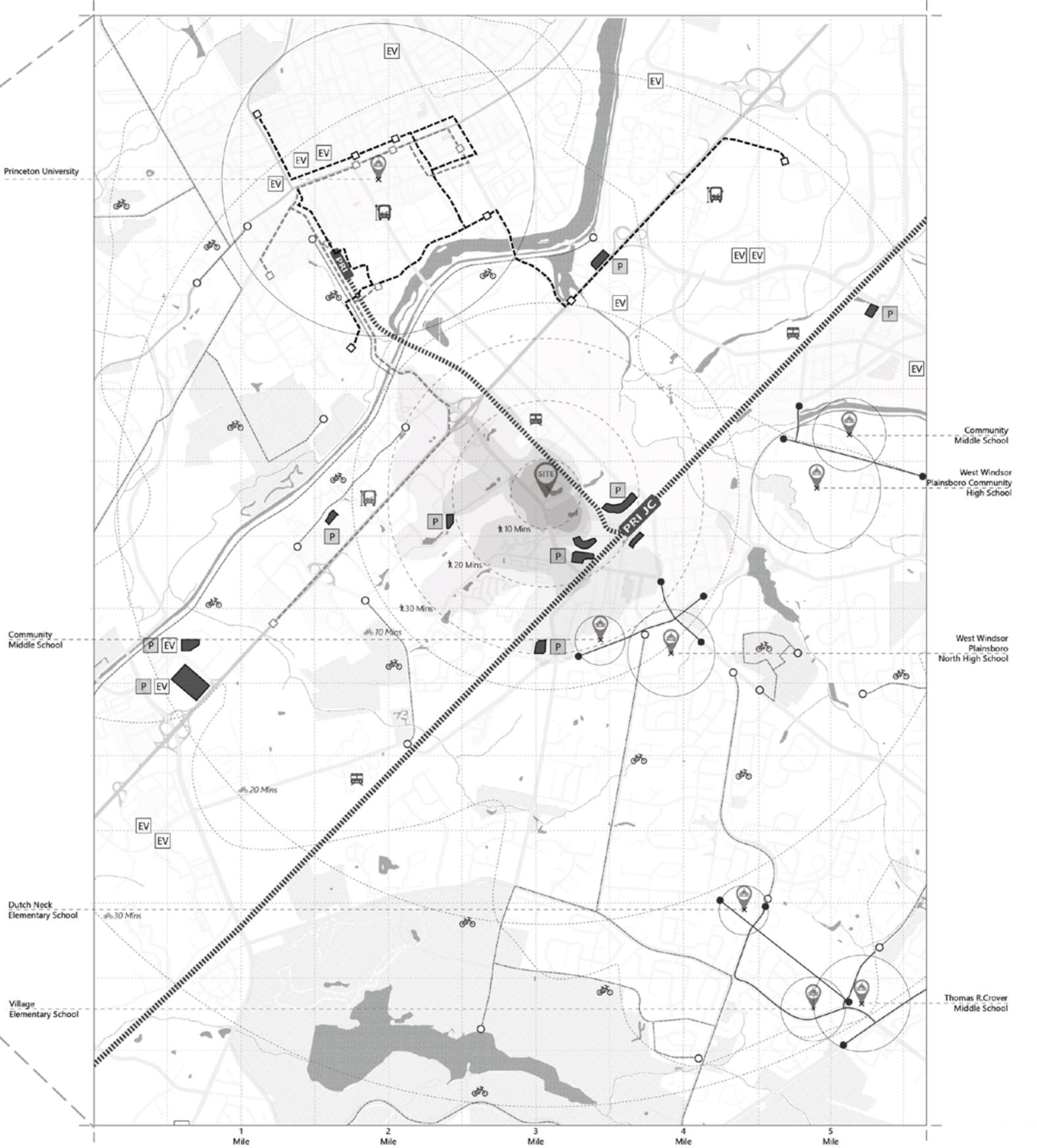
Ways Of Transportation To Work



Our architecture project is located in West Windsor, which is connected to New York and Philadelphia via the NJ transit system. This diagram shows that the site is easily accessible by train, with just a one-hour commute from both cities. The train also connects to nearby Princeton, as

illustrated in the diagram. However, it's worth noting that the residents of Princeton Junction primarily rely on cars for transportation, as mentioned in the diagram. Despite this, we believe that our site's convenient location and accessibility by public transportation will encourage

more sustainable transportation options in the area.



Princeton University

Community Middle School

Dutch Neck Elementary School

Village Elementary School

Community Middle School

West Windsor Plainsboro Community High School

West Windsor Plainsboro North High School

Thomas R. Crover Middle School

-  Pedestrian Line
-  Water
-  Public EVs Charging Location
-  Bikes Trails / Bike Trials for Students
-  Landscape
-  Public Parking lots
-  Weekday Buses / Weekened Shopper
-  Pedestrian Range
-  Freeway
-  NJ Transit
-  Education

By 2035, we plan to expand the range of parks in our landscape project and connect them through additional bike lanes. This will provide easy access to nature and contribute to students' mental health. However, according to the predicted flooded map, the water level will rise in 2035. To address this, we intend to transform a part of the parking lots into a wetland park and connect it to the lake and ditch.

The community context will also change in 2035. The development of sustainable housing areas with farms will change the traditional sense of suburban housing and land ownership. Additionally, people will move closer to the school district, resulting in more dense housing. This, in turn, will challenge the car-centric community in West Windsor, with the introduction of more electrified public transportation.

As electric cars become more prevalent, gas stations will be replaced by parking lots with charging piles. The increased availability of bike-sharing programs and public transportation will also reduce the need for parking lots in the future.



Landscape/Bike Lanes 2021



Landscape/Bike Lanes 2035



Community 2021



Community 2035



Public Transportation 2021



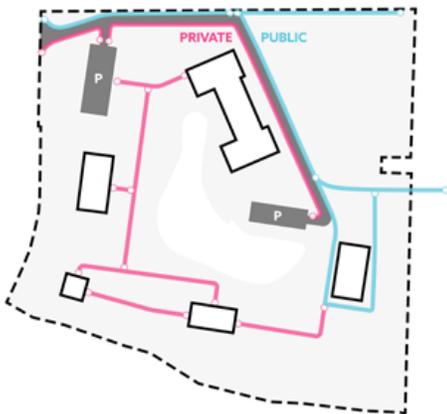
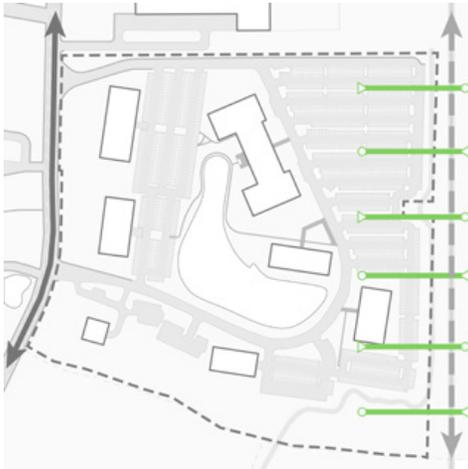
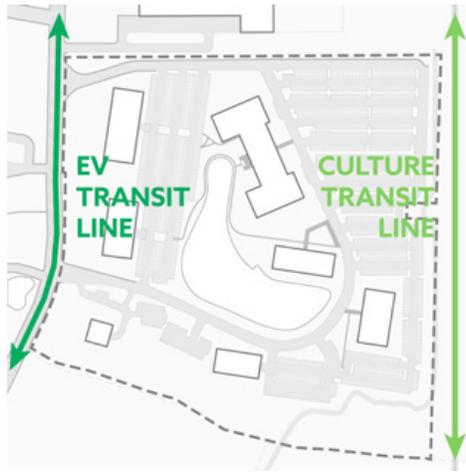
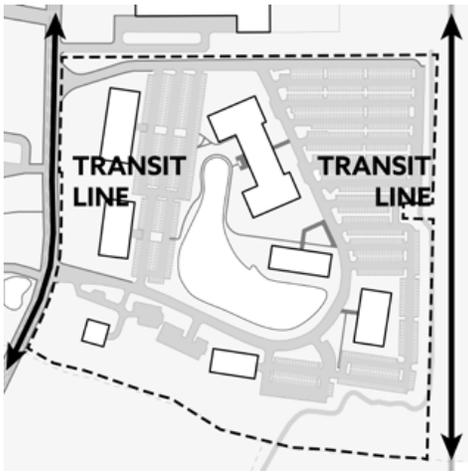
Public Transportation 2035



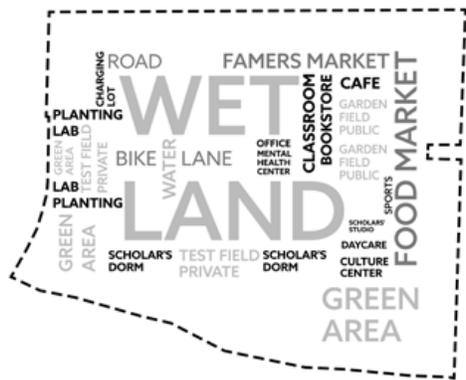
Road and Parking 2021



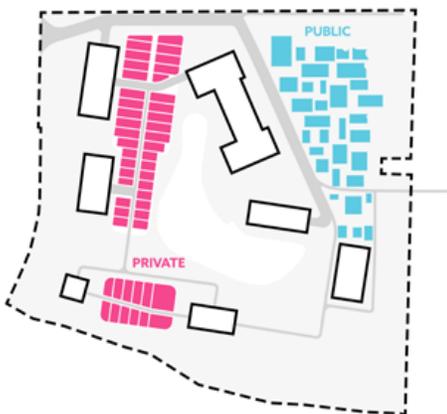
Road and Parking 2035



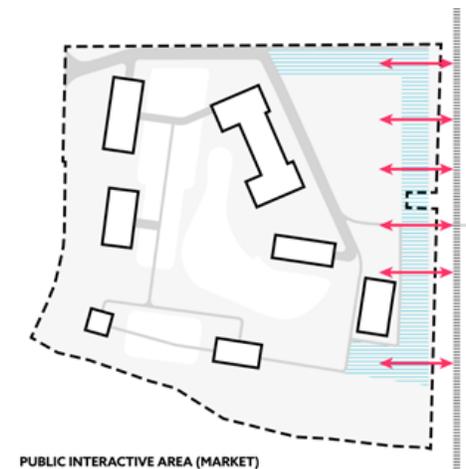
CIRCULATION



PROGRAM



TESTING FARM LANDSCAPE



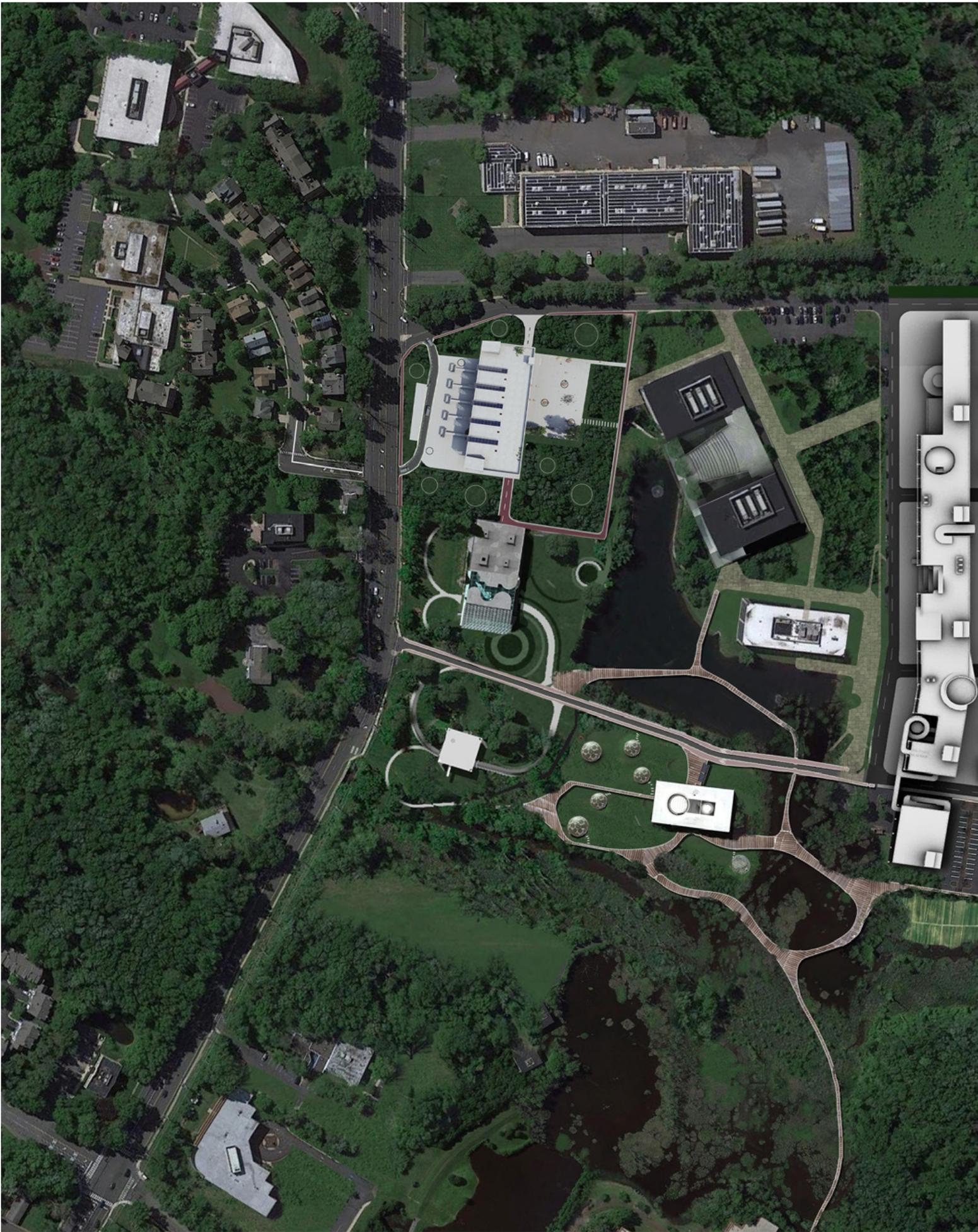
PUBLIC INTERACTIVE AREA (MARKET)

This diagram illustrates the relationship between our climate school and the surrounding township.

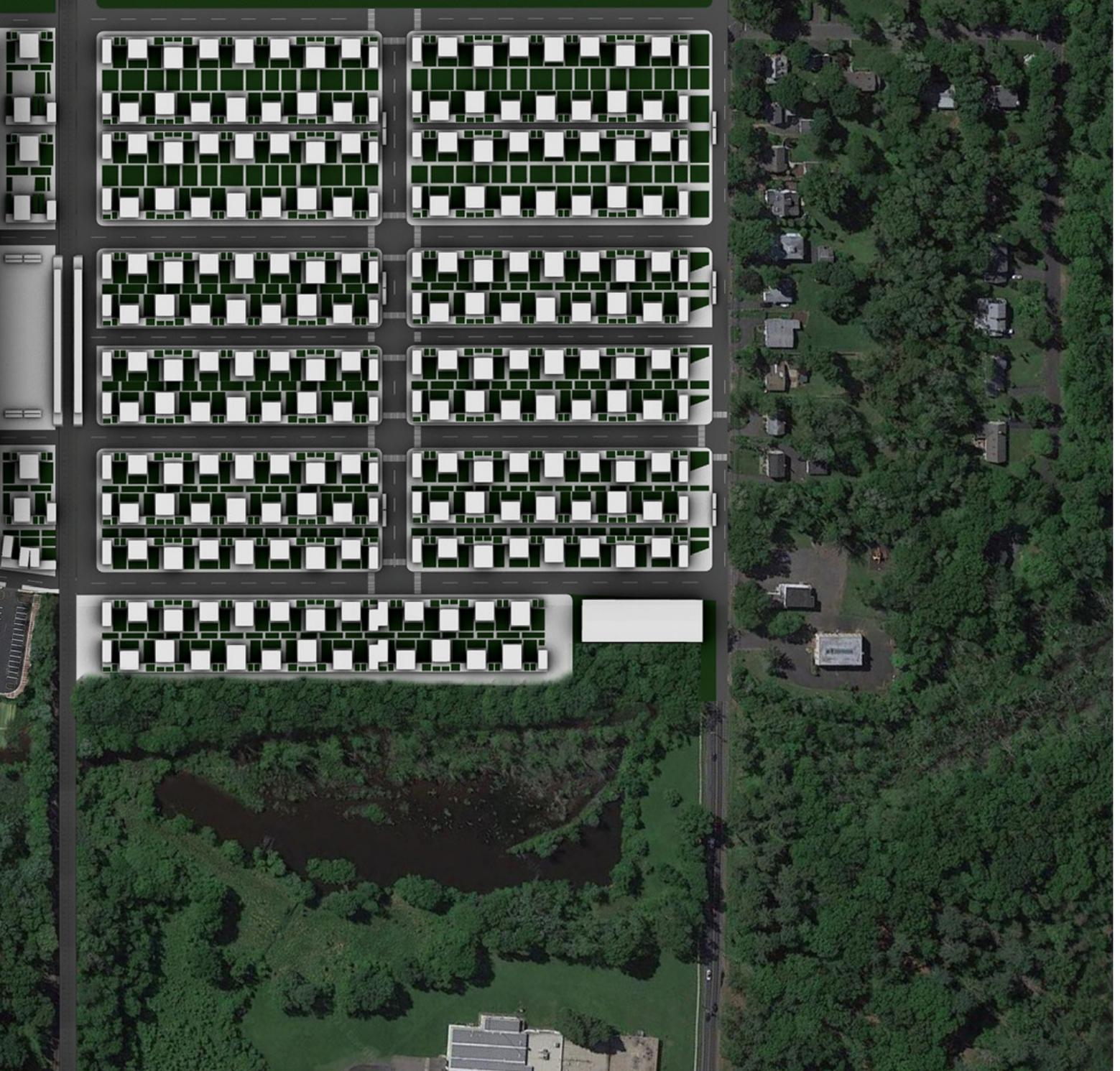
Our plan for the site includes using the lawn as a test farming field that will serve the climate school's lab and also become a landscape that connects with pedestrian routes. The ground floor will be open for walking through, making it easier to access the testing farms from nearby buildings and communities.

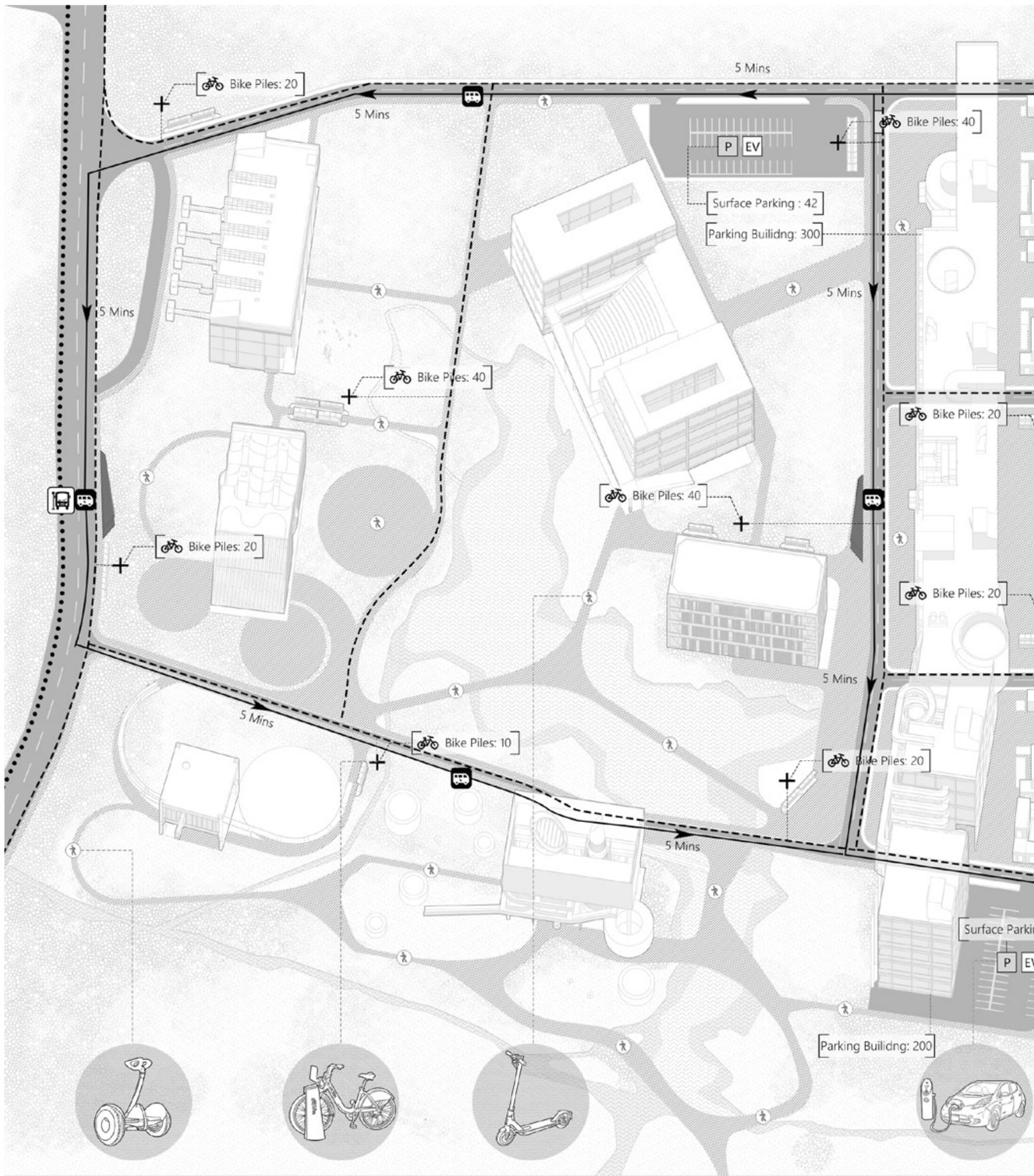
Due to the predicted rise in water levels in 2035, we plan to transform the artificial lake and ditches into a wetland park. This park will feature several pieces of wetland and marshland with wood platforms, providing a unique opportunity for bike and pedestrian access through the township bike lanes system.

