

CHANG PAN

Columbia University
Architecture & Design Portfolio

PROLOGUE

Although Architecture is often being treated as a serious subject, I choose to approach design from a different scope. In my opinion, the practice of architecture should be delightful. An architect who is enthusiastic of his work will most definitely result in a successful project. I have committed to innovate, create new concepts, and have fun during the serious study of architecture.

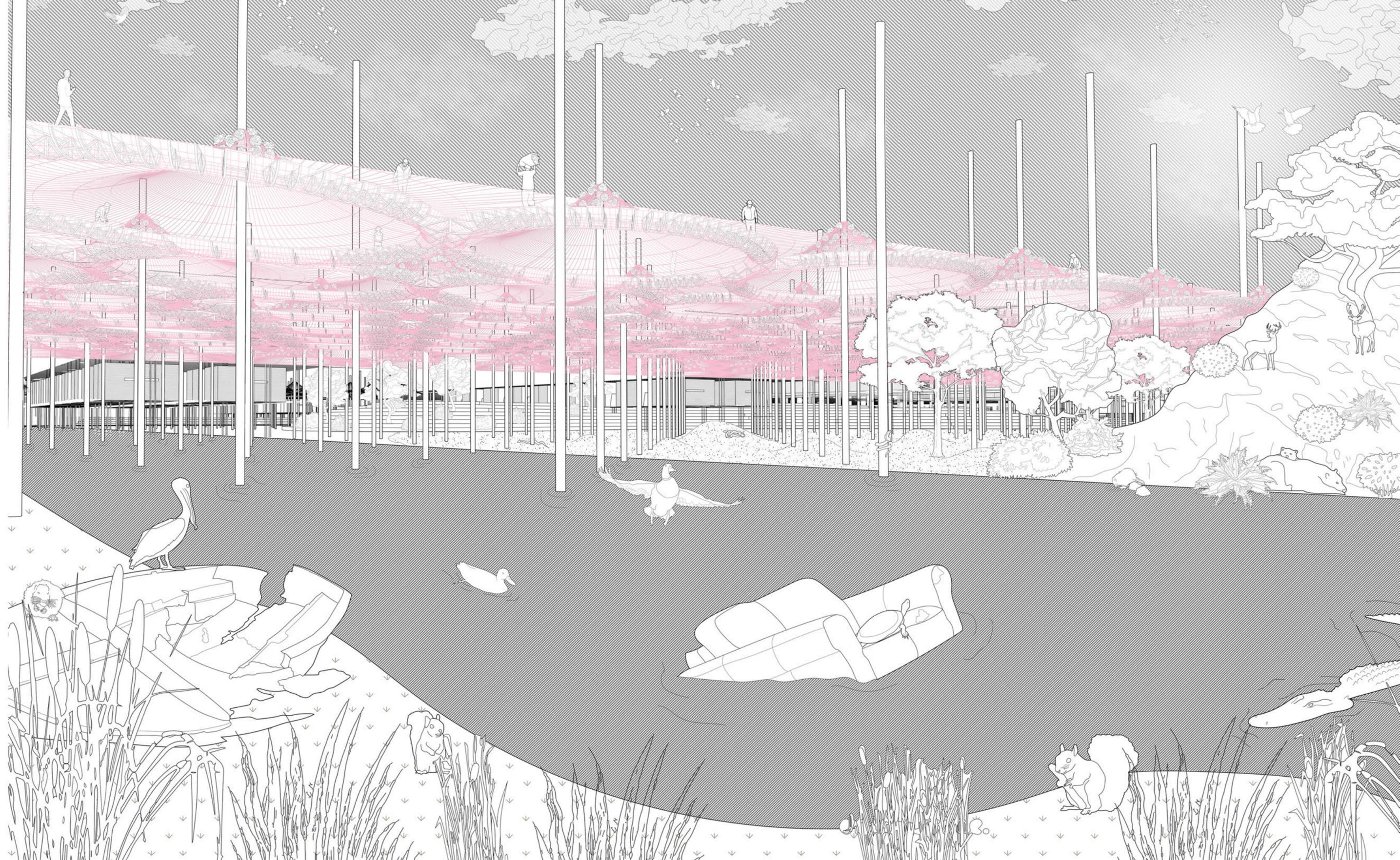
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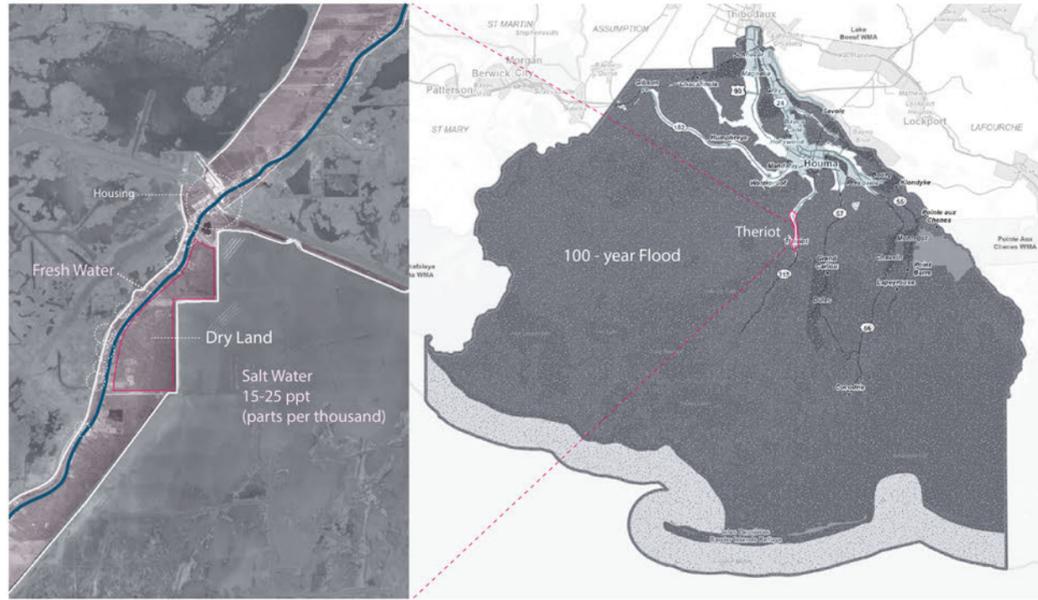
01 COEXTISING BUT SEPERATED

Studio Work, 2019 Fall
Instructor: Phu Hoang
Partner: Lu Xu

According to analyzations of the levee systems in Louisiana, the southern town Theriot will become the last dry land on south edge of Terrebonne Parish, LA. Animals and residents will be forced into Theriot. Therefore, it is necessary to increase the levee height, and create a safe haven for wild life in the area to coexist with humans. Inhabitation of human will occur on nets suspended on tall poles adapting to future sea level rise. Also incorporate programs like desalination pots, farm lands, hydroponic farming, residents and solar panel fields on nets.



■ LAST DRYLAND OF SOUTHERN LOUISIANA IN 100 YEARS



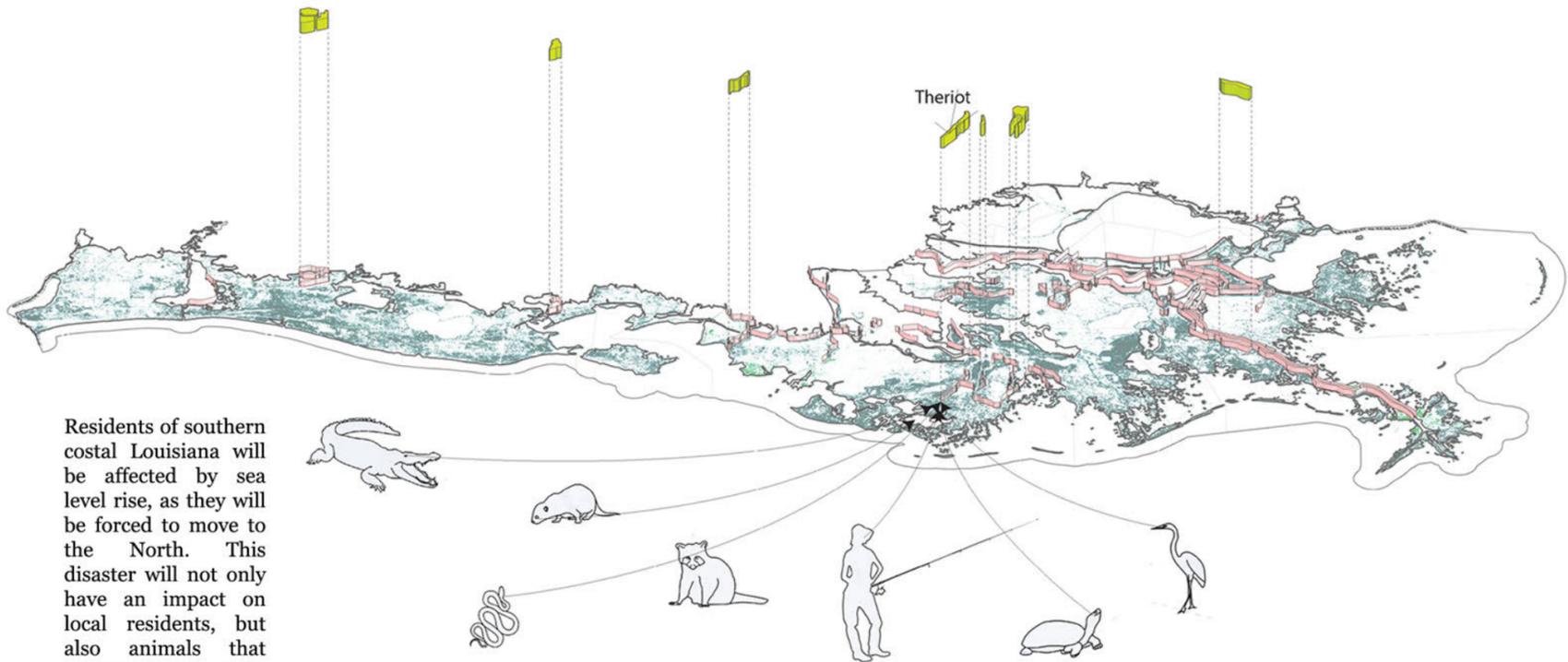
According to the 100 year flood map, coastal Louisiana will be flooded in sea water due to sea level rise. Especially in the South, a small town Theriot will become the last dry land in the area because of the existing levee system holding off the flood.

■ SEA LEVEL RISE IN ALLIGATOR VISION



American alligator is a spiece home to the U.S and are worth protecting as they are scarce in the world. Alligator's natural habitats are places humid and enclosed with a preference of fresh water. As sea level rises, alligator's natural habitats are invaded by salt water. Alligators will be forced to move North seeking a new fresh water habitat. It is very likly they will clash with human soecity in the process of doing so. Hence protecting alligators from invading sea waters is necessary.

■ ANIMAL AND HUMAN REFUGEES



Residents of southern costal Louisiana will be affected by sea level rise, as they will be forced to move to the North. This disaster will not only have an impact on local residents, but also animals that inhabits the south. Especially Alligatos and deers as there are a large number of them.



Although alligator lives are endangered by sea water rise, other spieces home to Louisiana are also heavily affected by such disaster. For example, people who live there will lose their homes, and also their buisness. Places like factory, piers, and farm lands are disappearing by the day. And we also choose to focus the project on deers as another spiece in comparison to alligators.

■ ATOP AND UNDER THE NETS



Nets are suspended along poles planted on the ground level to form a higher end in the middle. Which creates a slop for farm vegetables to be planted on nets. The sprinkler on the poles would spray water constantly onto the roots of the vegetables in order to achieve hydroponic farming.



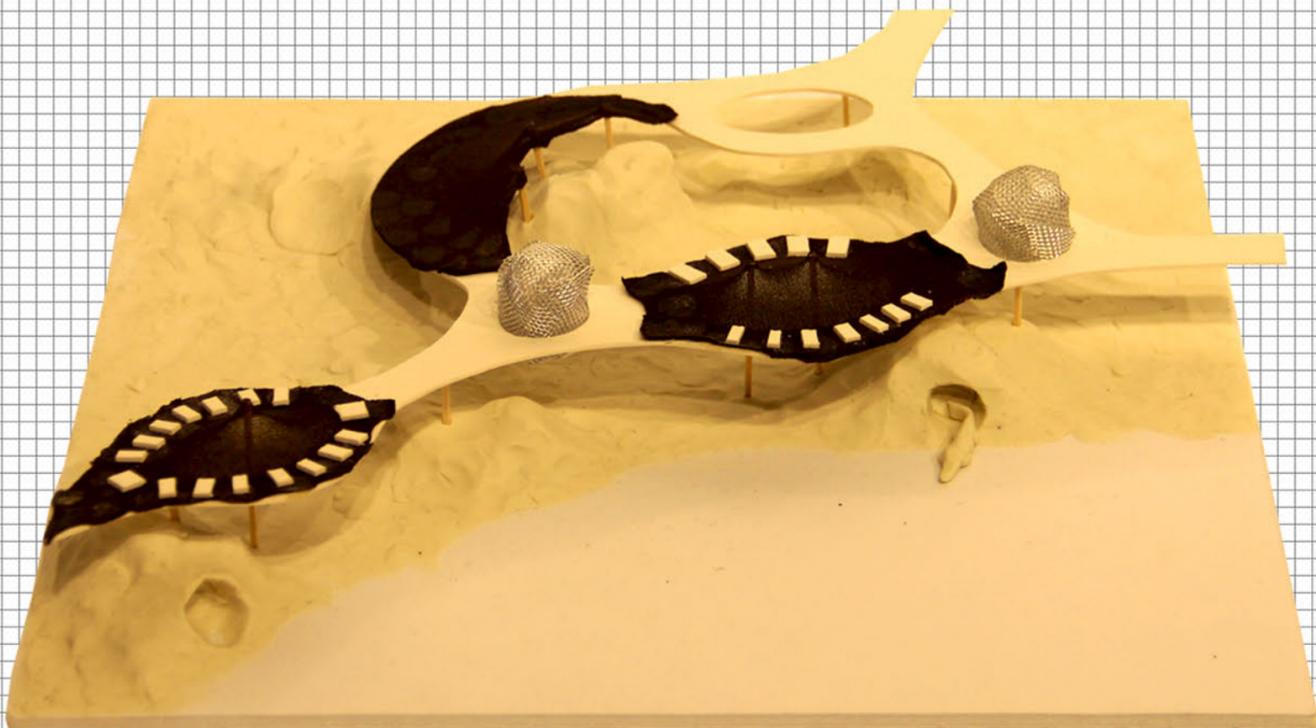
Various trees planted on the natural landscape to form a orchard farm on top for fruit harvesting, but also allows fruits to slip through the nets for animals to feed on. In a way creates a coexistent senerio for both human and animals.



