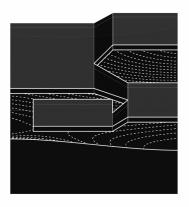
Architecture **Portfolio**

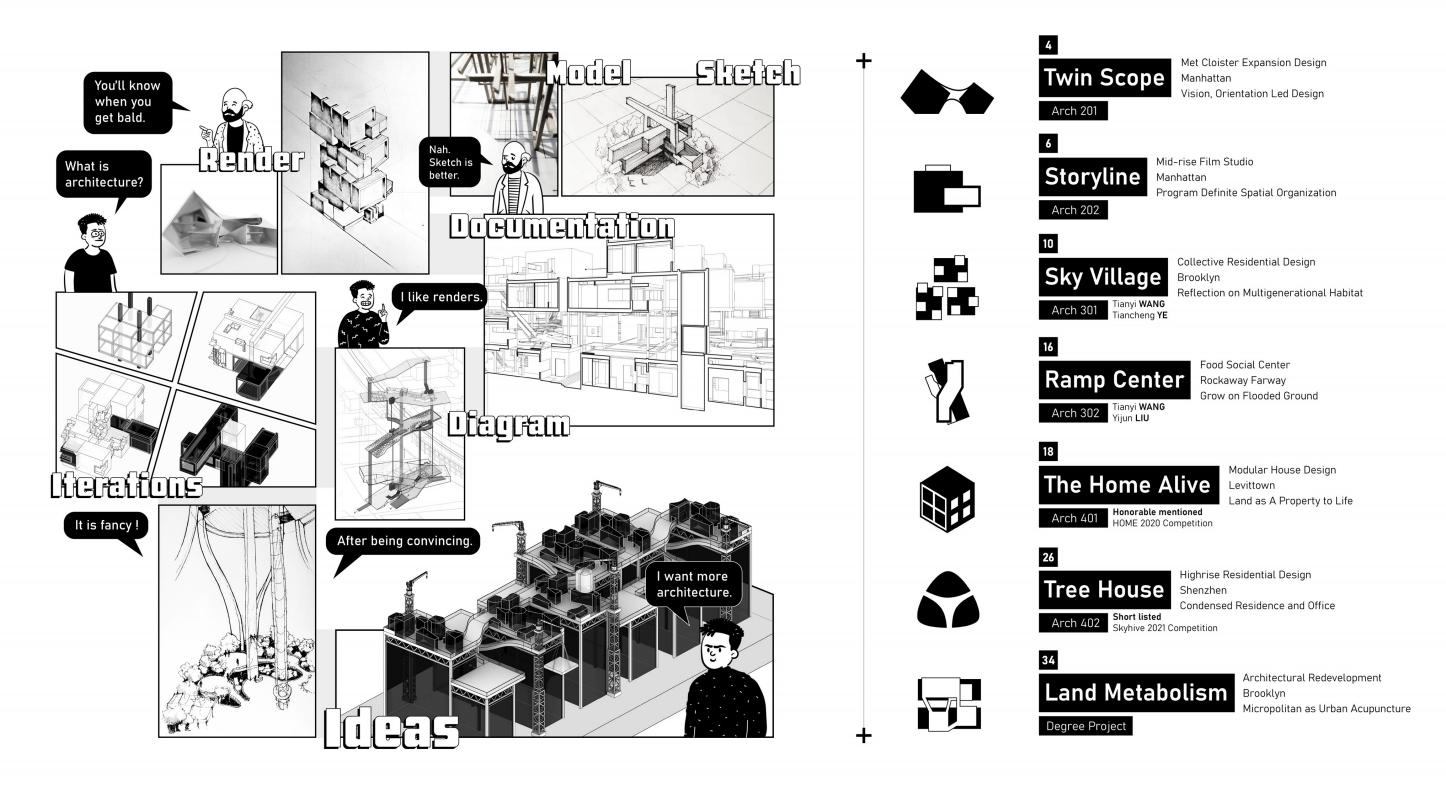
Selected works 2017-2021

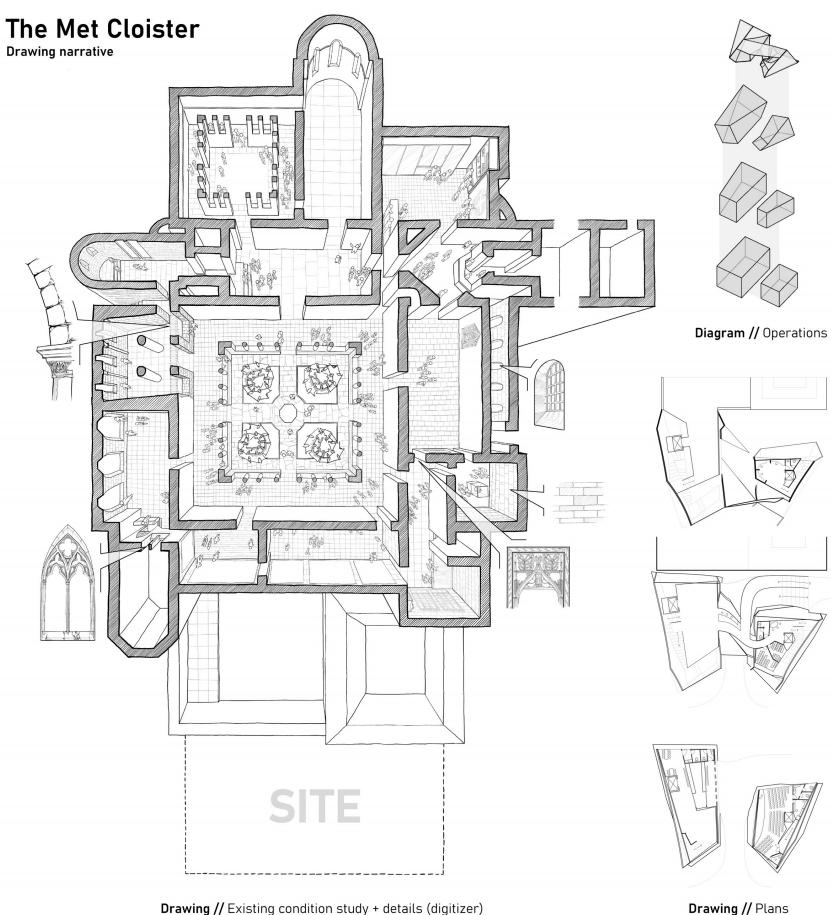


Tianyi WANG

Pratt School of Architecture B. Arch

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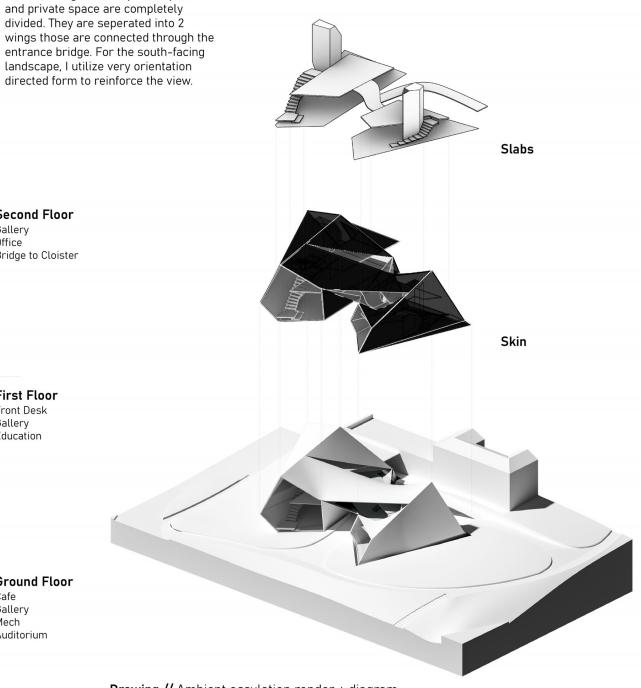






Met Cloister Expansion Design Site // Manhattan, NY

Instructor // Eva Perez de Vega Individual Work Arch 201, Year 2018



Second Floor Gallery

Methodology

This project is aiming to create an expansion building of the Met Cloister. Plus the division of public and private space is very important in the museum tour. So I take the separation of space as the main guide. The public space

Office Bridge to Cloister





Drawing // Plans

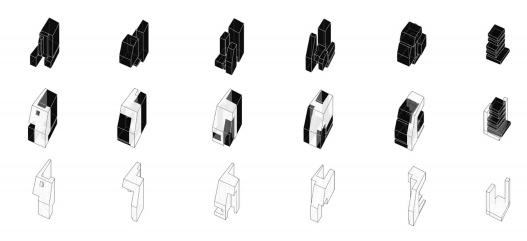
Drawing // Ambient occulation render + diagram