In addition, we plan to replace ground floor parking lots with a landscape that will provide a habitat for wildlife and people, thus reducing the need for cars. We intend to connect the pedestrian and bike lanes to the wetland park, bringing people closer to nature from the surrounding buildings.



This is a satellite image of our climate school, which includes a lake that connects to a ditch and pond, becoming a beautiful wetland park. The bike and pedestrian system will also connect the community with the landscape, allowing easy access to the wetland park from Princeton Junction through a wooden trail. As part of our plan, a portion of the old residential area and parking lots will be converted into a forest, transforming our climate school into a forest.





----- [Train Icon] ----- Train Station and Track

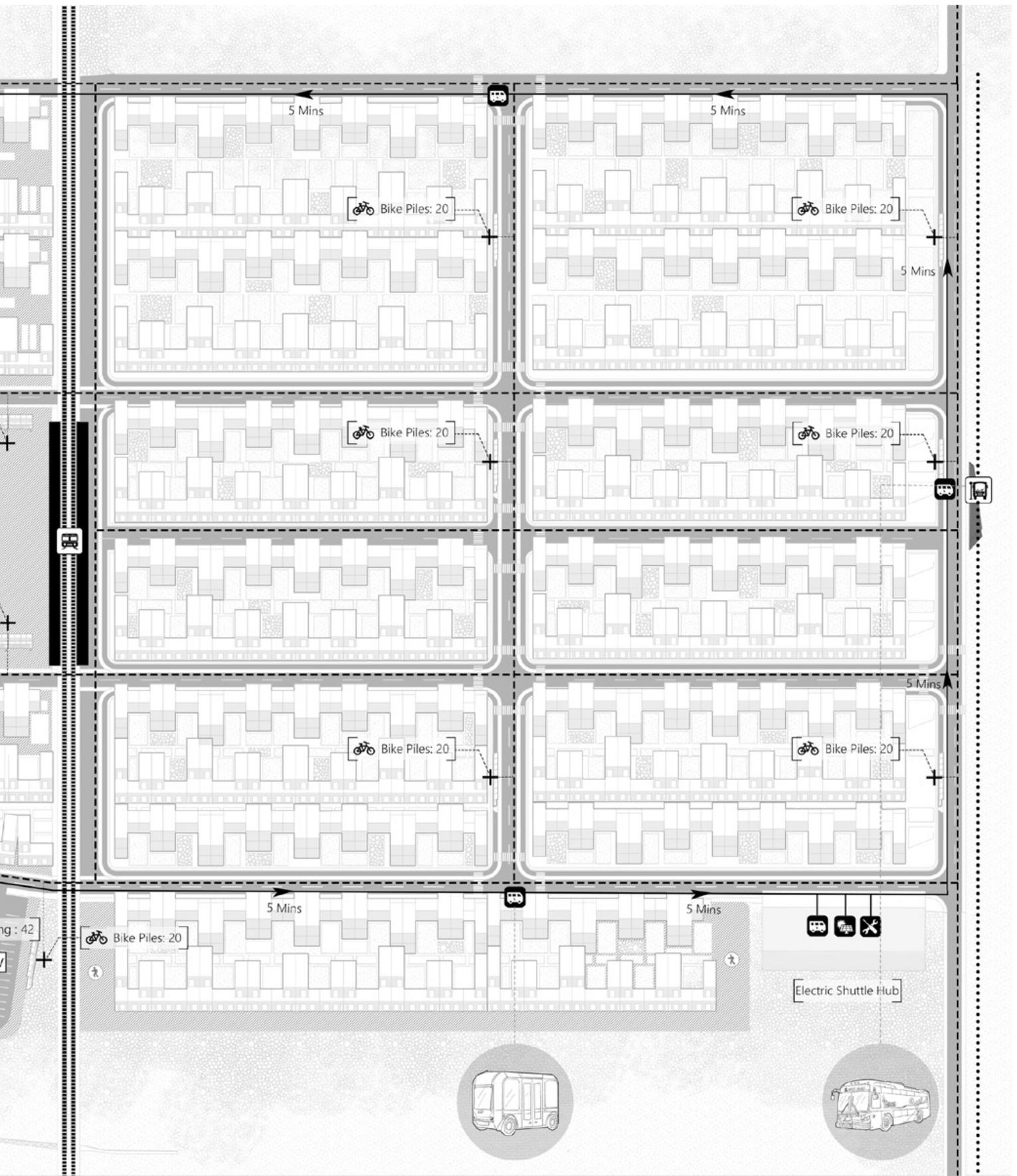
→ [Shuttle Icon] → Electric Shuttle

--- [P EV] --- Car Road and Charging Piles

..... [Bus Icon] Bus Station

//// [Person Icon] //// Pedestrian

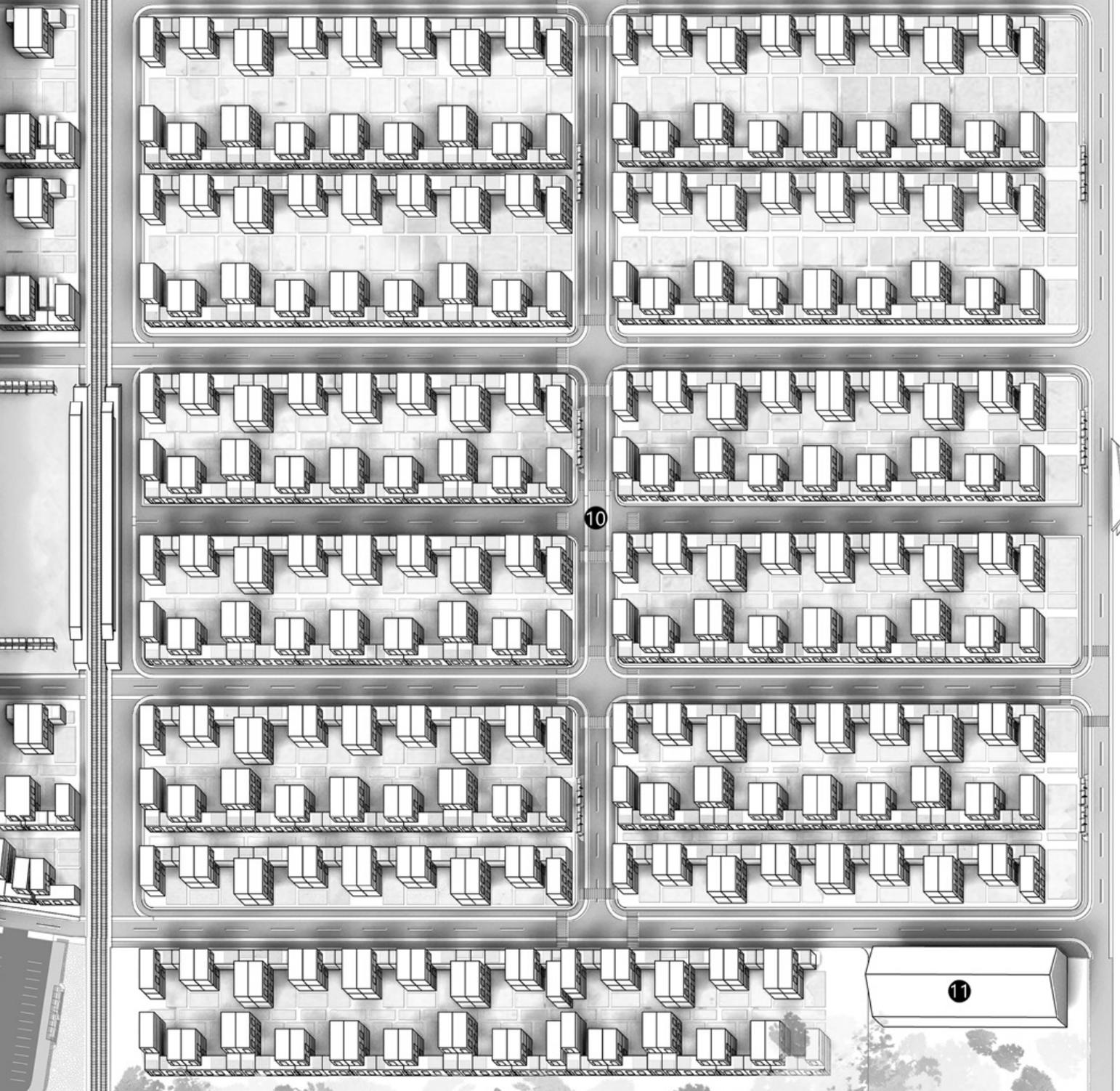
- [Bike Pile Icon] - Bike Lanes



This is our transportation plan for the climate school. There are four parking lots on our site, and six bike stops with charging piles in the community area, powered by solar panels. Pedestrian paving connects the landscape and recreation. For public transportation, we connect the old bus line with two smart electric shuttle loops, serving students, researchers, and communities. The solar panels will be set up on the roof of the shuttle bus hub, an abandoned warehouse next to our site.

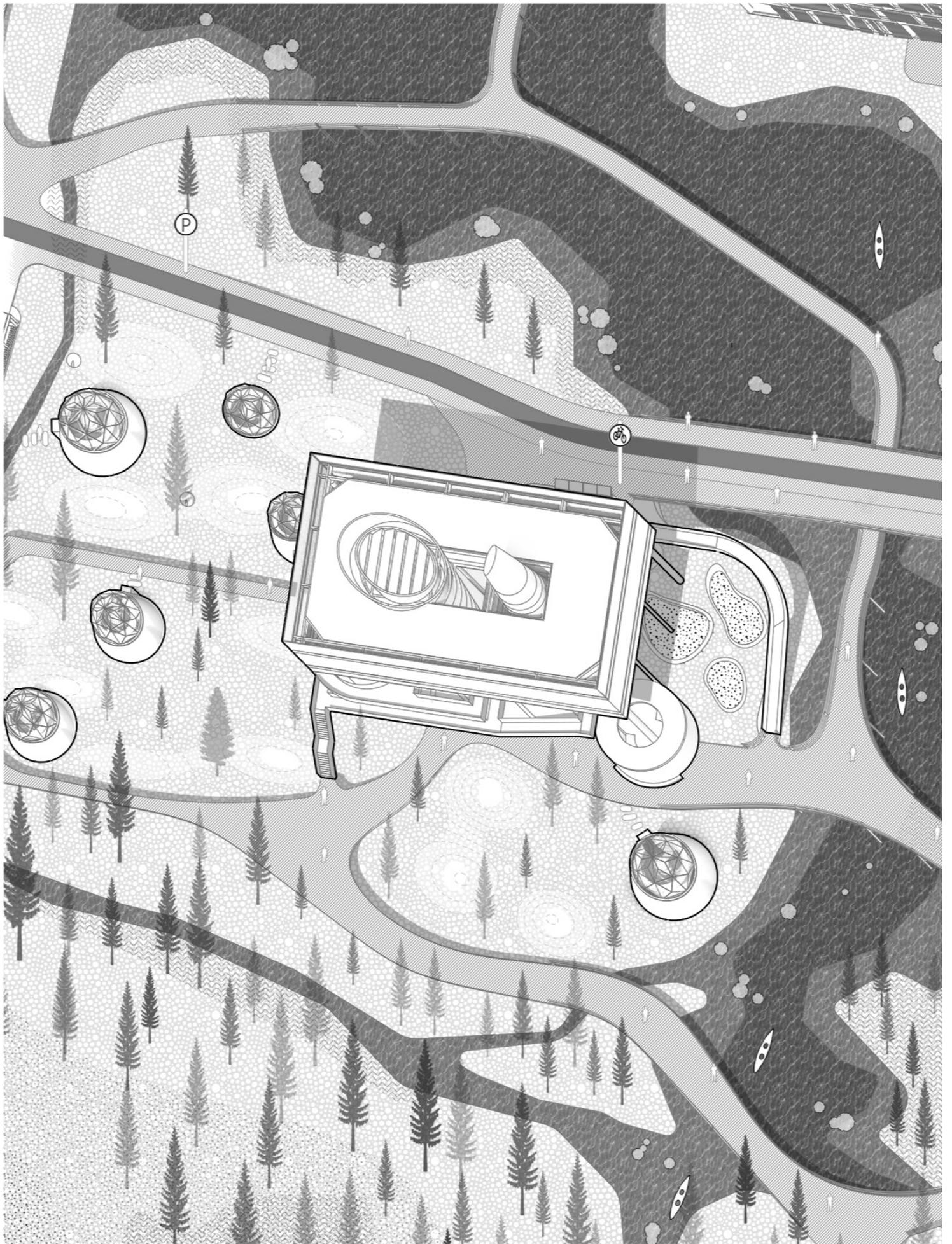


This is an oblique masterplan of the climate school, where existing buildings are repurposed. The college, library, and auditorium provide study areas for students, while the planting lab and material recycling labs serve both education and research purposes. Additionally, there is a museum and community center that offers exhibitions and day care services for the local community.

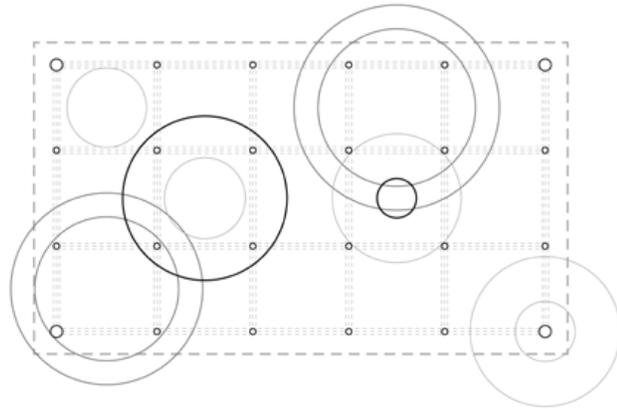


- | | | |
|-------------------------|----------------------------------|---------------------------|
| 1. Material Recycle Lab | 6. Community College | 11. Electric Shuttles Hub |
| 2. Community Center | 7. Solar Recharging Parking lots | |
| 3. Museum | 8. Bar Housing | |
| 4. Planting Lab | 9. Parking Building | |
| 5. Library | 10. Residential Area | |



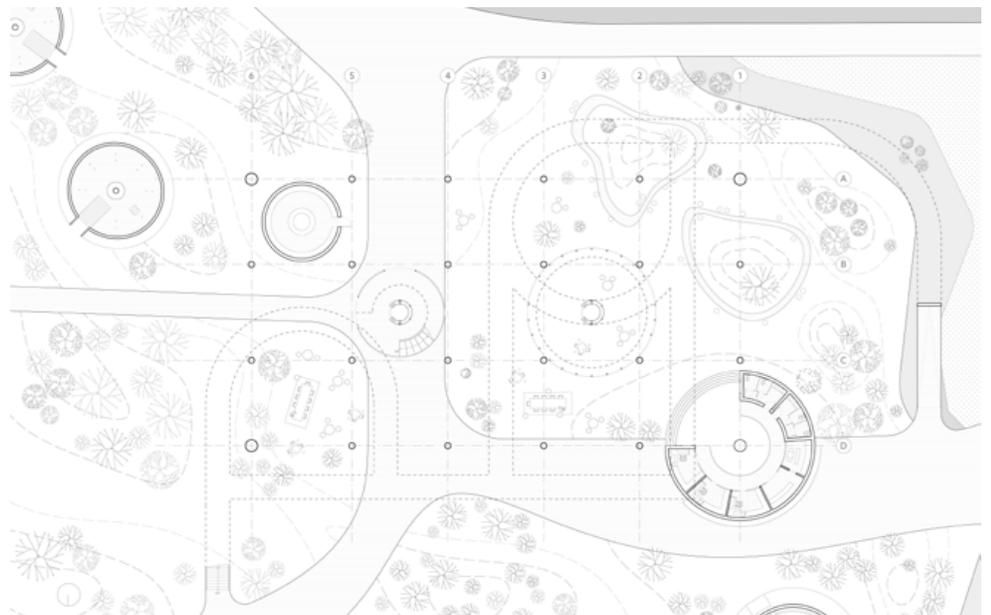


For individual group, we propose an individual planting lab surrounded by a wetland park. We designed a waterfront walking system on the ground floor for easy site crossing. The landscape features organic grass slopes with scattered greenhouses of different heights. Near the building entrance, there are landscape seats and rest platforms.



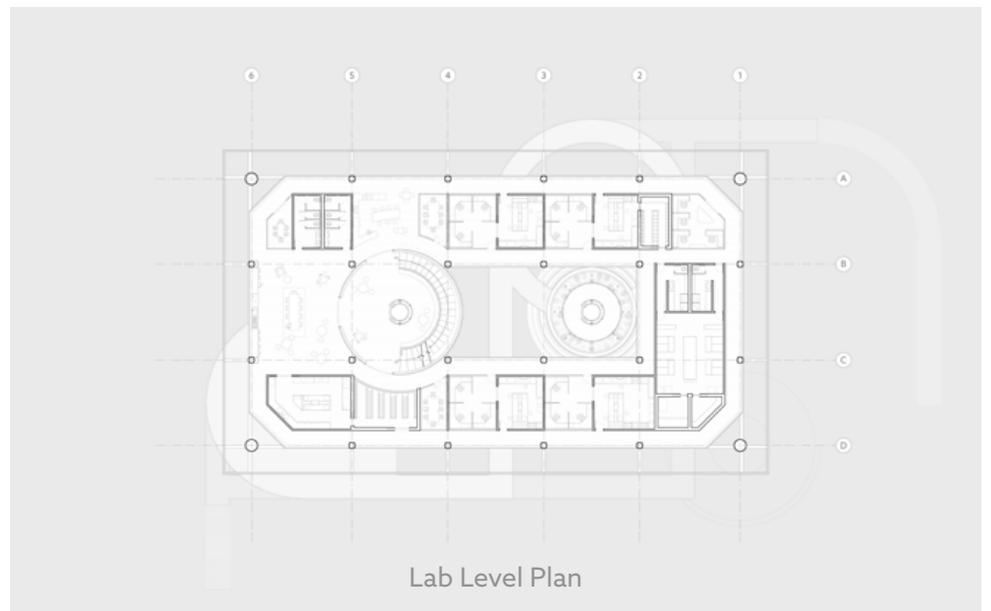
Concept Plan

Architectural plan is based on the original grid structure, which we disrupted using circular curves to create new program spaces. The ground level provides full public access to the natural landscape, which transforms into wetlands. The program includes an Animal Hospital and individual greenhouses scattered around the landscape. A storage room for bikes and planting tools is located near the main entrance. We will use landscape and original columns and buildings to create playful and functional public use furniture.



Ground Level Plan

The lab level retains the original building's shape with a circulation corridor along the outer edge and the center courtyard. Most programs are set between the corridor to ensure sunlight does not interfere with experiments. The Private Lab Core creates a large lounge and meeting space, with four labs connected to office space, and two individual indoor planting observation rooms will be connected to two of the labs. A preparation area will also be available for the Main Lab.



