Rui Wang

Collection of woks in MSAAD, GSAPP

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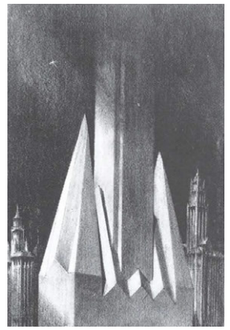


Theoretical envelope of 1916 Zoning Law appearing between the Municipal Building and theWoolworth (rendering by Hugh Fernss).
-Delirious New York

Prologue

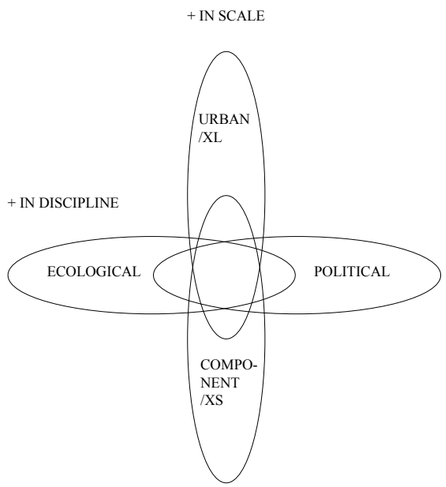
Zaero-Polo, Alejandro said in his 'The Politics of the Envelope' that 'Architects' traditional role as visionaries (and ideologists) has become redundant as the sheer speed of change overtakes their capacity to represent politics ideologically', which indicates the context of nowadays architects that ecological and political agents increasingly challenge the conventional autonomy of architecture.

What would the future architecture would be? What are the attitudes and weapons for us archtects?

ARCHITECTURE AS PERSUASION
Architecture+ is the menifesto that architecture acts as the medium and persuasion to be engaged in urban environment, human & society for future changes.

Architecture+ has its double meanings: The first is that to engage ecological and political issues in the discipline of architecture to argue its contemporary meanings and make futural proposals both theoretically and formally under interdisciplinary thinking.

The second is that as Koolhaas said that 'It is a tragedy that planners only plan and architects only design more architecutre'. The architecture nowadays shifts in its scales from infrastructure, landscape to structure, components. The envelopes and the programs of the architecture are seperated to deal with issues at different levels such as the urban scale and the indoor space.



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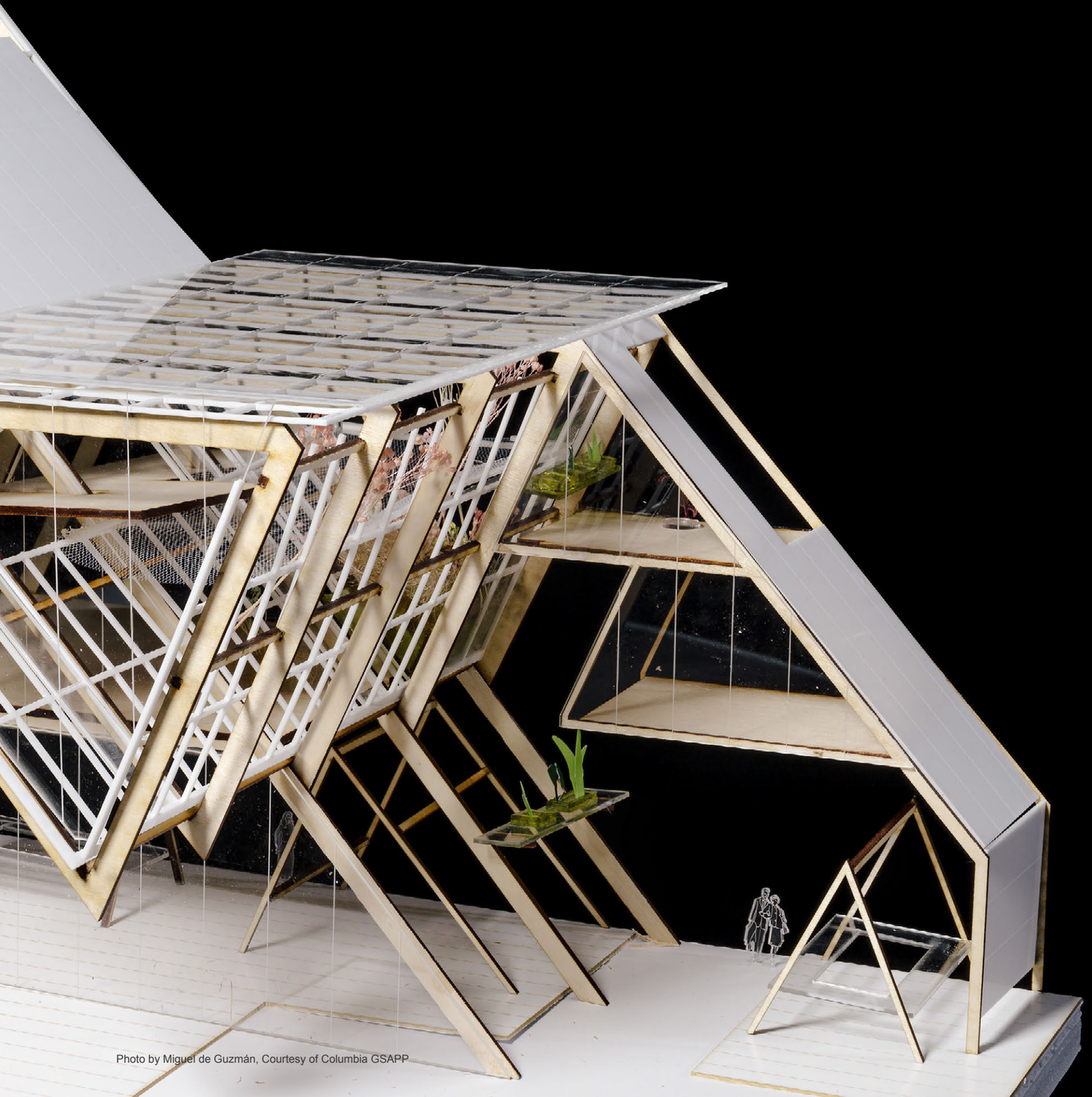
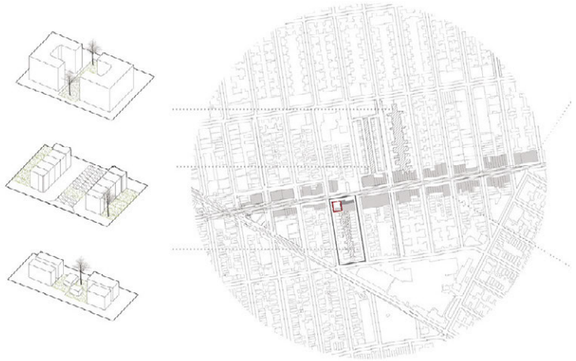


Photo by Miguel de Guzmán, Courtesy of Columbia GSAPP

CHILDCARE+

-A proposal for Green New Deal based on CLT

Fall Studio in GSAPP
Instructor: Bryony Roberts
Individual Work
2019.9-12



Jackson Heights: What the post-new garden city would be?

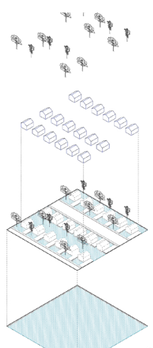
Queens County is among the most diverse areas in the entire United States, where Jackson Heights locate. It was heavily influenced by Howard's 'Garden City' movement in 1899.

And after that, Thomas was building a Garden City-within-a-city, contrast to Howard's garden city, to balance the desire for open space with the needs of a New York commuter. Because of Thomas's emphasized interior garden space, living in Jackson Heights was like being a member of a club. And like any country club, access to Jackson Heights was limited.

Initially built as 'restricted residential community', in general the communities are unwelcoming to outsiders. However, as Jackson Heights serve as an antidote to urban Manhattan, it becomes the most diverse suburban areas, with still limited green space access and public space.

What would the post-new garden city would be?

Sources:
https://ny.curbed.com/2017/4/19/15328342/jackson-heights-queens-history
https://en.wikipedia.org/wiki/Community_land_trust



Creditted to Nika Tepper

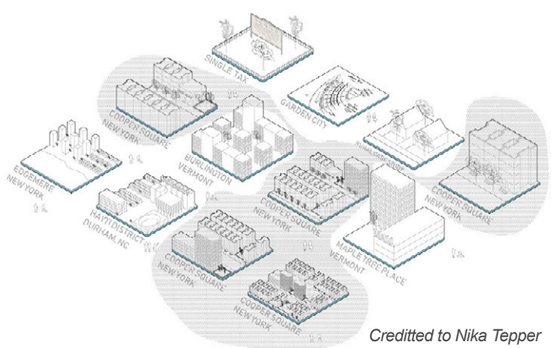
Community Land Trust(CLT), Childcare, Green Space & Commercial Retails

-What the future of these small business would be?
Jackson Heights has the tradition of small retail commercial business, which`are gradually removed and replaced by large shopping mall such as target, leading to more gentrification in this area.

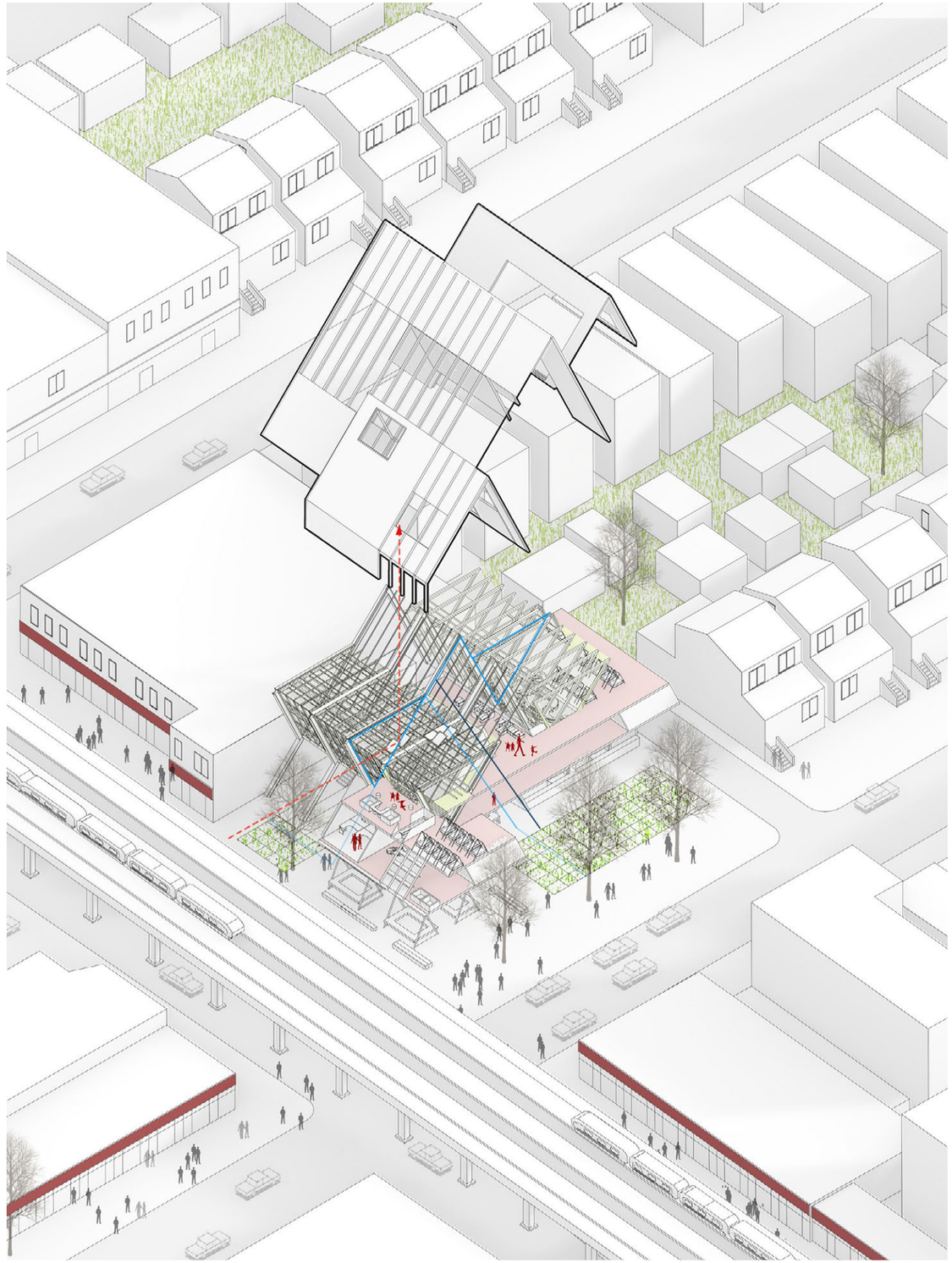
-What the future of green space would be?
The green space is extremely limited and most are in the form of backyard space which is owned privately and underutilized.

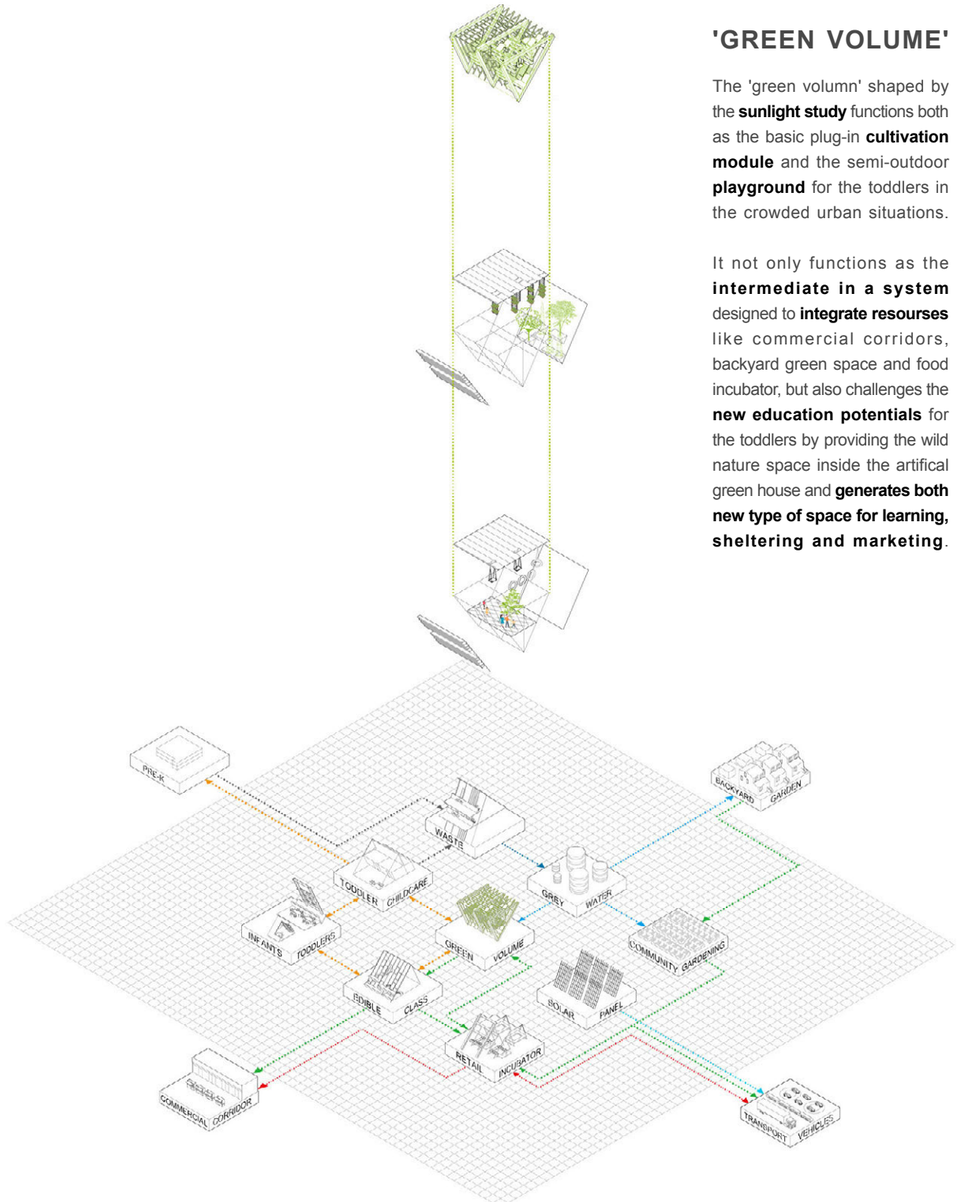
-What the new mode of the childcare center would be in the new ethic?
Considering the limited street space occupied by commercial business, cars, retial carts and pedestrians, the childcare centers face difficult environment.

