PORTFOLIO

Lulin He

HE LULIN

Architectural Designer

address 30 Newport Pkwy, Jersey City, NJ
phone +1 6073792108
email lh556@cornell.edu

Portfolio: https://issuu.com/525208815/docs/20230105_text_and_jpg_portfolio_lulin_he
LinkedIn: https://www.linkedin.com/in/lulin-he-177958223/

EDUCATION BACKGROUND

2021.08 - 2022.12 **CORNELL UNIVERSITY**
Master of Advanced Architecture Design, GPA: 3.9/4

2016.09 - 2021.07 **SOUTH CHINA UNIVERSITY OF TECHNOLOGY**
2017.10 - 2020.07 **&POLITECNICO DI TORINO(POLYTECHNIC OF TURIN)**
Double degree program (1+3+1)
Bachelor of architecture, GPA: 3.78/4 & 110L/110

HONORS & AWARDS

2022.08 **Merit scholarship |** Cornell, $14000

2020.11 **Top shortlisted |** Competition "LEAP" held by UNI (conceptual architecture design)

2020.09 **Graduated with honor from Politecnico di Torino**

2017.10 **Merit scholarship**
School of Architecture in South China University of Technology

WORK EXPERIENCES

2023.02-05 **David Smotrich & Partners LLP**
Architecture Internship
Surveying floor plan and furniture inventory for Department of Citywide Administrative Services(DCAs). On-site floor survey including measuring dimension and recording furniture inventory. Recreating floor plans in AutoCAD according to Survey notes.

2022.06 **Circular Construction Lab | Felix Heisel**
Design and construct in a 9-person team
Denailing recycled wood beams, polish and reassemble a sample structural component for the construction of a folly in Cornell's Art Quad

2022.06-07 **Realtime Urbanism Lab | Farzin Lotfi-Jam**
Research Assistant
Collecting information about existing smart cities, including their year of implementation, platform, and clients. Using this information to create flow charts to illustrate the operating systems of these smart cities.

2019.07-09 **URBAN ELEPHANT Design Laboratory**
Curatorial Assistant
Exhibition board modification and translations of materials for Bi-city Biennale of Urbanism\Architecture (Shenzhen)

SKILLS

Modeling **Rhinoceros, Blender, SketchUp, Revit, AutoCAD, Grasshopper**
Render **Vray, Lumion, Enscape, Cinema4D, Unreal Engine, Unity**
Adobe **Photoshop, Illustrator, InDesign, After Effects, Premiere**
Other **Microsoft Word, Powerpoint, Excel, Python, ArcGIS**
Language **English** (Fluent) **Mandarin**(Native) **Italian** (moderate)

CONTENTS

01 CSA outpost

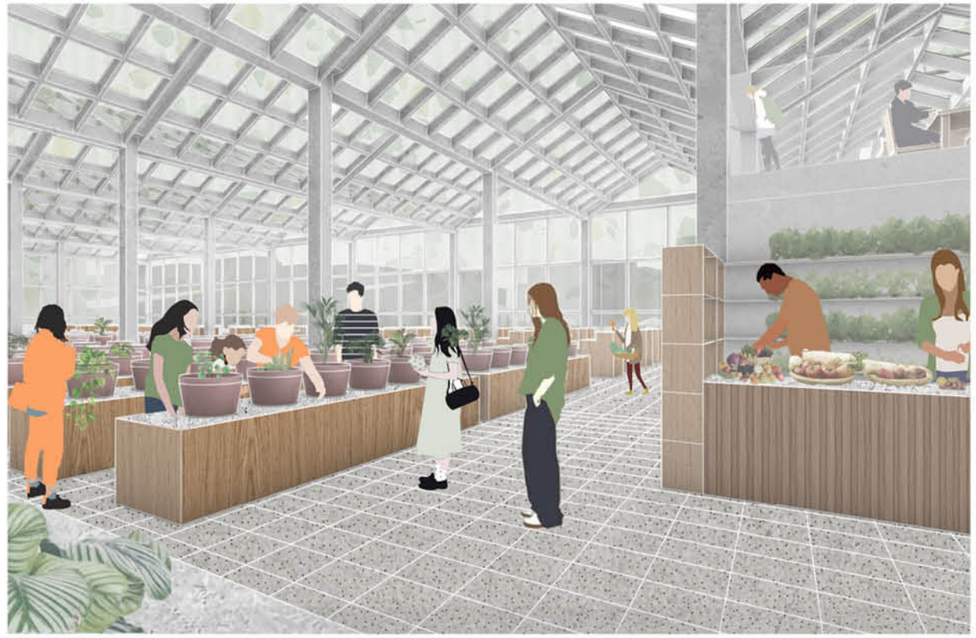
A Pilot Project for Community Supported Agriculture

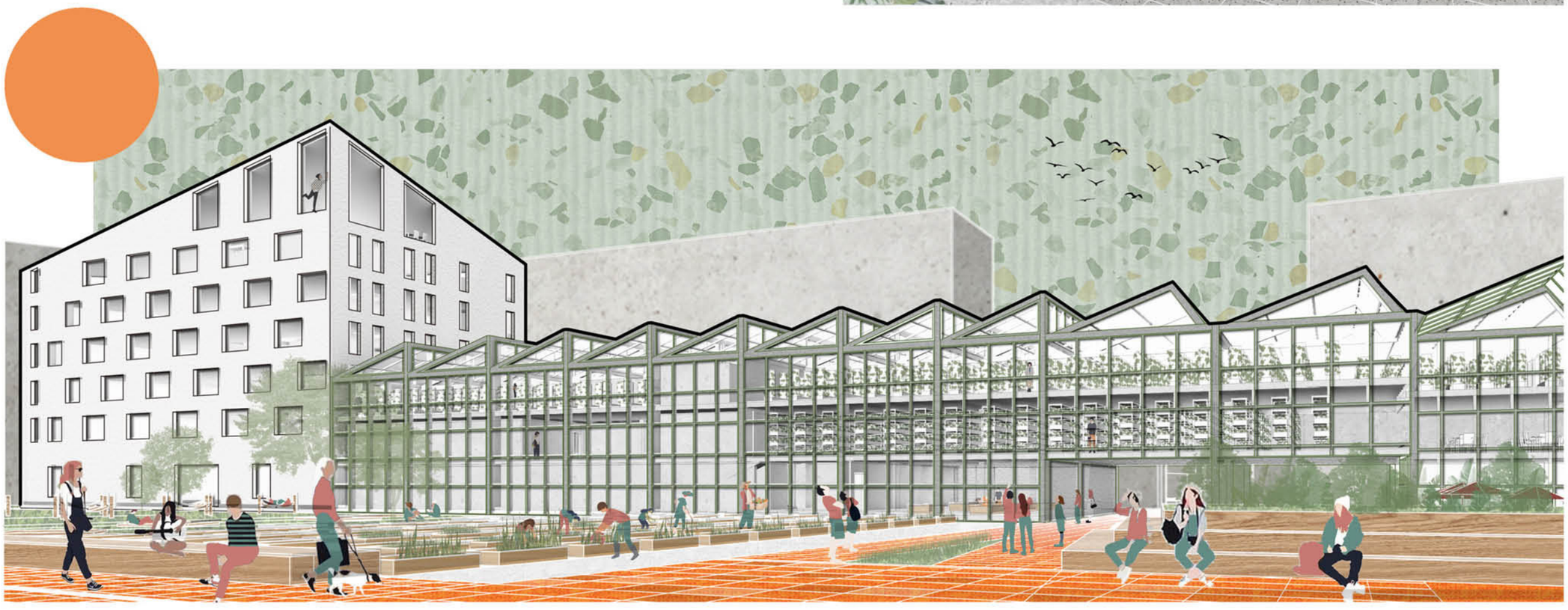
Polito 2019 Fall Atelier Urban Design
Tutor: Francesca Frassoldati, Chiara Lucchini
Location: Ex Diatto, Turin, Italy
Group work with Yingyue Li, Enxhi Hoxha, Tran Dong My Ling, Shuting Liu
Responsibility in team: Architecture design(50%), Landscape design(100%)
Drawings and modelling(70%), Essay writing and final presentation(100%)

In this proposal, the urban agricultural project was proposed considering from two perspectives: to satisfy the need of bottom-up communities for public spaces and to eliminate the alienation from nature due to previous heavy industrial development. Community Supported Agriculture appears to be a suitable balance point for the negotiation between civic activities and yearning for nature. With proper technical improvement, this prototype could be adapted for inserting into Turin's dense fabric, to provide more convenience for the community. Two axes, designated respectively for community and greenery are intertwined at the urban greenhouse.

This project was developed not only for one site, but with the ambition to conceive a mode that could be adapted and spread for more brownfields in Turin. Later on it was experimented with another site, together with the application of big data technology to increase its accessibility. Regarding this topic please see the essay in the writing sample.

1. M. Kries (2017). "Together!". In: Ilka & Andreas Ruby, Mateo Kries, Mathias Müller, Daniel Niggli (Eds), Together. The New Architecture of the Collective. Berlin: Ruby Press. pp.35-36
2. Birkby, Jeff. “Vertical Farming.” ATTRA Sustainable Agriculture Program, 2016.
3. Myhre, Andrea. “Community-Supported Agriculture: A Sustainable Alternative to Industrial Agriculture?” Human Organization, vol. 59, no. 2, 2000, pp. 187–197.

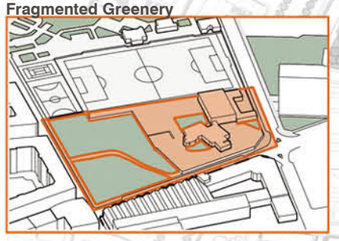




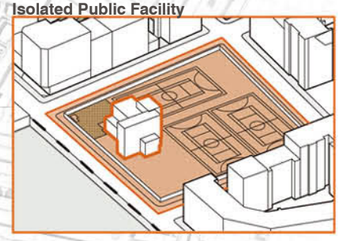
SITE ANALYSIS

Our site is called Ex Diatto, located in a dense urban fabric near the city centre. More public spaces and shared greenery is desired by the local residents. The high aging rate and unemployment rate are noticeable.

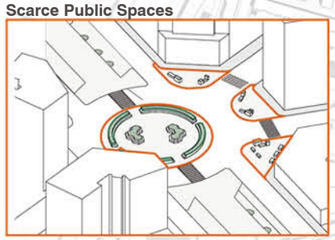
Fragmented Greenery



Isolated Public Facility



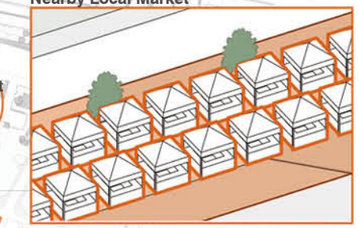
Scarce Public Spaces



Aging rate
108%-127%

Unemployment Rate
7.5%-9.8%

Nearby Local Market



PROPOSAL | *Urban Agriculture*

URBAN AGRICULTURE |*A Balance Point Between Human and Nature in Urban Space*

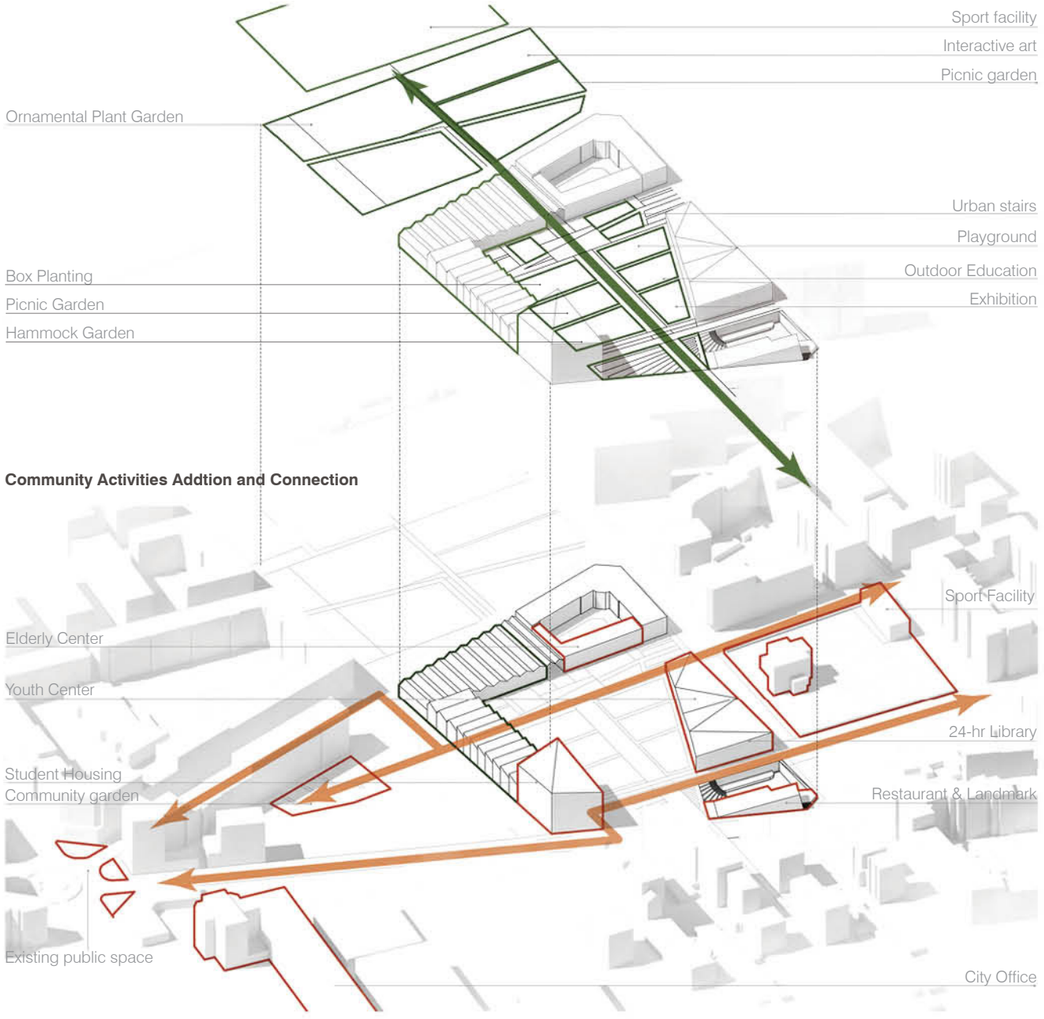
The previous efficiency-oriented urbanization has resulted in limited and polluted urban space. Which invokes citizens' desire for nature back into cities.

At this point, urban agriculture serves as a balance point that combines and mixes concerns for human-well being and need for nature.

Moreover, by replacing the traditional linear food supply chain with a circular chain, it promotes a [3] more transparent food system towards the consumers.