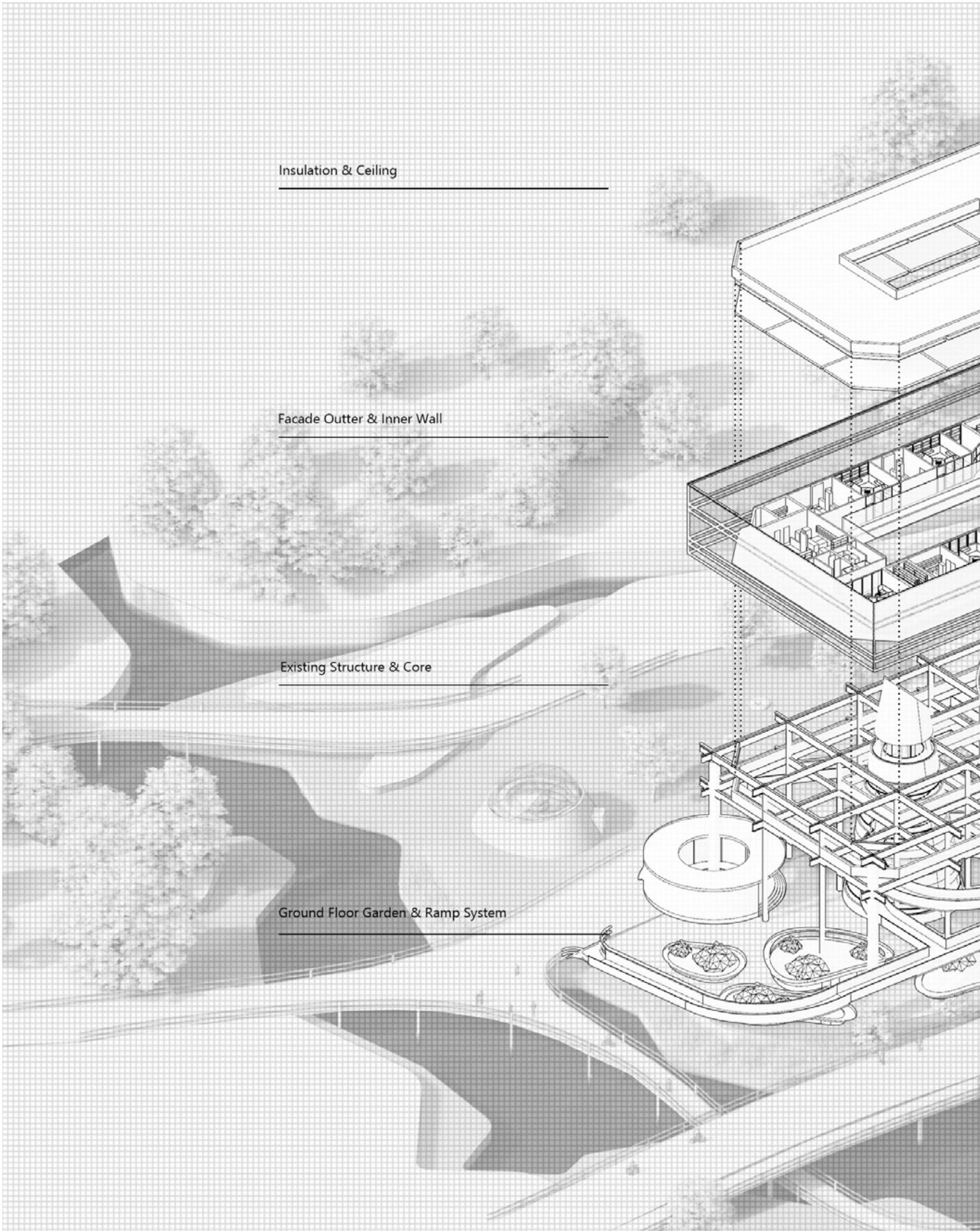
Lab Level Plan

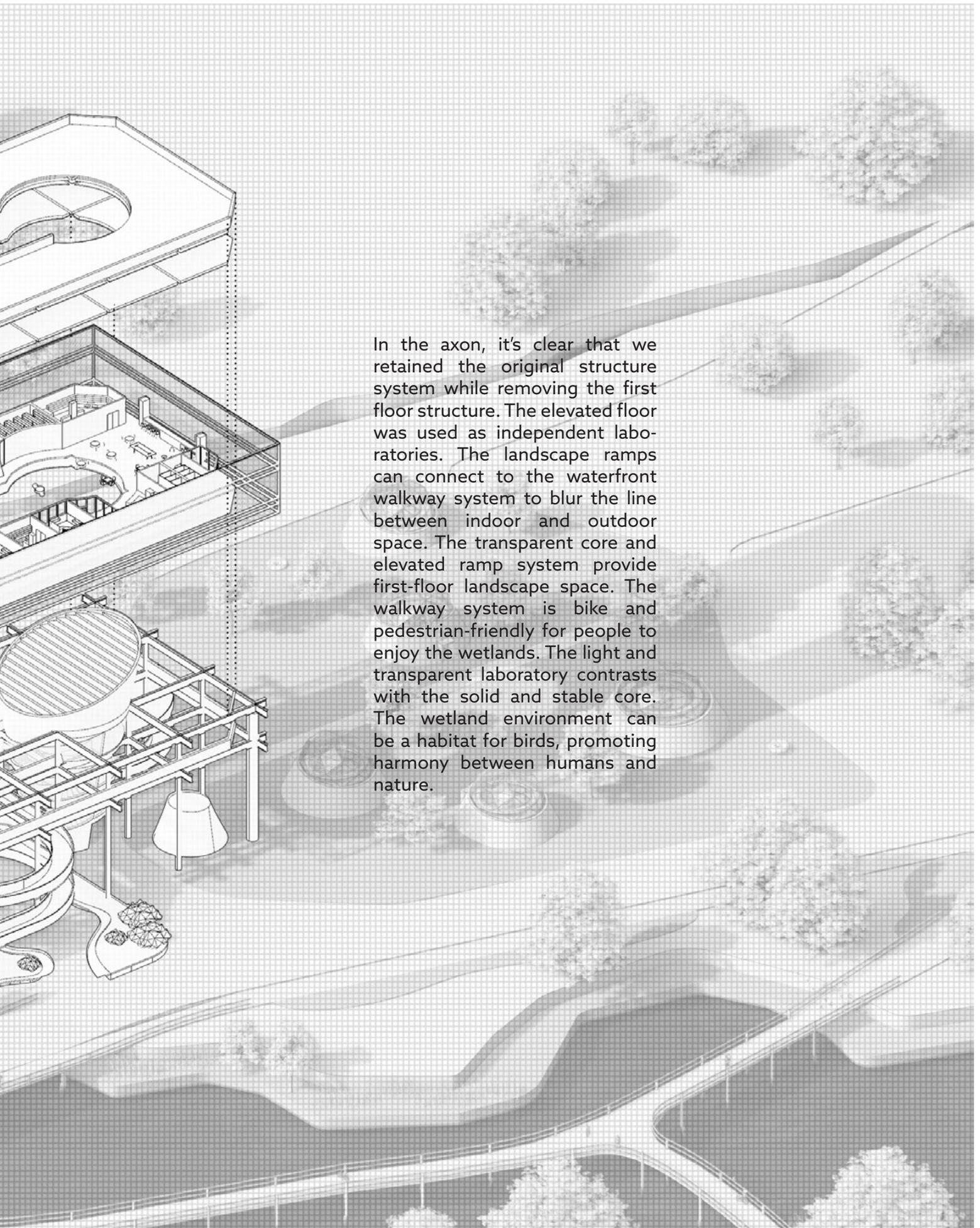
Insulation & Ceiling

Facade Outer & Inner Wall

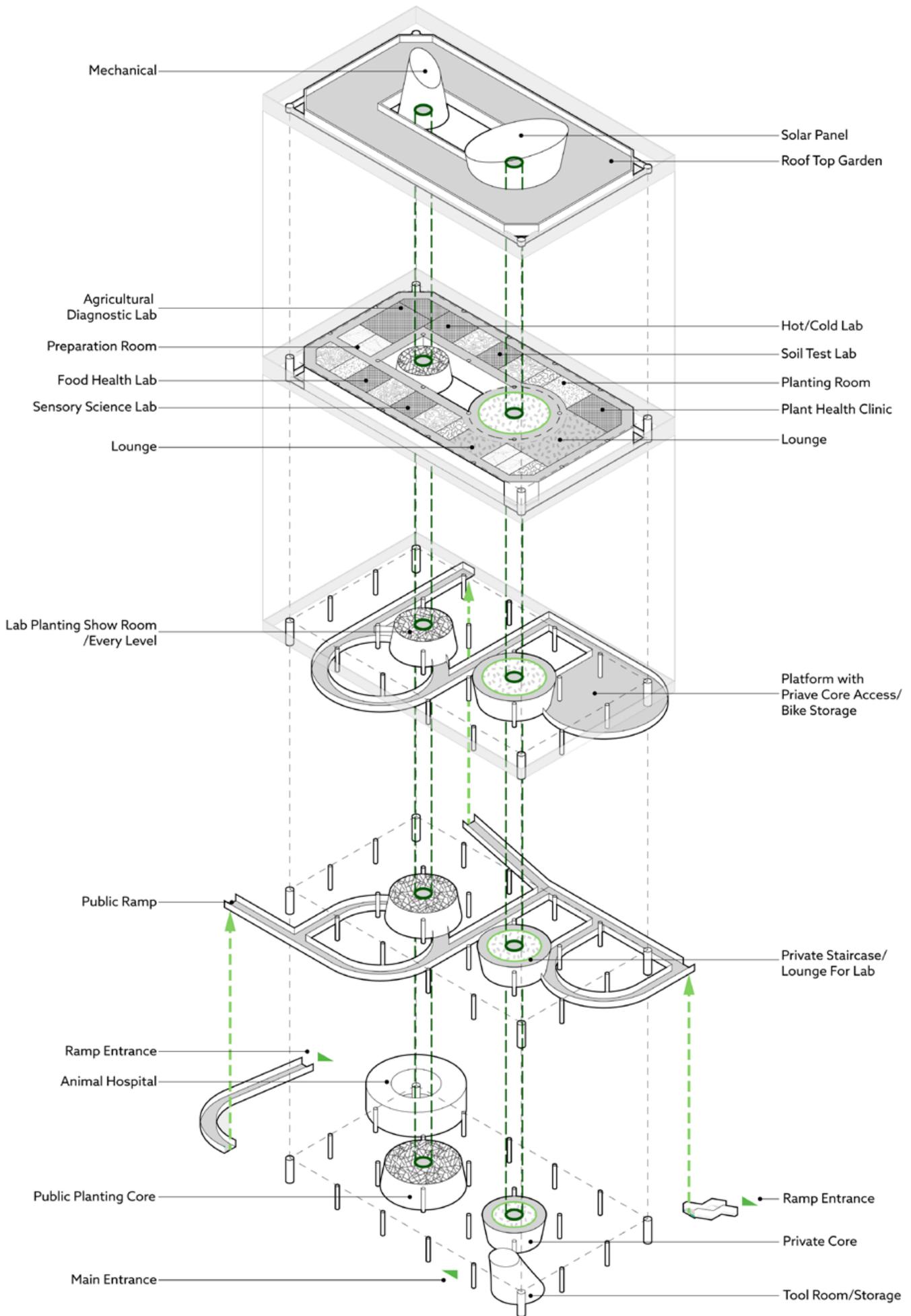
Existing Structure & Core

Ground Floor Garden & Ramp System





In the axon, it's clear that we retained the original structure system while removing the first floor structure. The elevated floor was used as independent laboratories. The landscape ramps can connect to the waterfront walkway system to blur the line between indoor and outdoor space. The transparent core and elevated ramp system provide first-floor landscape space. The walkway system is bike and pedestrian-friendly for people to enjoy the wetlands. The light and transparent laboratory contrasts with the solid and stable core. The wetland environment can be a habitat for birds, promoting harmony between humans and nature.



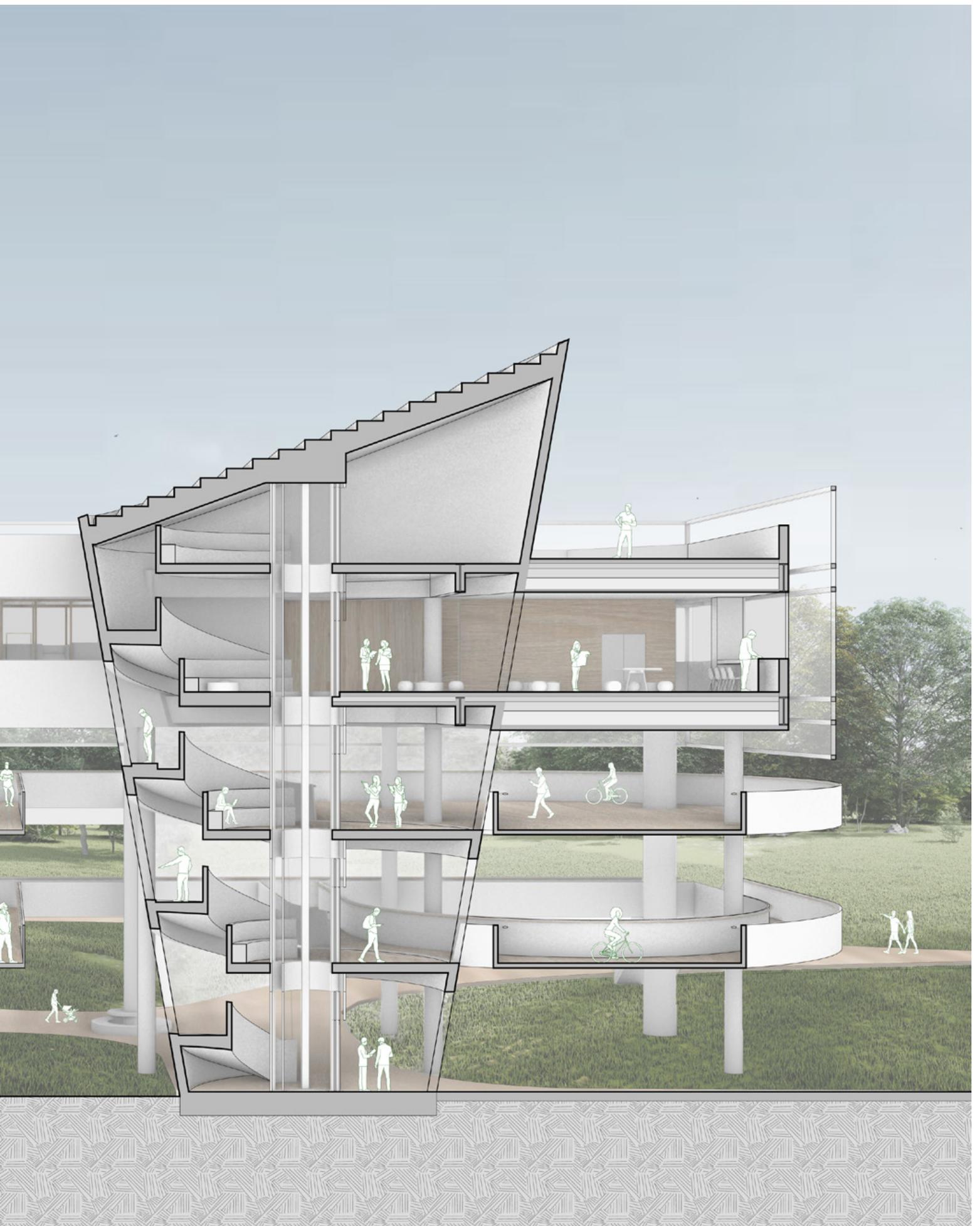
The Planting Lab serves both the community and researchers with two cores: the Public Planting Core and the Private Lab Core, both accessible from ground level to rooftop. The Private Lab Core is exclusive to lab access. The ramp system connects the Public Planting Core on the 2nd and 3rd levels for public access and the Private Lab Core on the 2nd and 3rd levels for private research. To address the future underground water flooding crisis of the site, the interior architecture space is elevated from ground level, and the ramp system provides safe circulation and platforms for activities. The building houses six different labs on the Lab level and the rooftop level has potential for alternative programs between roof garden and green house planting spaces. Visitors can also enjoy the overall view of the wetland park from here.















THICKNESS OF RETREAT

Early Education Center for Autism

Fall 2022 Advanced Studio, GSAPP

Instructors: Marc Tsurumaki

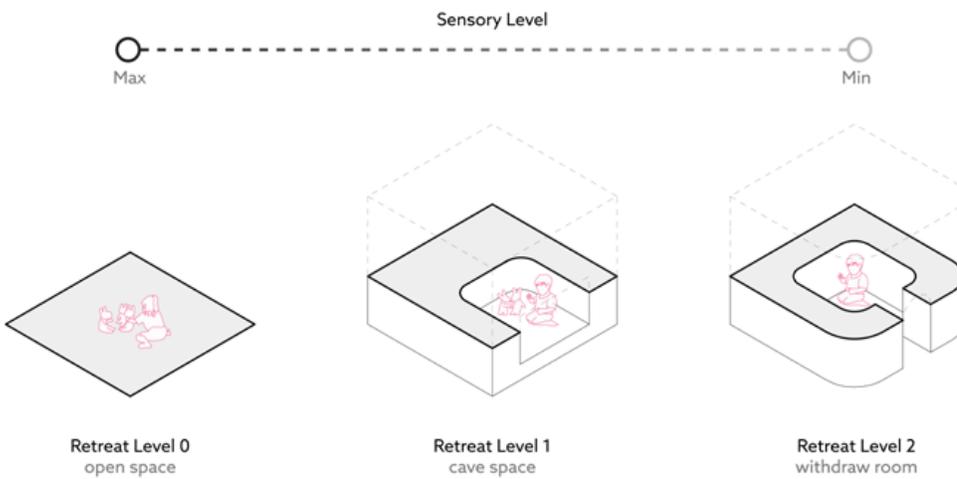
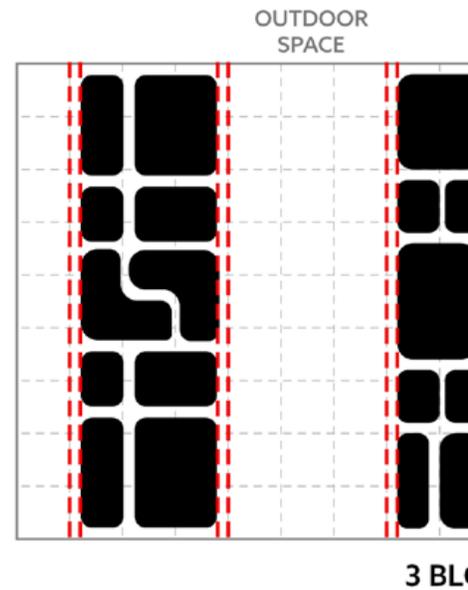
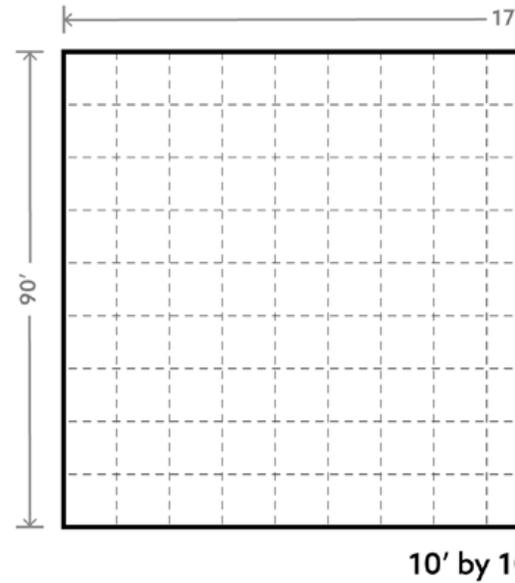
Over the past decade, Autism prevalence has increased by 178%, with 12,757 kids in New York City alone affected, and 2000 of them have not received early education. This project aims to address this issue by providing an early education center that caters to the unique challenges faced by children with autism, such as social communication problems, repetitive and restrictive behavior, over or under-sensitivity to senses, extreme anxiety, and meltdowns and shutdowns. The project's goal is to create a safe space for children with autism to retreat to their own world while still receiving early education.

Ultimately, Improving the accessibility of our entire built environment for people with Autism is ultimately the end goal.

But for autistic children, their childhood should have the right to retreat within the thickness.

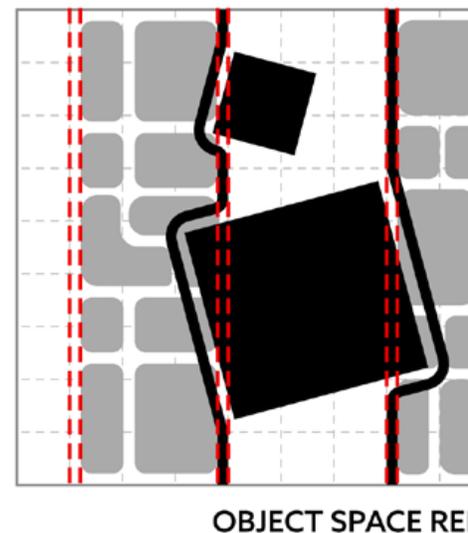


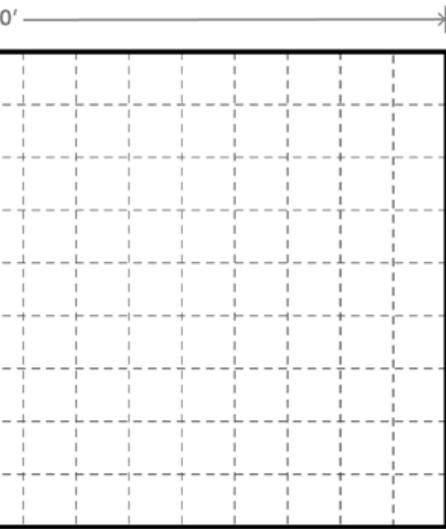




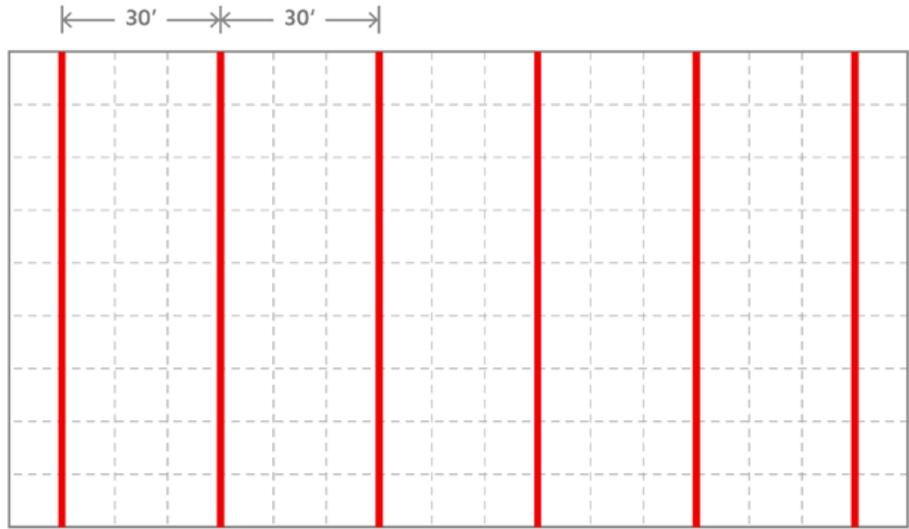
Located on Amsterdam Ave in New York, this project is designed to address the high rate of autism in the area. The design offers six layers based on a grid, forming three connected blocks. To cater to the three levels of retreat action needed for kids with autism, the walls can be reformed into three levels of "retreat space."

The design includes small and large "withdrawal rooms" within the thickness of the wall in every classroom and public space. These rooms are intentionally small and cozy, providing a safe space for autistic children to retreat to when they experience a meltdown or extreme anxiety.