Human habitation occurs mid-air to leave the ground level untouched for nature. Man made hills form a preferred living space for deers in which they could reside on a higher level of human inhabitation vertically. Which stimulate an interaction between the spieces.

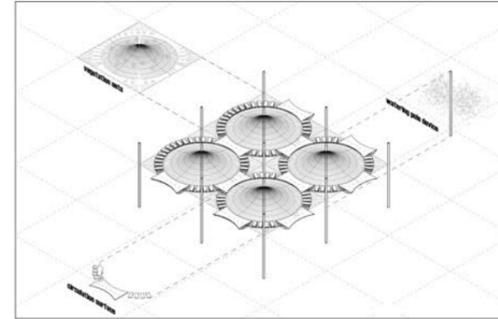


Nets and meshes form a storage on the mid-air platform. Solid meshes as shield for storage to protect the goods from damaging, while the nets on the bottom is a flexible surface. The flexibility allows produce to sink down into animal territories. Which allow animals to feed on it once enough harvest has been collected.

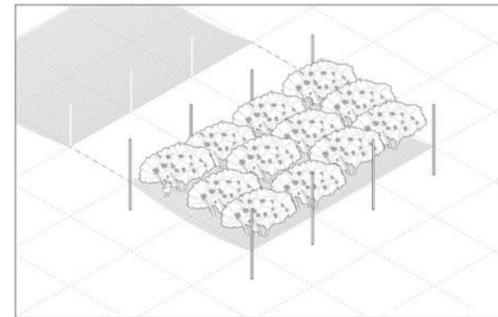


Large water bodies and hills give animals of different habitats to live together. Taller hills allow animals like deers to escape from predators like alligators. While still maintaining a food chain in the larger eco system. Hardended surfaces placed on nets transforming it into a walkable surface for circulation.

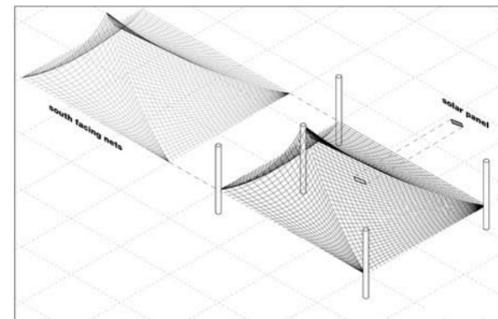
■ SUSTAINABLE COEXISTENCE



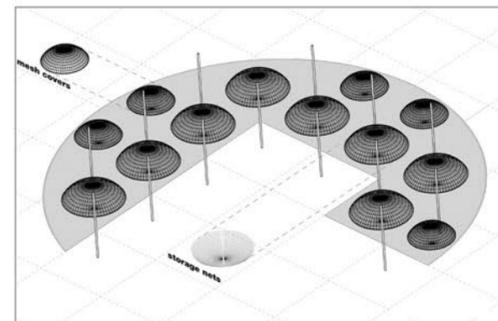
Hydroppnic Farming on Nets



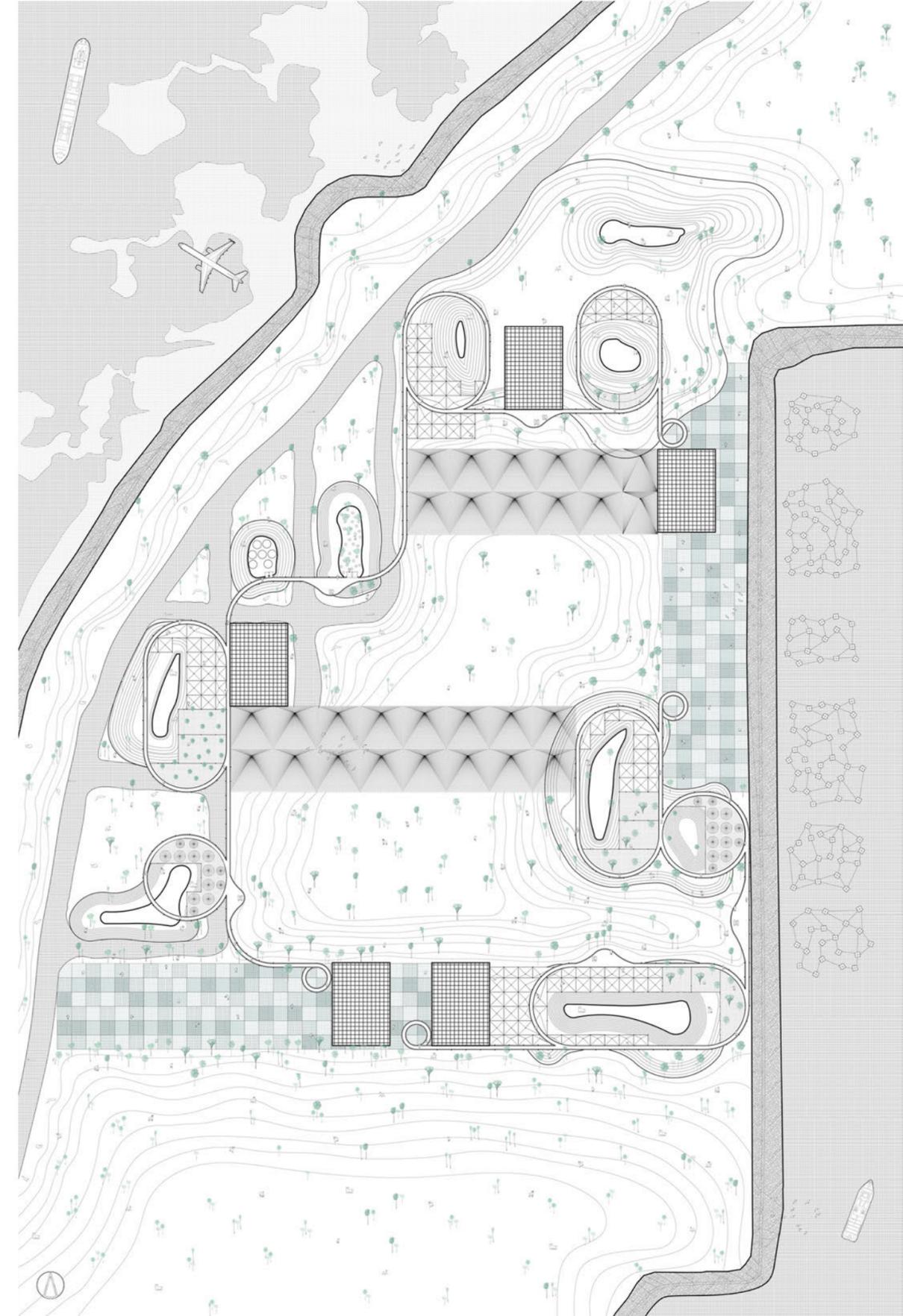
Orchard Farm on Nets



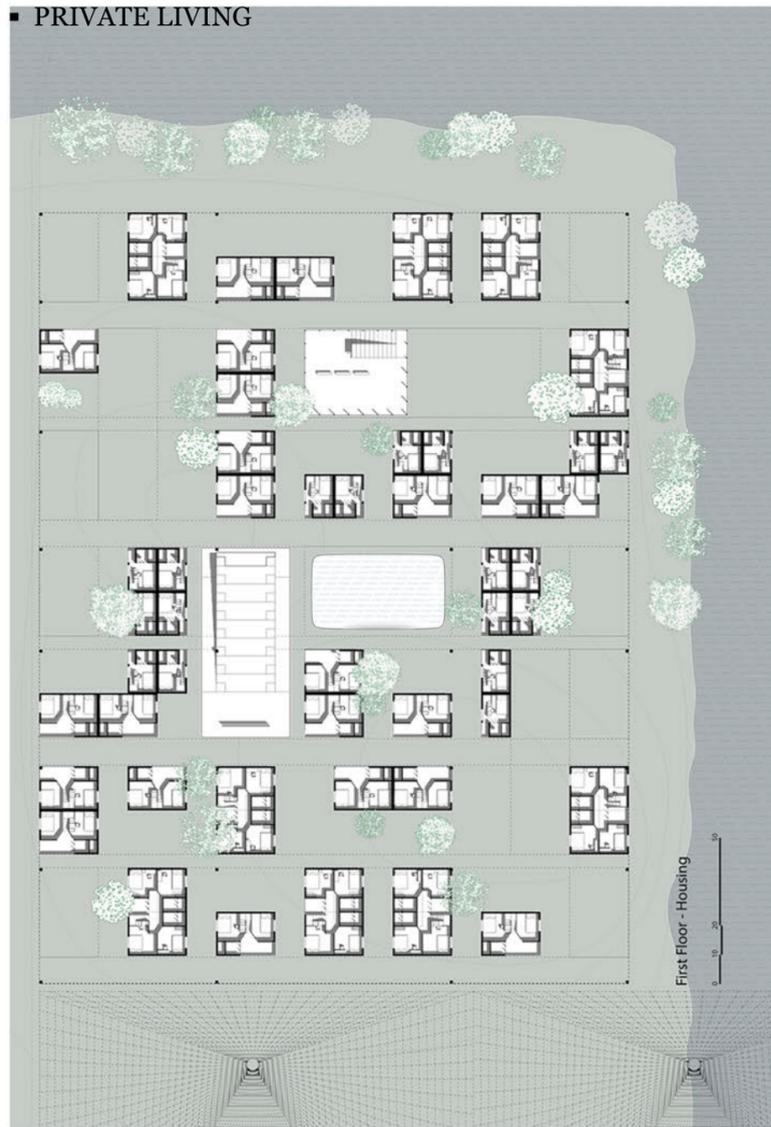
Solar Panels on Nets



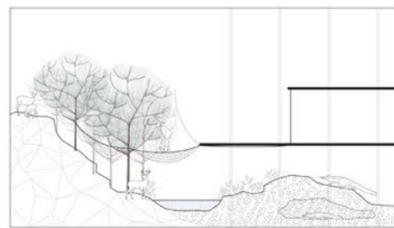
Produce Storage on Nets



■ PRIVATE LIVING



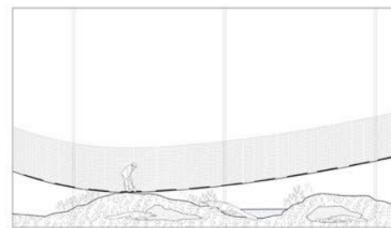
The first level of housing structure feature individual units that give privacy for families and singles. The housing structure also has moments where the program touches the ground level that creates interaction between its residents and animals. But animals could not enter the building due to soft boundaries like glass, stars and nets.