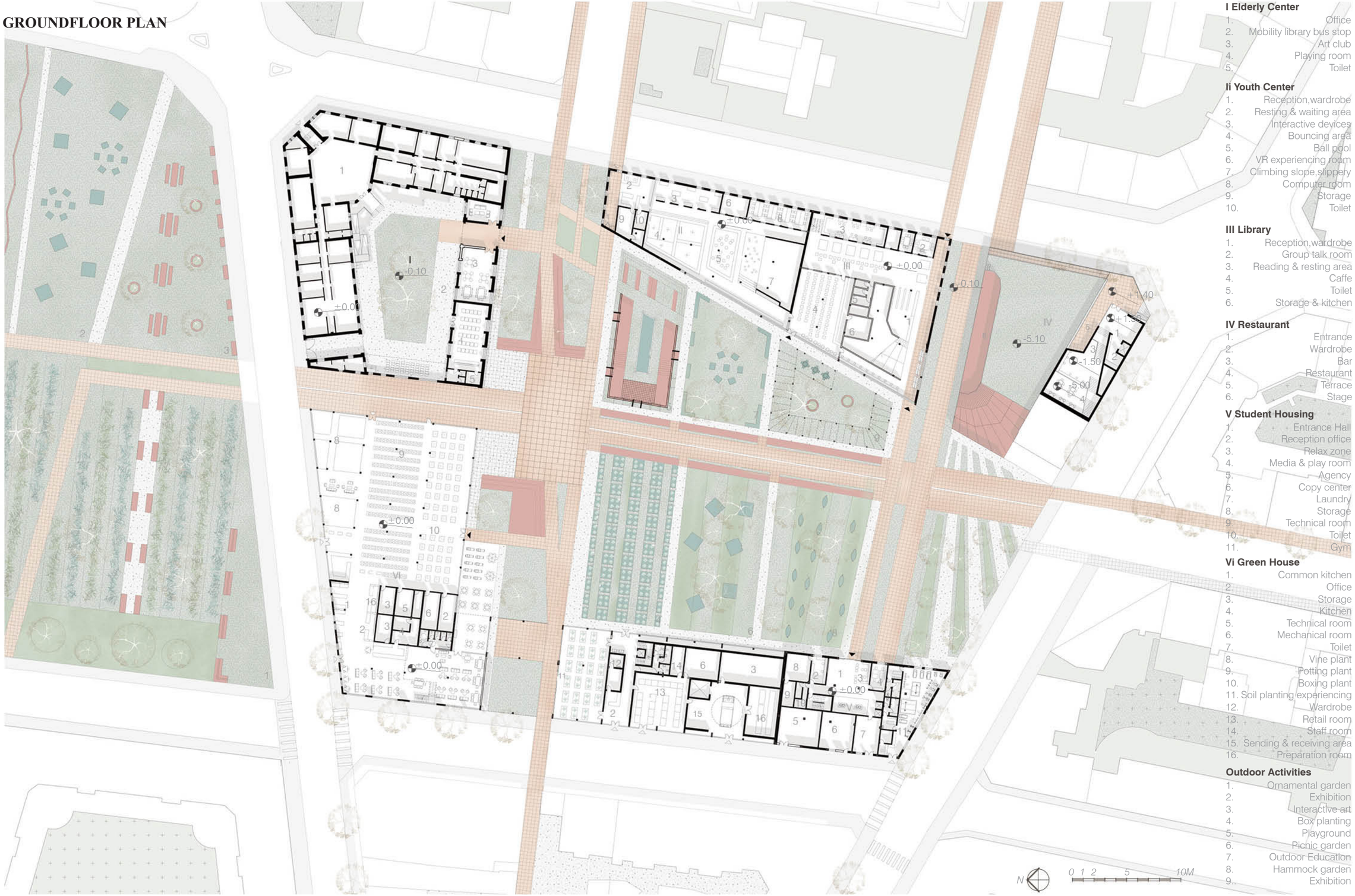
DESIGN STRATEGY | *Two Connections*

Green Connection



Community Activities Addtion and Connection

GROUNDFLOOR PLAN



I Elderly Center
1. Office
2. Mobility library bus stop
3. Art club
4. Playing room
5. Toilet

Ii Youth Center
1. Reception,wardrobe
2. Resting & waiting area
3. Interactive devices
4. Bouncing area
5. Ball pool
6. VR experiencing room
7. Climbing slope,slippery
8. Computer room
9. Storage
10. Toilet

III Library
1. Reception,wardrobe
2. Group talk room
3. Reading & resting area
4. Caffe
5. Toilet
6. Storage & kitchen

IV Restaurant
1. Entrance
2. Wardrobe
3. Bar
4. Restaurant
5. Terrace
6. Stage

V Student Housing
1. Entrance Hall
2. Reception office
3. Relax zone
4. Media & play room
5. Agency
6. Copy center
7. Laundry
8. Storage
9. Technical room
10. Toilet
11. Gym

Vi Green House
1. Common kitchen
2. Office
3. Storage
4. Kitchen
5. Technical room
6. Mechanical room
7. Toilet
8. Vine plant
9. Potting plant
10. Boxing plant
11. Soil planting experiencing
12. Wardrobe
13. Retail room
14. Staff room
15. Sending & receiving area
16. Preparation room

Outdoor Activities
1. Ornamental garden
2. Exhibition
3. Interactive art
4. Box planting
5. Playground
6. Picnic garden
7. Outdoor Education
8. Hammock garden
9. Exhibition

AXONOMETRIC VIEWS

The activities are designed specifically to satisfy different types of population in the surrounding area. The grassroot community, the students and the citizens due to its vicinity with of city centre. Indoor and outdoor activities are combined together to create a mixed-used vibrant block to enhance social interaction.

1. Urban Agriculture Activities

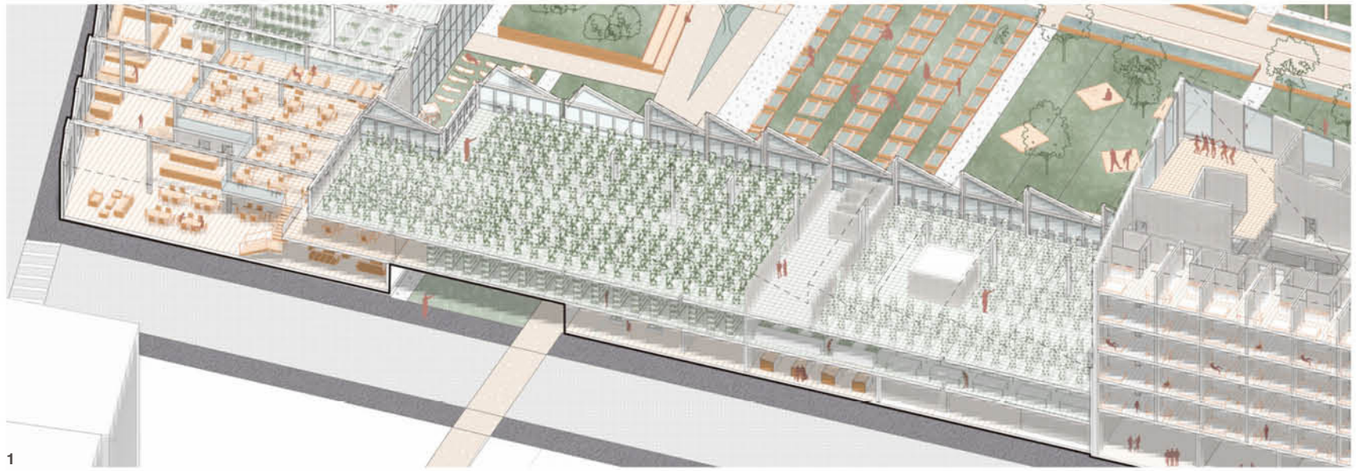
The Community Supported Agriculture is composed of both indoor vertical farms inside the previous industrial building and outdoor greenery with different functions.

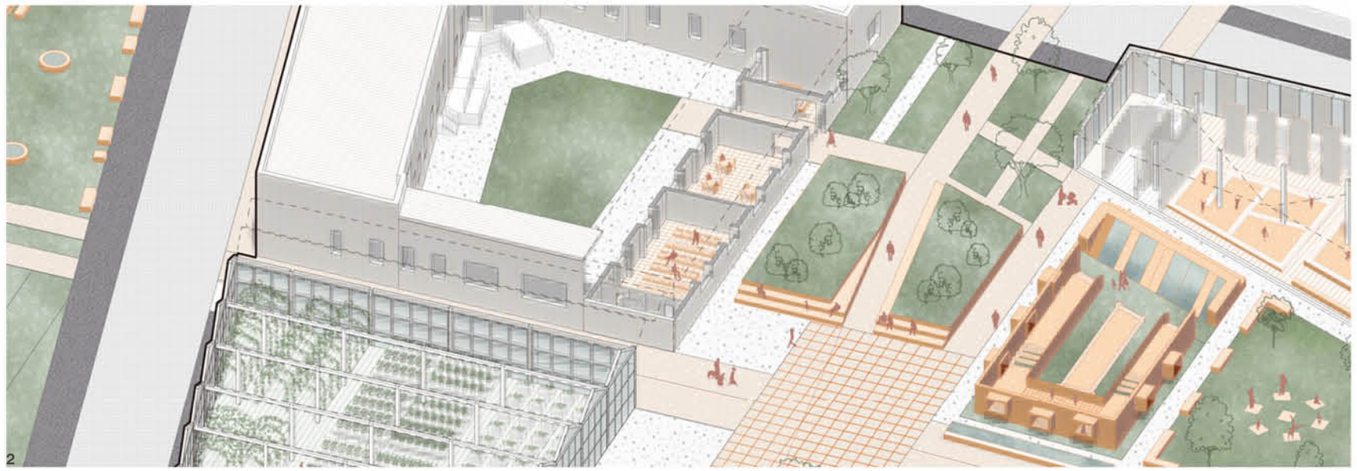
2. Community Activities

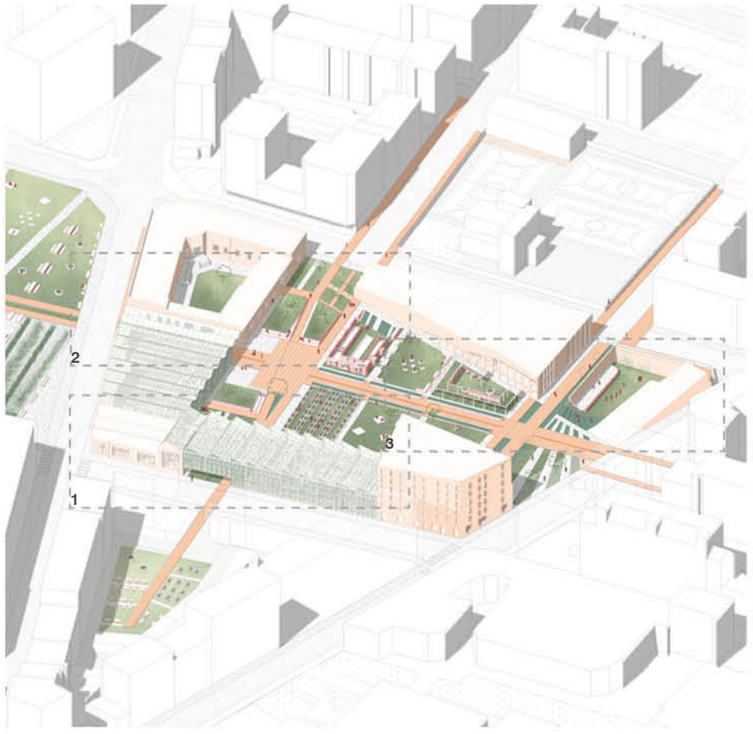
The existing city library on site was renewed as an elderly center. A new youth centre was constructed with playing and educational facilities. The green space between them serves as a connection for mutual outdoor activities.

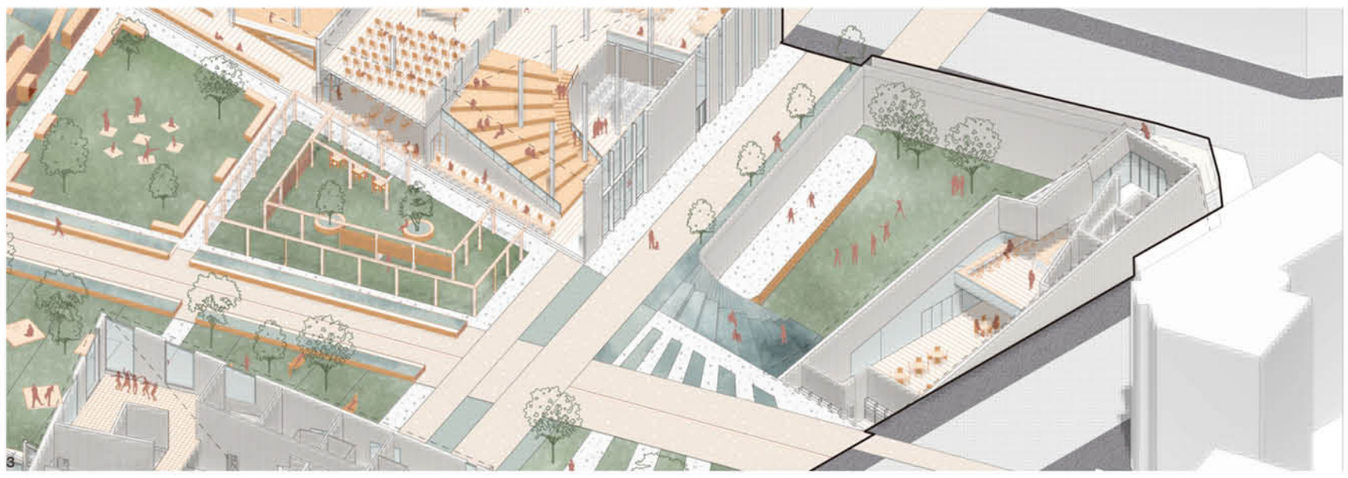
3. Citizen Attraction

To attract citizens, a buried restaurant is designed as a landmark. Furthermore, the continuation of the stairs with the stairs of the 24-hr library is to enhance the communication of different groups of citizens.The student housing was equipped with a panorama platform.

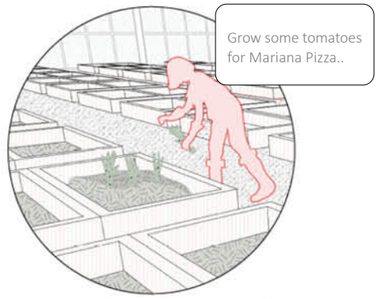

1


2



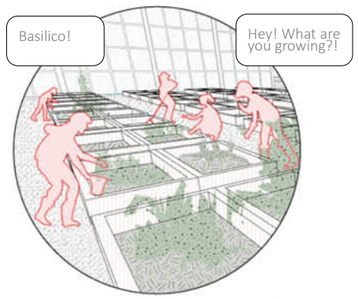

3

COMMUNITY AGRICULTURE



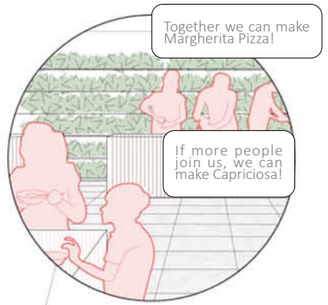
Planting

Since toxic contamination or pollutants may remain in the soil, synthetic soil may also be used in raised gardens beds or containers.[3]



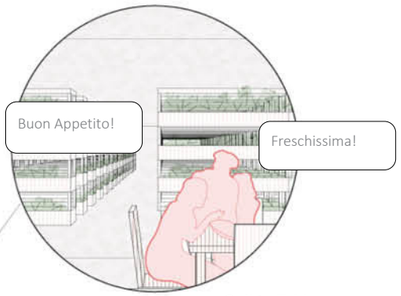
Meeting

CSA provides gathering opportunities for families and friends. People pay for renting boxes. Meanwhile they could meet friends with similar interest.



Cooking & Dining

The community can cook organic food together directly in the greenhouse and sharing various produce from different consumers.



Soil to Table

An organic restaurant was open next to the vertical farming. Consumers can enjoy organic cooking with knowing the explicit origin of their food.

COMMERCIAL AGRICULTURE

Vertical Farm

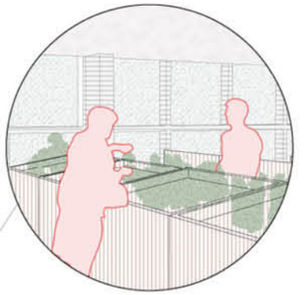
A combination of hydroponics and areoponics can save water and enable a year-round continuous crop production free from weather-related issues.[1]

Picnic Places

In the middle of the square, a picnic garden welcomes both consumers from the organic kitchen and citizens for gathering and having parties.