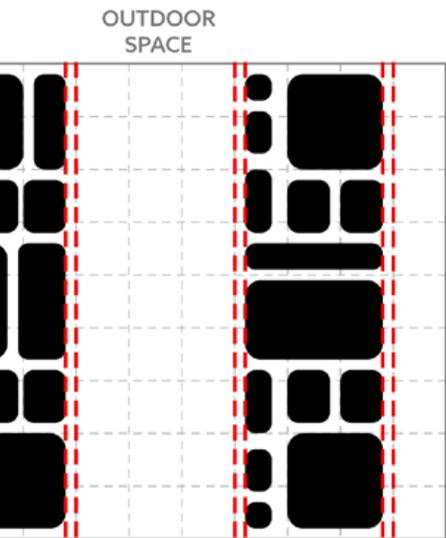




30' GRID

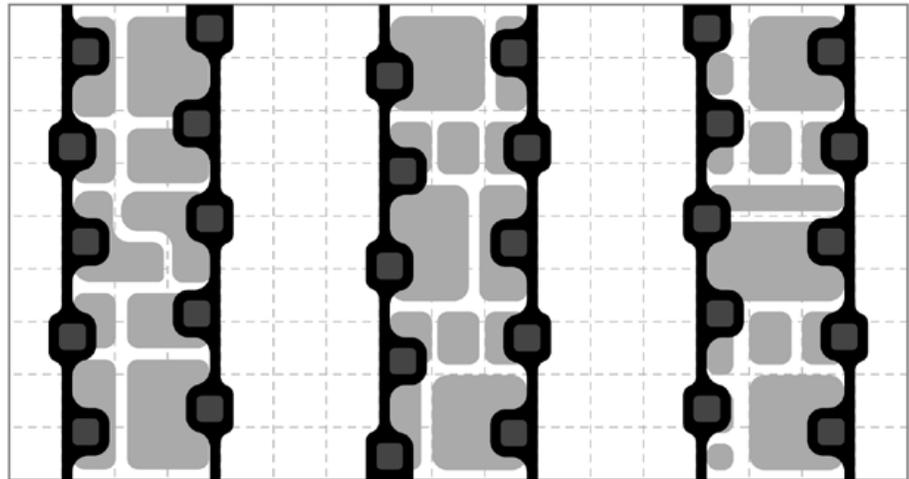


6 LAYERS

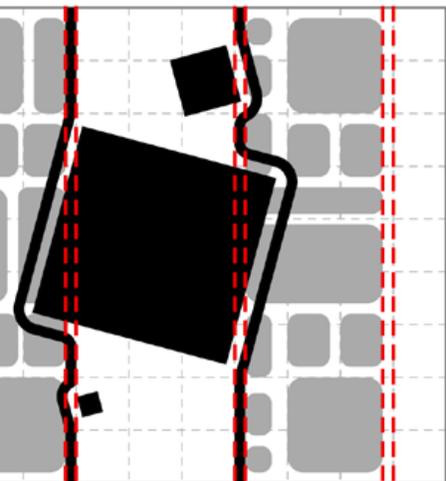


OUTDOOR SPACE

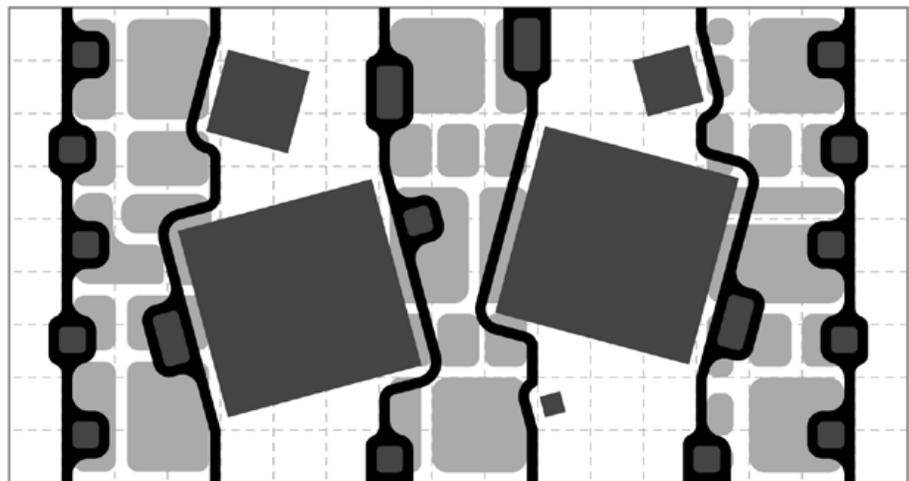
ROCK



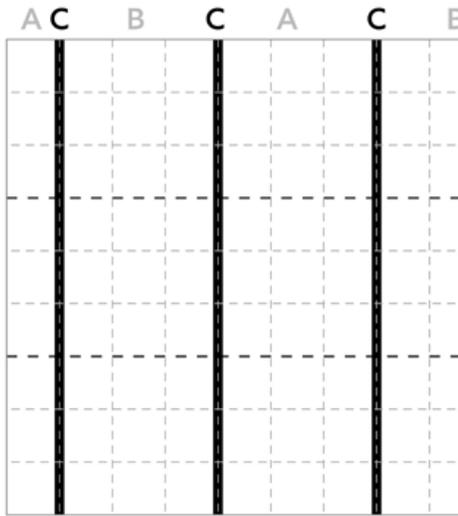
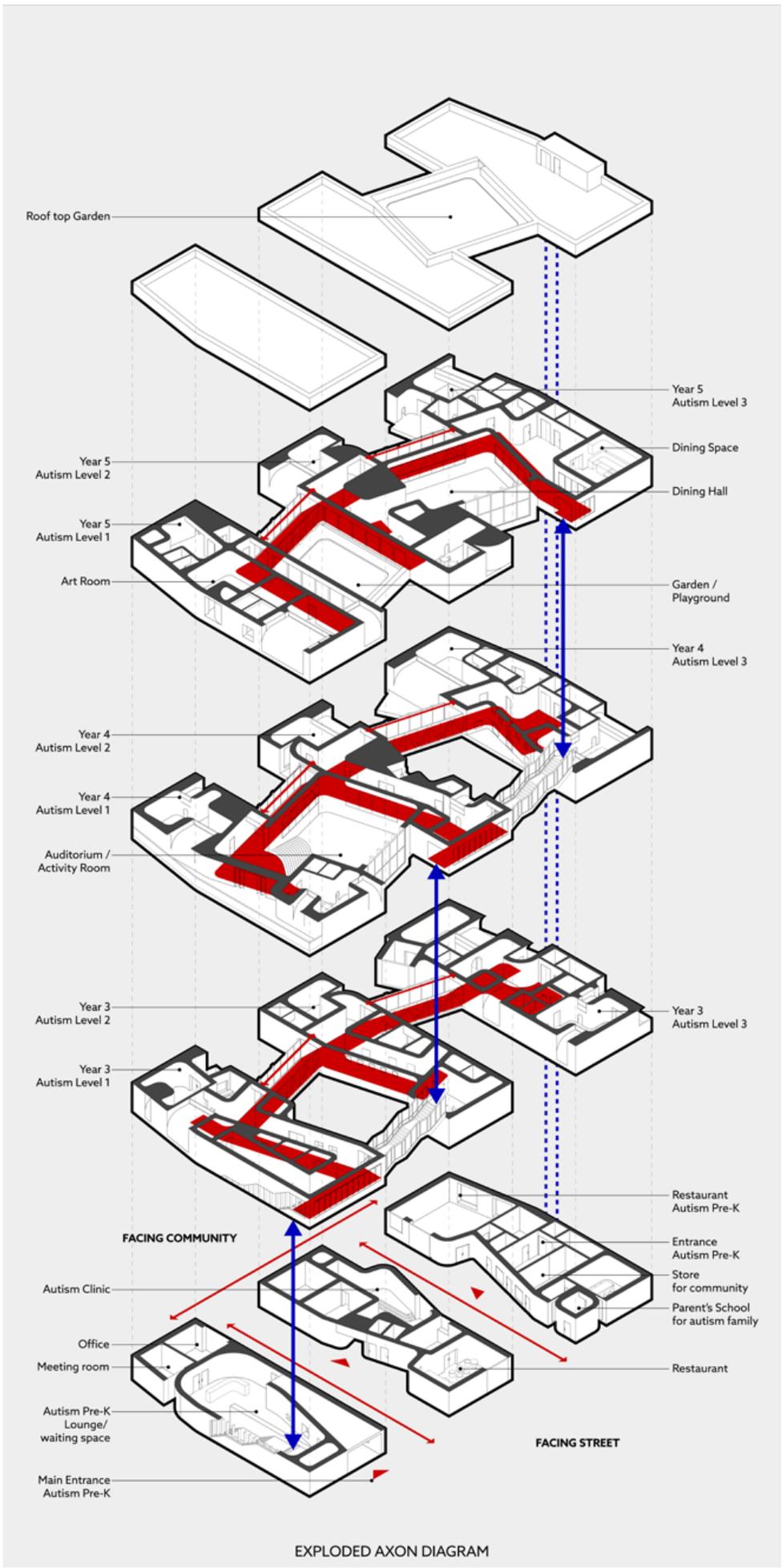
WITHDRAW SPACE WITHIN THICKNESS OF LAYERS



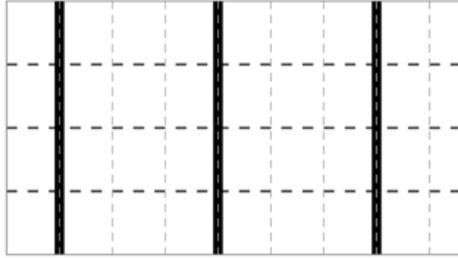
FORMING LAYERS



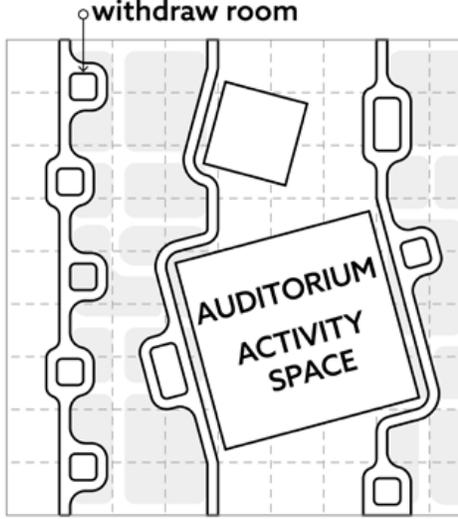
THICKNESS OF RETREAT



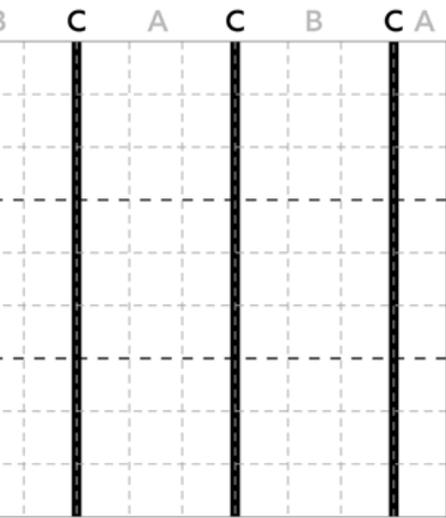
LAYERS OF THIN



LAYERS OF THIN



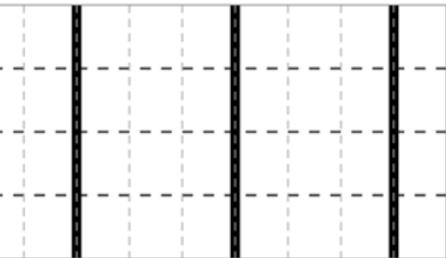
PROGRAM DIAGRAM - C



THICKNESS - PLAN



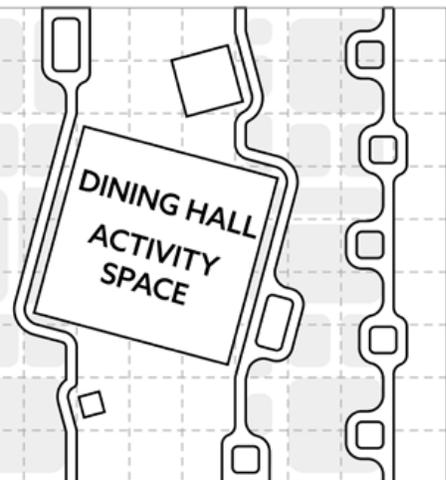
PROGRAM DIAGRAM - PLAN



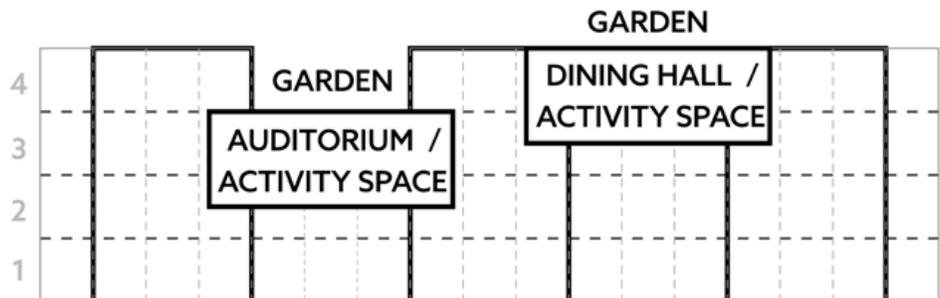
THICKNESS - SECTION

5 YEARS		5 YEARS		5 YEARS
4 YEARS		4 YEARS		4 YEARS
3 YEARS		3 YEARS		3 YEARS
NURSERY	PLAYGROUND	RESEARCH	STREET MARKET	STORES