Mid-rise Film Studio Design

Site // Manhattan, NY

Instructor // Chi-fan Wong Individual Work Arch 202, Year 2019



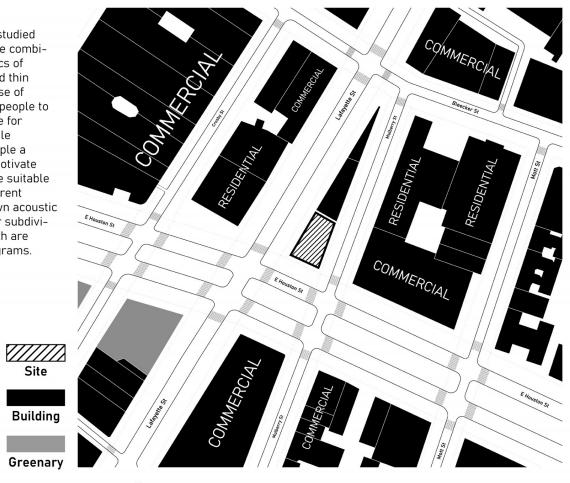
Iteration // Blocks program testing

Spatial experience

During the semester we studied different patterns of space combinations, the characteristics of different spaces. Long and thin spaces give people a sense of oppression and motivate people to move, so they are suitable for circulation programs, while spacious spaces give people a sense of openness and motivate people to stay, so they are suitable for daily activity, and different spaces also have their own acoustic characteristics, and other subdivision characteristics, which are suitable for different programs.

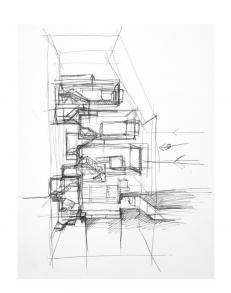
Site

Building

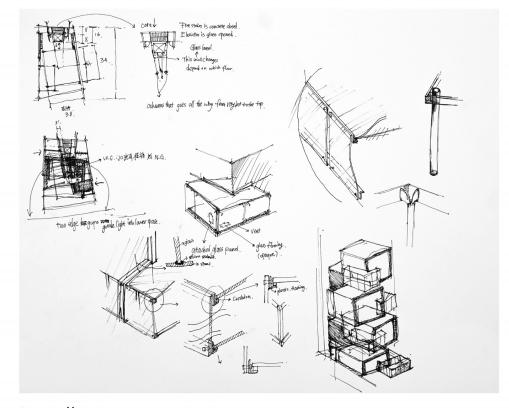


Drawing // Site map

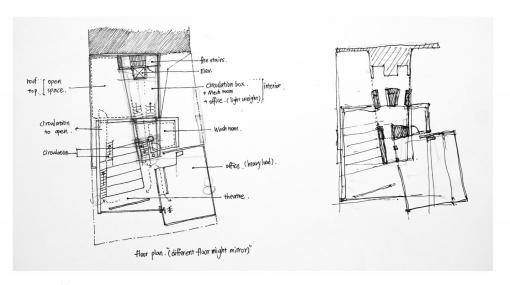
The project of the studio is mainly to shape the space by analyzing the graphics structure and narrative structure of different films, etc. as a reference. Abstract concepts are extracted from the films and converted into spatial features or arrangements. Here I choose the narrative structure and logic of parallelizing multiple timelines of fragments.



Sketch // Section draft



Sketch // Design process + details



Sketch // Floor plan + structural elements

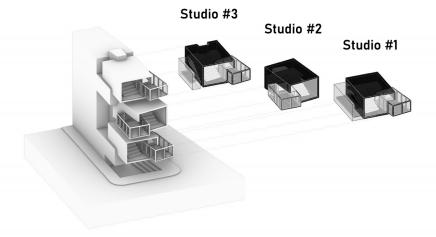
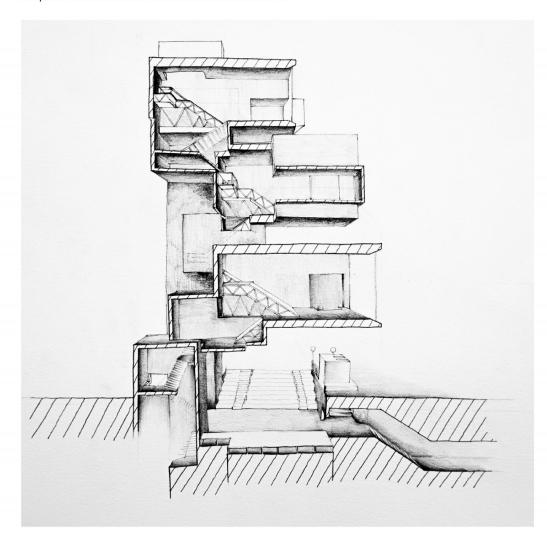
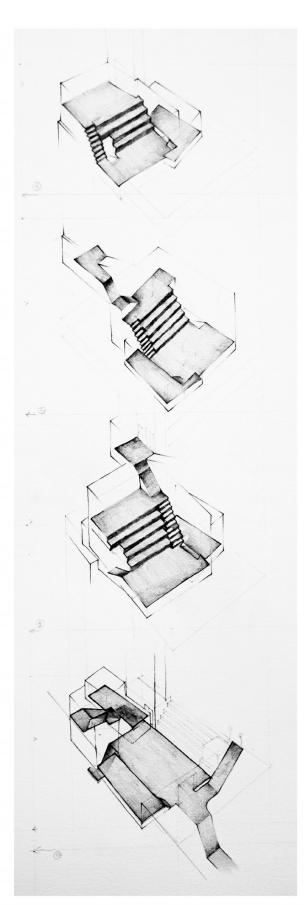


Diagram // Whole building + clusters

Storyline Studio starts from the narrative logic of the film as an inspiration and reference for the spatial structure. The different spatial blocks are edited together in the form of clips and finally fall on the core barrel. And each spatial block will be assigned only one specific function, and the clustering makes different reactions between them. For example, the editing room block is basically inserted directly into the multifunctional space block, while the multifunctional space block is locked into the circulation block.



Drawing // Section drawing of the building



Drawing // Exploded clusters

Studio #3

Multifunction space Theatre Office/editing room Circulation Roof garden



Multifunction space Theatre Office/editing room Circulation Yard









Model // Physical model details

Studio #1

Multifunction space Theatre Office/editing room Circulation Yard



Public theatre Subway station Sunken garden



Model // Chunk model + whole building composition

. 8





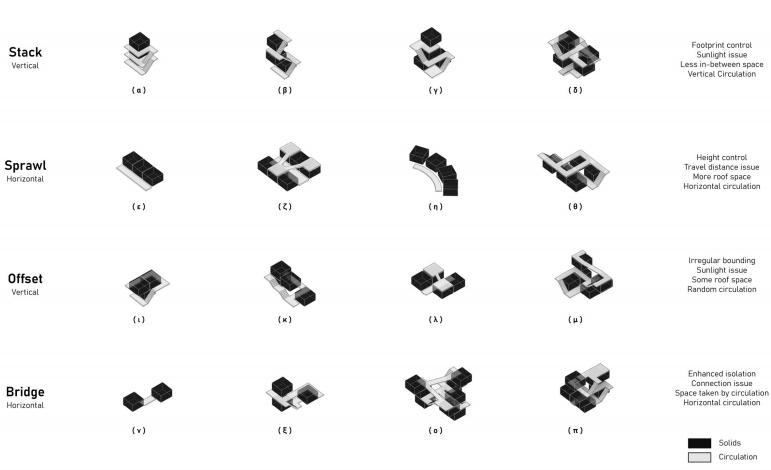
Multi-generational Co-housing Design Site // Brooklyn, NY

Instructor // Ane Gonzalez Lara Group Work // Tianyi WANG & Tiancheng YE Arch 301 , Year 2019

Sky Village project locates on the intersection of Nevins St. and Baltic St. in Brooklyn, NY. The project's goal is to create a neughborhood for multi-generation occupants.

The idea of shared housing is to create the sence of privacy circles, which the bedroom is the most private space while kitchen and living can be totally shared with public. Unlike usual tower that has all community facilities in the lower level, Sky Village spread the public space and facilities around the site, that flattens the circulation. Not only achieving that, Sky Village also creates various different paths for occupants to efficiently travel within the complex and encourage them to gather in the public programs. This proposal creates a great shared residential environment while maintaining quality space for each unit.

Diagram // Privacy circles + Conceptual linkages



Iteration // Cluster formation typology + Direction of organization

Testing the organization of units to form dynamic space for clusters, and further guide the direction of future growth. The tests above are based on minimum or no curveture elements as diagrammetic as possible, that can test out each advantages or disadvantages of each process, which are named after verbs. These tests help creating the space, with enough qualities for multi-generational residents and the nature of shared housing. Different moment happening within these typologies at different complexity level can be found in the unit design and overall final design. As Anthony Di Mari expresses in his book, spatial design in architecture is not mere aggregation, but convertion, reduction and experimentation.