-Community Land Trust (CLT)
A community land trust (CLT) is a nonprofit corporation that develops and stewards affordable housing, community gardens, civic buildings, commercial spaces and other community assets on behalf of a community.



Creditted to Nika Tepper





Water System

Gardening System

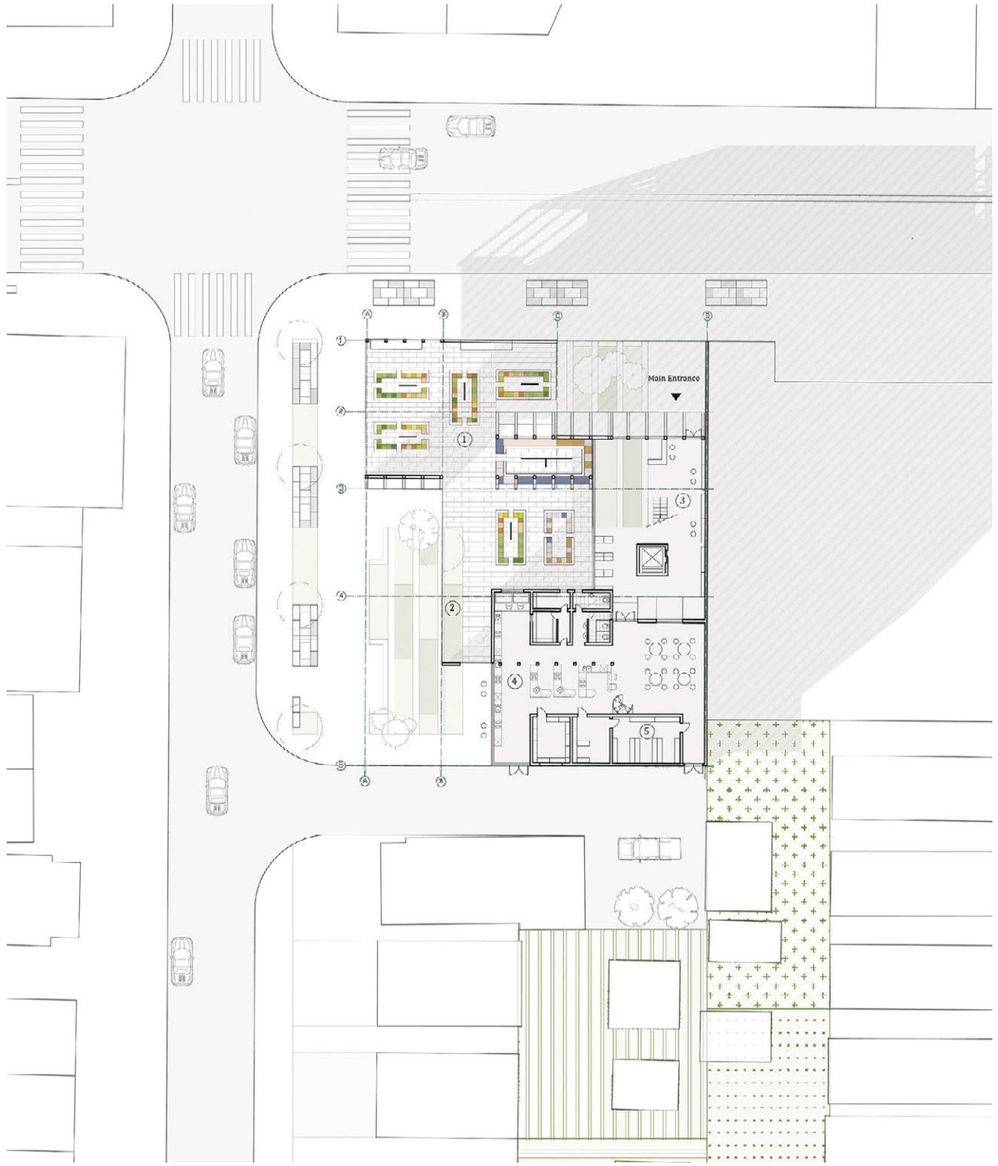
Commercial System

Childcare System

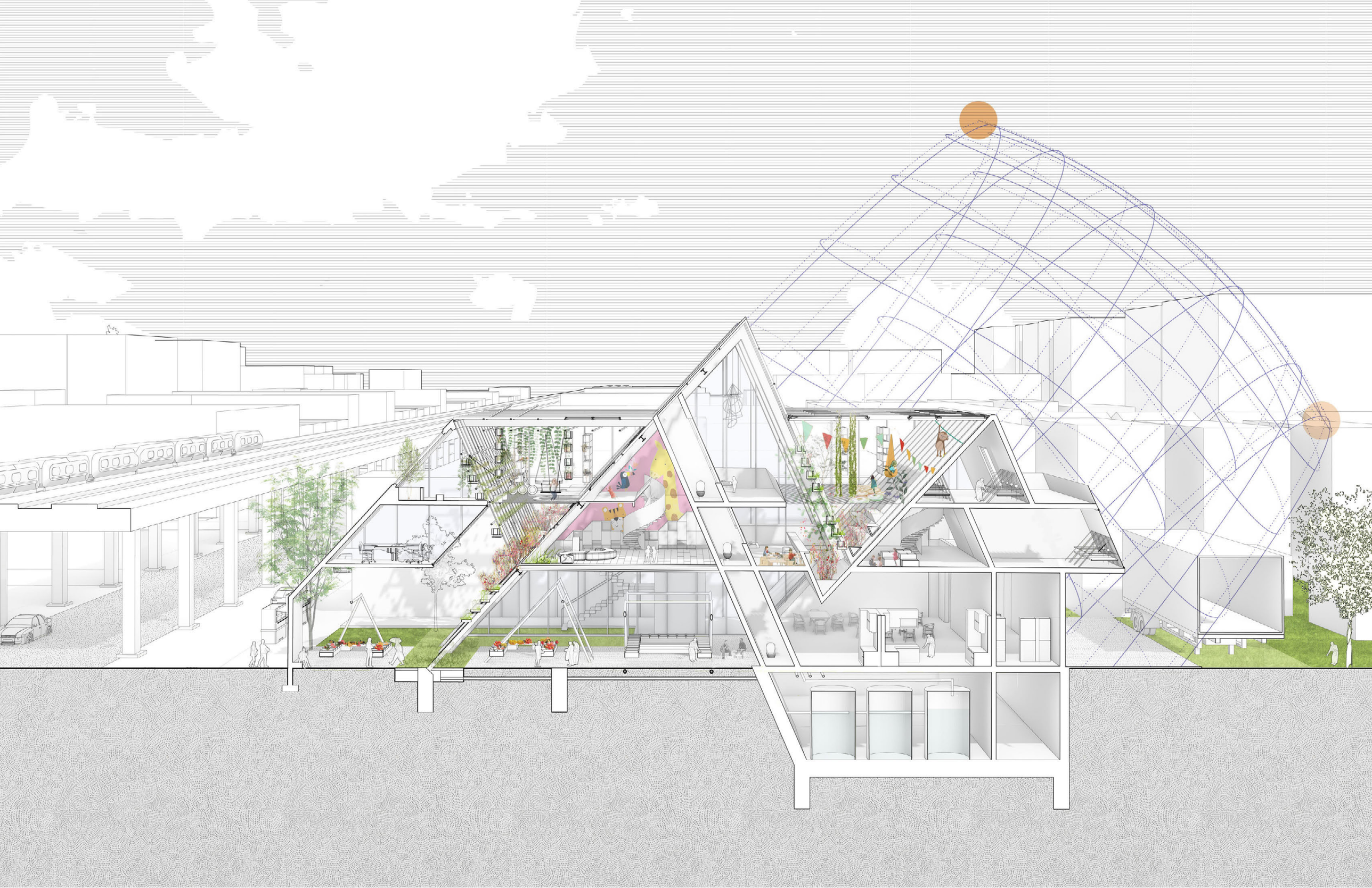
'GREEN VOLUME'

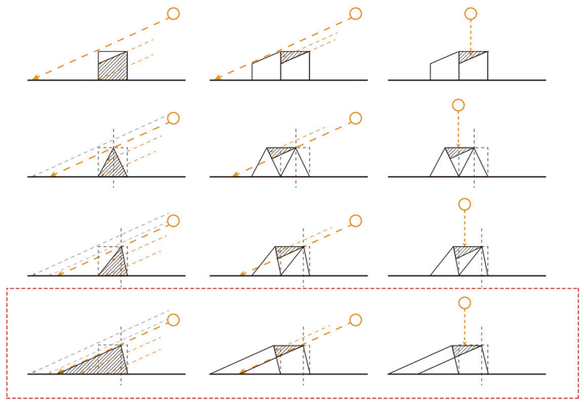
The 'green volumn' shaped by the **sunlight study** functions both as the basic plug-in **cultivation module** and the semi-outdoor **playground** for the toddlers in the crowded urban situations.

It not only functions as the **intermediate in a system** designed to **integrate resourses** like commercial corridors, backyard green space and food incubator, but also challenges the **new education potentials** for the toddlers by providing the wild nature space inside the artifical green house and **generates both new type of space for learning, sheltering and marketing**.

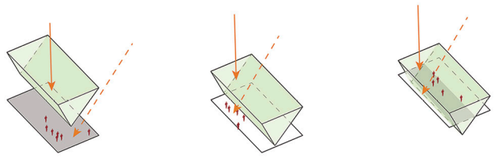


The first floor plan shows the intentions of generating the public Food Incubator combined with retail markets and public space both for the city and the community. **Could this be a kind of new paradigm for the infrastucture of the education institions+ other commercial and ecological agents?**

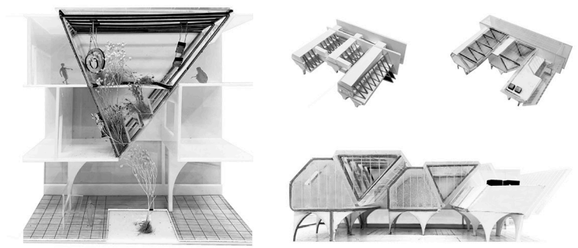




SUNLIGHT SUTY & SELECTION



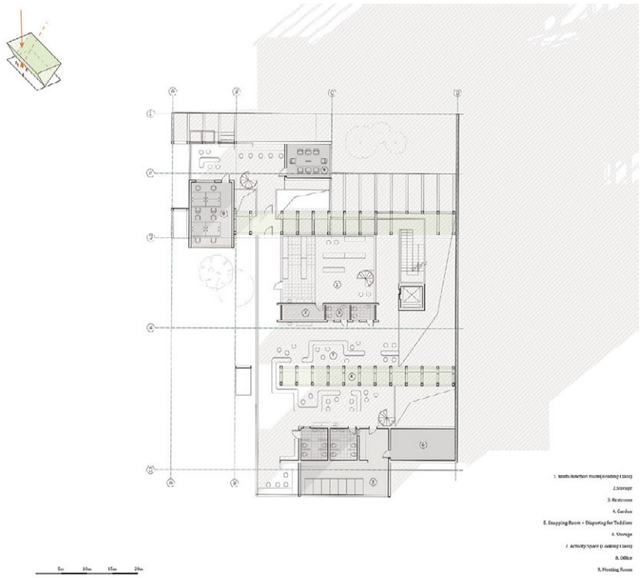
INTERVENTION OF GREEN VOLUME



MODEL IN PRCESS

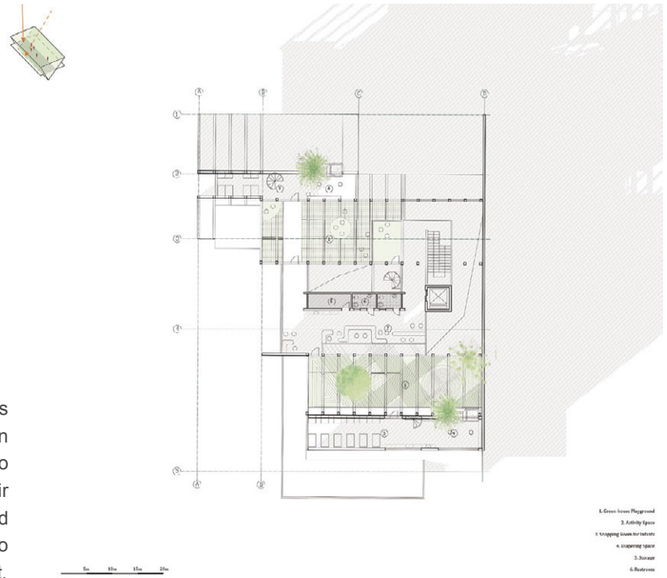
Green Module as the Greenhouse & Playground

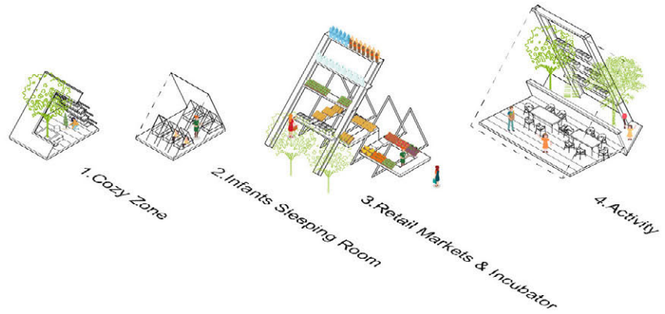
The green volume casts different influence to indoor space on different levels, providing the semi-indoor and outdoor playgrounds for the toddlers with a wild but protected playgrounds with controlled climate and greens.
The trampolines inserted and trees penetrating through explores new ethics for 'play' of kids in childcare center.