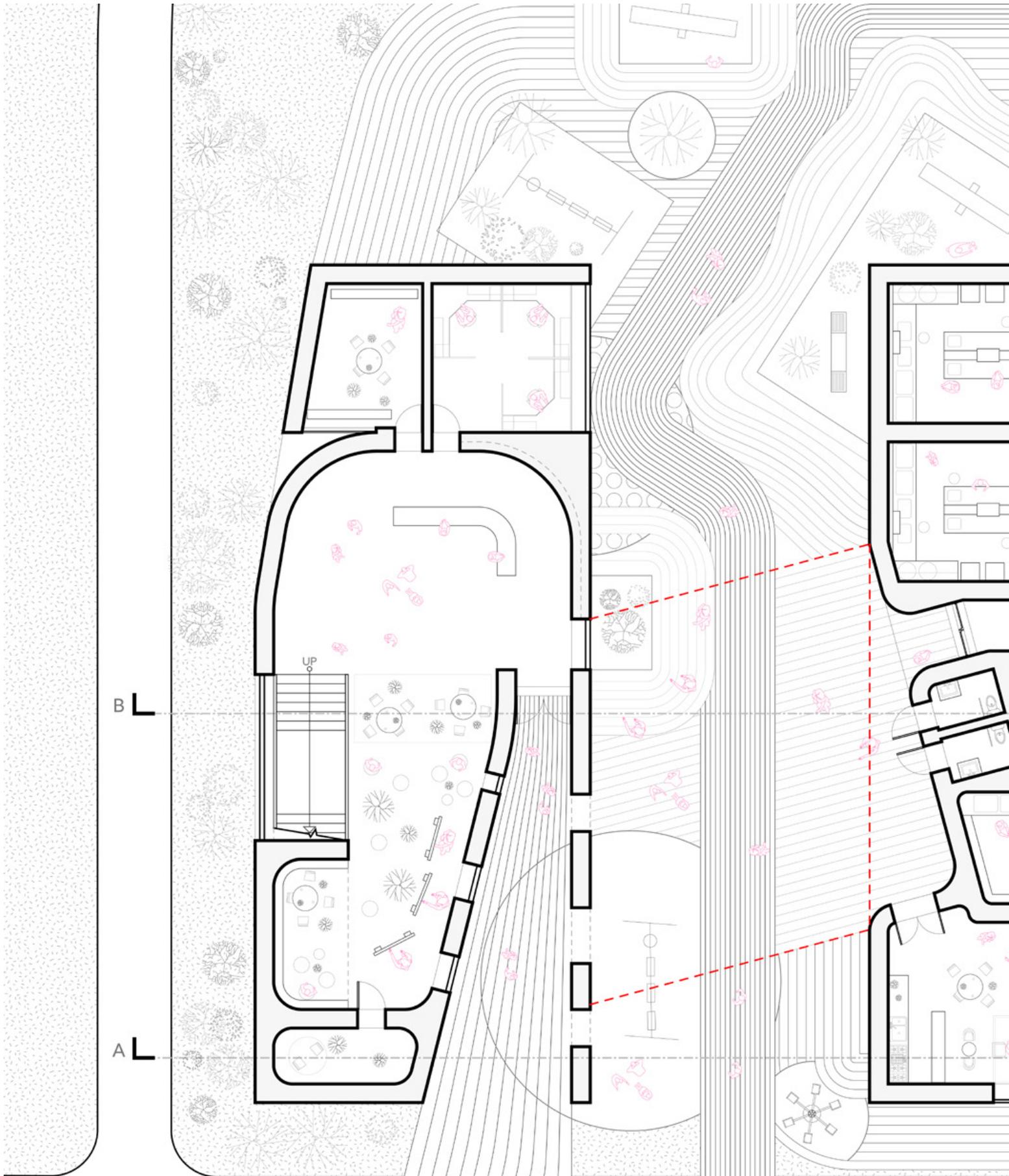
PROGRAM DIAGRAM - SECTION



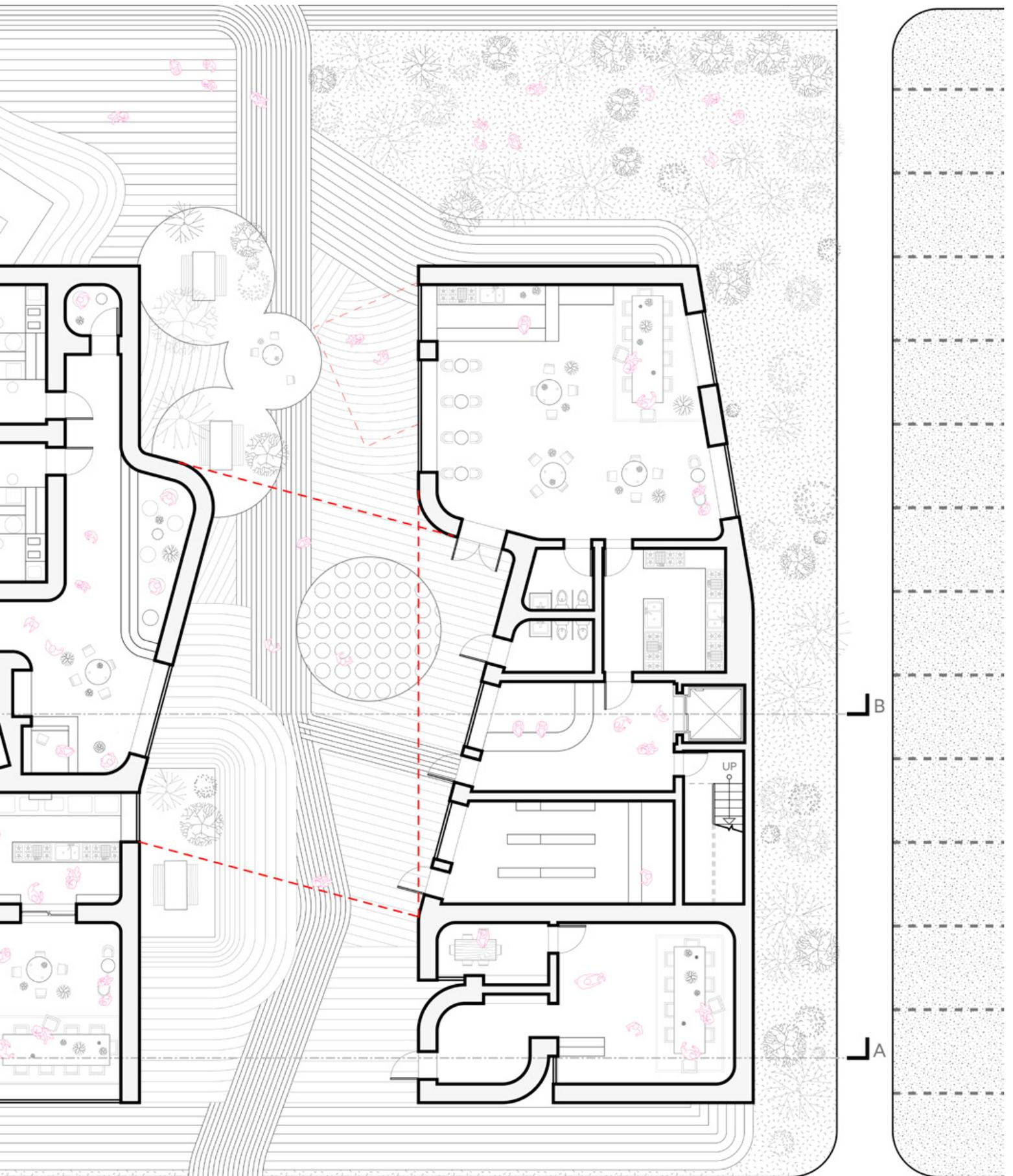
OBJECT SPACE IN PLAN



PROGRAM DIAGRAM - OBJECT SPACE IN SECTION



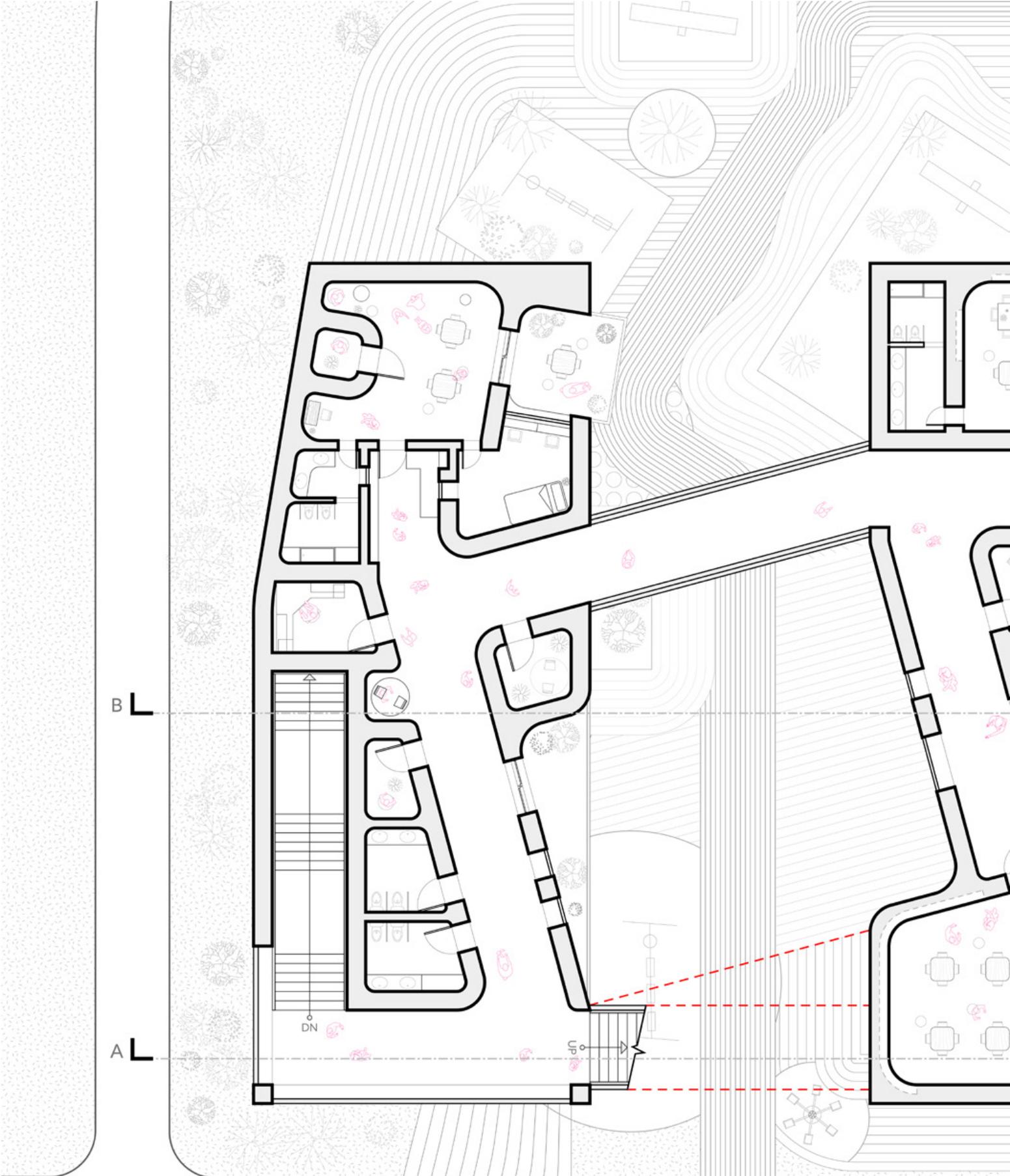
GROUND L

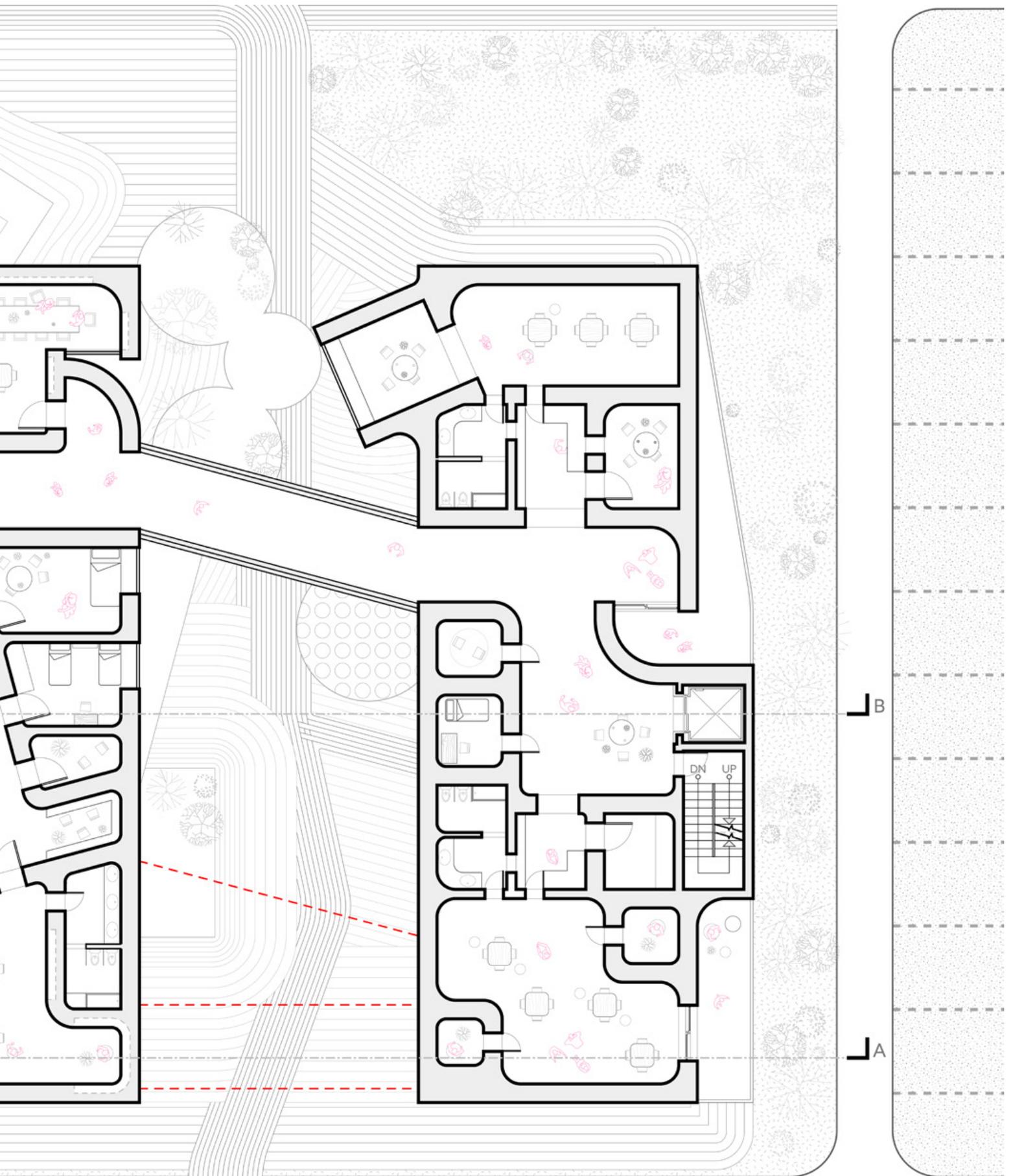


LEVEL PLAN

1/6"=1'-0"



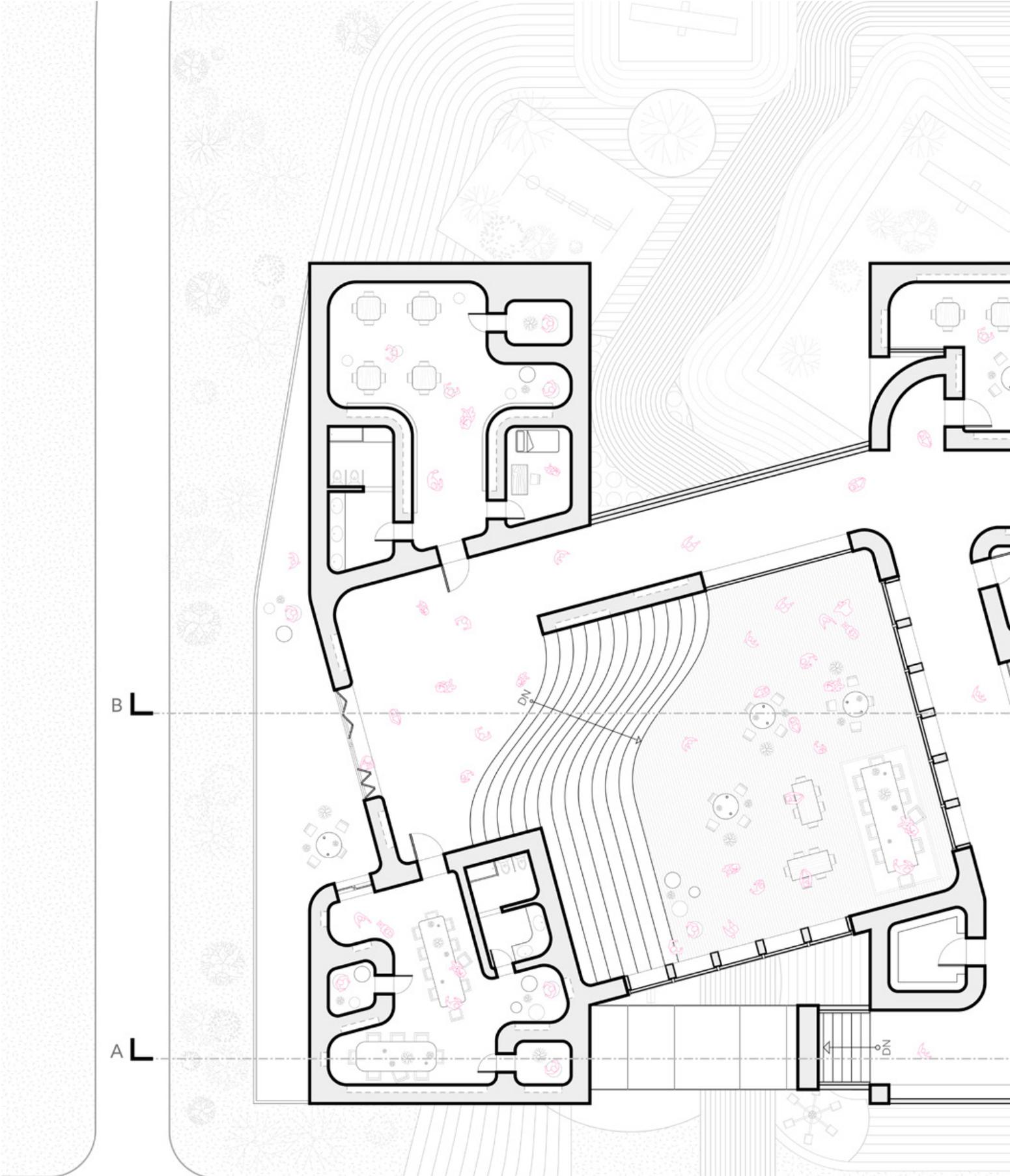




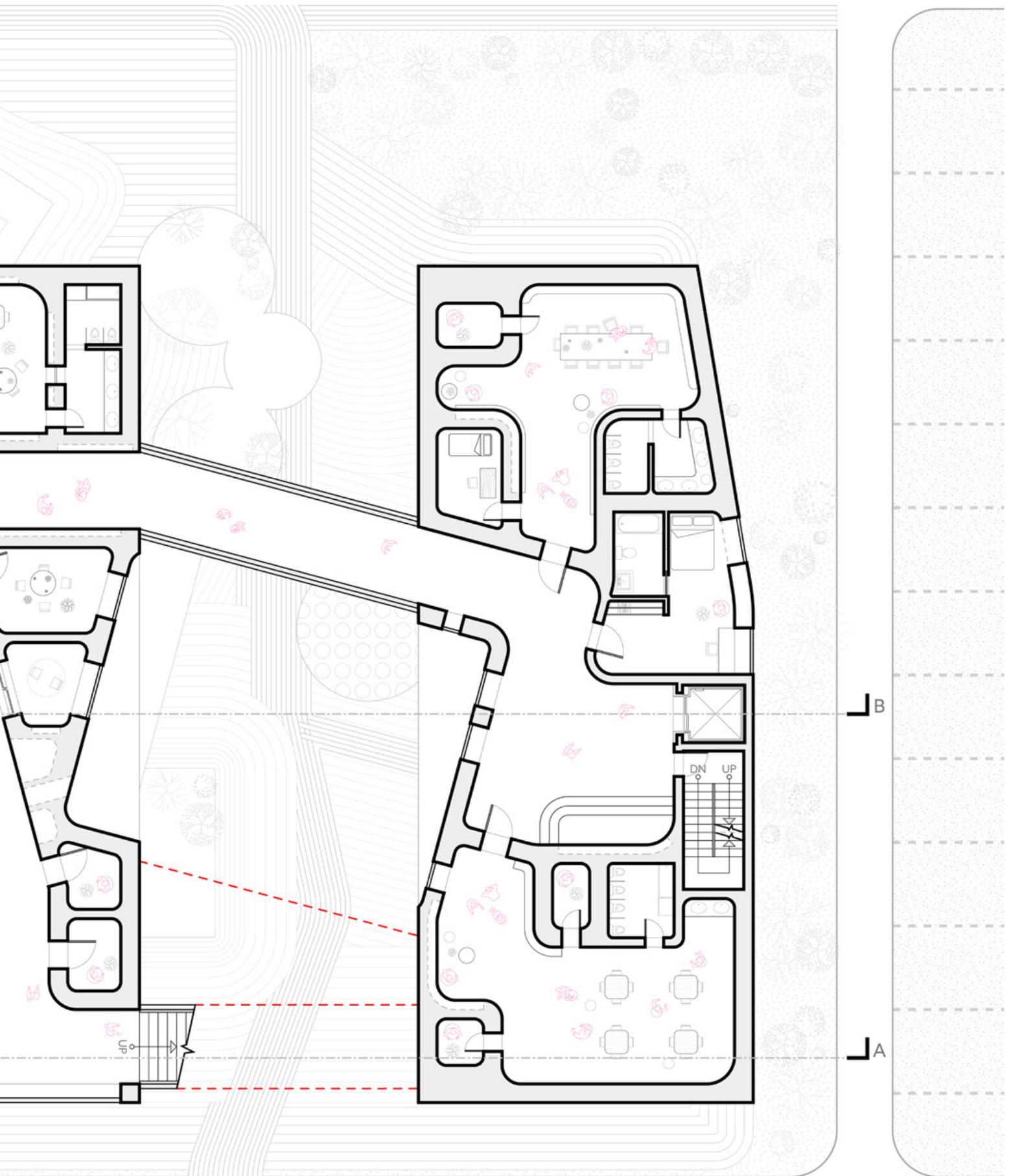
FLOOR PLAN

1/6"=1'-0"





THIRD LEVEL



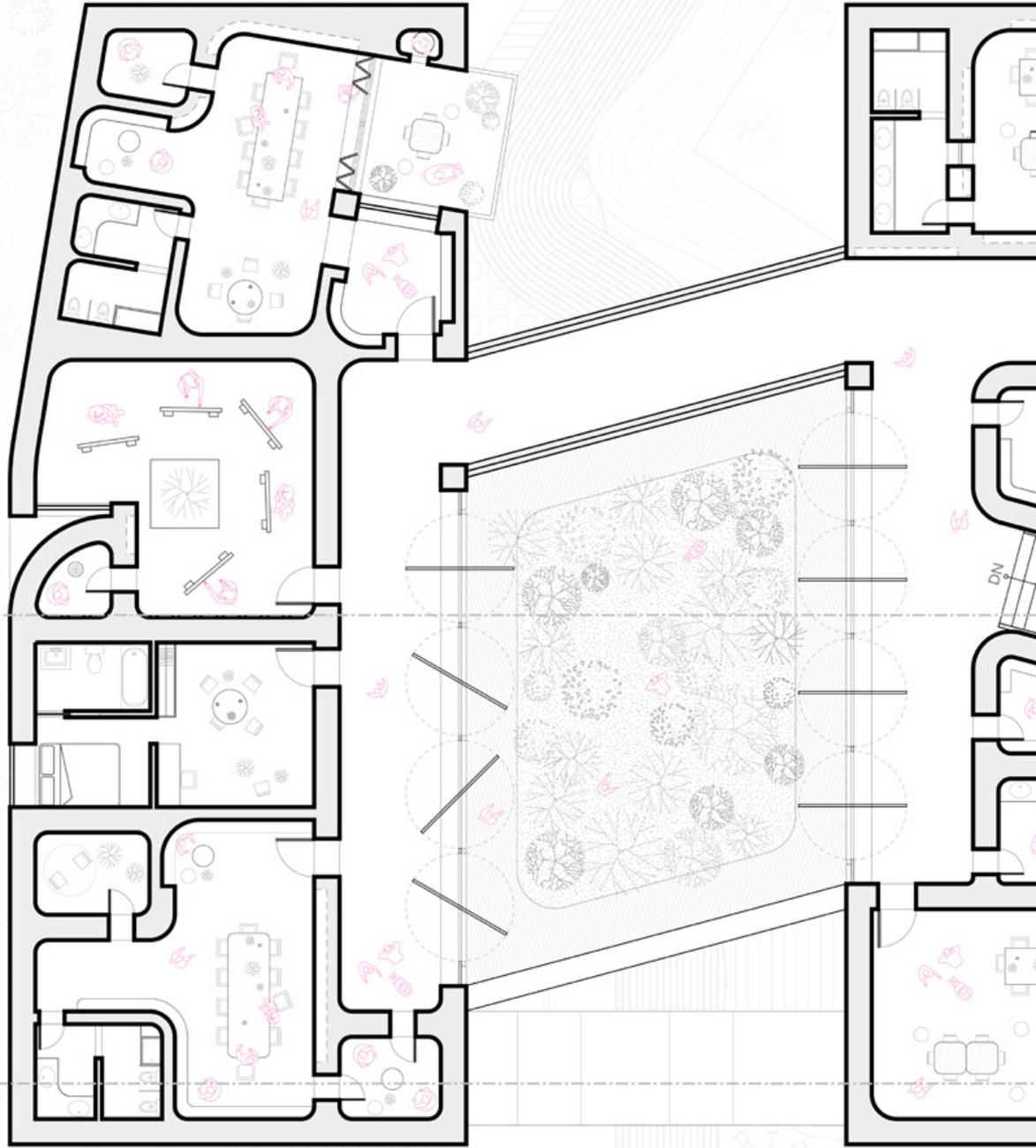
LEVEL PLAN

1/6"=1'-0"