In unit

Shared by a family or 2

Between-unit

Shared by families or partners from same floor

Sub-cluster space

Shared by families or partners from different floors

Bridge

Shared by whole sky cillage community and occupants

Site garden

Shared by whole Sky Village community and neighboring

Footprint control Sunlight issue Less in-hetween snace Vertical Circulation

Height control Travel distance issue More roof space

The isolation creates the main scene of the space, and delivers enough privacy to the interior that can fulfill occupants' demands. It is the starting point of the privacy circle and since the key of the project is to encourage residents to gather, units are tight.

Connection

Unit Designs

reaction.

Isolation

The connections, between units and units, should be carefully designed. A space should connect to no more or less than the exact amount of space. It directly shapes the circulation pattern and organization within the clusters.

Reaction

After the careful design on isolation and connection, which are normally identified as opposite words against each other. Units and the public space it create should react with each other to achieve the greater spatial quality.

Gowanus

Downtown Brooklyn

Drawing // Site access + Urban fabric

The unit, which is the basic and the smallest

element of the project, is the foundation of every coming designs. The unit will need to address three qualities, spatially, visually, and socially. They are isolation, connection, and

Senior Unit

One occupant

Family Unit Multiple occupants

Loft Vertical





Column





Stack

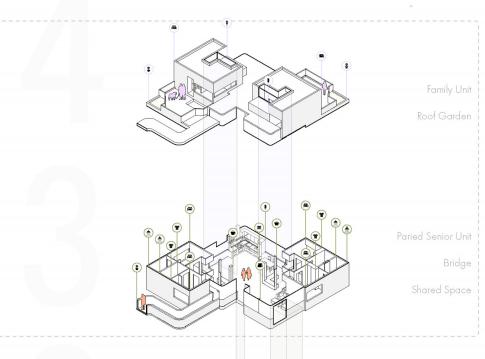




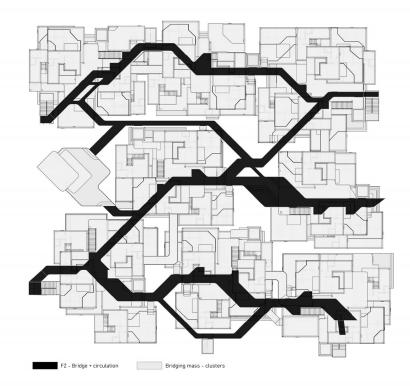
13+

Iteration // Unit typology + Family & Senior

+12







Drawing // Top view X-ray - Bridge level

Bridge Level In-between circulation system

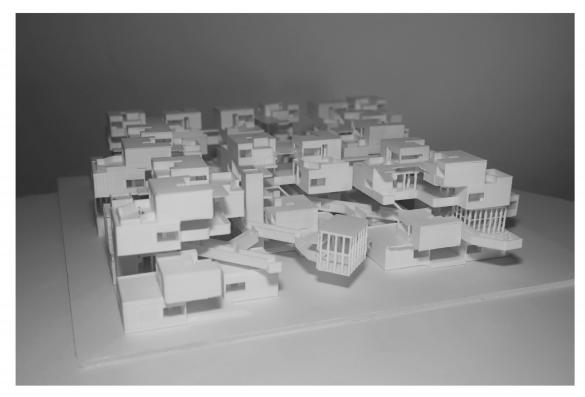
The layout of the master plan can be illustrated into 7 different clusters, each consists of multiple units. There are family units and senior units for different types and sizes of households. The hierarchy of shared space pyramid starts here.

Second-floor circulation system not only connects both lower level and upper level, but also presens as the most efficient way of transportation between clusters, and community facilities are seperatedly placed between clusters, that courage people to gather in these shared programs.

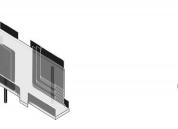
Public Social Space

There are 6 public space designed for specific social behaviors. Occupants are encouraged to leave their units, their clusters and gather in these space during their spare time. Not only through this organization, people will interact with each other more often, but also activate the transportation nature of the bridge level.

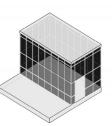
Drawing // Exploded diagram - typical cluster



Model // Full physical model



Outdoor stage



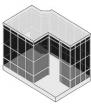
Gym (playroom)



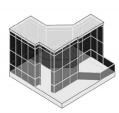
Pavilion (tearoom)



Office room



Multi-media room



Party room

Drawing // 6 public social space districuted along the bridge + Direction

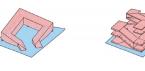


Community Center Design
Site // Rockaway Farway, NY

Instructor // Eunjeong Seong Group Work // Tianyi WANG & Yijun LIU Arch 302 , Year 2020

Design Concept

The location of the base is very close to the sea, and it is a flooded area for many years, so the key to this project is how to treat this particular factor. The breakthrough point I used was the concept of ground floor. The topography is lifted up and extended to all corners of the building with paper-cut elements. So in a way, people can easily walk to all corners of the building through the gentle slope without the need of stairs.



(A) Shear on linear



(B) Twist up linear



(C) Pinch layers



(D) Penetration



+ SITE

(E) Bridge + mass

Drawing // Site analysis - conditions

Iteration // Test models + landformation experiment

Description

The whole building completely expresses the sense of air, and the whole space is very open.
Because of the circulation of air, there is no great emphasis on it, but rather a deliberate weakening of the spacing between the spaces. The space is connected by many slopes, so the whole space can actually be understood as a whole folded slab.