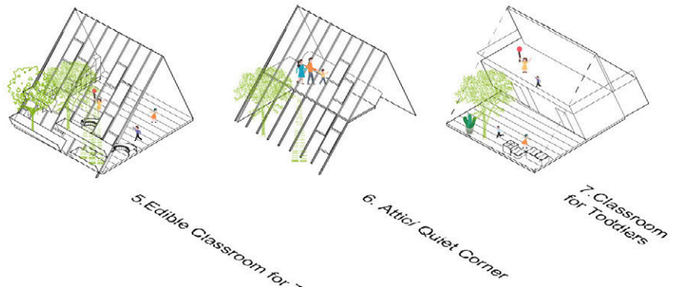


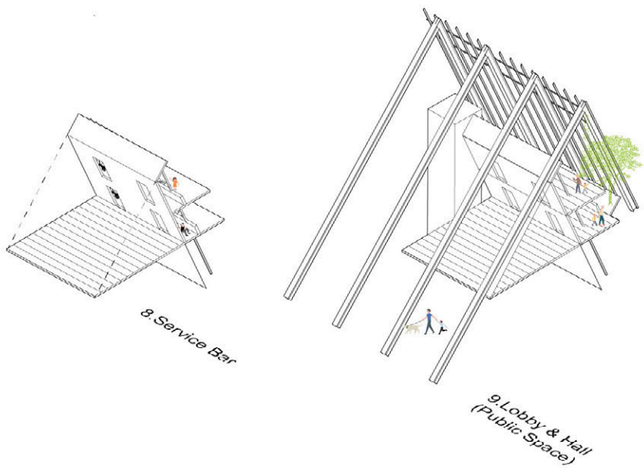
Edible school initiative

The green volume generates new potentials for education and explores the entension of **Montessori Method of Education** to engage children in interaction with their environments, enabling them to choose and act freely within an environment prepared to act spontaneously for optimal development.









INFANTS' ROOM

The triangular geometry provides new types of space for infants, generally quiet and small space with indirect sunlight and access to indoor playgrounds. Locating on third floor, the infants rooms are relatively isolated from the noise environment and maximize the use of space.

COMMUNITY GARDENS & MARKET

The first floor is more public, closely connected to the urban environment and community gardens. With the food incubator, it functions both as the institution for the city and community.

COZY CORNERS

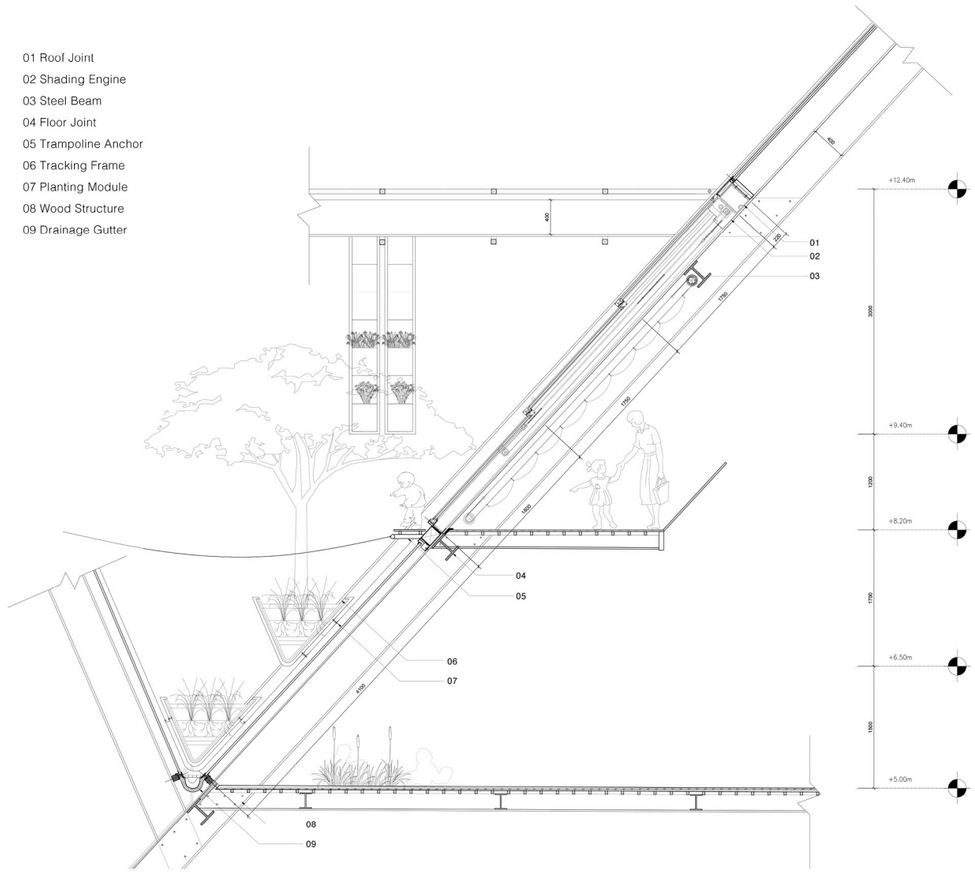
Contrast to the conventional enclosed classrooms, the space for kids are flowing space permeated into every corner of the building, with service columns penetraing inside.

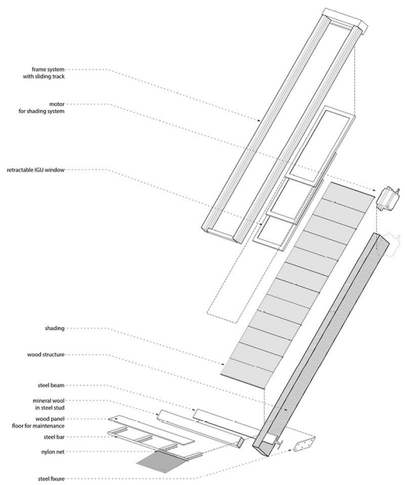
FACADE DETAILING

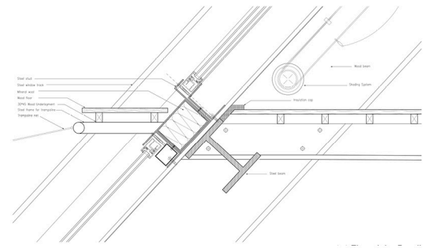
Instructor: Kevin Schorn
Spring Selective Course
Coorporator: Yining He

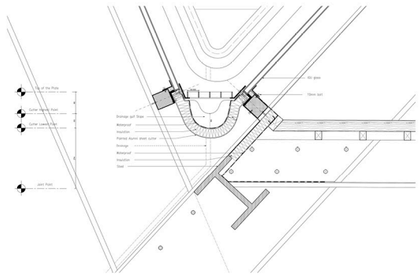
01 Roof Joint
02 Shading Engine
03 Retractable Window
04 Indoor Floor Plate
05 Steel Beam
06 Planting Module
07 Steel Beam
08 Drainage Gulf
09 Wood Structure for Plug-in Shelf
10 Retail Market

01 Roof Joint
02 Shading Engine
03 Steel Beam
04 Floor Joint
05 Trampoline Anchor
06 Tracking Frame
07 Planting Module
08 Wood Structure
09 Drainage Gutter









FACTORY HABITAT

-A silk factory habitat as the new pier prototype on Bush Terminal

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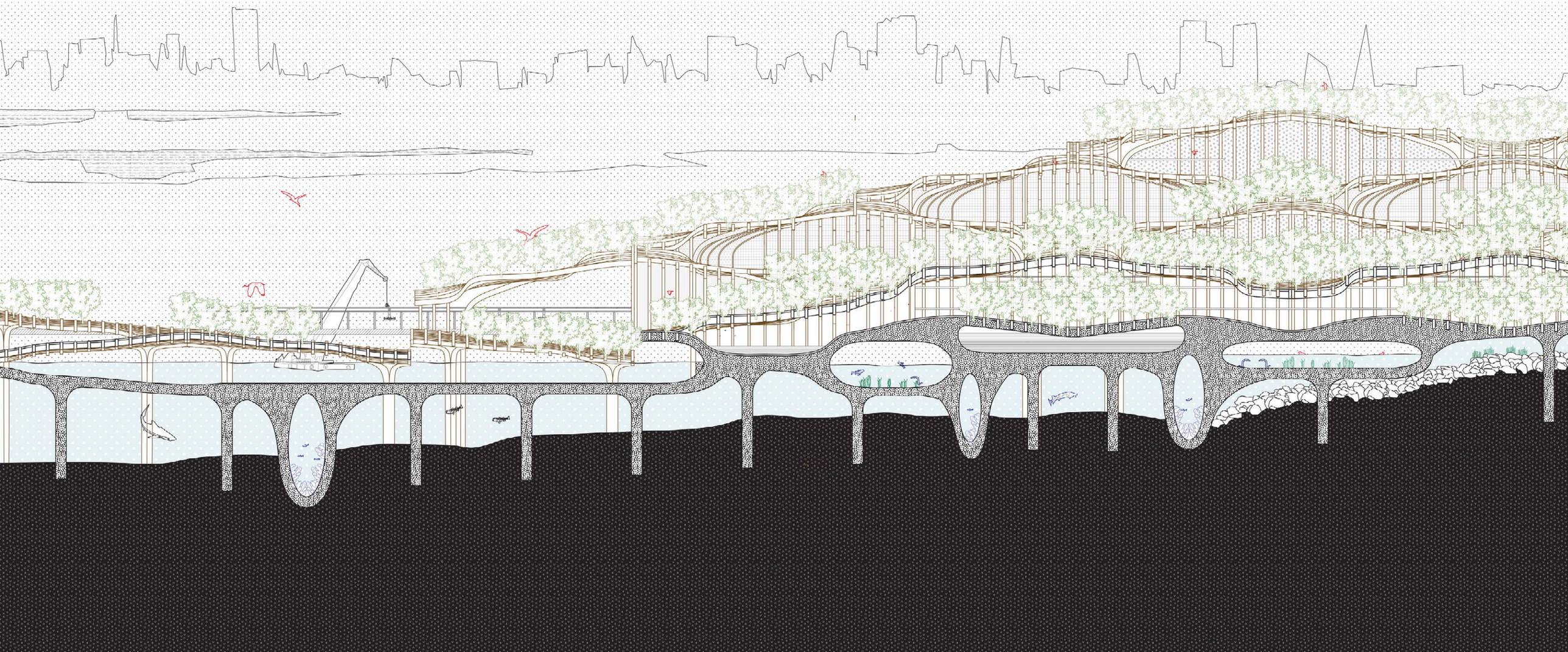
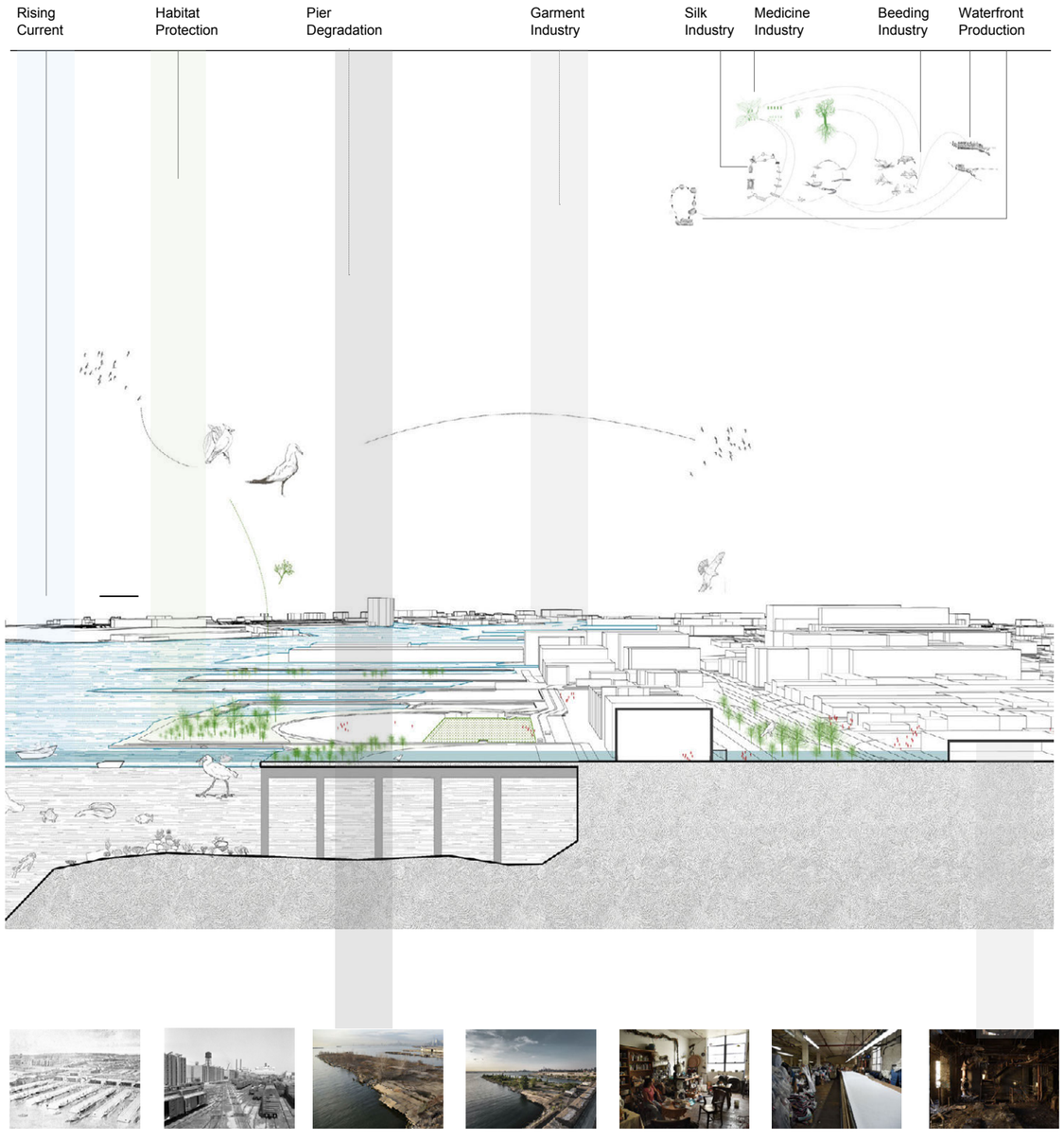
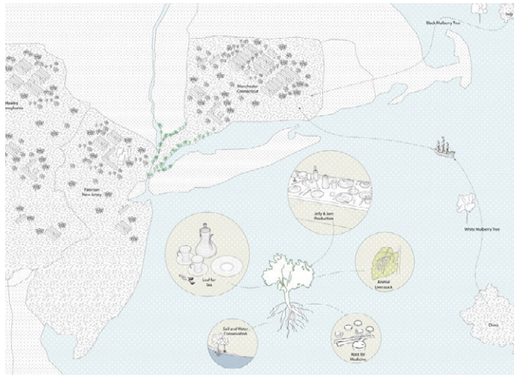
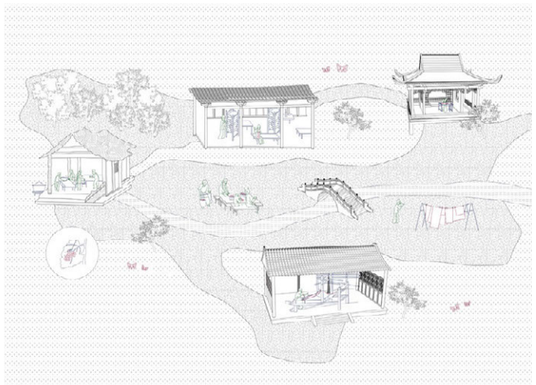
Spring Studio in GSAPP
Instructor: Mimi Hoang
Collaborator: Qingying Wang
2020.02-05



