

Architectural Prescription

HAOTONG XIA
PORTFOLIO GSAPP 2022

Architectural Prescription

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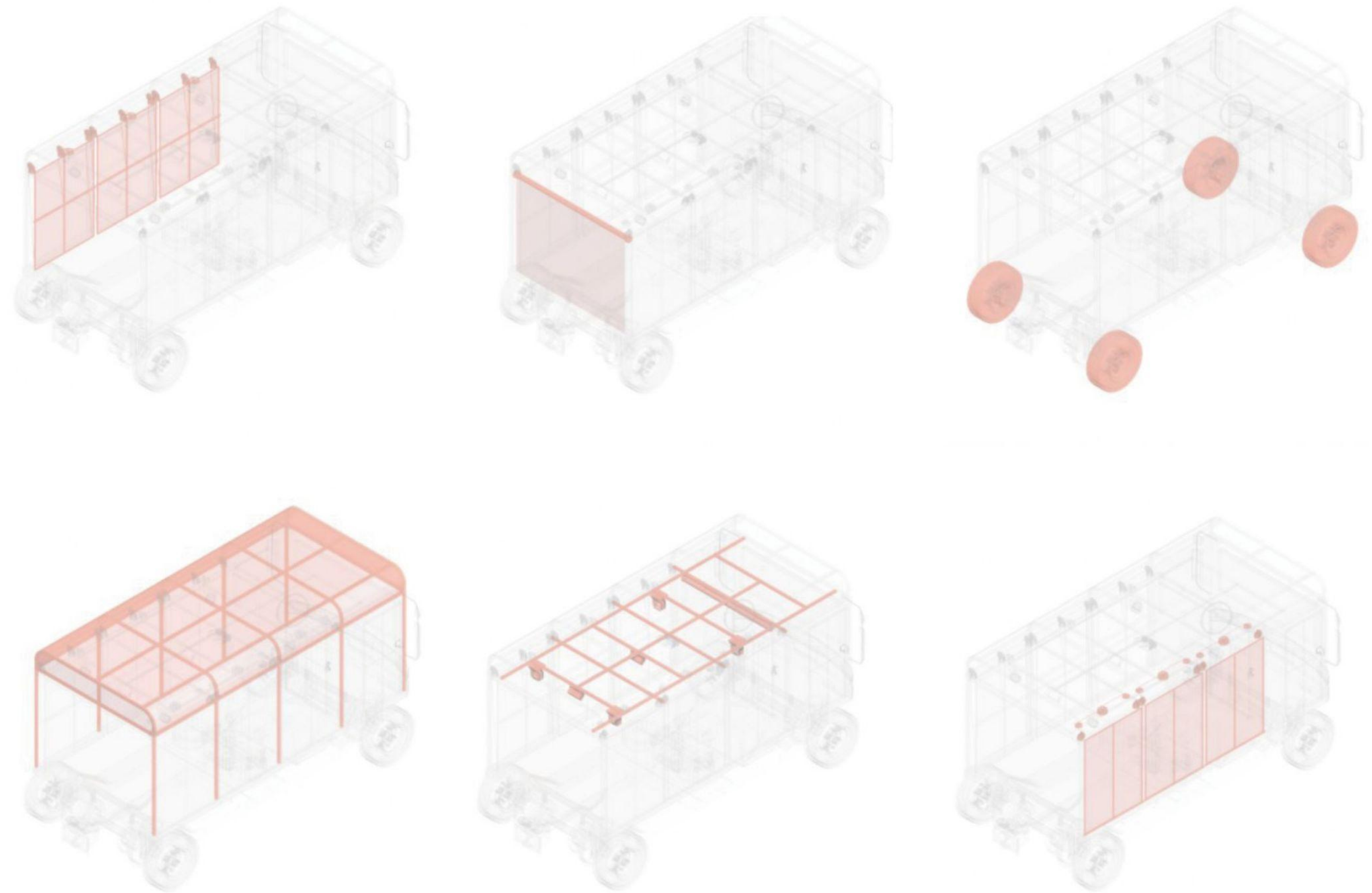
UN-DETAILING

Possibility Makers - A Flexible Carrier System Design

GSAPP Autumn 2021
ADV Studio V

Mentors:
Andrés Jaque

Work with:
Qingyang Yu
Yinlei Pang



Chapter 01-

Power is in Details

Wheels in the shed/ Cost of moving/ Power in wheels

Chapter 02-

Dissident Prescription

Technology reconstruction of details/ Social reconstruction of details

Chapter 03-

Performance of the Possibility Makers

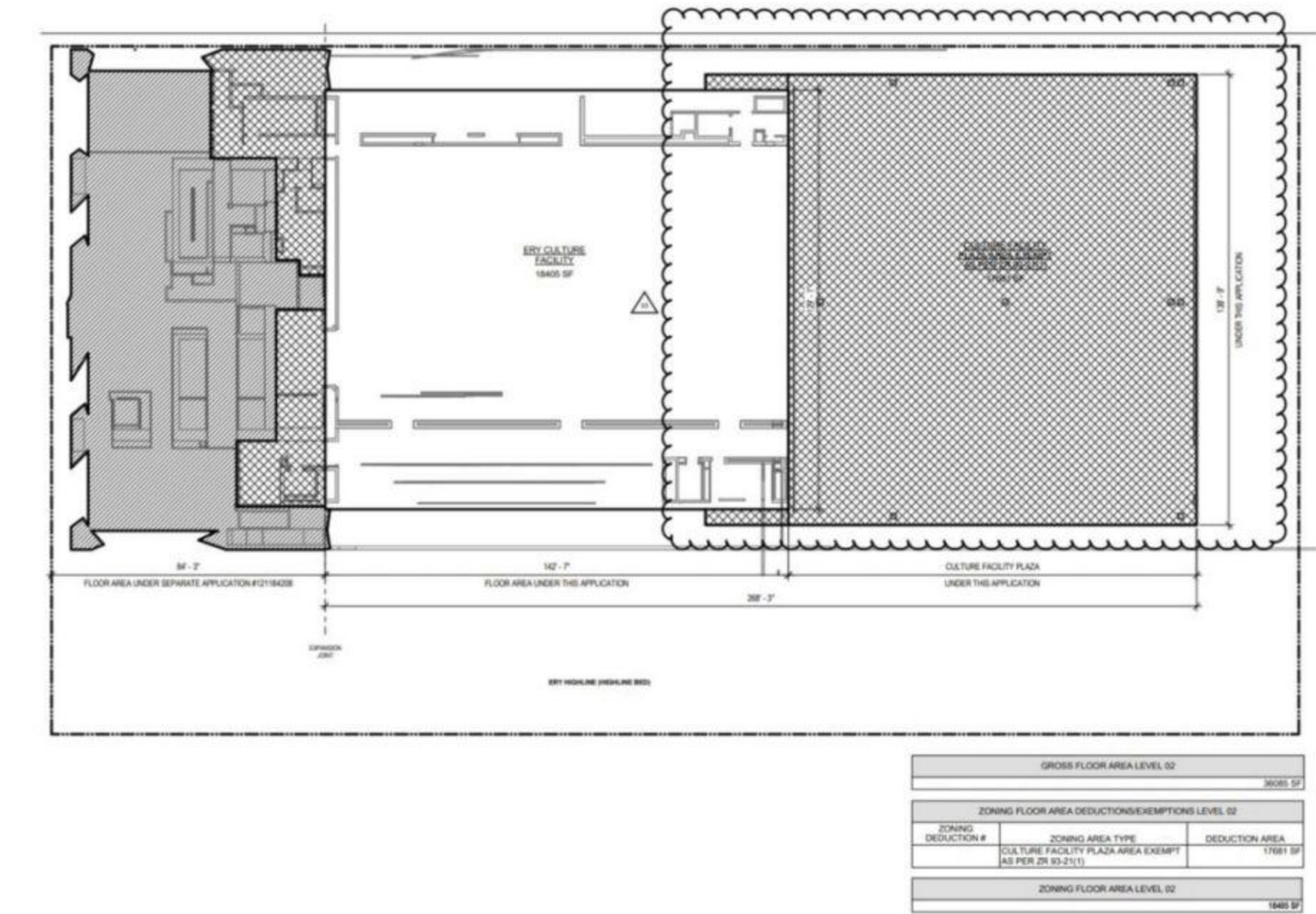
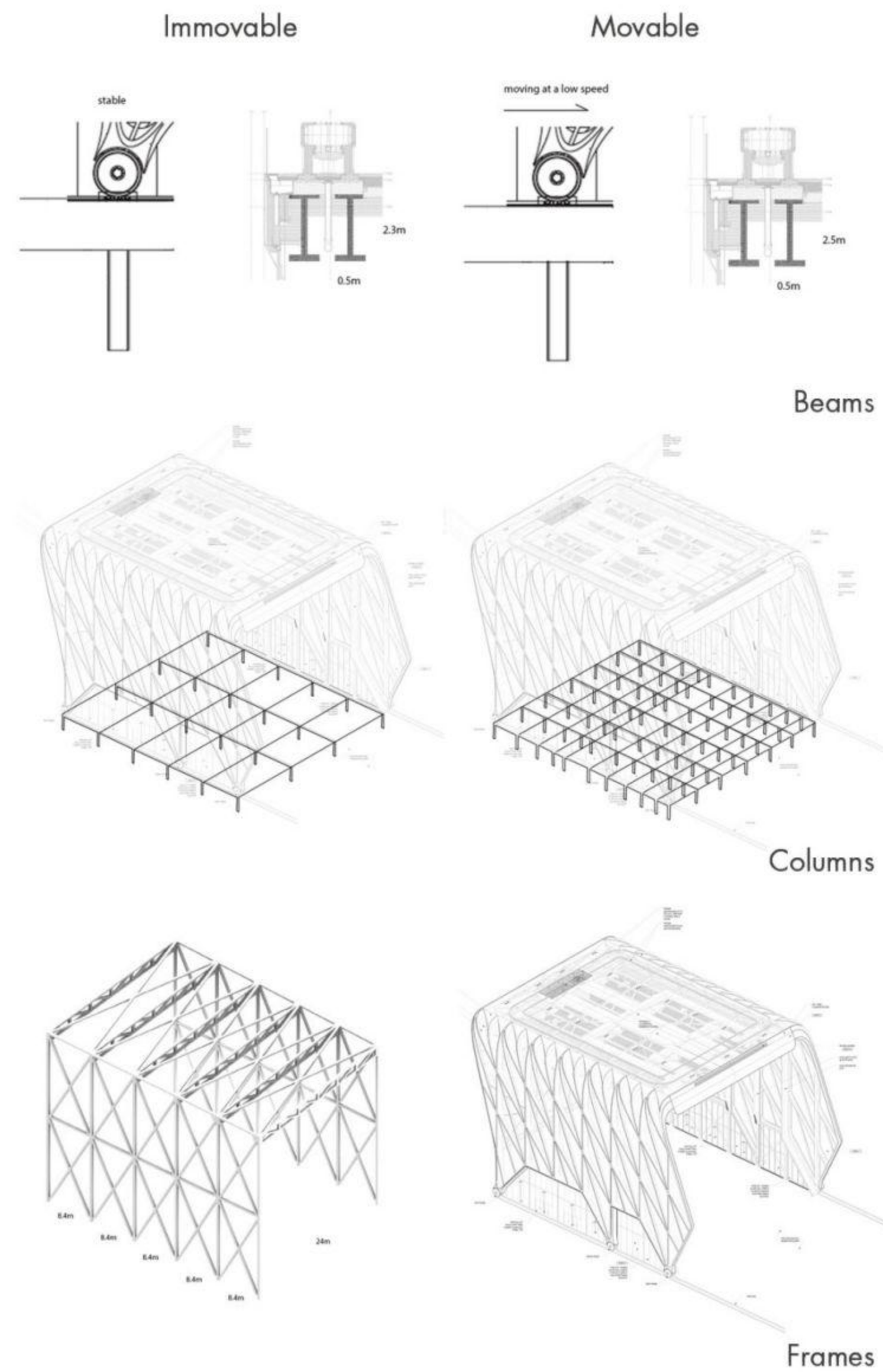
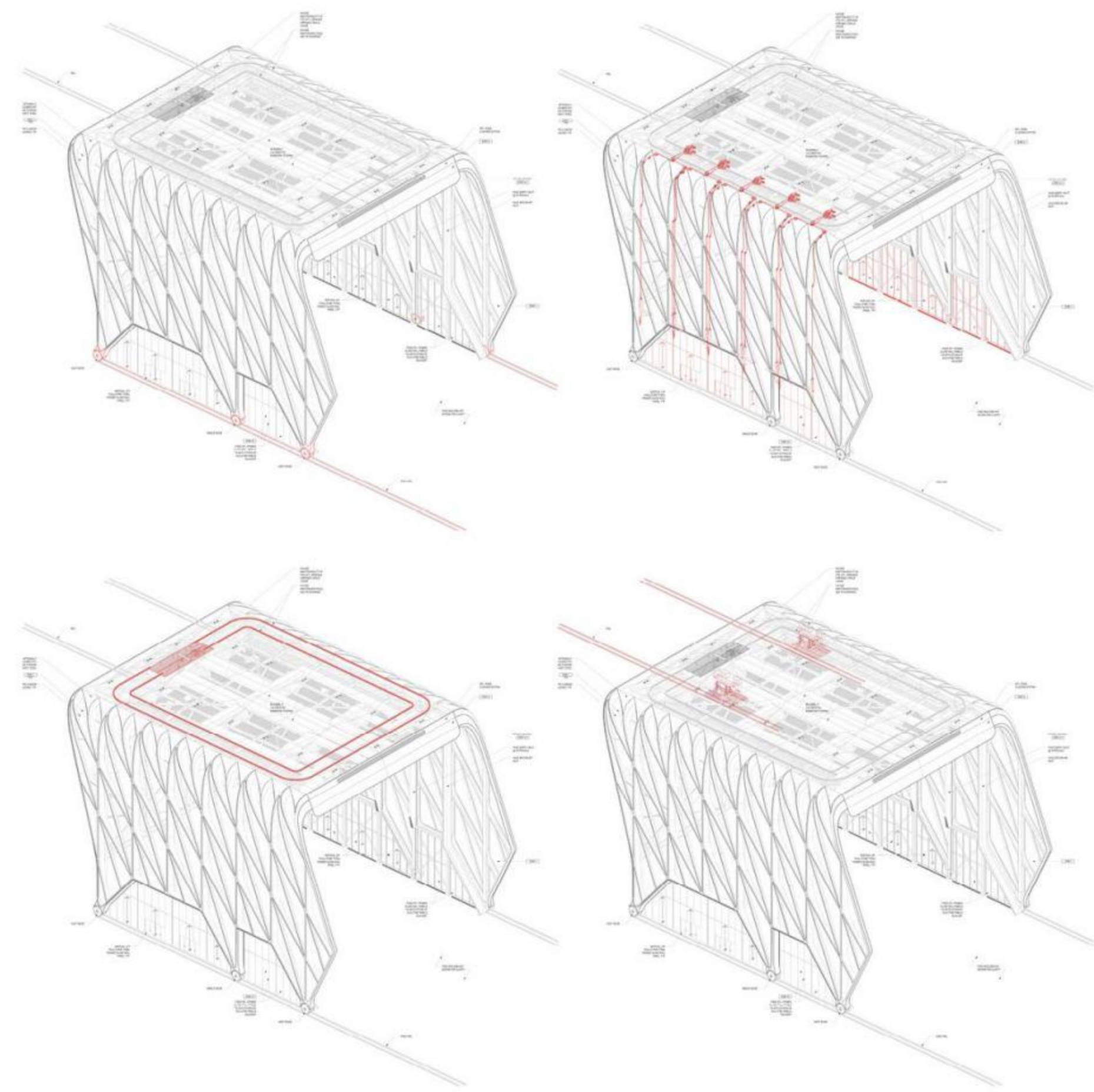
Dead-end/ Stations in use/ By the water

What can be done publicly with limited funding of \$550 million?

The Shed gives one answer: It is a cultural center in Hudson Yards. It is mobilizing a huge amount of resources - \$550 million, maintenance fee every year, and 11 years of development. The Shed is full of wheels, which makes it move, but also means additional cost.

In our project, we are counter-doing and constructing alternatives to the Shed with the funding limit that was invested for the Shed. But this one is intended to be, not only fictionally flexible but real flexible. We are taking advantage of the existing rail system, and coming up with a new design of carriers

traveling on it to offer flexible public space to people who need it.



Wheels in Shed

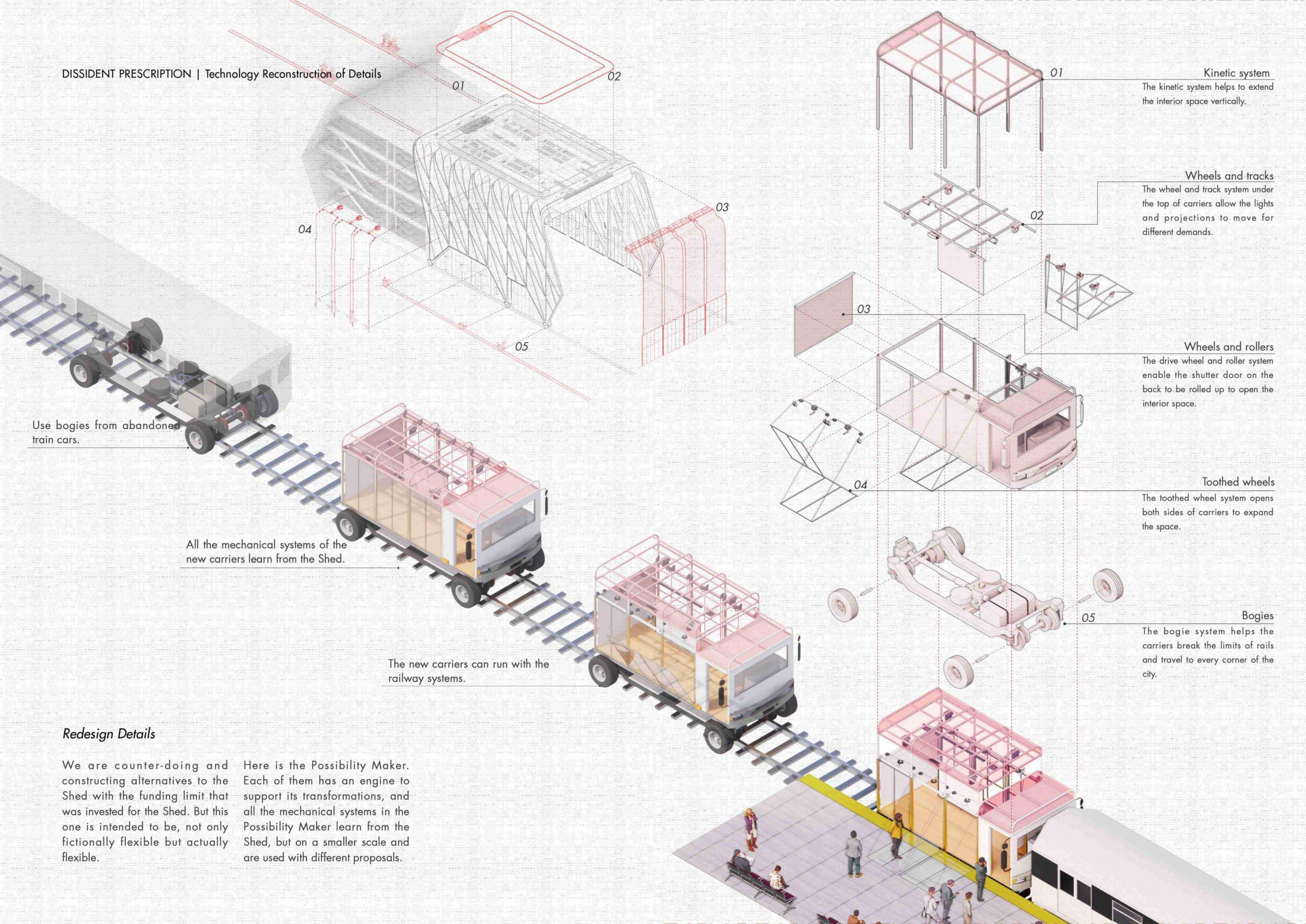
The Shed is full of wheels. Eight bogies wheels at the bottom and a rack and pinion system on the roof of the base building allow the Shed to deploy on a rail. The toothed wheel system allows the Shed to operate the side windows and shade and the wheel and track of the window cleaning machine on top.

Cost of Moving

Moving is a big thing for the Shed, but moving is also making things complicated, it means additional cost: The dynamic conditions will lead to thicker beams and more columns of the foundation, more steel materials in the deployable frame, and a more complex structural system.

Power in Wheels

The Plaza of occupancy when the Shed is deployed is not included in the building area of the Shed. During the project approval process, the Shed is described as a canopy, so that it is able to legally occupy the public plaza. Its real attitudes against the public are contradictory to its concept of flexibility.



Kinetic system
The kinetic system helps to extend the interior space vertically.

Wheels and tracks
The wheel and track system under the top of carriers allow the lights and projections to move for different demands.

Wheels and rollers
The drive wheel and roller system enable the shutter door on the back to be rolled up to open the interior space.

Toothed wheels
The toothed wheel system opens both sides of carriers to expand the space.

Bogies
The bogie system helps the carriers break the limits of rails and travel to every corner of the city.

Use bogies from abandoned train cars.

All the mechanical systems of the new carriers learn from the Shed.

The new carriers can run with the railway systems.

Redesign Details

We are counter-doing and constructing alternatives to the Shed with the funding limit that was invested for the Shed. But this one is intended to be, not only fictionally flexible but actually flexible.

Here is the Possibility Maker. Each of them has an engine to support its transformations, and all the mechanical systems in the Possibility Maker learn from the Shed, but on a smaller scale and are used with different proposals.





Possibility Maker is intended to be a non-profit and organic supplement to the city. Different from the Shed, art is not seen as autonomous products here, but

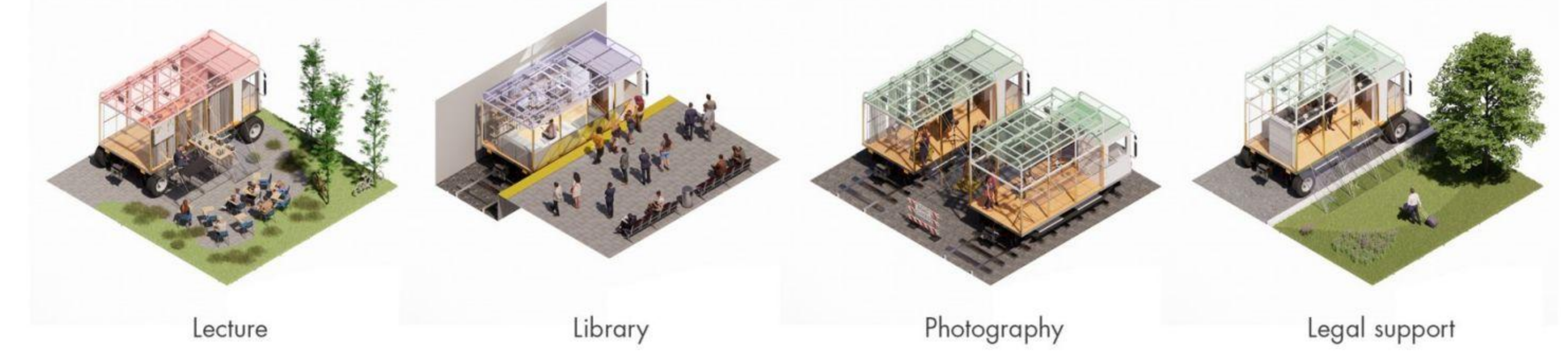
instead, intersectional paradigms. These carriers work as organic supplements to the city with public services like education and training, environmental protection,

daycare, legal supports, etc. The invention is intended to be flexible enough to transform based on what people really need.

Art



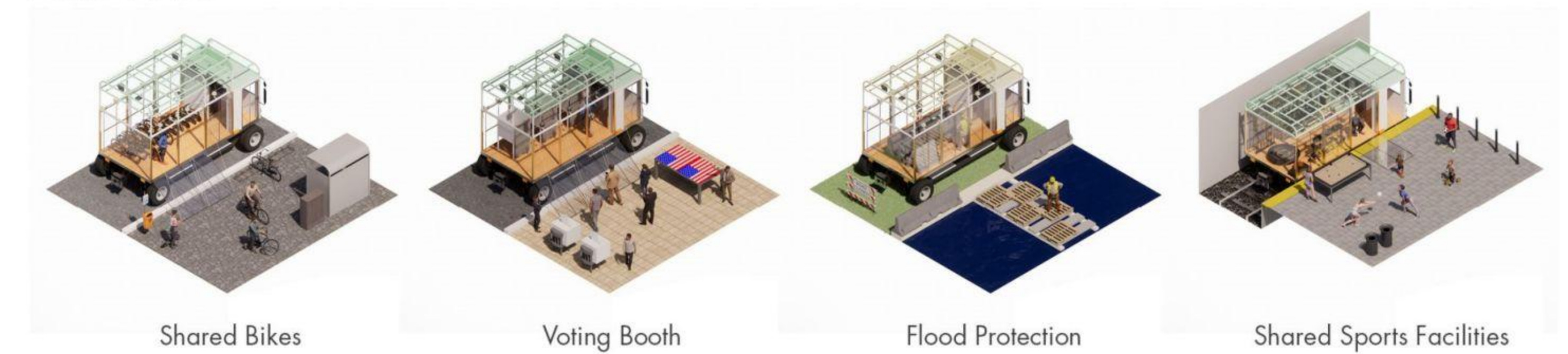
Education



Community Support



Public Service



SYSTEM OPERATION | Organization and Management

- Art institution
- System 1
- System 2
- System 3

the Shed

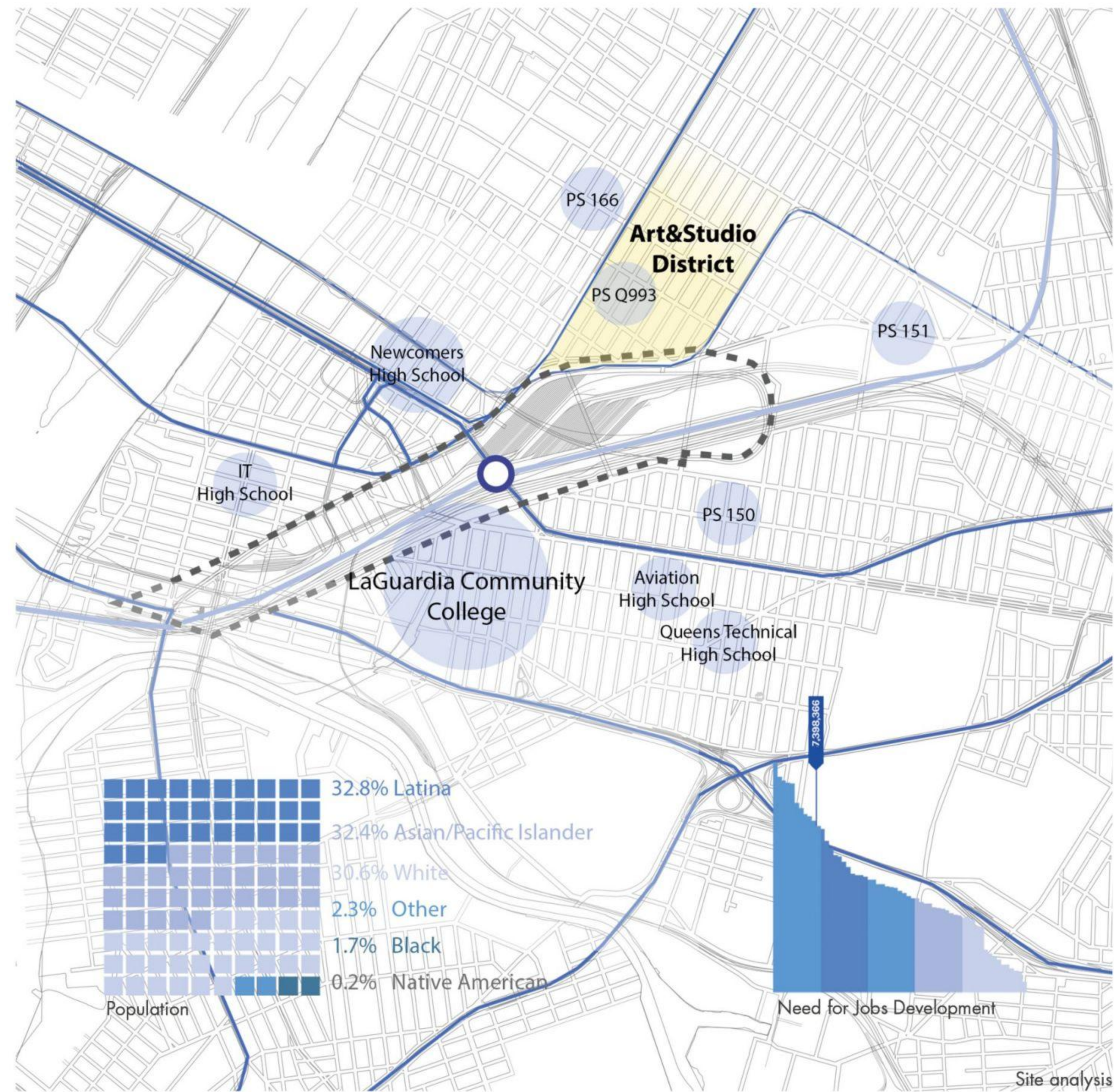
New System with Existing Rail Tracks

The map shows that those who need public space are in the areas out of Manhattan Island. Taking advantage of the existing rail system, we summarized three systems, within which all rails are connected. New carriers will be traveling on the rail system, and the new invention will be flexible enough to offer different types of public space to the whole city.