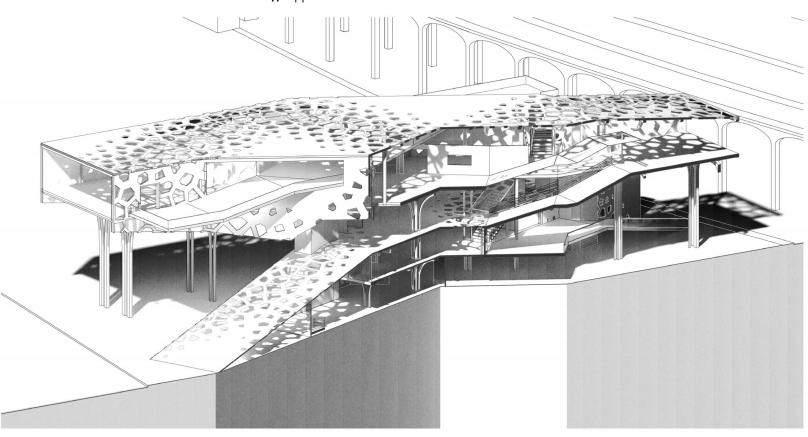




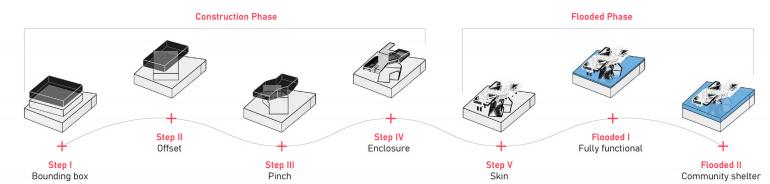
Structure

Caged framing

Render // Upper level + in-between level



Drawing // Longitudial section



Iteration // Process models & operations + flooded phase

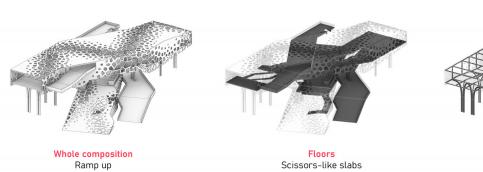
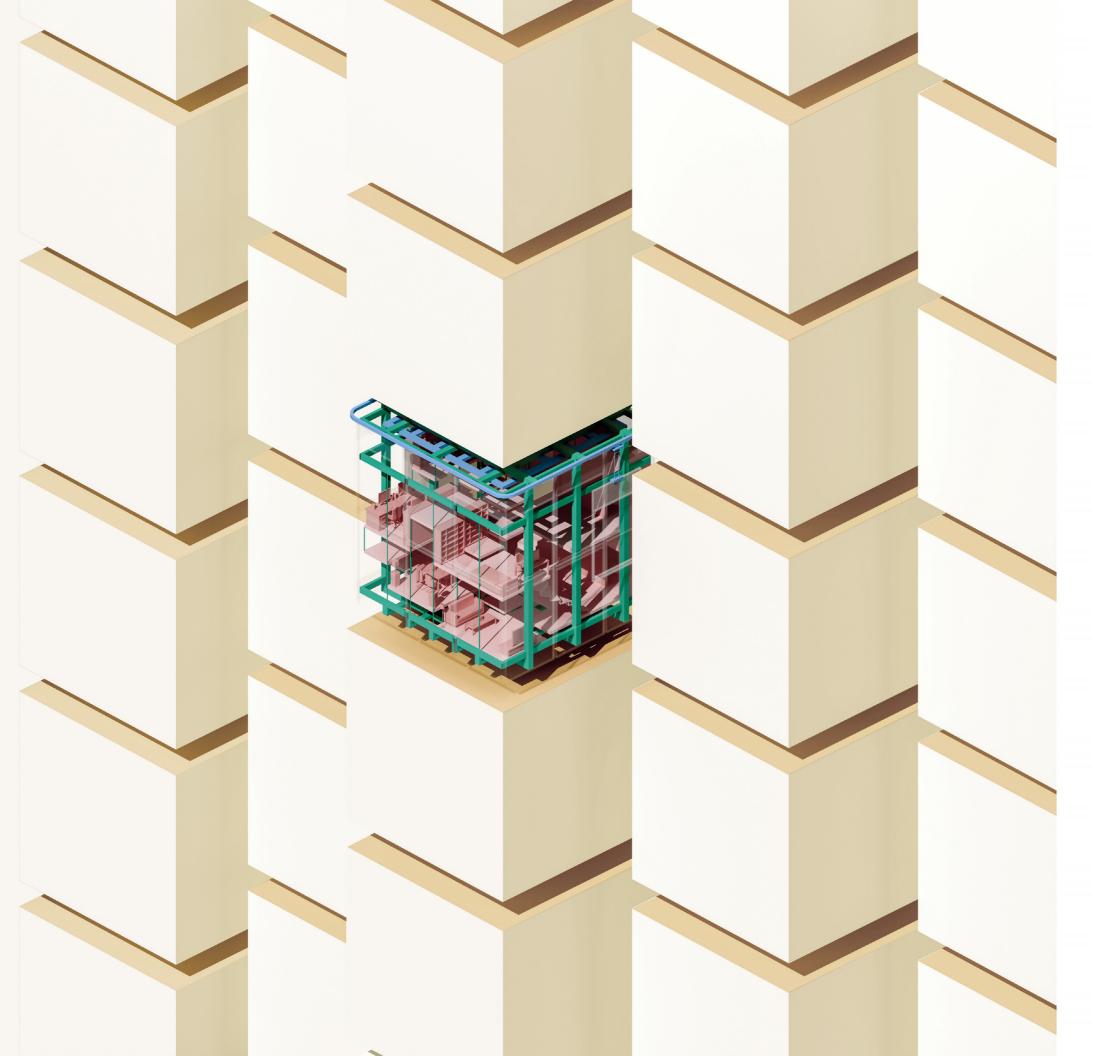


Diagram // Building + slab + structure





Modular housing design
Site // Brooklyn, NY

Instructor // Leonard Leung Individual Work Arch 401, Year 2020

Honorable mentioned, HOME 2020 competition

In today's home, program-specific space does not capture the way people live. People's activities are not limited to their programmed area—moreover, spatial demand shifts during different life stages of a family. Buildings today do not provide enough flexibility, and flexibility is what I am chasing after. The home that embraces different families, and everyone can find their spaces here.

Each family is given a structural framework where various panels and boards are adjustable and interchangeable . Occupants can design their own space breaks down to 5×5 ft panels. In order to provide different programmatic spaces of unique spatial qualities, rooms are redefined within the structure through the difference in elevation, instead of regular walls and door.

All the paneling, including floors and facades, are removable and space itself changes through time. When a child leaves the home, the home can be redesigned into another configuration that better fits the new family structure. Older facades and floor panels can be recycled and replaced, even with new materials or the latest technology. The building itself does not determine any spatial configuration, which is changing according to occupants'demands. Thus, this home could be the dream home at any given time.

Diagram // Panel installation + conveyor system

Matrix // Modular slabs compositions + programs organizations

The house that ages with you, and changes with you.

Conveyor system

The key idea of the entire project is to give as much of self renovation potential as possible. The conveyor system enables the possibility of space changing every decades within the bounding box.

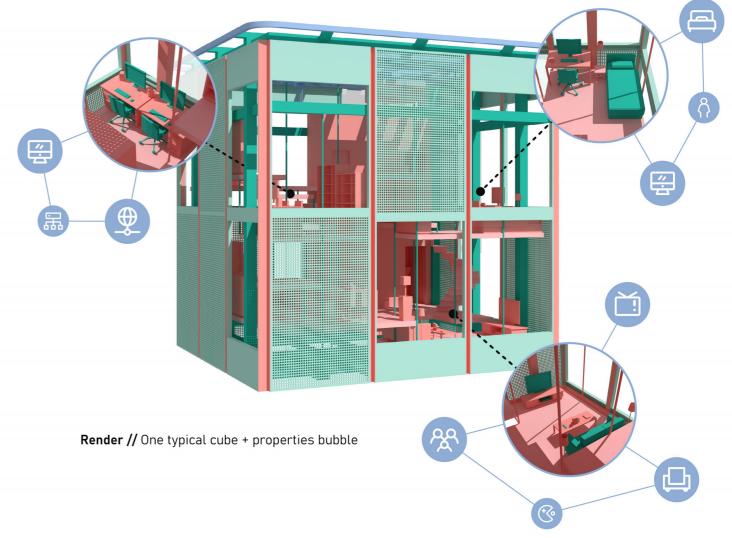
The system contains two parts, the outer rail to transfer the facade panels, and inner grids to install modular slabs. Each can not only deliver and install, but also store the excessive panels.

Move or still?

During the preliminary research period, before the menifesto had been locked, I was trying to achieve the ultimate flexiblility and exprienced with 5 different formal proposals each with one or a combo of unique types of movements. Lifting, rotating, offsetting. The geometries change a lot, whereas one quality continues—the space changes daily for different demands.

It is for a reason that 99 percents of houses today are not transformable.

The home, as a residential focused space, should be the start and the destiny of everyday life. It is embedded into our gene that a home is not supposed to be changed at will. If challenging an existing common of the society, one must have an extremely defensible reason.



A person in the United States is expected to move 11.4 times in his lifetime.

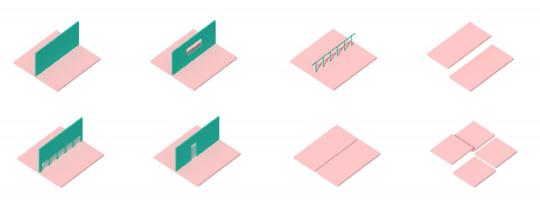
A home may not change frequently. However, most families are not going to stay unchanged for hundreds of years. They change every few years or decades. The structure of a family changes, the population of a family changes, the space to meet their needs should change too.

Instead of moving from a place to another, the home alive can change the structure and the interior layout from one mode to another. Whenever the household structure changes or anything happens that causes the change in spatial demands, the home can change itself into a fresh new layout to adapt the mission.

Not only the panels and slabs can move and shape the new house. The house itself is metabolizing itself. All the paneling and slabs can be switched to not only a new one, after several decades of wheathering, but also can be replaced by the panels of new technologies in the future. The building can change its own infrastructure system by using exterior panels of newly invented thermal insulation materials, or powered windows panel with wireless control capability. The home is designed for the future.

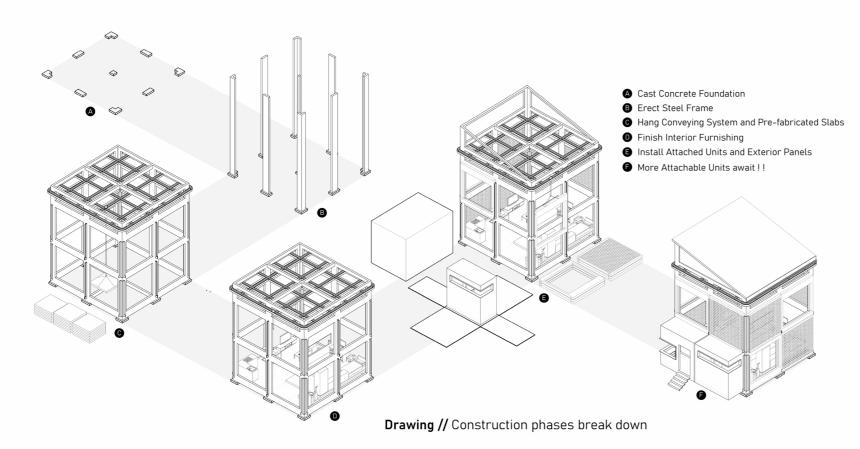
Let your home be a part of your family.