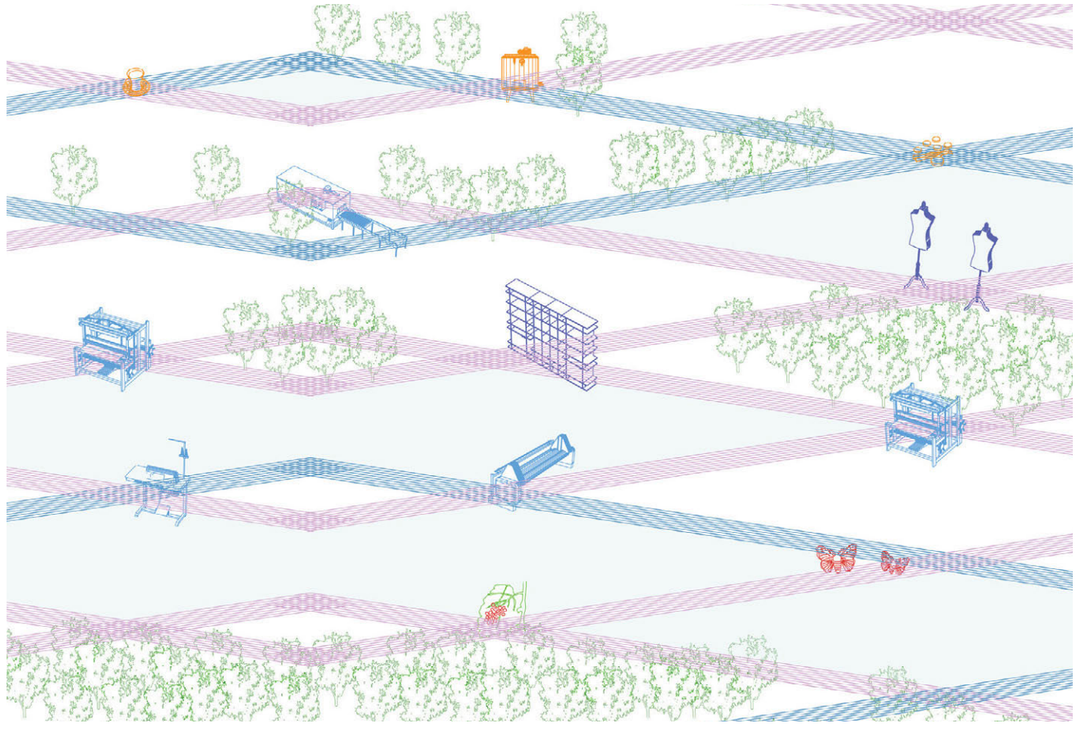




History of Silk Industry & Mulberry tree near New York

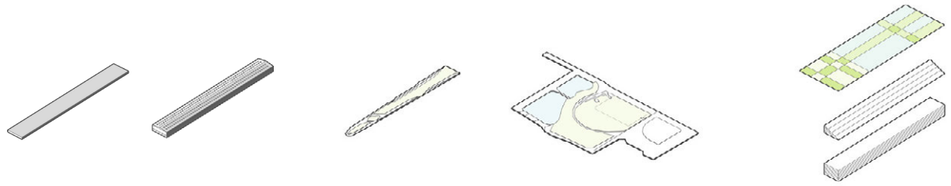


Traditional Ecology of Silk Industry(Creating Habitat)



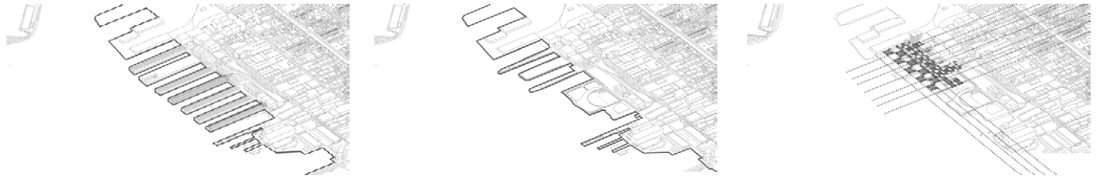
Weaving Factory, Waterfront & Habitat

Pier Typology/ Habitat Pier



Boarding Pier | Pier Building(Warehouse) | Eroded Pier | Pier Park | Pier Building + Park + Buffer

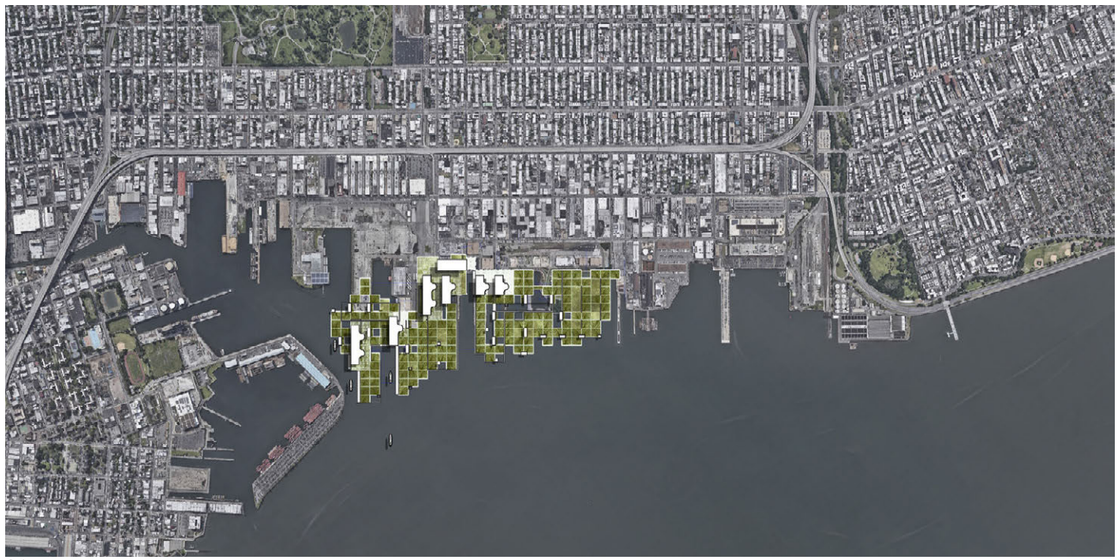
Factory Typology/ Habitat Factory

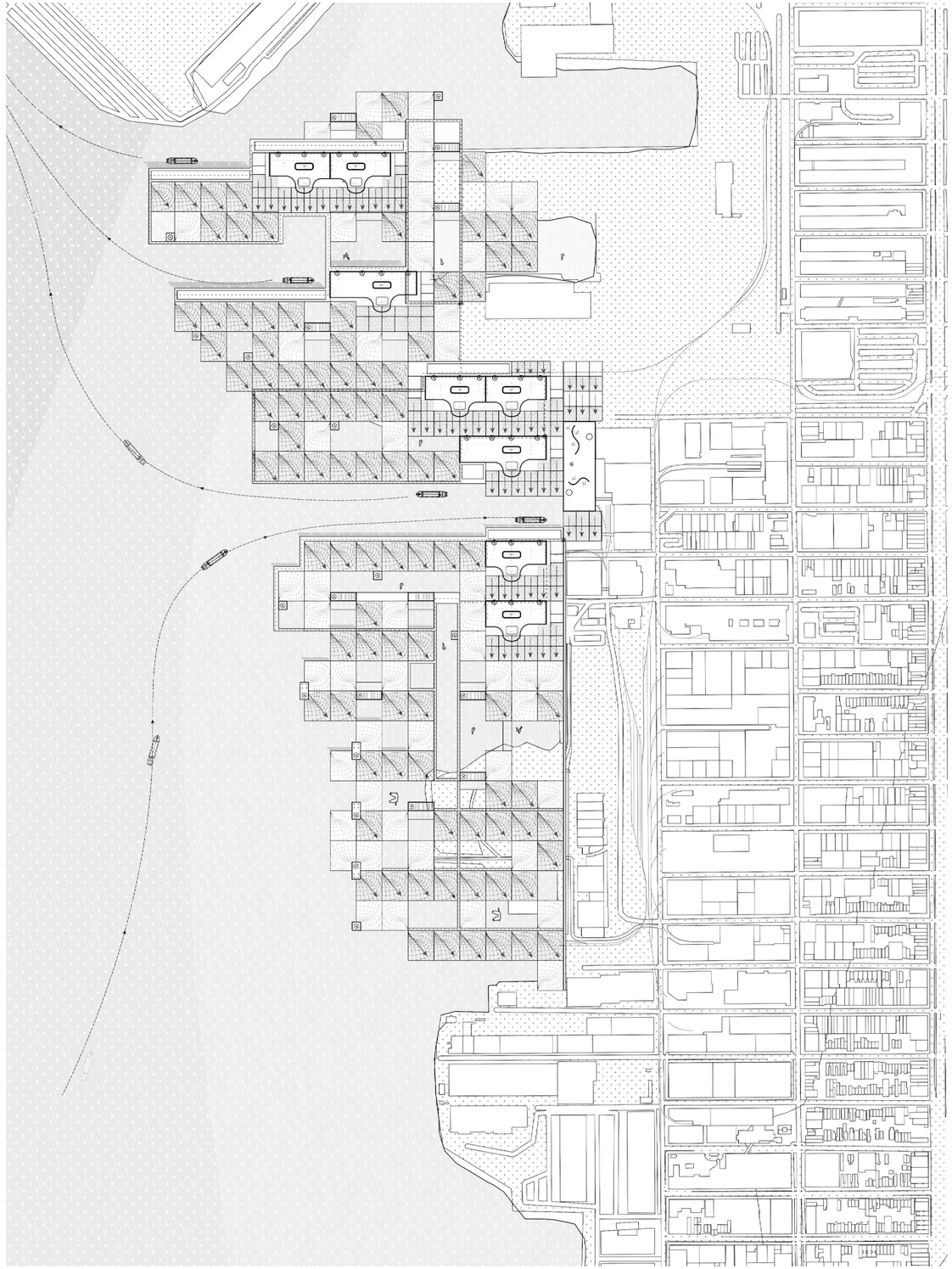


Linear waterfront | Erodede waterfront | Interweaving waterfront

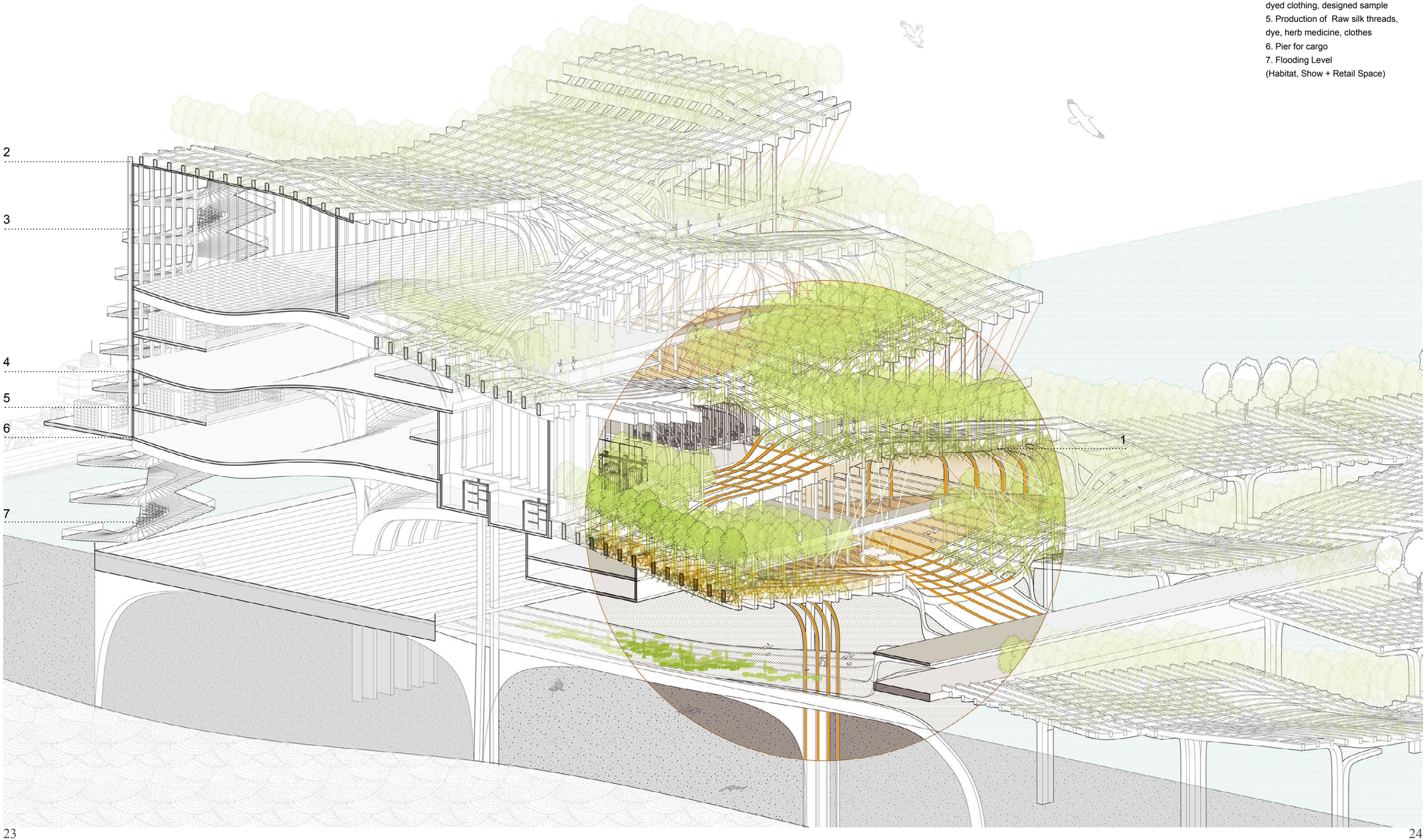
Site Analysis

Flooding zone | Industry Zone | Pier & Circulation | Overlapping Habitat Zone

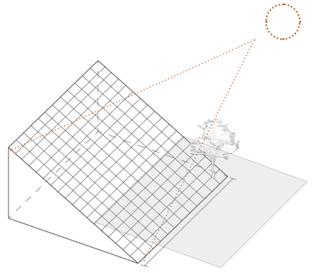




1. Silk Wormy Dome
2. Mountain Park
3. Gallery, Museum
4. Production of Undyed clothing, dyed clothing, designed sample
5. Production of Raw silk threads, dye, herb medicine, clothes
6. Pier for cargo
7. Flooding Level
(Habitat, Show + Retail Space)