Day and Night - Unfolding Publicness Across the City

The carrier systems require three different management systems: under MTA's management, cooperates with some NGOs, and one online to respond to immediate needs. During daytime hours, the cars follow the schedule of the subway system and stop at stations. Periodically, they converge on the railroad's dead-end to host events. At night, the carriers stop at the polluted waterfront while the water purification system is activated.



Sunnyside Yard

The first condition is in the dead end. It provides space for long-term deployment and a place for the rail-to-road transition. Outer wheels can be attached to the gears and help the car to leave the rail.

Sunnyside Yard Queens is in a diverse neighborhood with a number of schools around. In March 2020, a new Sunnyside

Yard Master Plan was released by the city, one goal of which is to establish seamless job training-to-employment pipelines for those who live or receive education in the area. The master plan may still take years to come true, but the demands have already been here. According to the research, there are huge demands on the job training and workforce development.

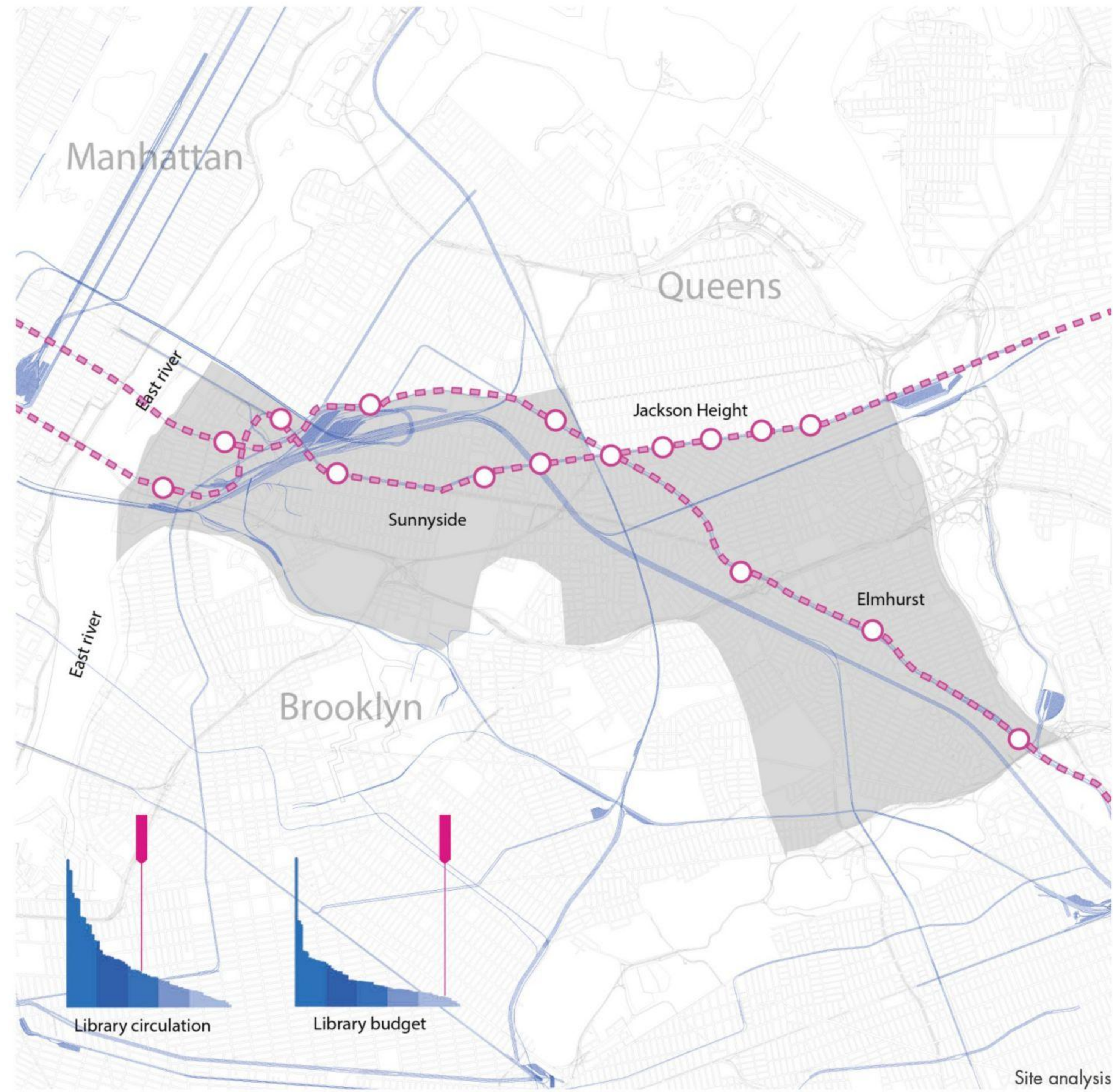
Therefore, before the new master plan is constructed, possibility makers can serve as an urgent transitioning response. They will come to the area, expand themselves, connect with each other and offer platforms for education and training, babysitters for people who come with their kids, and shared kitchens for dining.

PERFORMANCE OF THE POSSIBILITY MAKERS | Dead-end

- 1 Shared kitchen
- 2 Daycare
- 3 Job training and education





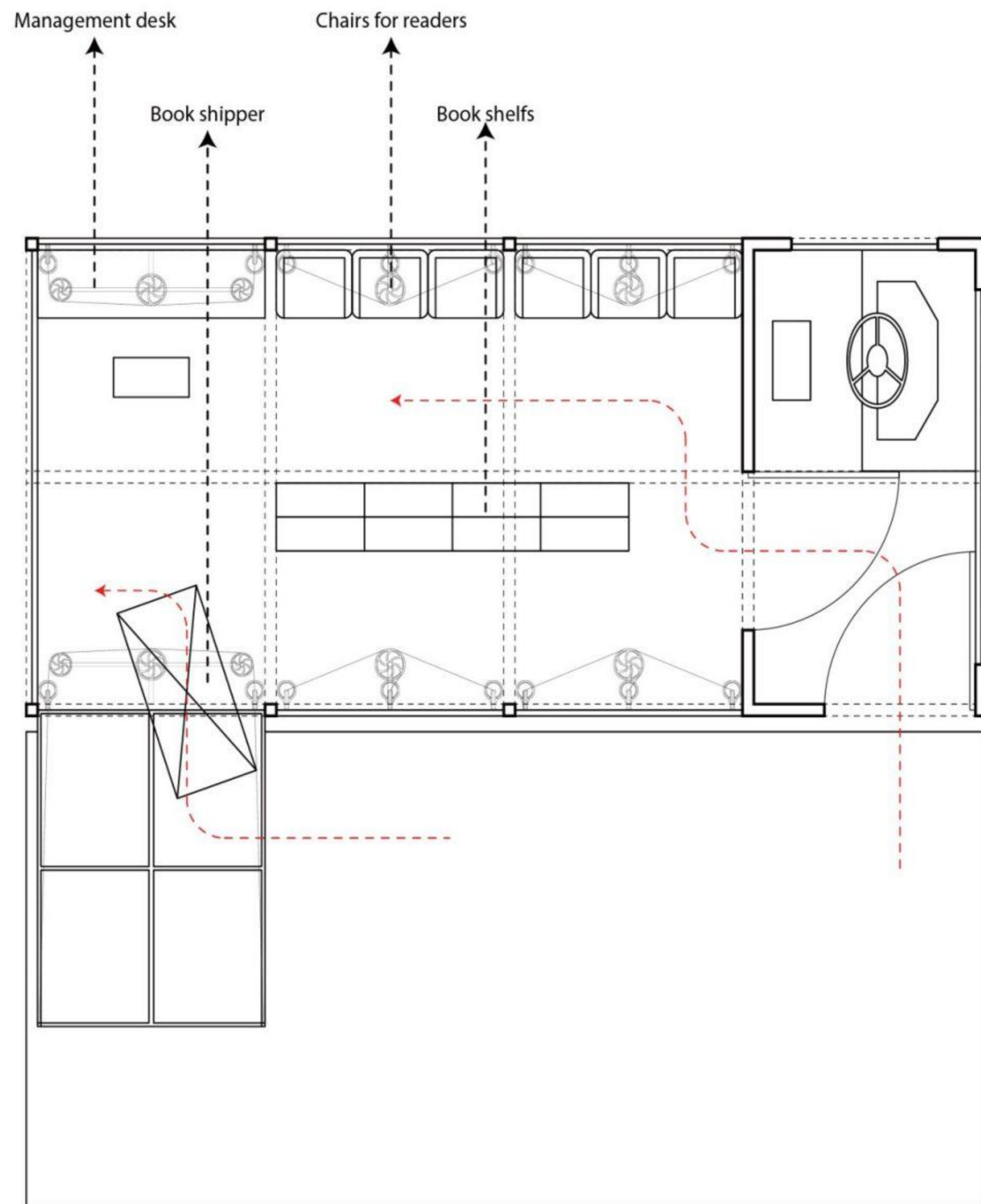


Sunnyside and Elmhurst

The second condition is the station use. Library circulation among students in Sunnyside and Elmhurst is higher than the average of New York City. However, the library budget in this area is at the lowest level in New York City.

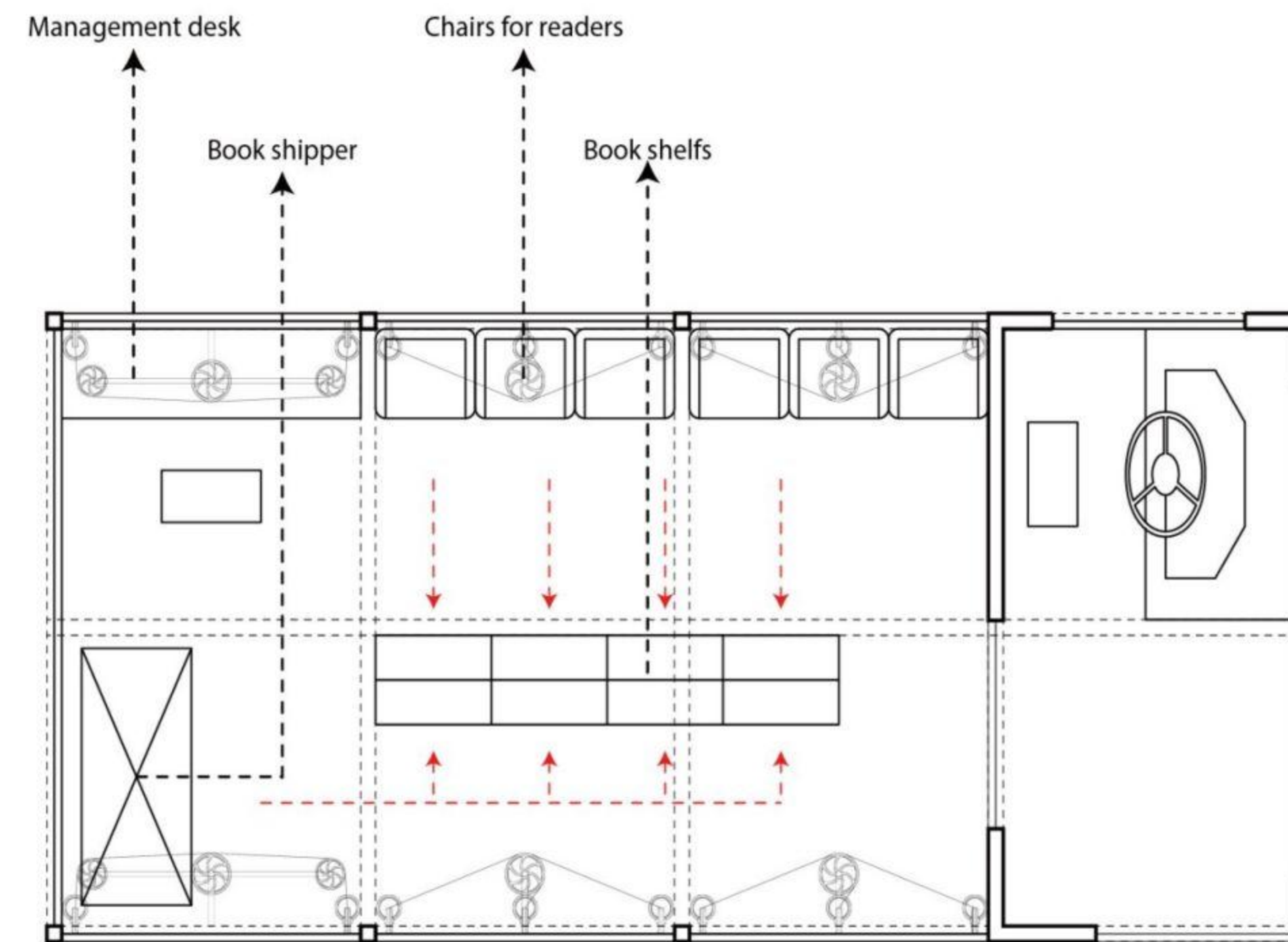
Therefore, we set some of the travelling carriers passing through stations in this area as libraries on rail to supplement the gap between budget and usage. When Libraries in Sunnyside and Elmhurst receive requests for books

they don't have, they will contact libraries in Manhattan.



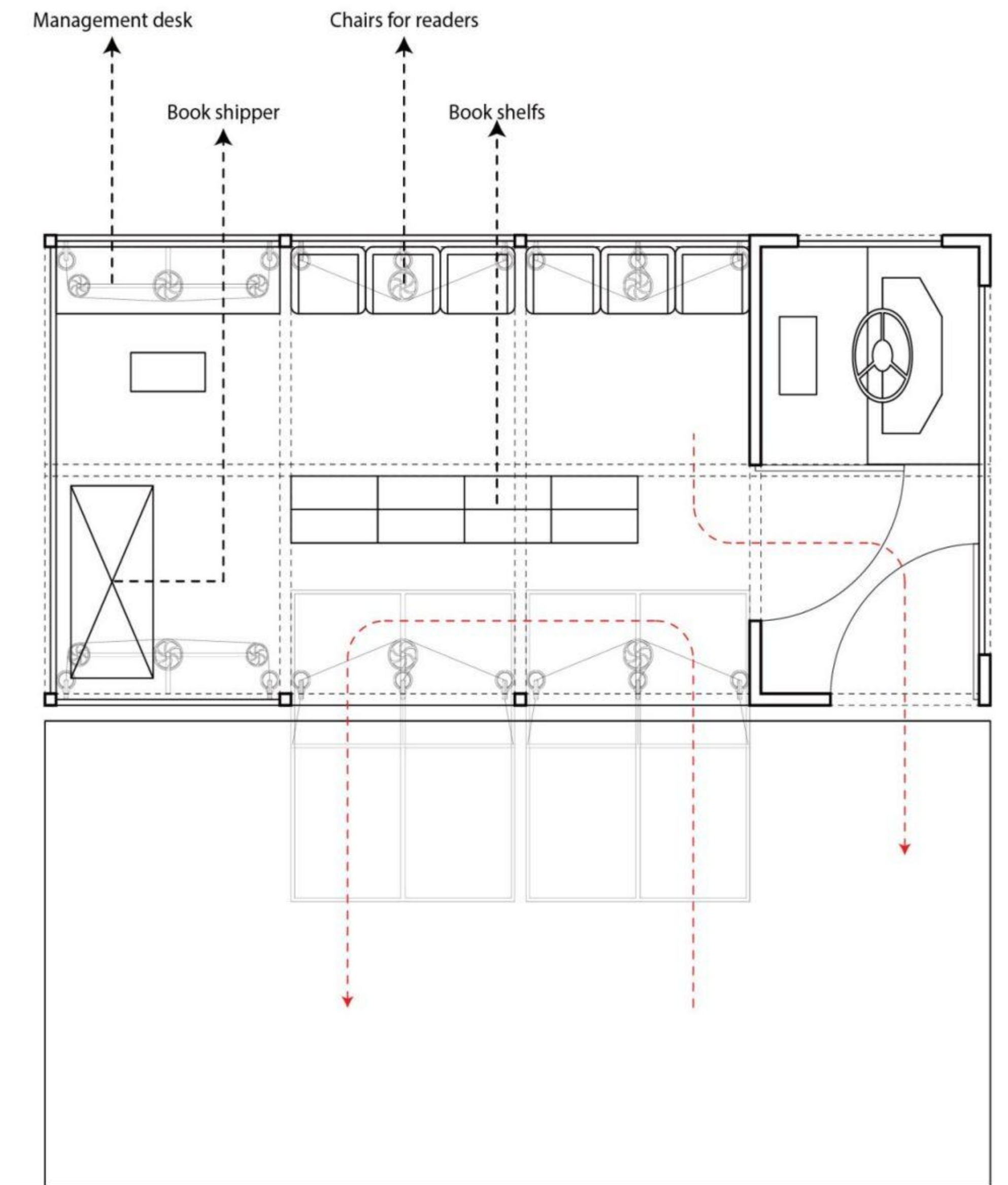
Stations around Manhattan Libraries

Library staff will bring all the ordered books to the carriers with a book shipper.



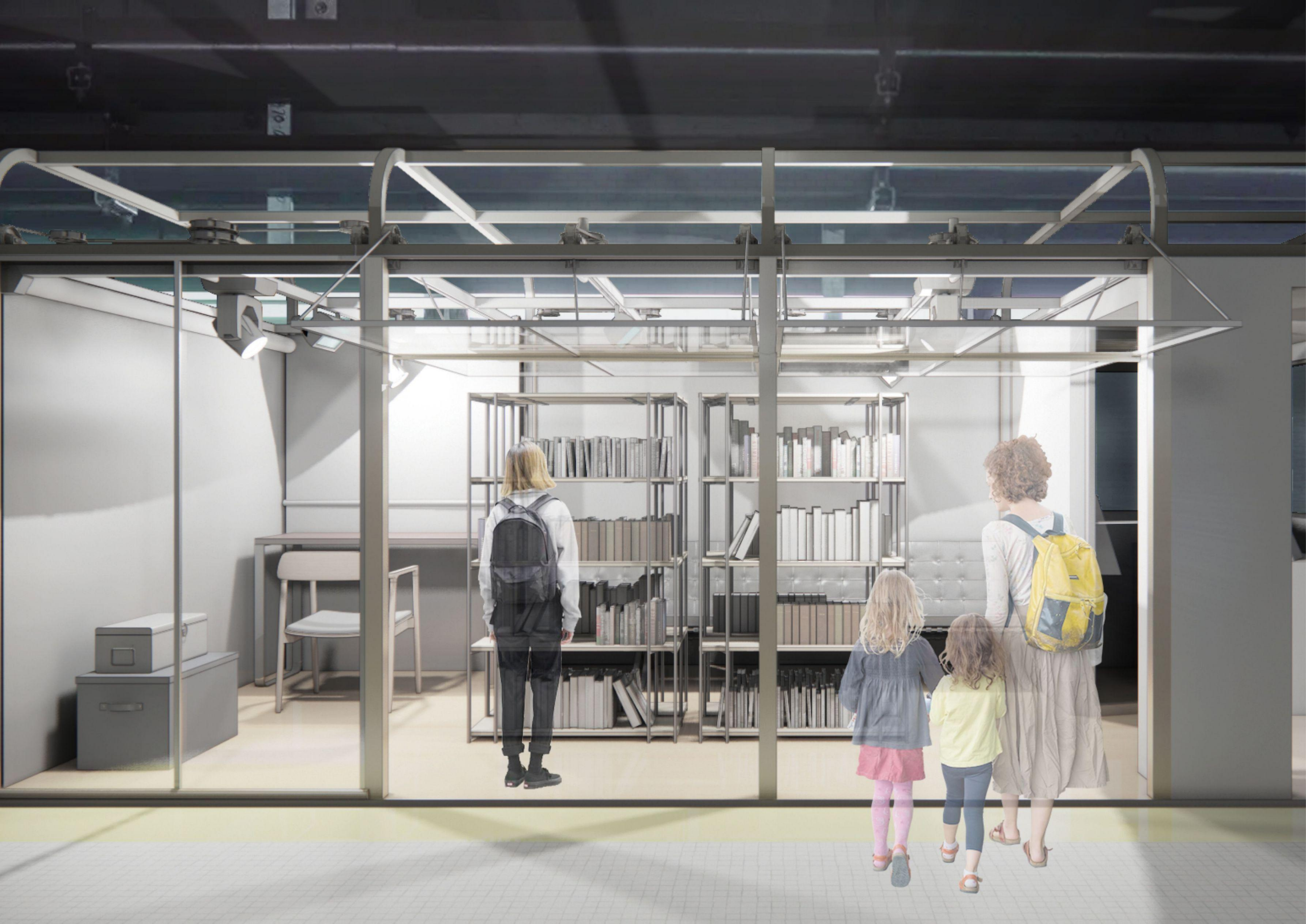
Traveling

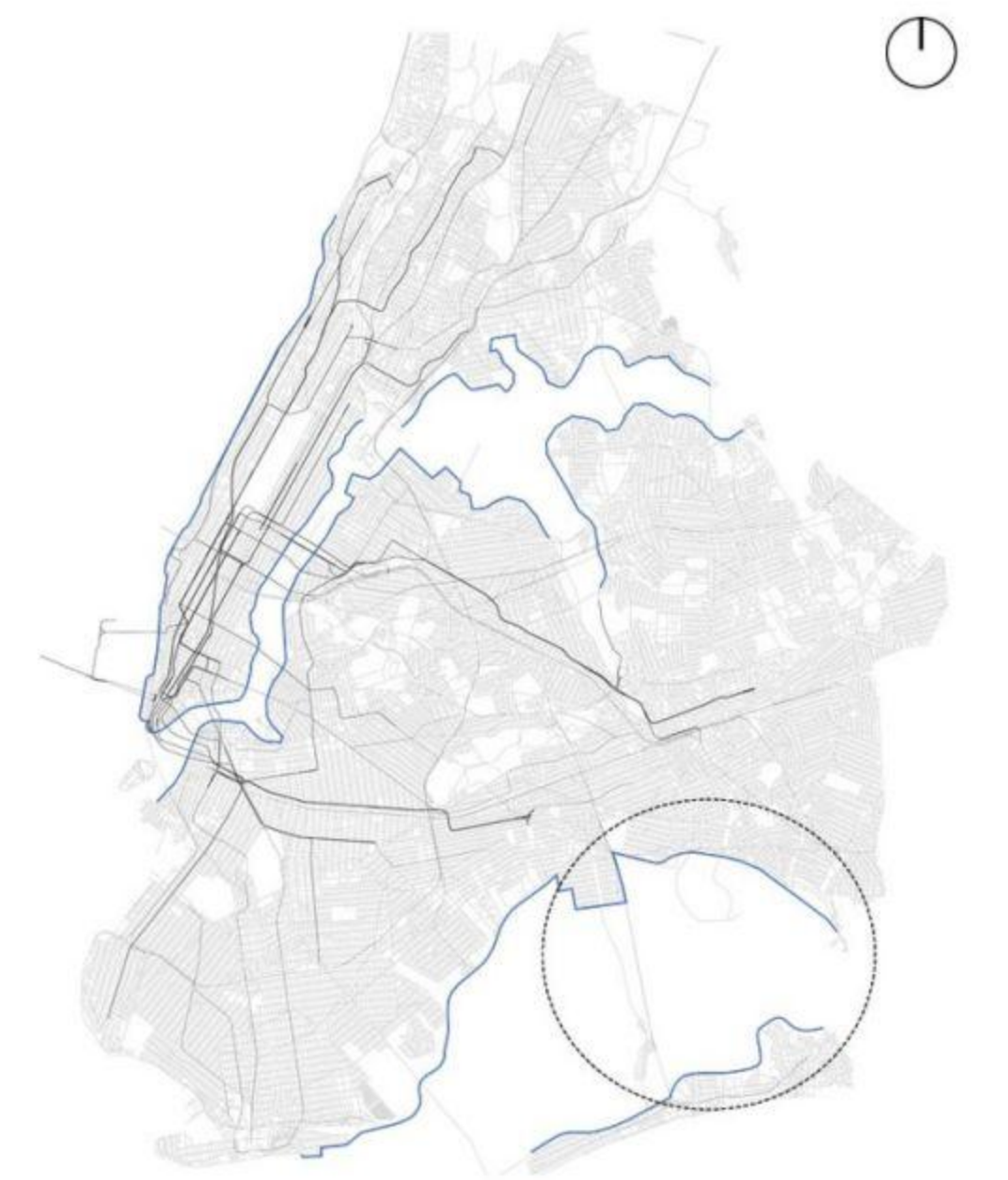
Books ordered by readers and pick-up books will be placed on the different side.



Stations in Sunnyside and Elhurst

When the carriers arrives at the stations in Sunnyside and Elhurst, people can pick up their books or read in the car.





Jamaica Bay

The third condition is by the river. There is a pollution problem in Jamaica Bay. Several wastewater treatment stations are located along the watershed. So, when demand for public service is low at midnight, Possibility Makers will be dispatched to the waterside and cooperate with NGOs to help purify the water.

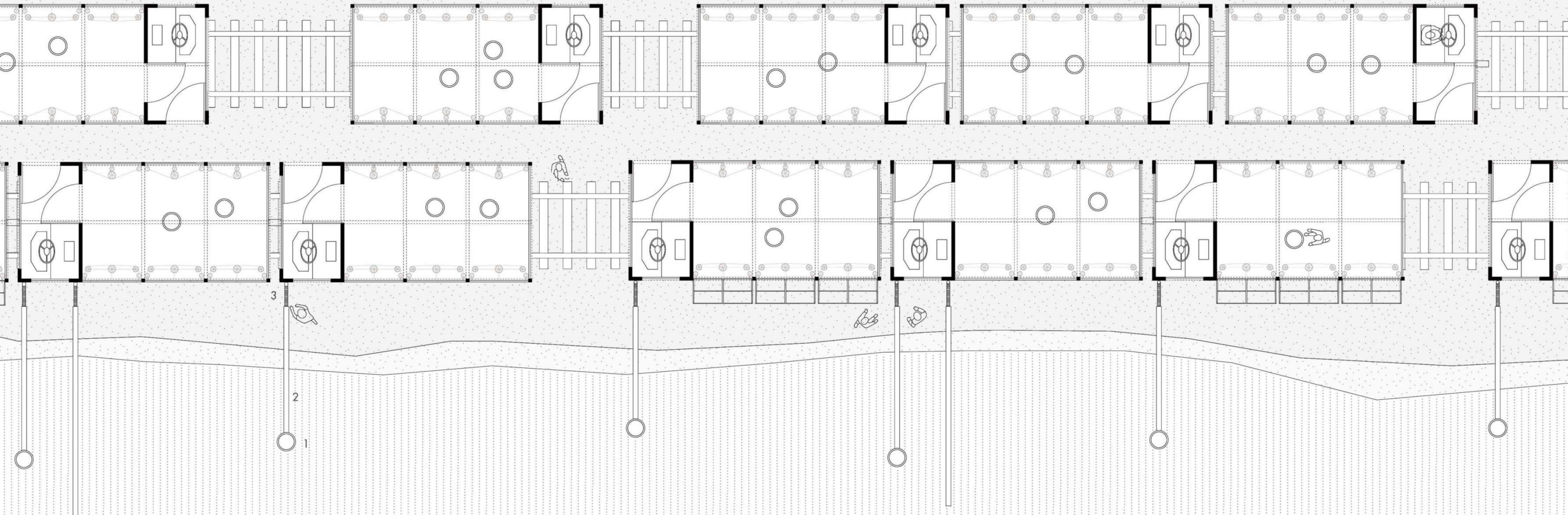
The carriers will come and park at the newly constructed rails on the beach of JFK airport, which is in a major polluted area and has no current programs ongoing. The trash collectors are fixed on the rails to collect trash and dead seaweed, and when the cars come at night, pipes on the cars will be connected to the collectors, and

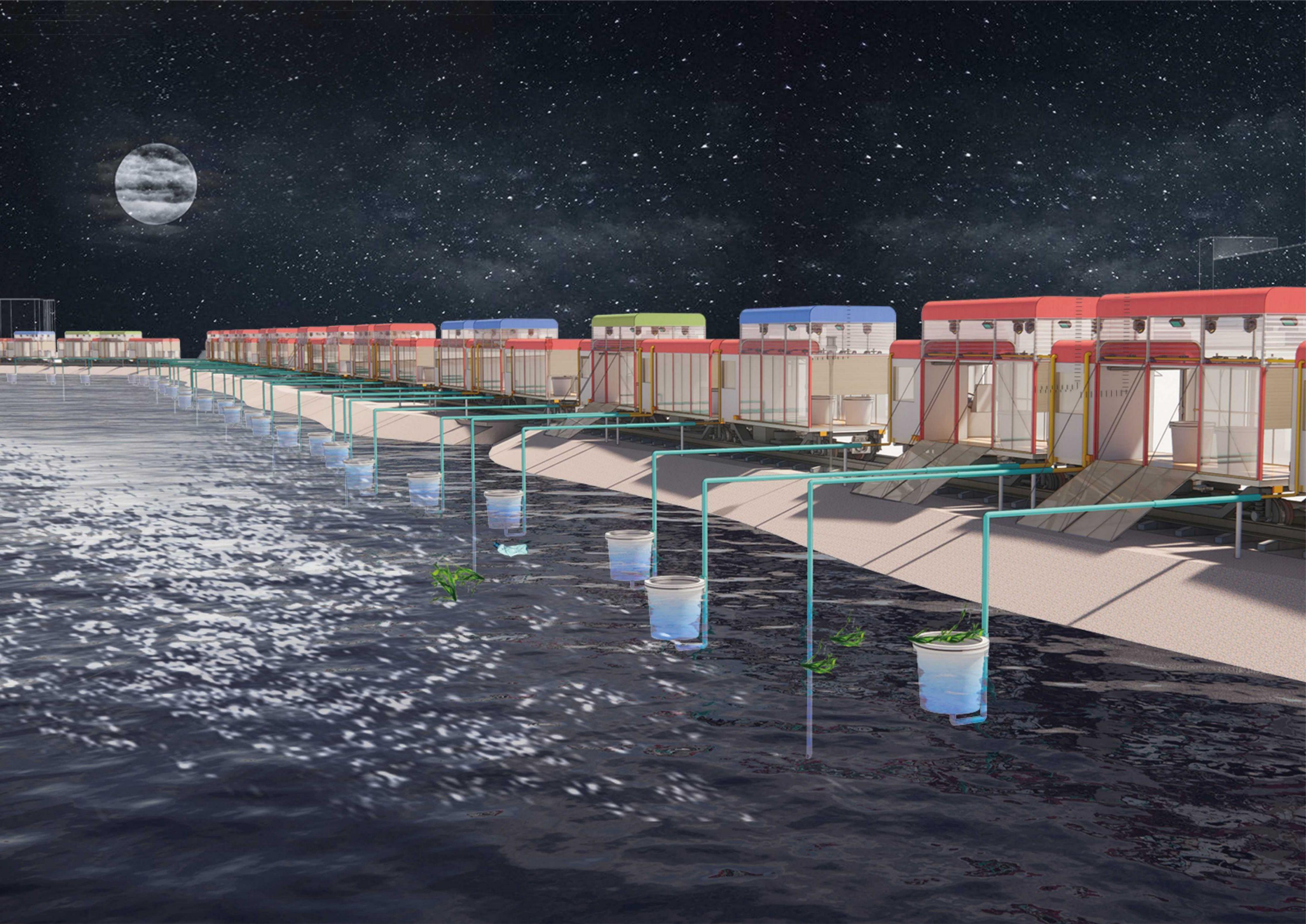
the purification will start.