Skill Transferring

It teaches yousters the agricultural skills, which adds educatoinal value to the urban agriculture project and increase the income of the stakeholder.



Local Market

Consumers pay a subscription fee and can receive their share of produce through on site colloection or home delivery[4].

02 Infinite Fractal

A Mutual Supporting System in an Asteroid-Mining-Driven Space City

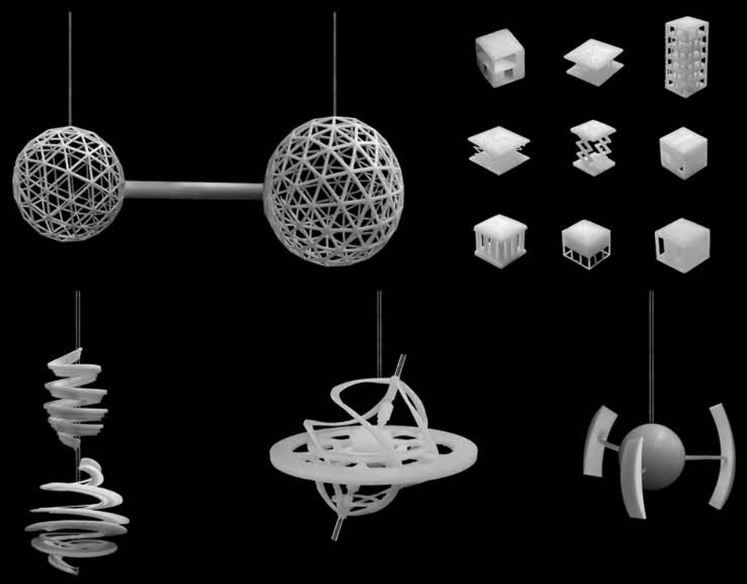
2020.08-09 LEAP competition held by UNI
Tutor: Dan Liang
Group work with Chen Zhang, Yuanjun Li
Responsibility in team: Concept(90%), Digital Model(70%), Render(90%), Drawings and final presentation(50%), 3D printing(70%)

As the 4th generation of space architects, we locate our space architecture in a greater scenario: how could we start from one module and develop into a space city? In addition, considering the specific requirement of this competition: a space habitat for asteroid mining activities, we approached our project by addressing the feature of this activity- efficiency and profit.

As we can say different types of asteroids are of different usage for humans to develop their space settlement, the mining method and consequent processing of these asteroids should be separated into specialized units: the construction units and the habitat units, connected by an arm to form a mutual supporting system. We took the micro structure of the molecule as our reference.

The growth of our space city is subjected to two main constraints: the maximization of profit and the sustainability in space. For more profits, the developer tends to build at the maximum density., moreover, to build as much as construction-mining units which are specialized in processing asteroids containing precious metals. However, in order to avoid over-proliferation that could lead to possible resource depletion in space, policies will constrain the numbers around one unit between zero and three, to ensure enough space for each unit.

References
1. Han, L. and Lan, Q., 2016. Jian Zhu Yu Tai Kong =. Beijing: Zhong guo dian li chu ban she.
2. Youtube.com. 2020. Asteroid Mining. [online] Available at: <https://www.youtube.com/watch?v=3-3DjxhGaUg> [Accessed 27 December 2020].



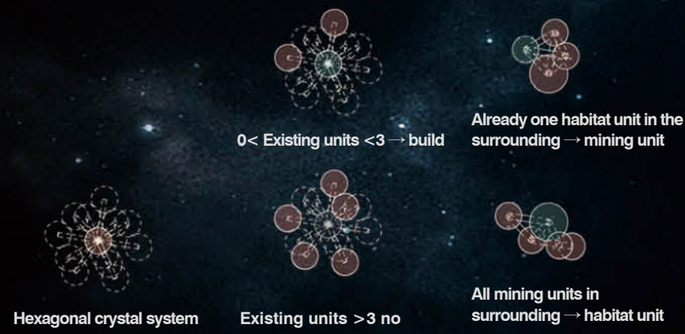
ITERATION LOGIC AND FUTURE GENERATIONS

Proliferation principle:

Potention location of the next generation around one existing module is like the surrounding atom around one atom in the hexagonal crystal system in molecule structure.

In order to avoid over-reproduction and resource depletion, a module will be constructed only when the existing modules in its surrounding location is less than 3.

If in the new generation's surrounding location, one habitat module already exists, the module will be mining module, otherwise it will be a habitat module to ensure the life support of the wholesystem.



Proliferation process

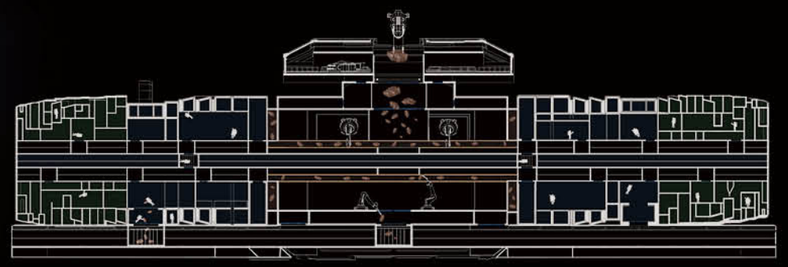
STEP 1: LAUNCH THE ARM FROM EARTH

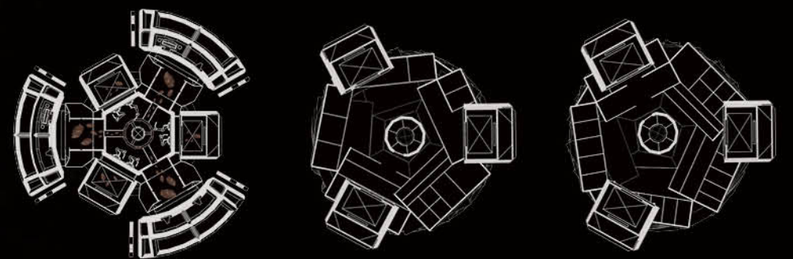
Exploring, Living(Early stage), Asteroids sorting

The linking device will be sent to the space firstly to carry out the task, just like a metrocyte. It will be used as an orbital space habitat to launch small mining vehicles and fabricate the first batch of living and production units.

The central part of the linking device is the mineral processing area with its two sides being the working area. The end of the linking device is the living area. The living area will be spinning to provide artifitial gravity. People move through the central elevator and the mineral move through the three elevators on the surface.

Section





Central operation space

The first step is to crush the asteroids in a crusher, and then transport it to the operation area with robotic arm through pipeline.

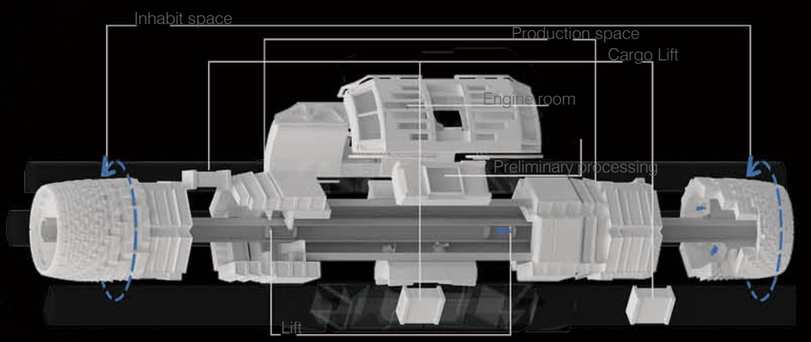
Work Space

The cargo elevator will transport the processed ore according to its psecific usage for further processing and production.

Inhabit Space

Before the construction of the habitat unit, the workers will live here. The elevator in the center and the rooms on several sides are connected by a platform.

Functional Layout

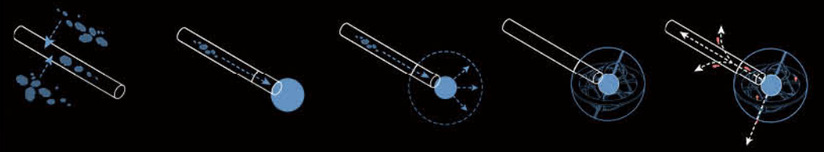


STEP 2: CONSTRUCTION OF MINING - CONSTRUCTION UNIT

Structure construction, S and M asteroids mining

After the successful self-sufficient operation of the metrocyte, the linking device will trigger the construction of the spheroidal production module. This module will be used for fine ore material processing and production of large-scale living units.

Unit Production Workflow



The arm will receive asteroids firstly.

S and M asteroids will go to construction-mining unit.

The facade will be built fisrt for radiation protection.

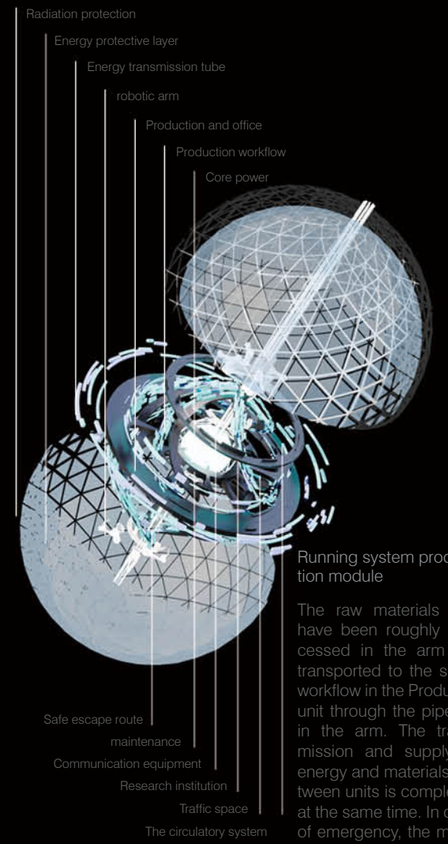
A complete spiral workflow for S and M asteroid mining.

Safe evacuation route.

Workflow For Processing

Using energy tranmitted from the habita unit, ore materials and various functional units will be transferred from the production unit back to the center of the habitat unit.

Stratifield Axonometric Drawing



Running system production module

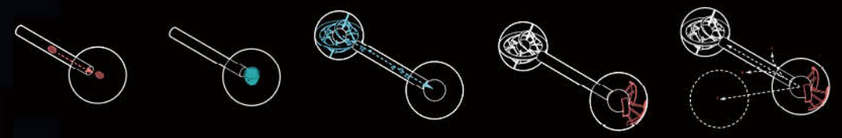
The raw materials that have been roughly processed in the arm are transported to the spiral workflow in the Prodution unit through the pipeline in the arm. The transmission and supply of energy and materials between units is completed at the same time. In case of emergency, the material transport pipe can be temporarily used for safe evacuation.

STEP 3: CONSTRUCTION OF MINING - HABITAT UNIT

Living, Manufacturing, C asteroid mining

The living units fabricated by the construction module will be used to assemble living modules, in order to create larger and multi-functional space. Meanwhile, shared facilities and the hydroponic farm in the center will also stimulate more potential commercial value for visitors from the earth.

Unit Production Workflow



C-type asteroids will be shipped to the center of the habitat module.

Aquaponic farm will be nutried by the water extracted from the C asteroids.

Receiving building components from construction unit.

Cities and platforms will be built with these units.

Safe evacuation route.

Energy Supply Analysis

Mining module
Core: S or M-type asteroid. It extracts iron for construction, silicon for solar panels and other materials that are precious for space mining interests.

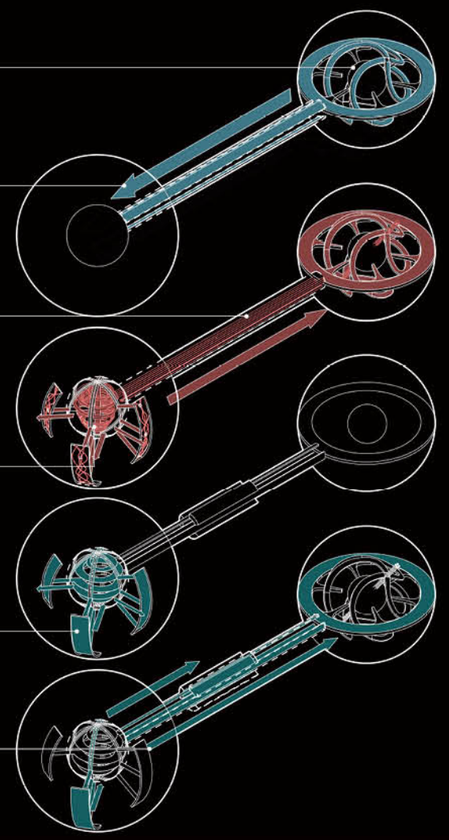
Living units construction and transmission
Construction units will be transferred from the production module to the habitat module through the metrocyte.

Energy transmission
Habitat modules will provide mining modules with water and fuel for production.

Habitat module
Core: C-type asteroid. It will extract water for living and aquaponic farm and fuel and making fertilizer and necessities.

Working routine of researchers
Scientist, medical specialists, engineers and maintainance staff will go from the living board to their working board through the core.

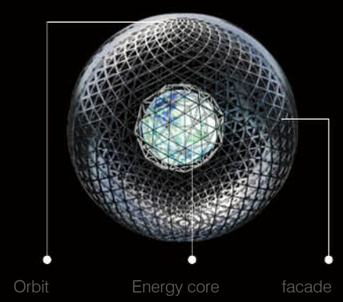
Working routine of miners
Astro-miners will go working in mining module or to the space craft harbor through the core and elevators.