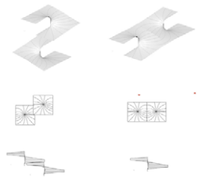
Planting Module



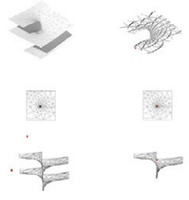
Slope & Buffter

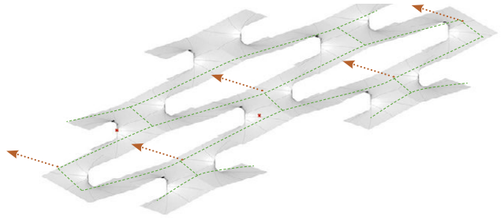
Modular Unit

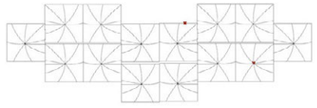
Circulation Type

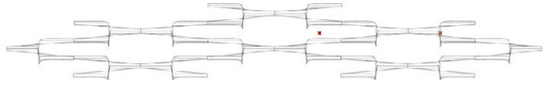


Structure Type

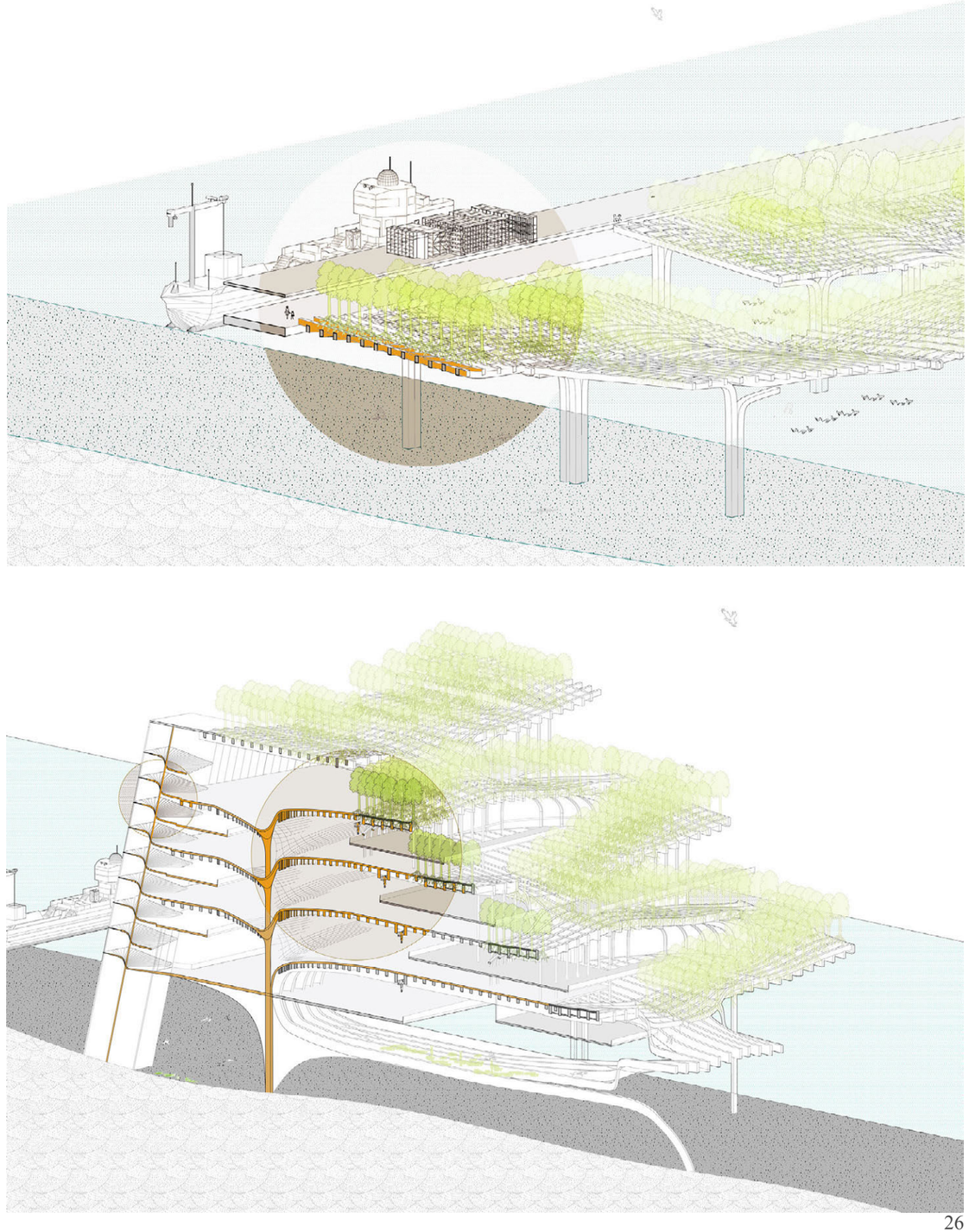




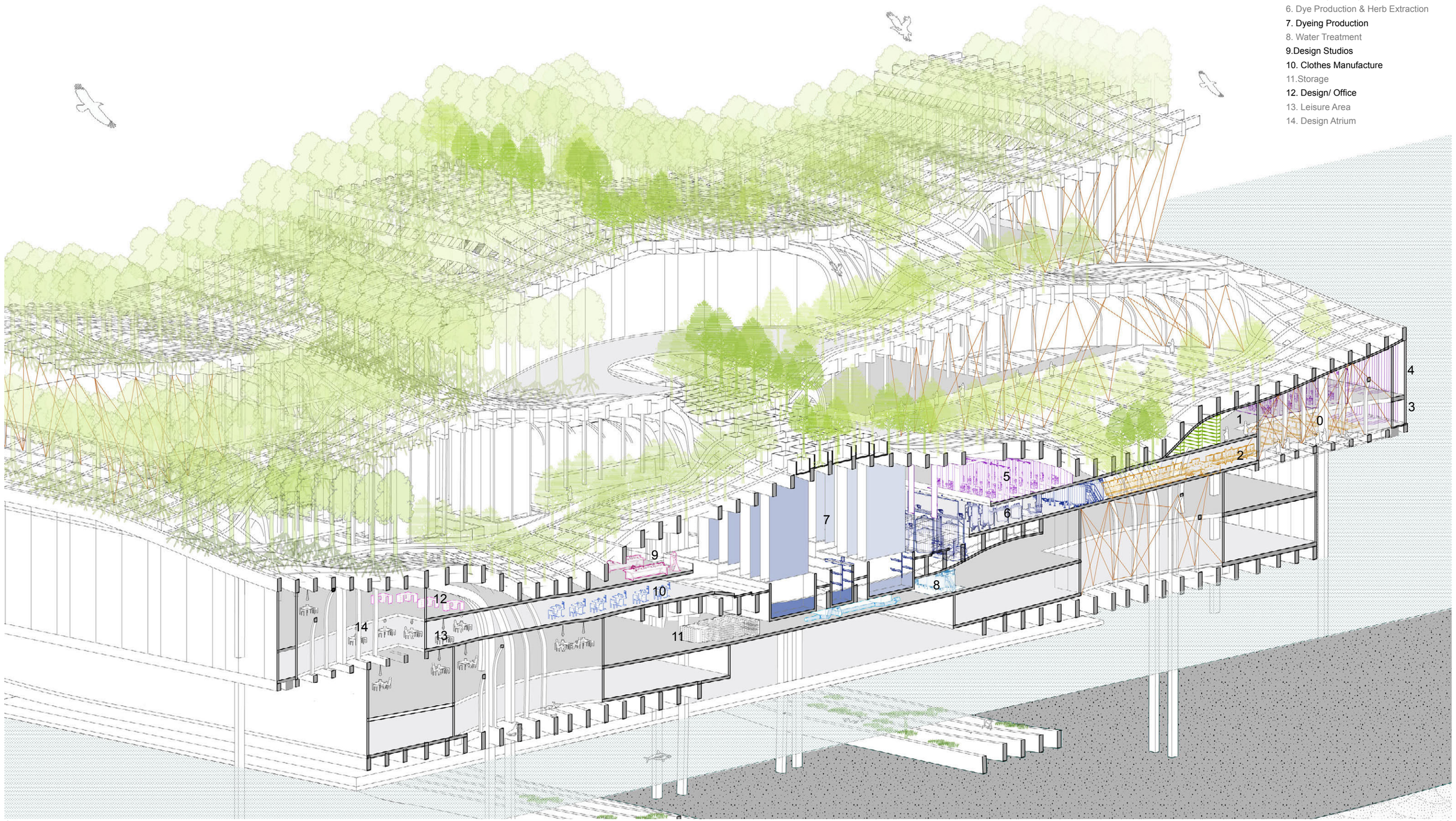




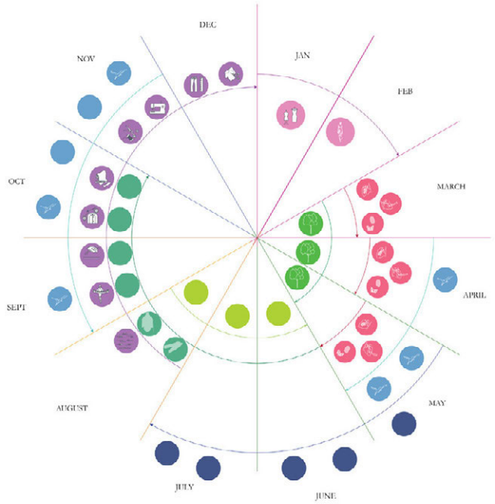
Landscape- Circulation- Space



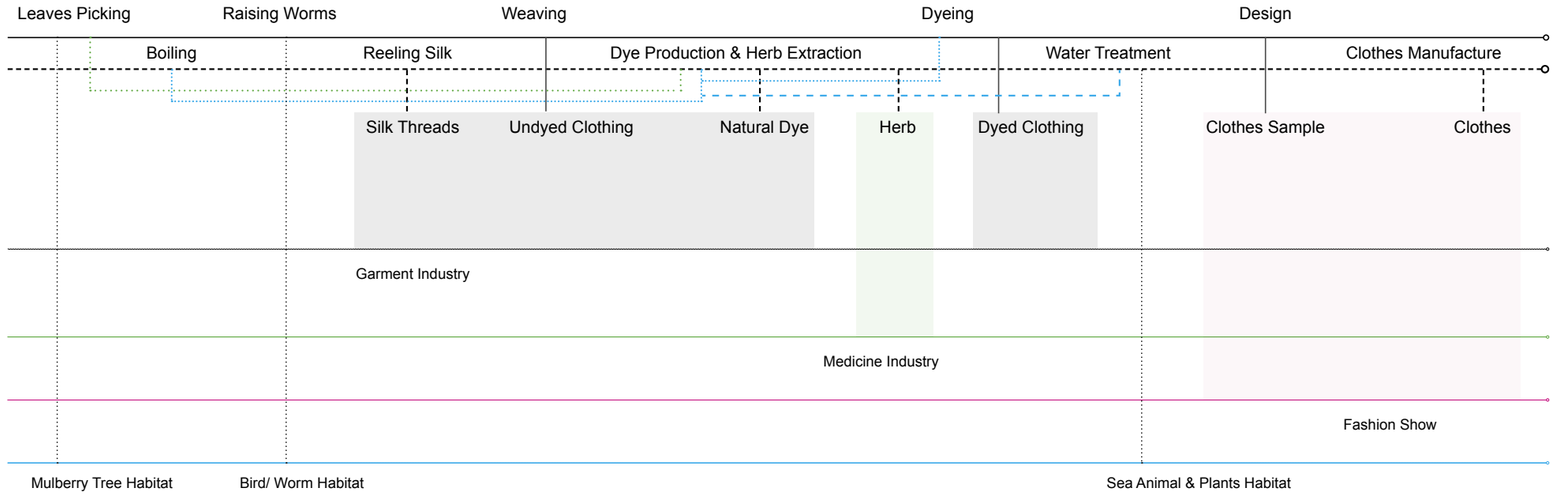
0. Silk Worm Raising Dome
1. Leaves Picking & Storage
2. Boiling
3. Reeling Silk
4. Weaving 1 (Threads)
5. Weaving 2 (Cloghing)
6. Dye Production & Herb Extraction
7. Dyeing Production
8. Water Treatment
9.Design Studios
10. Clothes Manufacture
11.Storage
12. Design/ Office
13. Leisure Area
14. Design Atrium

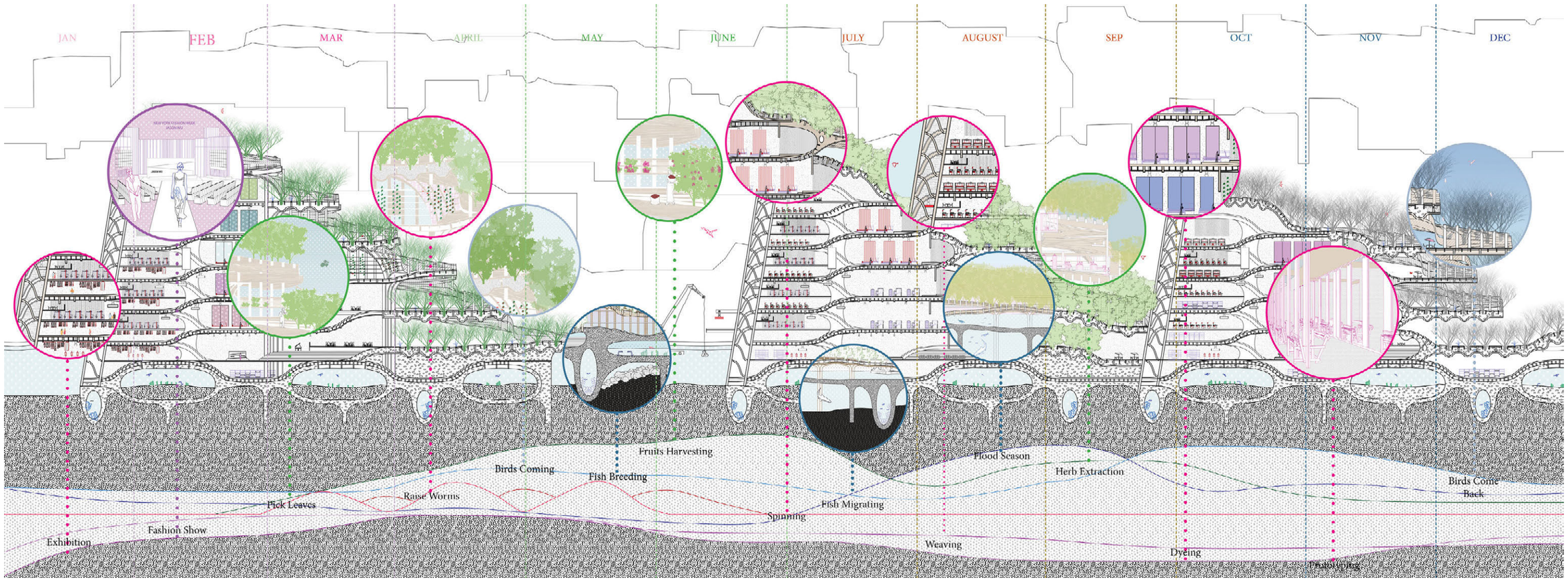


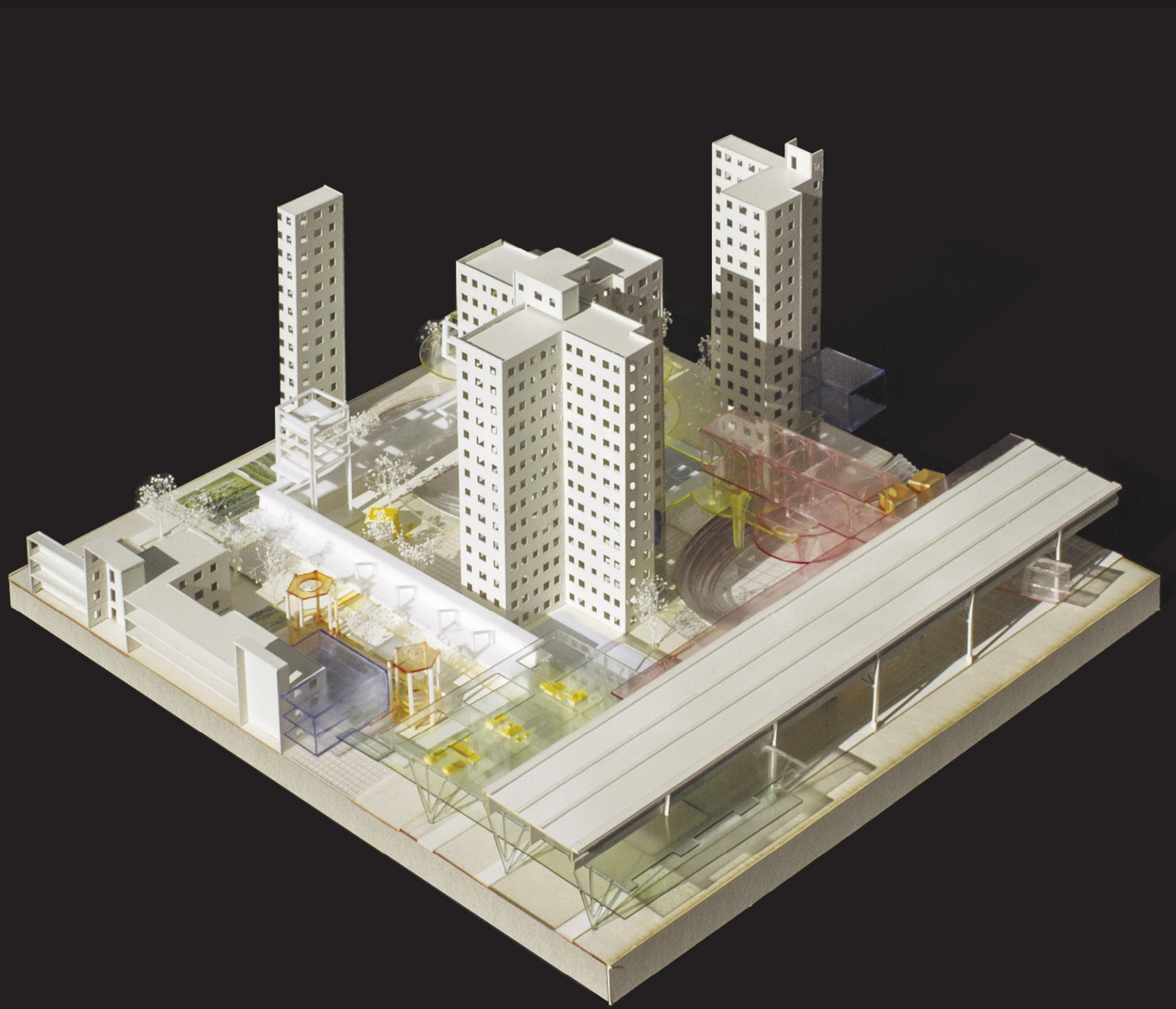
Factory Habitat Clock



Factory Habitat Organization







REDEFINITION OF 'TOWER IN THE PARK'