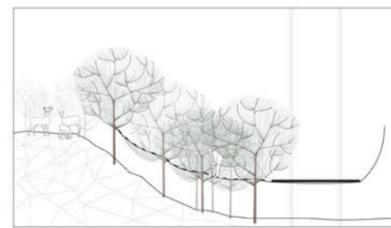
Deer + Human coexistence



Alligator + Deer + Human

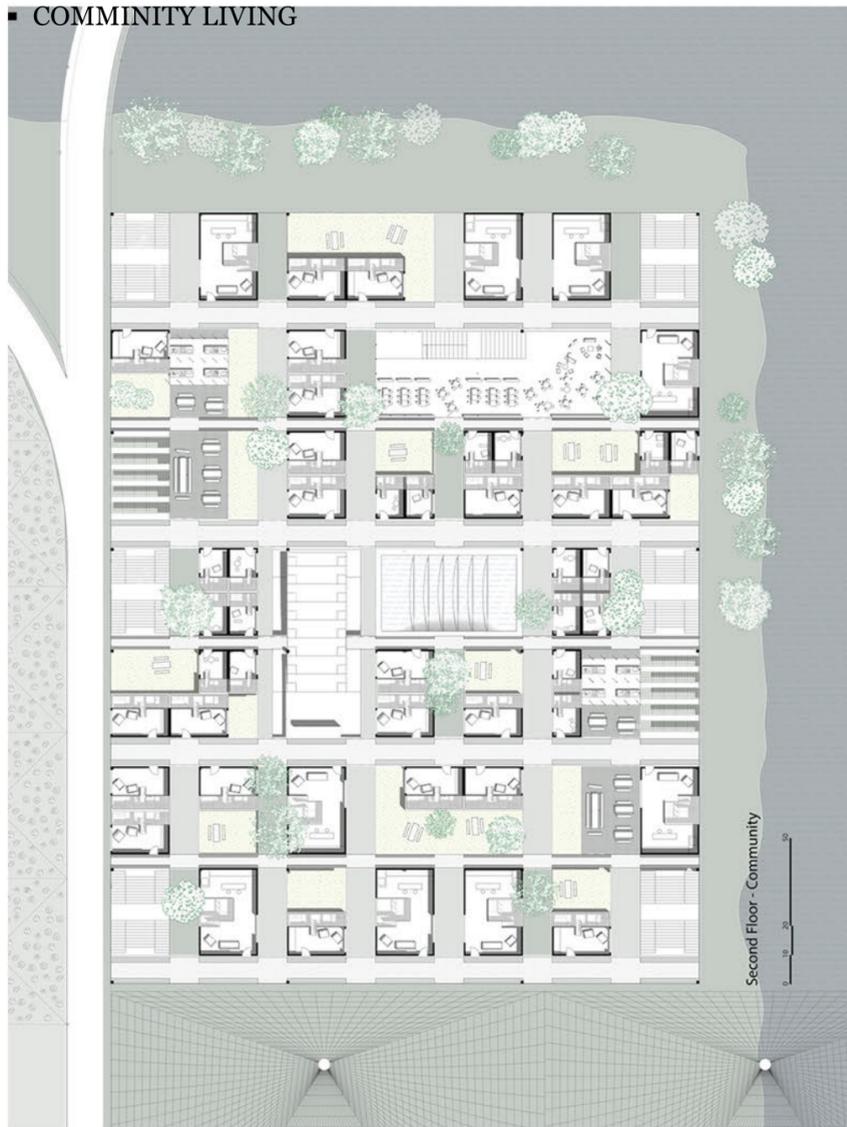


Alligator + Human



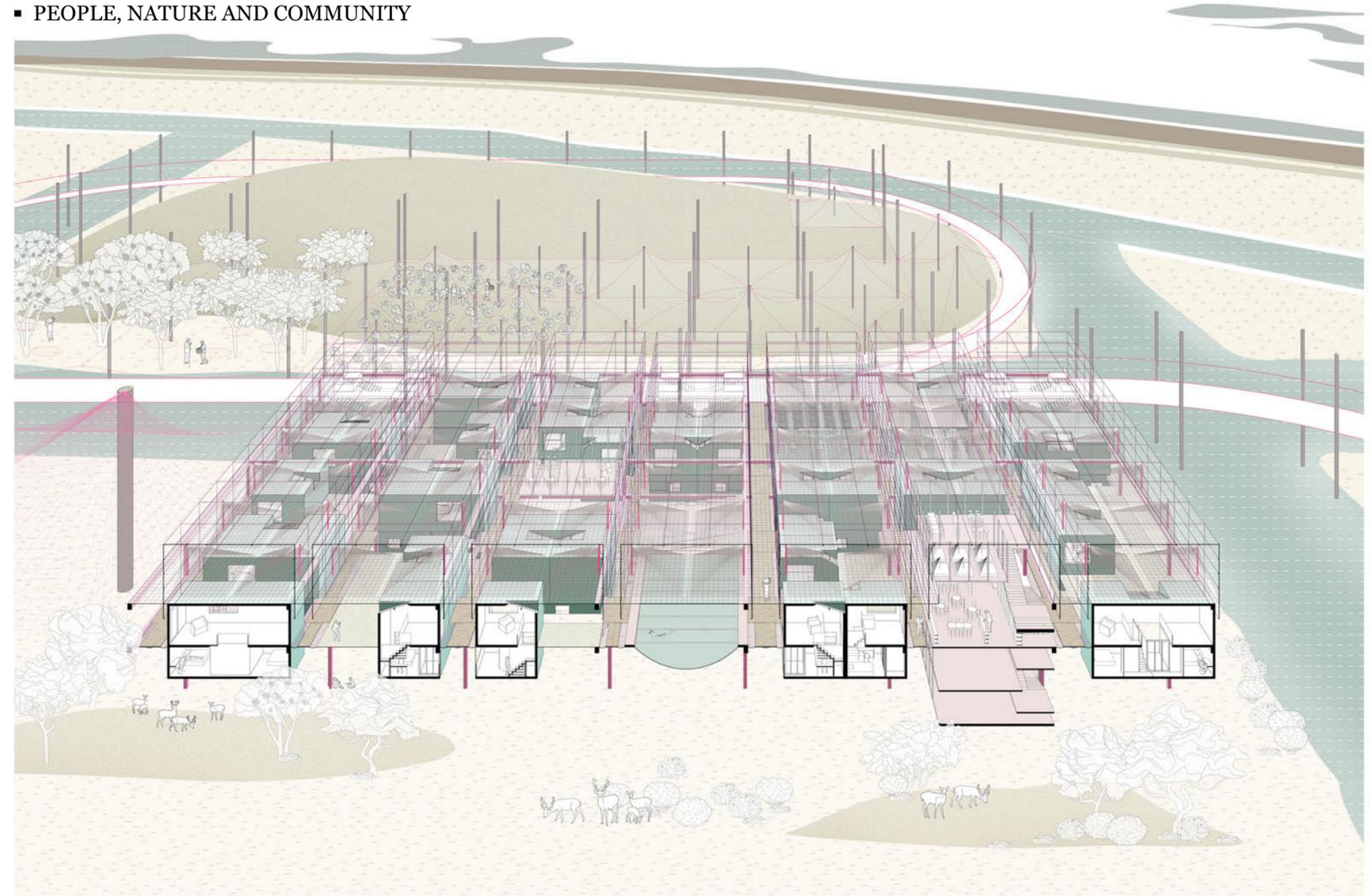
Deer + Human

■ COMMUNITY LIVING



The second level of housing structure features public programs like lounge, swimming pool, and movie theatres. The building has corridors formed by nets in order to achieve a transparency with the nature in surroundings. The third level of the building are hydroponic farms using nets to shorten the time from farmers going into their works.

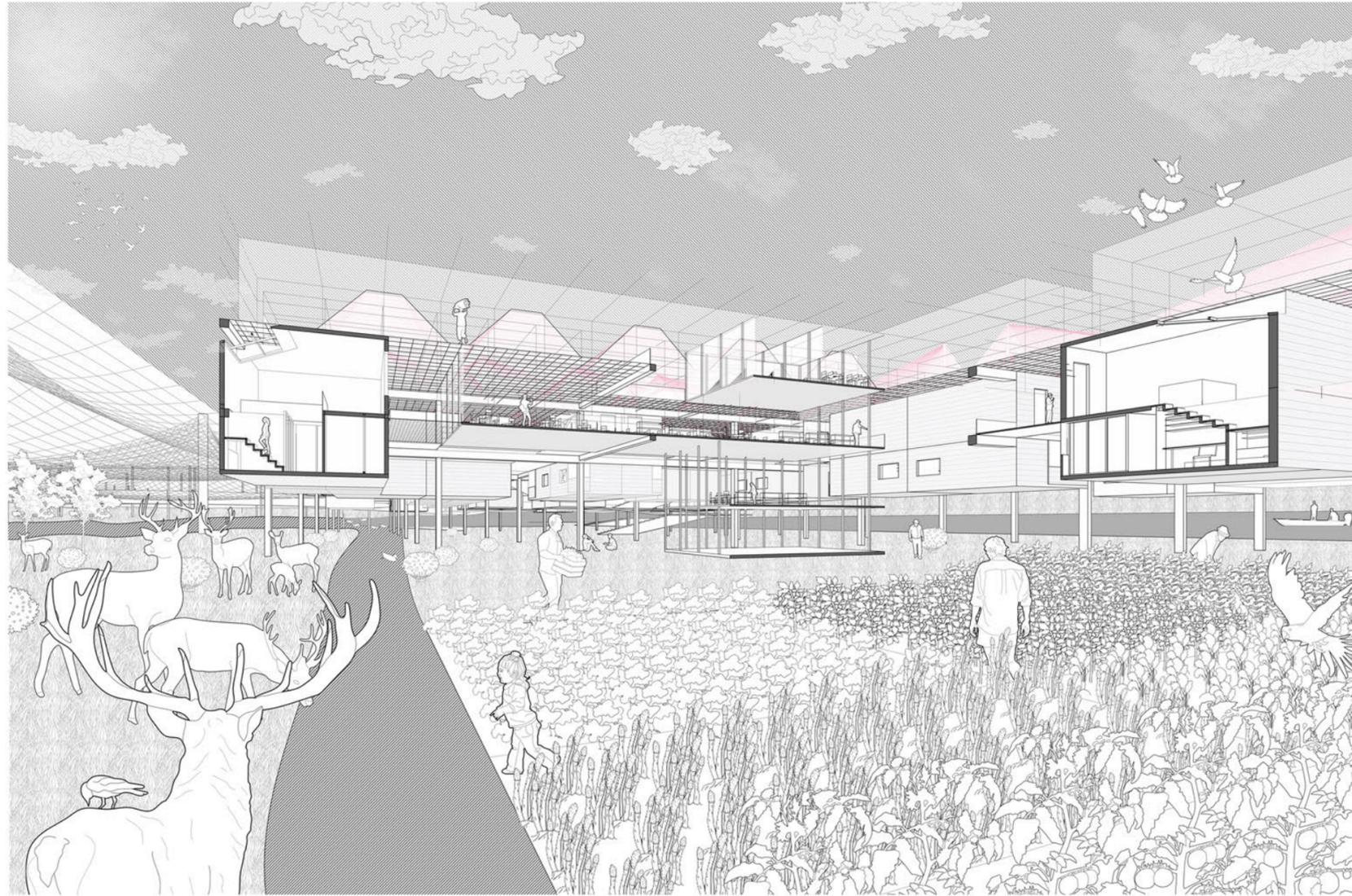
■ PEOPLE, NATURE AND COMMUNITY



■ 1/4 PHYSICAL SECTION MODEL



■ PEOPLE, NATURE AND COMMUNITY



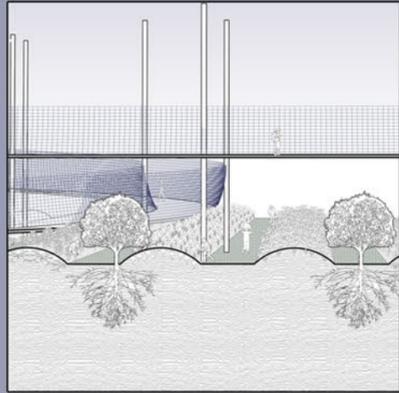
Interaction between different species is a large part of the project. However, a direct interaction by the animals will cause troubles to the farming community, as they would eat the harvests from farms or even attack residences. Hence it is necessary to create an invisible boundary from animals to the human community. Invisible boundaries could sometimes be a small water body where land animals cannot cross, steep change of elevation in landscape or obstacles formed by nets to prevent flying animals. Although most of the farming are hydroponic farms in the living structures, there are also farm lands for a more traditional farming method in order to provide a variety of farm goods from the operation.

■ PEOPLE, NATURE AND COMMUNITY

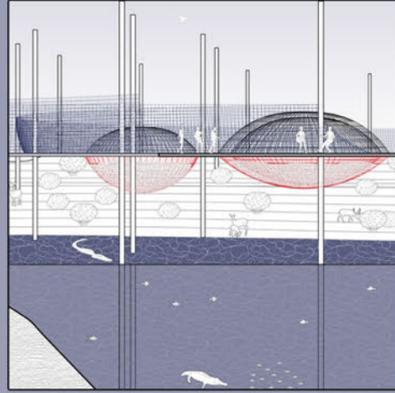


On the top level of the residential structure, there are hydroponic farms situated on a net system for vegetable growing such as tomatoes. The nets are suspended by a large pole in the middle, while the sprinkler on the poles would spray water onto vegetable's roots. Hardened surfaces such as wood panels are placed on nets for farmers to operate around the farm. We keep the top level as transparent as it could be with nets in order to let the building sink into nature to create an atmosphere of coexisting.

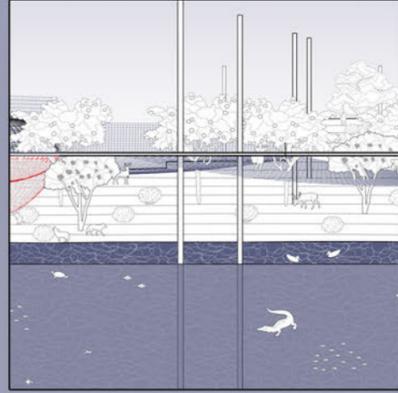
■ LEVELS OF INHABITATION



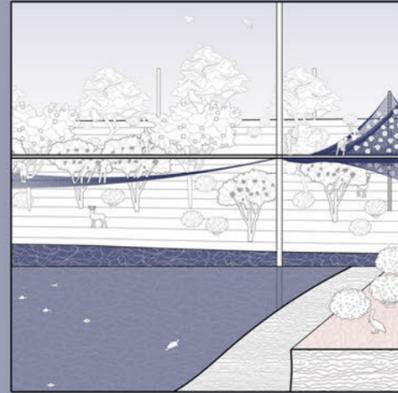
Most of the inhabitation of the farming community lives on a suspended level on nets, but there are moments where the farming happens on ground level where animals are separated from by invisible boundaries.



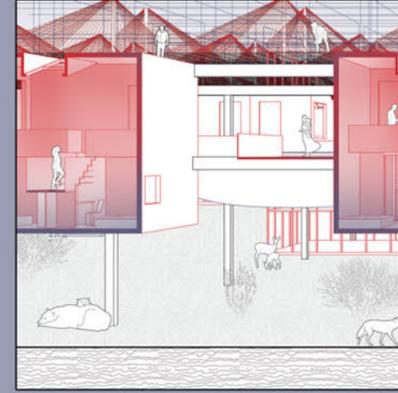
Nets form a storage system where harvests could be stored, waterbody underneath the nets provide habitats for alligators and water animals, and deers reside on the hills behind.