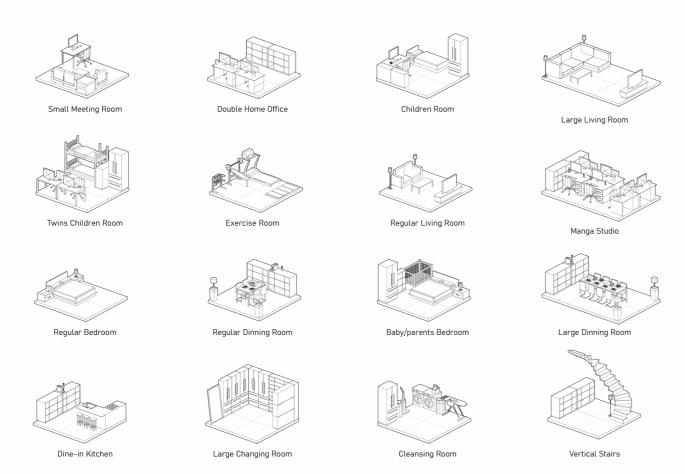
Let your life decides your



Iterations // Spatial seperations

20





Iterations // Different slabs space configurations

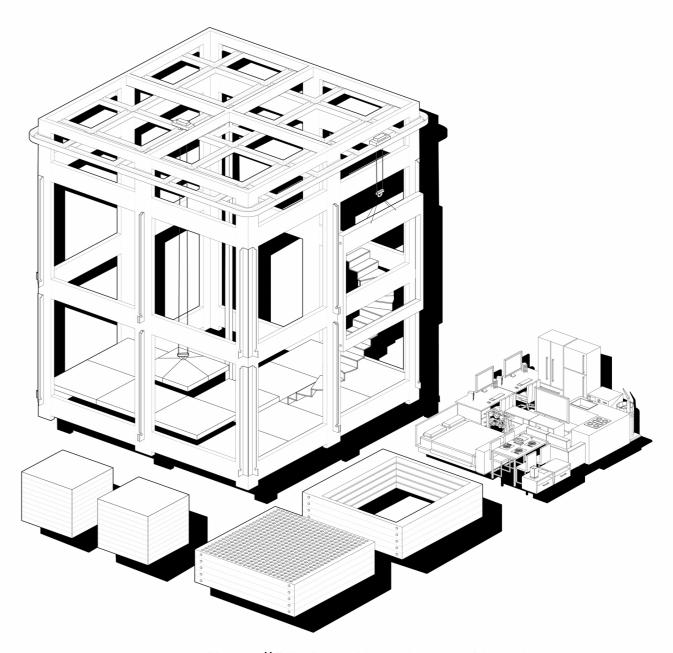


Diagram // Fully disasembled skeleton + prefab panels

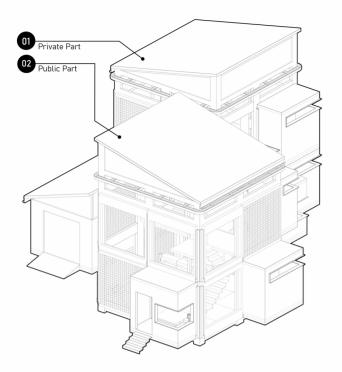
Site Selection

The site is set to be the suburban area of the states. The example here is the Levittown, a test field of the mass product of modular housing in each given lots. The original housing type is a single house with only basic programs. However, the buyer not purchase just the house but its land, which means they can adjust the use of the land at their will. As the result, today's Levittown shows no longer modular anymore. Almost all households have redeveloped and constructed add-on structure to meet different needs. Which, in a turn, is a quite clever way of dealing with their demands shift.

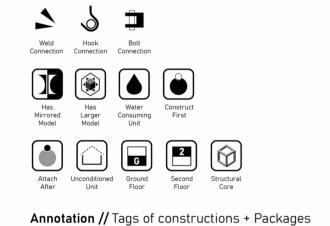
By applying the system of the home alive into the site, they are naturally emerged into one. They shared similar natures, of ability to adapt, and easy to construct.

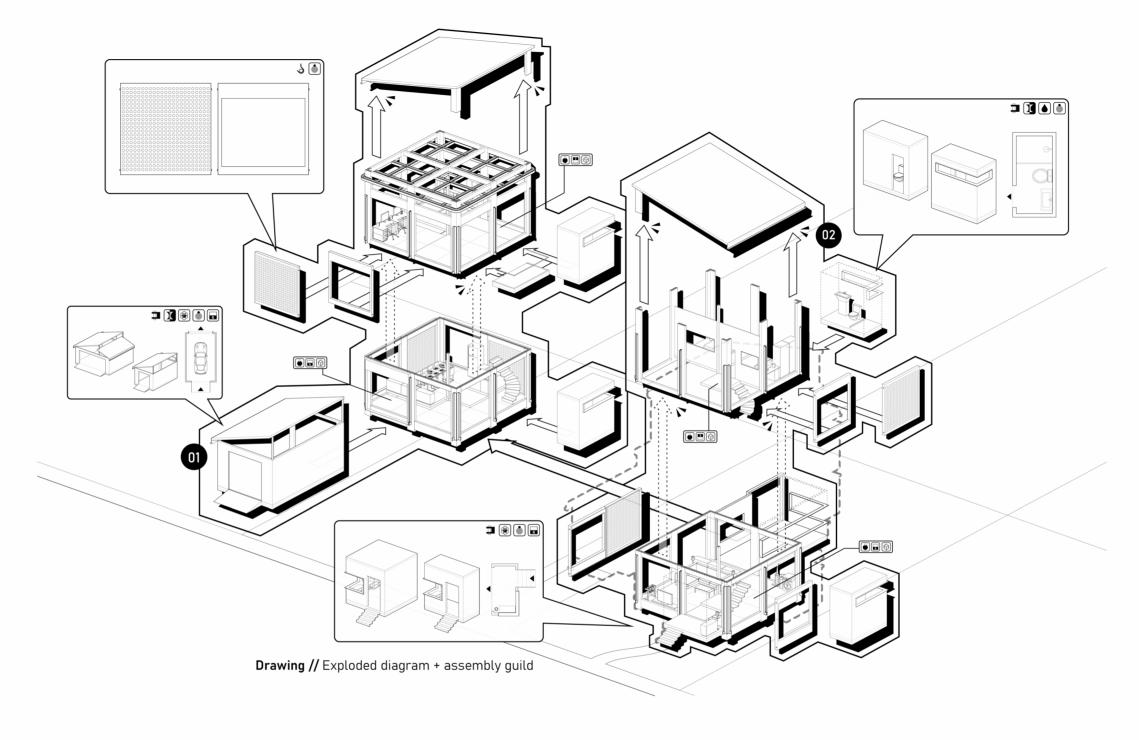
Every two lots share one cabin which functions as the portal to the city infrastructure system. Each lot has one public facade, the lawn, and one private facade, as the backyard. Different configurations using the given space presets, or prefabricated attached units, are able to consist different housing structure for different households.

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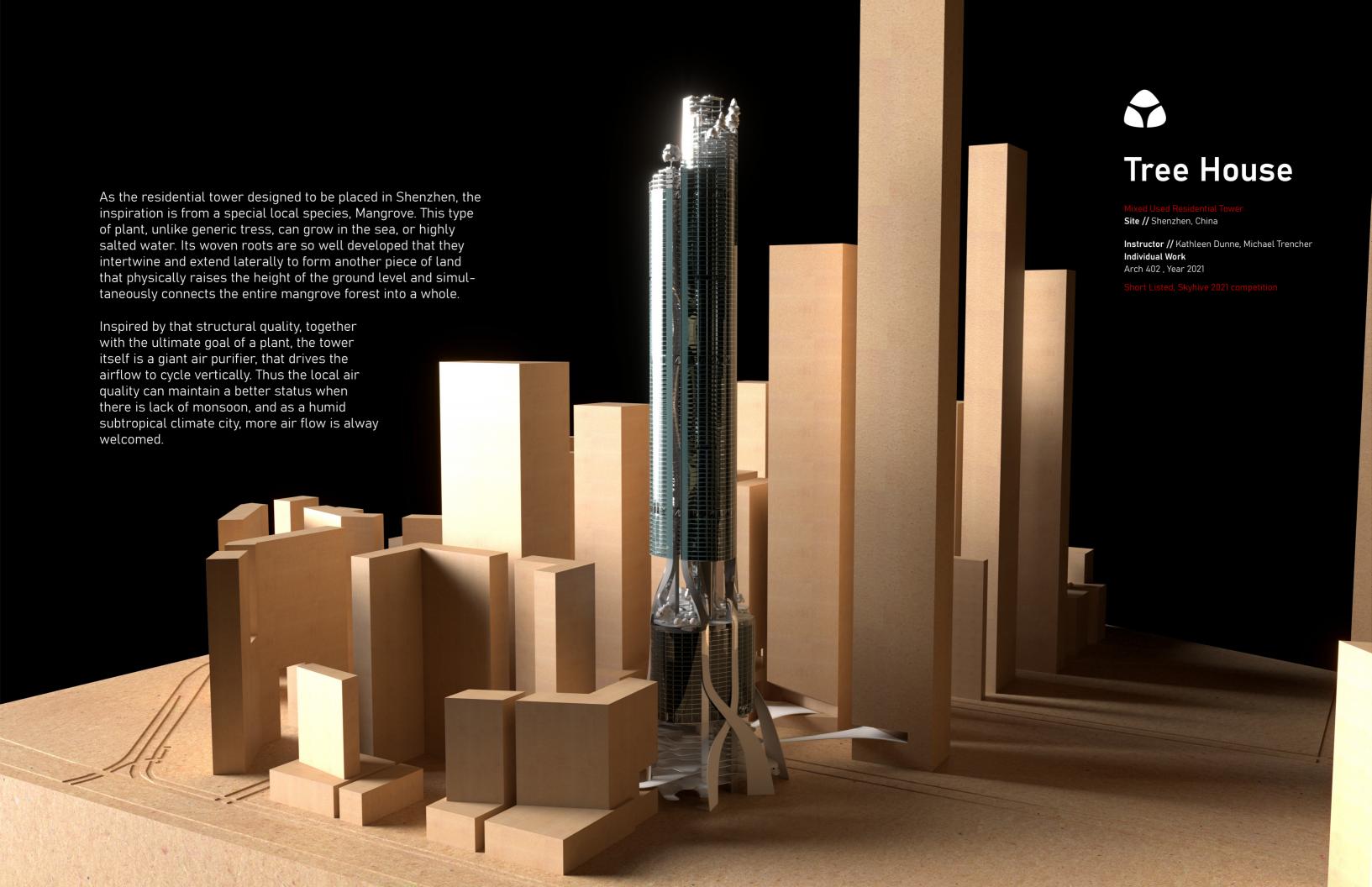
Drawing // Fully constructed house