The carriers will be grouped into three, one of which has a water purifier installed and use its engines to pump water from the Bay. 300 million gallons of water will be purified by 1200 cars every night.



- 1 Seabins
- 2 Fixed pipes
- 3 Retractable water pipes





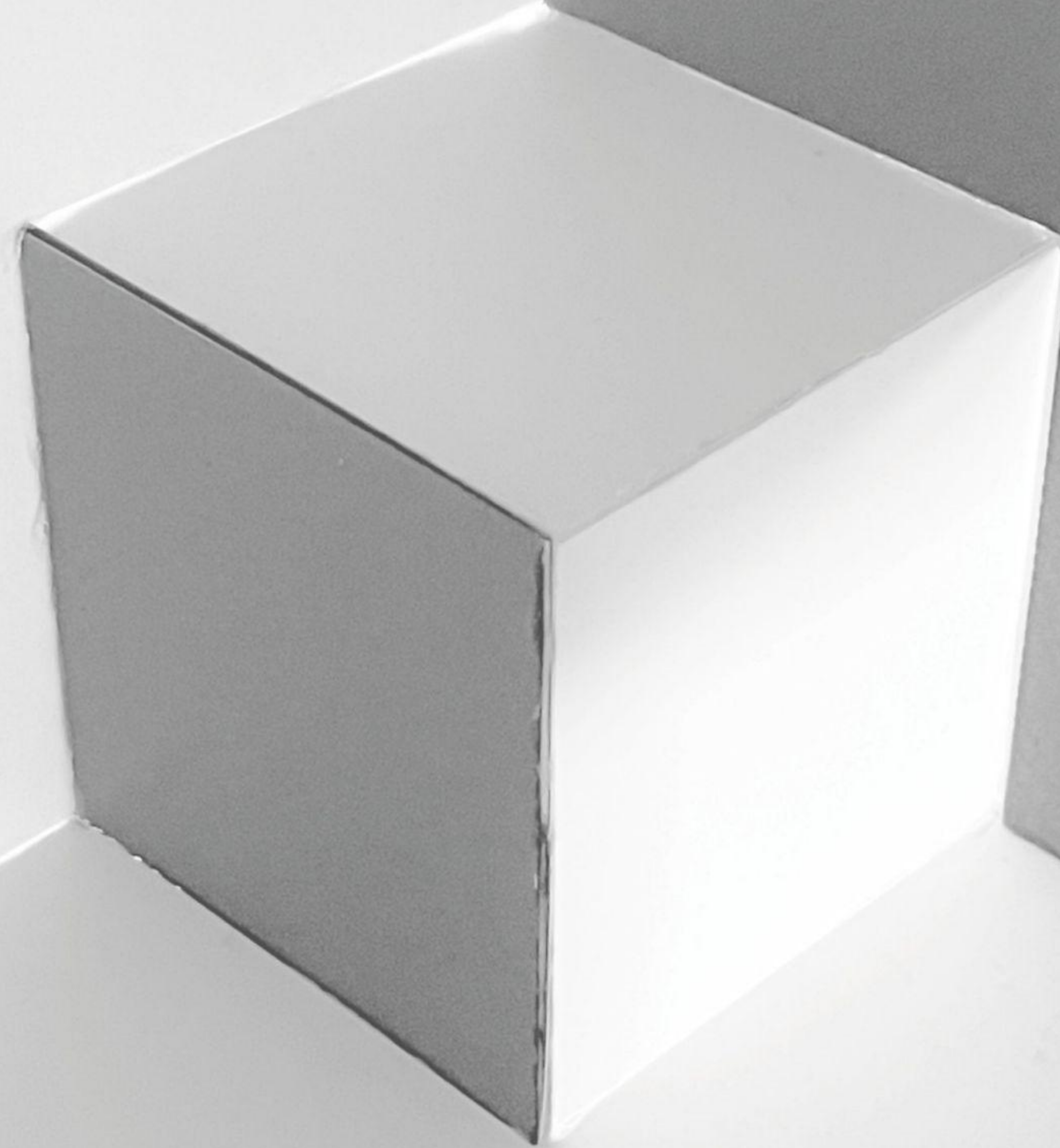
94 DAYS

Documents of Sunlight

GSAPP Spring 2022
ADV Studio VI

Mentors:
Stephen Cassell
Annie Barrett

Individual design



Chapter 01-

Document of Sunlight

Almar Mater/ Light and Form/ Bright and dark/ Perception of the shape

Chapter 02-

Changing Cubes

Cubes/ Colors and Shapes/ Interplay of light and color/ Changing space

Chapter 03-

Central Park Climate Lab

From square to circle/ CLT folded panels/ Nature/ Light forms space/ Ambiguity

Everyday

The project investigates the exact effects of the diurnal cycle that defines each single day, and the interplay of sunlight and space.

Practice

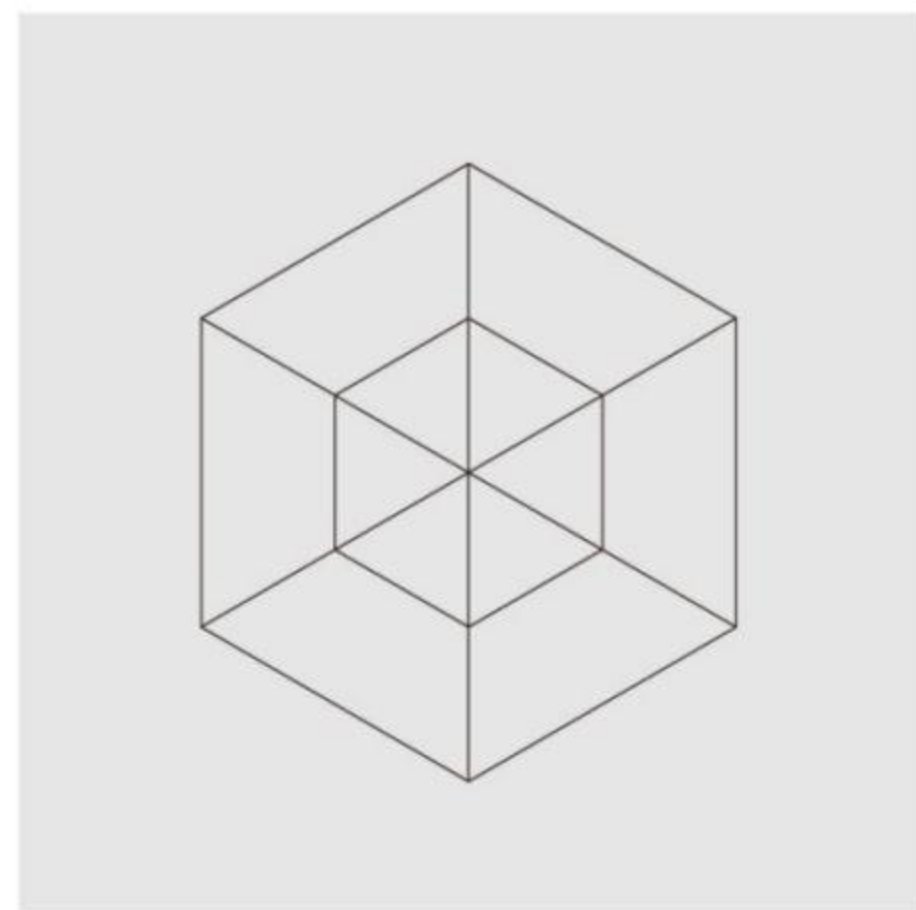
Rather than focus on the singular culmination end of a design, the project is divided into three parts and concentrates on the recursive practice of creation – a practice that builds on itself.



Light and Form

The formation of our visual image depends on the interaction of sunlight and objects. Light brings bright and dark relationships and different bright and dark colors influence our perception of the real object.

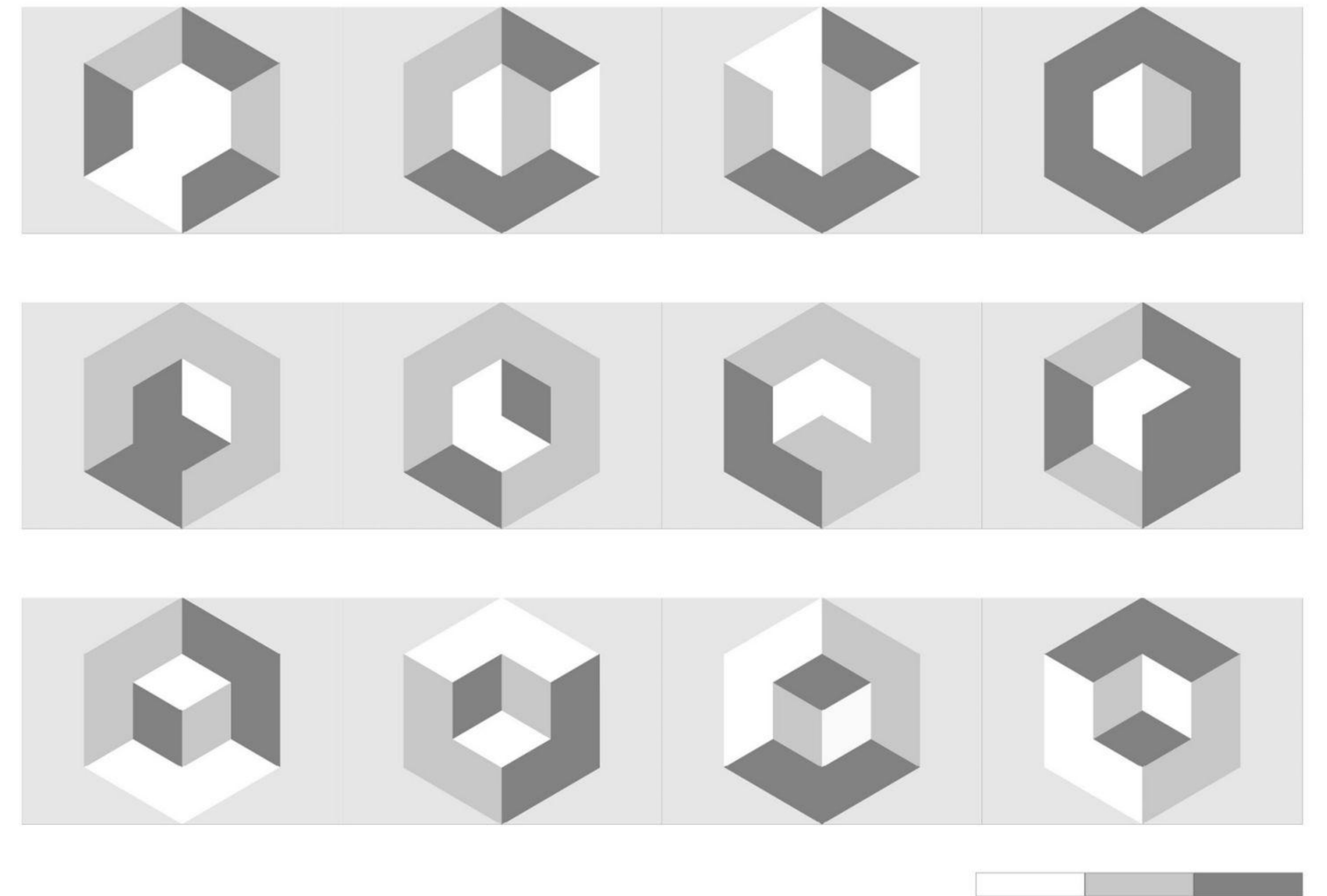




Colors and Shapes

What happens if subjectively change the relationship between the bright and dark of an object?

If an object is given a different color, the reflection of the image in our vision may deviate, thus creating an optical illusion.

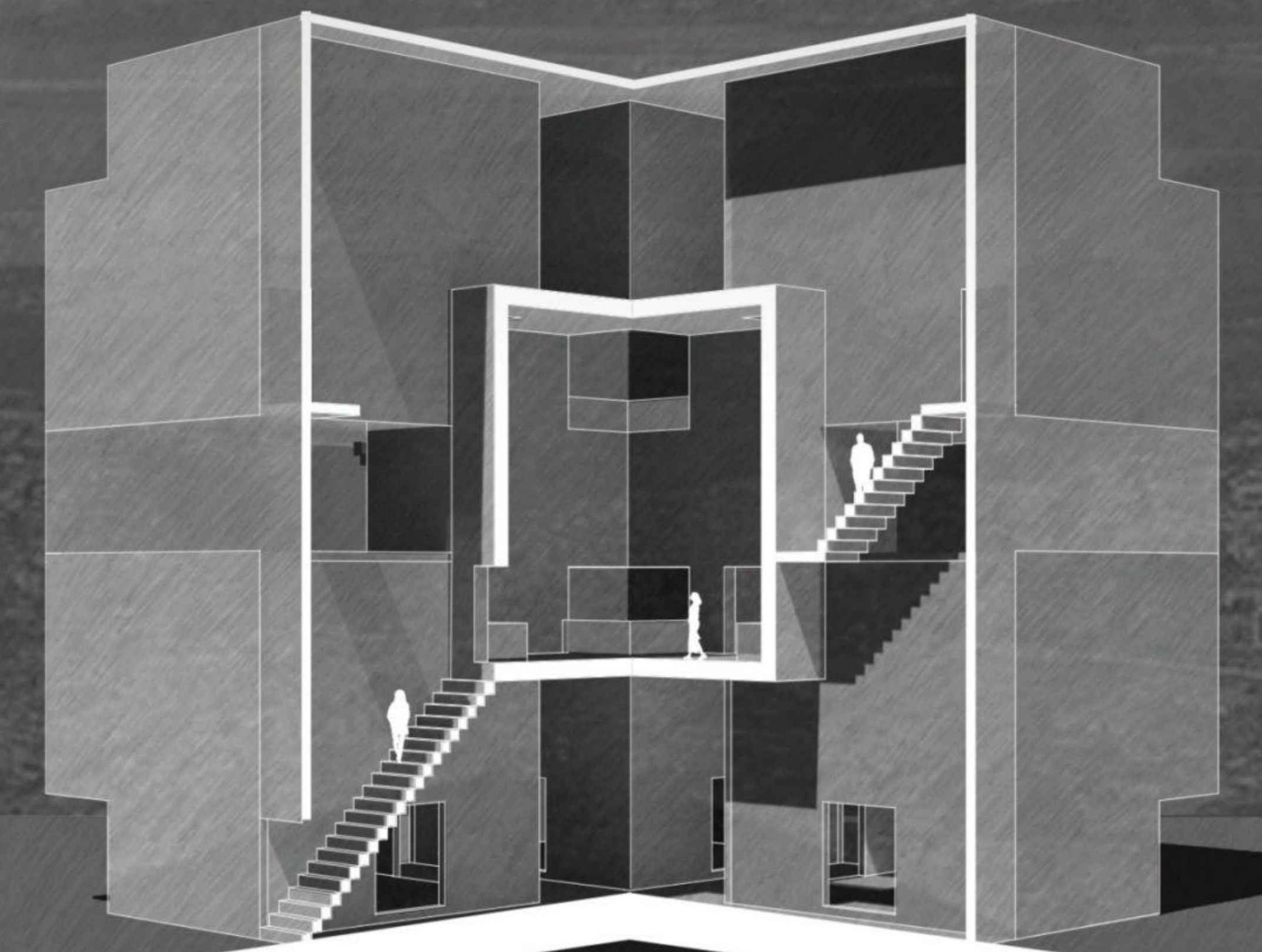
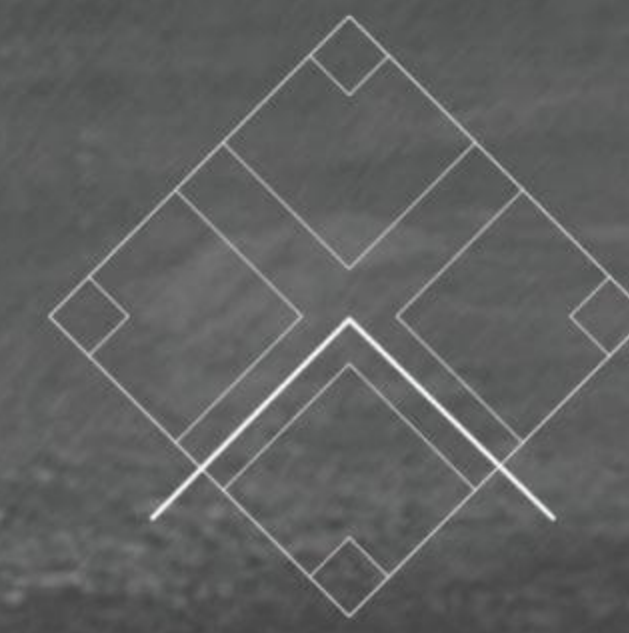
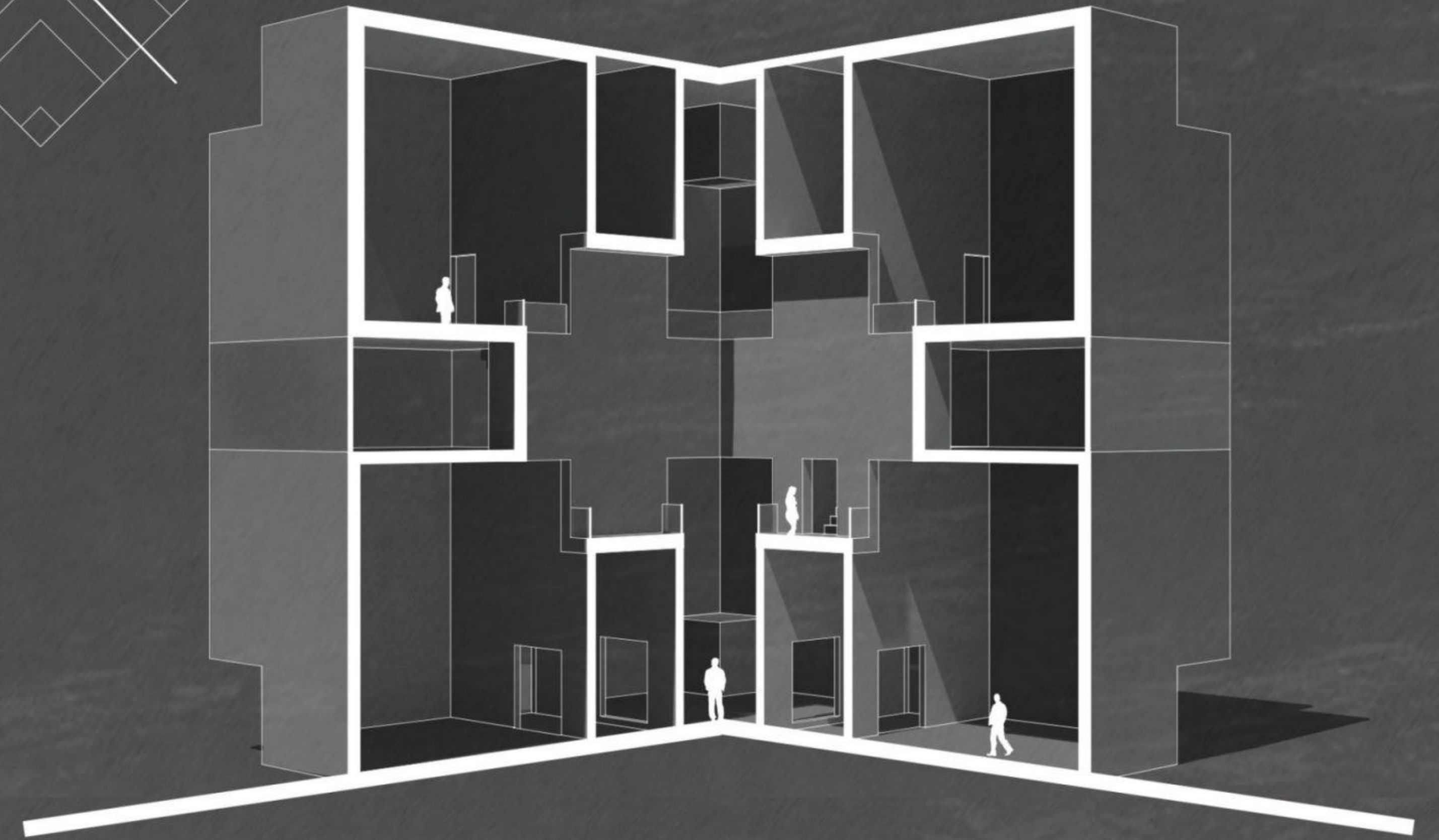
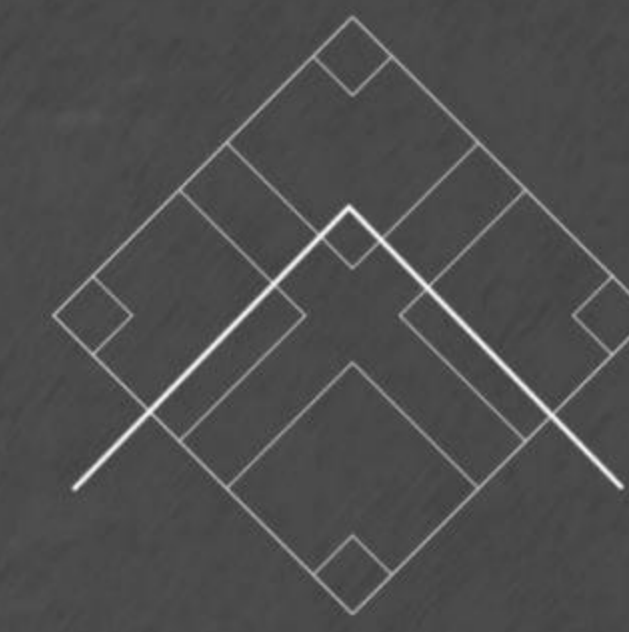
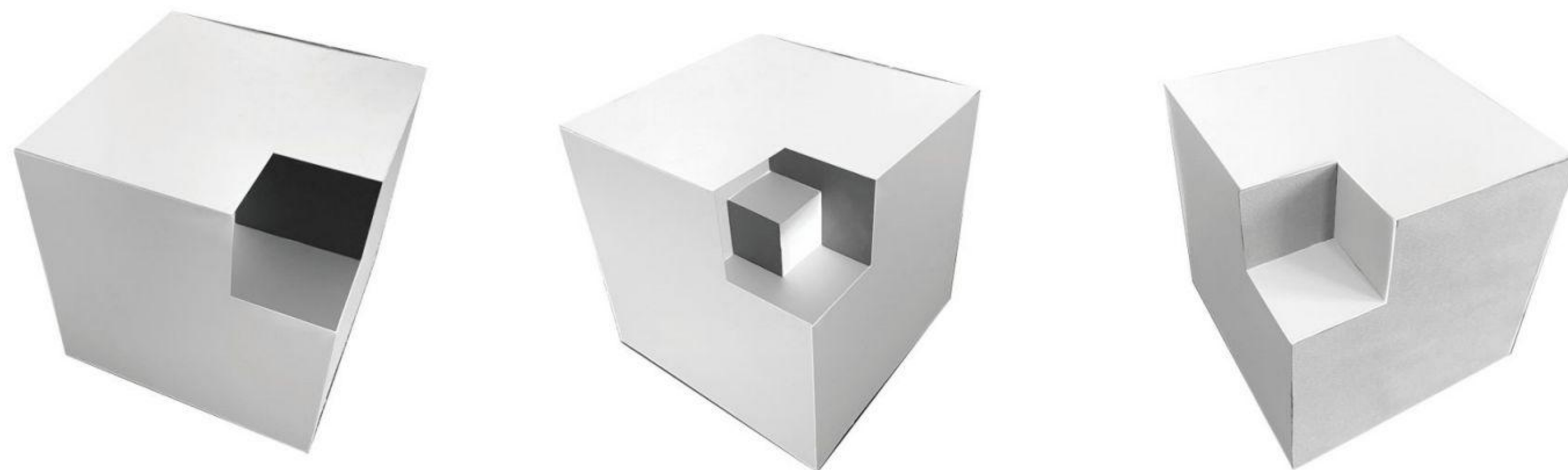
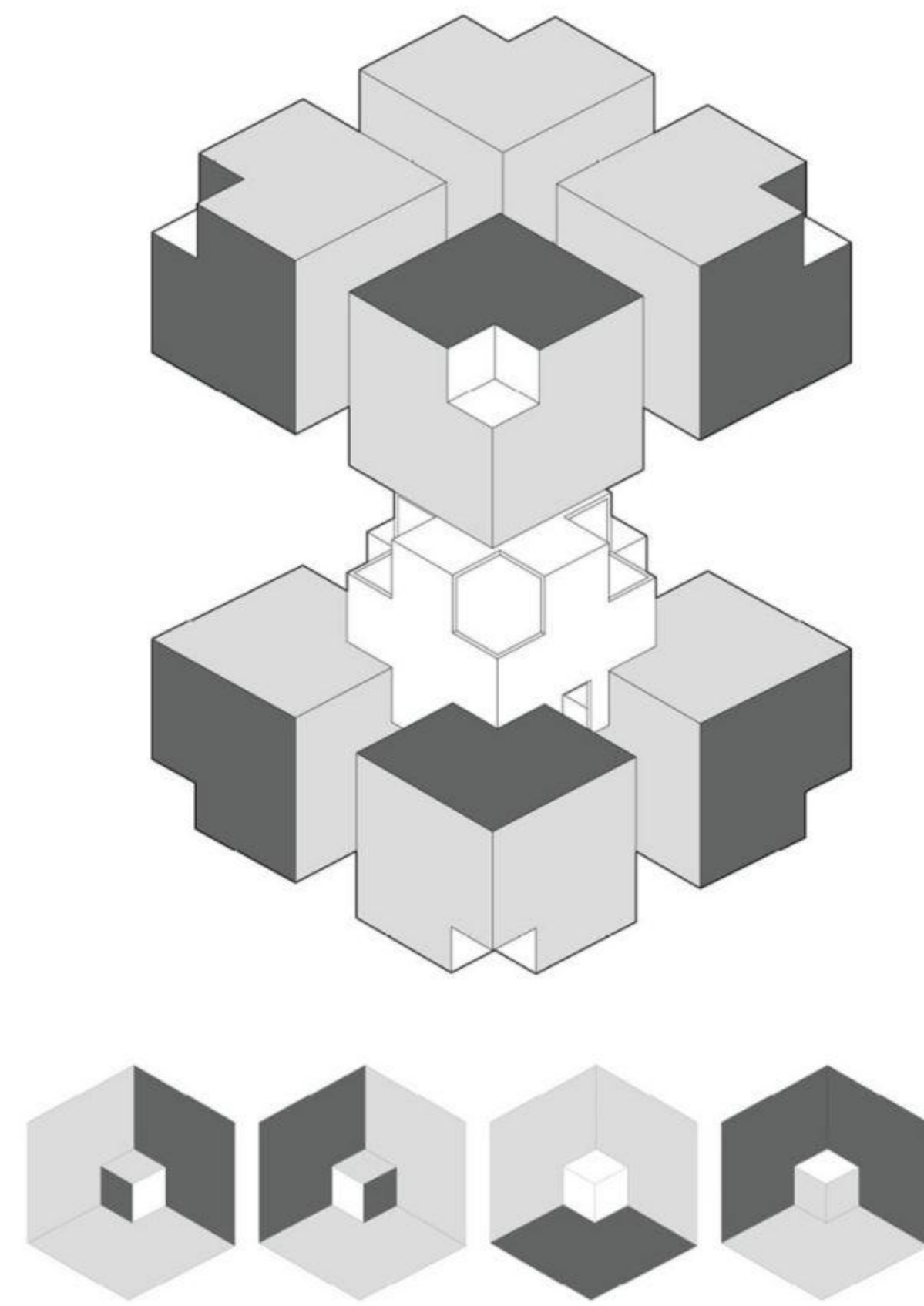


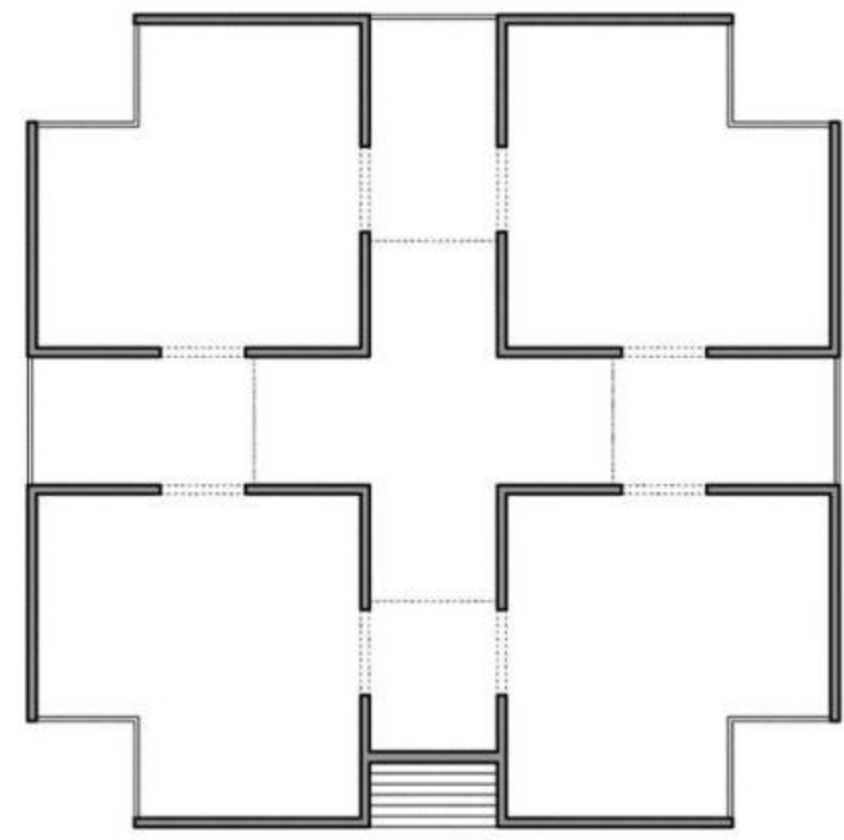
Boxes with Three Colors

So what would it look like after combining these small boxes with different corners and colors?