B L

A L



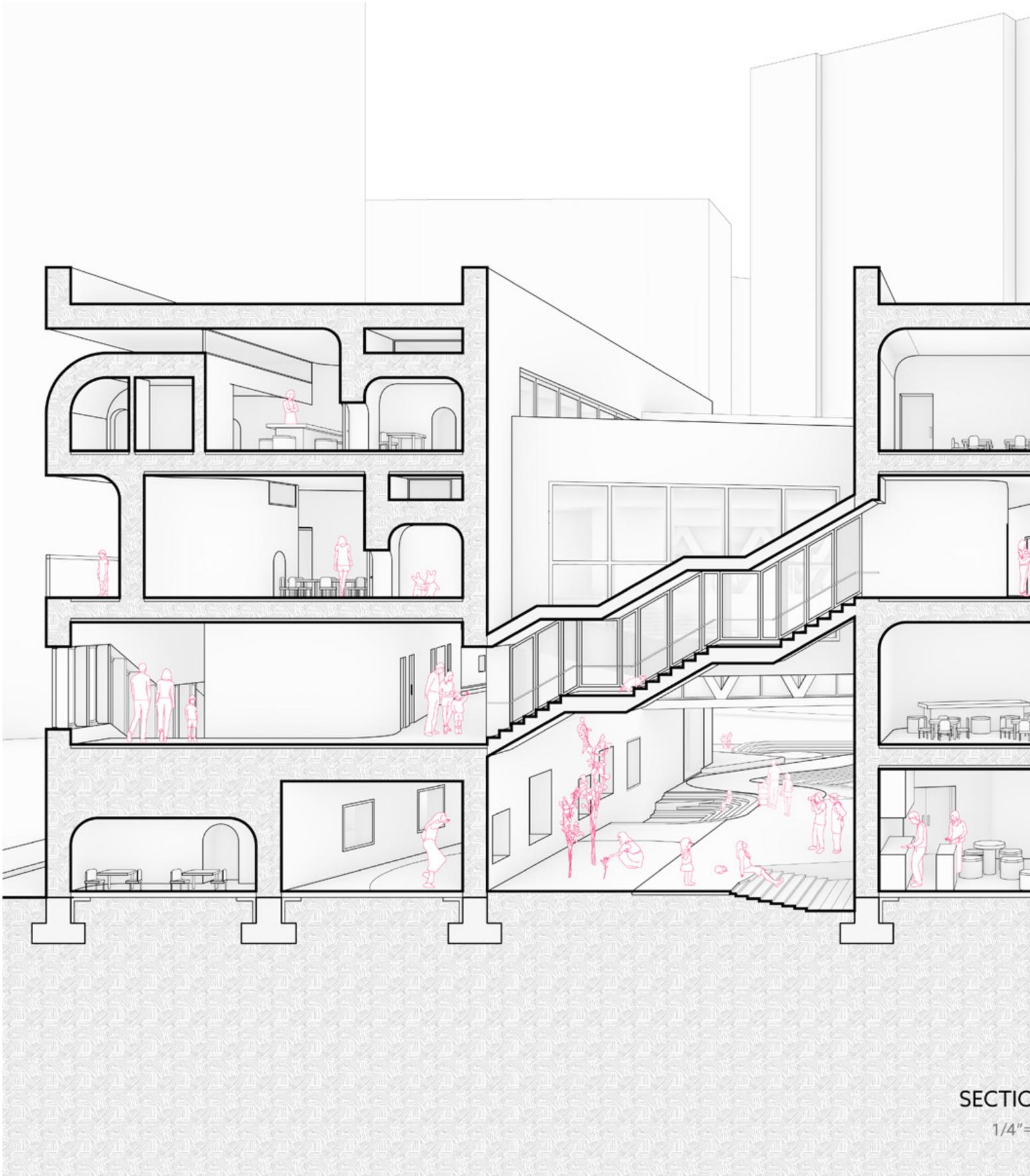
FOURTH L



FLOOR PLAN

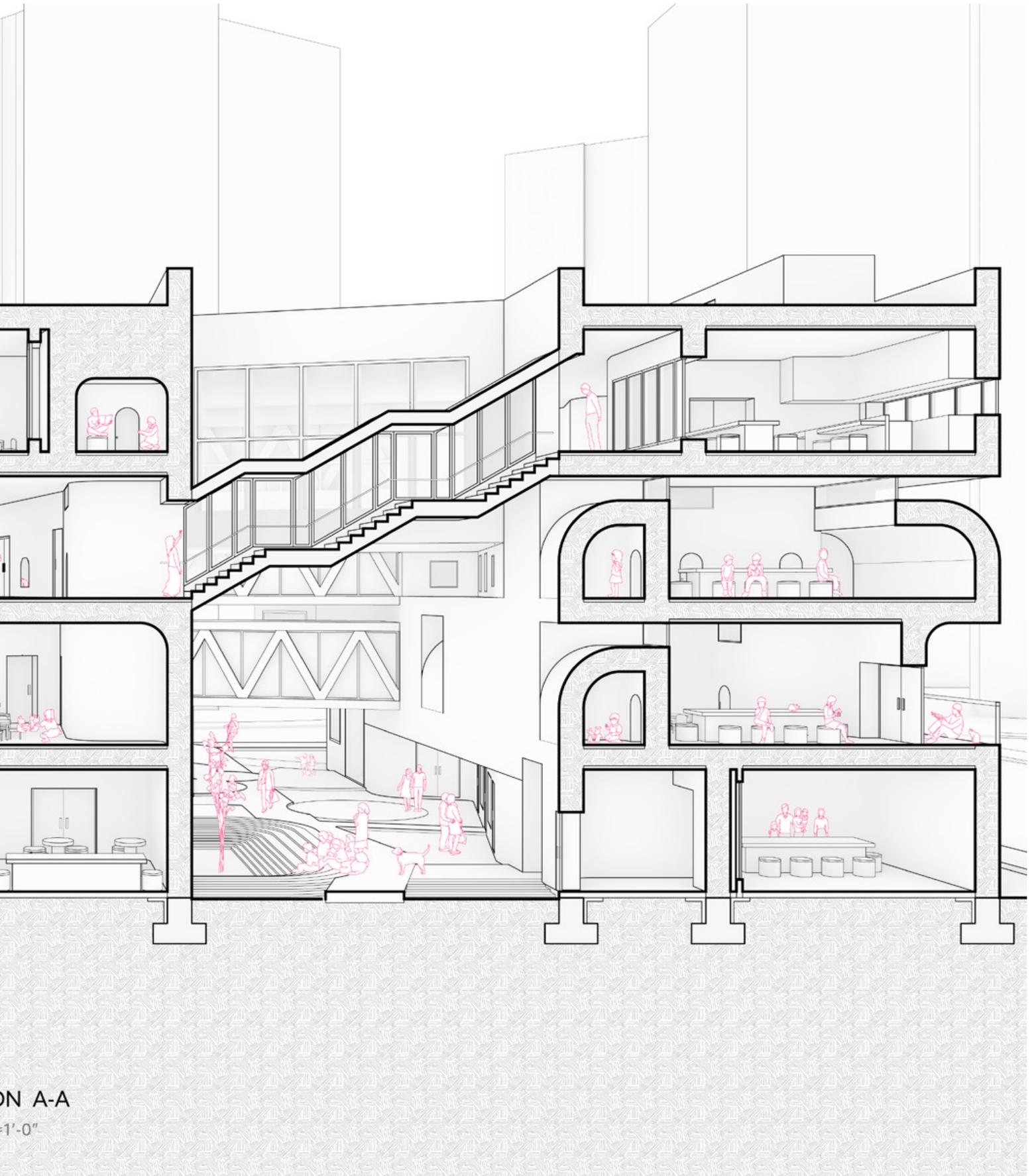
1/6"=1'-0"





SECTION

1/4" =

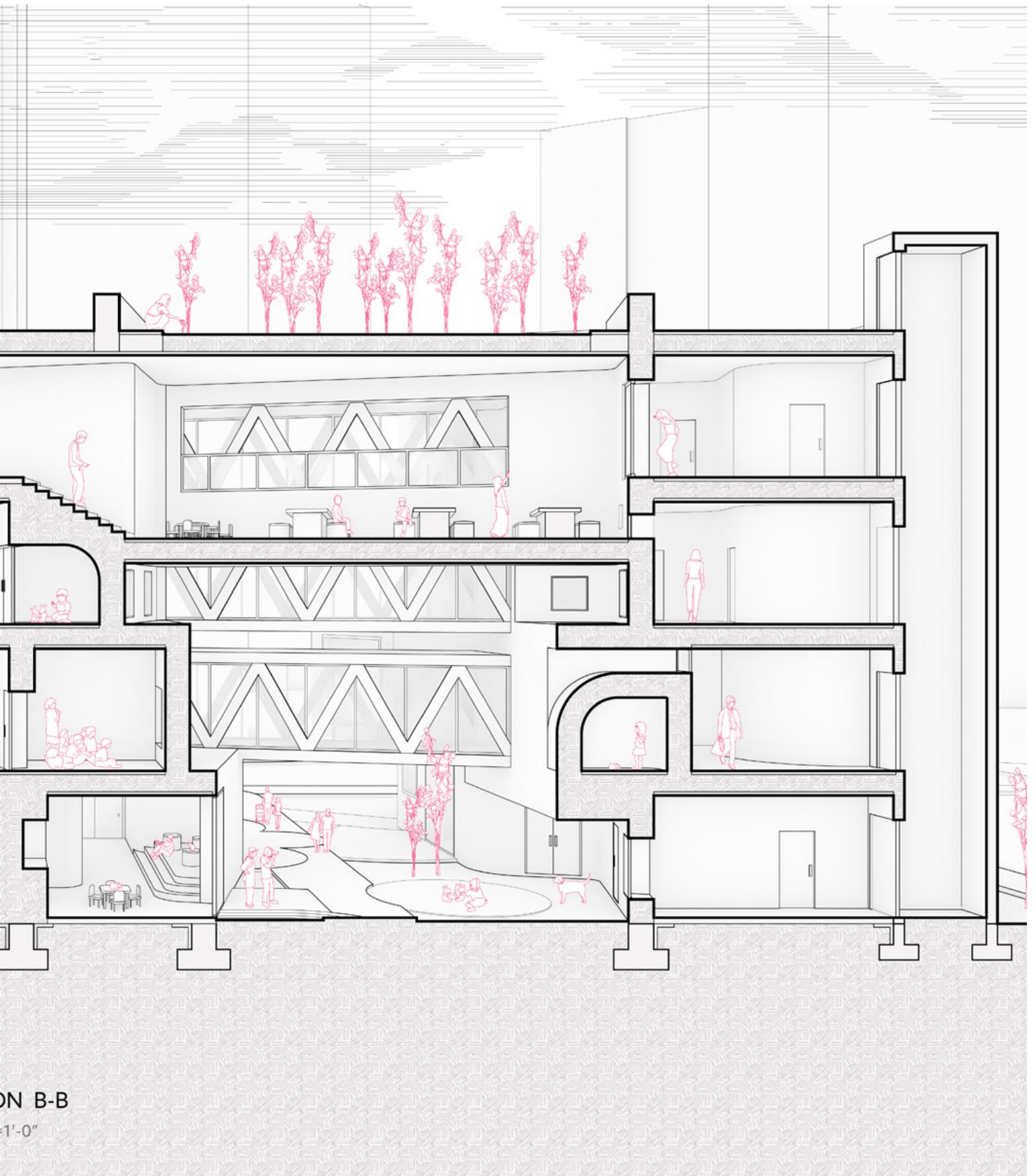


SECTION A-A
1'-0"



SECTION

1/4" =



SECTION B-B

1'-0"





PERMEABLE CITY

REIMAGINING HUMAN-SOIL
INTERACTION IN HOUSING

Spring 2023 Advanced Studio, GSAPP

Collaborator: Ruonan Joan Du

Instructors: David Gissen

Drawing inspiration from Otto Wagner's aesthetic and health principles of the early 20th century, which advocated for smoothness and impermeability, Vienna's urban landscape has been shaped by a detachment of exposed soil from people's daily lives. This has resulted in a disconnect between residents and the natural environment.

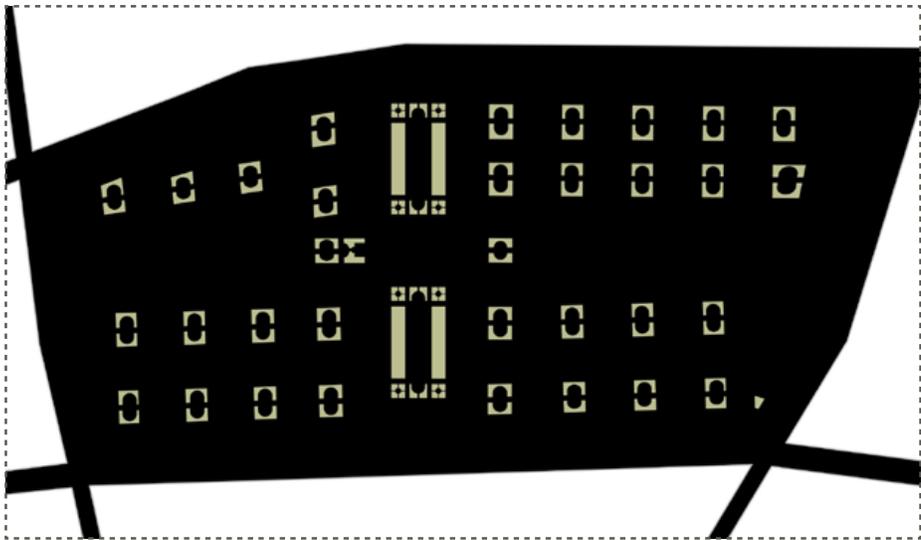
This proposal aims to spark a dialogue on alternative perspectives towards soil, emphasizing that it does not have to be viewed negatively when considering diverse ways of coexisting with it. Rather than isolating residents from soil through fixed programs and rigid spatial designs, the Permeable City project integrates an array of functions within a flexible and permeable landscape.

By embracing a more harmonious relationship with soil, the Permeable City not only reconnects residents with nature but also fosters a sustainable and adaptive urban environment that can better respond to the evolving needs of its inhabitants.



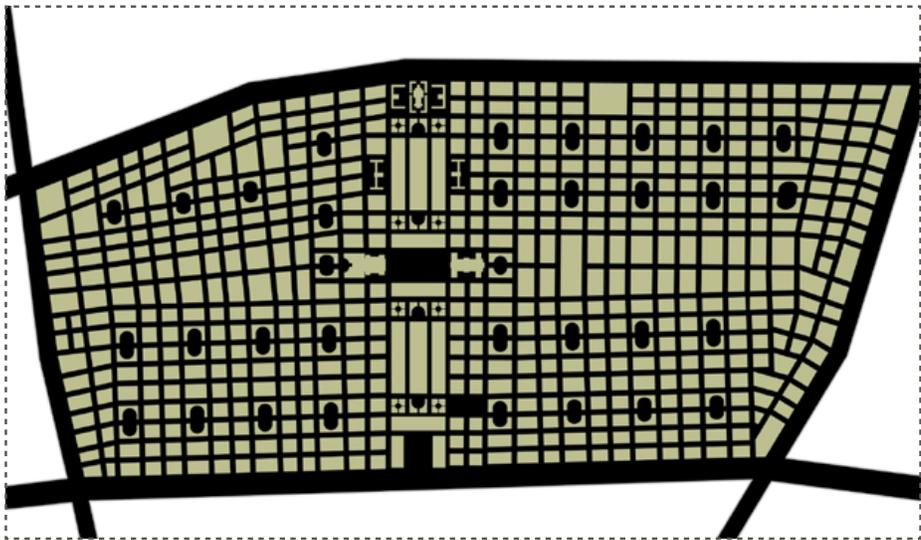


Critics on Otto Wagner's the Great City (1915)



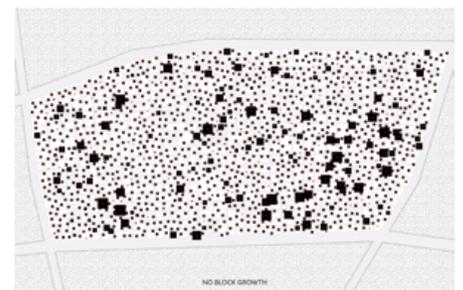
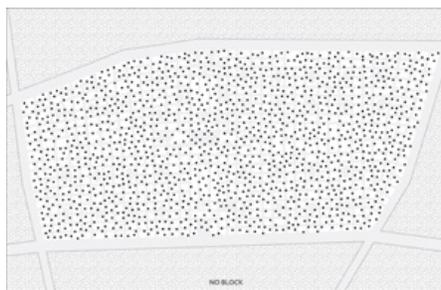
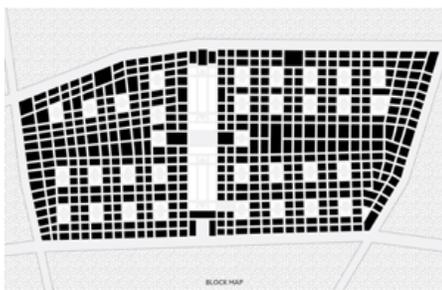
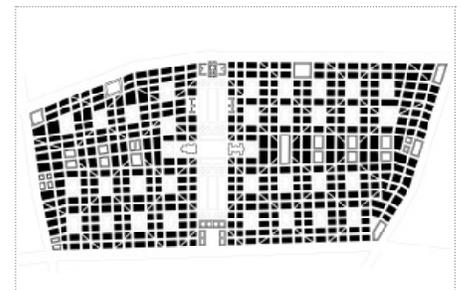
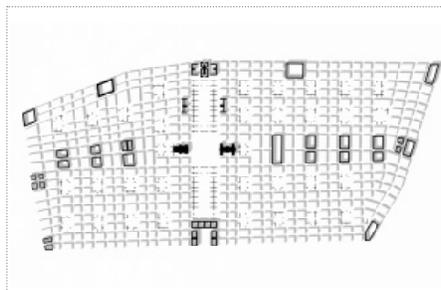
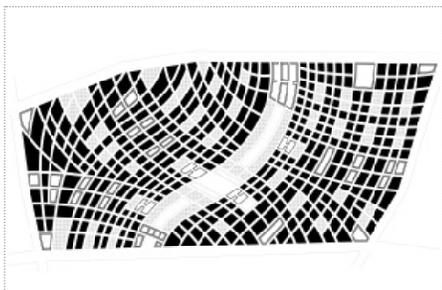
4%
soil coverage

By measuring the area, only 4% of land is permeable because of the prevention of soil fecundity by Otto Wagner.



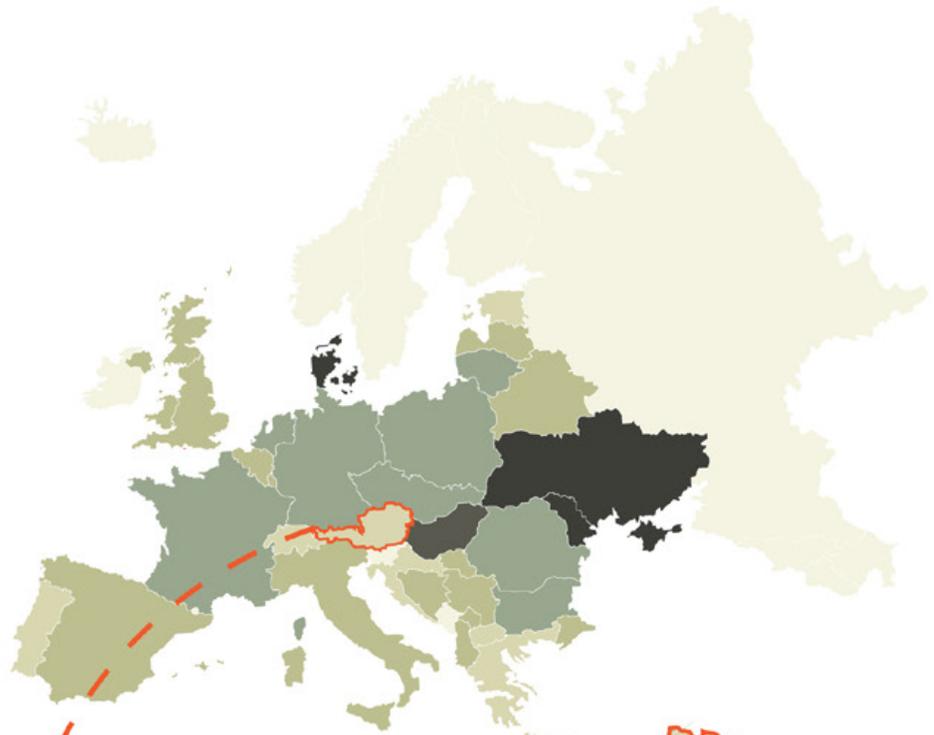
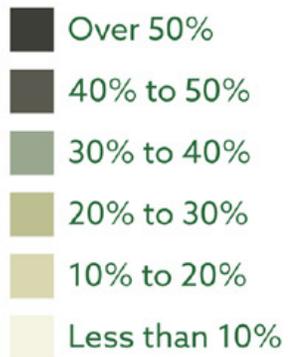
96%
soil coverage

If we reverse the amount of hard and soft ground in the city, what becomes possible?