LIVING SCENE IN MINING-HABITAT MODULE

Shared Facilities For Living Modules

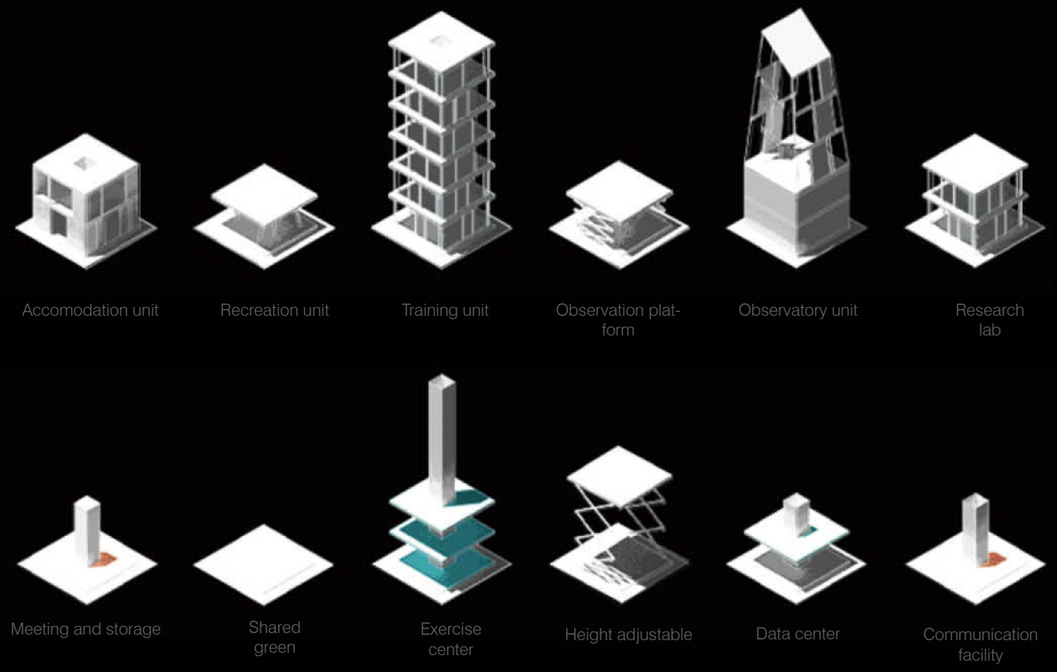
The center of the life module

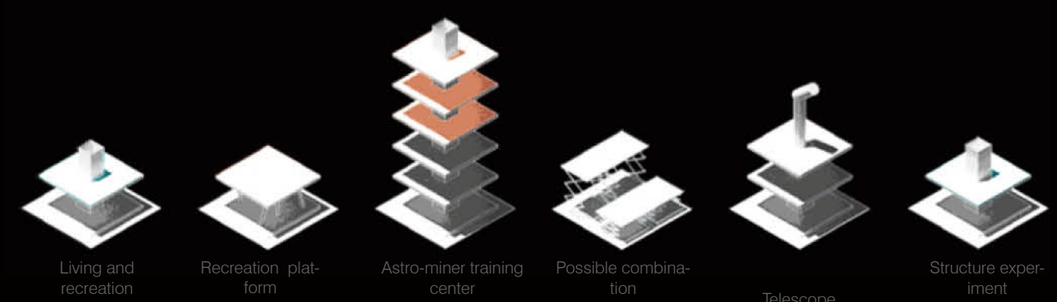


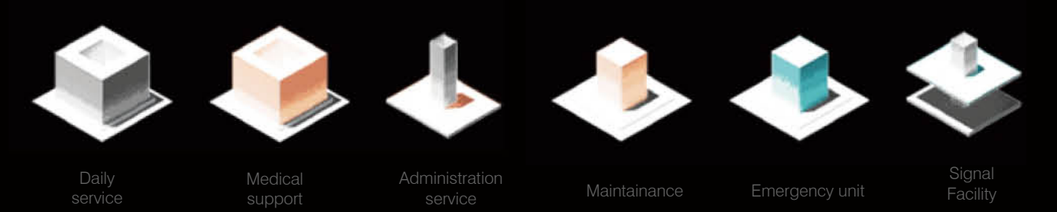
Public infrastructure

Greenery and garden

Vertical greenery







03 UNIQUECOVER

A Transformation of Site's Weakness into Character

Polito 2019 Spring Architecture Construction Studio
Tutor: Claudio Rossi, Andrea Bocco
Location: Milan Barrier, Turin, Italy
Groupwork with: De Souza Ramalho Fernanda, Davide Ventura, Wanyi Xie
Responsibility in team: Concept(25%), Physical model(25%), 3D Modelling(100%), Detail(100%), Final presentation(100%)

The project is developed in an abandoned site positioned in a dead end in Barriera di Milano borough. This zone is mostly residential and marked by the presence of people from different nationalities. Due to the lack of sense of security and the limited indoor area, a strong character that could be observed on site is that most of the residents tend to cover their balconies with plastic covers for privacy and extra room function. However, this not only destroys the architectural appearance but also exacerbate the social separation in this area.

Our intention is to transform the weakness of the site 'the balcony cover' into its strength, satisfying the need of the users through architectural design but also to encourage the communication between people from different nations. The covers are reinterpreted as "popped out boxes" that one can customize according to his need. In this way it becomes a window to display the diversity of the site and forms a distinct community identity.

SITE ANALYSIS

Foreign Citizens 14.76%

China 5%

Romania 46%

Peru 5%

Morocco 12%

Location: Milan Barrier

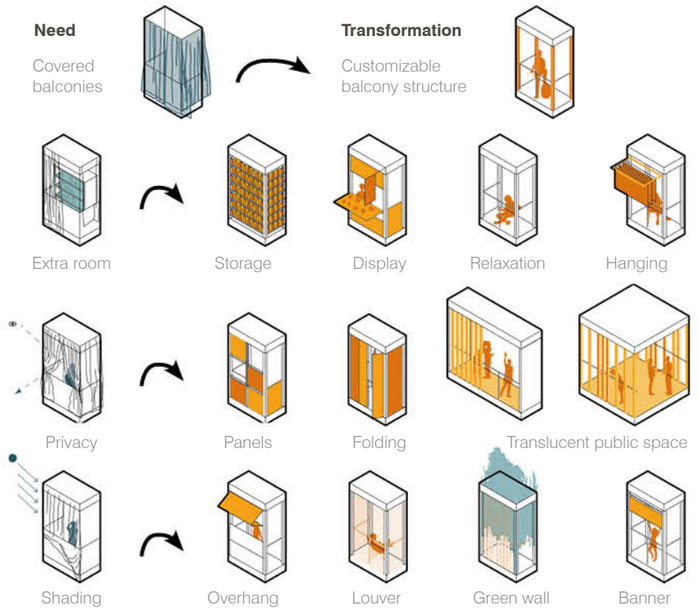
The Covered Balconies

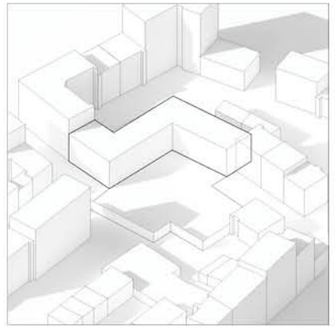
Our site, called Barriera di Milano(Milan Barrier) is located in the peripheral area of the city with residents with different cultural backgrounds. In our site inspection we found that the most obvious character is that the residents tend to cover their balconies for various usage.

3.6km

City Centre

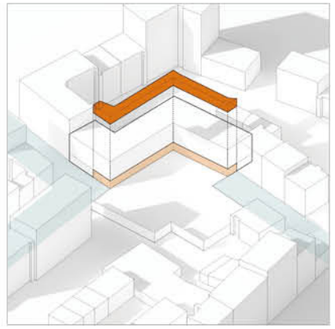
CONCEPT GENERATION





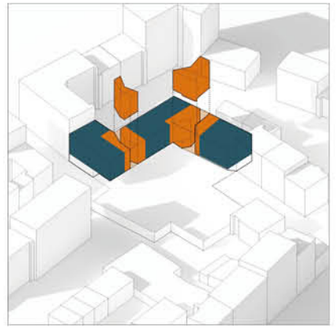
Building Connection

Connect the interrupted facade.



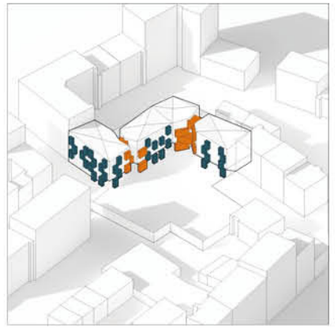
Passage Connection

Connect the street by opening a gallery on the ground floor.



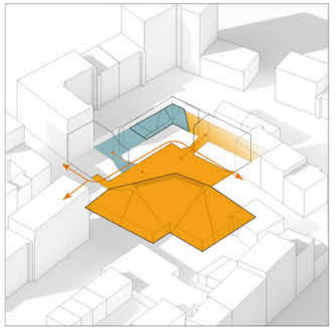
Living Connection

Connect residental parts with common spaces in between.



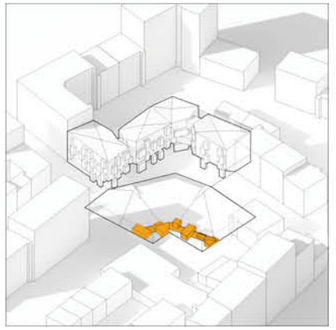
Visual Connection

Bridges and popped out balconies for vertical and horizontal connection.



Privacy Transformation

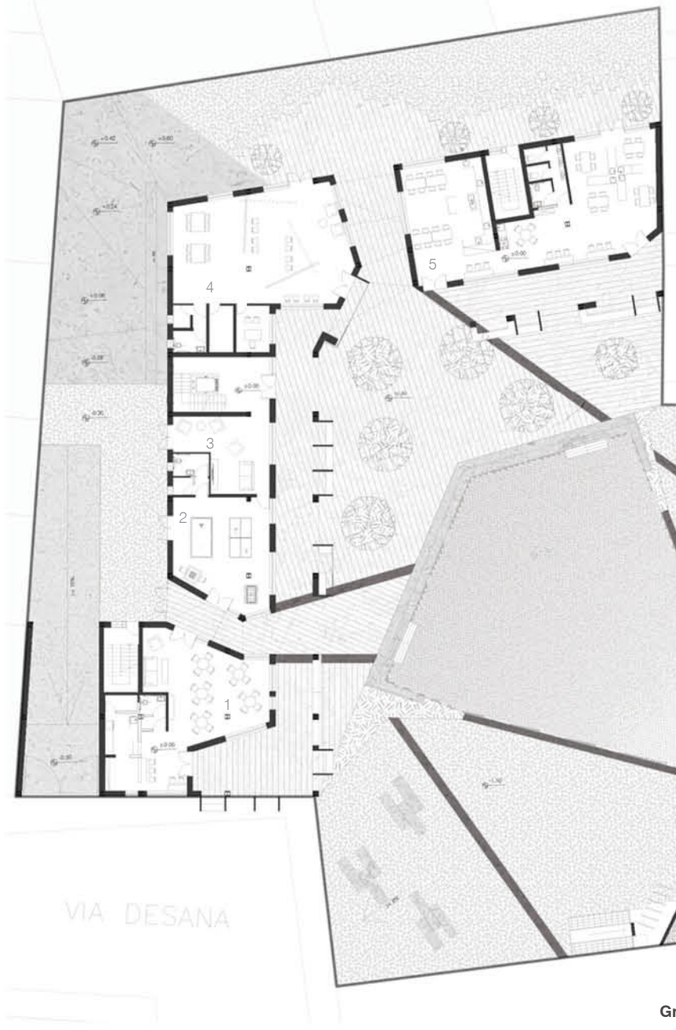
Create a more private backyard for the residents.



Form Connection

Create a second 'facade' in the square to echo with the main building.

FLOOR PLANS



Ground Floor

1. Wine Bar
2. Playroom
3. Living Room
4. Cultural Club
5. Foodlab
6. Common Terrace
7. Relax Room
8. Living Room
9. Common Kitchen
10. Coffee Corner
11. Reading Room
12. Terrace
13. Retail Room
14. Dining
15. Kitchen
16. Workshop

INTERNAL VIEWS

Co-working Space
The semitransparent common space offers a good play for residents to rest and discuss.

Food Lab
In the foodlab, residents could learn cookings from all over the word. They could also hold classes to make profits.

Balcony with Private Garden
One could use the ceiling of the other residents' balcony as his garden, thus creating the interaction with his neighborhood

CONSTRUCTION DETAIL

1_Roof

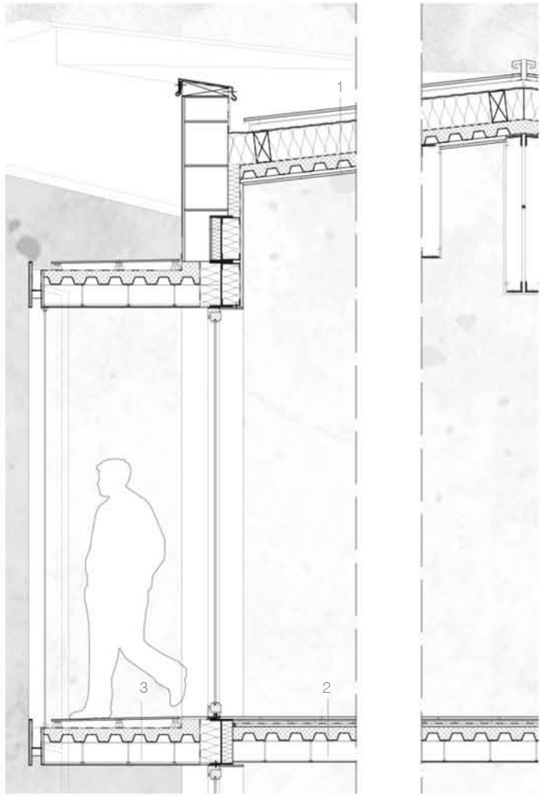
Internal Finishing	2mm
Gypsum Board	15mm
Omega Metal Profile	25mm
Metal Deck with Reinforced Concrete	90mm
Vapor Barrier	4mm
Glass Wool Insulation	200mm
Wood Nailer	
Waterproof Layer	8mm
Steel Beam	50mm
Steel Stud (Air Gap)	25mm
Standing Seam Metal Sheet	15mm

2_Internal Floor

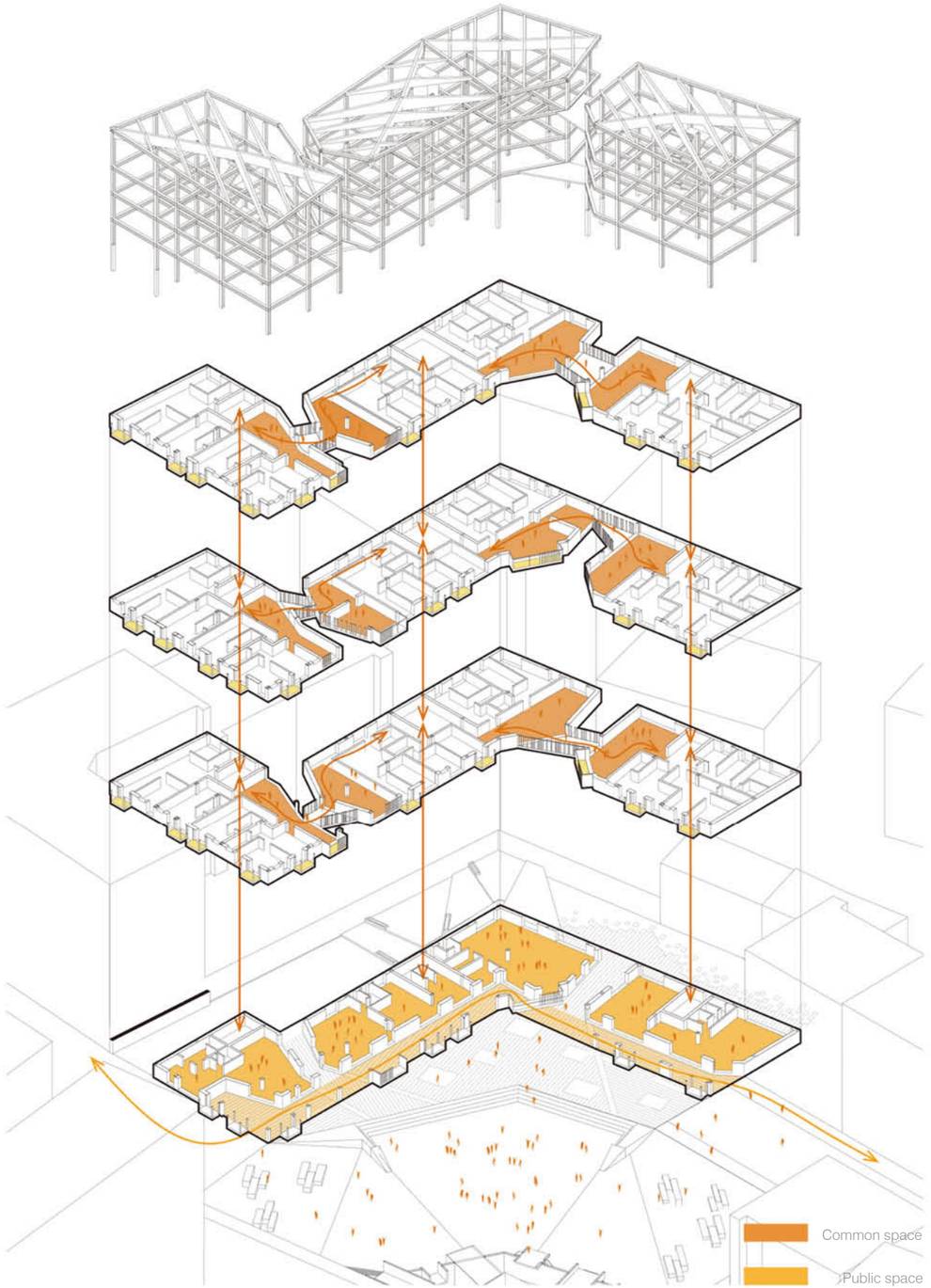
Internal Finishing	2mm
Gypsum Board	15mm
Secondary Beam in Steel	140mm
Metal Deck	50mm
Reinforced Concrete	40mm
Acoustic insulation	30mm
Waterproof Membrane	4mm
Heating system laid on a concrete layer	15mm
Cement Screed	10mm
Parquet Floor	15mm