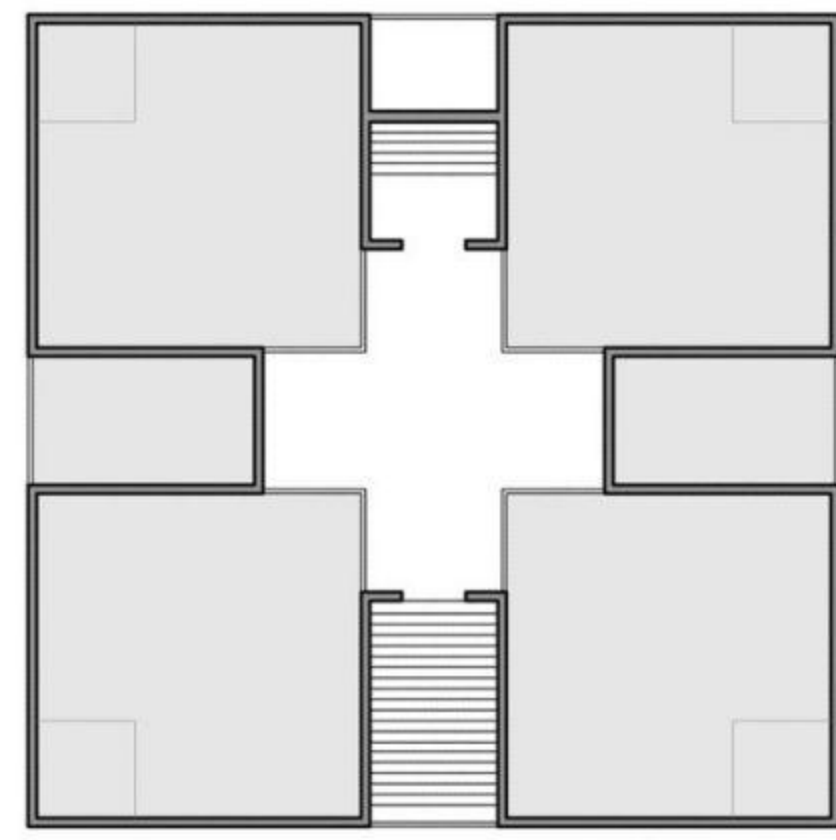
This is a space formed by nine cubes put together. Each cube has a hole in the corner, which is the part where they are connected to each other and the part where the light comes in.

Three different walls, translucent white frosted glass, light gray walls, and dark gray walls are selected for the walls of each box depending on the orientation.

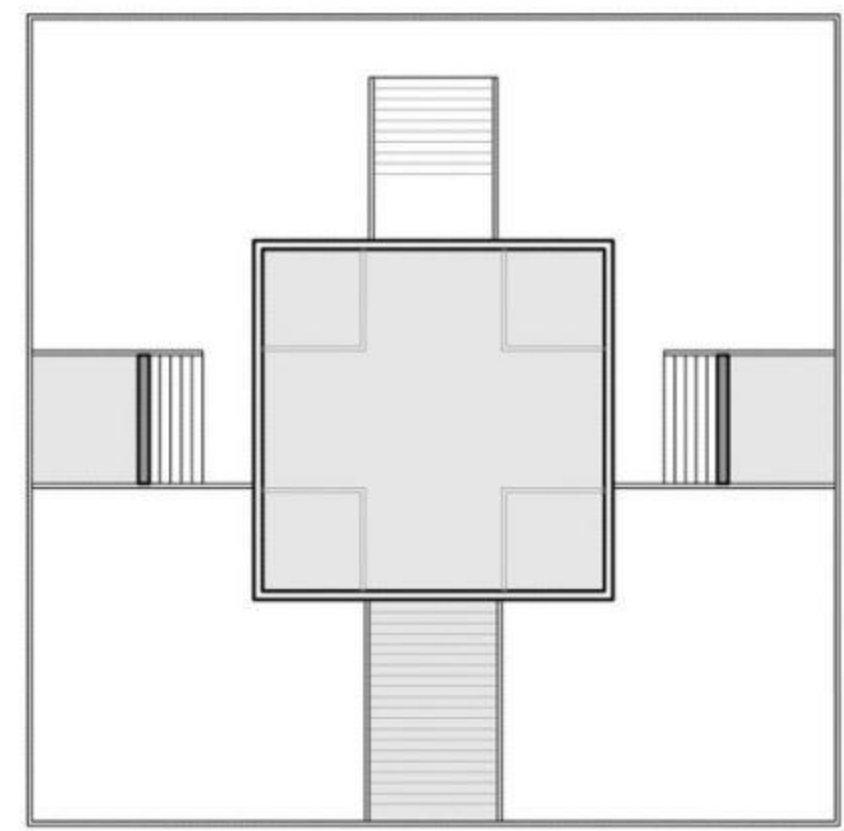




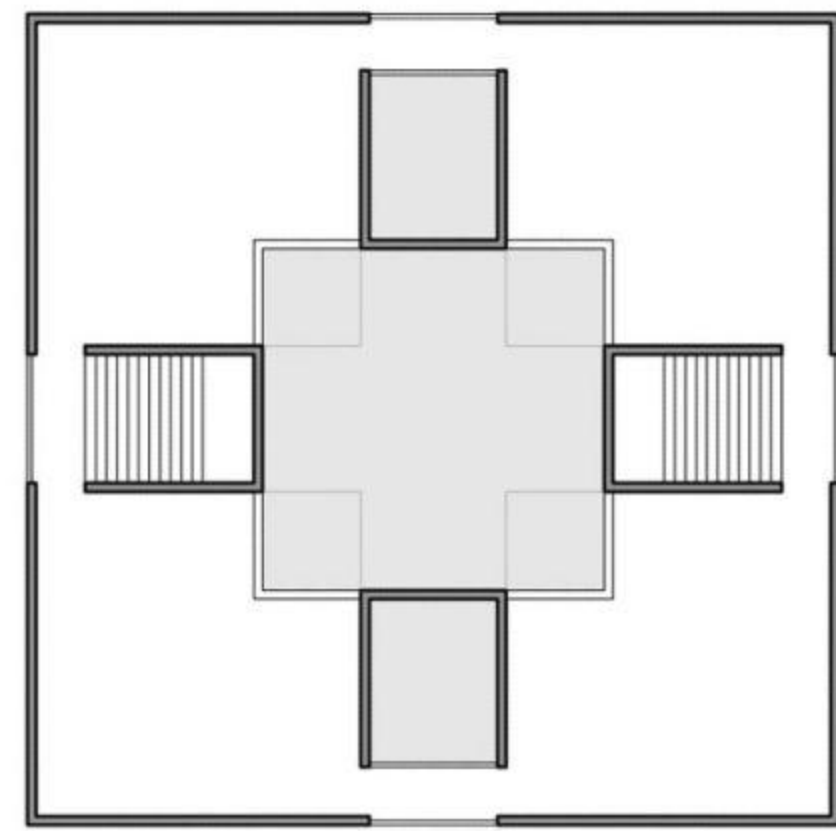
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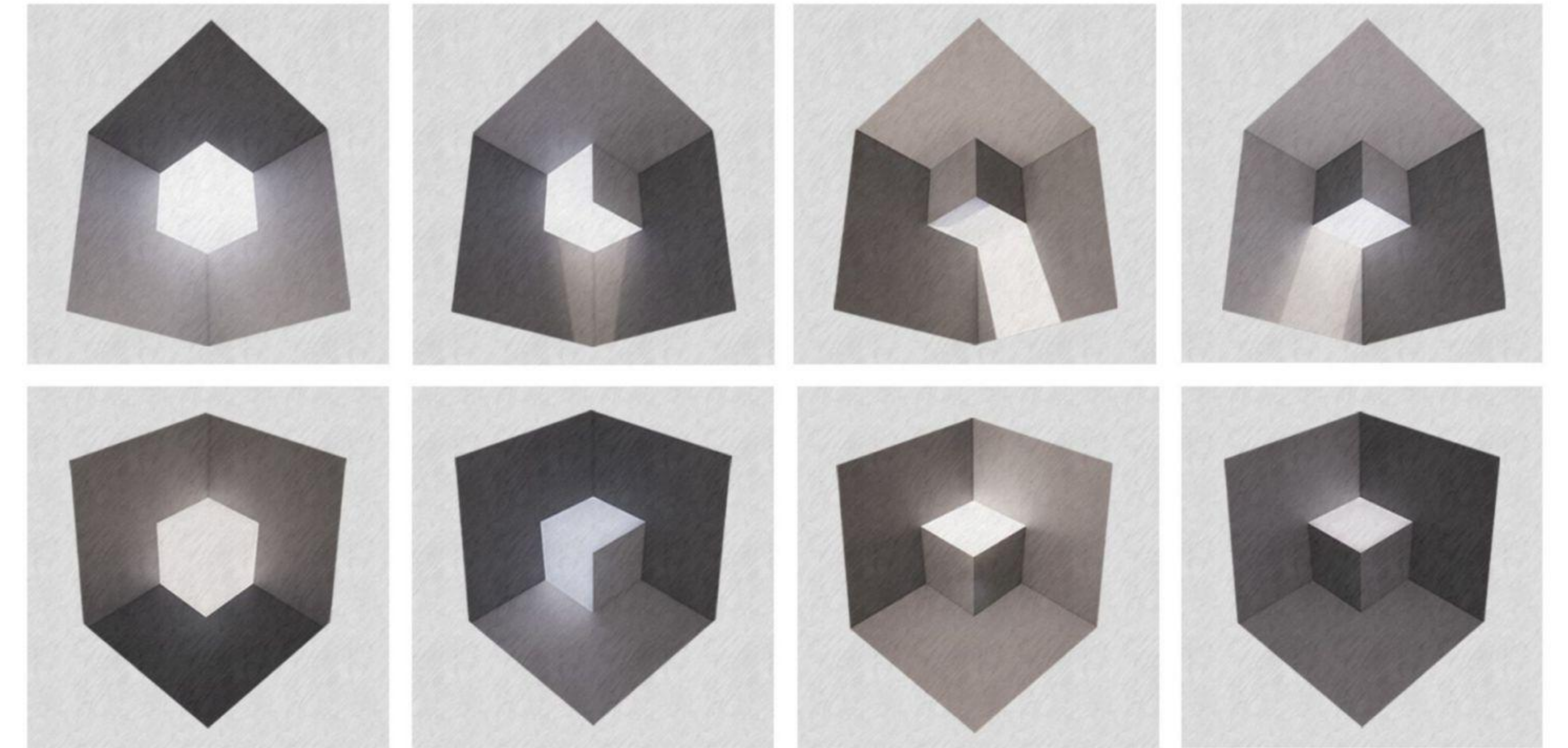
2F



3F



4F

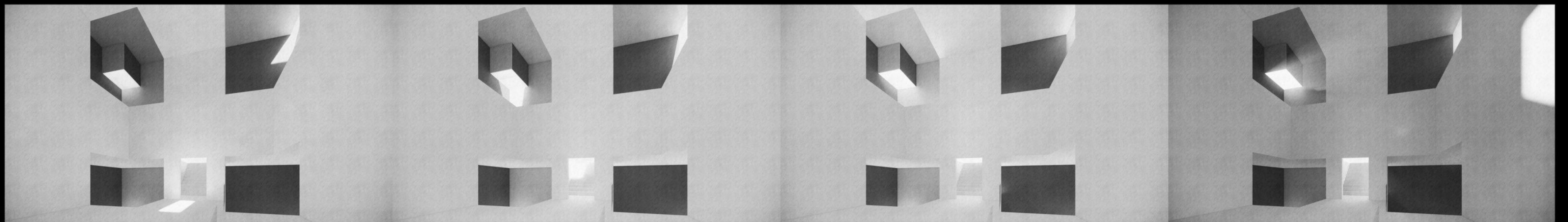
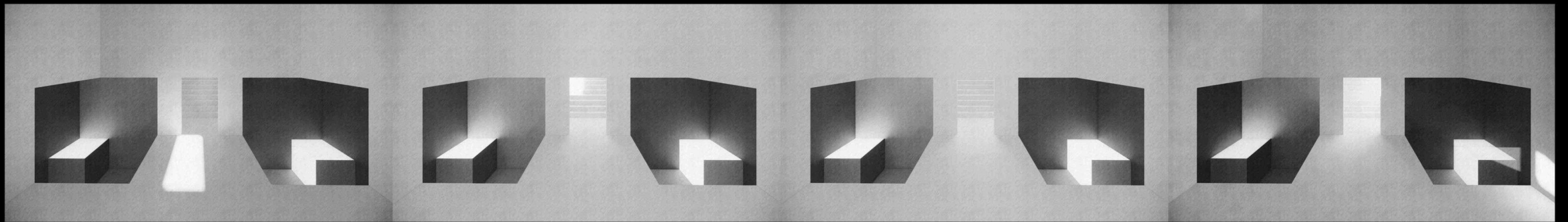
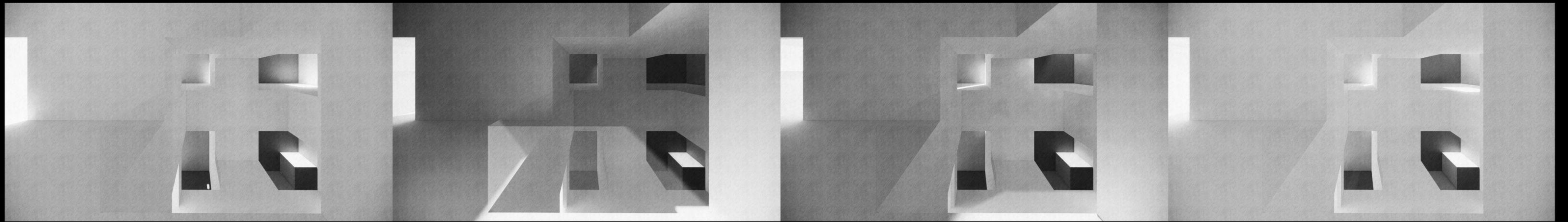


Changing Room

Although the whole building is symmetrical. Our perception of each space is different when walking between different cubes due to the influence of colors and light. The whole building became an ambiguous and ever-changing space.

Interplay of Light and Colors

The light and shadows will add another layer of color to the object. Sunlight may sometimes allow us to see their true shape, and sometimes the light and shadows enhance our illusion.



9:00 AM

11:00 AM

1:00 PM

3:00 PM



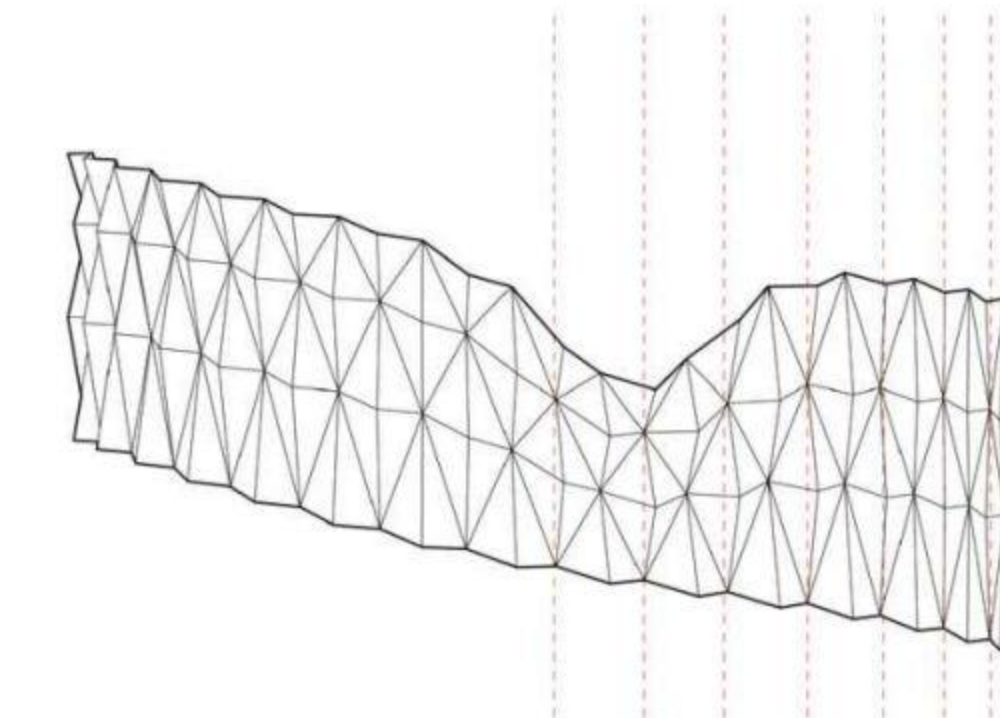
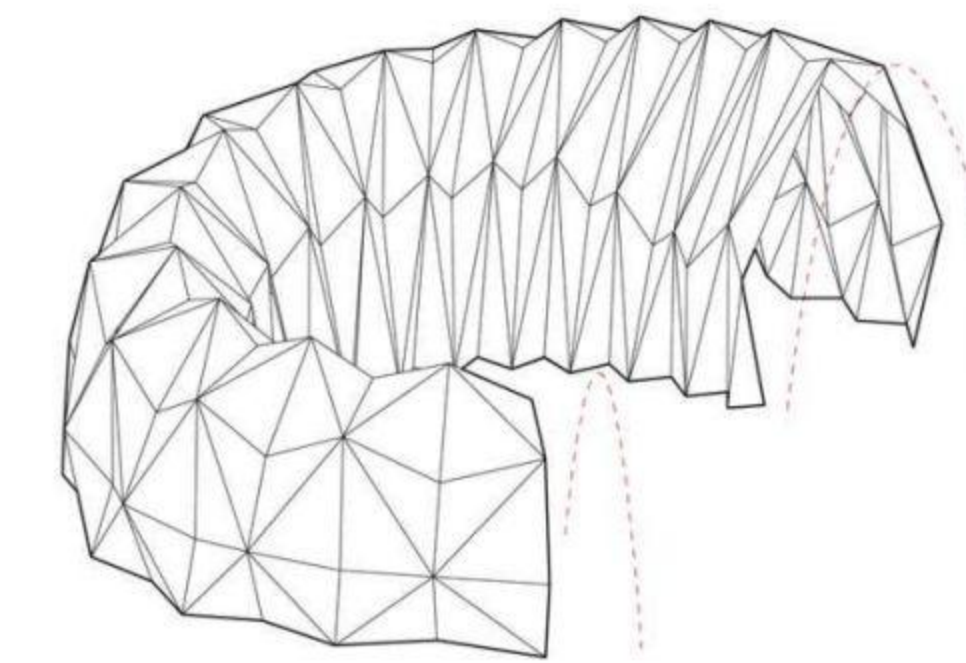
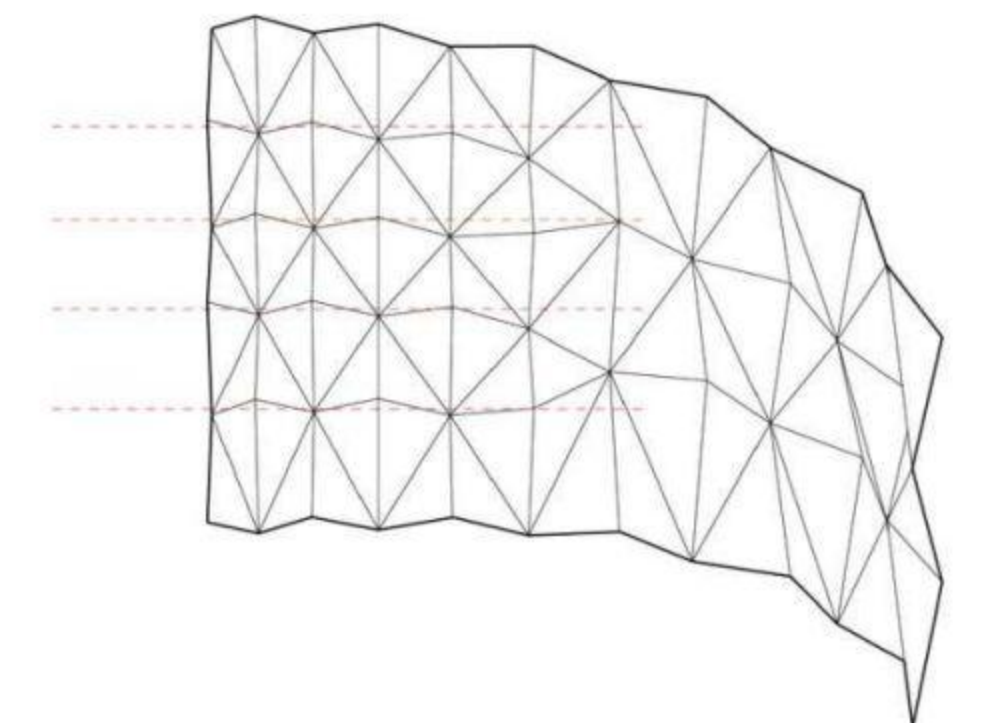
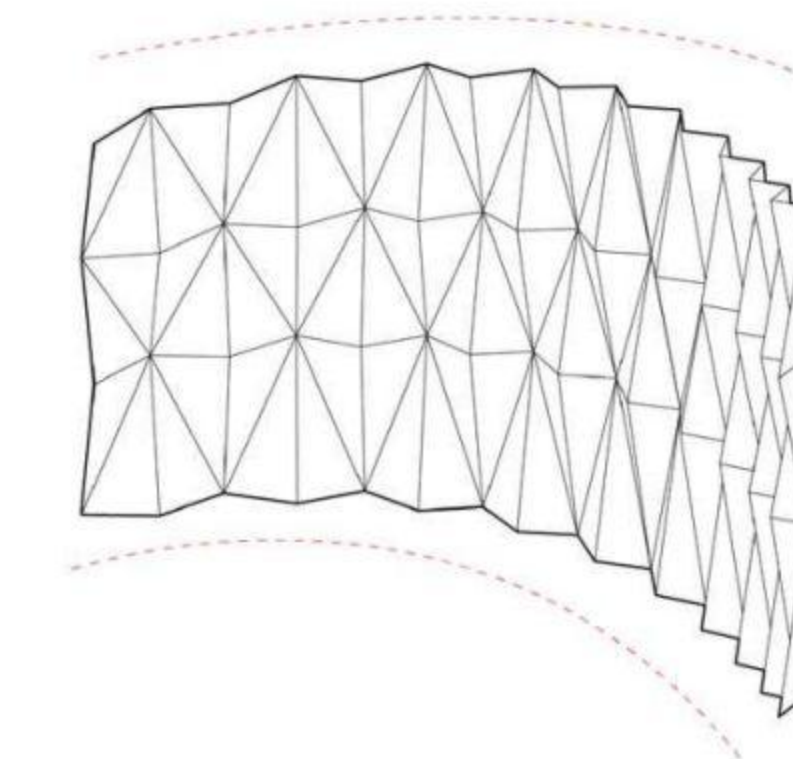
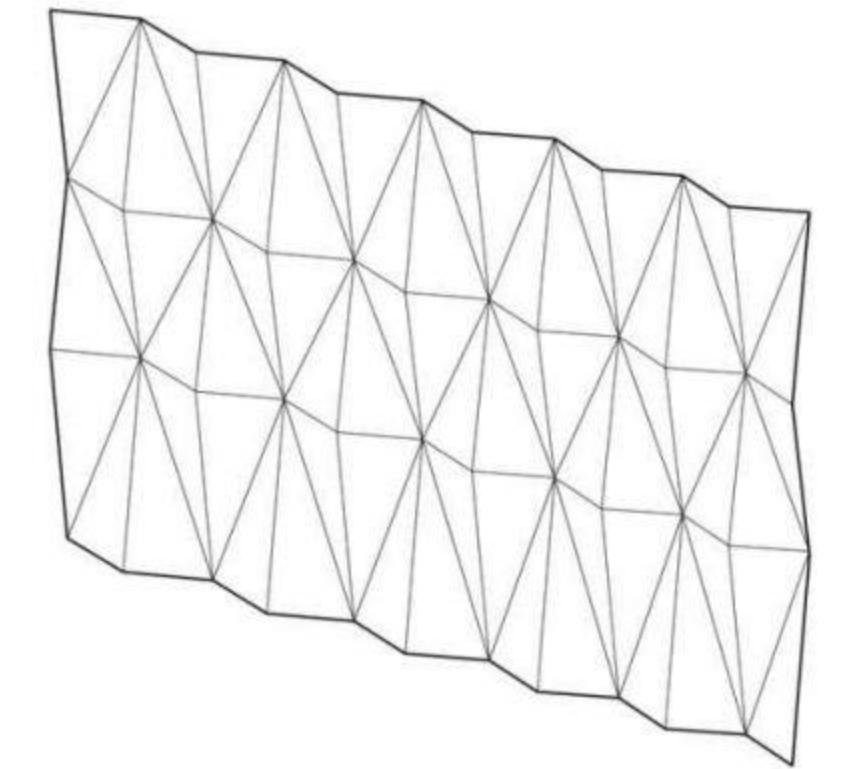
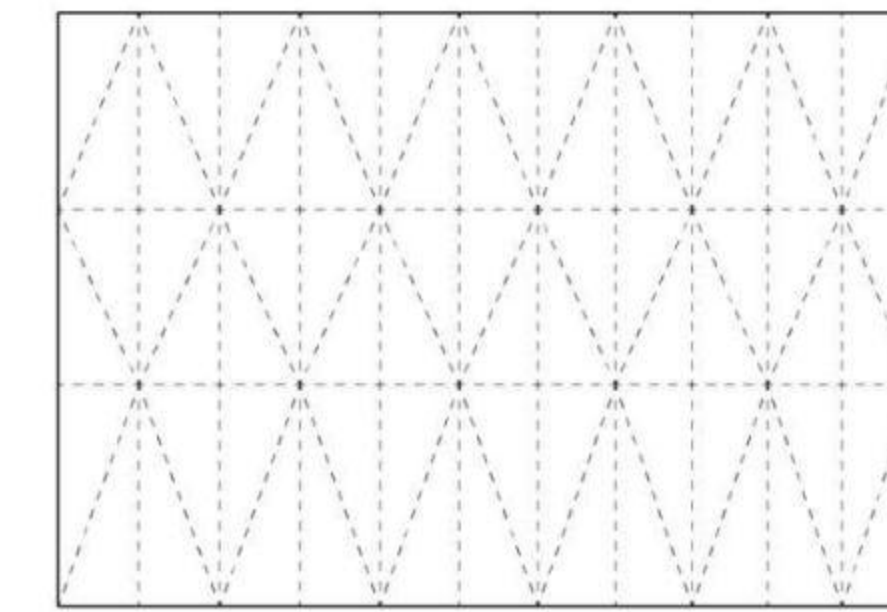
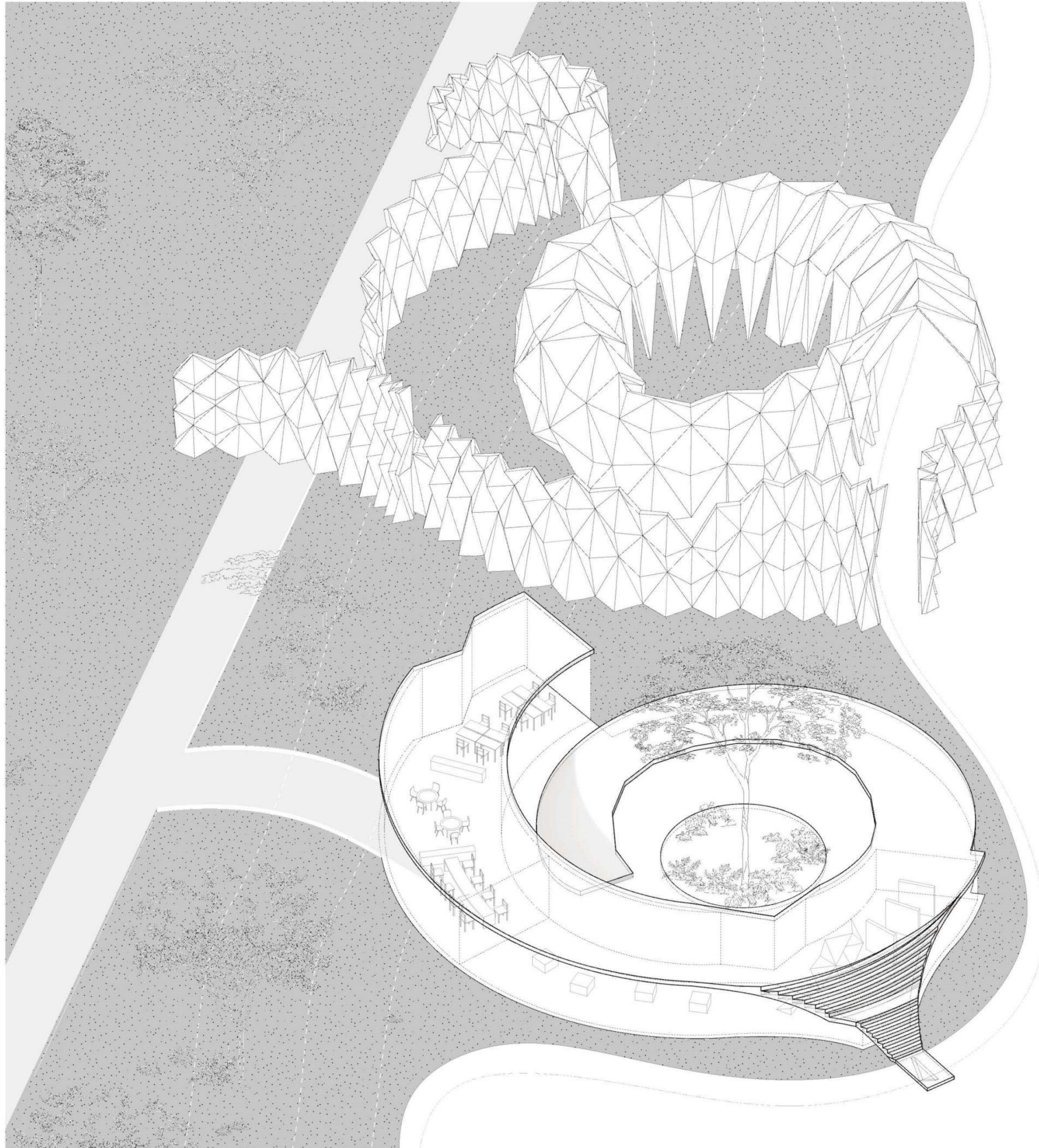
The Building As An Amplifier of Sunlight, Time and Nature

The third part is a design for Central Park Climate Lab, based on a newly founded program belonging to the Central Park Conservancy.