-A plug-in system of NYCHA public housing

Summer Studio in GSAPP
Instructor: Nahyun Hwang & David Eugin Moon
Collaborator: Xinning Hua
2019.6

NYCHA as the aging living machine

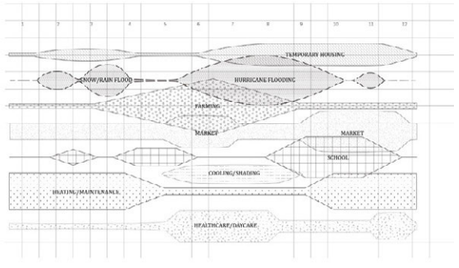
Nycha was founded in 1934 as Mayor Fiorello H. LaGuardia's antidote to the shoddy tenements of New York City's housing crisis during the Great Depression. Public housing was trumpeted as the duty of progressive government, and the swift construction of sprawling complexes became a slum-clearing machine that reshaped the city's urban landscape.

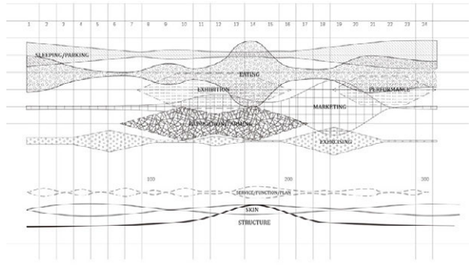
"Everything is getting old at once, because everything was kind of built at once. So it's like a 30-year window where almost all of public housing was built, and now we're in that 30-year window where it's going to be totally revamped or redeveloped. A lot of these buildings have had more than your normal wear and tear. They stopped doing preventive maintenance, which led to a lot of boilers not working. These are far from exceptions in a system facing a capital backlog estimated at up to $19 billion and described by the nonprofit Community Service Society in a 2014 report as having "fallen into critical condition … and accelerating deterioration."

Flooding, emerging challenges & Dilemma of LA MARQUETTA

Sandy's effect on Nycha put the icing on the cake. Nycha was in decay already. Hurricane Sandy and the developments that it hit really devastated the properties, because the boilers and electricity were located in the basements. NYCHA itself has recently reported appalling maintenance problems: gas cut off in the Douglass, Grant and Johnson houses, while the Armstrong Houses suffer from outages of electricity and water. At the Carver and Tilden houses, trash compactors are broken — the sort of problem that leads to garbage bags piling up in halls and courtyards.

Because of the deteriorating environmental conditions and the safety problems around public housing areas, the La marqueta struggles to survive although there's investment from government to help revitalize. The vendors shrink from 500 to only 8 and it's become even harder for them to maintain in the following years.





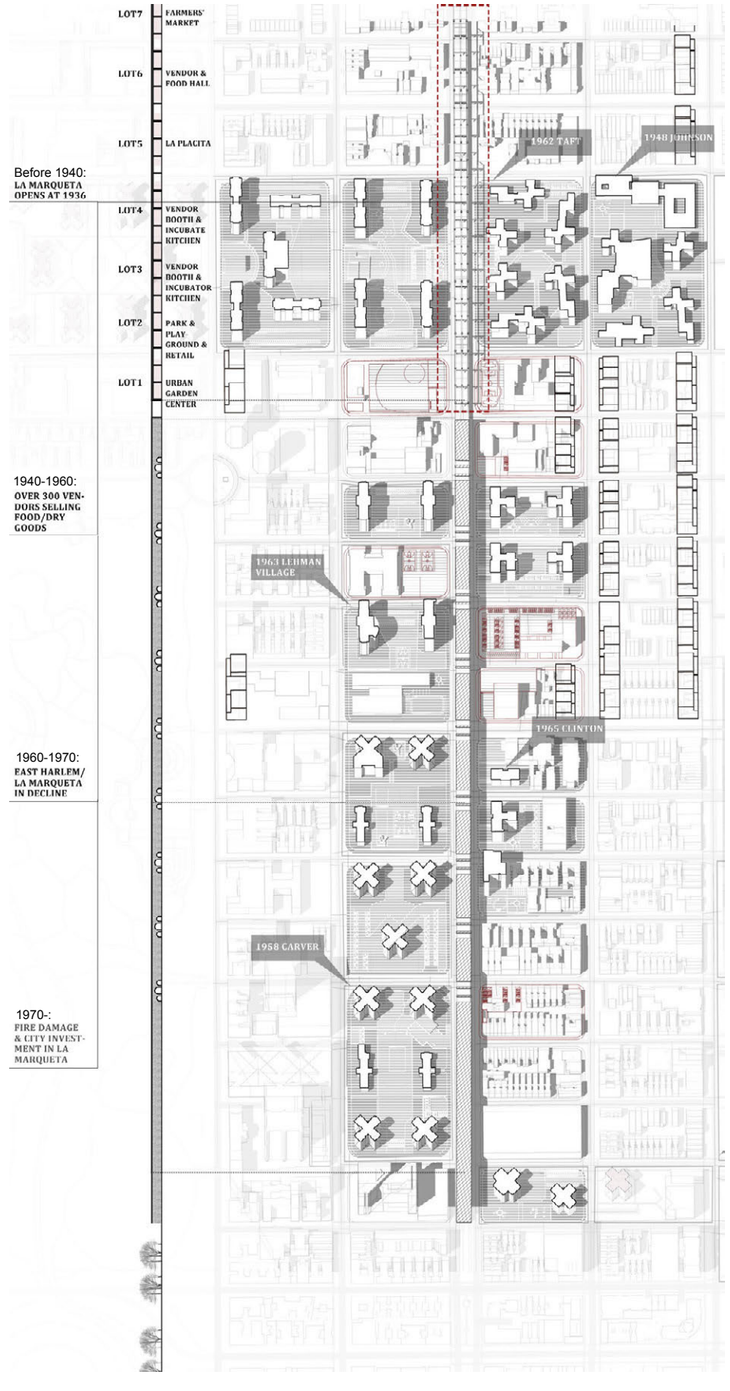
Re-programming

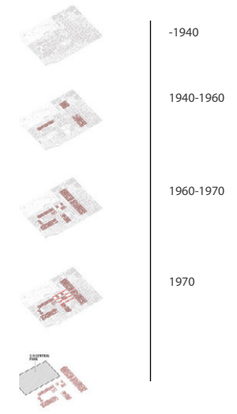
The contrast between the relatively permanent form which ages quickly and the rapidly changing activities inspires us to rethink the new way to deal with the variations that erode the public housing.

Programs and challenges happen annually, daily, hourly or centurily. Can we dissect the buildings into layers that deal with the programs with specificity as well as flexibility? Could we allow redundancy for future challenges by generating new potentials to deal with complex problems by layering systems?

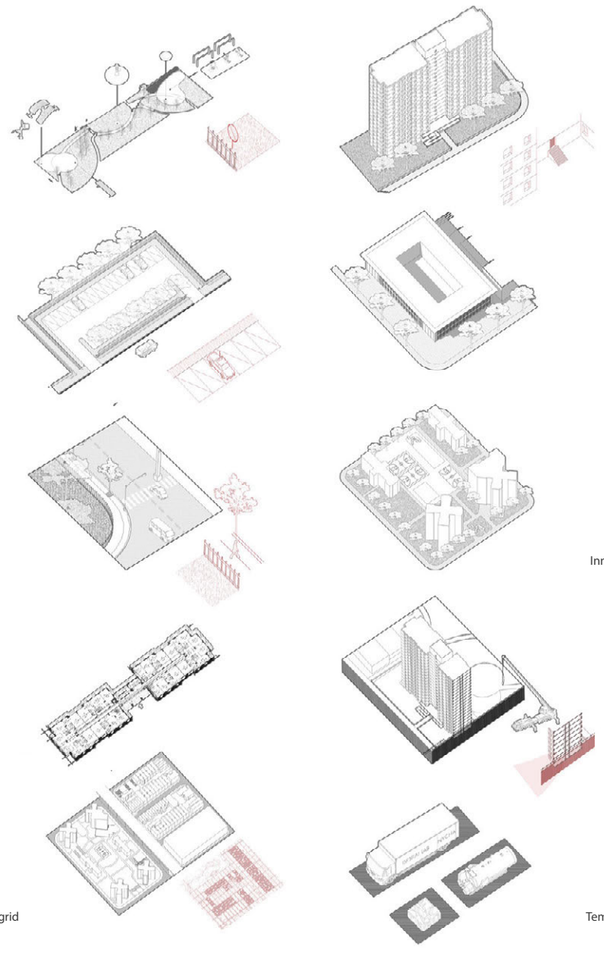
Re-defining the 'park' as the soft infrastructure

The overlapping, complementary activities could be the clue to reorganizing the unordered events now under the new plug-in system, which redefine the underutilized 'park' under the tower to be a soft infrastructure. Increasingly influenced by economic and ecological elements, the soft infrastructure could be a new typology to intervene with the large volumes of buildings and changing environments as the urban catalyst.



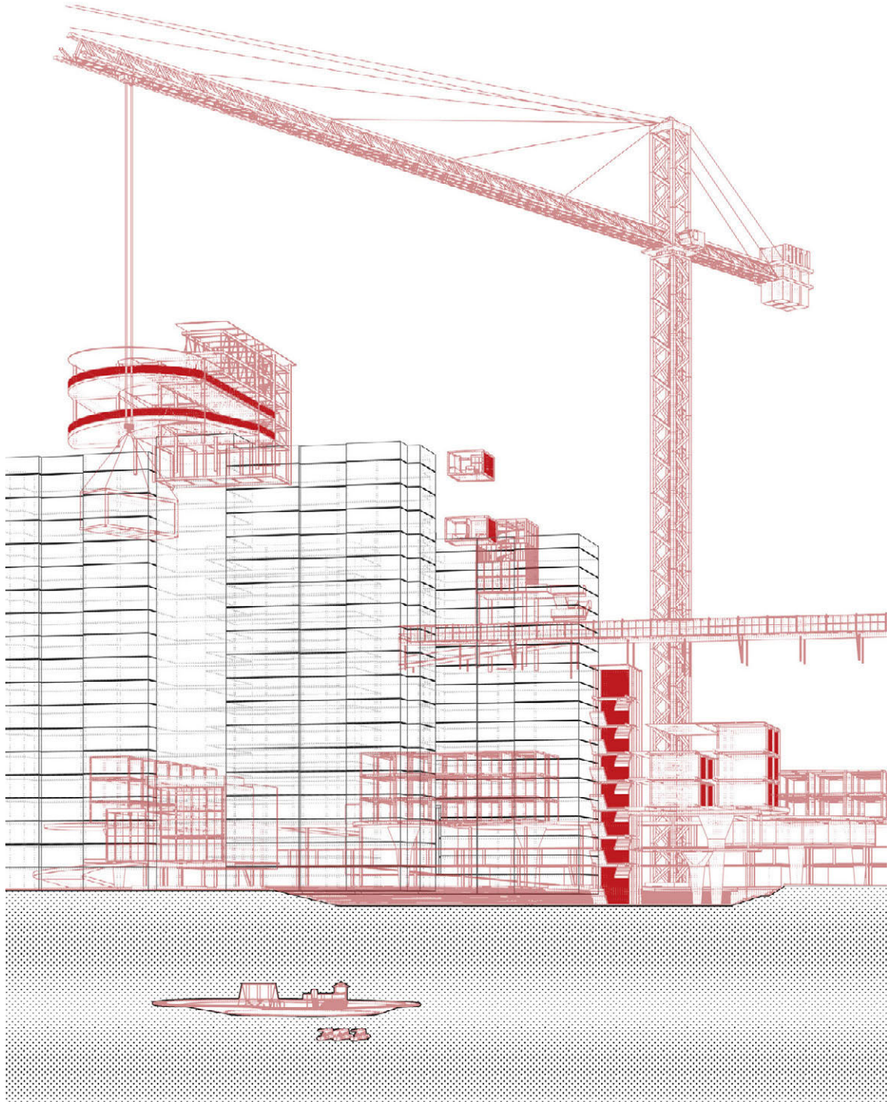


The NYCHA public housing emerged to occupy large areas of origingal small textures, reshaping the urban grid and redefining the public space from street to 'park' under the 'tower'.