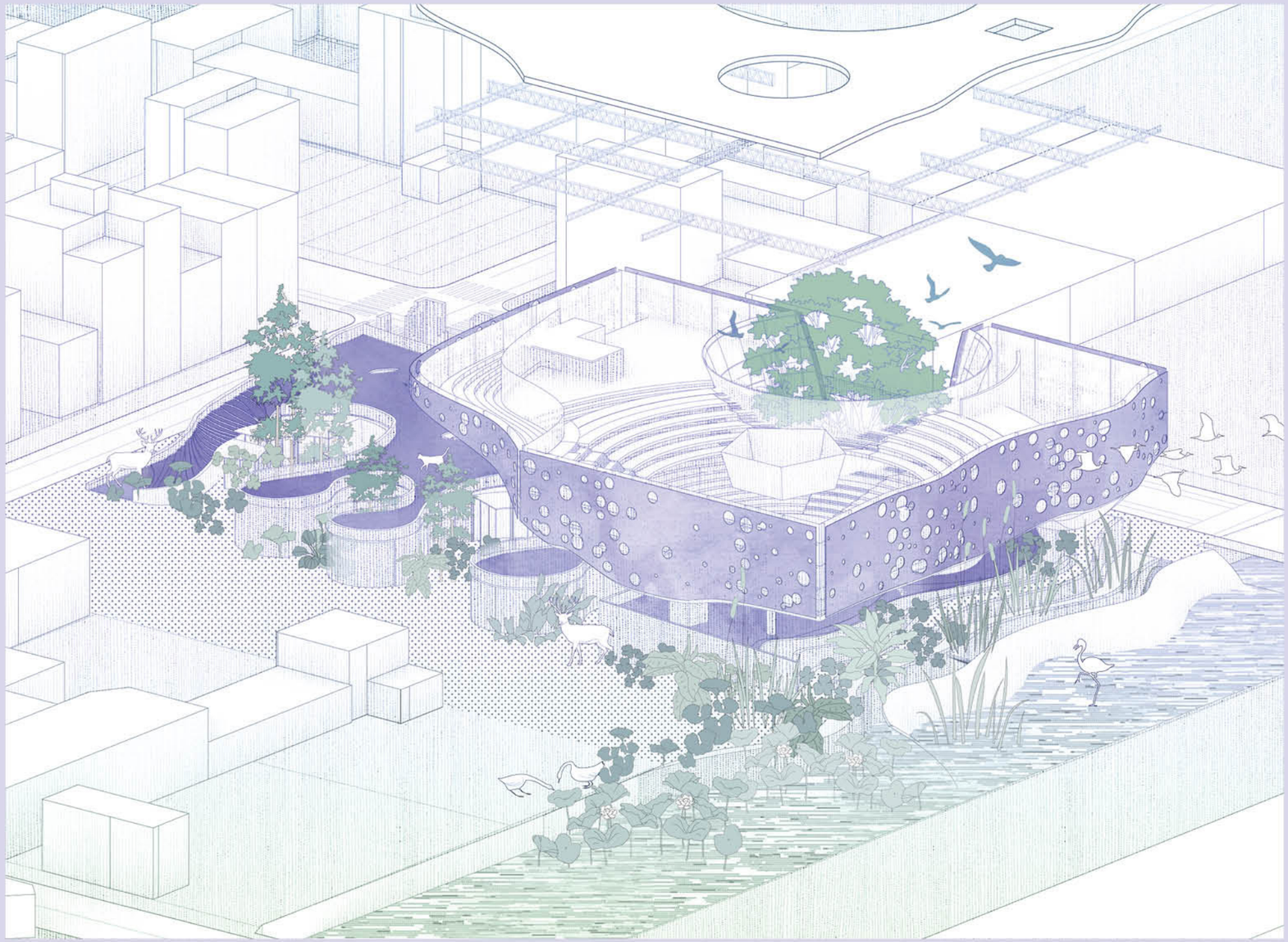
3_Balcony Floor

External Finishing	2mm
Plaster Board	15mm
Secondary Beam in Steel	140mm
Metal Deck	50mm
Reinforced Concrete	40mm
Waterproof Layer	4mm
Adjustable paving support	
Ceramic Tiles	10mm



AXONOMETRIC VIEWS





04 Call of The Wild_Passive Play

A Mixture Between Game and Architecture

Date: Cornell AAP 2022 Spring
Tutor: Florian Idenburg
Location: Gowanus, New York, USA
Group work with Xinyue Geng, Xingyao Wang
Responsibility in team: Architecture design(33%), Modelling(70%), Rendering(50%), Promotional Video(100%)
Video Link: https://www.youtube.com/watch?v=U710-3pV0ac

This project is a mixture of AR game design and e-arena design, aiming at using game strategies to guide conscious sustainable community behavior[1]. It promotes the transformation from ego and eco status to seva status, in which humans and nature live equally on the planet. The main methodology to achieve this is by switching human and nature perspectives through AR experience.

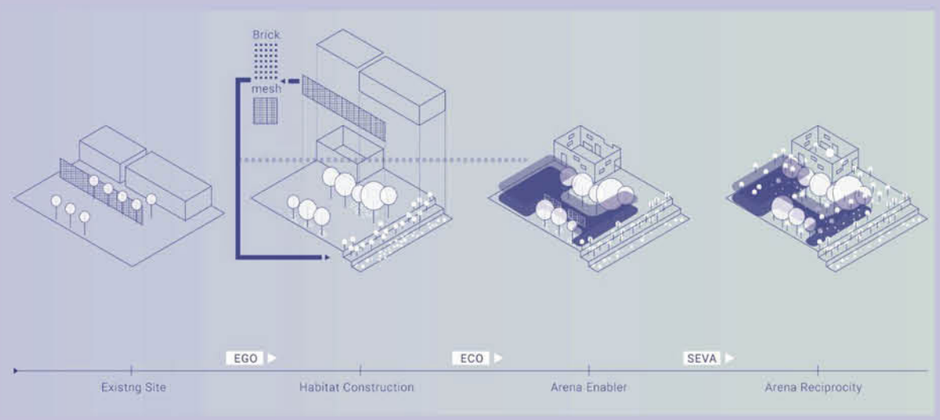
Firstly, we conceived an AR game that teaches information about endangered flora and fauna in the Gowanus district in Brooklyn. Residents need to collect information through AR games and combine their clues together to find the weekly animal.

While the second part is to design an e-arena plus community center that incorporates the game we designed. The site strategy itself is a conscious process that prompts the transformation from ego state to seva state on the polluted Gowanus site. In our building, before entering the core space: the arena, the visitors will be immersed in different natural environments: land, water, shore, and sky. They will have the experience of becoming different animals which is in the theme. By seeing the world from another perspective, visitors will know the emergency of protecting the heavy-polluted Gowans canal.

References
1. Douglas, B. and Brauer, M., 2021. Gamification to prevent climate change: a review of games and apps for sustainability. Current Opinion in Psychology, 42, pp.89-94.
2. Wahl, Daniel Christian. “Seva: Regeneration in Service to Life.” Medium. Age of Awareness, August 11, 2020. https://medium.com/age-of-awareness/seva-regeneration-in-service-to-life-f969d3f15763.

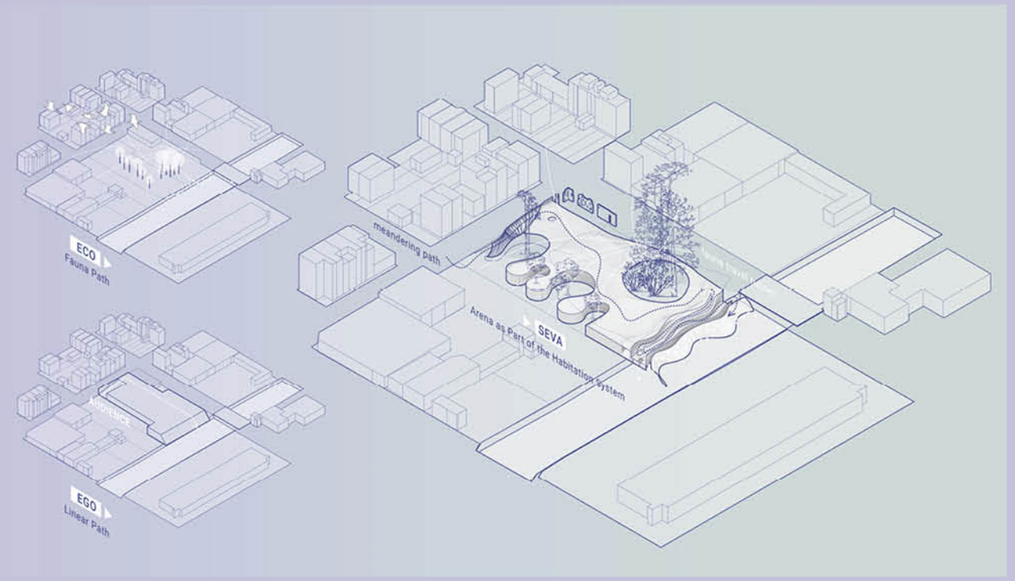
Ego, Eco, Seva

According to Anil Sachdev and Daniel Wahl, "If we simply 'move from ego to eco' we are in danger of denying the importance of self-care. Only by also caring for self can we effectively and over the long-term care for our human community and the community of life. The healthy way to integrate the dynamic polarity of 'being for oneself' and 'being as part of a larger whole' is to unleash the potential created by this polarity in service to life."[2]



The site strategy itself is a conscious process that prompts the transformation from ego state to seva state on the polluted Gowans site.

The arena not only guarantee enough room for the growth of flora & fauna, but also leave space to accomodate human activities. By weaving eco and ego together, we can achieve the co-living of human and nature.



The path of flora and fauna is designed according to their living habit so that we can provide a more suitable living condition. The path of human is to achieve the maximum efficiency and good experience.

OBSERVATION

BUY+PLANT

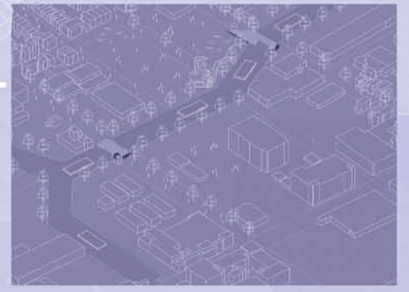
BIKE/WALK

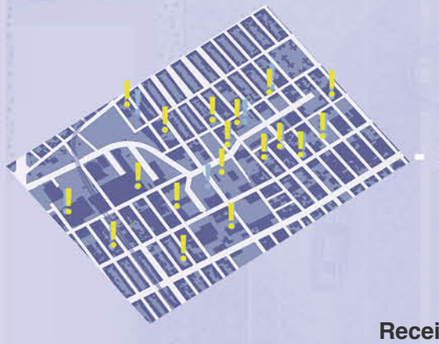
USER TOKEN

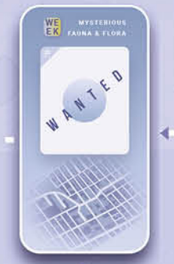
Weekly Task Release

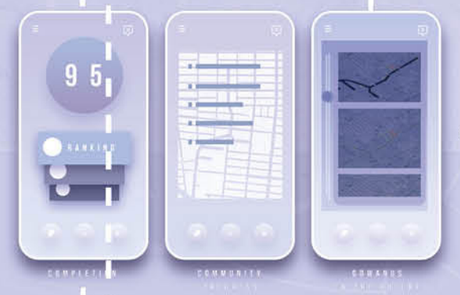
Community Goals & Leader board

Ger More Environemental Tasks







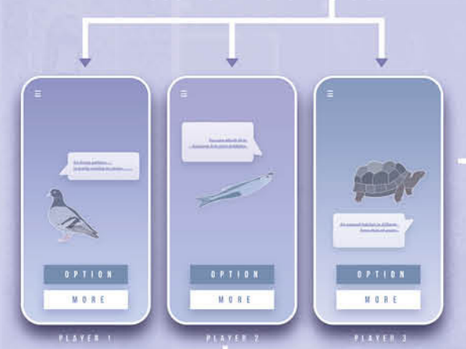


TASK1

TASK2

TASK3

Receive Different Clues

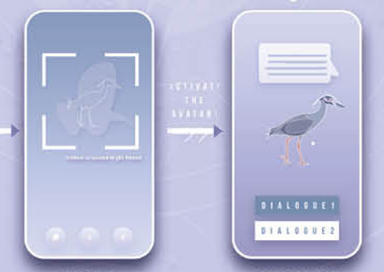


PLANT ADOPTION

SUPPORT ALGAE FARMING

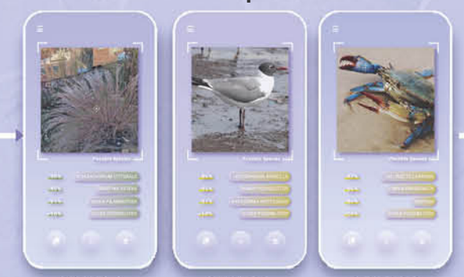
REDEEM COUPON

Complete the Task



Direct to the Habitat

Explore



Active AR Avatar

We conceived a VR game that teaches information about endangered flora and fauna in the Gowanus district in Brooklyn. Residents need to collect information through AR games and combine their clues together to find the weekly animal.

While the second part is to design an e-arena plus community center that incorporates the game we designed. The site strategy itself is a conscious process that prompts the transformation from ego state to seva state on the polluted Gowans site.

DESIGN | *Plans, Sections*

The design of an e-arena plus community center incorporates the game we designed. The site strategy itself is a conscious process that prompts the transformation from ego state to seva state on the polluted Gowans site.Before entering the core space: the arena, the visitors will be immersed in different natural environments: land, water, shore, and sky. They will have the experience of becoming different animals which is in the theme. By seeing the world from another perspective, visitors will know the emergency of protecting the heavy-polluted Gowans canal..

GAMES | *Switching Perspectives in Land, Shore and Sky*

The way to switch the perspective between humans and fauna & flora is achieved both by the careful selection of natural material and the AR environment. For different game themes, we chose materials to create an atmosphere that can create a feeling of being inside the actual environment. Besides, by adjusting the scale of the furniture and structural components, we aim to make the audience feel the perspective of a specific flora and fauna.

Video Link: https://www.youtube.com/watch?v=U710-3pV0ac

Reality View

Land

There is undulating grounds to create different spatial feelings. We put the nest of bird here. Visitors can interact closely with nature on our in this floor.

Game View

Reality View

Shore

In the shore we used tense vegetation in immerse the audience into nature.

Game View

Reality View

Sky

We have intricate placement of escalators and staircase, to create a feeling of being immersed in a tree.