alternative study

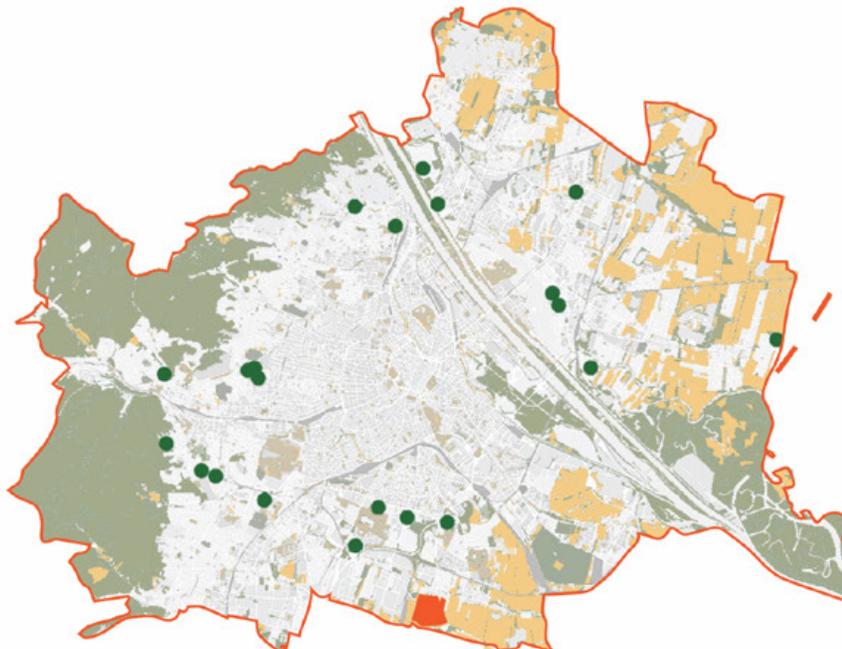
EUROPE ARABLE LAND

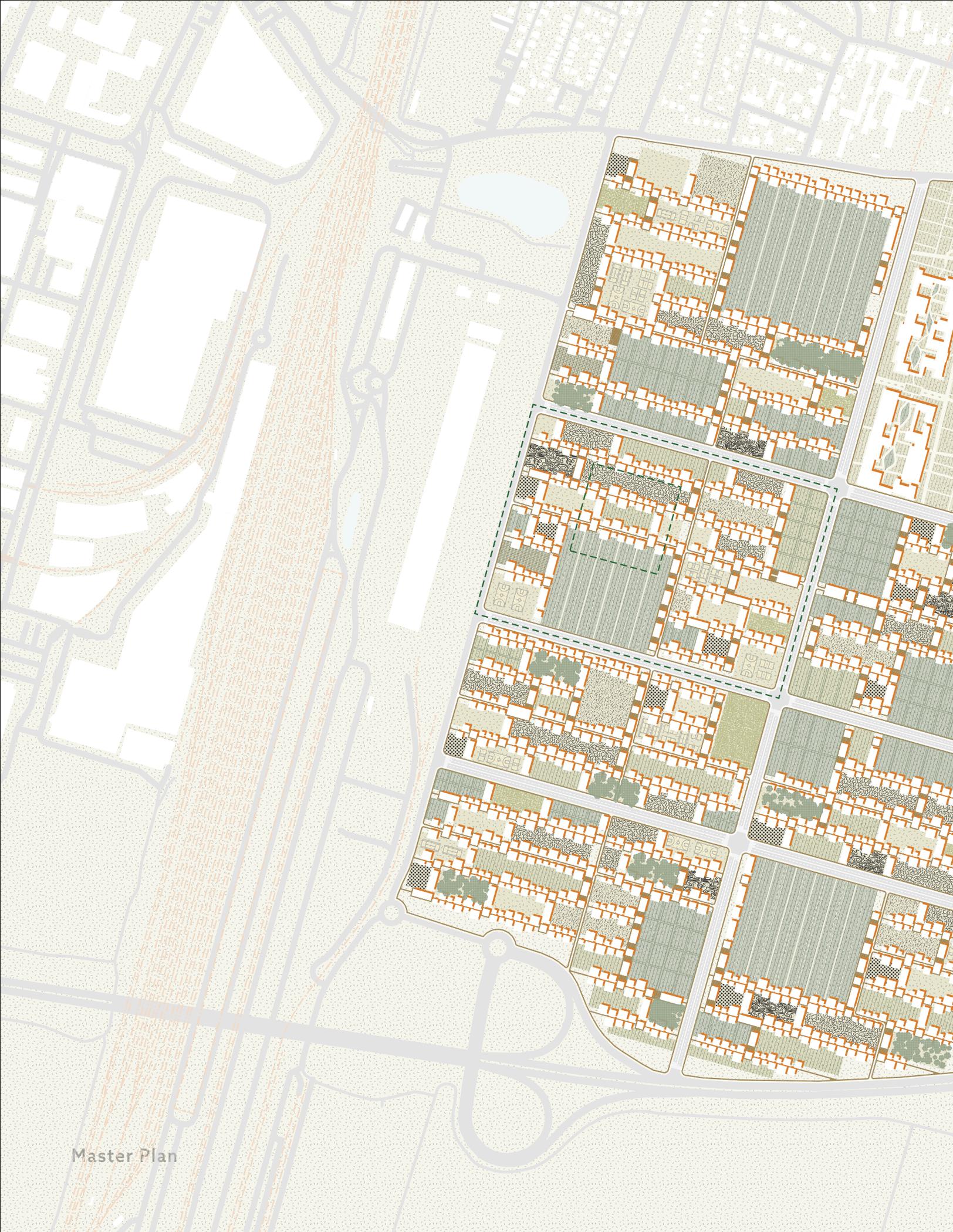


AUSTRIA LAND COVER



VIENNA LAND COVER

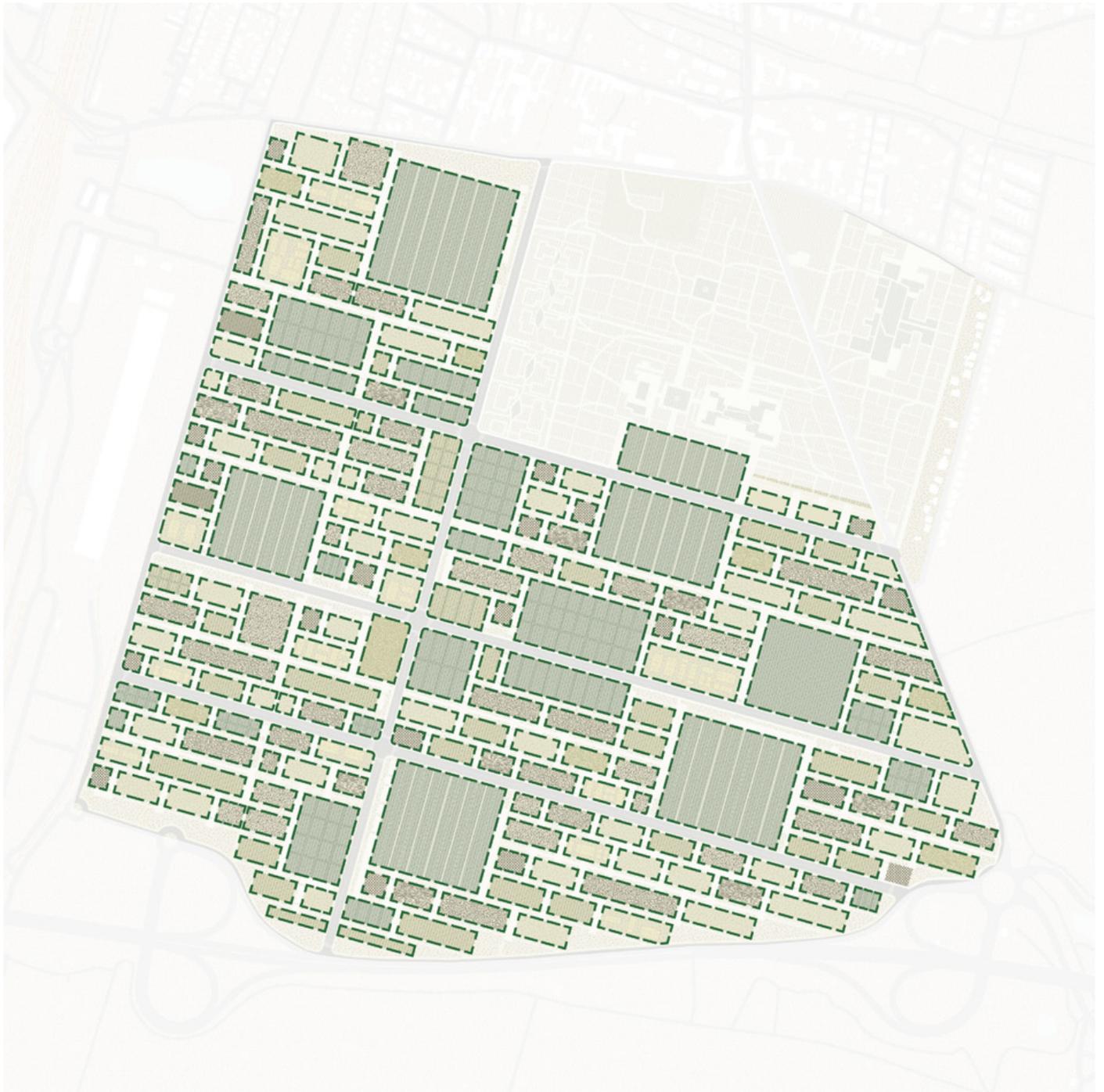




Master Plan



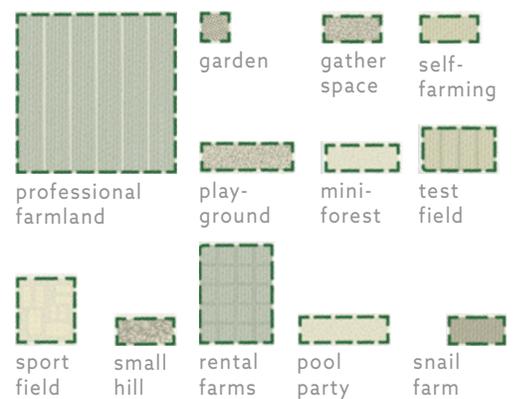
**IF WE REVERSE THE
AMOUNT OF HARD AND
SOFT GROUND IN THE CITY,
WHAT BECOMES POSSIBLE?**



Challenging the conventional notions of openness and enclosure in urban design, the site comprises approximately 200 distinct yards, surrounded by buildings that create a unique interplay between

Yards

interior and exterior environments. This innovative design fosters a sense of interconnectedness, both within the community and with the natural world. The yards offer a diverse range of programs tailored to suit various interests and needs, such as different types of farming, engaging landscapes, and versatile multipurpose fields for recreational and leisure activities.

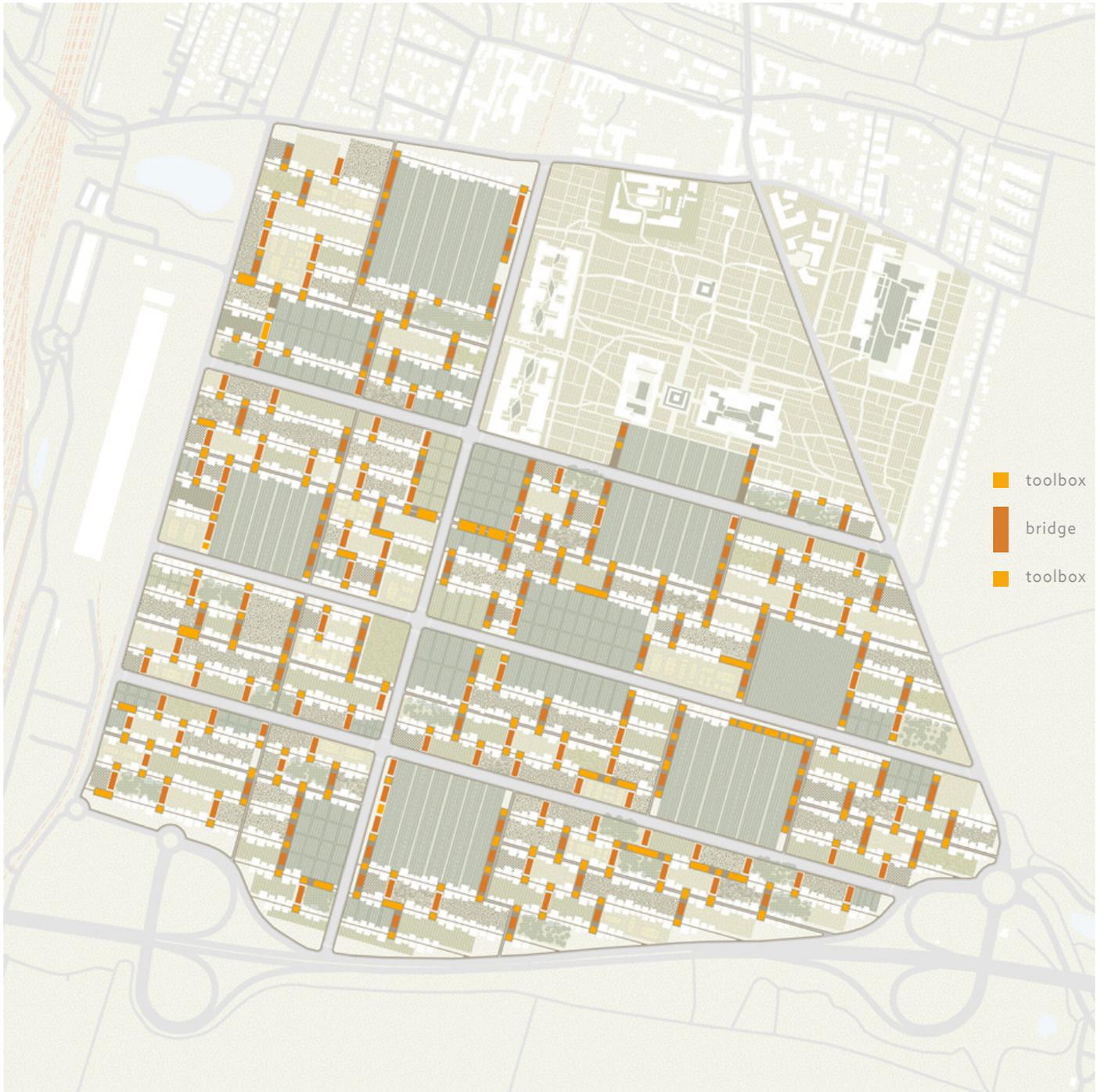


The yards in the Permeable City are designed as a series of personal open spaces, originally featuring exposed soil and devoid of physical barriers. This layout encourages intimate public interactions with soil, fostering a sense of connection to the natural environment and promoting a healthier urban lifestyle.



The yard programs and activities are determined by community discussions. This rendering depicts one possible activity - an open weekend market where residents can bring their harvests and exchange goods, fostering a sense of community and connection.





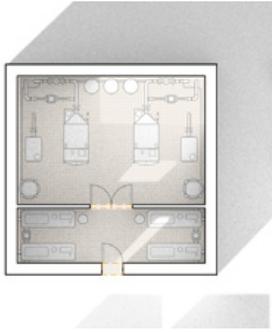
Public programs are thoughtfully embedded within a carefully designed grid system to facilitate community services and foster shared activities among residents. These programs are strategically arranged

in harmony with the yard layouts, ensuring a seamless integration of public and private spaces. To further enhance the residential experience, versatile toolboxes have been designed to supplement the

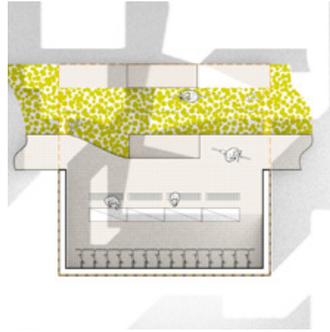
dwelling, providing residents with additional amenities and resources that cater to their needs. Moreover, the bridges connecting various sections of the development have been thoughtfully planned to feature

larger, more expansive spaces. These bridge areas serve as integral community hubs, promoting social gatherings and fostering a strong sense of community among residents.

Public programs



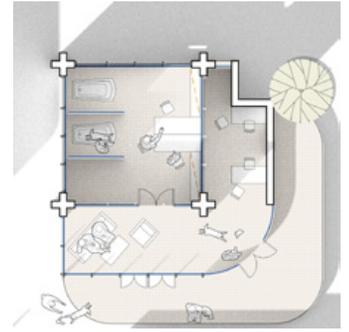
MEP room



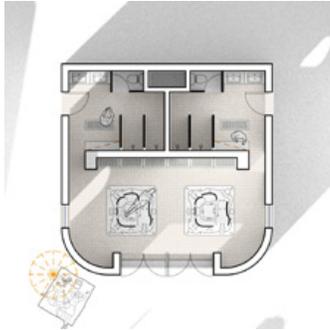
bicycle station



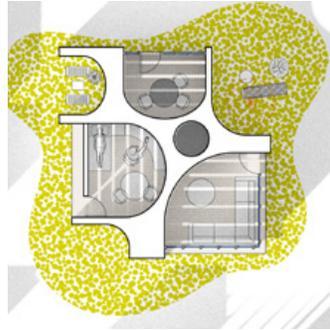
laundry



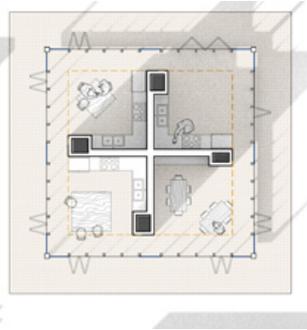
pet clinic



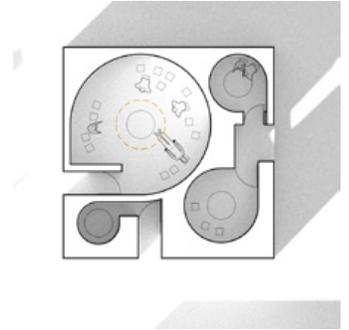
spa



therapy

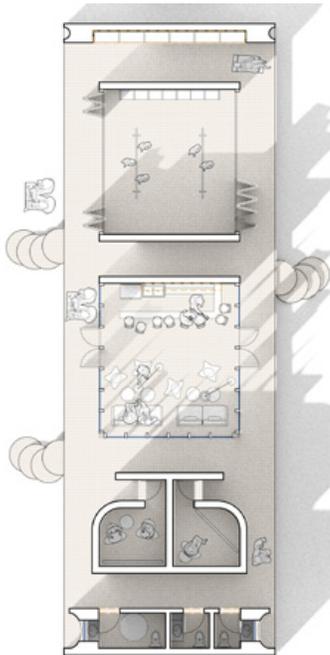


shared kitchen

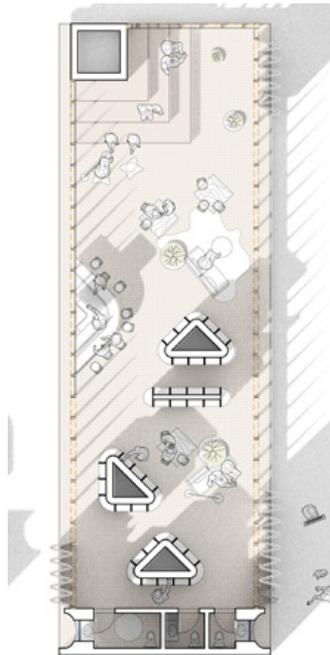


meditation

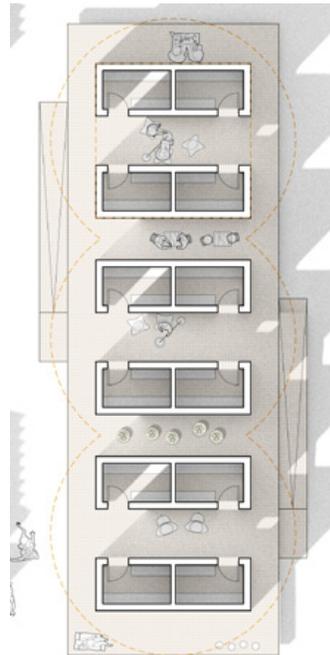
Toolbox plans



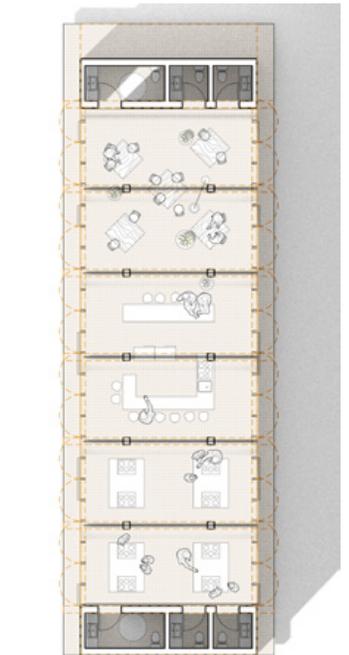
bar & screening & dancing



cafe & library



farm storage



cooking class

Bridge plans



Tactile model making

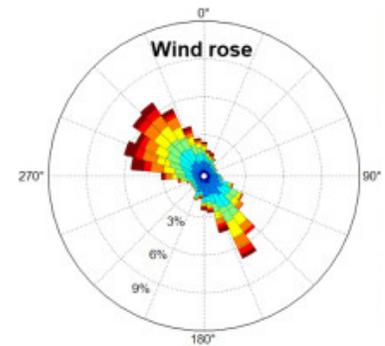






Plan and property

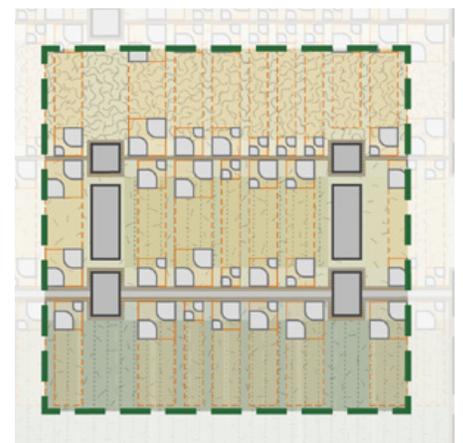
All housing units in the Permeable City are designed along a horizontal axis, ensuring maximum sunlight exposure for each residence. The interior spaces are thoughtfully divided into two sections, allowing for natural airflow and ventilation to pass through. This intentional design consideration makes living in close proximity to soil not only possible but also comfortable, fostering a harmonious and healthy relationship between residents and the environment.