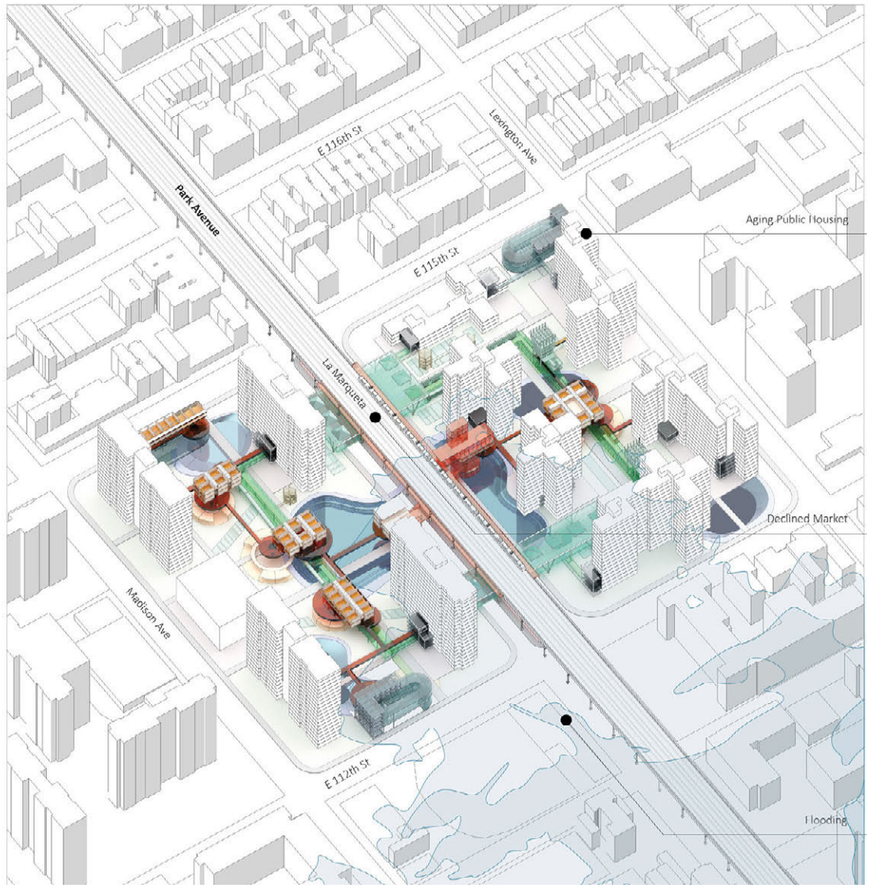


CHALLENGES OF NYCHA PUBLIC HOUSING

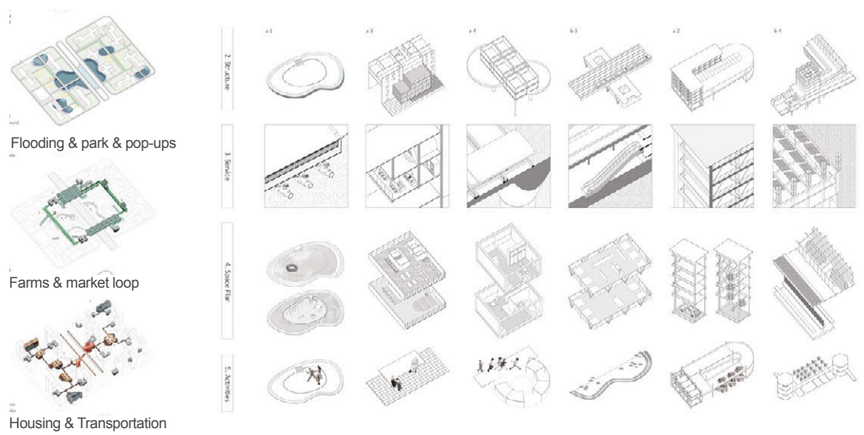
Diagrams above symbolize typical challenges Nycha public housing is facing. These large-volumn 'aging machines' designed for permanent use are isolated from the ever-changing urban environment at present. **Could there be another way to use the money to generate new vigor to help the machines self-sustain in urban environment insteading of just extending their life?**

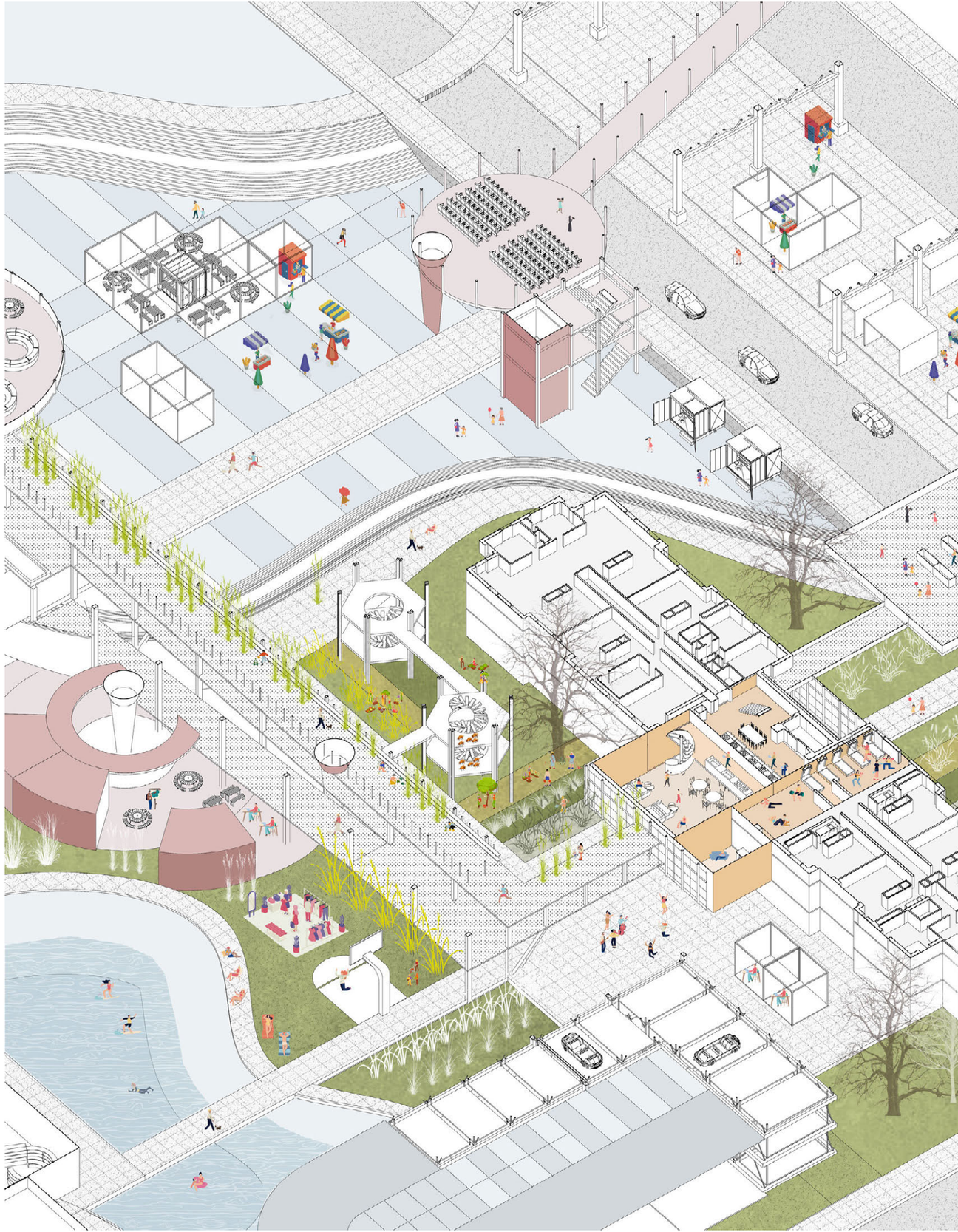


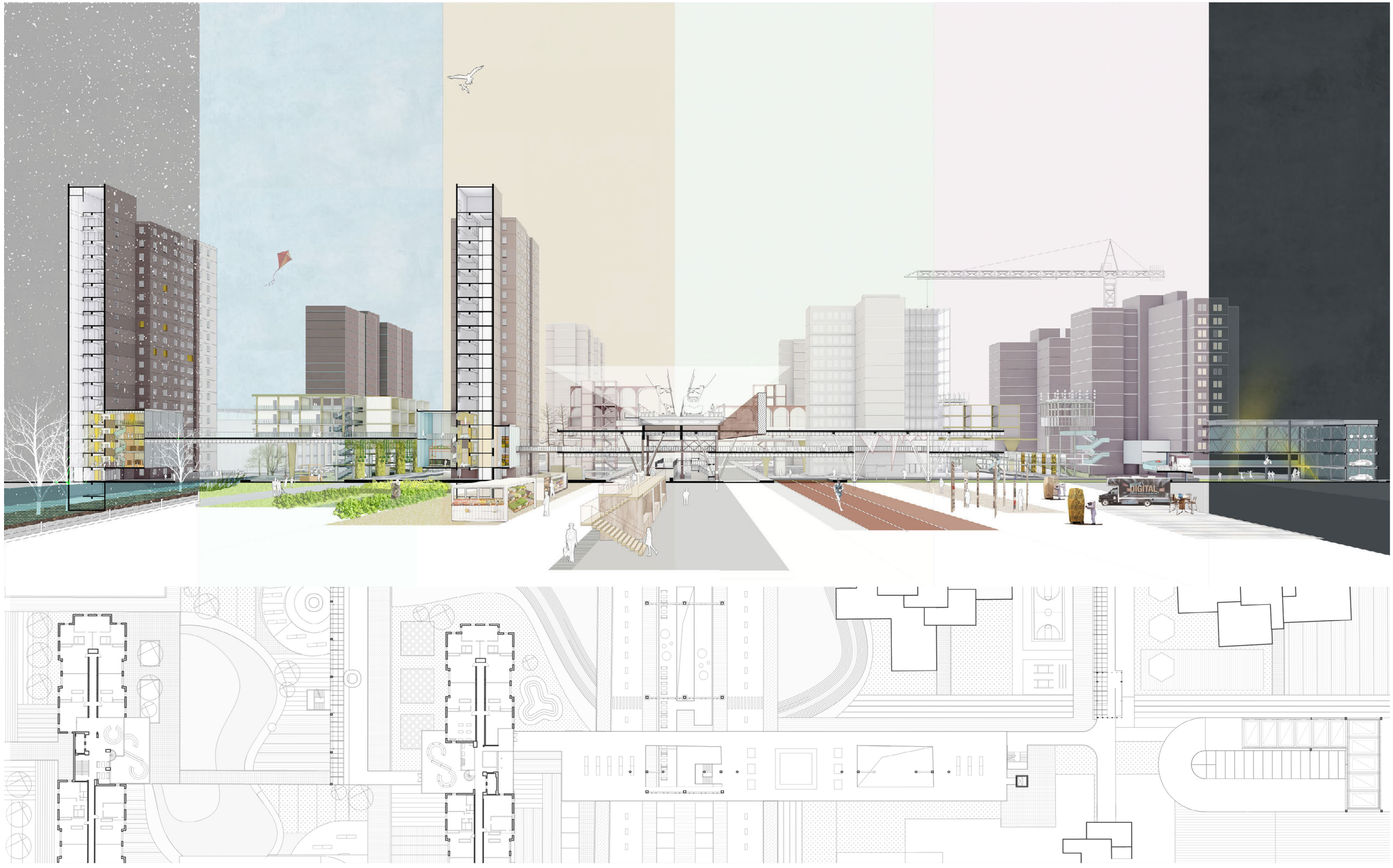
PLUG- IN SYSTEM AS SOFT INFRASTRUCTURE
Scaffolding as incompleted components



LAYERED SYSTEMS WITH DIFFERENT AGING PACES






DIGITAL

Views From the New Living Module

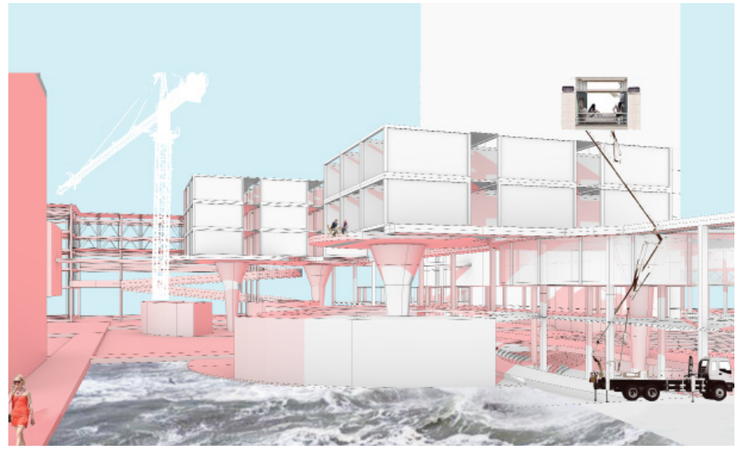
Indoor temporary living modules dealing with unexpected disasters and necessary maintainence. It is the relatively permanant part of the system in the third layer with easy access to railway transportation and LA MARQUETTA market under bridge.

Views From the Old NYCHA room

The plug-in system provides daily events and markets to intervene with the everyday life of the original residents, including educational trucks, exercising(running & swimming), barbeque, etc. The park under the tower is redefined as the pulic infrastructure that holds new potentials.

Urban Farming

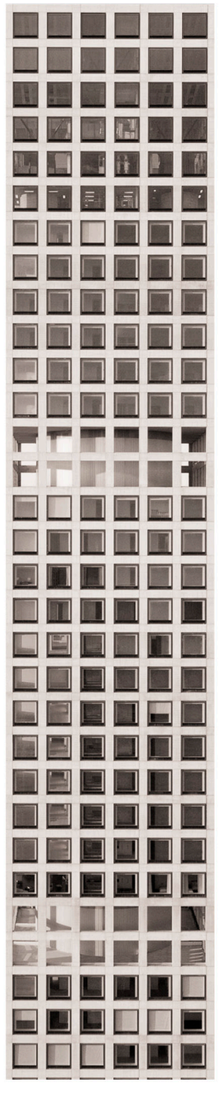
The plug-in urban farming modules are the moveable parts that both as part of the park and economic resources to help relieve the financial burden. Bee houses and other related urban farming components are attached to the big farming loop, which is anchored in the first floor and supply materials to the food incubator in LA MARQUETTA.



Flooding resilience & Maintainence

There are regular floodings happening during summer and winter, which cut the power off since the devices are in the underground floor. As a result, elevators and other boiling machines can't work. The flooding retainers and the device rooms on the roof help reslove these challenges when these disasters happen.

432 Park Ave



If you buy a postcard at a souvenir shop in New York today, you are very likely to be able to buy one with a photo of the 432 Park Avenue on it. Ironically, this monument-like building wasn't initially meant to be a landmark. Quite the opposite, it was meant to be the perfect viewing platform to enjoy the view of the rest of the city. The buyers, mostly not from New York, paid $7 to $95 million per unit so that they can enjoy the view through the 10-foot-by-10-foot windows, even though 80% of the time nobody stands behind these windows to see the views since the buyers actually live somewhere else and they just buy the unit for investment.

But how did the view of New York City become a luxury and saleable goods? And how did the developer and designer managed to do that? What was the sacrifice to gain the views? Or more brutally, who were sacrificed? By asking and trying to answer these questions, we might be able to unfold a little bit the conflicts within the process of designing, constructing and marketing of the 432 Park Avenue.

It's not that easy to gain the views. Firstly, the developer sells the views by increasing the height of 432 Park Ave. However, the height itself is a mayor conflict for anyone not involved on the development. By buying "air rights" from owners of shorter buildings, developers can add floors to new towers as investments, which is viewed by critics as the Oligarch's Erection—as a catchment for the rich from which to look down on everyone else.

An intense conflict happens when developers take advantage from a loophole in the city's zoning laws doubling the height of the mechanical voids to gain extra height for views. Amendments were made by the government to count mechanical floors greater than 30 feet tall, which is criticized by citizens as misguided and obtrusive. The developer of 432 Park Ave feels it's not offensive because "they created a very nice building that fits into the skyline perfectly", where the mechanical void itself is part of the design as intervals, lighting the night of New York and also as the compromise of the architect and structural engineer, functioning as the solution to reduce vibration caused by wind pressure.