Game View

05 Breathing

An Inflatable Living Habitat Inspired by Sponge Self-healing

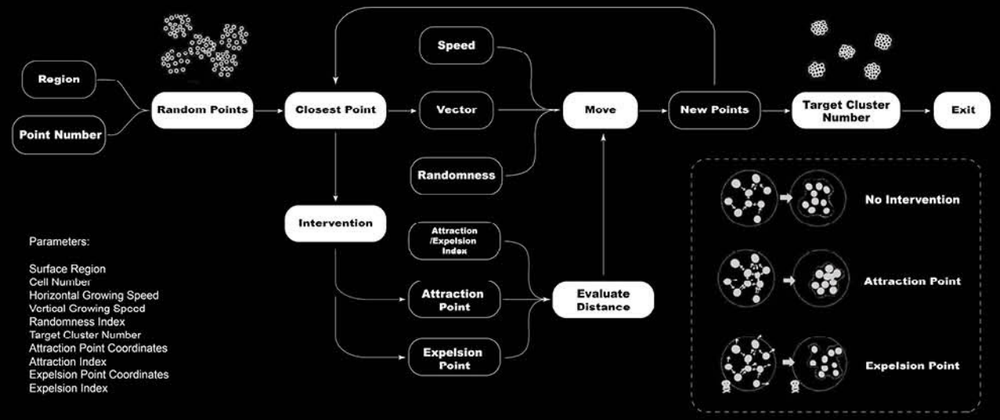
Video Link: https://youtu.be/kPstWDCwwsg
2022.09-12 Cornell Design Studio_Across Discinplines
Tutor: Jenny Sabin
Group work with Xinyue Geng, Michele Chen
Responsibility in team: Concept(50%), Digital Model(80%), Render(90%), Drawings and final presentation(50%), 3D printing(50%), Animation(100%)

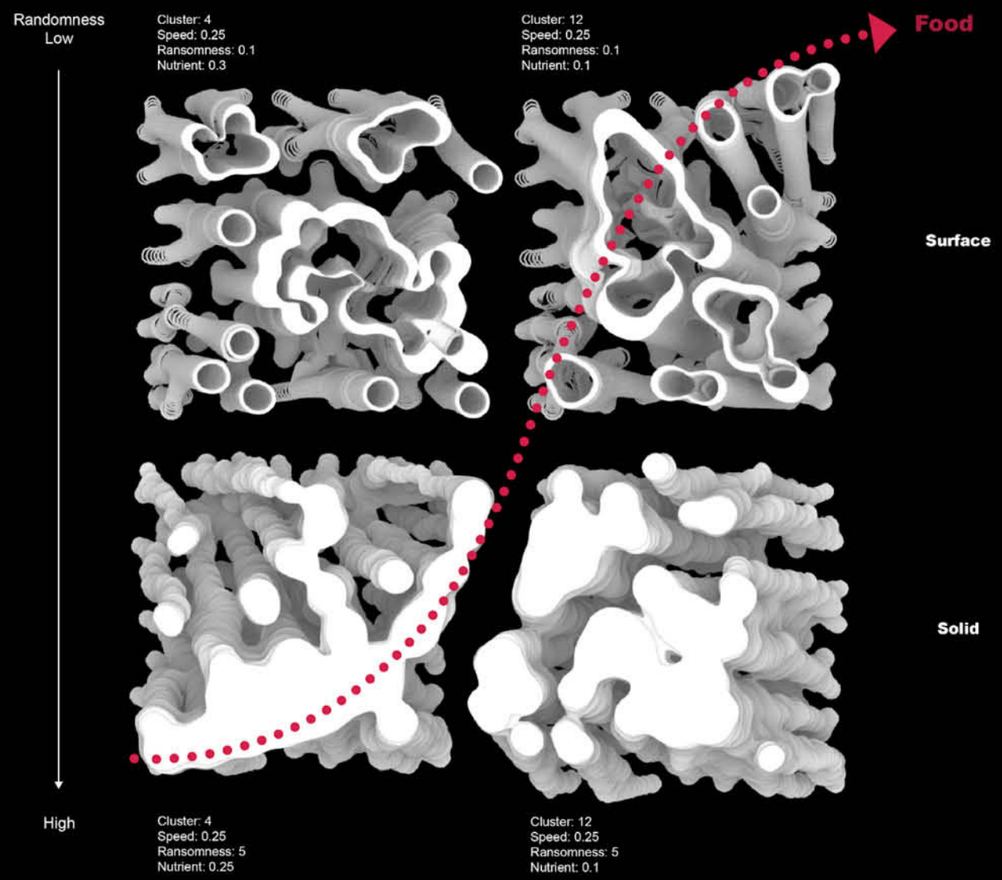
Our project, “Breathing” is an inflatable-structure living lab inspired by sponge cells, which are known to be able to self-heal as they reaggregate towards each other and rebuild themselves when they have been damaged. It aims to create a new gathering space on campus. The surface responds to human activity and provides a new type of habitat for local fauna and flora through its eco-friendly microstructure.

One of our key collaborators would be botanists and plant experts, who have a deep understanding of algae and the ideal growing conditions for plants. Additionally, we would need to collaborate with a silicone material company so that we can test the material properly to ensure that its properties fit the needs of our model on a real-life scale. It would also be helpful to have a structural engineer on the team, who could help verify our design and ensure the dimensions, materials, and functionality we intend to include are valid and safe.

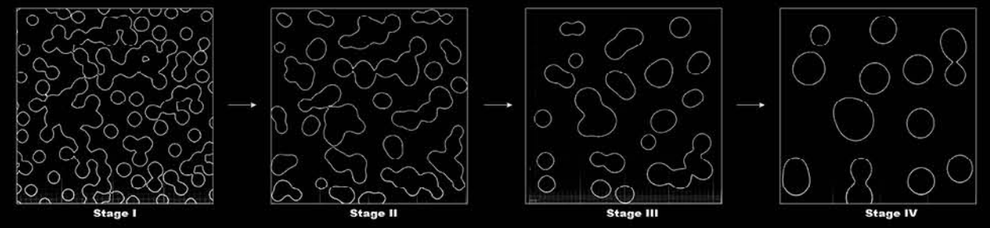
After it is made, our project will act as a gathering and venue space for the public. Located in between the three buildings of the Cornell Tech campus, it will provide a gathering space that is semi-outdoors for people to relax together while having a layer of protection from the weather. Our project is responsive- inflating and deflating as a response to both the weather and human activity (how many people are inside and around the structure), as well as displaying a light show of various interaction levels depending on that number as well. The structure would inflate as more people enter it, and deflate as fewer people are inside. Additionally, given the soft material and shape of the structure, people can also sit around on the lower parts of the outside of the structure. The material will also have some texture and grit to it, allowing people to climb it (to a certain extent) and sit at various parts.

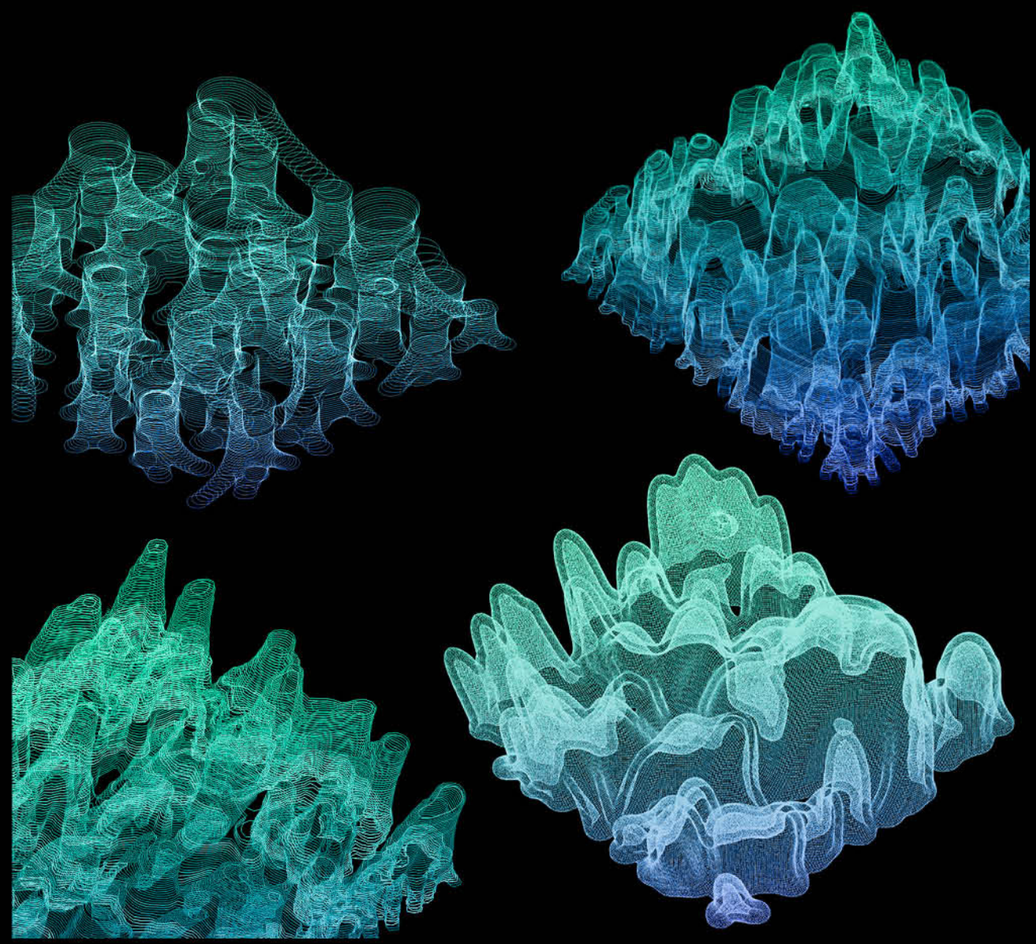
Concept & Pseudocode





We built a simplified model where the central logic is to let the randomly distributed sponge cells to find their closest other cells and move towards them, and by repeating this loop over and over again, we reproduce the aggregation process on the computer. Our 3D model demonstrates the process by projecting the behavior on the time scale into 3D space. We added intervention including attraction and expulsion to the "sponge" and it appeared responsive and adaptive properties.





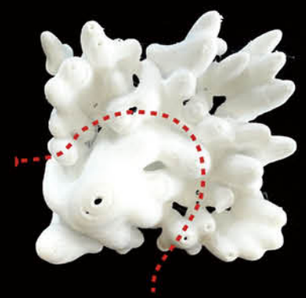
Model Making Experiment

Semi-Spontaneous
Aggregation Model
Cell Differentiation

Cell Number: 400
Material: PLA
Flexibility: low
Transparency: low
Surface Type: Solid

Cell Number: 50
Material: PLA
Flexibility: low
Transparency: low
Surface Type: Solid

Cell Number: 50
Material: PP
Flexibility: Low
Transparency: High
Organic Boundary



Cell Number: 50
Material: PP
Flexibility: Low
Transparency: High
Surface Type: Hollow

Cell Number: 50
Material: PP
Flexibility: Low
Transparency: High
Surface Type: Hollow

70% Ecoflex & 30% Brushable
Brush Method: Normal
Layer Number: 4
Color: Original color after mixing
Transparency: Medium
Flexibility: High

80% Ecoflex & 20% Brushable
Brush Method: Normal
Layer Number: 2
Color: Green pigment
Transparency: High
Flexibility: Too High

70% Ecoflex & 30% Brushable
Brush Method: Mold Upside Down
Layer Number: 4
Color: Green, blue, and purple pigment
Transparency: Low
Flexibility: Medium

Project Material Ideation

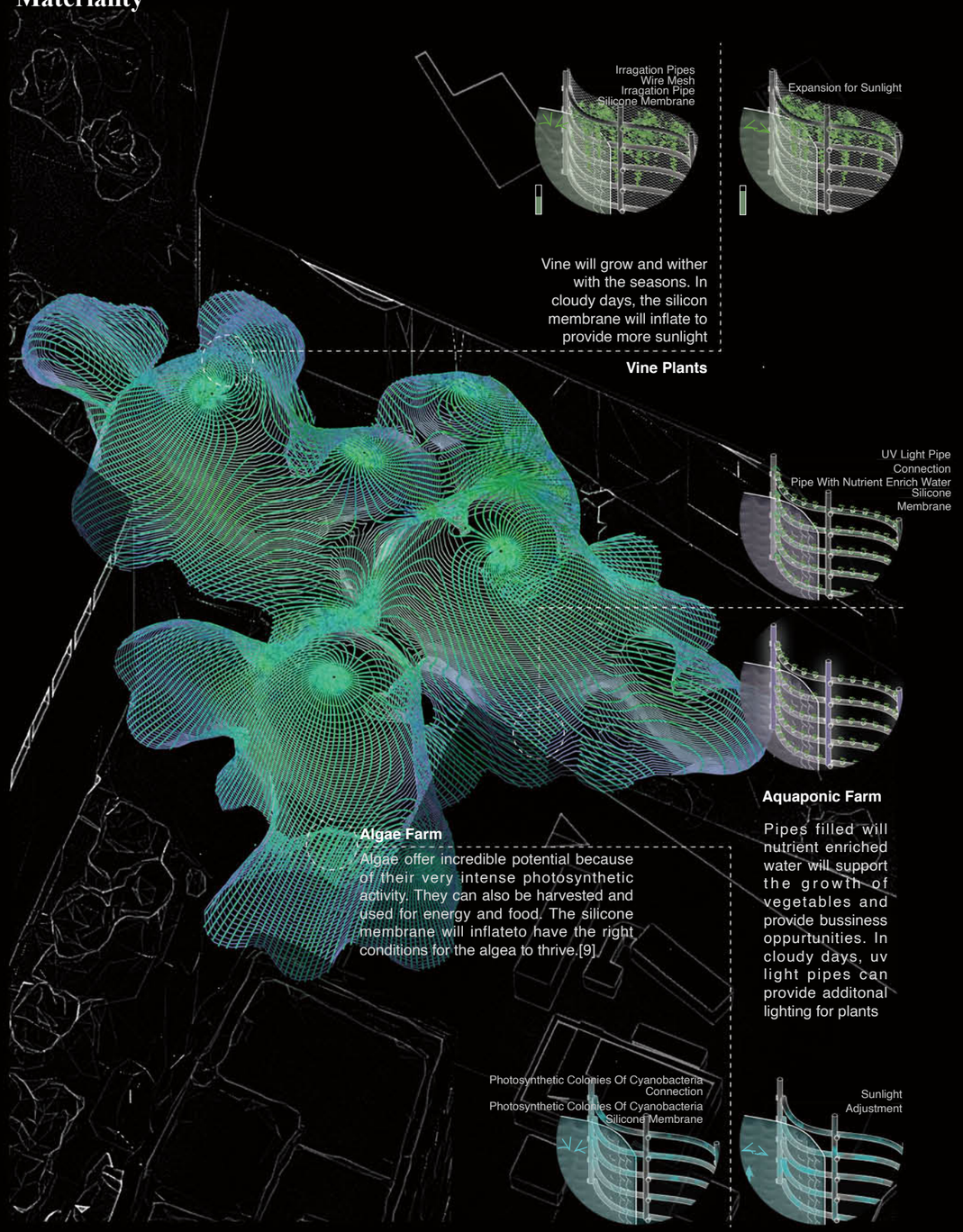
Interaction + **Silicone Rubber** = **INFLATABLE SILICONE RUBBER**

Static
Built in genetation proess

Elastic

Interactive

Materiality



User Group

We hope this place can provide scientists with exterior living labs. The on site aquaponic farm can also provide job opportunities for the neighborhood. While it could a special gathering space for students and families from all over the New York City.