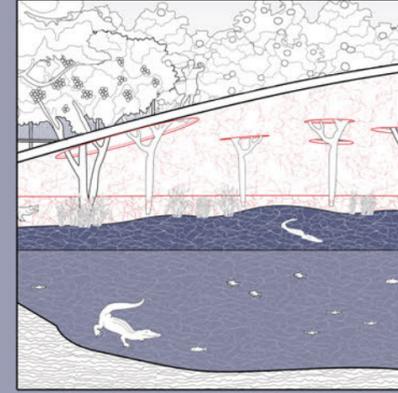
Trees planted inside the nets let farmers reach the tree tops easily, while the roots of the trees are still on the ground. Animals could feed themselves from the fruits fell through the nets.



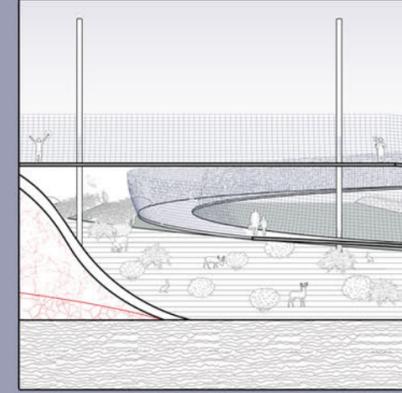
Hydroponic farms happens on top of nets in the exterior. But due to the cold tempature, the vegetables that are planted are different from the ones planted indoor.



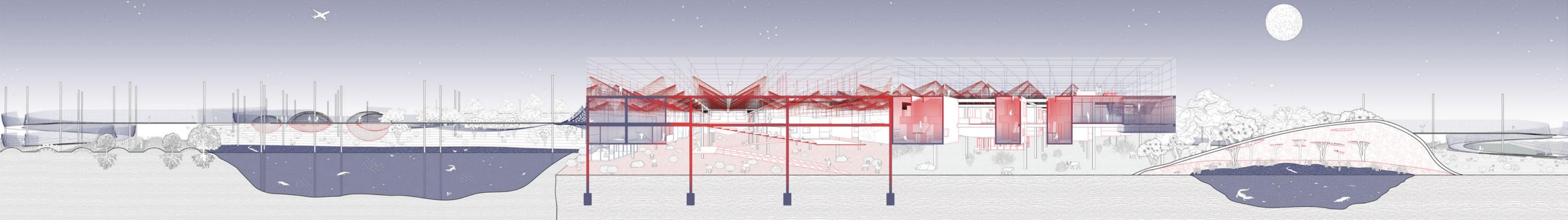
The top level of living quarters are hydrponic farm lands on nets. The warm tempature of indoor green house give a better control of vegetable and fruit harvesting.



Large hollow hills form a humid cave for alligators to reside as it is their preferred habitat. Trees could also be planted inside while the tree tops are outside of the cave for easy picking.



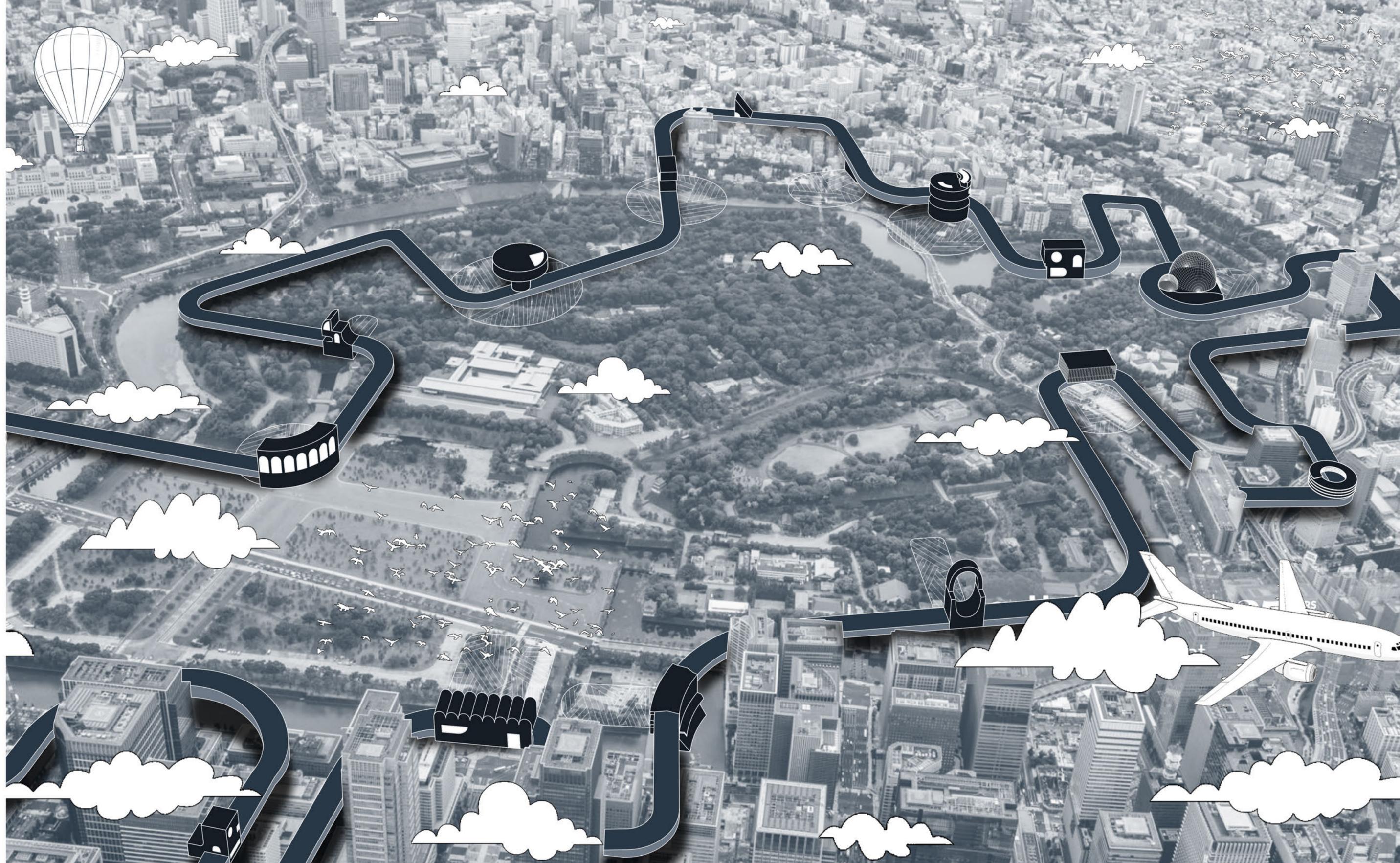
Hills form a natural habitat for deers and mountain animals underneath the community inhabited nets. The fact they are living in a close proximity to each other establish a form of coexistence between spieces.



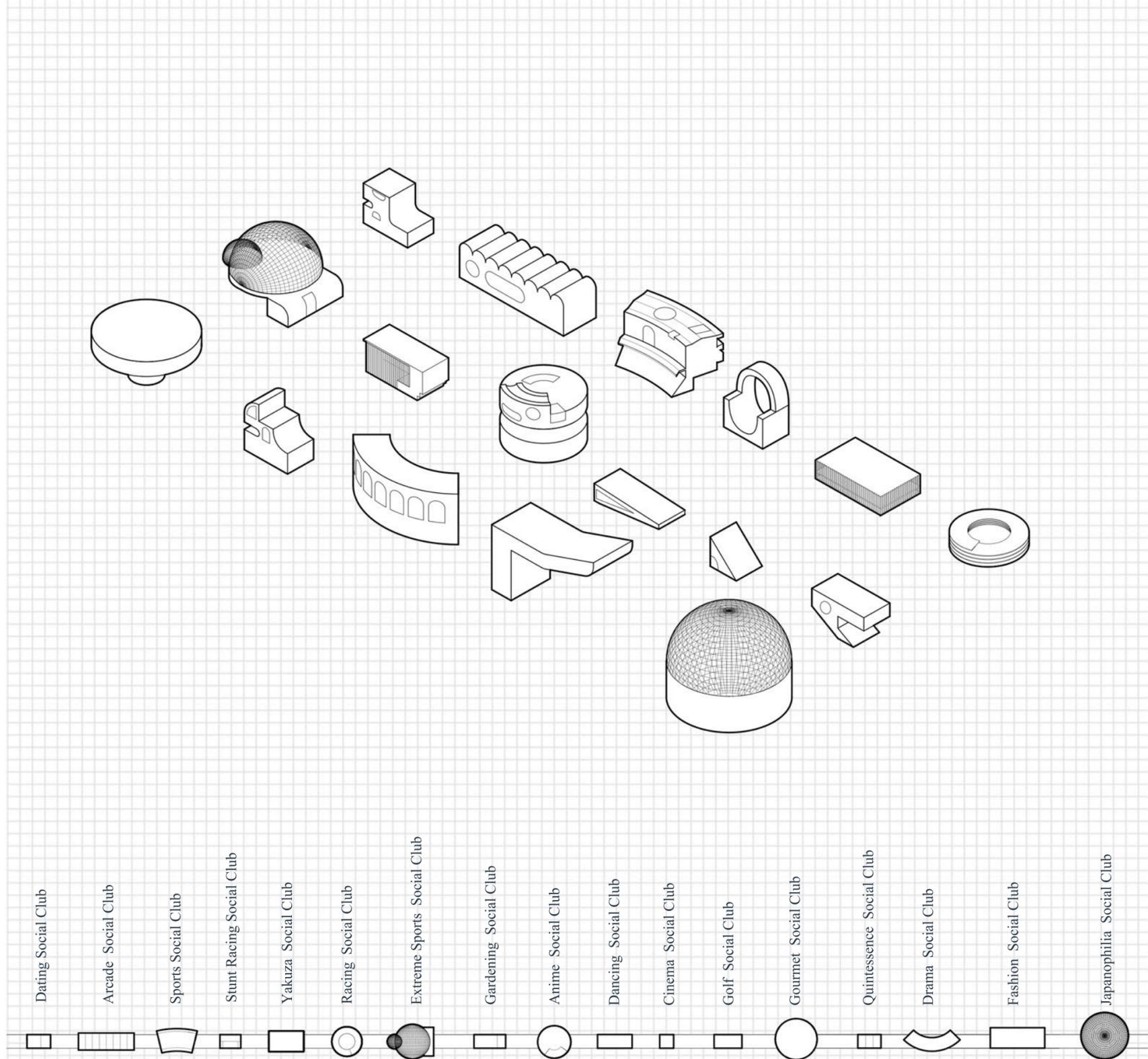
02 IMPERIAL PALACE'S NEW MOAT

Studio Work, 2020 Spring
Instructor: Sarah Dunn & Martin Fe-
lsen & George Louras
Individual Work

The Tokyo Imperial Palace is the primary residence of the Emperor of Japan. The total area including the gardens is 1.15 square kilometers. Perhaps the most anti-social place in Tokyo. Located in the heart of Tokyo, the many social issues plaguing the society could be found all around. For instance, Hikikomori, Otaku, and Aging population. In this project, I explore the possibility of how the moat of Imperial Palace could become a mega social club to stimulate social interactions.