Iterations // Attachable prefab units





Menifesto

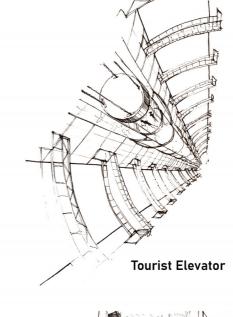
Shenzhen is a city where the vase majority of the population is mobile. There are many reasons for people to settle in a city, but a large percentage of people who come to Shenzhen and often do not have enough money to libe close to their place of work, like the city center. So I think that every centralized city planning office area should have a special residential area for that.

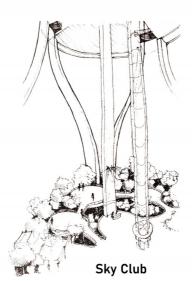
Drawing // Site map (Shenzhen) + squared city zones

Even if they are all working populations, different populations have different types of jobs and the nature of their work. To cater to different working populations, different kinds of work areas need to be designed differently. This includes, but is not limited to, home-based workers, small start-up companies, and work areas that offer rentable space. When these different types of work areas are brought together, they are then given the functionality of super high-rise residential. Such residences will require a more robust traffic circulation design than other ordinary residences. Mangroves are a good example of this. Mangroves do not appear singly, but in clusters, their roots are so well developed and intertwined that they seem to build a new land on top of a salt pond. Such a structure is perfect for my site, and coincidentally, the coast across the road is a mangrove reserve.

The site is a new growing urban district in Shenzhen, China, which names Shenzhen Bay Super Headquarters City. There are planning to have several super-highrise as well as several other skyscrapers as the headquarter offices.

The critical condition of the existing site is its programmatic isolation. It has few direct connections to other adjacent metropolitan blocks. Except for the metro and the urban expressway, which makes it very easy to access, given it is an urban island hovering over existing system. But also, this can directly create very serious traffic problems, because people do not come by linear pattern, but radial, which can burden the traffic expectations of the city to some extent. On the other hand, an office-oriented urban area without enough residential and commercial attached to activate the district can easily lead to a depopulation of the city during nighttime, which is a huge waste.





Sketches // Renders of critical scenes

Express Elevators

Iterations // Formal tests of multiple towerlettes

Testing different operations on multiple towerlettes to test out different configurations of placing different programs seperately.

Program

The entire building, programmatically, is been cut into three major chunks as well as one special function. These include a commercial hill on the lower floors, an office tower on the middle floors and a residential highrise on the upper floors. The different programs are arranged vertically, so the fast and slow elevators are arranged according to this pattern. The special program is its tourist nature which is almost exclusive to the super high-rise. As a prime location in a waterfront, there is almost no super high-rise in the vicinity except for the headquarter city, which provides this site with a valuable sense of air, light, and view. In addition, the property of residential tower has the advantage of making the daytime touring experience more manageable.

+

Diagram // South elevation + elevator maps

ZONE G

ZONE F

ZONE E

ZONE D

ZONE C

ZONE B

ZONE A

Local Elevators

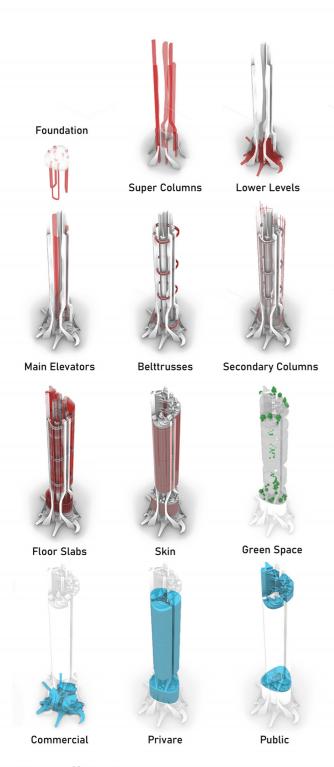
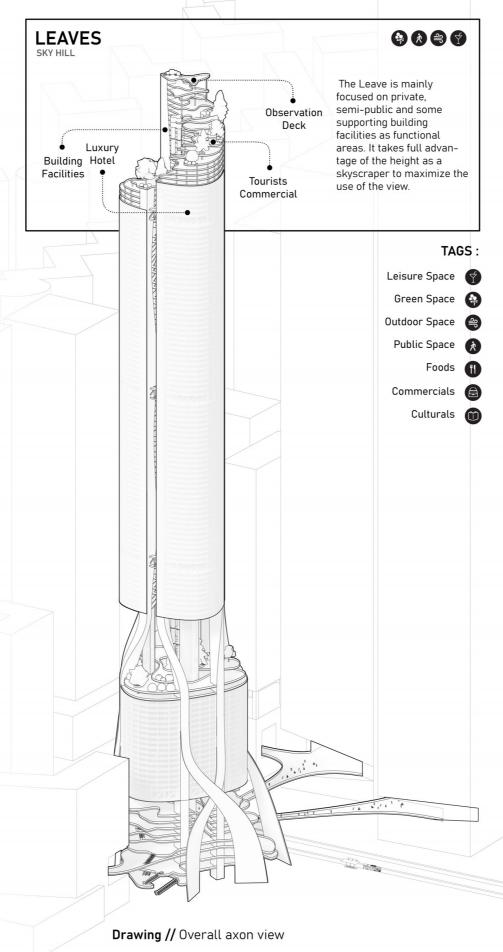


Diagram // Structure + program

The entire structural aspect can be split in two in a longitudinal angle. The root trunk of the tree below the empty courtyard, and the branches and leaves of the tree above. The branches and leaves are the structural components of three small cores that are separated. With the reinforcement of the belttrusses, the whole building is still a whole, but the shifting and interesting degree of space is a constant reminder that this building is like three brothers standing together.



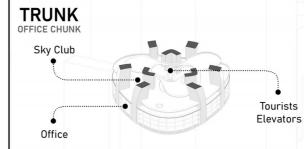


Vertical

Gardens

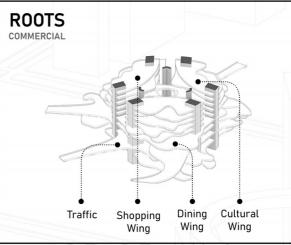
The distribution of functions is the same as the core function of the original design of the building, which is residential. This is where the high-density and high-end residential units for The leading companies of the Chinese regional team as well as the maximum advice first floor Shenzhen HD section then has a very false oh habit. are concentrated. The most important core function of the whole block is actually its structure, which has a concept of triple towerlettes in it. The three mini cores are independent of each other but logically form a whole.

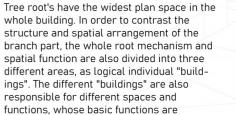
The three separate towerlettes give the possibility formany different unique spatial qualities to happen. The first is the visual connection between the three separate buildings. People tends to define their occupied space as far as where they can see. So when people can see but not be able to go there, the fallout is constructed. Also the sky gardens lined up vertically on the inner side of the three towerlettes are in a similar way emphasizing their presence and activating the functional value of the high-rise core residential area.



Sky Hill

As the backbone of the whole tree structure, the tree trunk is very integrated and contains two main programs. Office, which is private, and tourists, which is totally public. But it is filtered through the super high elevated sky garden, that the entire superstructure space and the lower space are separated according to the tendency of private and public.