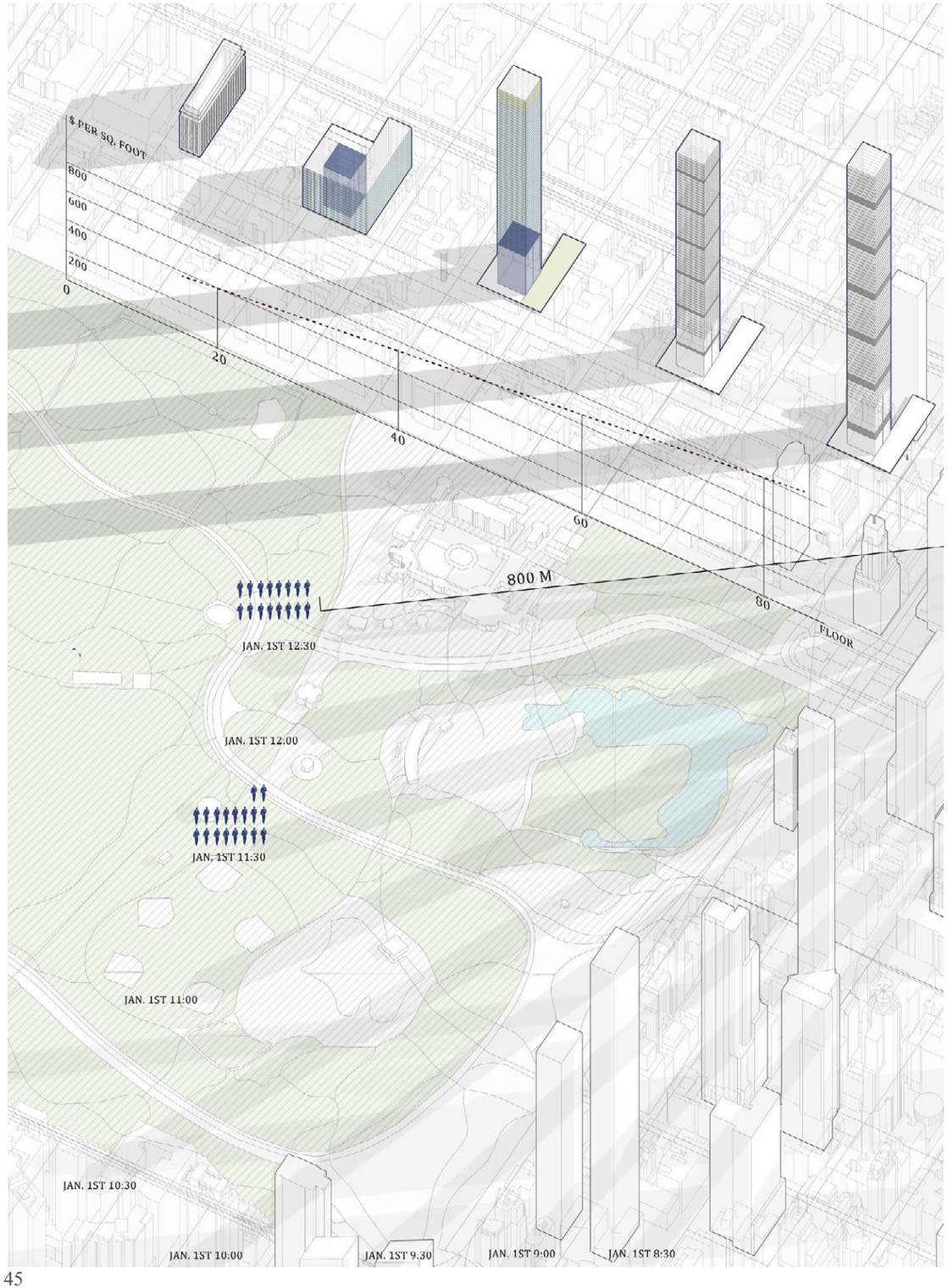
The second compromise to gain the views is the window assembly. In order to "frame the views", the developer Harry Macklowe requests for thicker and larger window frames, which is the defining feature of the tower. Although beautiful on the facade, the architect, Rafael Vinoly himself isn't pleased with how they are densely framed and waste space inside; also apologizing for the 24 10-by-10-foot windows on four sides. Ironically, Macklowe wanted the frames to highlight the Central Park views, but apparently tenants are already removing them. Another compromise is that in order to sell the views, the bathrooms are designed at the central part of the units, large enough to maintain this idea of luxure and enjoying the views to the largest extent, which leads to even more cramped layout on the rest of the floor.

Any skyscraper is going to come with its own set of issues, 432 park however has a longer list than most. Apart from the issues the architect himself mentioned and later had to apologize for, the building is starting to show a real isolation from the city. Most of the apartments are vacant and purchased by wealthy international businesses and this drives their prices up even more. Building a skyscraper this tall casts massive shadows on New Yorkers who have to transit around the building every day of their lives, this development is not for the average New Yorker, this idea is ethically challenging.

There is a strong pressure on 432, from head-on wind and the unpredictable vortices that exist in cities and is relieved by openings in the concrete on every 12 floors, which expose a circular core for air to flow round.

The building flexes by as much as 60cm — moving more in the middle than at the top. Unusually, 432 Park's concrete skin, the visible fascia, is the main structure and the concrete laced with steel can bend without cracking. However concrete does loose a certain strength over time and the architect has criticized this again by categorizing it as a 'screw up'.

The residence was made with the intention of bringing back postmodern and modern design, however what it really is doing is making the majority of the inhabitants of the city feel more detached and isolated.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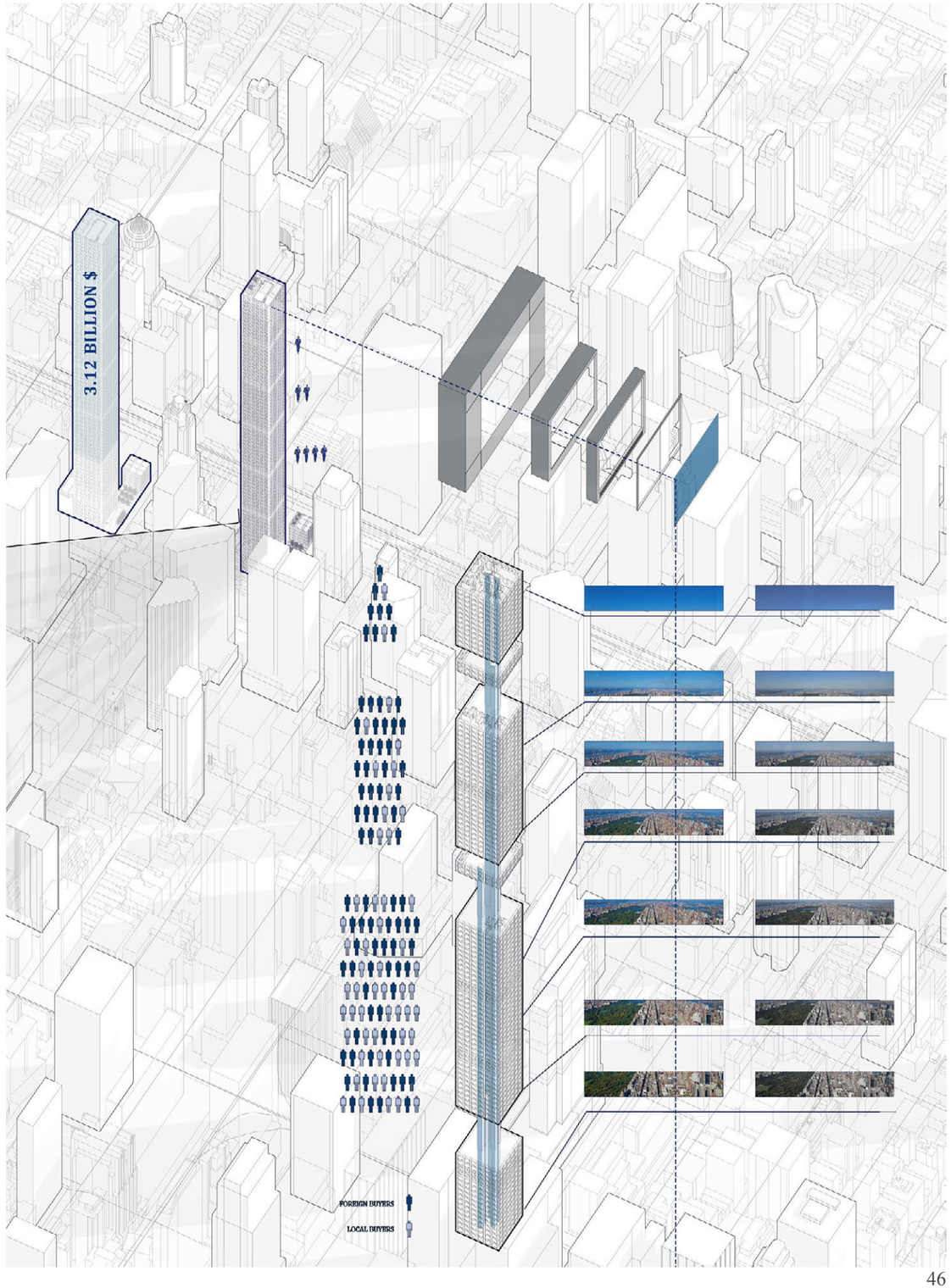
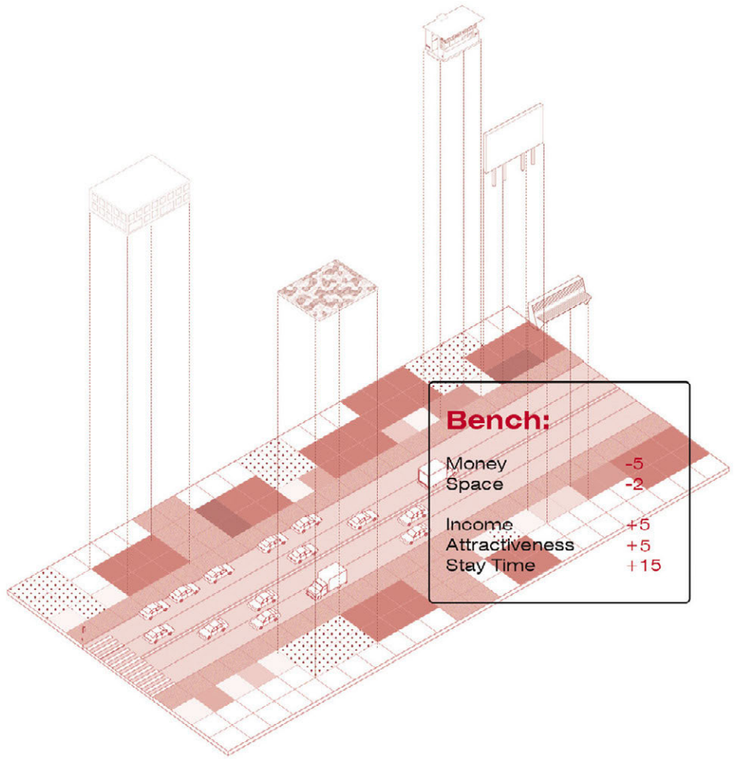

3.12 BILLION $
FOREIGN BUYERS
LOCAL BUYERS

'My Street'



THESIS

Nowadays, public space in our city is too crowded with advertisements in order to gain commercial value in short time. The depressive feelings given by enormous and shining billboards actually make pedestrians less willing to wander on the street. While a rational street furniture design is always ignored, which could benefit our city in long term. Although it is no wrong to earn money in commercial furniture, a fantastic layout of different kinds of furniture can actually attract more pedestrians and realize city economic growth. So a new method to encourage the street furniture design is in urgent need.

However, the design of street furniture is not necessarily exclusive to urban designers or architects. Everyone can also propose their own idea of public space and find better solutions to change a specific portion of street. Our target is to provide such kind of street simulation platform that formulate rational evaluating system and provide great interaction for users that can really change our street from digital screen to real world.

SYSTEM

Street Economy System

At the beginning of the simulation, there is initial fund for player to decide how to use them. To make more benefits, each decision should be well-considered. Following factors influence the cost and income of the street:

+How many times Ads catch attention from pedestrians

+How long time Ads catch attention from pedestrians

+Retails interactions with pedestrians

-Construction of furniture

-Daily Maintenance of furniture

Attractiveness System

The attractiveness level of the street is a parameter that directly controls how many people would like to come to the street. It does not only show how welcome your street is, but also exerts huge impact on the street economy system. Obviously, no company is willing to pay a lot for a billboard that no one sees it. Not the number of billboards, but the amount of attention to a billboard can catch generate value.

AGENTS

Moving Agents — Pedestrians Navigation Control

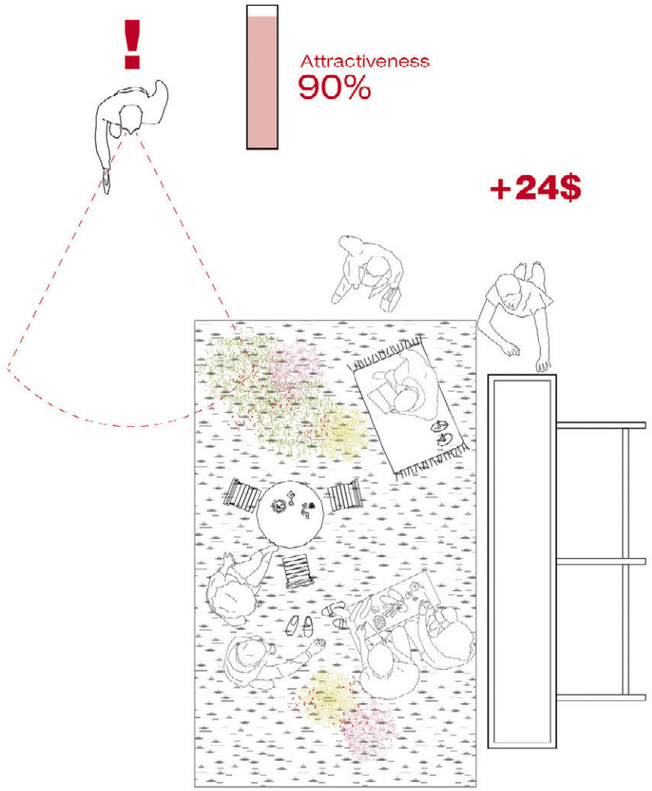
The agents of pedestrians are generated randomly outside the boundary of the community. The attractiveness parameter of the street decides how many pedestrians will come to the street. Pedestrians' attention and stay time, are the two things that can interact with commercial programs that generate value for the street.

Furniture Agents — Types of Furniture and Effects

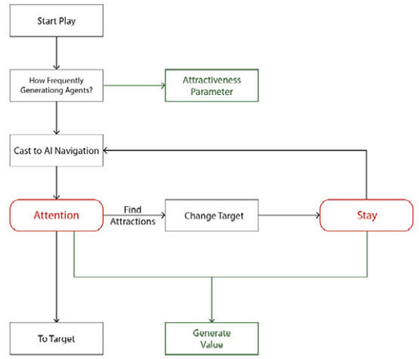
We divide the furniture into four categories: Vegetation, Commercial, Convenience. Each of them have child types and they have different affects on the street.

INTERACTIONS AND EFFECTS

The combination of different types of furniture is extremely important in this simulation game. Designer should think of a method that catch pedestrians' attention and lead their behavior to generate more values for the street. For example, making a beautiful lawn to attract pedestrians so they have more chances to interact with the commercial furniture is clever:



Attractive System:
Urban Furniture as Indirect Investment



		Cost	Attractiveness	Income	StayTime
Vegetation	Tree	-100	+5	0	+1
	Lawn	-80	+3	0	+5
	Pot	-50	+4	0	0
Commercial	Billboard Ad	-150	-6	+2/ Attention* UnitTime	0
	Title Ad	-40	-1	+1/ Attention	0
	Retail	-60	-2	+5/ Interaction	0
Convenience	Bench	-60	+2	0	+3
	TrashBin	-30	+1	0	0
		-400	+10	0	+4