■ TOLL HOUSE TAXTONOMY



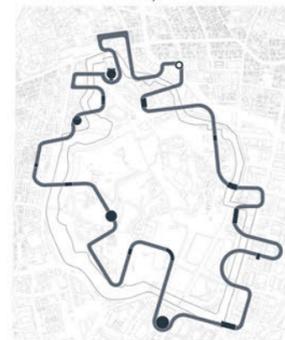
original moat footprint



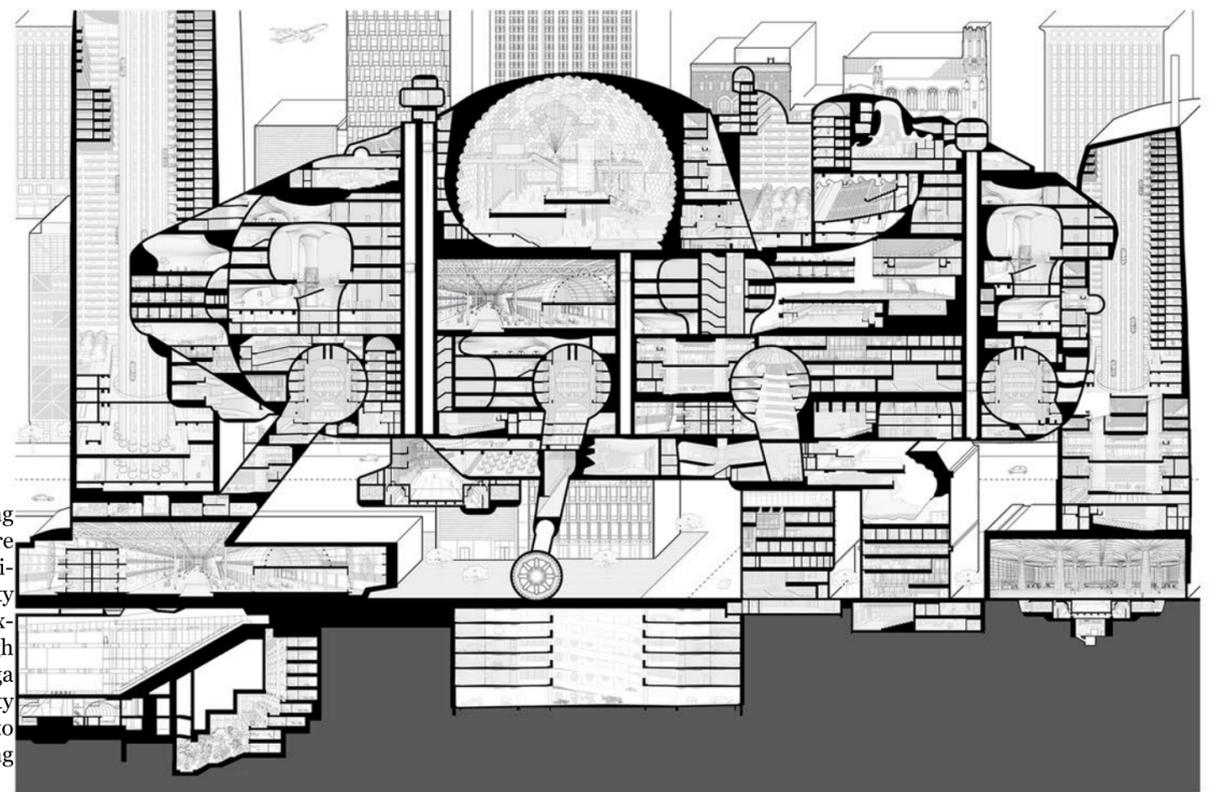
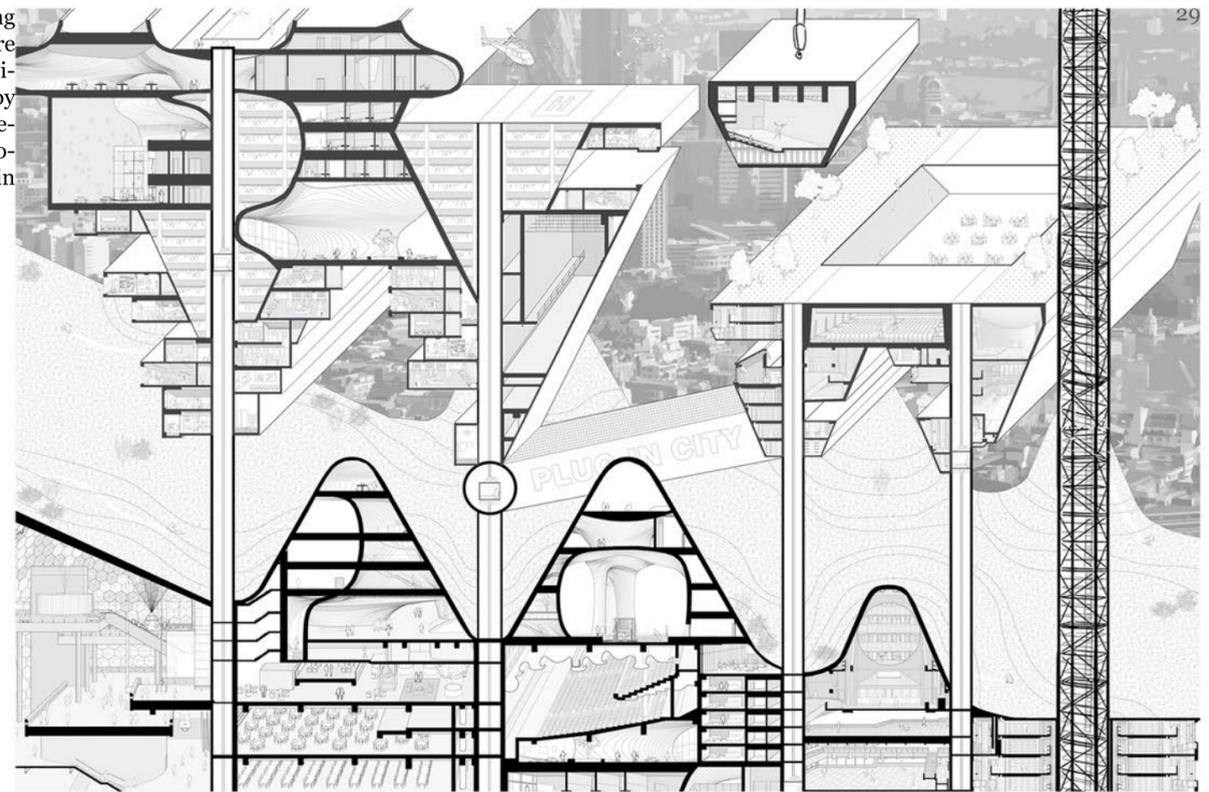
moat extends outward to include more of the city



moat shrinks inward to give private lands to the public



A section drawing exercise to explore the sectional quality of Plug-in city by Archigram. To develop a way of producing sections in the project.

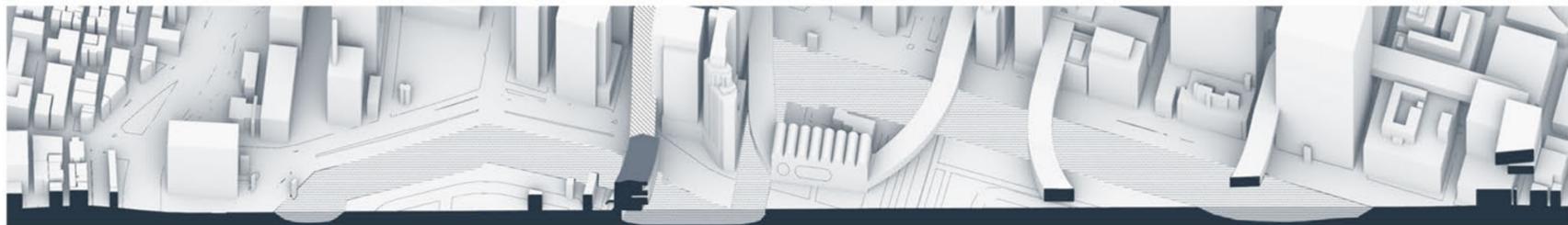
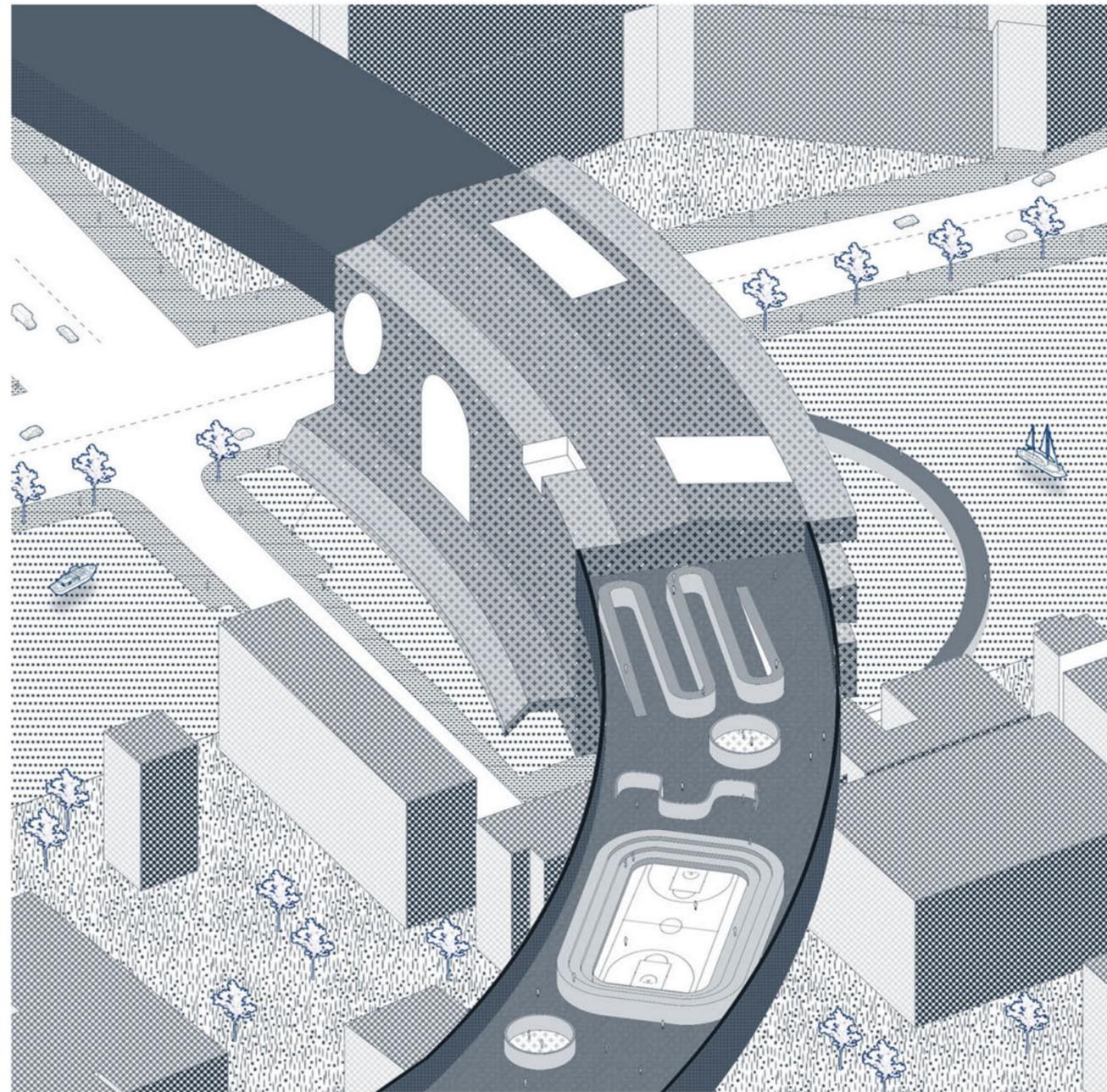


A section drawing exercise to explore the sectional quality of Walking city by Archigram. Exploring through section how a mega structure in the city could connect to adjacent existing buildings.



SPORT HUB TOLL HOUSE

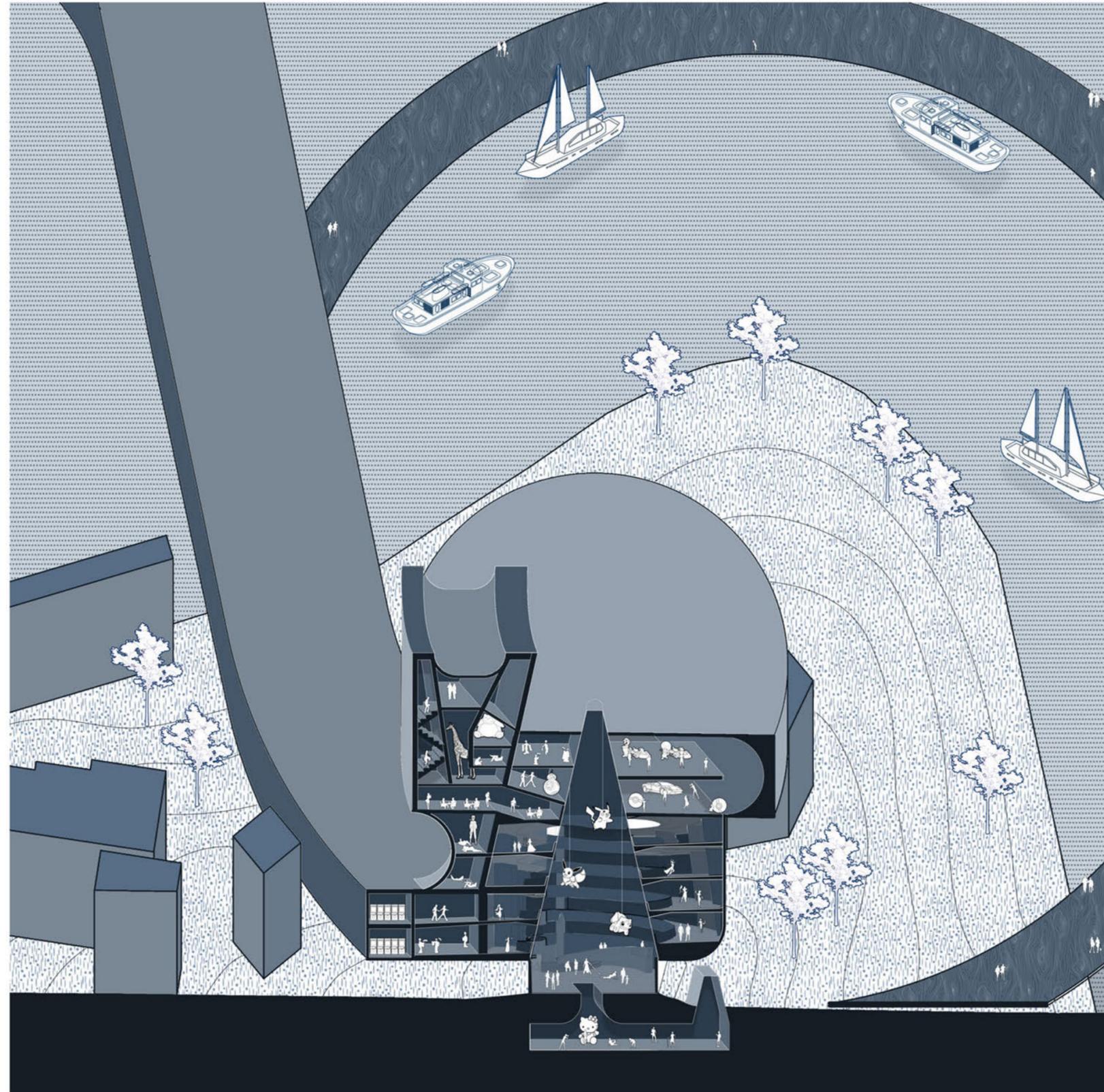
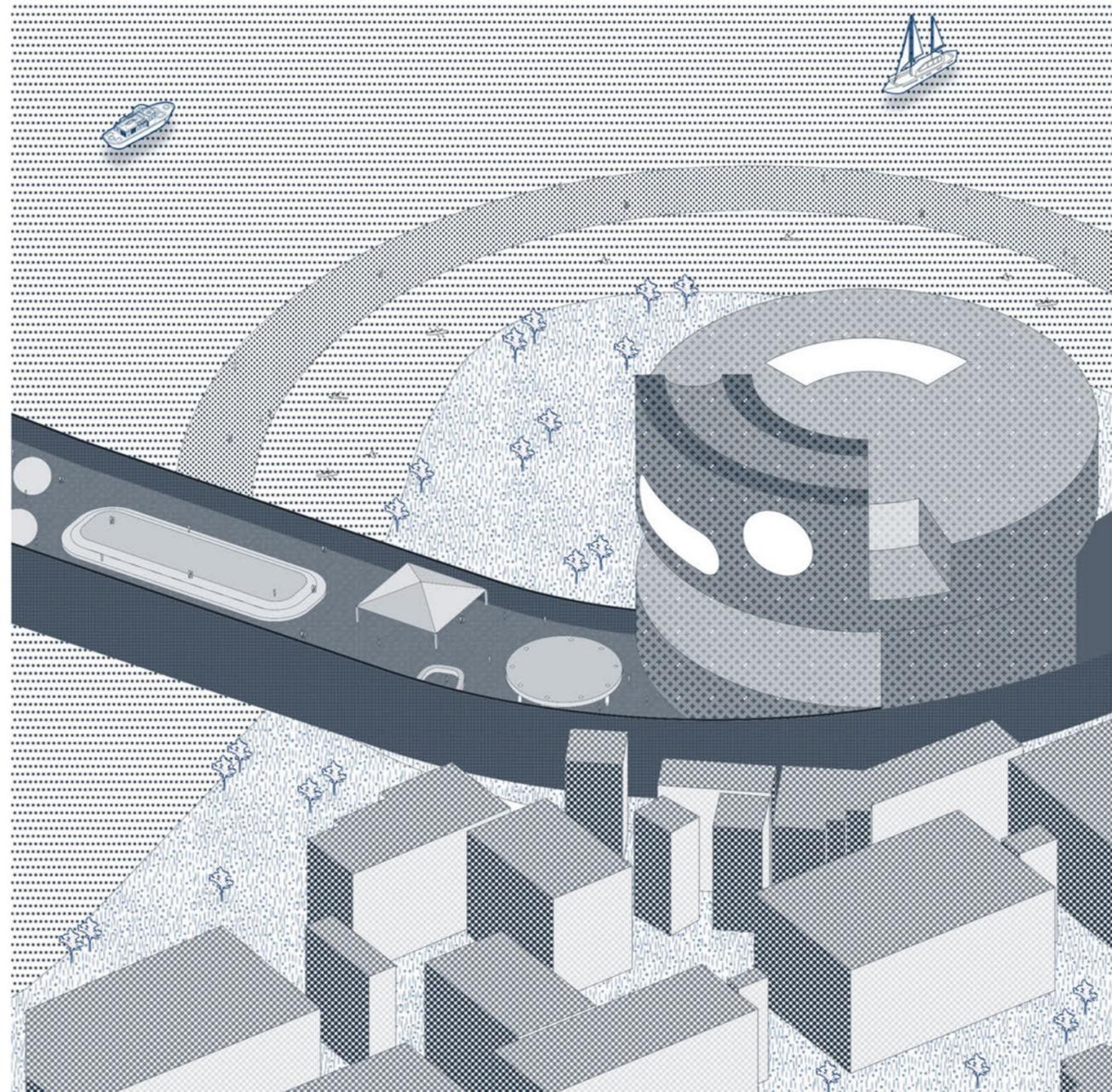
A toll house adjacent to otemachi business district as a sports hub. The different sports facilities gather people of various interests in sports into one place, stimulates people who are into sports to try new activities.