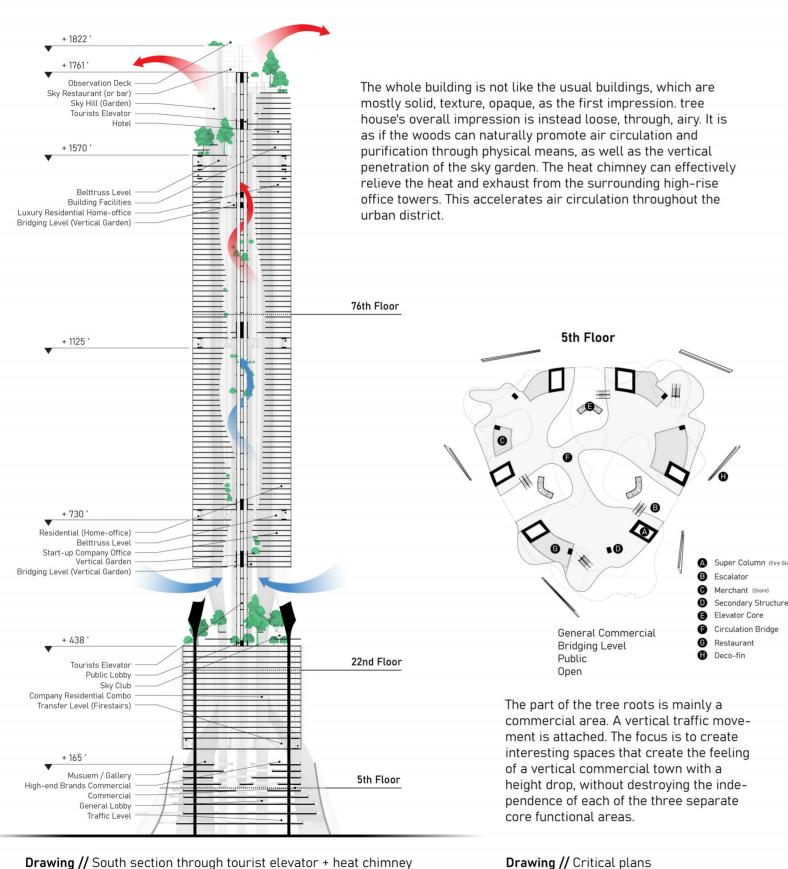


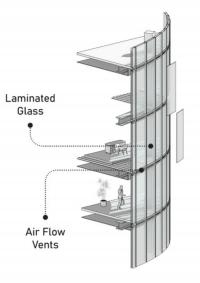
transportation, culture, commercial.

At the same time, derived from the concept of mangrove forest interconnection, the sky

Dining Cultural Cultural Wing Wing Wing Wing Corridor of tree roots the tower into the local urban fabric.

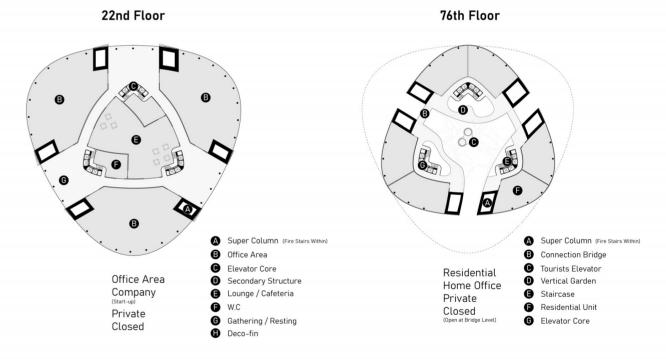
Drawings // Chunks program + spatial analysis





The entire structural aspect can be split in two in a longitudinal angle. The root trunk of the tree below the empty courtyard, and the branches and leaves of the tree above. The branches and leaves are the structural components of three small cores that are separated. With the reinforcement of the belttrusses, the whole building is still a whole, but the shifting and interesting degree of space is a constant reminder that this building is like three brothers standing together.

Drawing // Double skin facade



The trunk portion of the tree is a high-density office area that will have the same high density of people and production during the day as the other super-tall corporate headquarters buildings nearby. The heat generated in this area will directly drive the function of the heat chimney and help the air flow throughout the city.

The tree branch area is the core of the building, the area where the residential functions are located. During the day there will be relatively little heat production in this area, and the cooling of the vertical garden will purify and stimulate the air through the building.

Drawing // Critical plan

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Urban Acupuncture district activation system
Site // Industrial City, NY

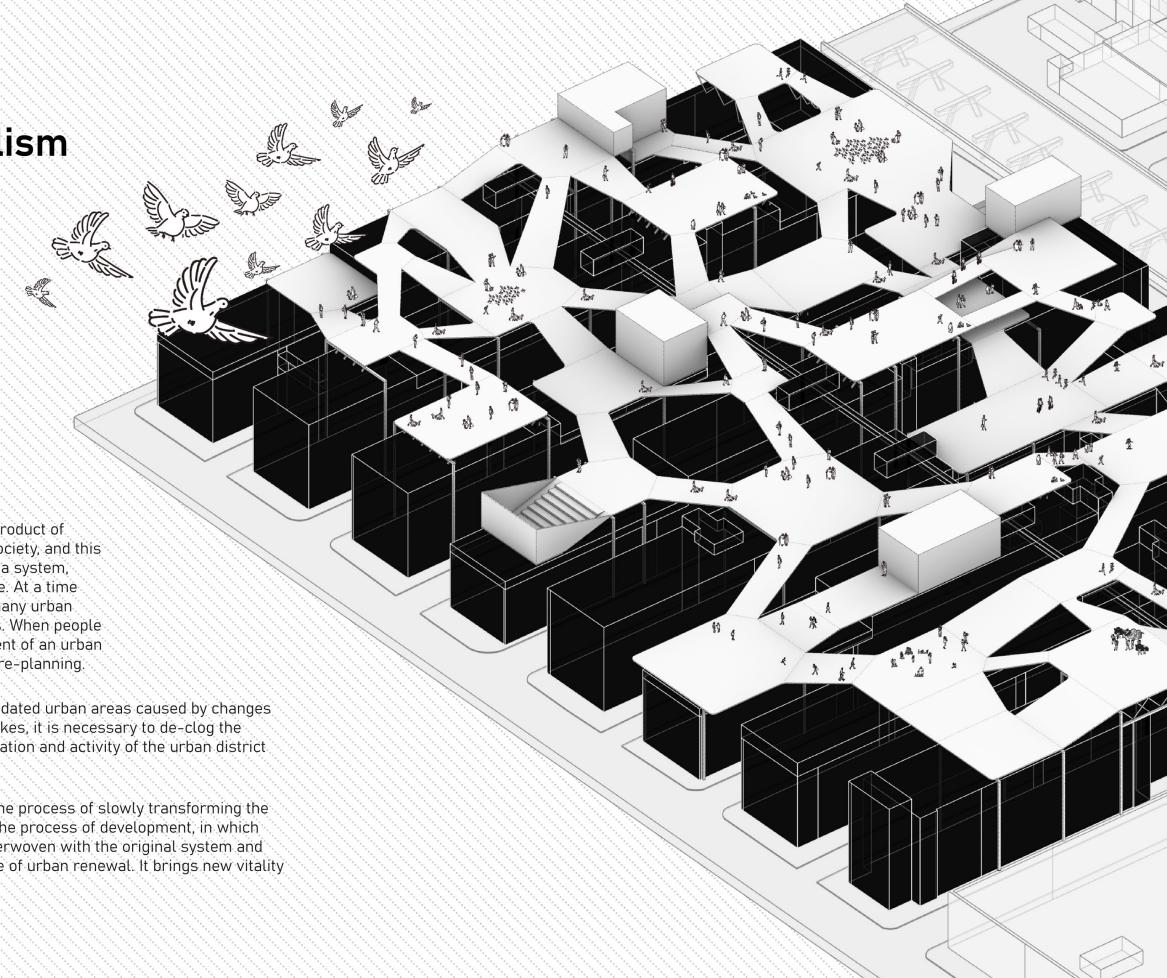
Instructor // Ostap Rudakevych, Tulay Atak, David Kim Group Work // Tianyi WANG & Tiancheng YE Degree Project , Year 2021

In Progress

The metropolis is a singular individual, the product of human activity, the embodiment of human society, and this is what is most fascinating about the city as a system, which has its own logic of development cycle. At a time when human beings are developing cities, many urban problems are plaguing different urban areas. When people consider the transformation or redevelopment of an urban area, they often think of reconstruction and re-planning.

In order to reactivate the de-vitalized or solidated urban areas caused by changes in times, population shift and planning mistakes, it is necessary to de-clog the blockage of functions and open up the circulation and activity of the urban district by means similar to urban acupuncture.

Land metabolism is what I use to describe the process of slowly transforming the urban area from one function to another in the process of development, in which new functions and structures are slowly interwoven with the original system and form a new assembly to achieve the purpose of urban renewal. It brings new vitality to the whole area.



Architecture as brick

Architecture is an understanding, a nature, an art. It is a part of historical memory, a carrier of historical events, an important presence in our lives, a physical carrier of family and human society. As an object that can be sculpted by history, it also has its own cycle of years and changes, just like many other living things. As the most primitive part of human inorganic creations, architecture has a more important role in people's lives than tools.