The building will provide office space for the researchers to study the impacts of climate change on Central Park and an exhibition space to showcase the new research.

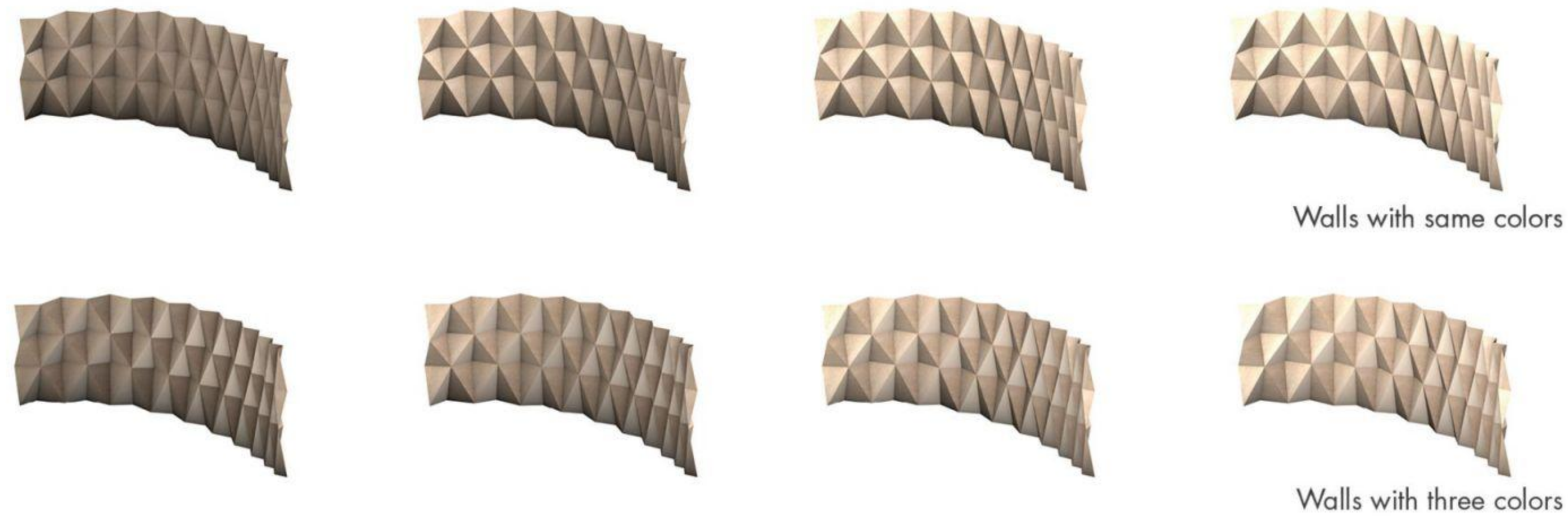
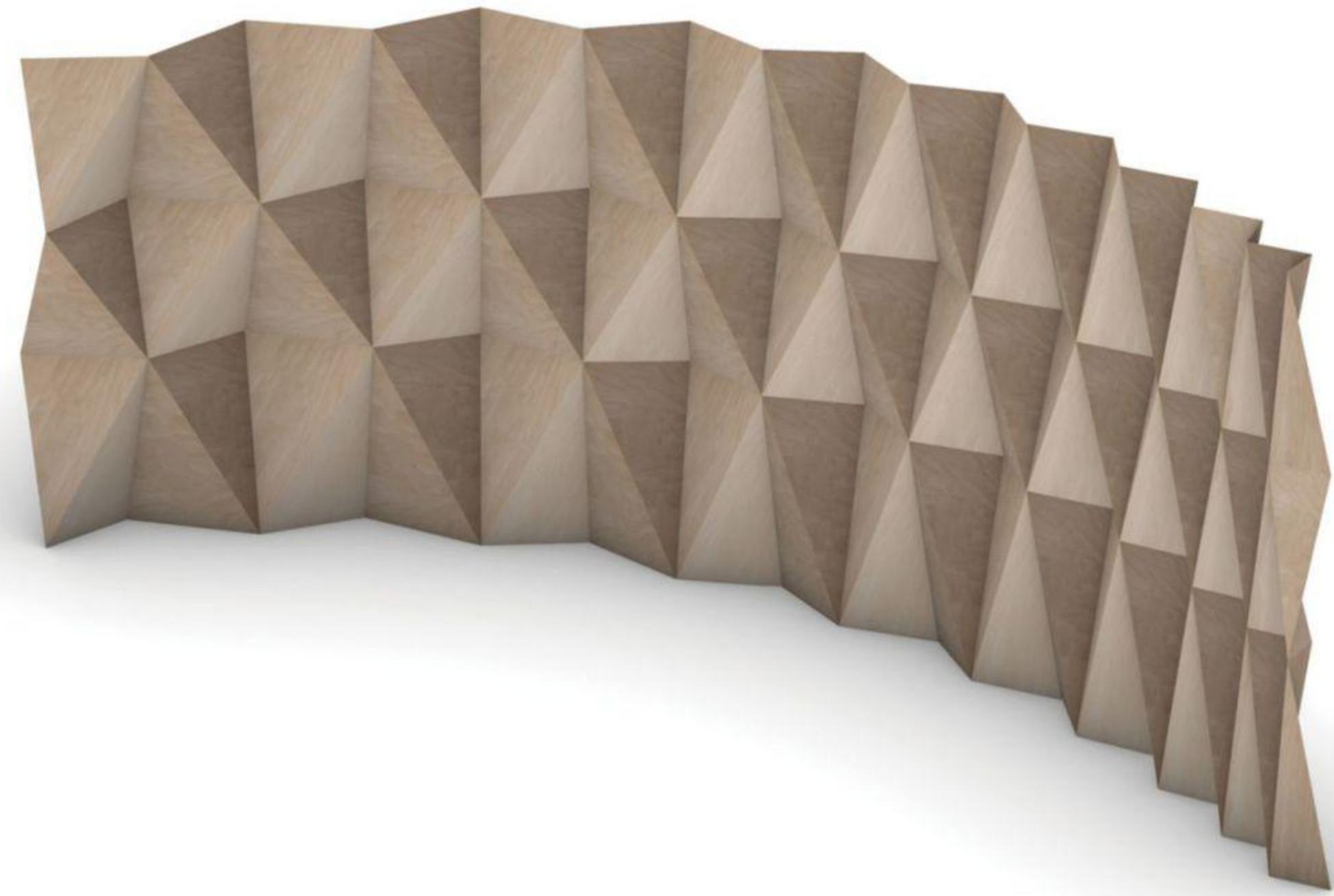
Also, the architecture works as a space to connect visitors with nature and highlight their senses and emotion as they walk through the building.





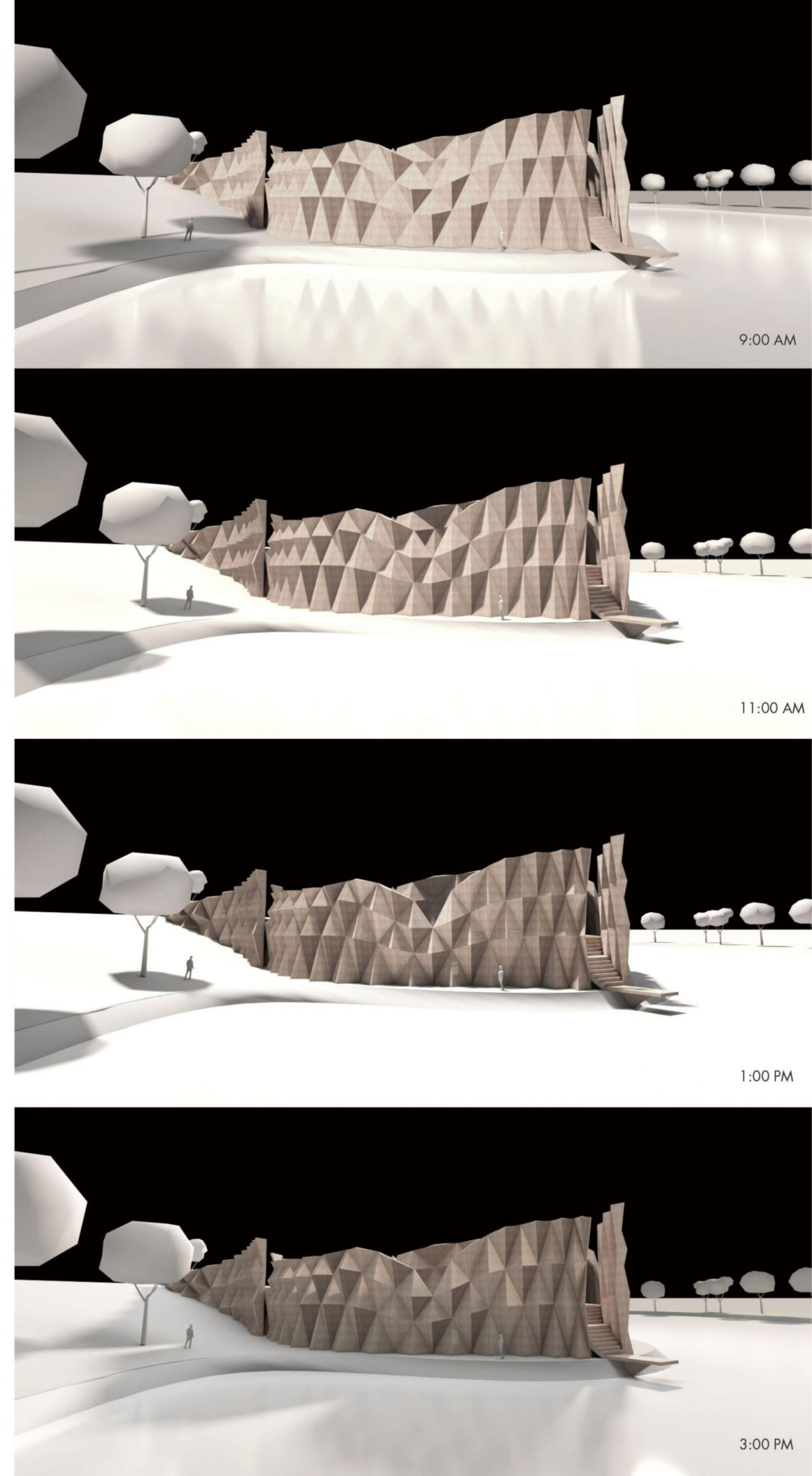
CLT Folded Panels

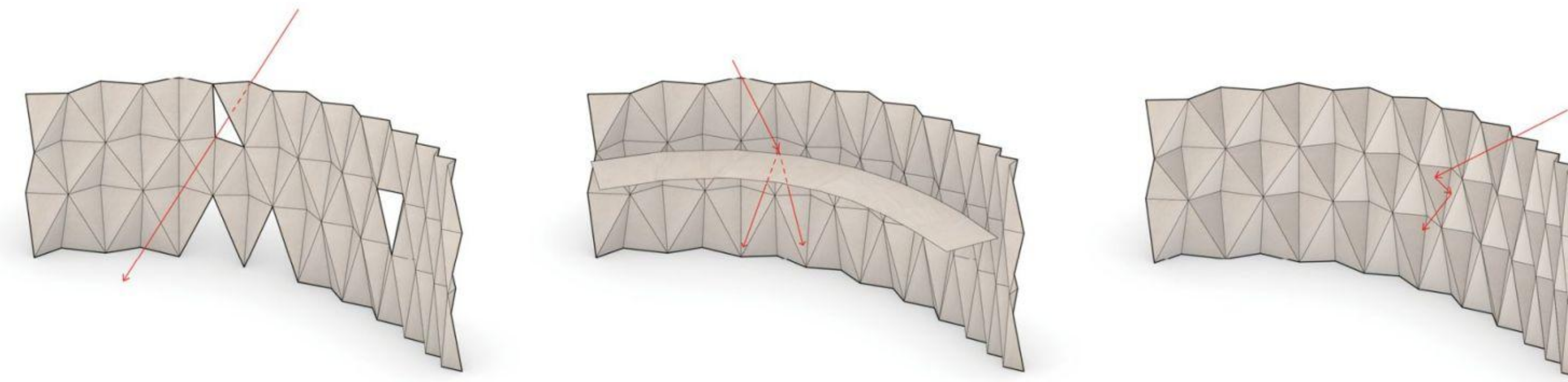
Folded CLT panels work as main structure in the building. By folding, each facet reflects light in a different direction, resulting in different appearances and shapes. Also, changing their shape, division, and height will create more light and shadow effect.



Walls with Different Materials

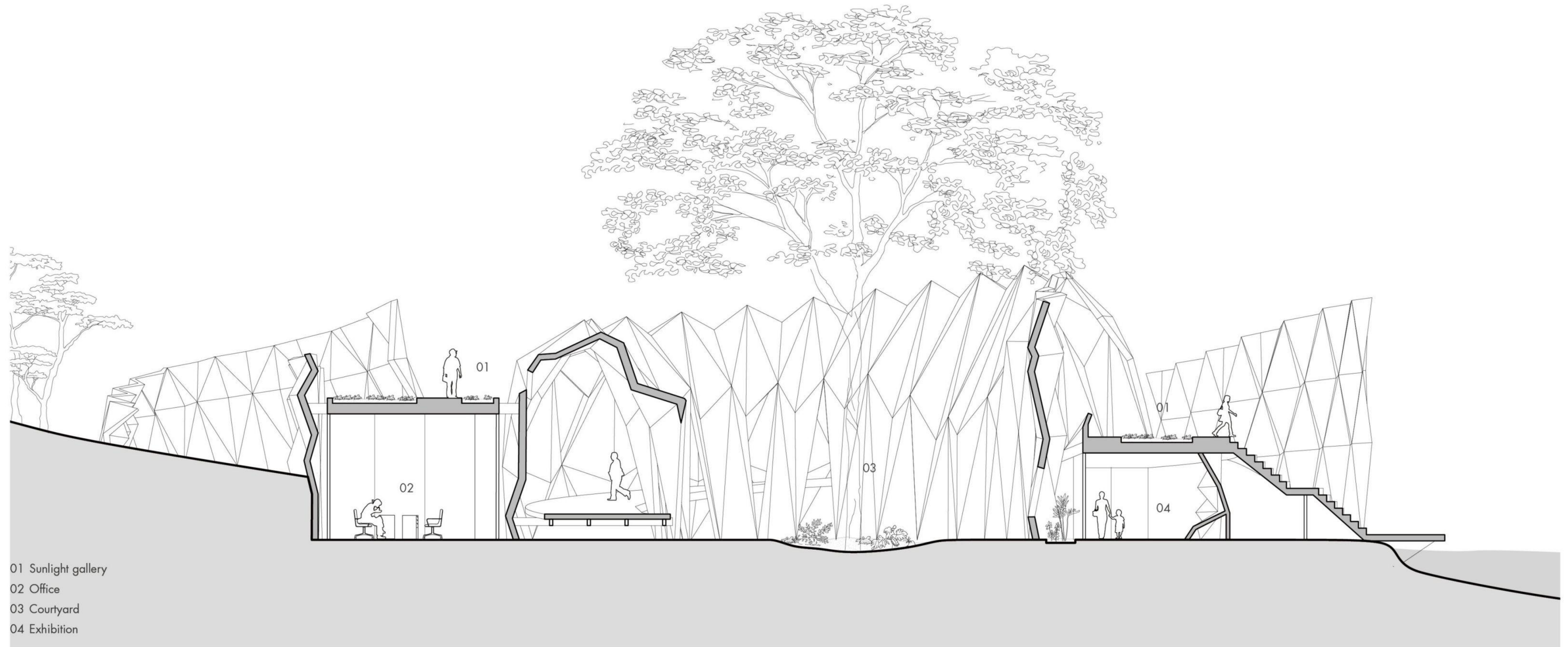
Continue to explore the interaction between light and colors. Each wall made up of three different colors panels. Two dark opaque wood panels and one light translucent panel. When placing them under sunlight, the comparison between the original wall and the wall with various colors shows that the triangular shapes become uncleaned. Also, the concave and convex relationship becomes ambiguous.





Different Light Sources

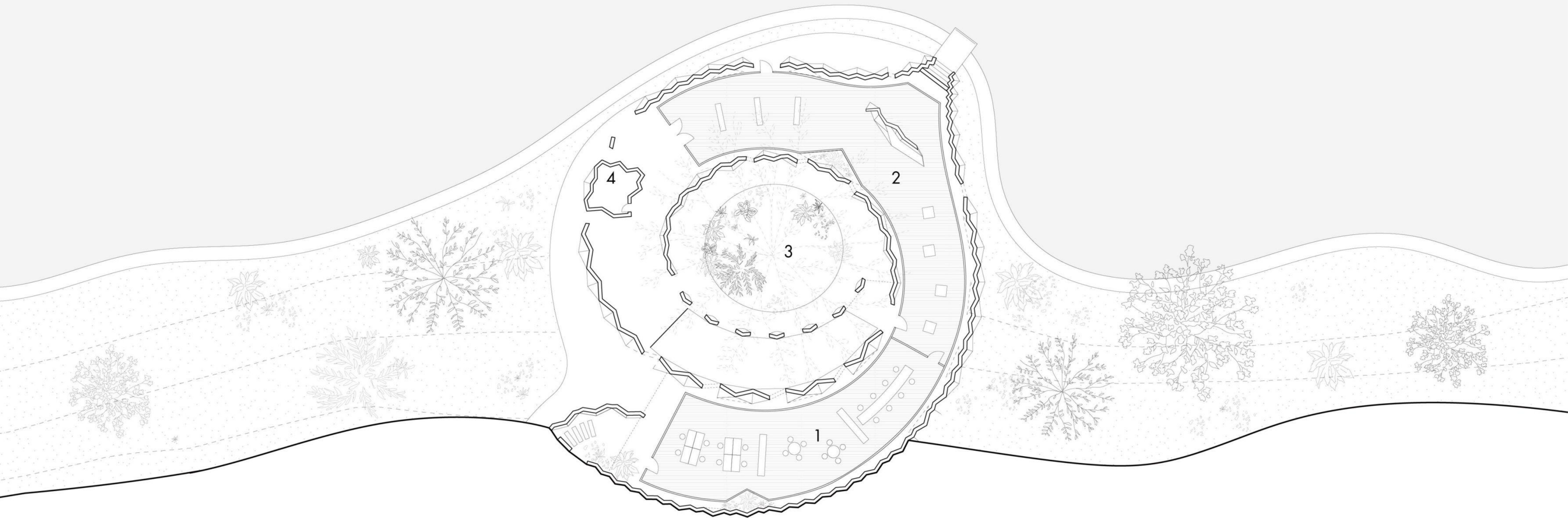
For indoor space, there are three types of light sources. The first is direct sunlight coming through the openings. The second type is light coming through the gap between the folded wall and the floor, which brings a softer shadow. The third way is light through the translucent material.

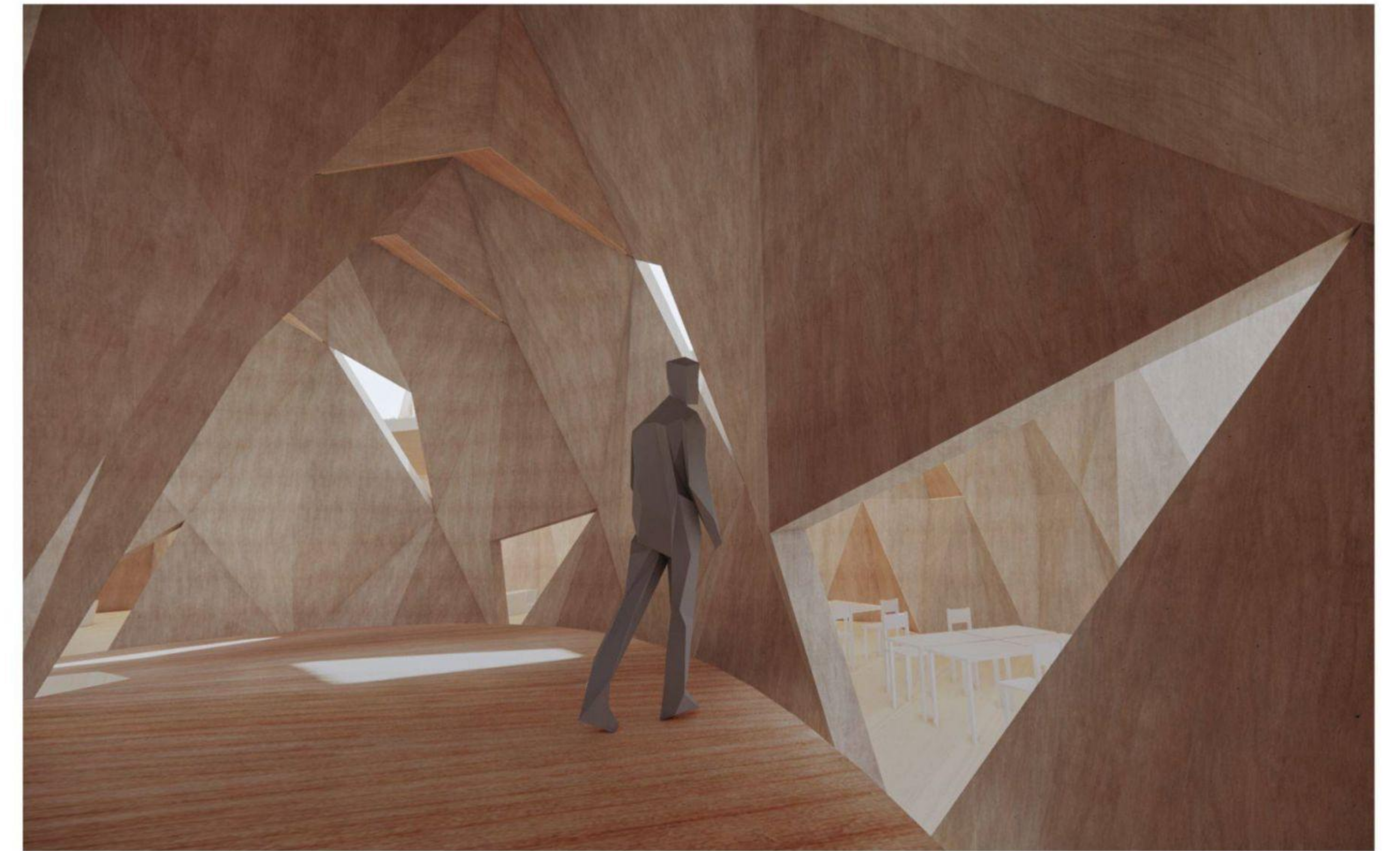


- 01 Sunlight gallery
- 02 Office
- 03 Courtyard
- 04 Exhibition

-1 Floor plan

- 01 office
- 02 exhibition
- 03 courtyard
- 04 auxiliary space

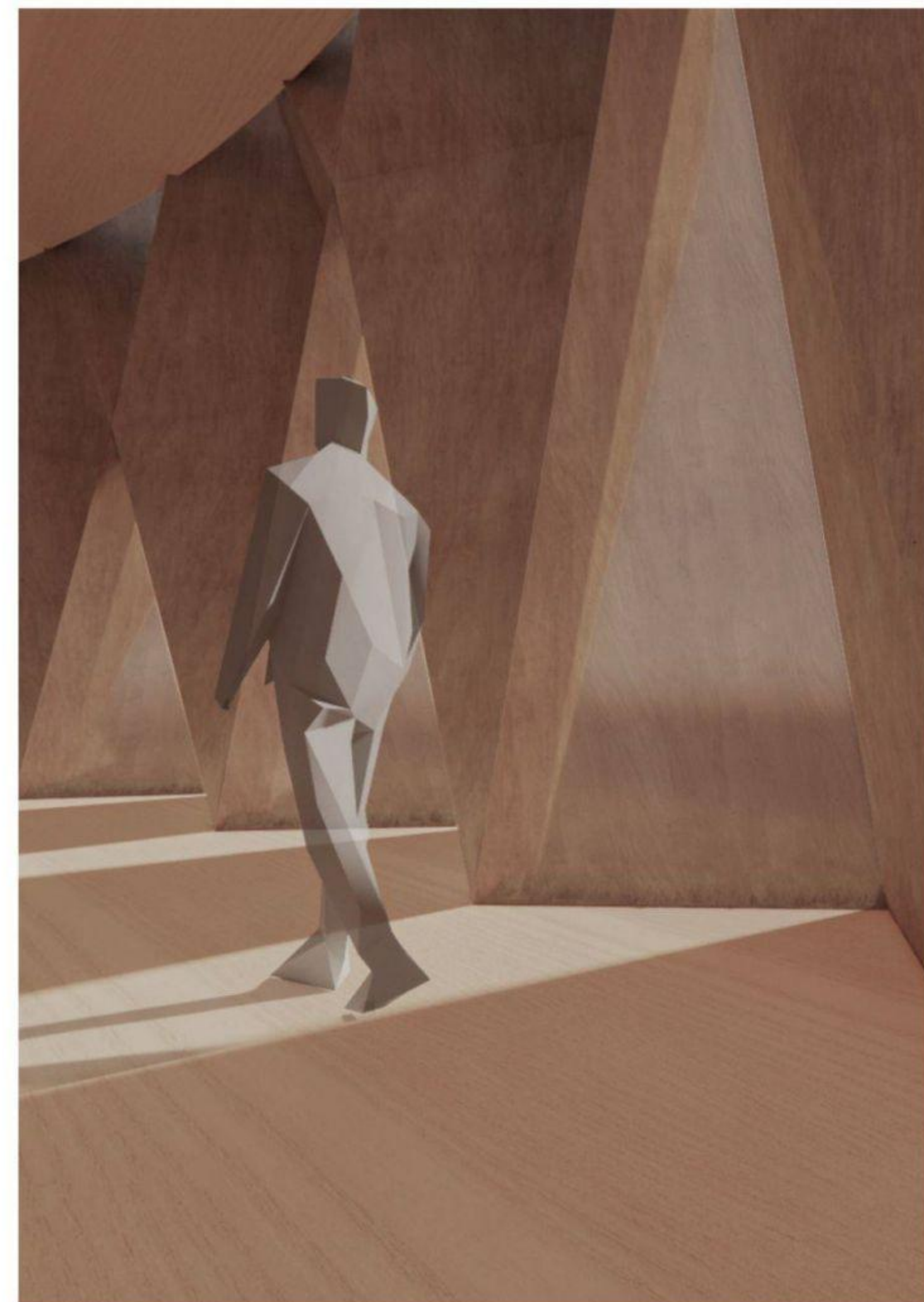


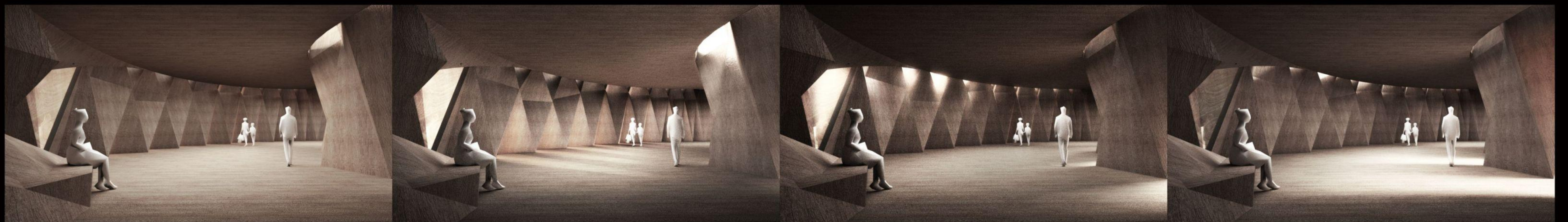
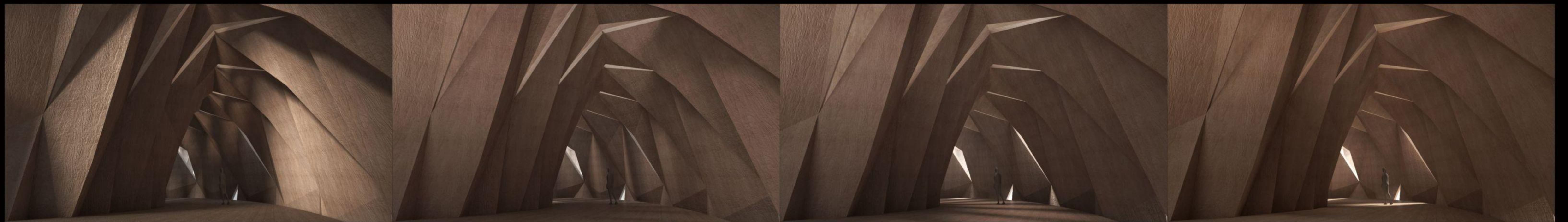
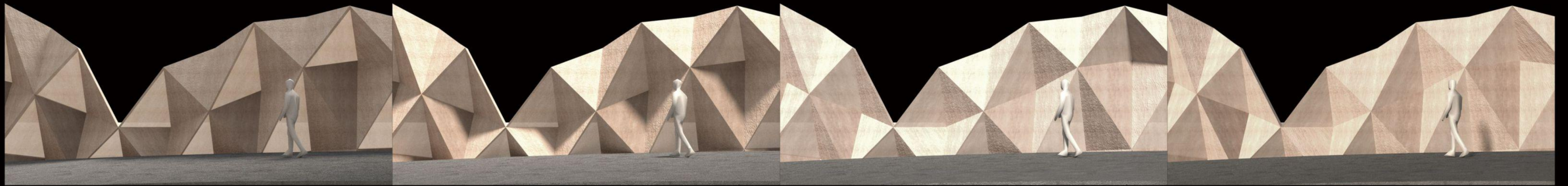


Light Forms Space

The dark panels affect our perception of shadow, while the translucent material show distinctly different colors and brightness when influenced by light from other direction.