OTAKU CULTURE TOLL HOUSE

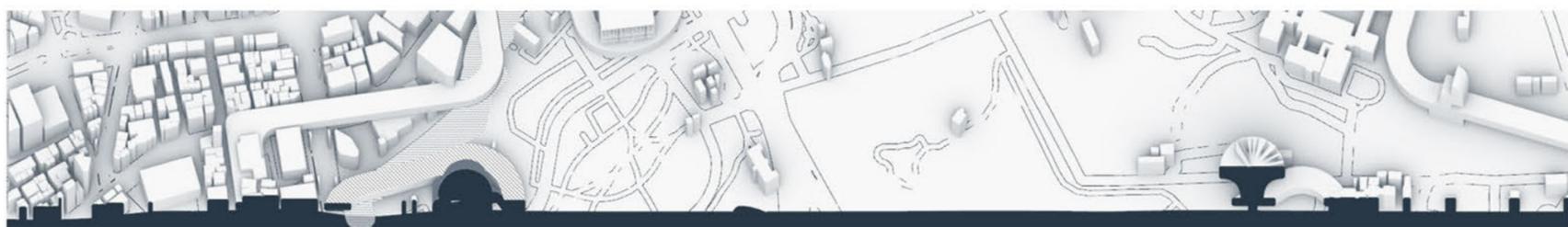
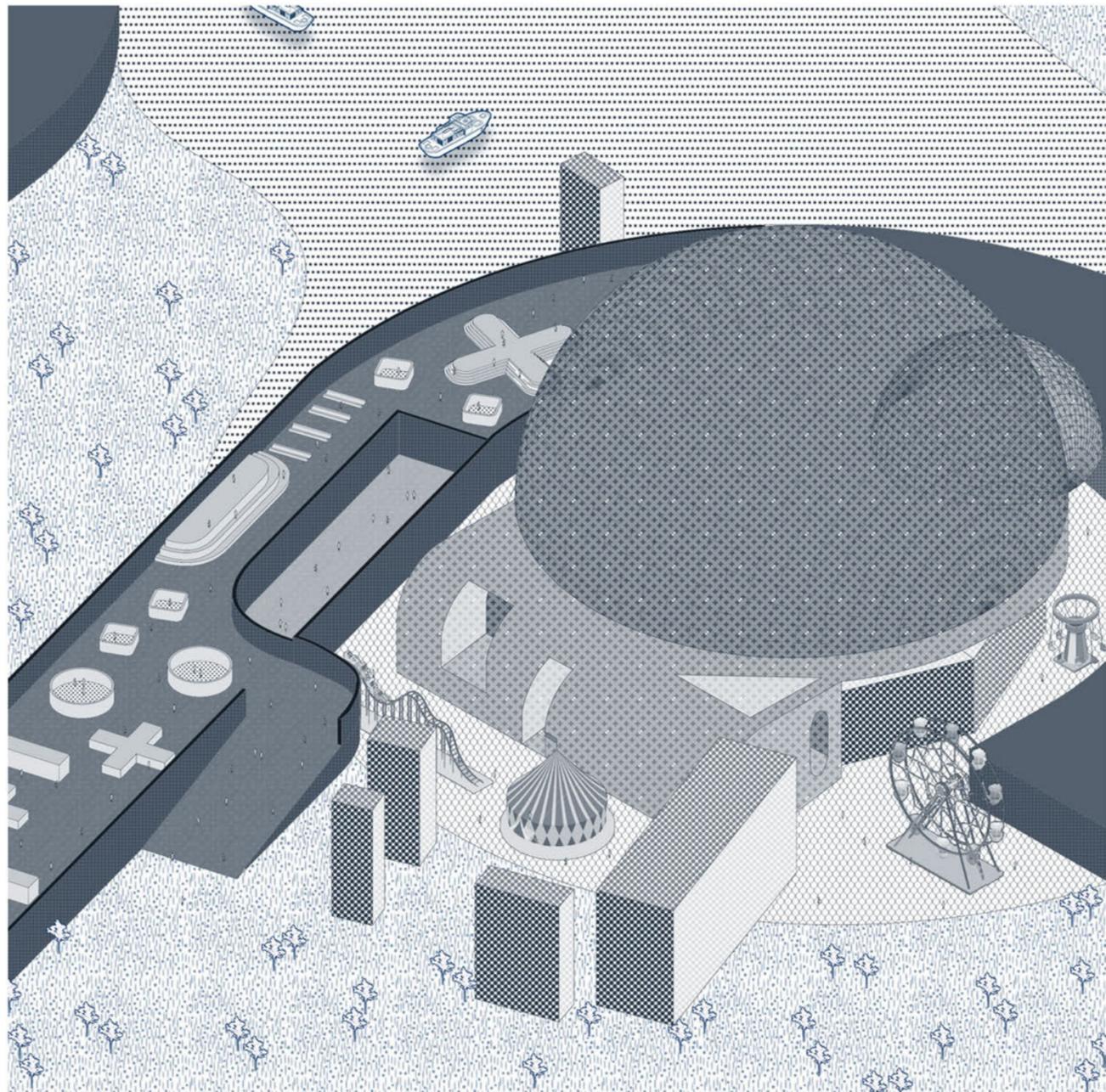
A toll house inside the imperial palace as a paradise for anime lovers. Cosplay conventions, manga book store and everything anime related are put within one place for people to gather. While some other activities such as traditional Japanese culture clubs and motor clubs are also included.



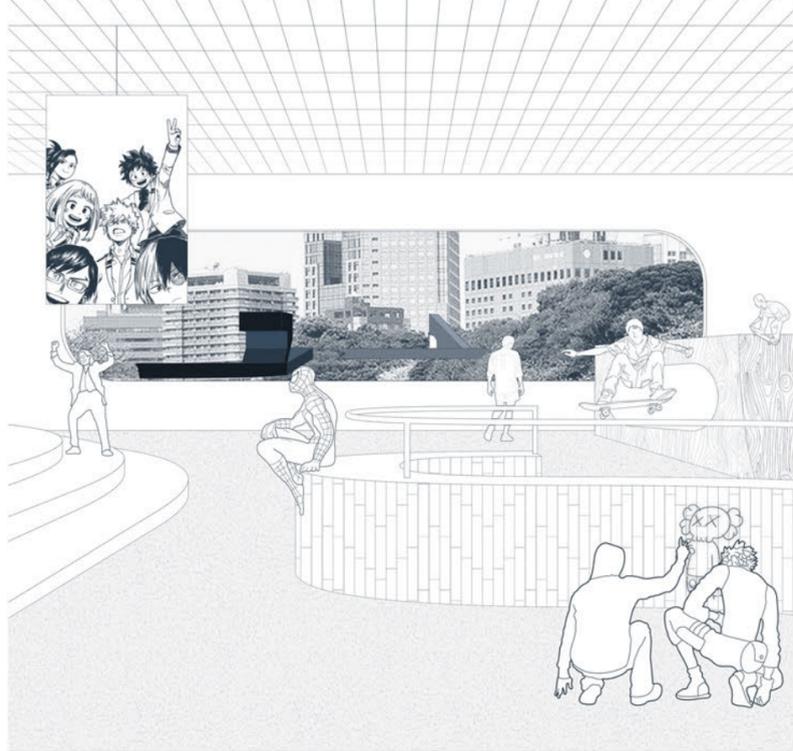


EXTREME SPORTS TOLL HOUSE

A toll house floating on top of the Nippon Budokan in the Imperial Palace. The mixture of extreme sports activities in the space could attract audience going to see the sumo match trying sumo on their own or other novel activities.



■ UNEXPECTED ENCOUNTERS WITHIN THE SPACES



Both the toll houses and the continuous ribbon forms spaces of social clubs to stimulate unexpected encounters with people of different interests through transparency from one and other. For example, a person who is interested in cosplay and anime culture is going to the cosplay social club, and he sees the skateboarding club right next to the cosplay social club. He then approaches the skateboarding members to learn how to spray paint his favorite anime character.

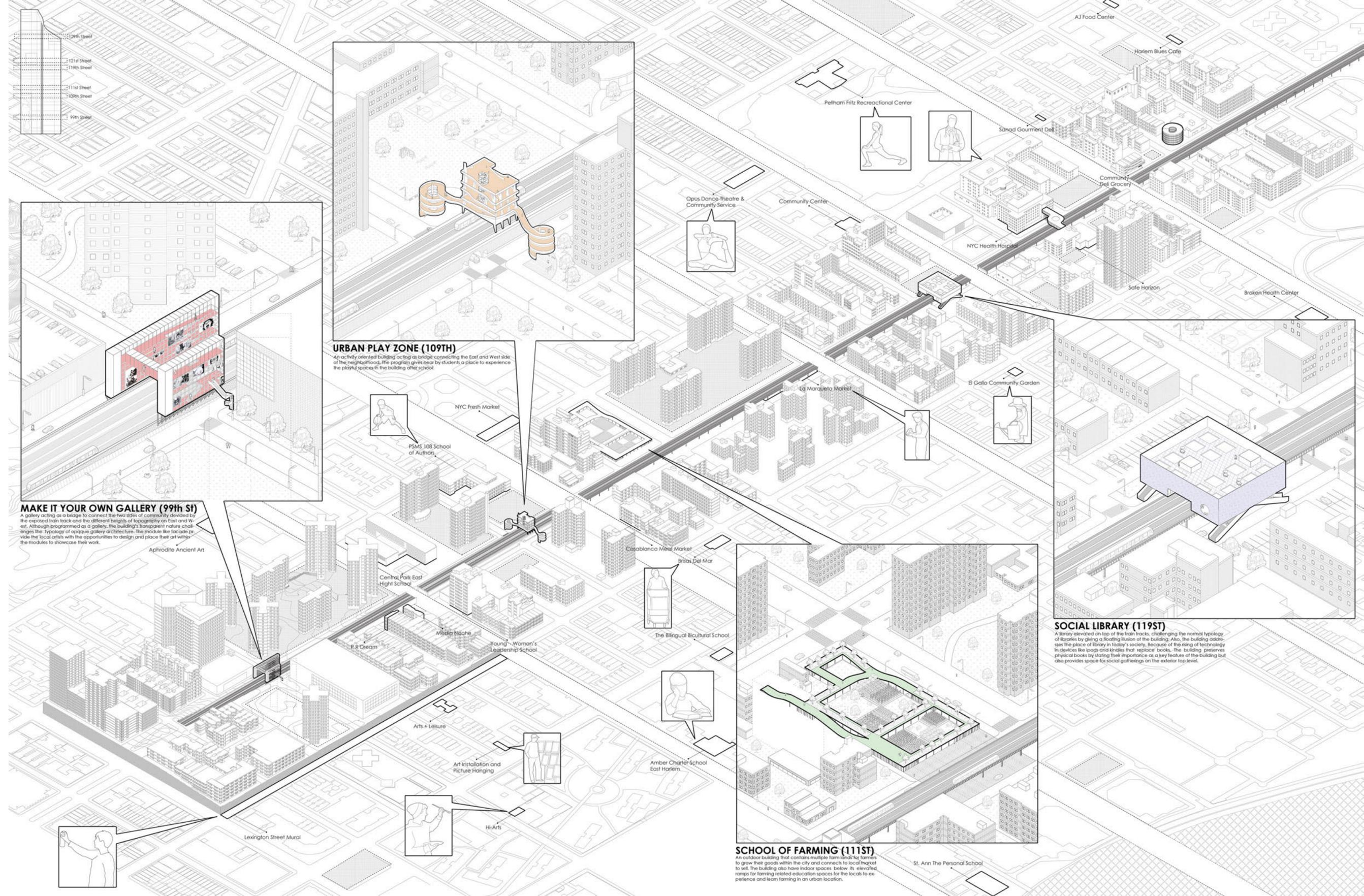
The ribbon goes in and out of city to reach different demographics of people. It touches the imperial palace at a moment to address the interaction between the old society and the new.