Architecture reshapes entire communities as bricks and mortar while also considering future sustainability. Through different design tools and technical means. The ultimate goal is actually to regulate the microclimate of different sites, and by adjusting these microclimates to regulate people, activate the community and contribute to the city. In addition to the building itself, the microclimates are also based on the basic settings at different scales and the atmospheric environment (whether natural or metropolitan).

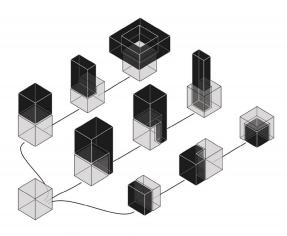


Diagram // Co-existing typology

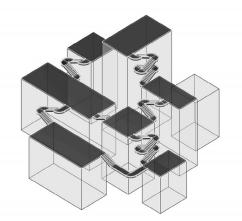
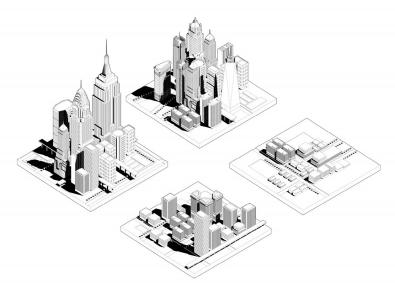


Diagram // Neighborhood above neighborhood



Drawing // Different urban clusters + bricks

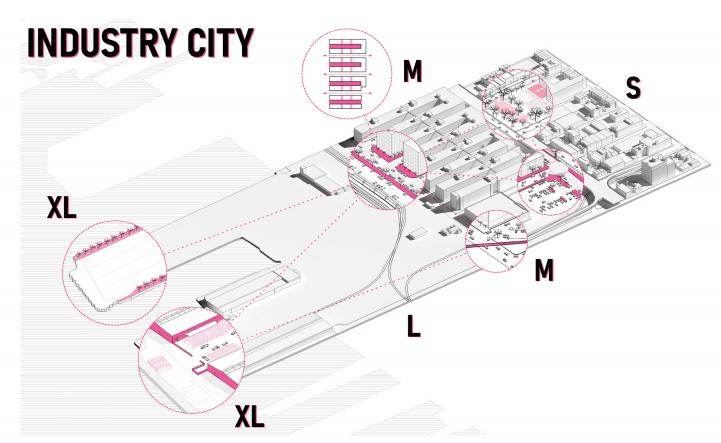
Co-existing

To make use of the vertical space of each land. There are several options in terms of redeveloping the existing architecture, that can lead to a state of co-existing. This period of the land is specially interesting for its organization. Different organization of blocks, old one and newly structed one, can lead to totally different result. It can create hierarchy, parallel, extension and more. Whether the existing block is touched or not can also lead to different potential of newly constructured structure.

Neighborhood above neighborhood

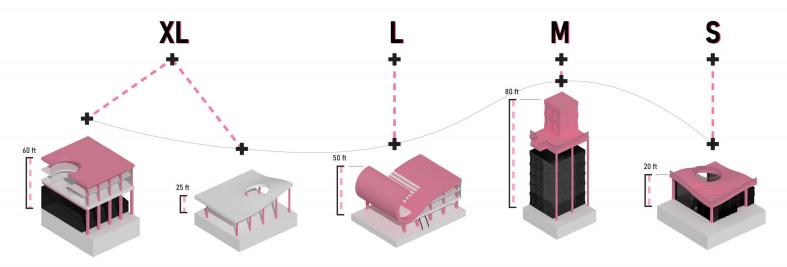
The close urban cluster, which they are having similar in structure and height, can be joint together to form the new ground level. The new ground floor would connect different buildings in a different pattern that different composition of neighborhood is offset from the existing community. More communal space is created and social activities are ensured with a better atmosphere and fresh connections.

in order to create more connectivity between buildings. These space can be also programmed as green infrastructure space, the can connect vertically to the existing greenary, park infrastructures.



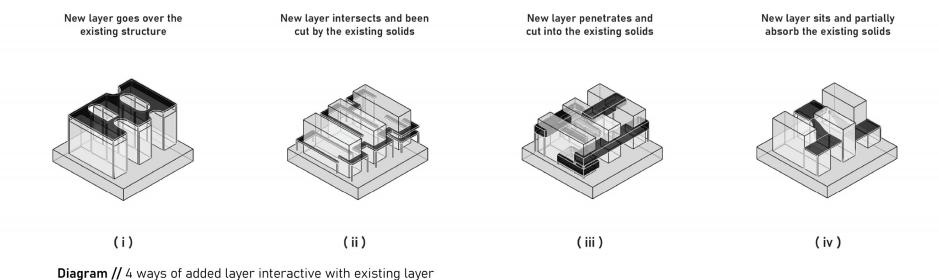
Drawing // Site condition - industrY city

The blocks of First Avenue, Second Avenue, 39th Street, and 41st Street have two more structures, 19 and 20. When urban manufacturing slid into decline in the 1960s, it hit IC's most notable tenants, leading the site into a 50-year period of divestment and decay. Our site starts from 39th St to 33rd St on North-South Axis, 1st Ave. to 4th Ave. on East-West Axis, which contains the South Brooklyn Marine Terminal, Industry City, part of Gowanus Expy, and residential area adjacent to the highway. Therefore, the site has been divided into four different scales with gradient, from west to east, XL to S. The condition of the site perfectly fit with our thesis concept, Urban Redevelopment as the direction and Landformation as the solution. The four gradient scales of site provide the earth for Landformation design to grow, and the historical and unused urban spaces need to be revived through new add-ons on existing buildings.



Drawing // City fabric + different scales

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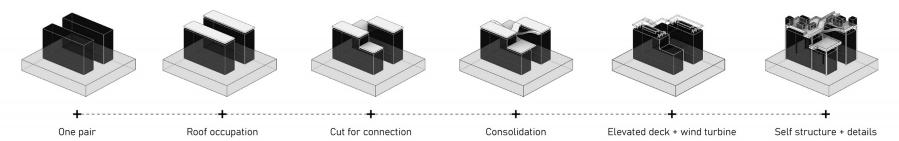


Diagram // Cluster redevelopment break down phases

Micropolitan

The functional solidification and homogeneity of urban areas can prevent them from maintaining a good number of mobile people and vitality throughout the day. Through urban acupuncture, the existing urban fabric is treated as a site of emerging structures, and the use of rooftop space and in-between space is used to shape a new functional area that can activate the urban area, which may be an industrial area with commerce, or a commercial center with high-density residential areas. Through the mixture and chemical reaction between different programs, it is possible to prolong or even resident the production or active state of the whole urban area.

Such an area will have a similar existence to a small village or town outside the urban system. And the circulation of the surrounding lines will be carried out around this urban area, just like a micropolitan.

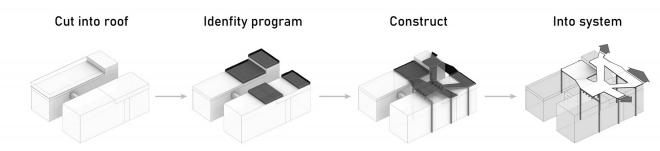
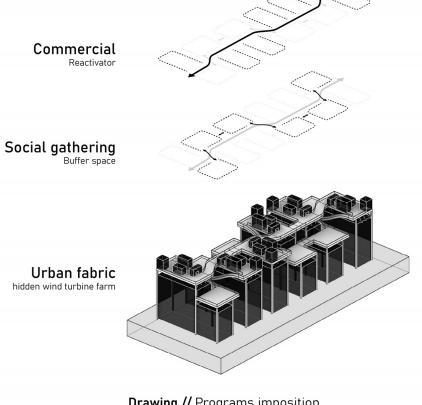
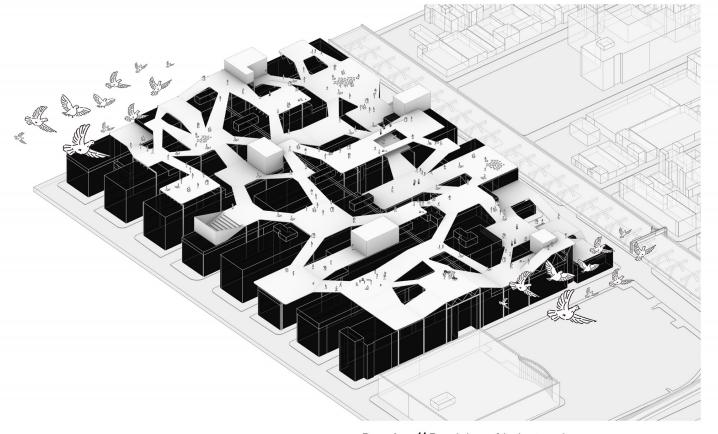


Diagram // Roof programming + Formation



Drawing // Programs imposition



Drawing // Prevision of industry city