These variations together blur the appearance, form and space. At the same time, the continuously changing effect highlights the visitors' sense of the sunlight and connection with the nature.





9:00 AM

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1:00 PM

3:00 PM

COUNTERCOLLAPSE

Rethink Collective Life in Octagon House

GSAPP Summer 2021
ADV Studio V

Mentors:
Ignacio G. Galan

Research with:
Chenxi Dong
Tianran Li

Individual design

Chapter 01-

Trigger

Life Scenes of Grandma Yang

Chapter 02-

Controversies

Growing Elderly Care Gap/ Models

Chapter 03-

Rethink Collective Life

A brochure design



By renovating the Octagon House, the project tries to counter the medicalization of aging, promote intergenerational interaction and rethink collective life.

Collapse of the Traditional Family-oriented Elderly Care System

Due to the "one child" policy in the 1980s in China, the pressure on working adults to take care of the aging population has intensified which will bring more challenges to the traditional family-oriented elderly care system. At the same time, the problem of isolation from the growing population of empty-nest elderly and immigrant elderly is becoming more and more obvious. As a result, the exploration for elderly care and the improvement of the existing facilities are necessary.

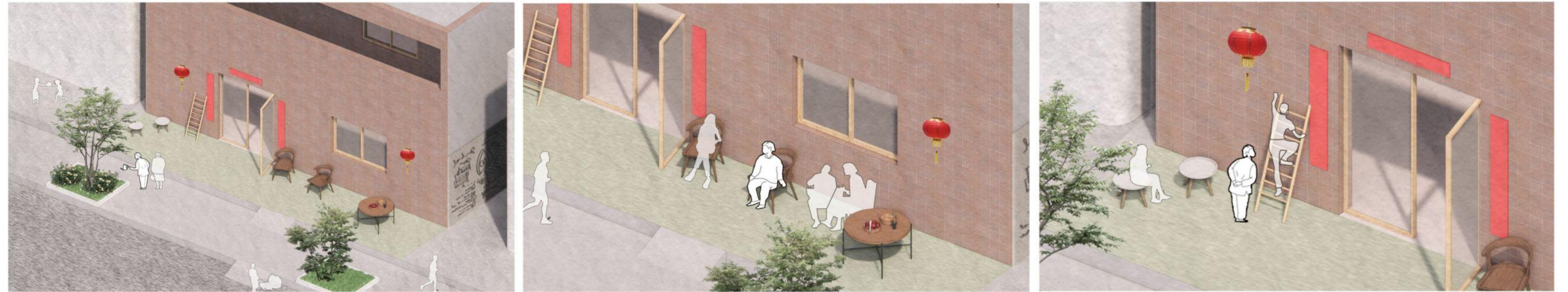
Octagon House as a replicable intervention in different contexts

The project focus on the Octagon Center, a long-term care center for the elderly in Yuanling Village. By renovating the building, the project tries to promote forms of sharing, collaboration and intergenerational interaction. A care center is no longer a place where the elderly resist going to live, but a place where they can enjoy collective life, maintain social ties and realize their values. Since the Octagon Center is privately managed, we imagine we would develop a brochure

that simultaneously presents our proposed intervention to them but could also offer the Octagon center in Yuanling village as an example for a new approach to transform existing nursing homes into independent assisted living facilities. This manual will be promoted in Shenzhen, and even nationwide as a reference for other care centers.

Life in the Countryside

The project begins with observing the changes in the life of my Grandma Yang. She used to live in the countryside, a community where everyone was familiar with each other. She likes growing flowers and vegetables. She always sits in the courtyard and chats with her neighbors.



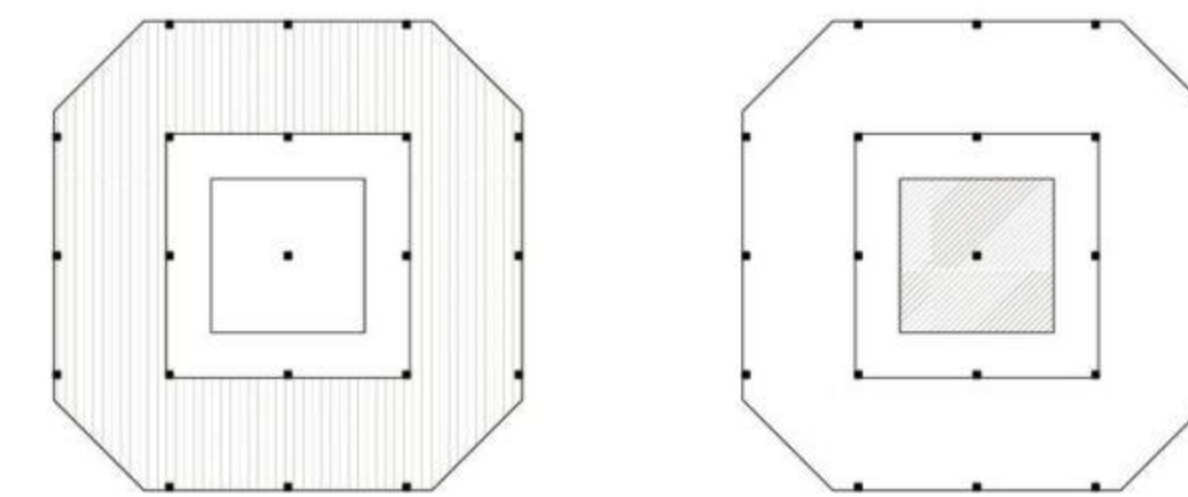
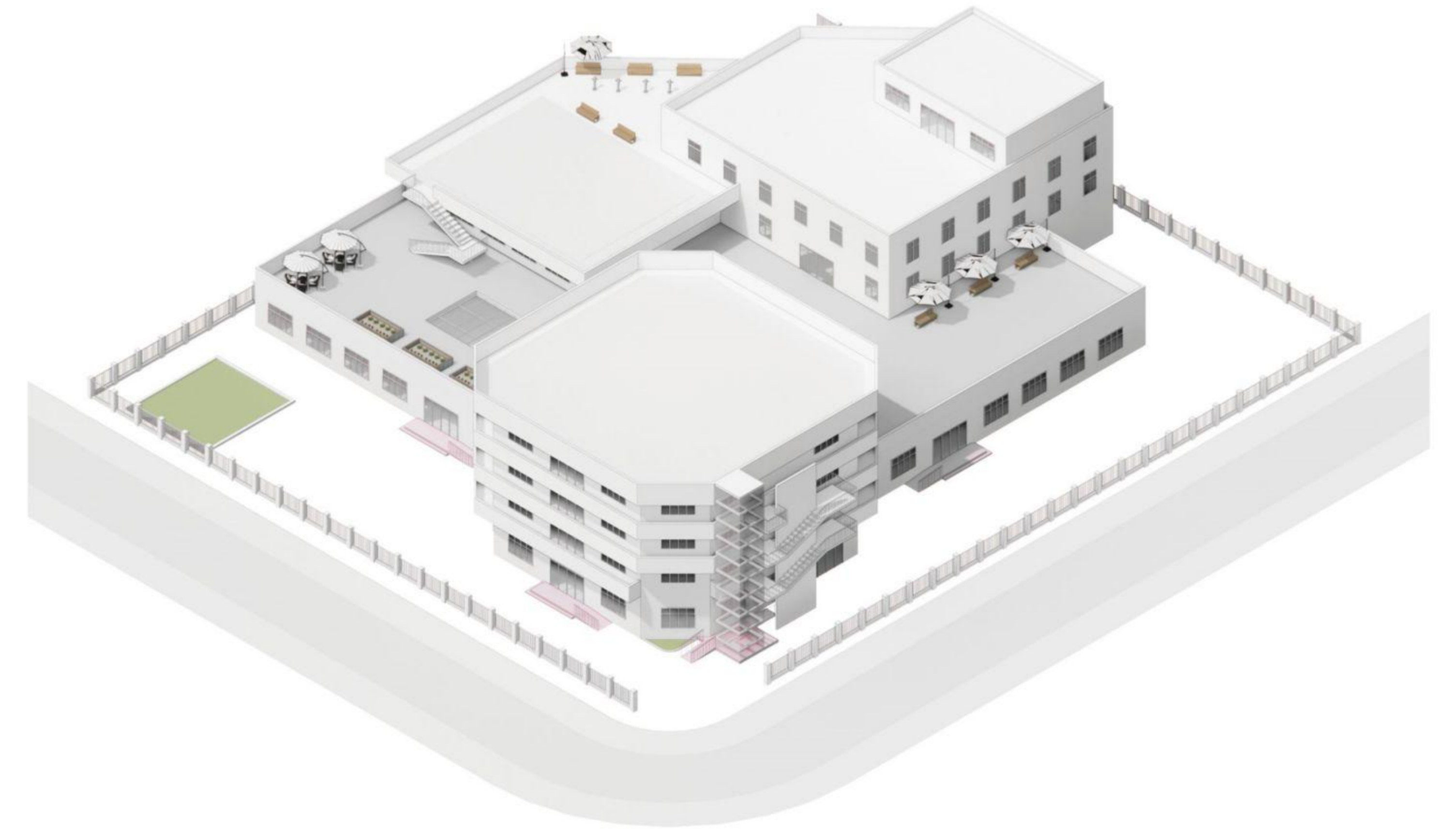
Life in the City

When my grandma got old, she followed her children to migrate from the countryside to live in the city. The environment around her changed. Grandma feels lonely sometimes. She lives with assistant Mo, a middle-aged woman from the rural area with a little professional train.



Growing Elderly Care Gap

My grandma's life is a snapshot of many elderlies living in big cities today. The problem of isolation from the growing population of empty-nest elderly and immigrant elderly is becoming significant.



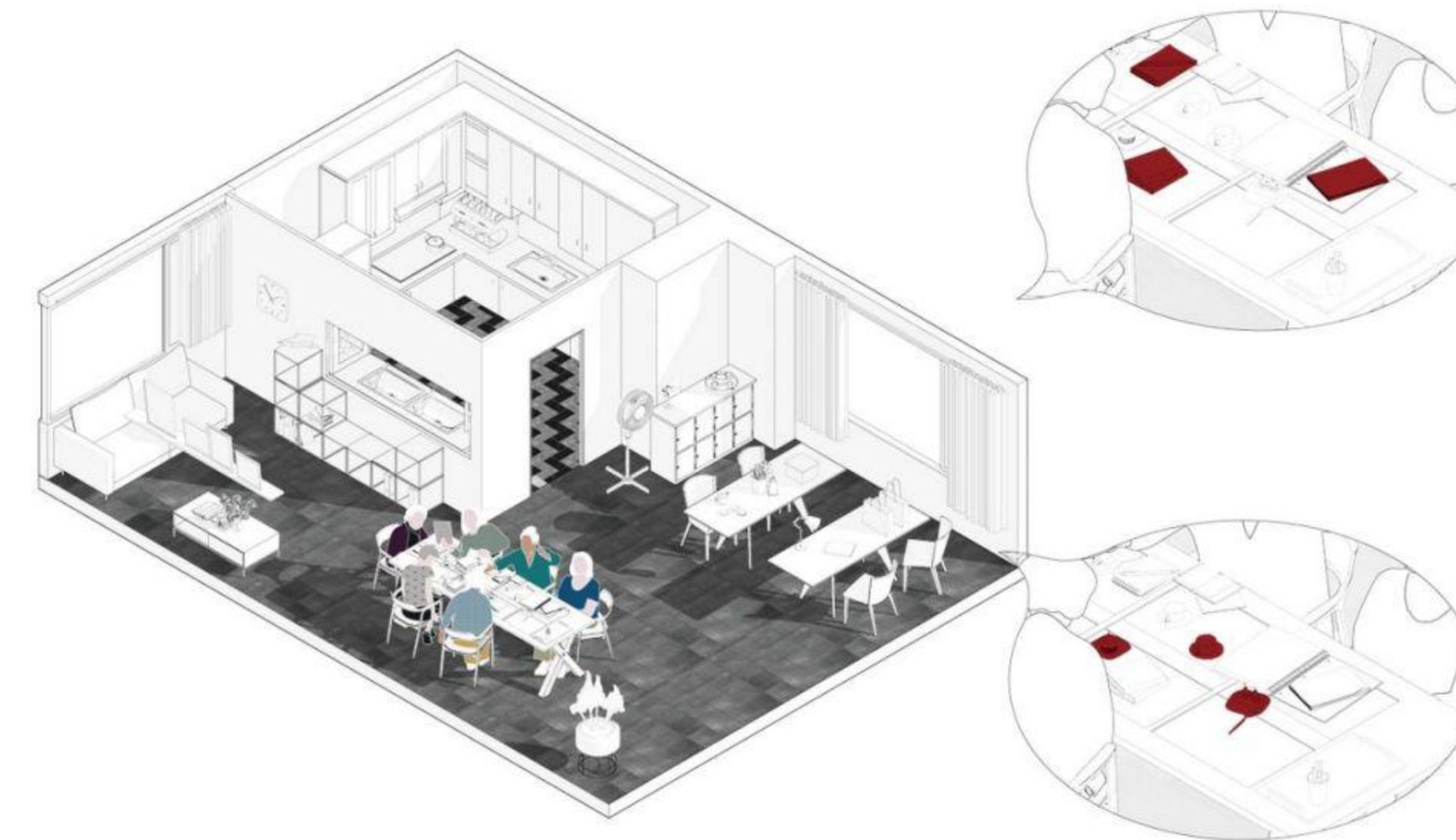
A Care Center or A Hospital?

Similar to many care centers in Shenzhen, the interior layout of the original Octagon center is homogeneous with a dull corridor space. The centrally located nursing service room is similar to a hospital. The whole center is isolated from the community.



Snack Shop Run by the Elderly

Silverwood facility, a private senior-living chain in Japan for old people. At the entrance of this facility is an old-fashioned snack store run by the elderly living here and the store is always full of children.