03 COVERING THE TRACKS ON PARK AVENUE

Studio Work, 2019 Summer
 Instructor: Nahyun Hwang & David Moon
 Partner: Qiazi Chen

Park Avenue in New York City cuts all the way from the Southern tip of Manhattan island to the North. Underneath the avenue lies the subway system that runs the city since a long time ago. However, the subway track exposes itself and comes up to the ground level on 97th street. Which creates a rather obvious boundary on the North side of Park Avenue that influences the neighborhoods in the North quite drastically. Our project aims to reduce the separation of the East and West by connecting them through devices of architecture while also providing more program on the North side of Park Avenue.

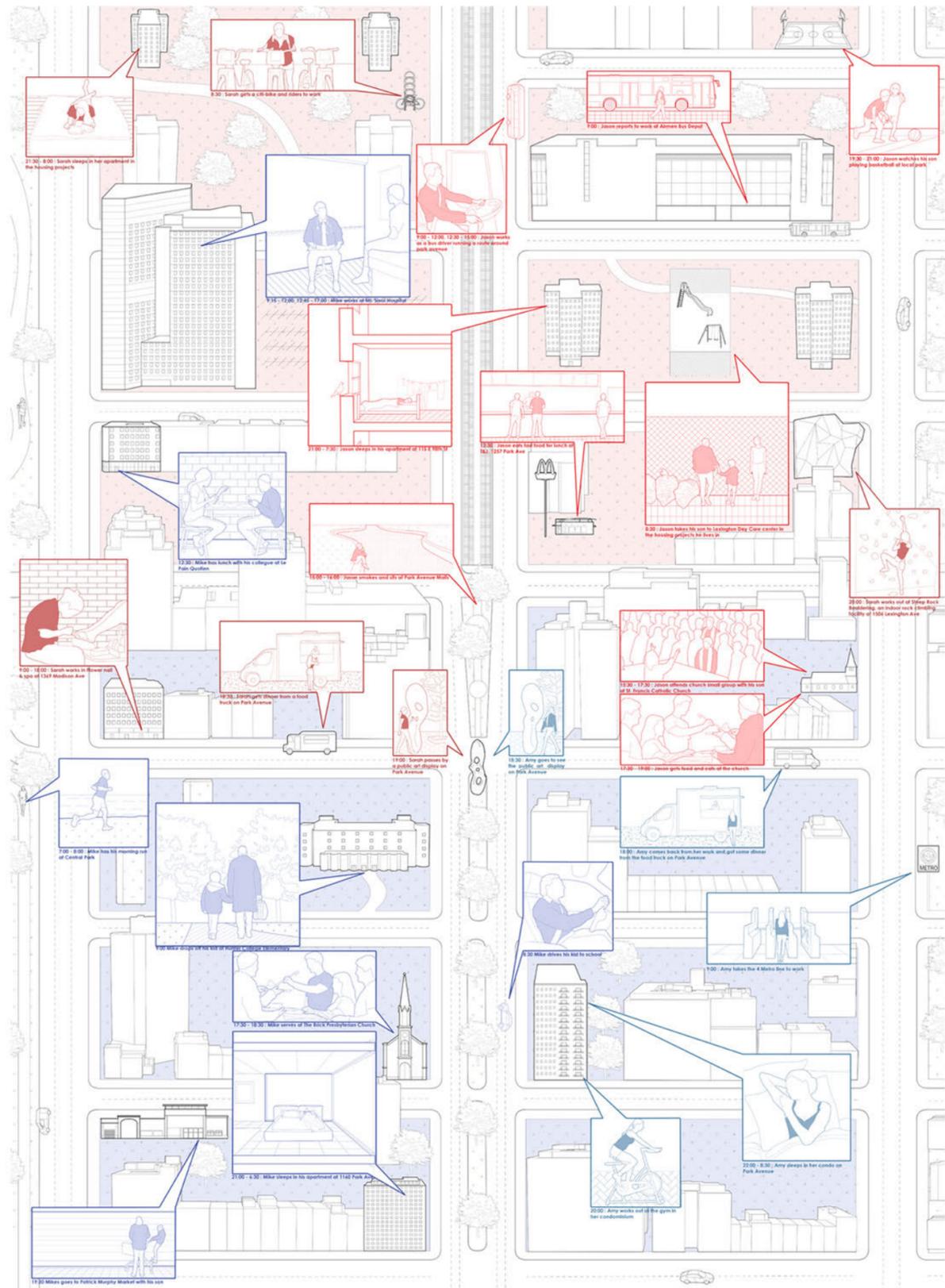


MAKE IT YOUR OWN GALLERY (99th St)
 A gallery acting as a bridge to connect the two sides of community divided by the exposed train track and the different heights of topography on East and West. Although programmed as a gallery, the building's transparent nature challenges the typology of opaque gallery architecture. The module like facade provides the local artists with the opportunities to design and place their art within the modules to showcase their work.

URBAN PLAY ZONE (109TH)
 An actively oriented building acting as a bridge connecting the East and West side of the neighborhood. The program gives near by students a place to experience the playful spaces in the building after school.

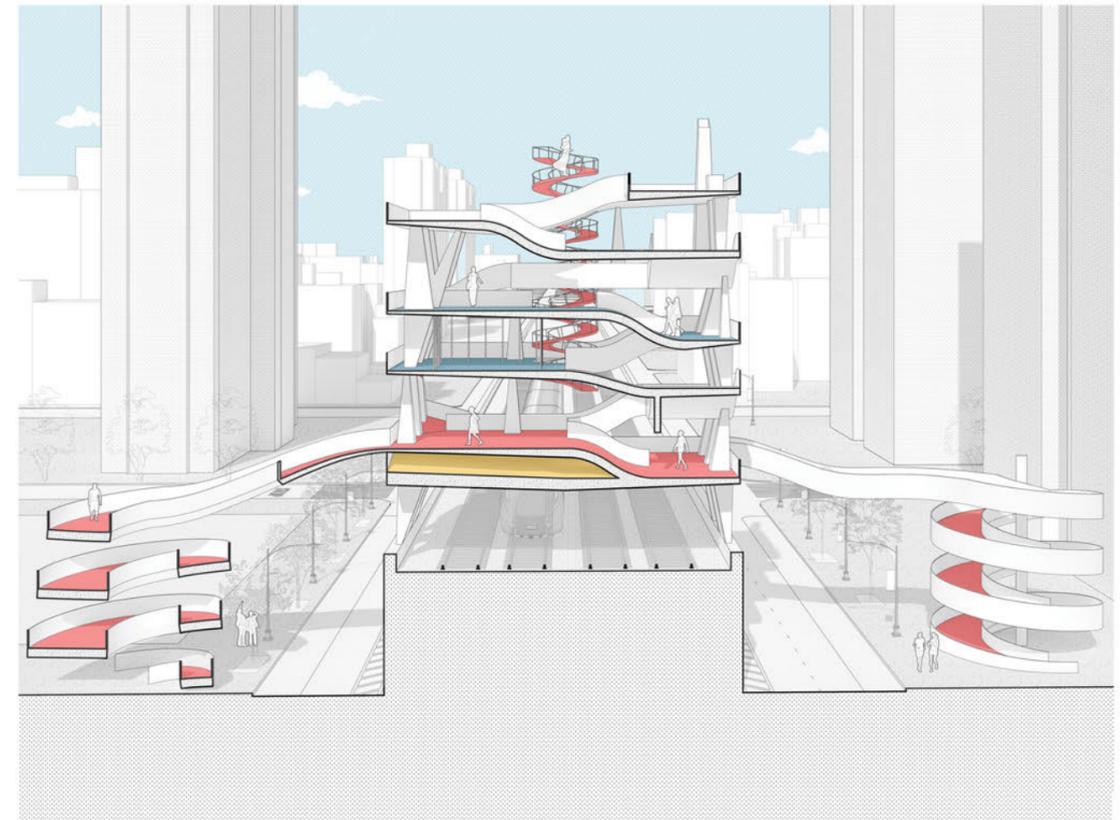
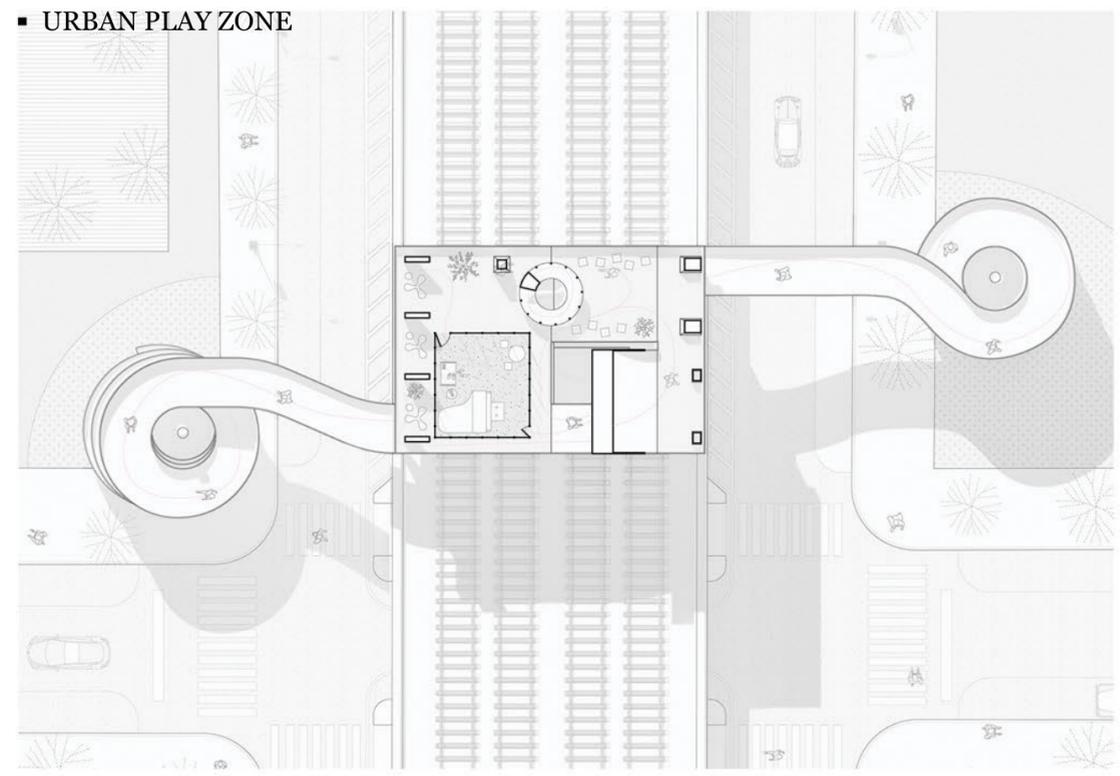
SOCIAL LIBRARY (119ST)
 A library elevated on top of the train tracks, challenging the normal typology of libraries by giving a floating illusion of the building. Also, the building addresses the place of library in today's society. Because of the rising of technology in devices like books and knives that repair books, the building preserves physical books by stating their importance as a key feature of the building but also provides space for social gatherings on the exterior top level.

SCHOOL OF FARMING (111ST)
 An outdoor building that contains multiple farm kinds for farmers to grow their goods within the city and connects to local market to sell. The building also have indoor spaces below its elevated ramps for farming related education spaces for the locals to experience and learn farming in an urban location.