Vienna wind rose map



block plan

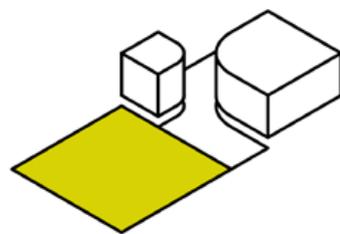
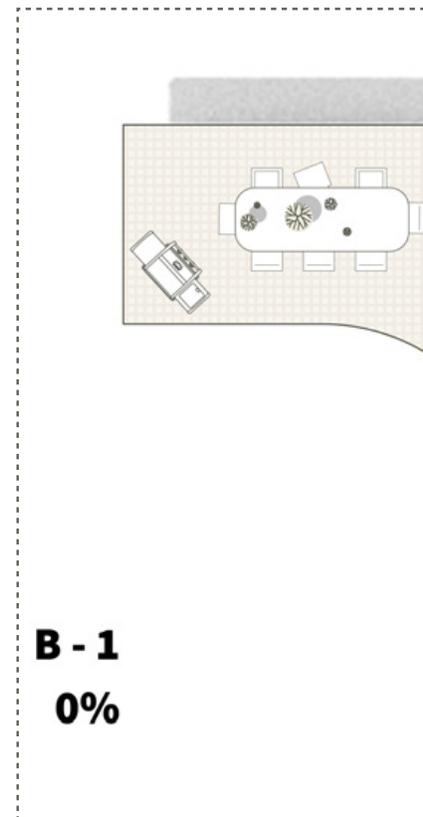
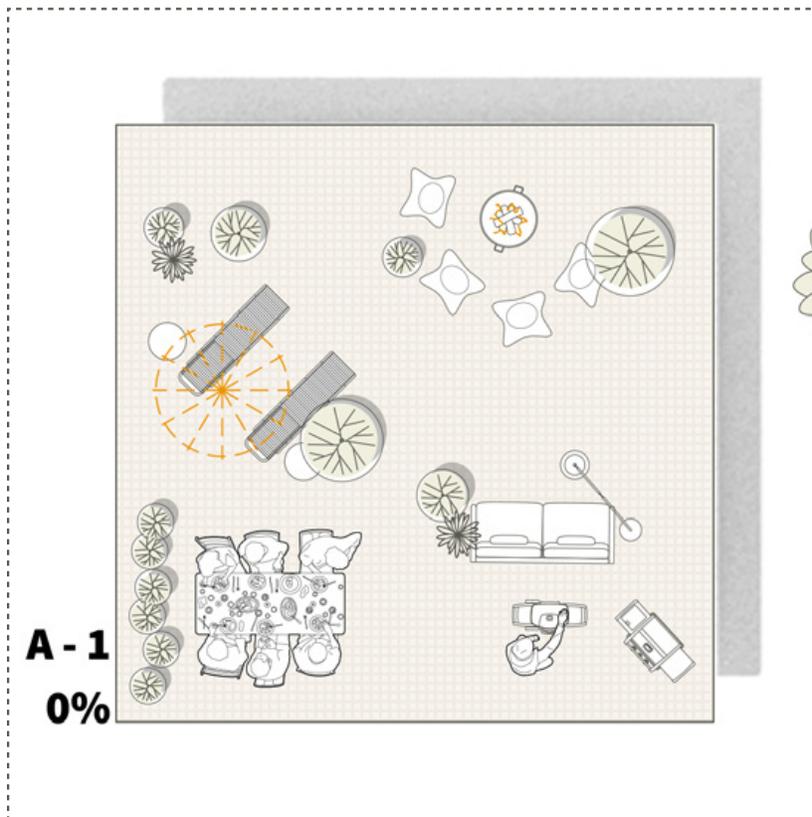


yard plan

Upon selecting their desired neighborhood, residents are presented with an array of housing options, thoughtfully designed to foster a more intimate connection with nature. The guiding principle behind these designs is to broaden the spectrum of living harmoniously with soil, creating a seamless transition between the built environment and

natural surroundings. The design process is divided into three interconnected steps: open yard, in-between space, and personal spaces. These components come together to form an integrated and cohesive living environment. In each scheme, various soil coverage levels are highlighted, demonstrating the diverse ways residents can engage with and

embrace the natural landscape. Through this innovative approach, the Permeable City empowers residents to explore and adopt varying degrees of soil integration in their daily lives, nurturing a deeper connection with the environment and promoting sustainable urban living.



open yard

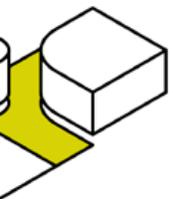
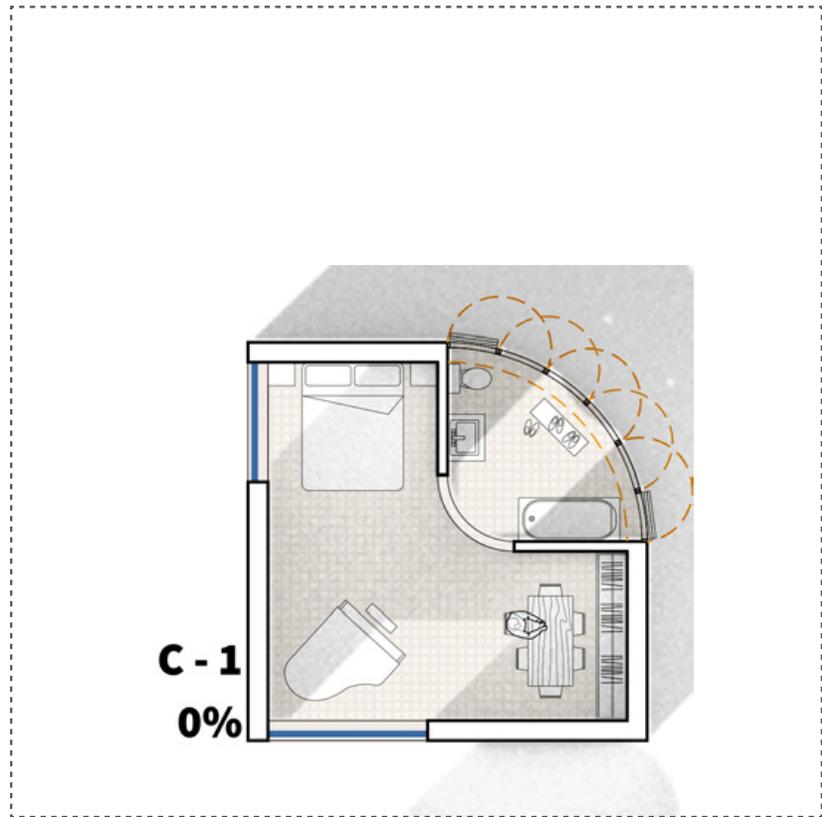
open yard's paving and utilization



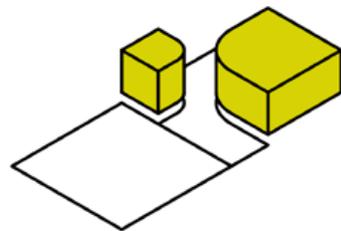
in-between

approaches to degree of enclosure and personal ownership

Expand the spectrum of living with soil



between
home and the
closure for their
open space

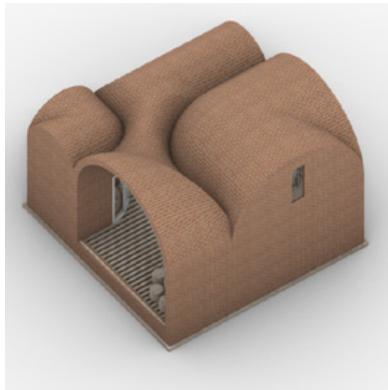


personal space

the level of soil involve-
ment in their living envi-
ronment



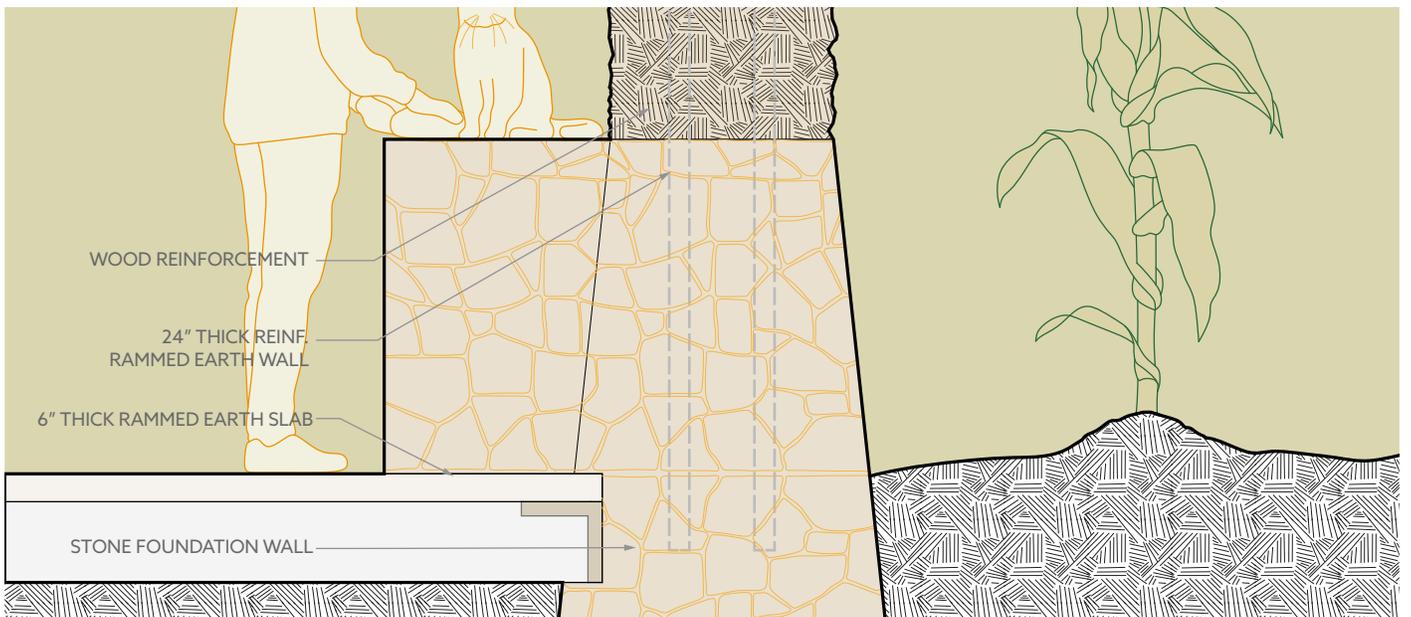
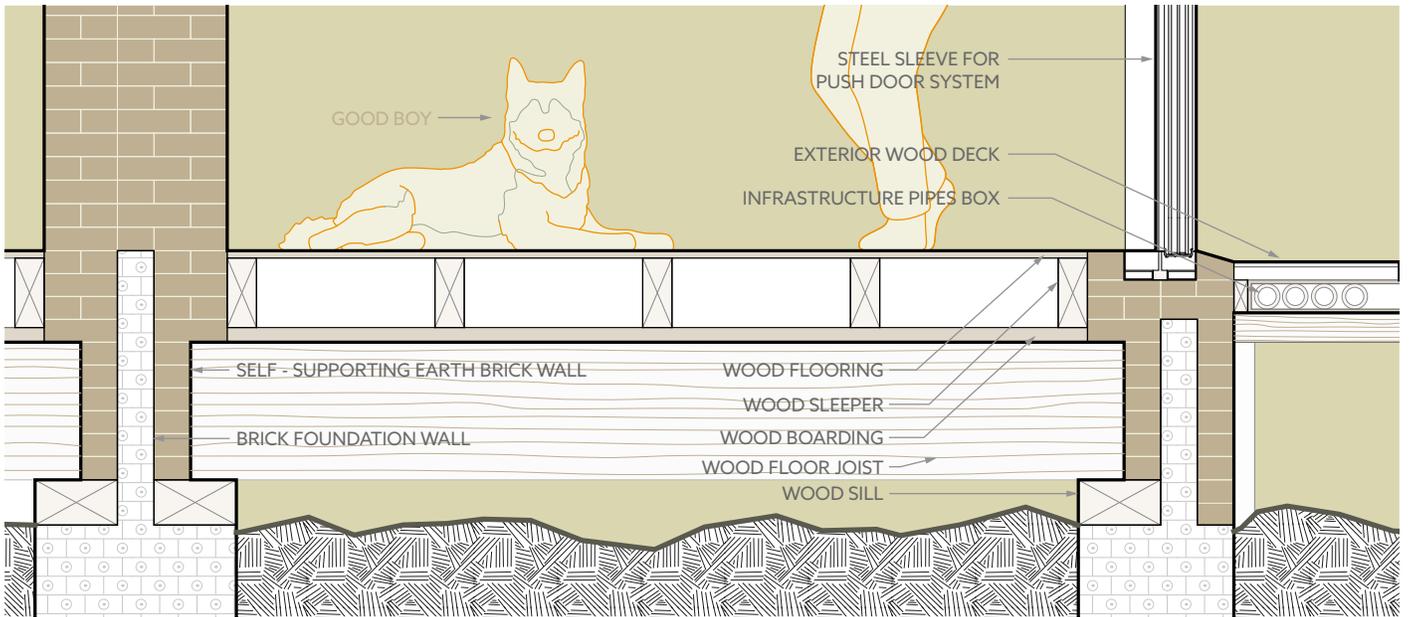
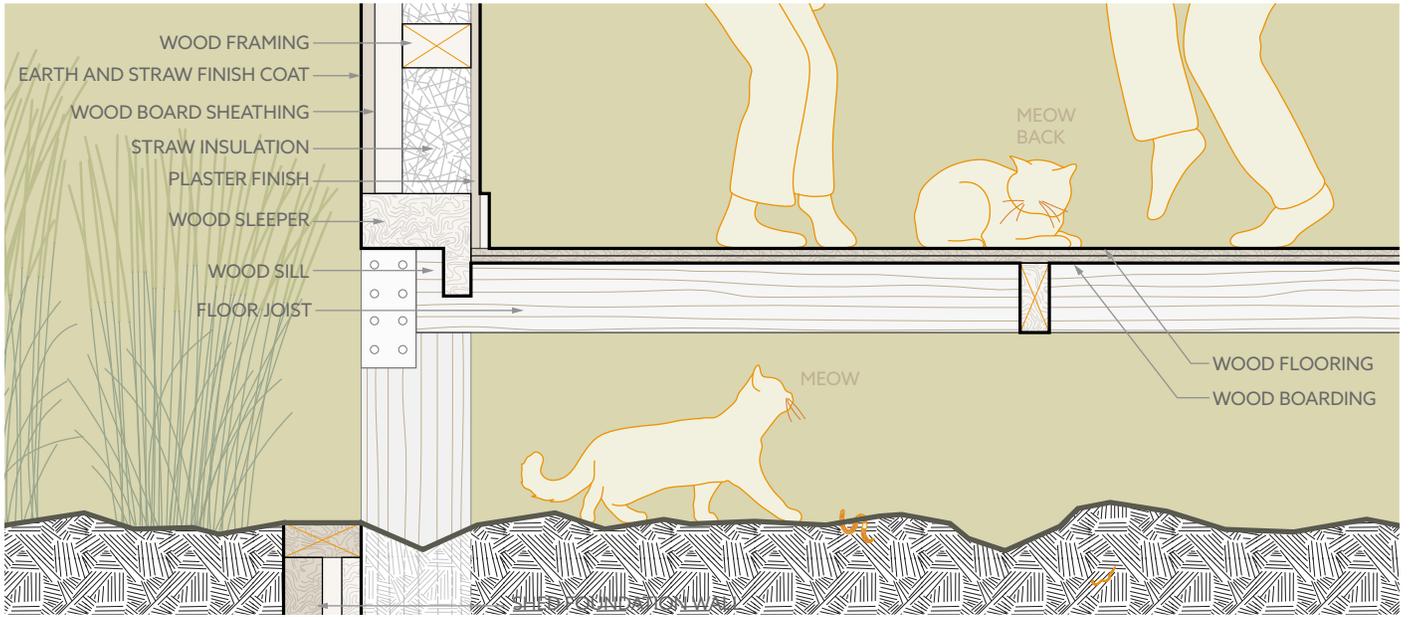
wood frame



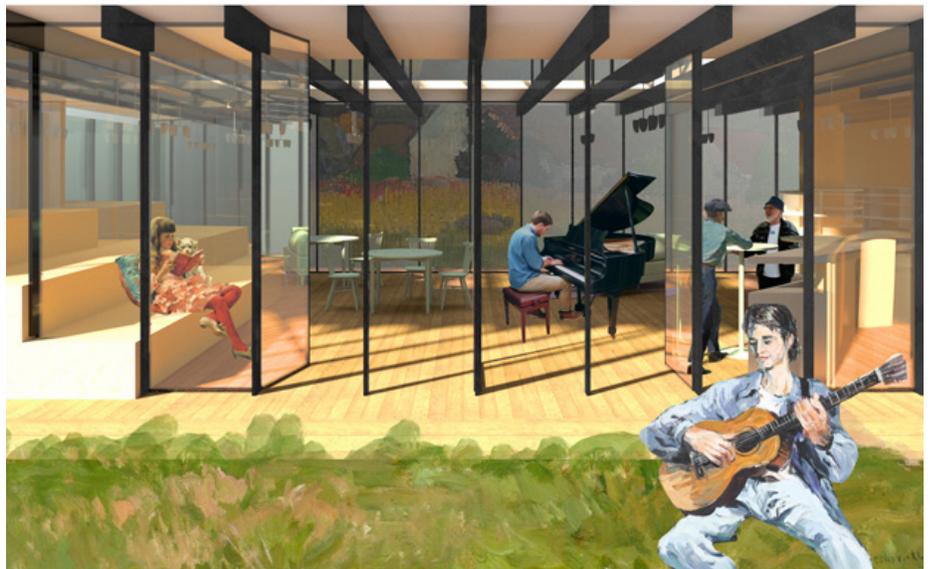
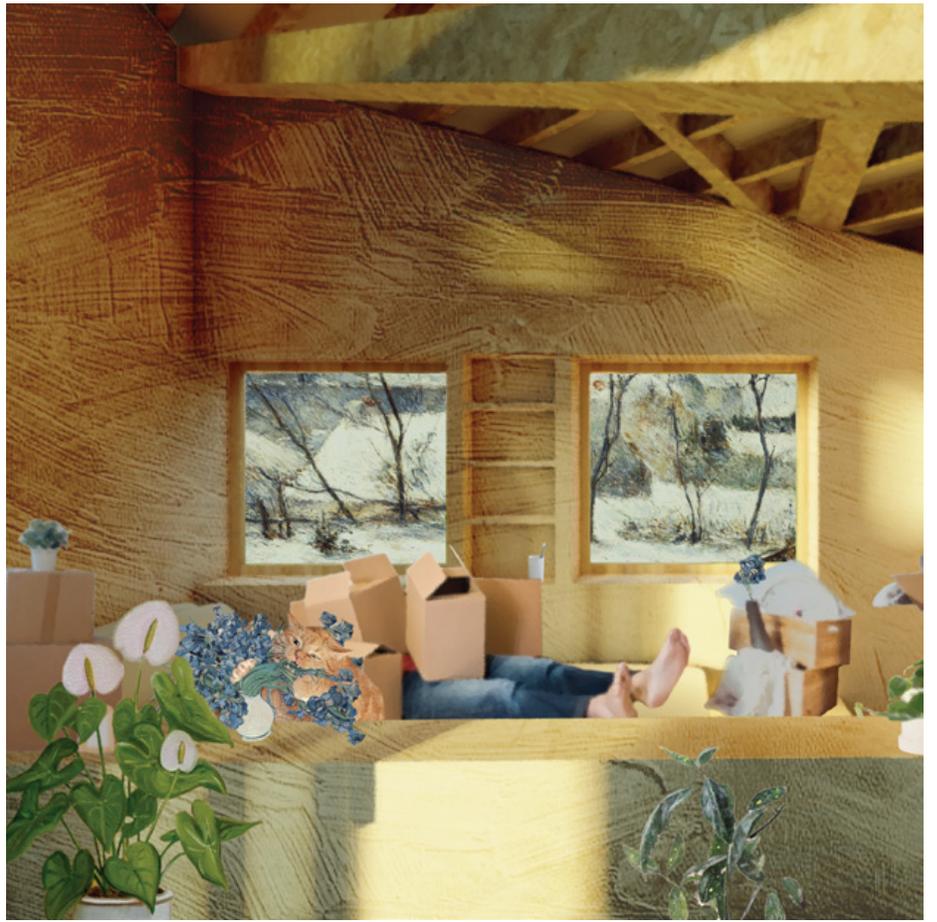
brick

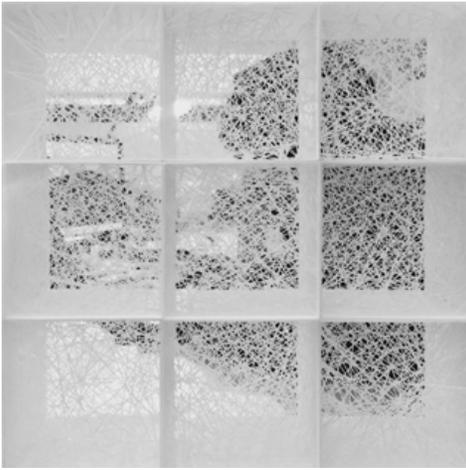


straw bale

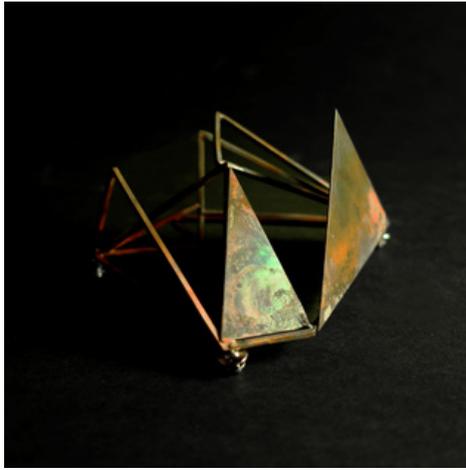








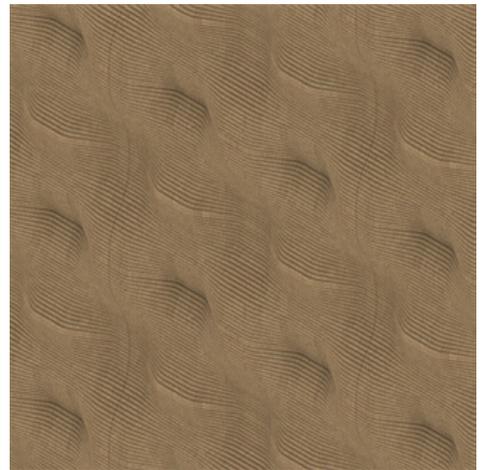
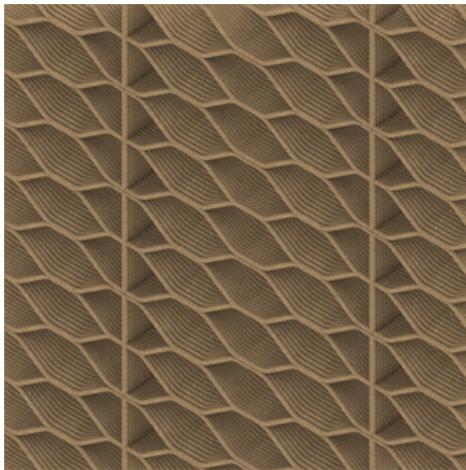
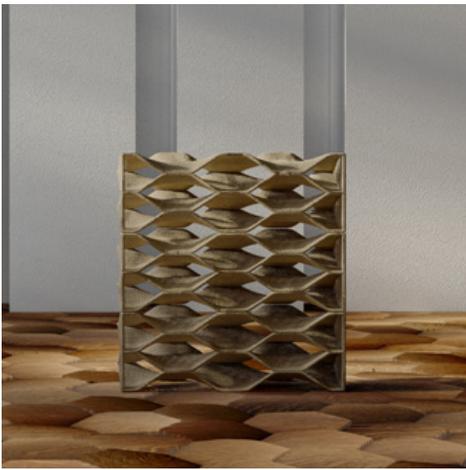
SILKWORM WALL 3D Printing Wall



TENSION Jewellery/Metal Arts



REFORMATION Color Glass Blowing



LIVING ARCHITECTURE WALL 3D Printing Soil Wall



WEIWEI WANG

PORTFOLIO

G S A P P

W O R K S

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