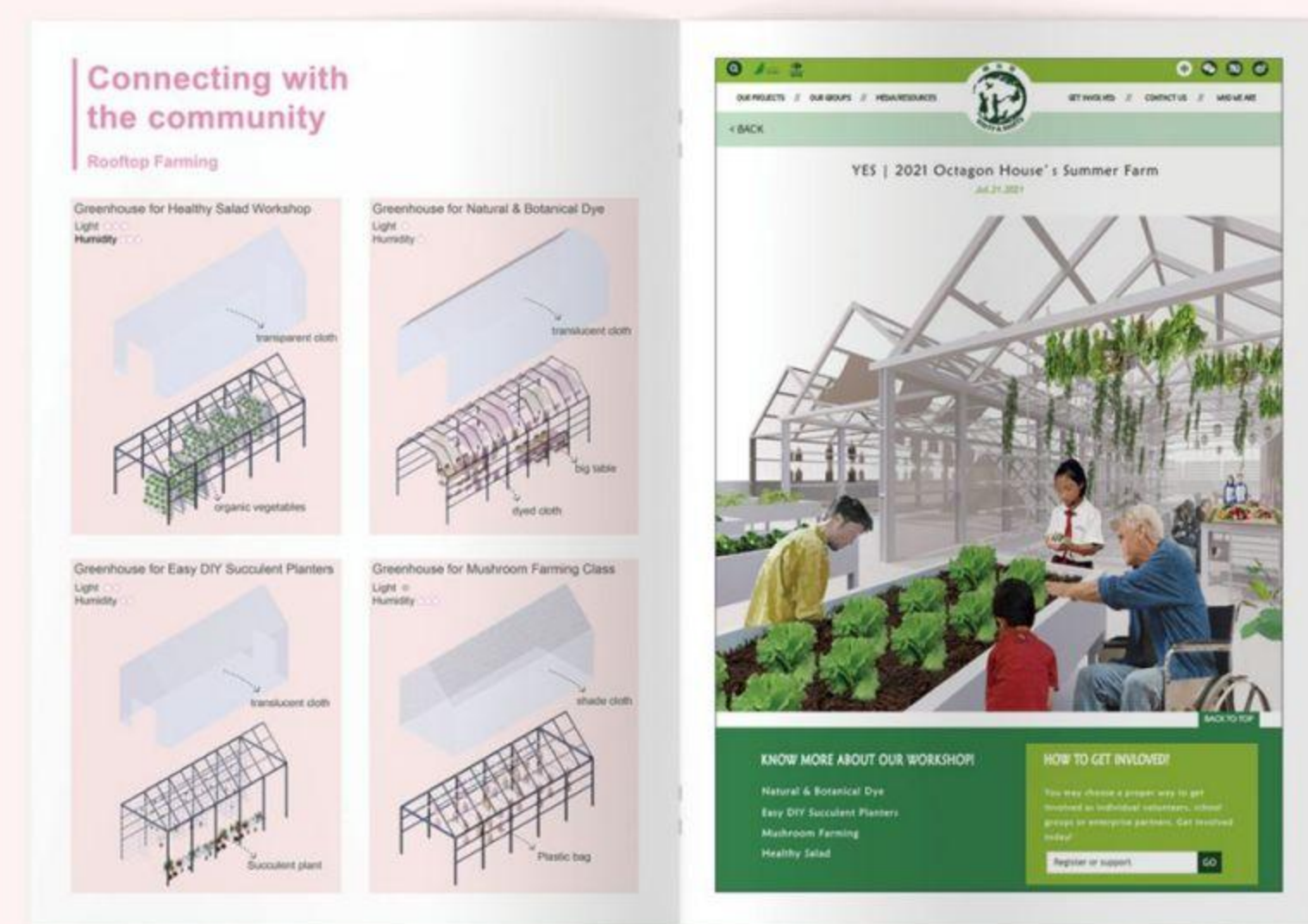
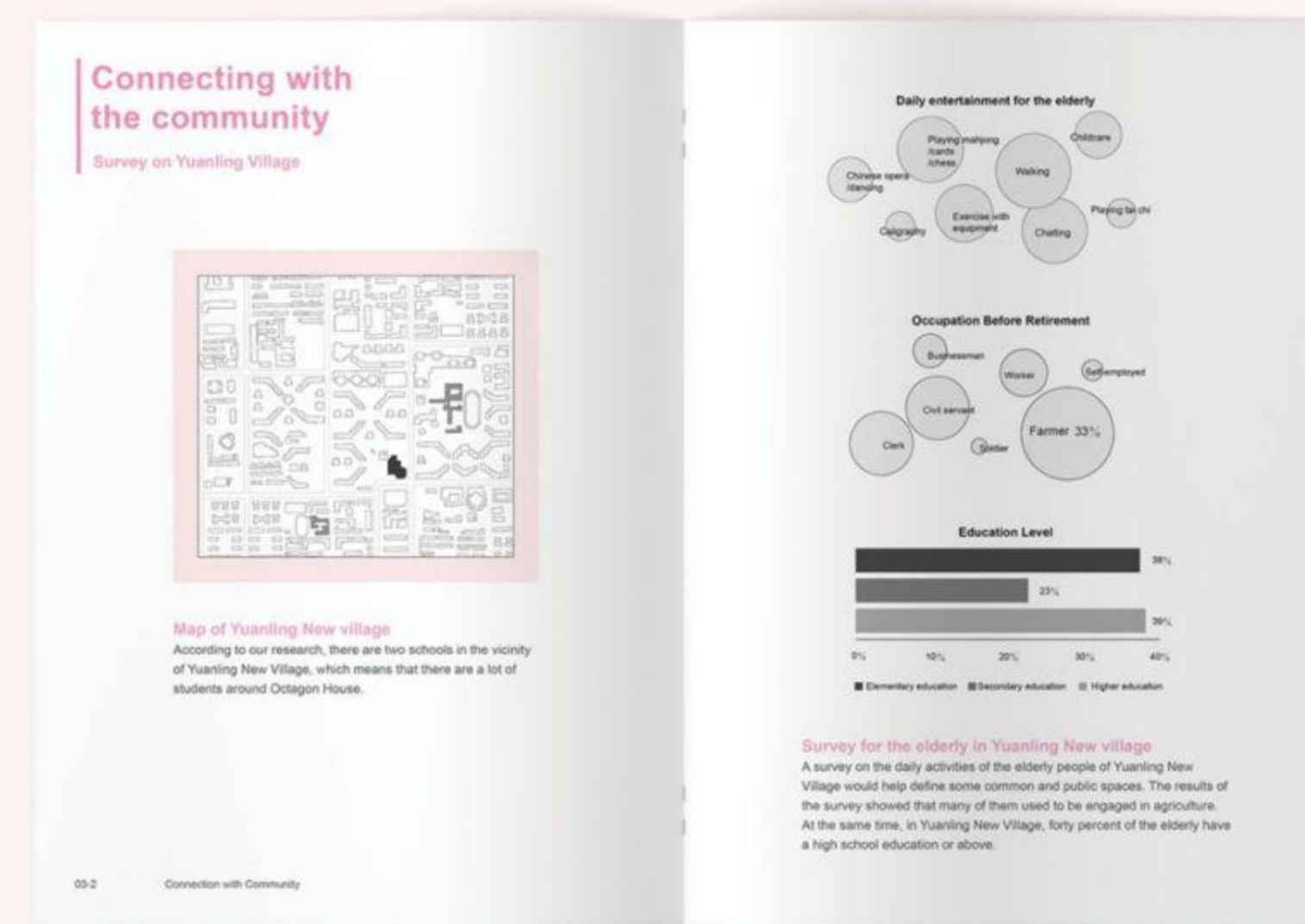
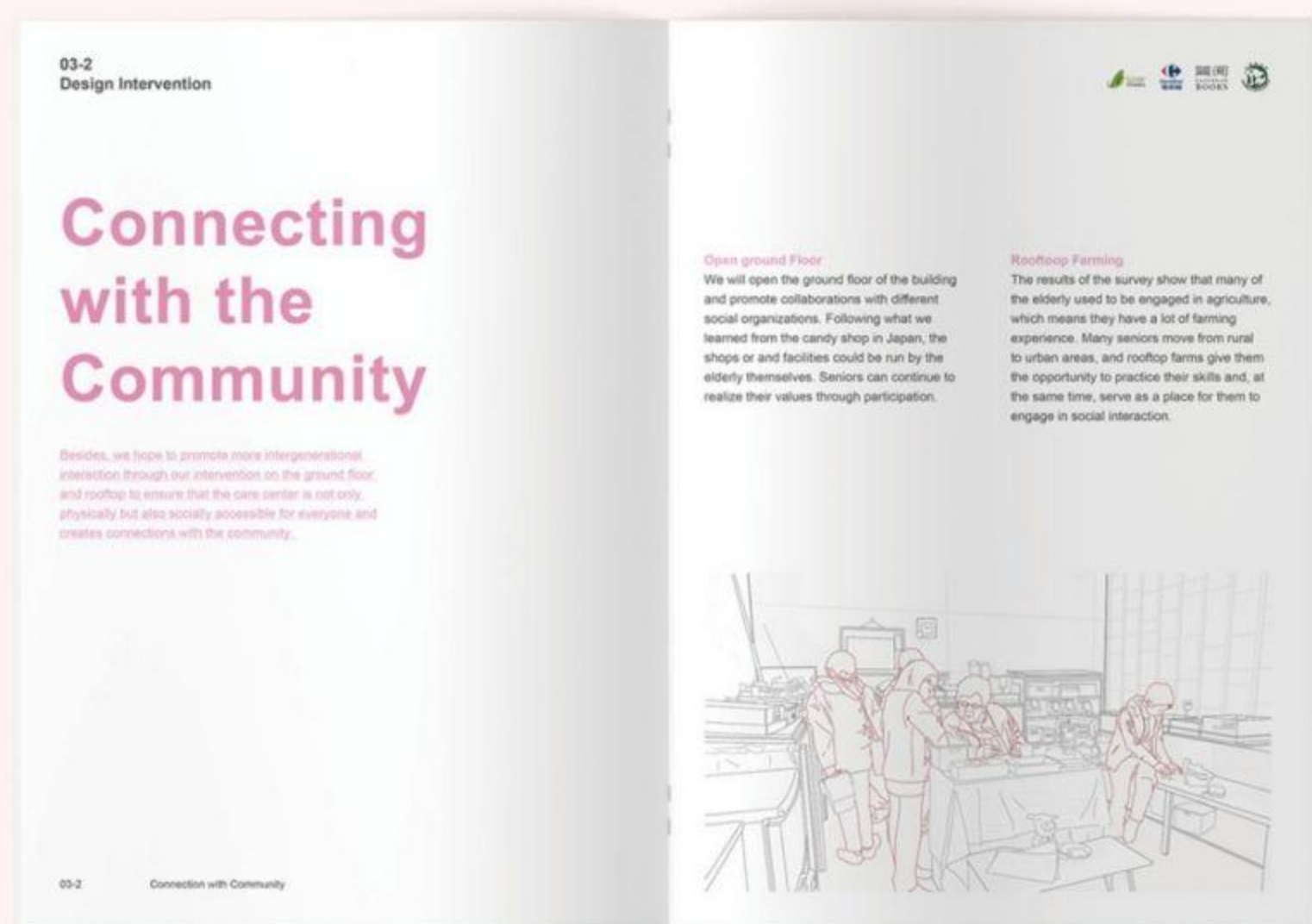
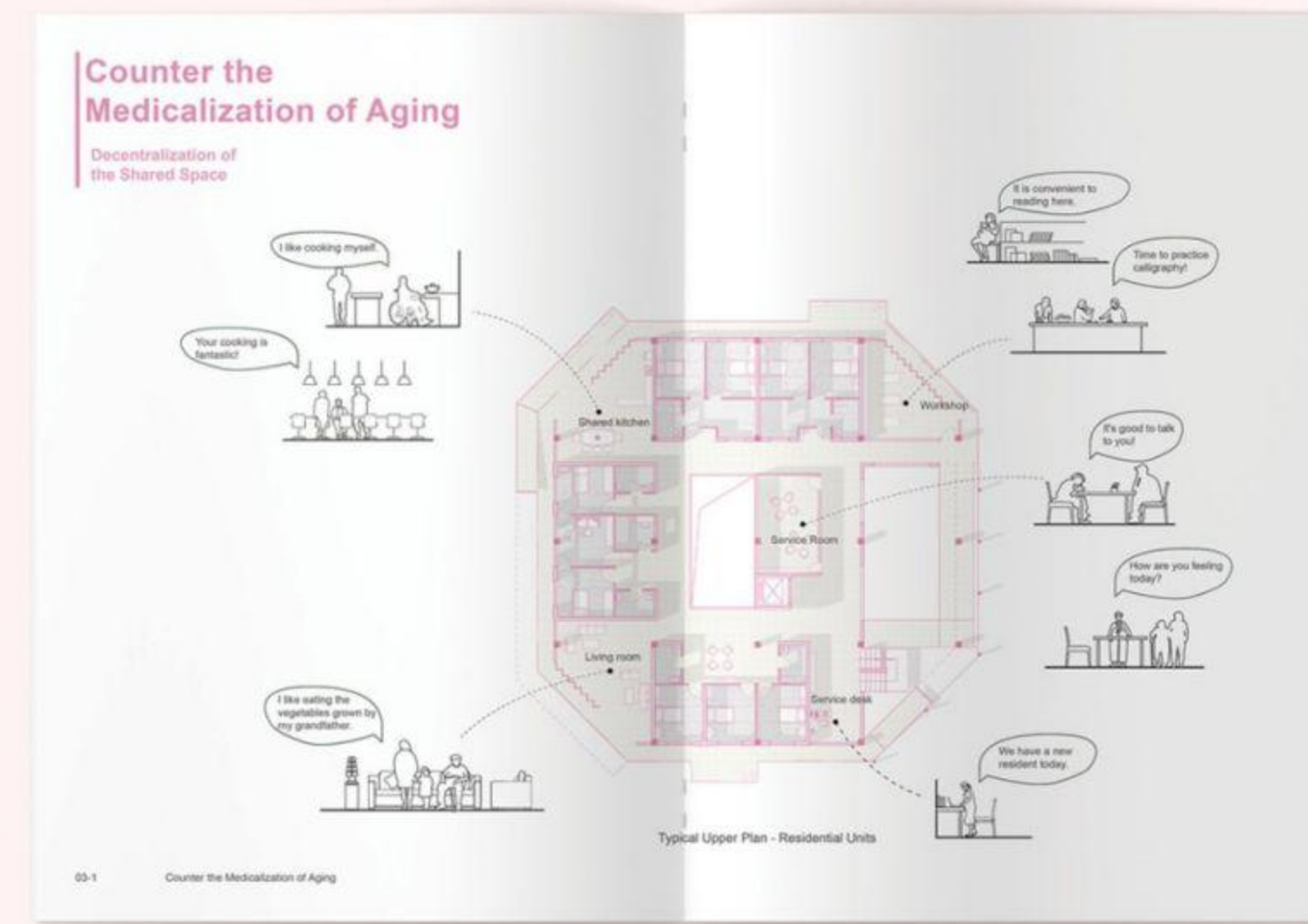
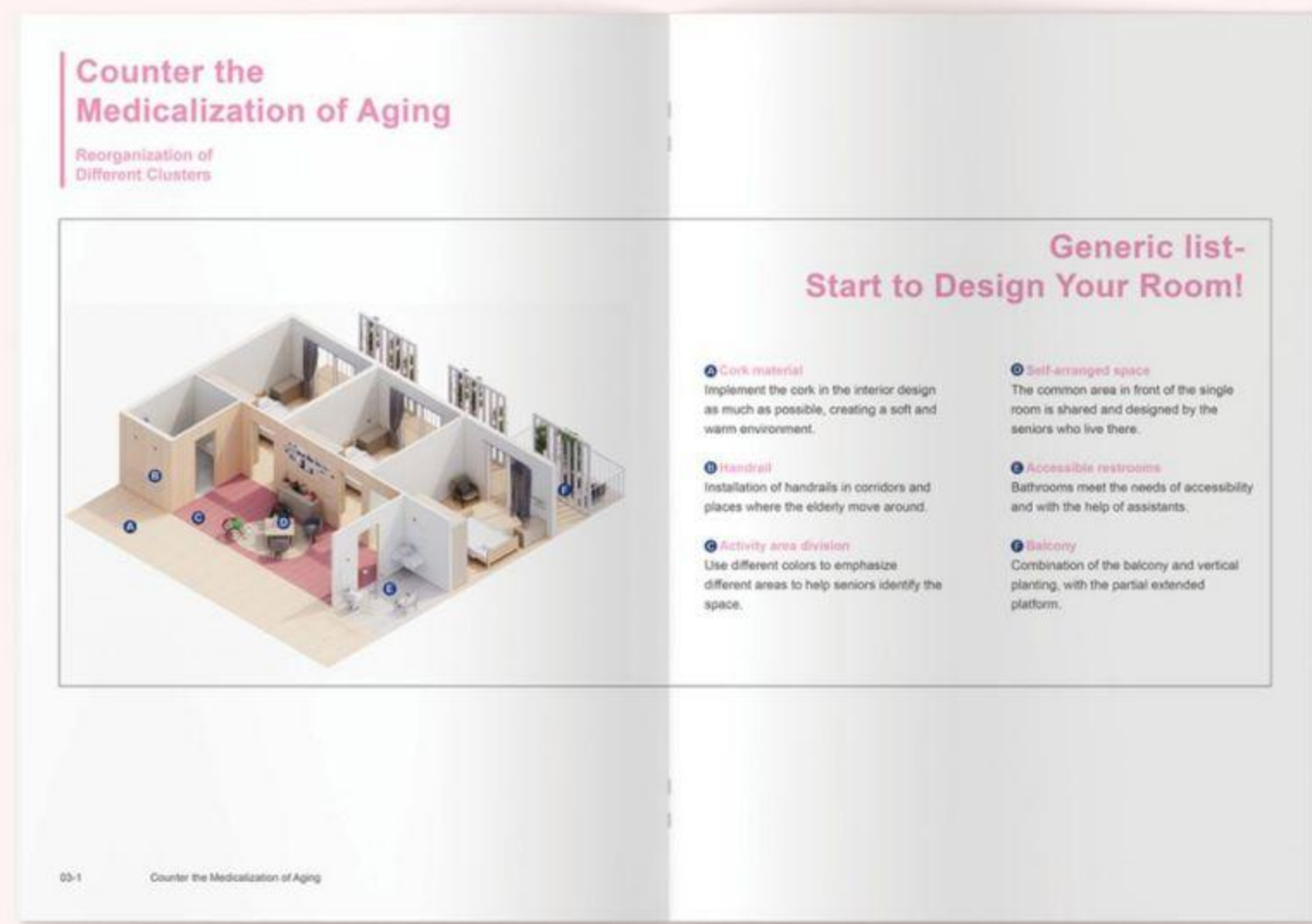
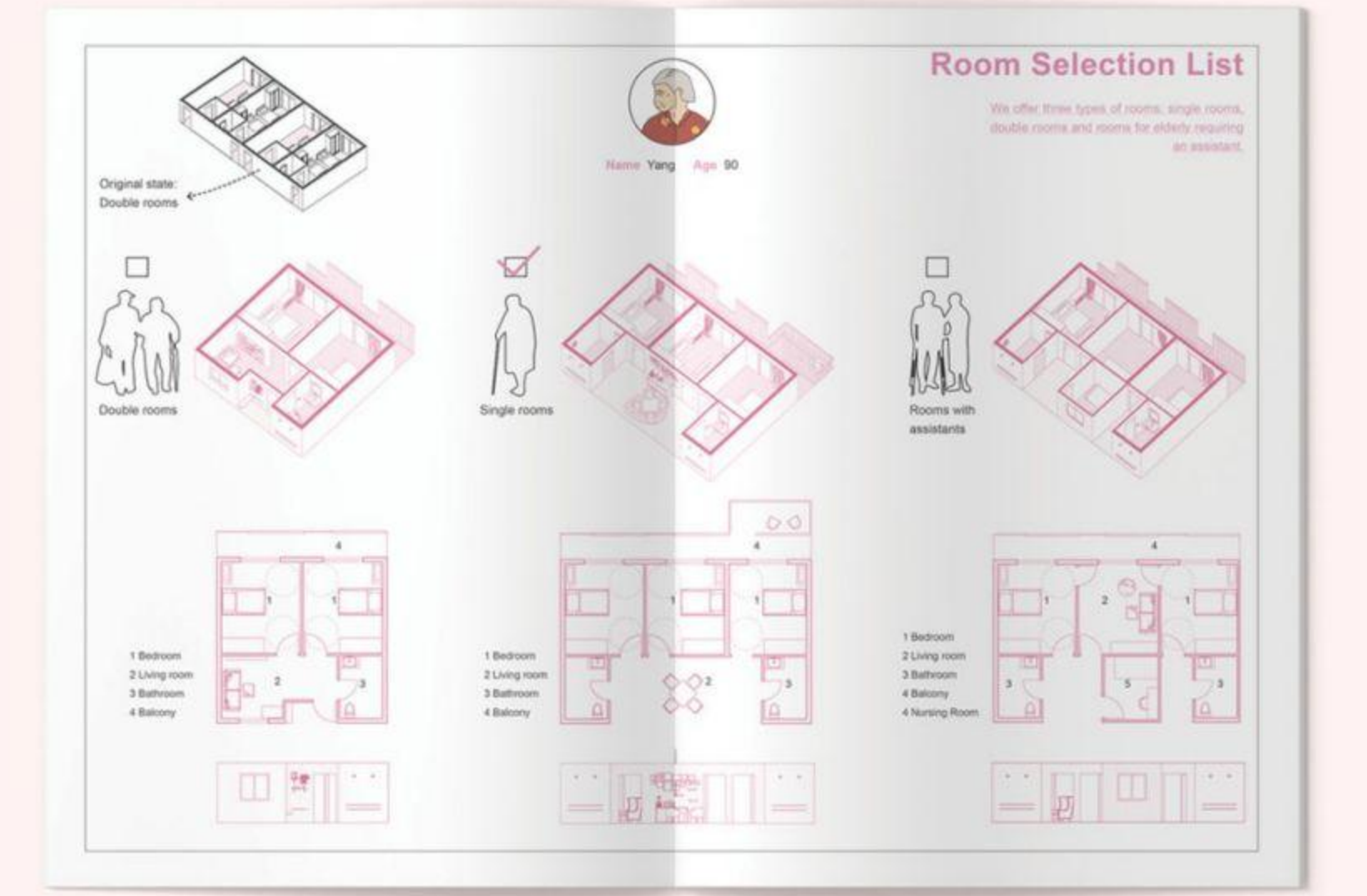
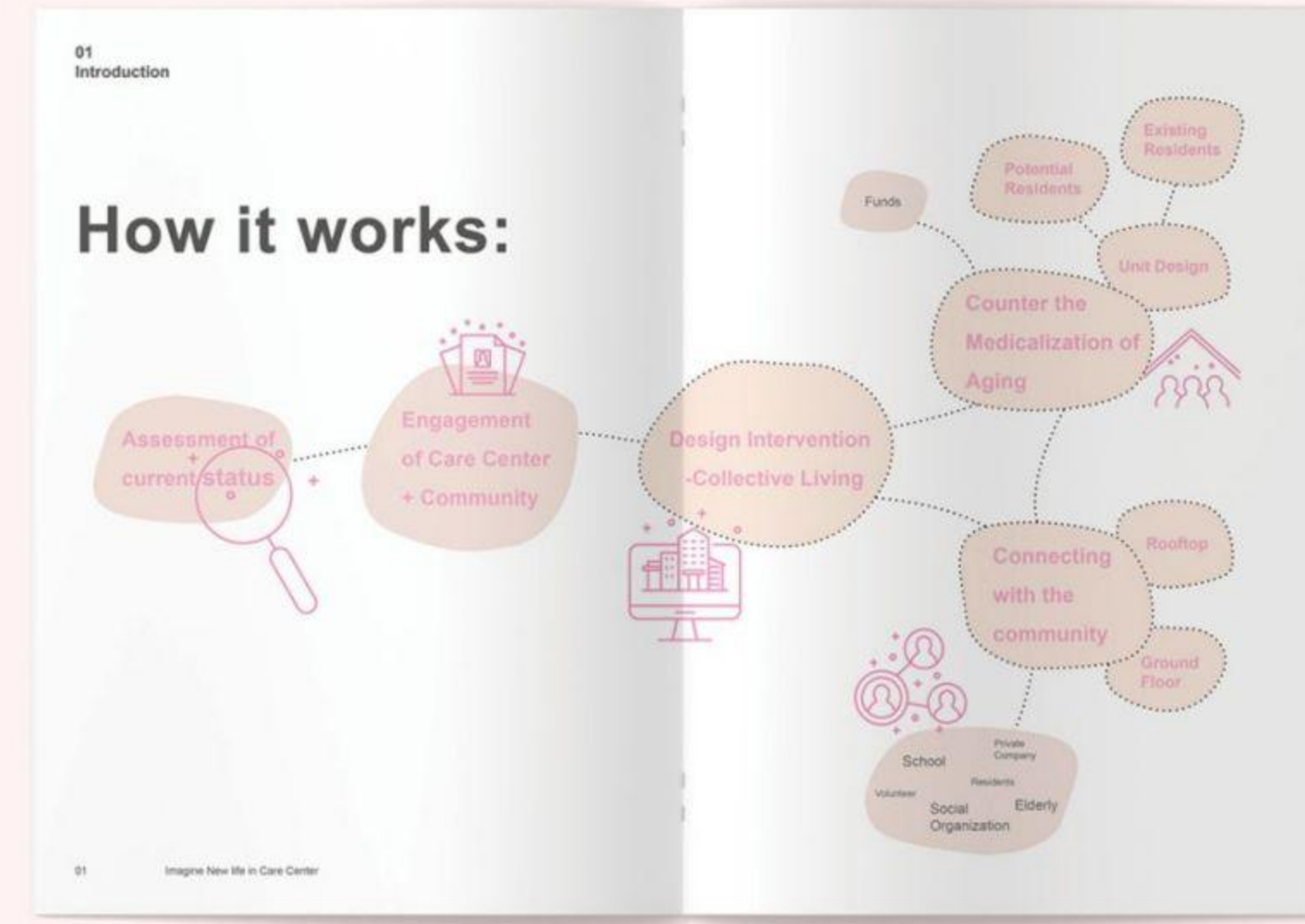


Story of Seven Women

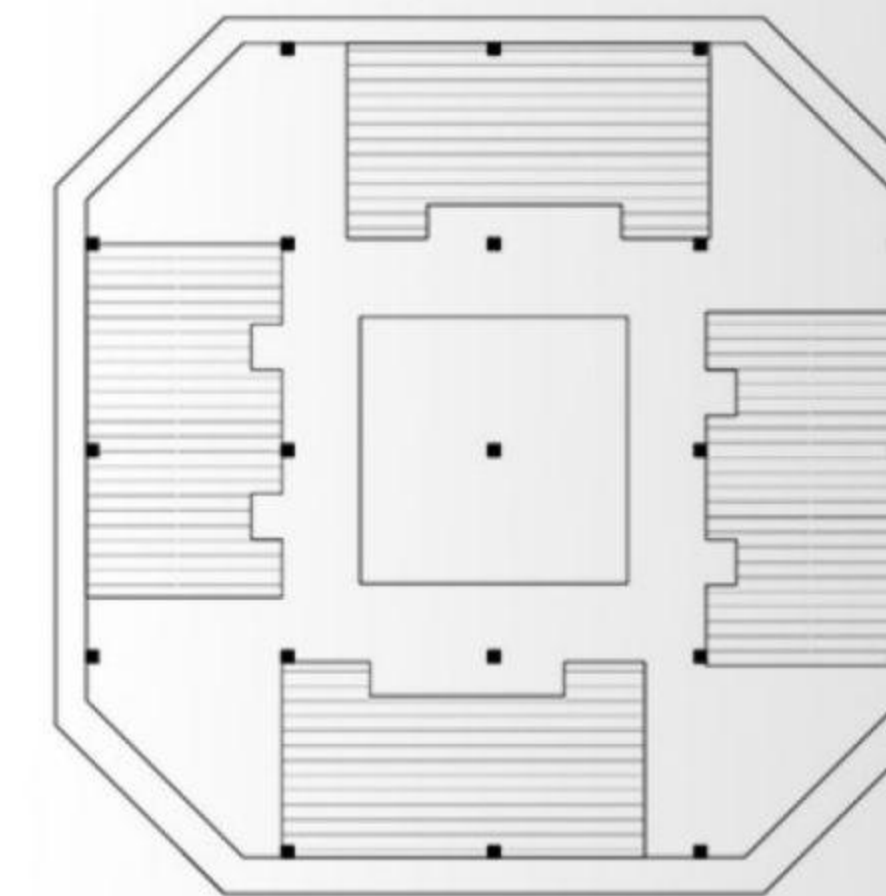
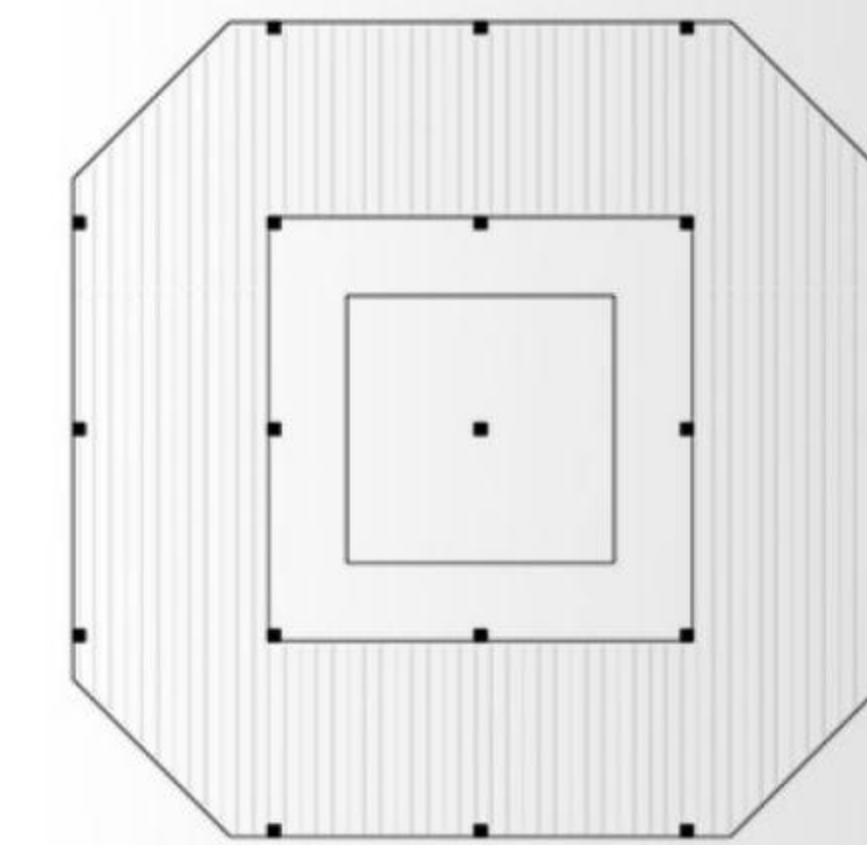
This is a story about seven single women in Japan who decided to buy different units in the same mansion, being neighbors and taking care of each other. From time to time, they would cook and share meals.



Studied modes of elderly care practiced both from local and international contexts. Within these modes, the old people can become more integrated with communities and society, rather than being isolated and the cases will provide us with new ways of thinking about collective life.

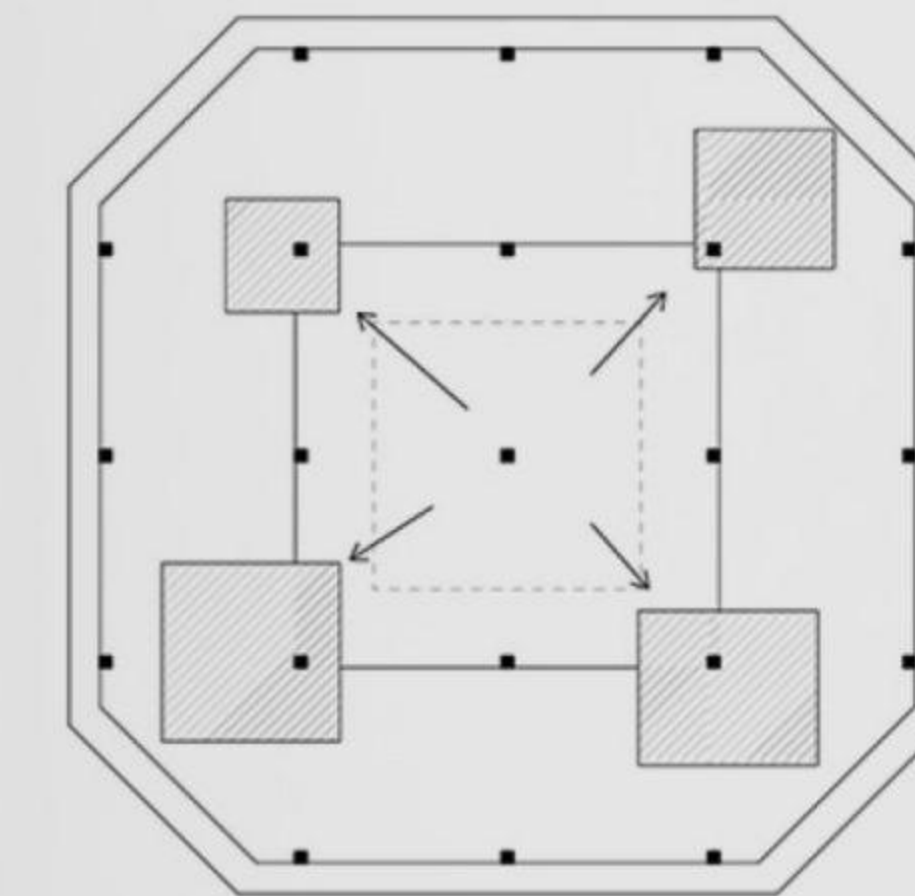
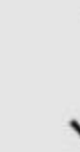
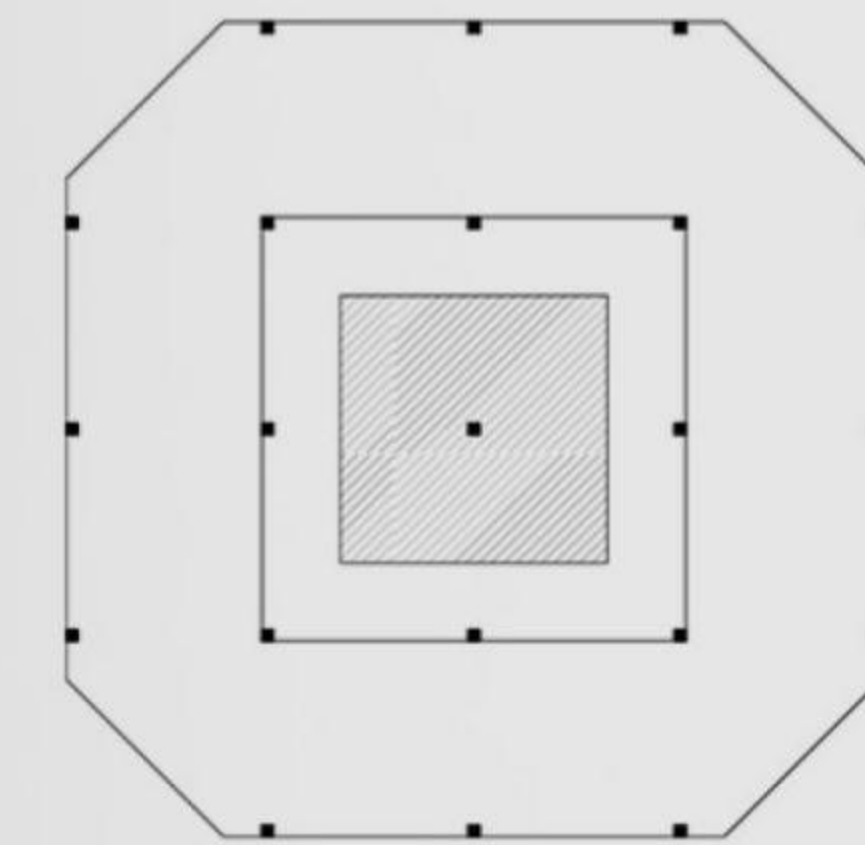


Counter the Medicalization of Aging



Reorganization of Different Clusters

Our attitude is anti-medicalization of aging which means old people should not be treated as a patient. We wanted to change the dull and monotonous space of traditional nursing homes and transform the care facility into a place where different forms of collective living can be rehearsed.



Decentralization of the Shared Space

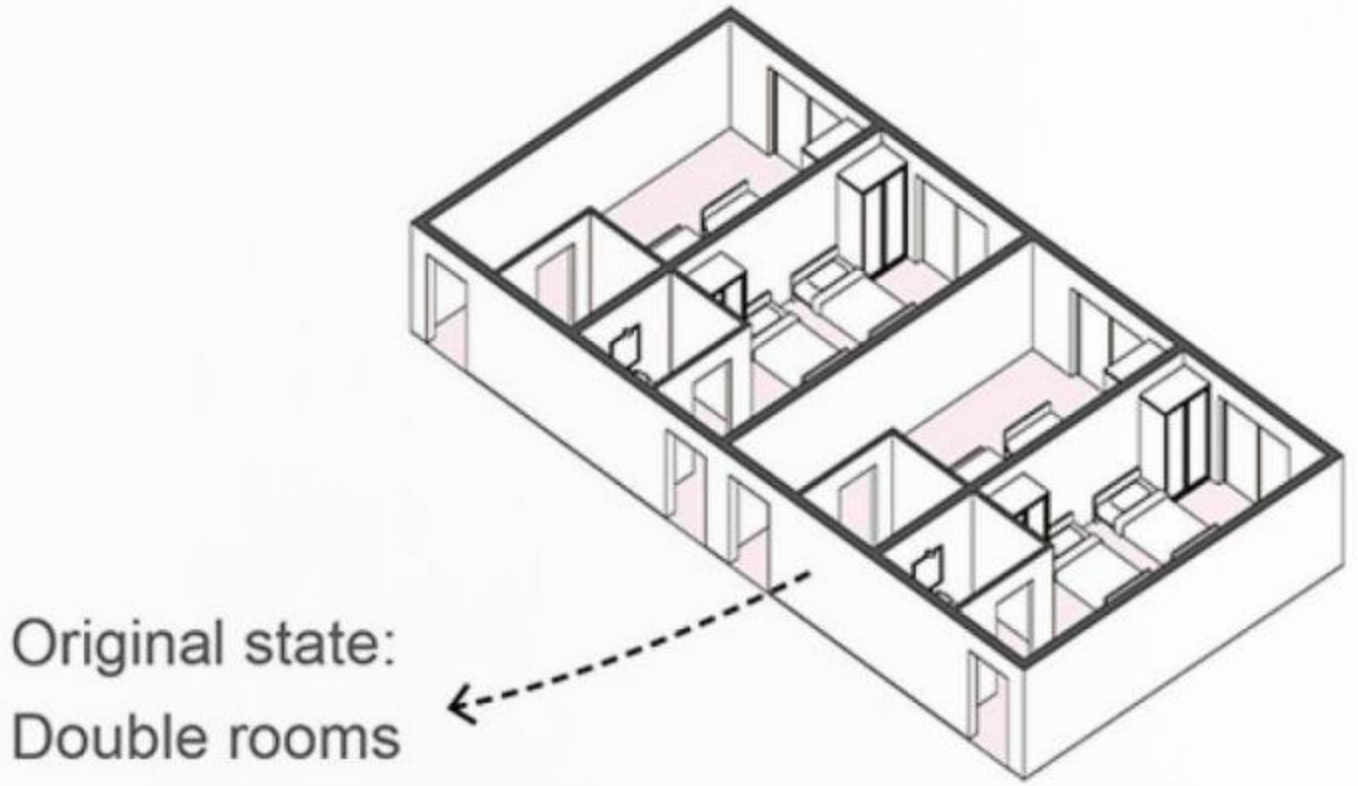
Prioritize accessibility of place, circulation, services to ensure that the care center is physically, socially accessible for everyone. Decentralization of the service space to create a space that encourages the elderly with different physical conditions to be able to socialize without barriers.