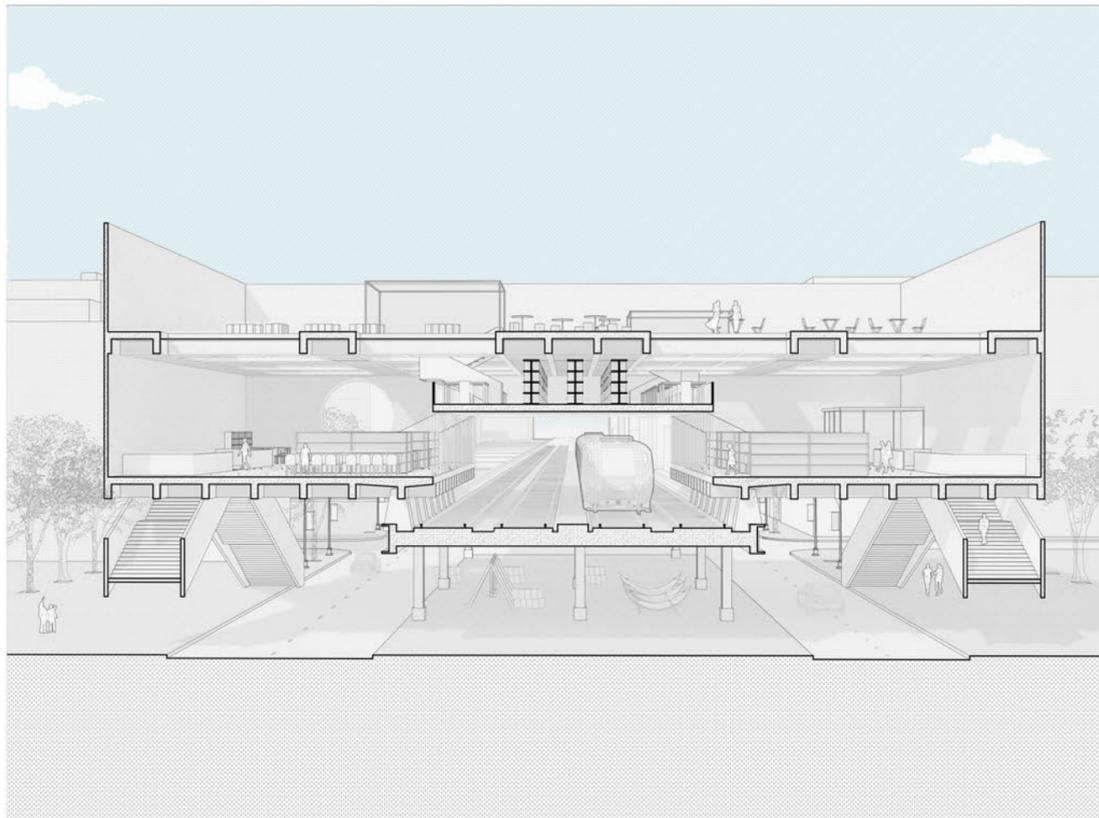
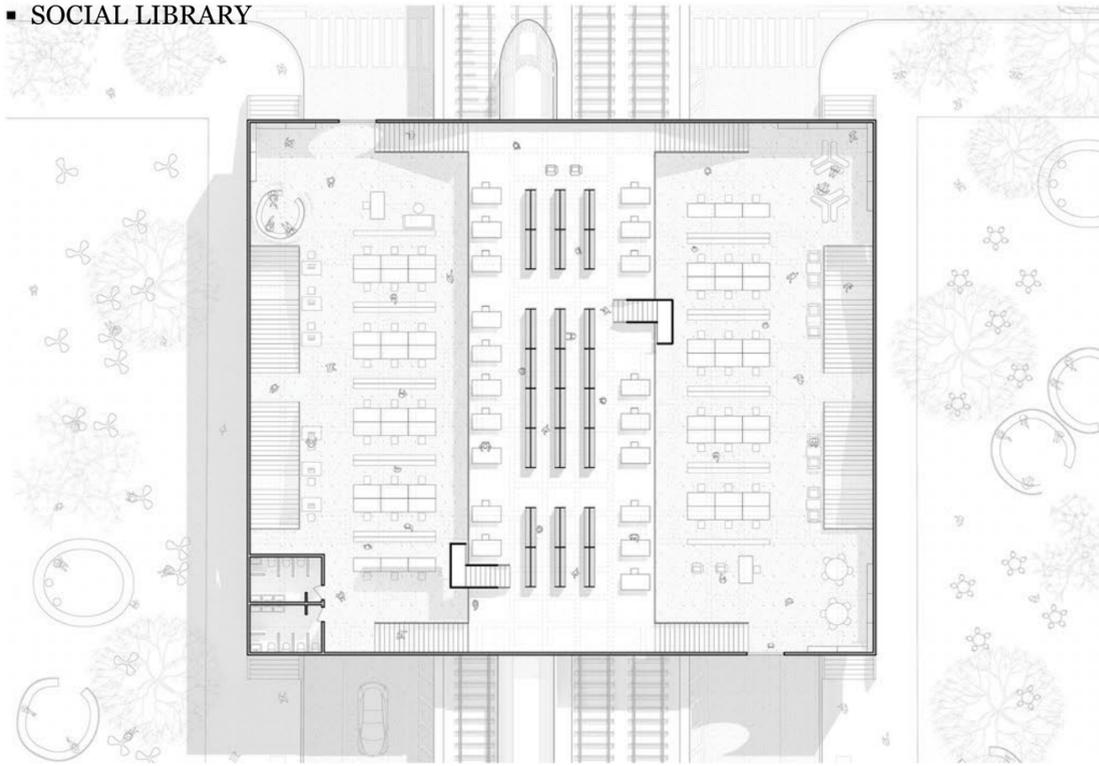
The North and the South side of the 97th street and Park Avenue lives two very different demographics. Although the activities they participate in throughout the day are similar, the proximities of the activities are far apart. The blue in the drawing represent the higher income demographic, the red in the drawing represent the higher income demographic.

■ URBAN PLAY ZONE



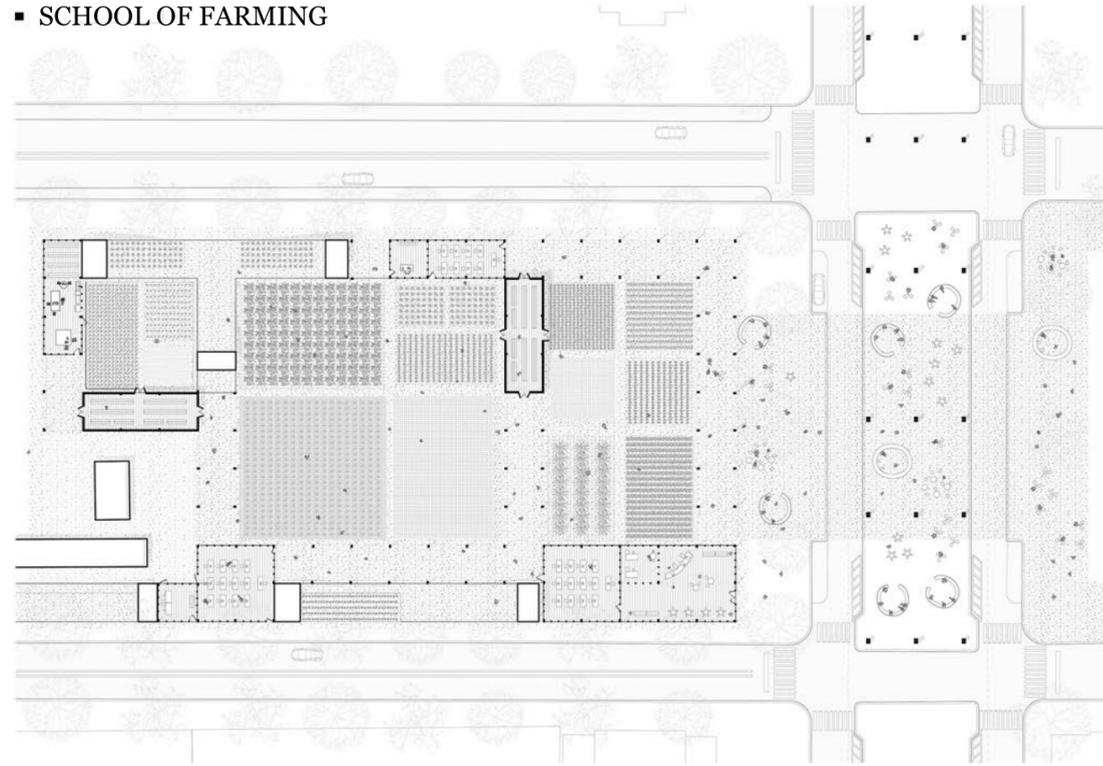
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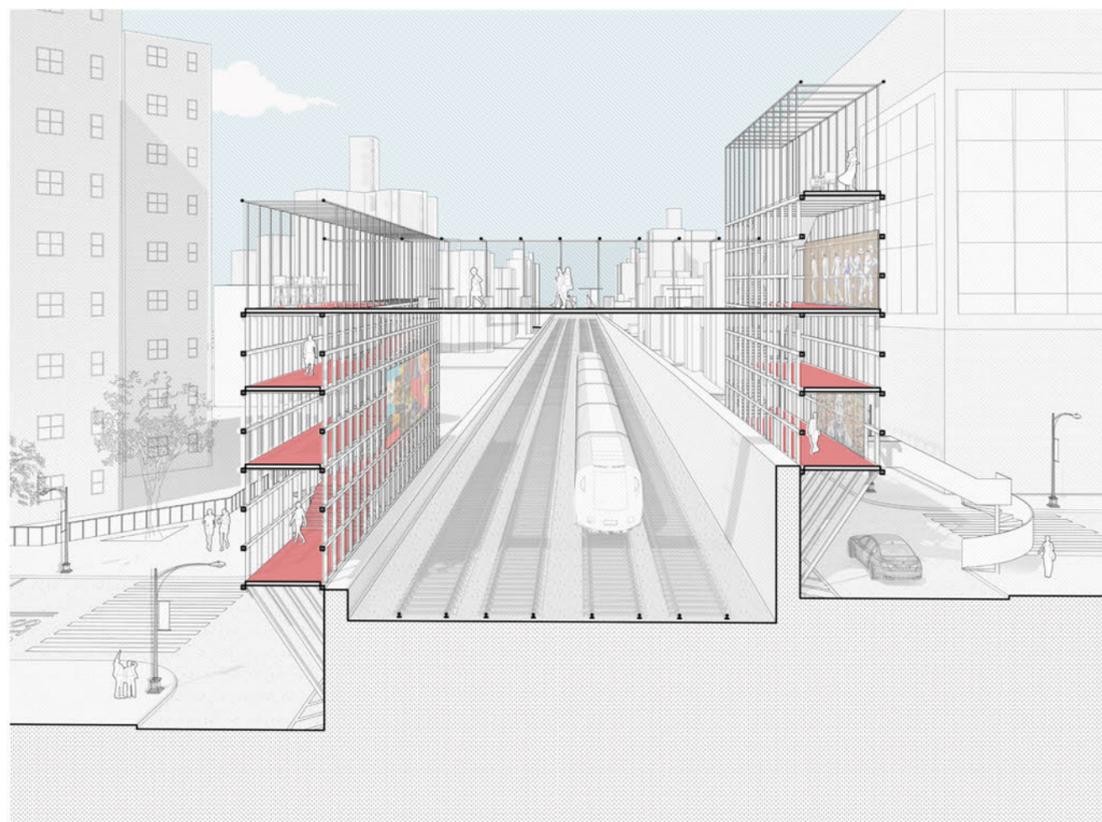
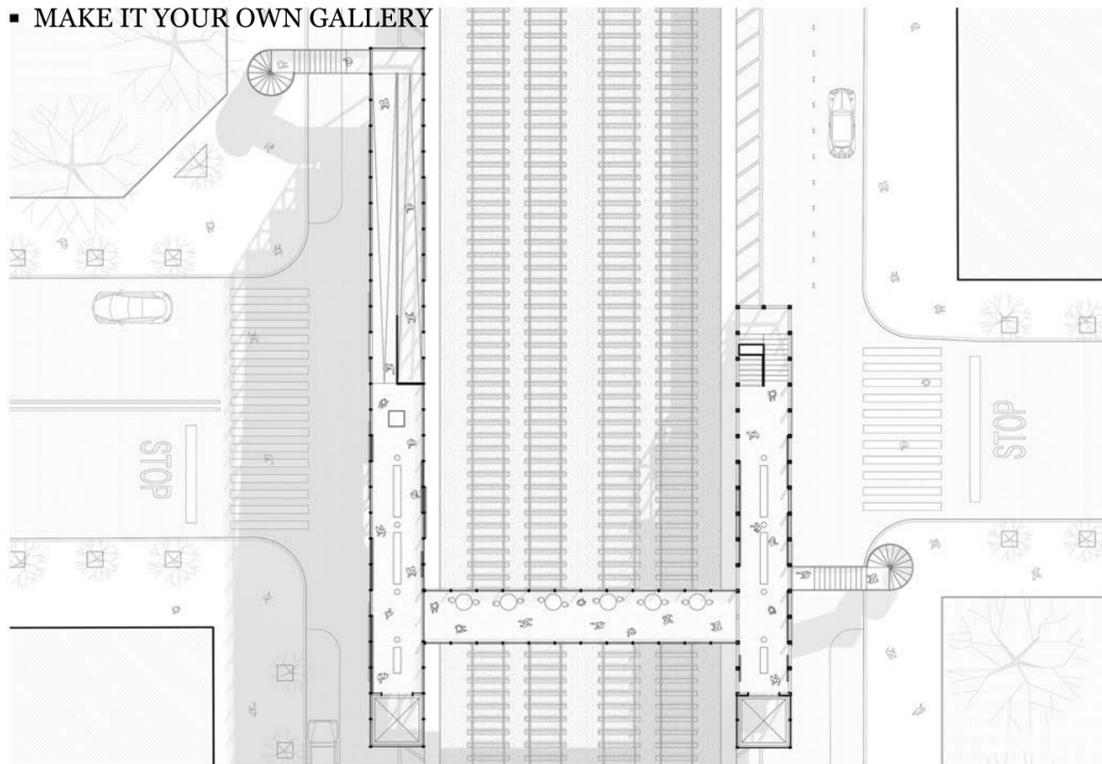
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