Video Link: https://youtu.be/kPstWDCwwsg

06 OriginTown

A Community Rooted TOD Project

Date: Cornell AAP 2022 Winter ULI Hines Competition
Tutor: Mitch Glass, Lily Chi
Location: Oakland, United States
Group work with Tongbi Li, Dahlia Idris, Lingwei Wang, Zixiao Zhu
Responsibility in team: Architecture design(60%), Urban design(50%)
Drawings and modelling(40%)

Synonymous to origin in the coordinate system, OriginTown lies at the intersection of two arterial axes which connects Downtown Oakland to an existing network of corridors and surrounding neighborhoods. The development aims to utilize this network to foster and transform the existing site into a rich diverse multicultural urban neighborhood, revitalizing the area through job creation, seamless connectivity, affordable homes and community activation.

OriginTown re-energizes Oakland, by embracing and embodying its vibrant creative and maker culture. The development acts as a canvas, providing space for the creatives and makers to express themselves whether in the form of food, music, art, or fashion. The provision of 500,000 SF of exhibition spaces, parks, plazas, and art galleries and more than 150,000 SF of commercial maker space is a testament to the development's commitment to the community. Not only that, proposed exhibition spaces are designed to proudly showcase the crafts of the creatives and makers of Oakland, with the flexibility to also host a series of popup retails and residencies. Spaces around the BART track are accessorized with consecutive art studios along the BART track which incorporate a live-and-work system, offering jobs and incubator spaces for small entrepreneurs. The upper floors of the art studio are spaces for fab labs and other cultural/educational facilities. Cultivated strategic partnerships with Oakland's key non-profit organizations allowed OriginTown to provide emergency shelter, located next to our community park. The ground floor of the space is used for unsheltered support programs, education space, public demonstrations and retail. The underpasses are reimagined into a skate park, decorated with art, ample lighting and bright color pedestrian lanes to increase the sense of security. OriginTown offers 366 two to three bedrooms affordable units making up 27% of total units. All of which are reserved for low to moderate-income households. Offices, life science centers and hotels are concentrated mostly along Broadway but offices are also broadly integrated into each block. Additionally, the development will create approximately 2,200 new local jobs, reducing unemployment and boosting sustainable economic growth.

This LEED neighbourhood also follows the principles of TOD development, given its concentrated development intensity along the main transit corridor – Broadway, reducing the use of vehicles. Enhanced bikes and pedestrian boulevard encourages the community to use public transportation. Moreover, the highway underpass lighting systems obtain their power from the solar panels on the rooftop of nearby affordable housing.

SITE ANALYSIS

Horizontal Connection

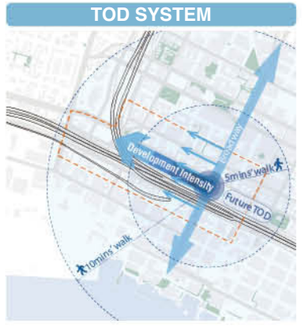
OriginTown's arterial axes will restore the connection horizontally into Chinatown, Jack London and the proposed Black Arts Movement & Business District (BAMBD). OriginTown re-energizes Oakland, by embracing and embodying its vibrant creative and maker culture.

Under Highway Connection

The development's community corridor marked by a thread-like pedestrian boulevard and a bike lane begins northwest of OriginTown, highlighting various attractions starting with an Art Museum, followed by the Jefferson Square Park, various art studios, a theatre, central commercial district and finally leading into Chinatown.

Vertical Connection

OriginTown's arterial axes will restore the connection vertically from the city center to the waterfront area. Galleries are also built above the BART track, located south of the development to keep the pedestrian passage from disturbance.



Community Connection

Taking advantage of the existing Marriott city center and the proposed baseball park Gondola line, a commercial corridor will be built along Washington Street. Retail and commercial activities are concentrated here to create a continuous activity interface.

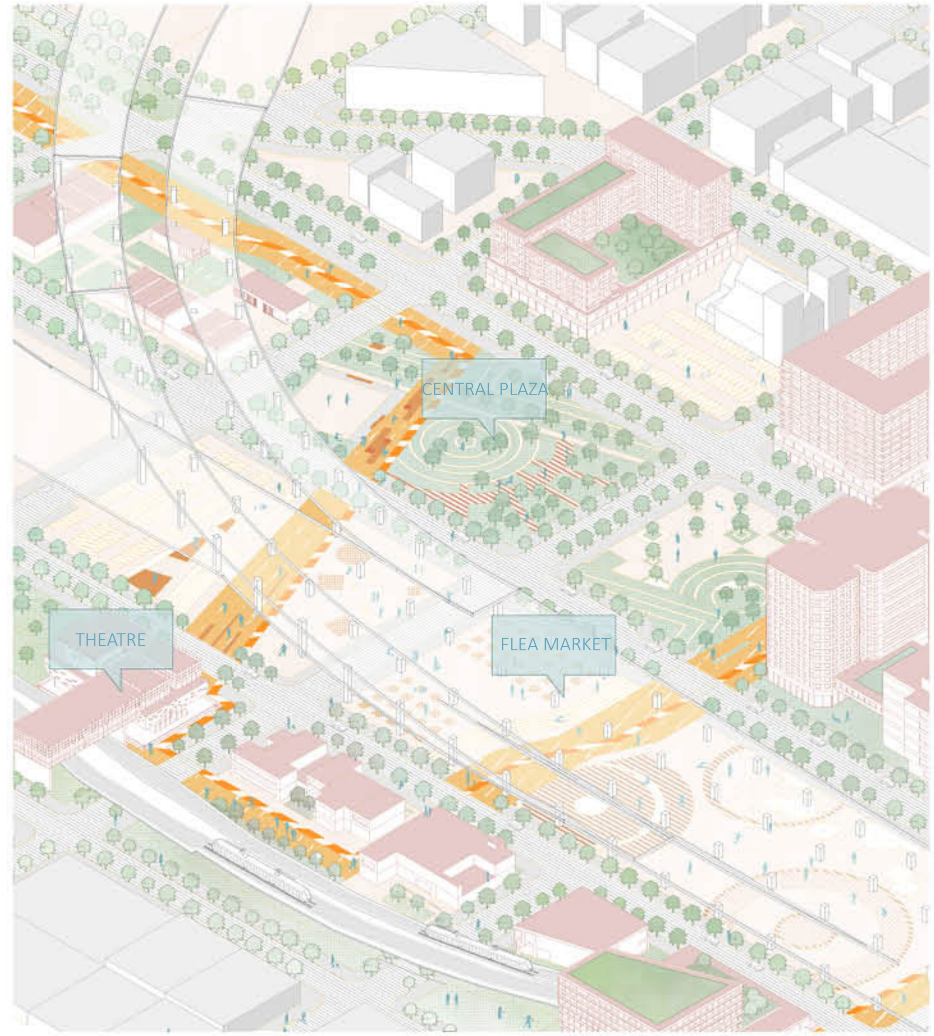
HIGHWAY PARK VIEW

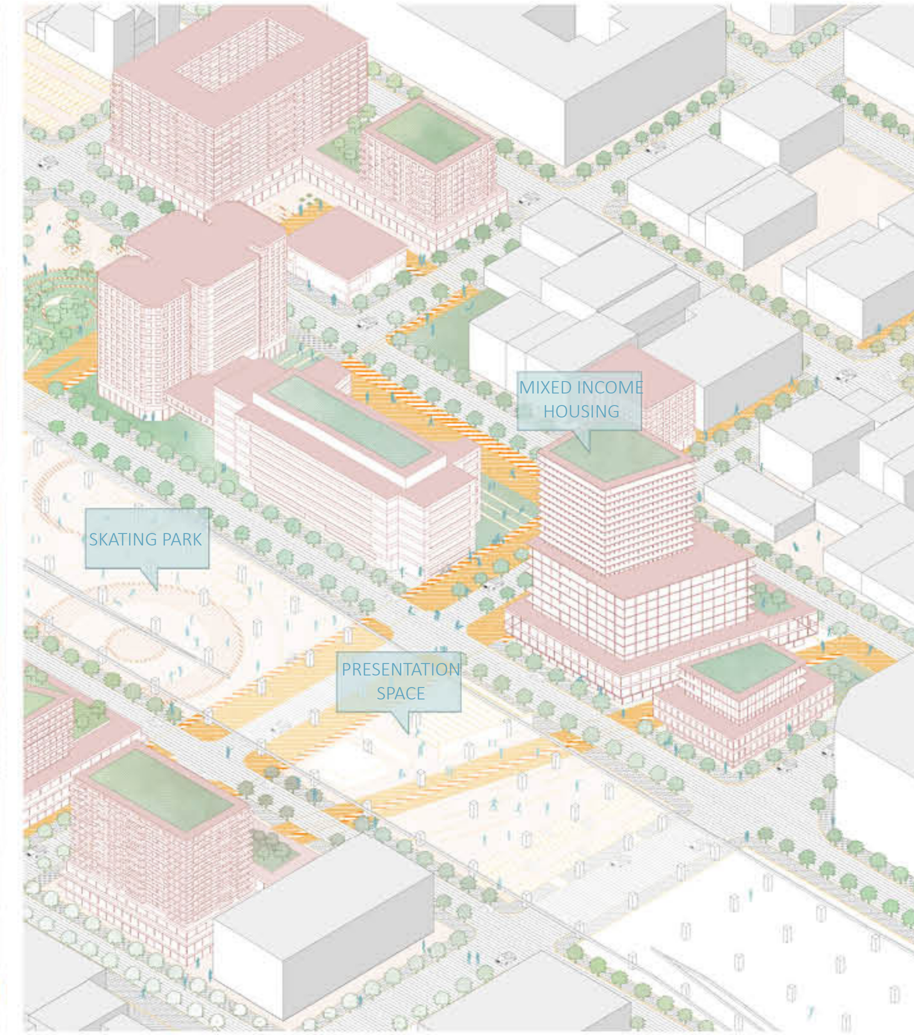
SITE PLAN

1. Landmark - Mix commercial, Office and Residential
2. Mix Commercial and Hotel
3. Mix Commercial, Office, Residential
4. Mix Office and Residential
5. Art Workshops/ Fab Labs
6. Mixed Office and Mixed Housing
7. Art Workshops(Existing)
8. Theatre
9. Low Rise Retail
10. Mixed Retail and Affordable Housing
11. Art Museum
12. Containers/ Homeless Shelters
13. Sports Park
14. Central Plaza
15. Children' s Park
16. Flea Market
17. Skate Park
18. Installation Gallery
19. Seasonal Pocket Park

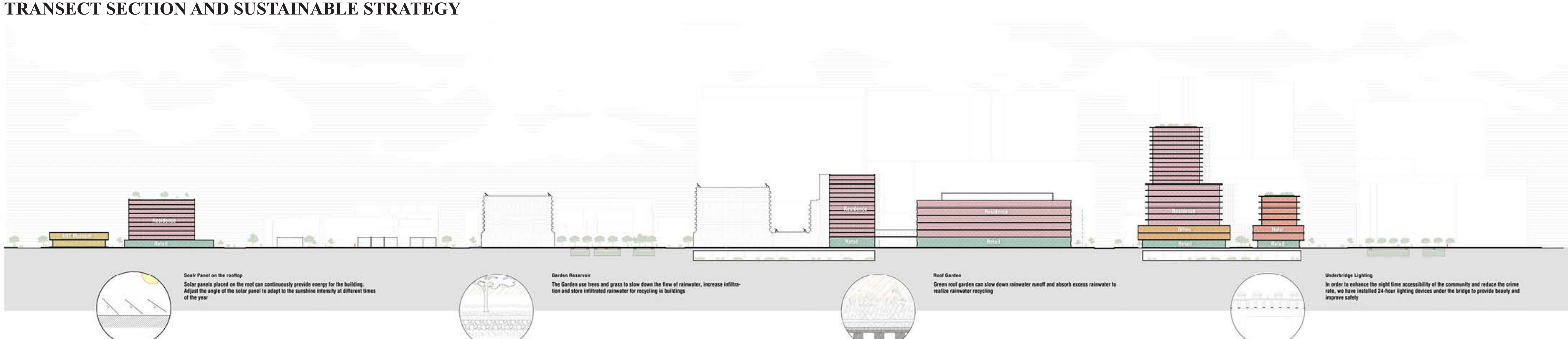
JOURNEY ALONG THE COMMUNITY CORRIDOR

To stitch both side of the high way, we place activities along the thread-like park to connect multiple activities.





TRANSECT SECTION AND SUSTAINABLE STRATEGY



MASTERPLAN

07 Recalling Hadrian's Dream

A regeneration of the original sense of Villa Adriana

Date: 23/08/2019 - 05/09/2019 Piranesi Prix de Rome Workshop
Tutor: Francesco Leoni
Location: Tivoli, Italy
Groupwork with: Wenjun Feng, Sīnan İlker, Yasemīn Güz, Ezgī Beyen
Responsibility in team: Architecture design(70%), Landscape design(100%)
Drawings and modelling(100%), Final presentation(100%)

Identified as a Unesco world heritage since 1999, the Villa Adriana has been an object of study and visit for about a half millennium. There are 2 elements that make up the image of Villa Adriana: water and architecture. The water not only generates some key architectural episodes, but also the proximiti with the Aniene Riveralso is at the heart of choice for the location of the villa. Besides, the millennium that the Villa Adriana has experienced has given it many layers of historical stratification.

Hence the reconnection with water and its history layers are then the original inspiration of this design. The design is composed of 2 parts:

1) Inside the villa, 2 water pavilions are placed following its original positioning syntax. One is related to the bath architecture in Rome, resuming the function of bath as a public space. The other has a symbolic meaning, placed at the origin of the annual ring theme park, indicating the origin.

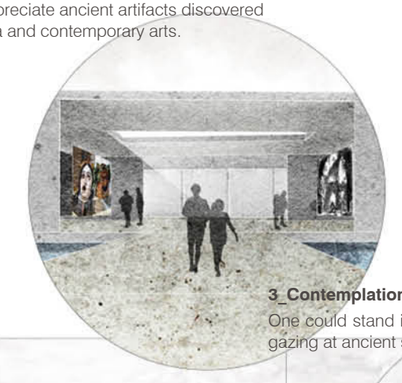
2) Inside the buffer zone between the archeological site and the Aniene River, the creation of a landscape arrangement is for its propagation and preservation. The 2 paths connecting the river and the site has 2 different themes: one is to regenerate the spectacle of water captured in architecture, while the other, beginning with a gallery of memory, was to narrative Harian's trip to the eastern world and the history of the villa.

References
1. L. Basso Peressut, P.F. Caliari, Piranesi Prix de Rome. Progetti per la Grande Villa Adriana, Accademia Adrianea Edizioni_In edibus, Roma-Vicenza, 2019
2. Italian Tourism Official Website. 2020. A Brief History Of Hadrian's Villa. [online] Available at: <http://www.italia.it/en/travel-ideas/unesco-world-heritage-sites/the-emperors-abode-hadrians-villa/a-brief-history-of-hadrians-villa.html> [Accessed 30 December 2020].
3. P. F. Caliari, Tractatus Logico Sintattico. La forma trasparente di Villa Adriana. Edizioni Quasar, Roma, 2012.

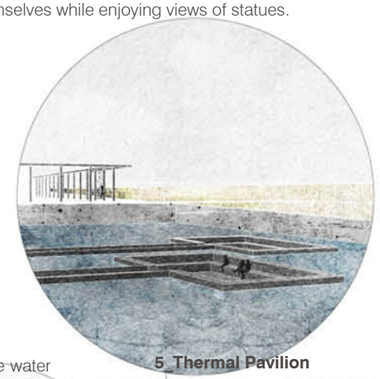
THE WATER ARCHITECTURAL PATH

THE PUBLIC PRODUCTIVE LANDSCAPE

2_Exhibition Pavilion
Mimetic of the Maritime theatre, the tourists could appreciate ancient artifacts discovered in the villa and contemporary arts.



4_Water Seats
Experiencing how ancient royalties entertain themselves while enjoying views of statues.



3_Contemplation Island
One could stand in the middle of the water gazing at ancient statues.

5_Thermal Pavilion
A thermal-exhibition pavilion with a gallery in the outer ring and thermal bath in the centre.

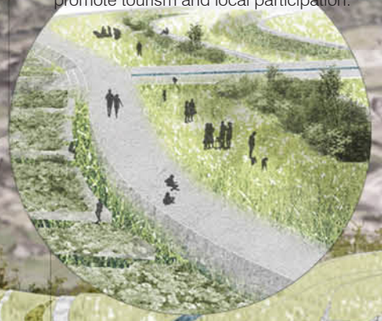
6_Gallery Of Memory
As the starting point of the Villa, it is to narrate the oriental trip of the emperor Hadrian to the tourists.

9_Wine Tasting Ya
One could enjoy the grandeur of Villa Adriana while tasting excellent Italian wine.

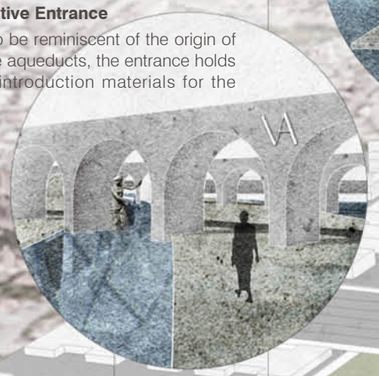
10_Research Archive
Precious docements and models were stored in the archive whose construction also follows the subtraction of mountain

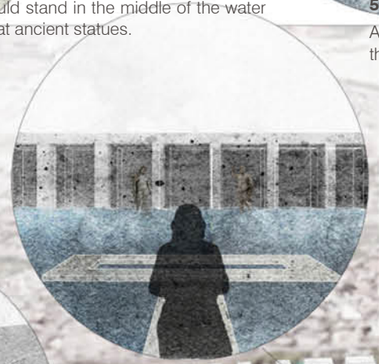
7_Wheatfield And Horticulture Garden
In the productive zone, one could join various productive activities, which stimulates the local economy.

9_Relaxation Garden And Urban Stage
Involving local activities into the villa to promote tourism and local participation.



1_Introductive Entrance
Designed to be reminiscent of the origin of the Villa, the aqueducts, the entrance holds display of introduction materials for the tourists





OTHER WORKS

Game Environment Rendering in Unreal Engine
Link: https://youtu.be/2K1QWQdr-fQ

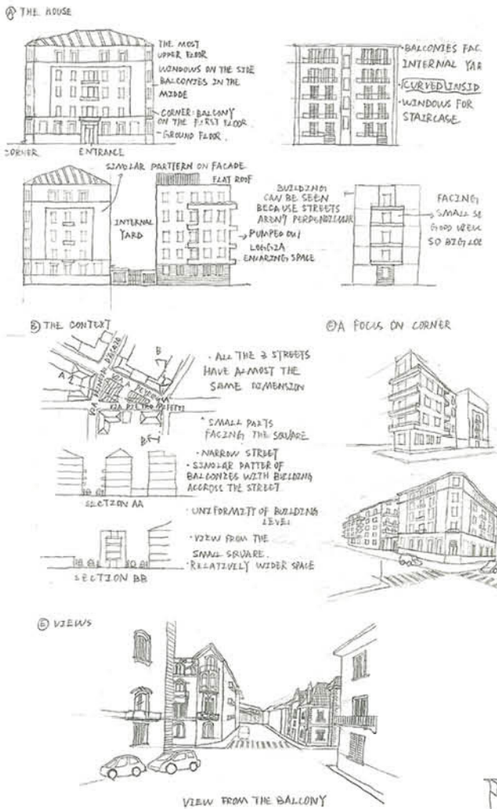
OTHER WORKS

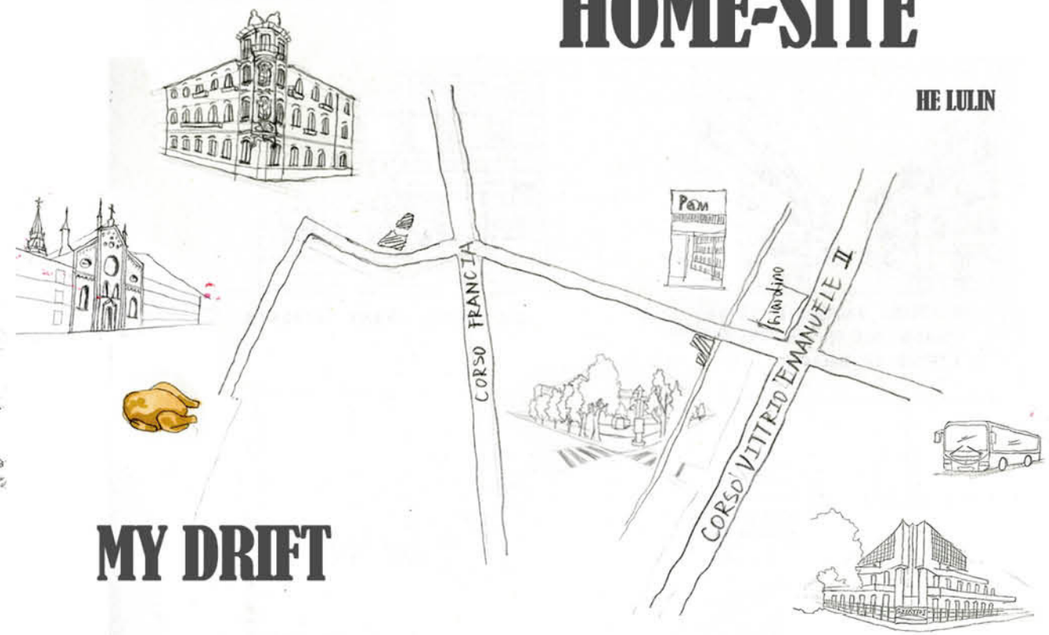
Game Environment Rendering in Unity

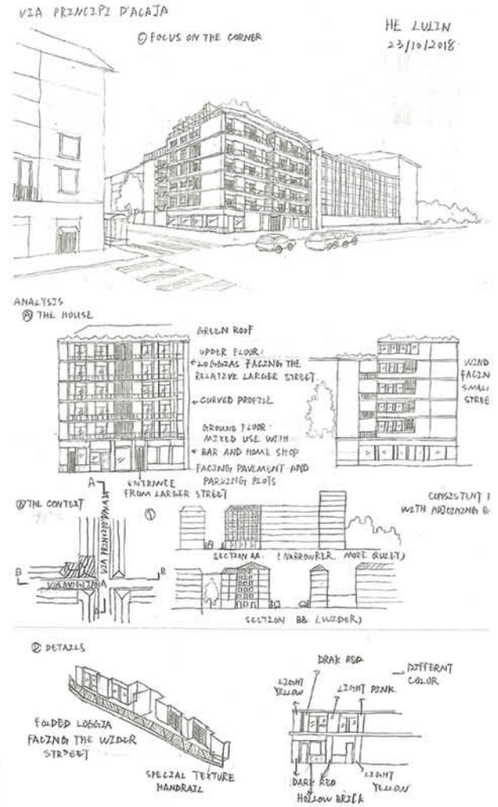
HOME-SITE

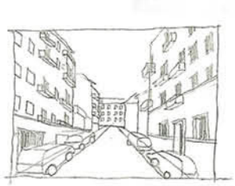
HE LULIN

MY DRIFT

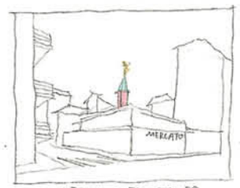







VIEW ON VIA DOMENICO CAPELLINA
SLOPE ENDING WITH BUILDING
GROUND FLOOR NOT OPEN TO PUBLIC


RELATIVE INTIMATE STREET SIZE
MIXED USE ON GROUND FLOOR
RHYTHM OF BALCONIES
BRICKS ON FIRST TWO FLOORS

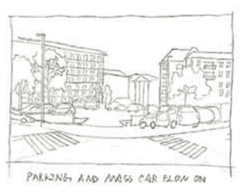


VIEW OF THE TOWER

PEOPLE TALKING OUTSIDE THE CAFE

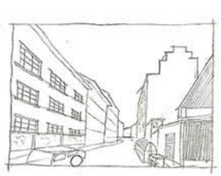

A WALL FULL OF FLOWER

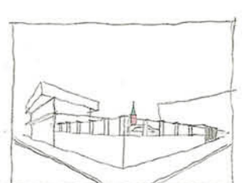

BUILDINGS RETREAT FROM STREET
MORE OPEN STREET FEELING


PARKING AND MASS CAR FLOW ON RAMBLA BARCELONA

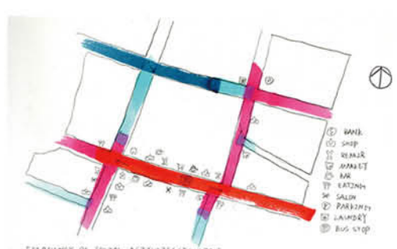
I SAW TWO OLD COUPLE FAREWELL THEIR GRANDSON

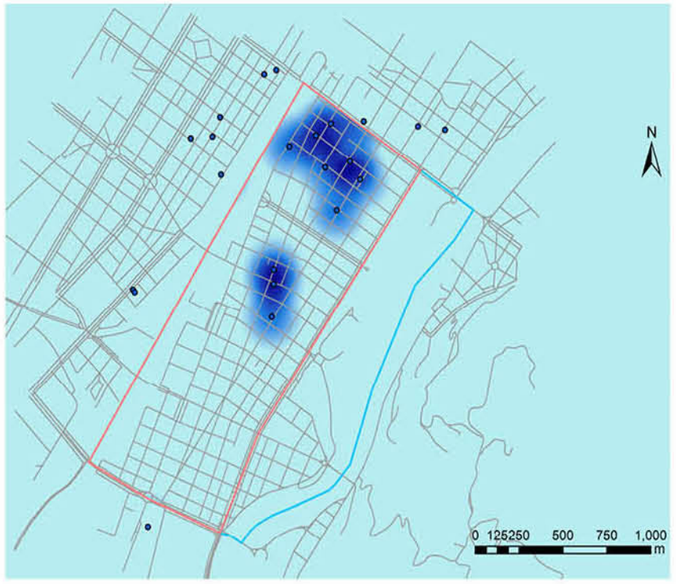

BUS STATION. BANK. PIZZERIA.
MASONRY BRICK ON GROUND FLOOR
RED BRICK ON UPPER FLOOR


VIA PIER D. PONELLI
QUIET. TRASH BIN. FACTORY

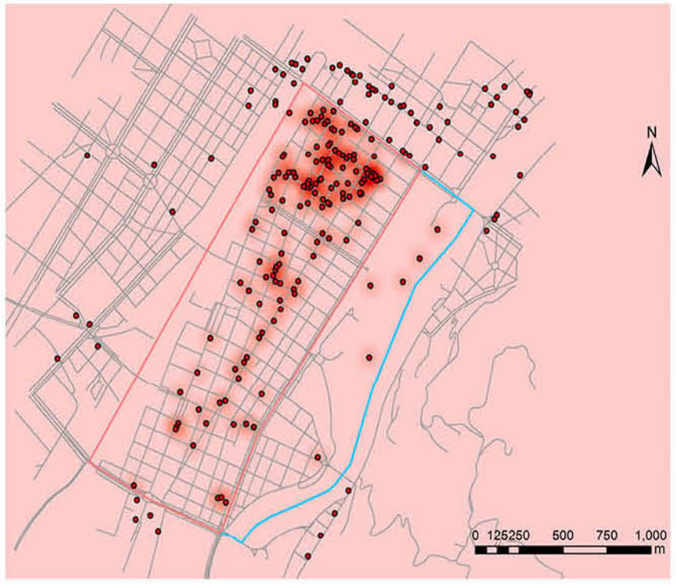

VIEW OF THE TOWER


I SAW A PEOPLE RUNNING ON THE STREET
I VIEW FROM BUS STATION

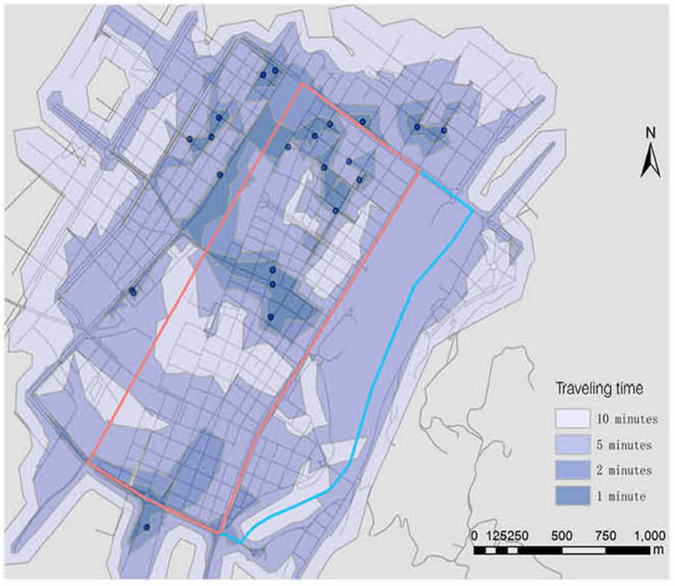




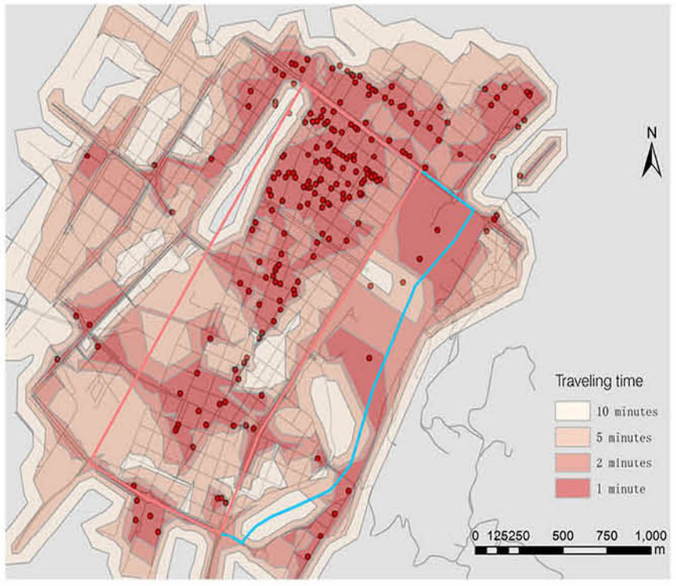
Kernel density anlysis of food distribution points in district San Salvario, Turin.



Kernel density of food consumption points in district San Salvario, Turin.



Accessibility analysis to food distribution facilities, from this map we can tell that within 10 min all the residents can get access the nearby market, yet only a small portion of residents are not covered by the 5-min service circle.



Accessibility analysis to food consumption facilities, 5-min service circle covers almost all the residential area. The high-level convenience of the district between Corso Marconi and Porta Nuova is again demonstrated here, majority of food activities being able to be reached with in 2 minutes.

"The city, however, does not tell its past, but contains it like the lines of a hand, written in the corners of the streets, the gratings of the windows, the banisters of the steps, the antennae of the lightning rods, the poles of the Bags, every segment marked in turn with scratches, indentations, scrolls…"

—— *Italo Carvino*

To me, the design should be the **reflection** of what the designers observe in the city. The design does not tell, but it reflects the designers' care for the surrounding, the people, and the architecture. It is through transforming the site into architectural language that the city holds on to its past and looks forward to a bright future.