Room Selection List

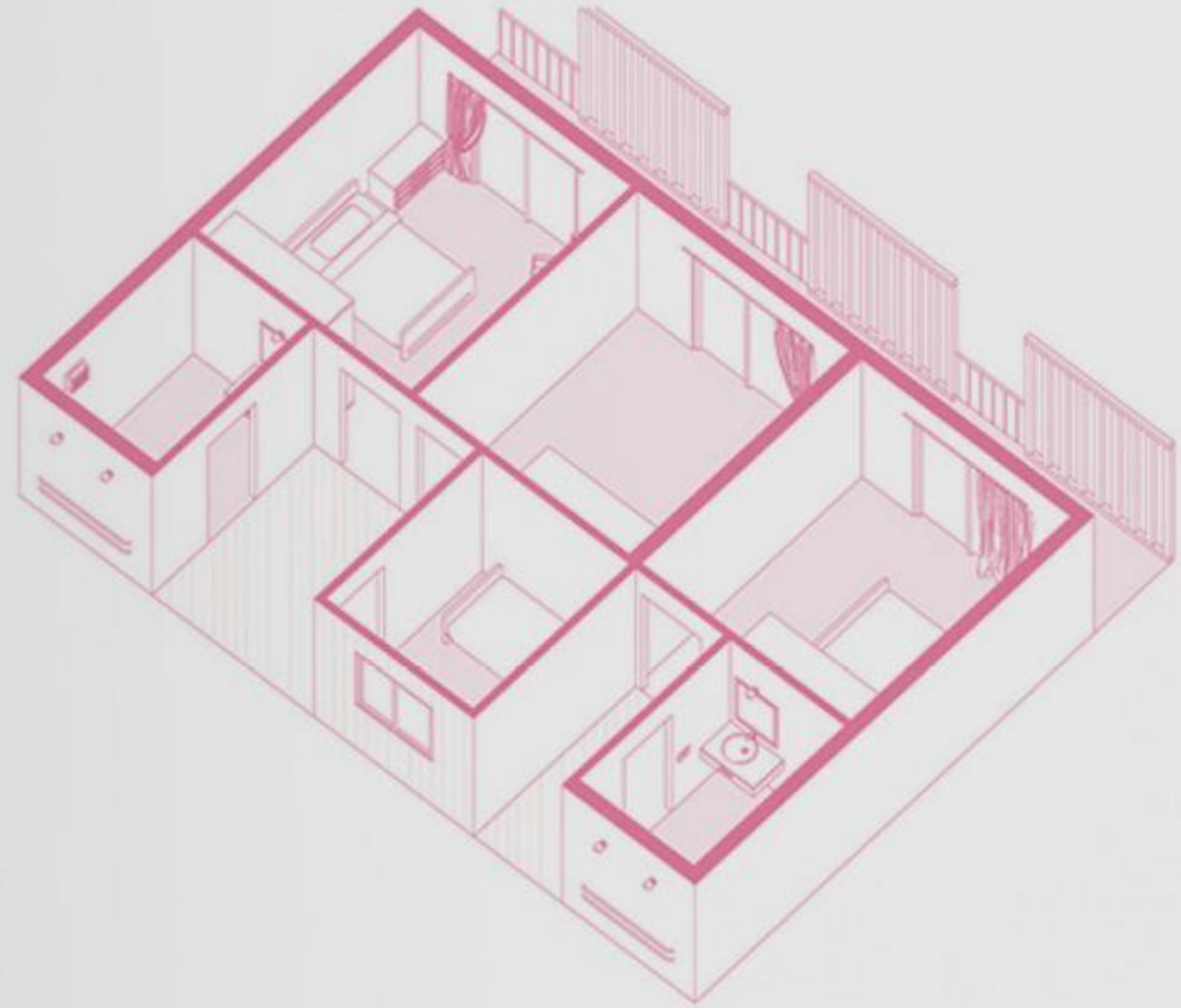
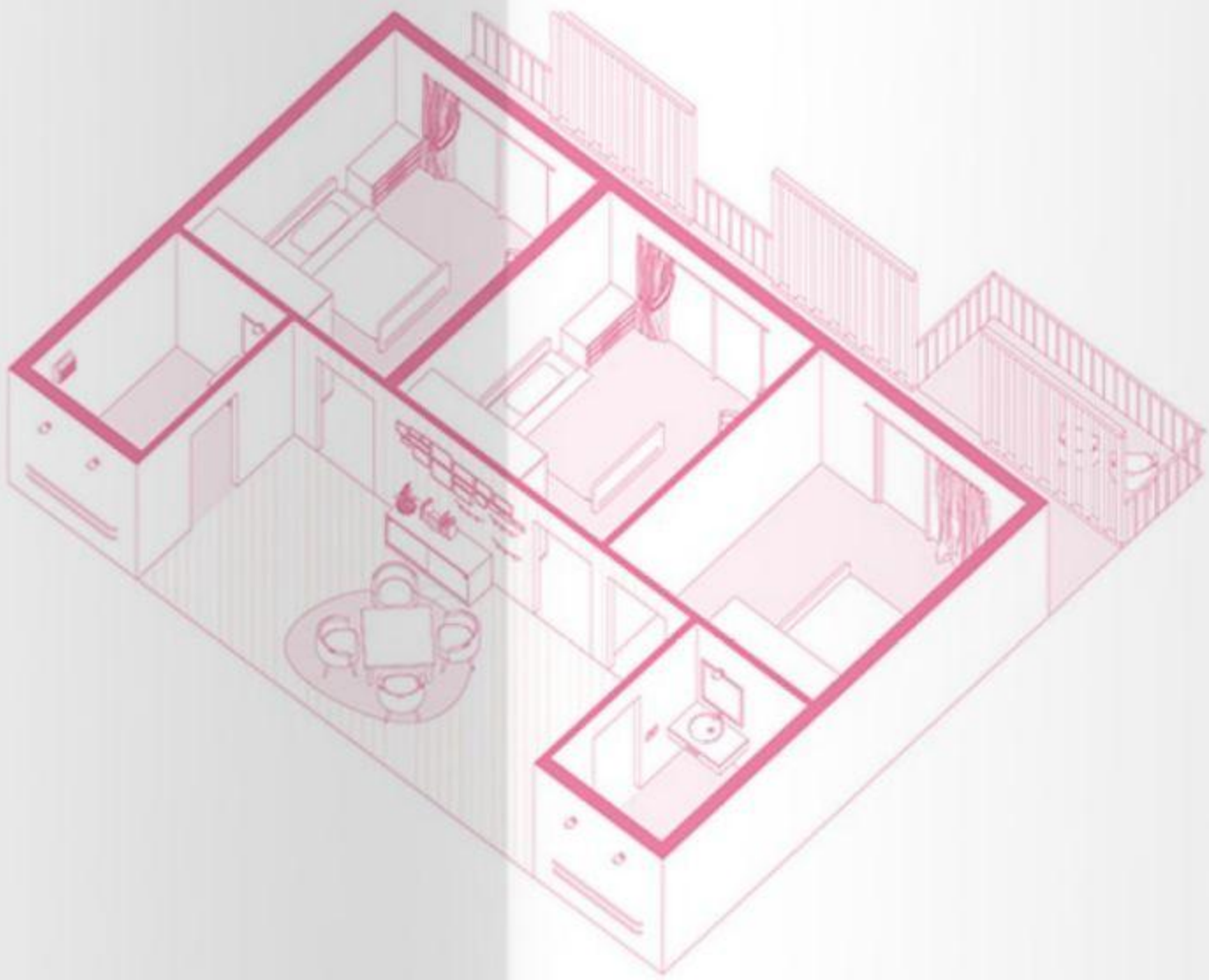
We offer three types of rooms: single rooms, double rooms and rooms for elderly requiring an assistant.



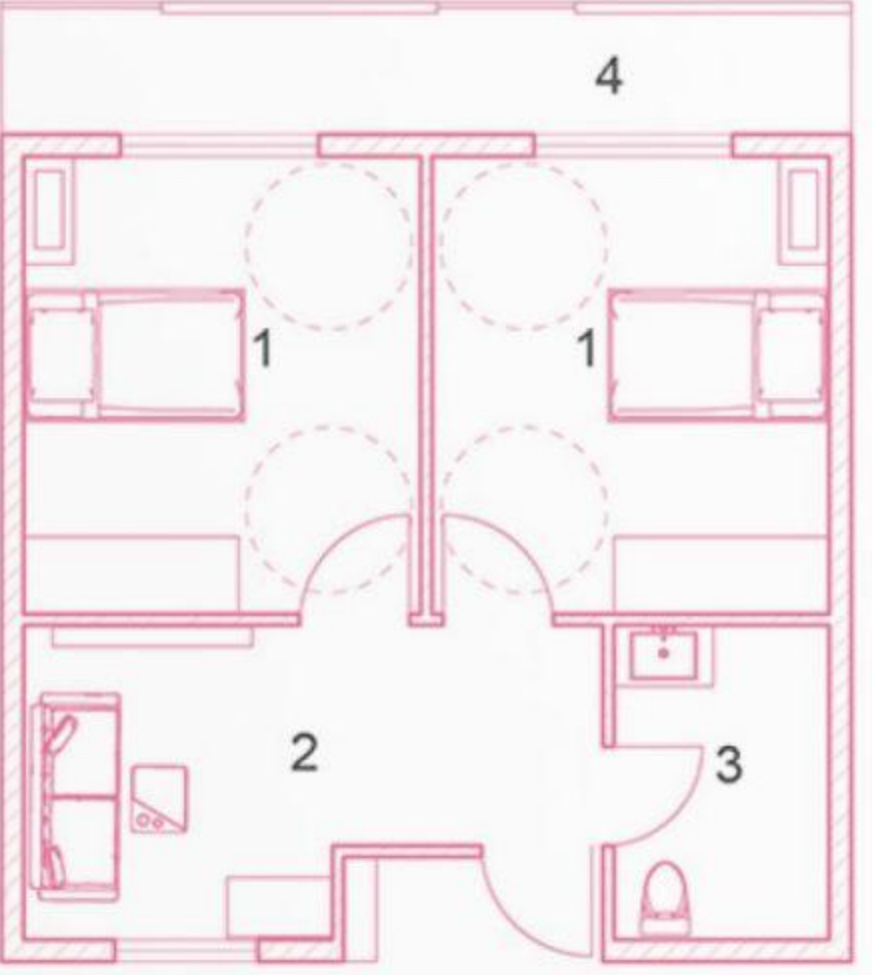
Name Yang Age 90



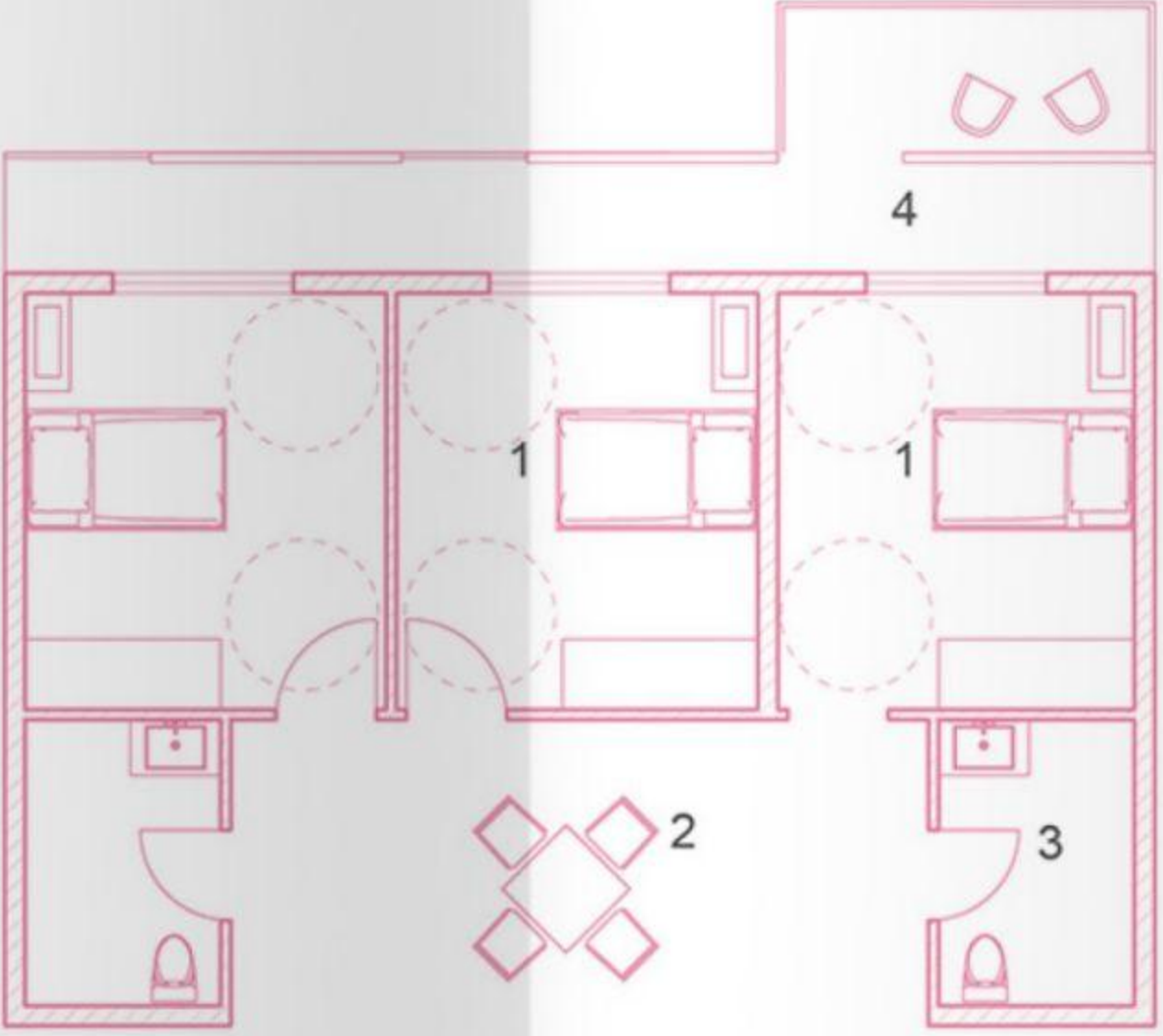
Original state:
Double rooms



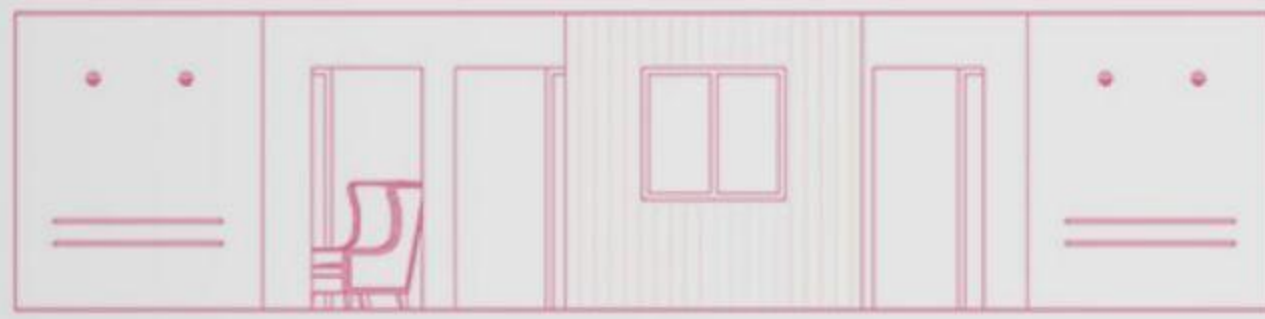
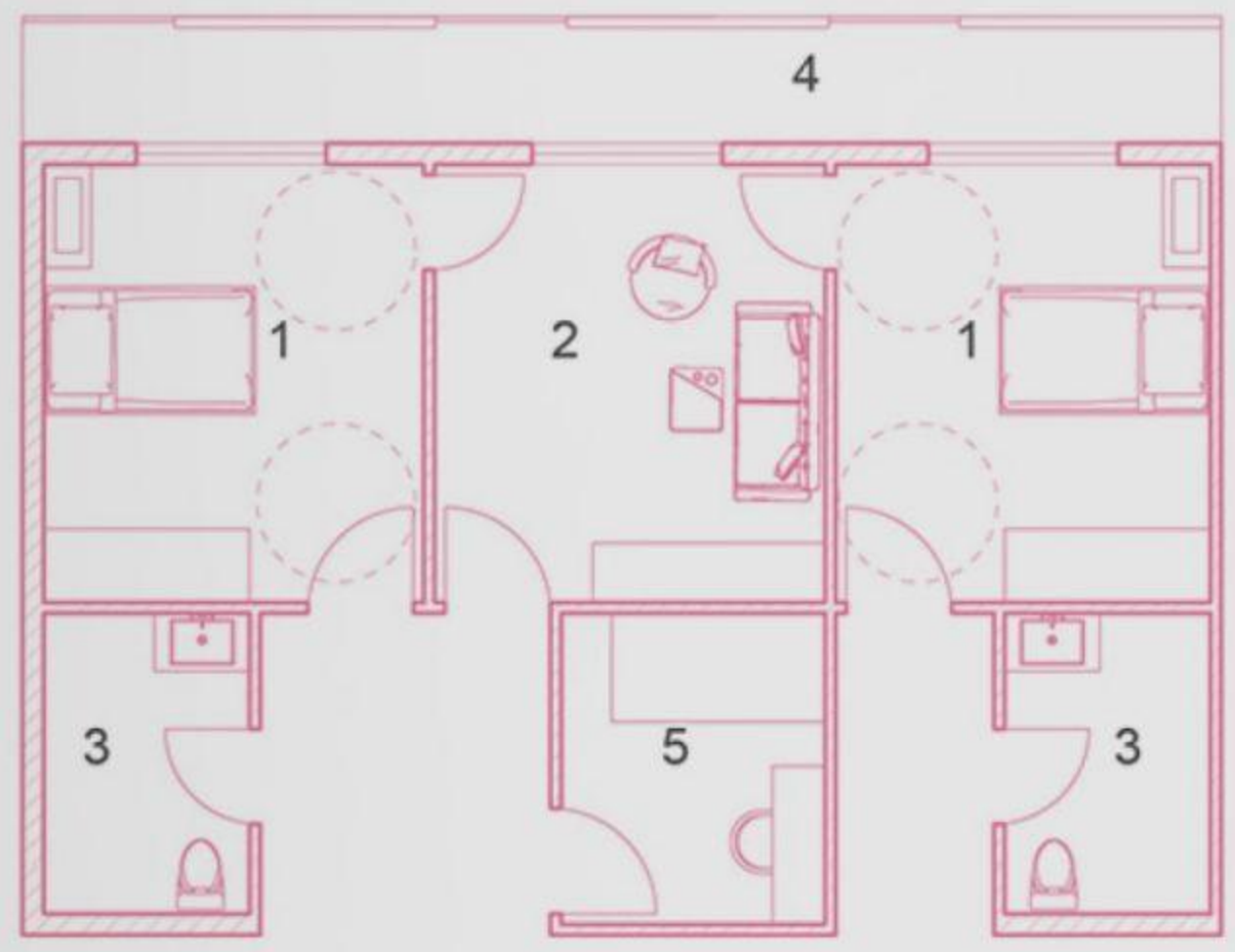
- 1 Bedroom
- 2 Living room
- 3 Bathroom
- 4 Balcony



- 1 Bedroom
- 2 Living room
- 3 Bathroom
- 4 Balcony



- 1 Bedroom
- 2 Living room
- 3 Bathroom
- 4 Balcony
- 4 Nursing Room



Counter the Medicalization of Aging

Reorganization of Different Clusters



Generic list- Start to Design Your Room!

A Cork material

Implement the cork in the interior design as much as possible, creating a soft and warm environment.

B Handrail

Installation of handrails in corridors and places where the elderly move around.

C Activity area division

Use different colors to emphasize different areas to help seniors identify the space.

D Self-arranged space

The common area in front of the single room is shared and designed by the seniors who live there.

E Accessible restrooms

Bathrooms meet the needs of accessibility and with the help of assistants.

F Balcony

Combination of the balcony and vertical planting, with the partial extended platform.



“ **Balconies around individual rooms** provide more space for the us to move around. ”

“ **Self-arranged space** becomes a calligraphy showcase ”



“ **Corridors** become space for us to communicate. ”

Story of Residents

“ **Planting** makes my life more interesting! ”



“ **Shared Kitchen** is comfortable and it enables me to cook myself and share with others. ”

Connecting with the Community

Besides, we hope to promote more intergenerational interaction through our intervention on the ground floor and rooftop to ensure that the care center is not only physically but also socially accessible for everyone and creates connections with the community.



Open ground Floor

We will open the ground floor of the building and promote collaborations with different social organizations. Following what we learned from the candy shop in Japan, the shops or and facilities could be run by the elderly themselves. Seniors can continue to realize their values through participation.

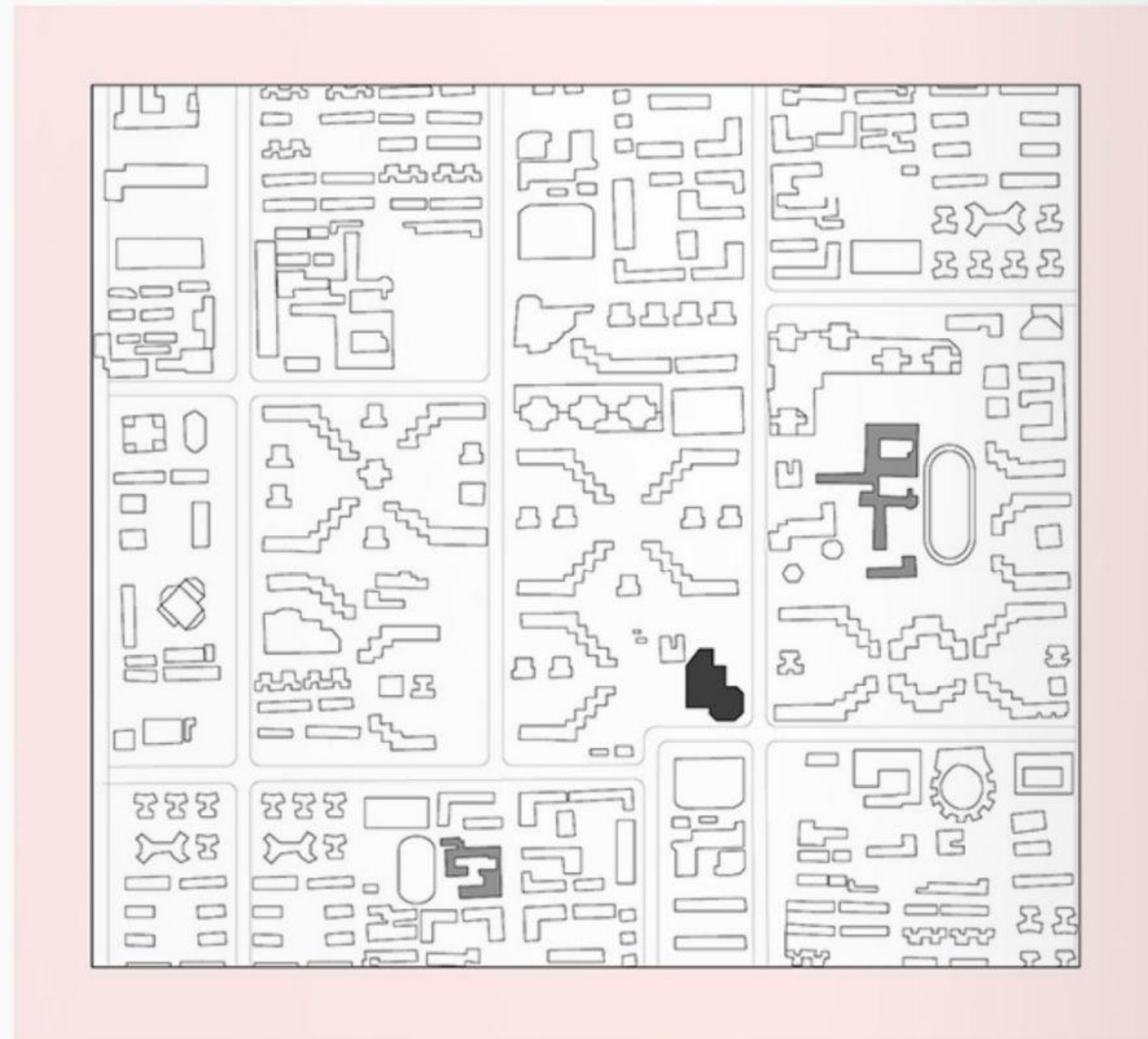
Rooftop Farming

The results of the survey show that many of the elderly used to be engaged in agriculture, which means they have a lot of farming experience. Many seniors move from rural to urban areas, and rooftop farms give them the opportunity to practice their skills and, at the same time, serve as a place for them to engage in social interaction.



Connecting with the community

Survey on Yuanling Village



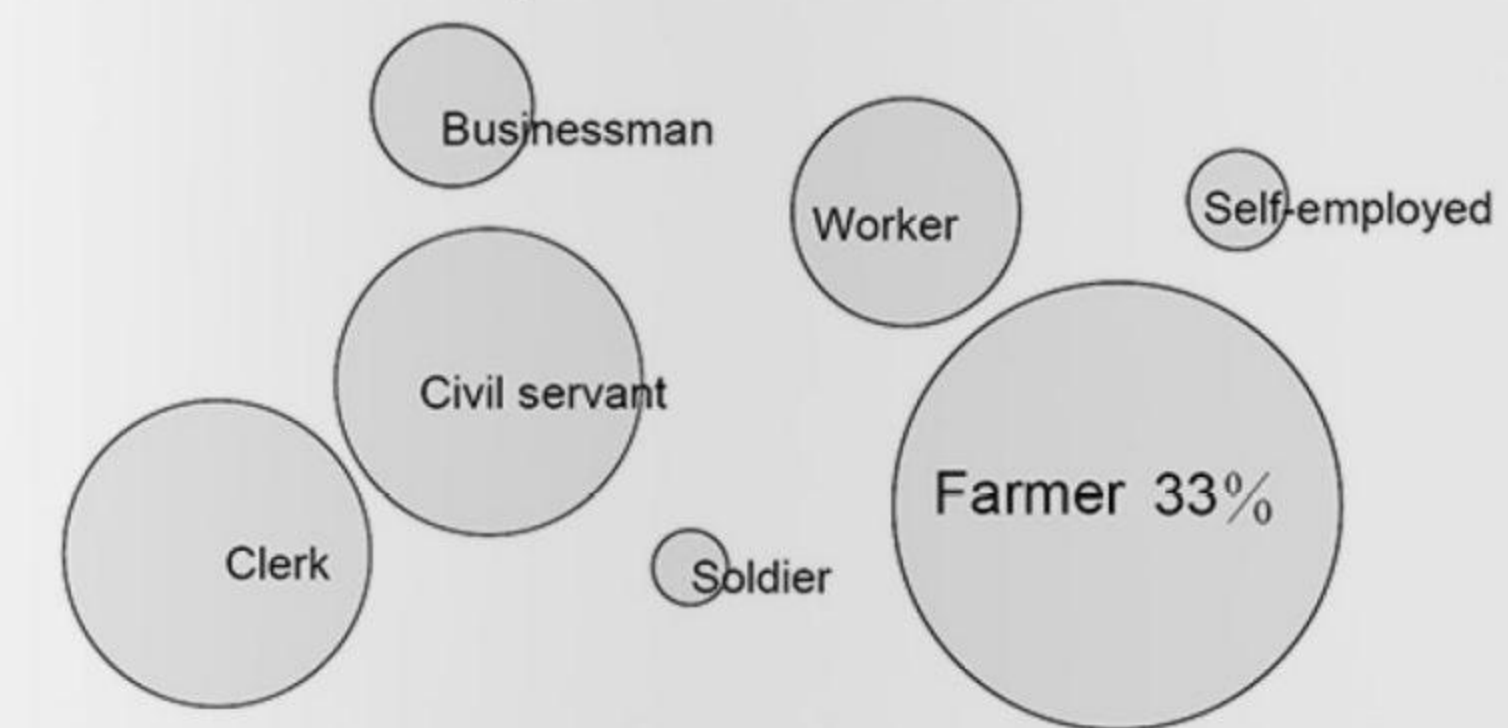
Map of Yuanling New village

According to our research, there are two schools in the vicinity of Yuanling New Village, which means that there are a lot of students around Octagon House.

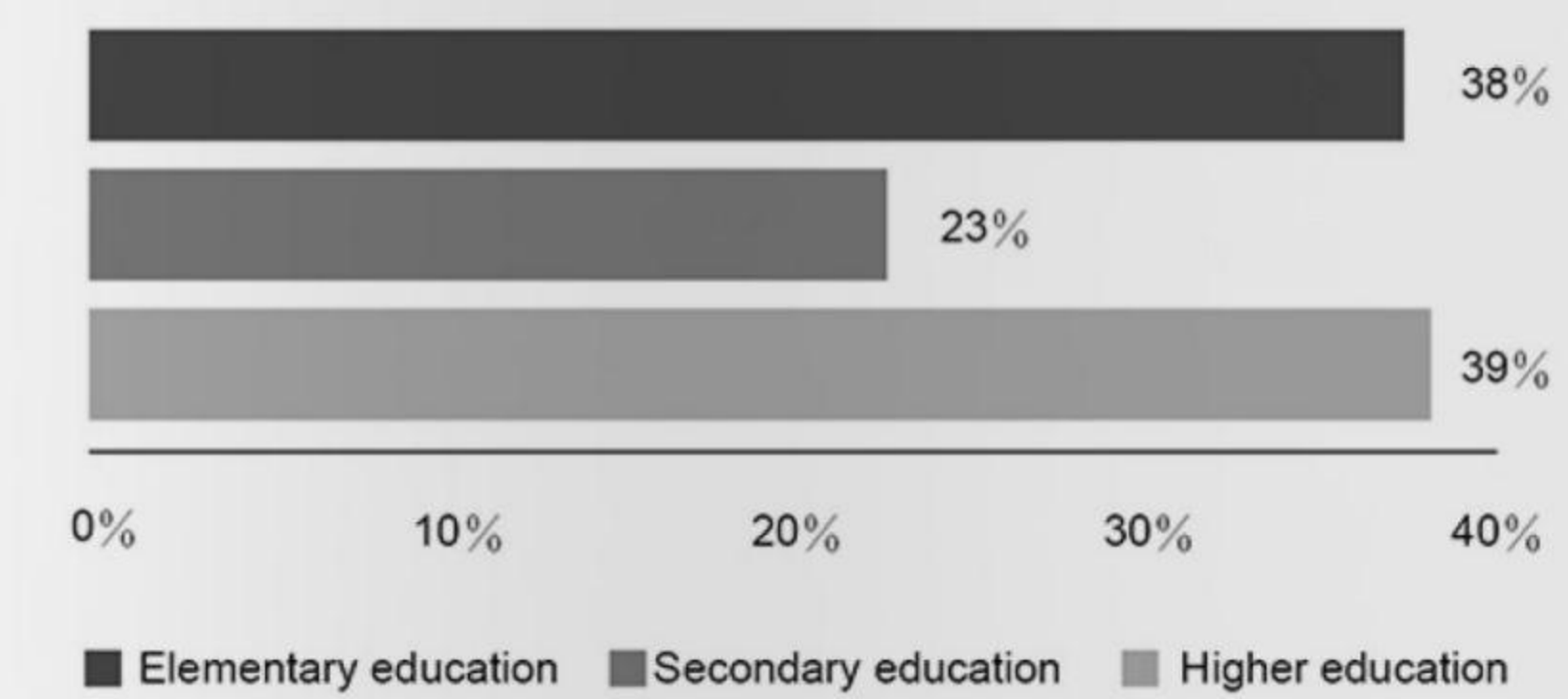
Daily entertainment for the elderly



Occupation Before Retirement



Education Level



Survey for the elderly in Yuanling New village

A survey on the daily activities of the elderly people of Yuanling New Village would help define some common and public spaces. The results of the survey showed that many of them used to be engaged in agriculture. At the same time, in Yuanling New Village, forty percent of the elderly have a high school education or above.

Connecting with the community

Rooftop Farming

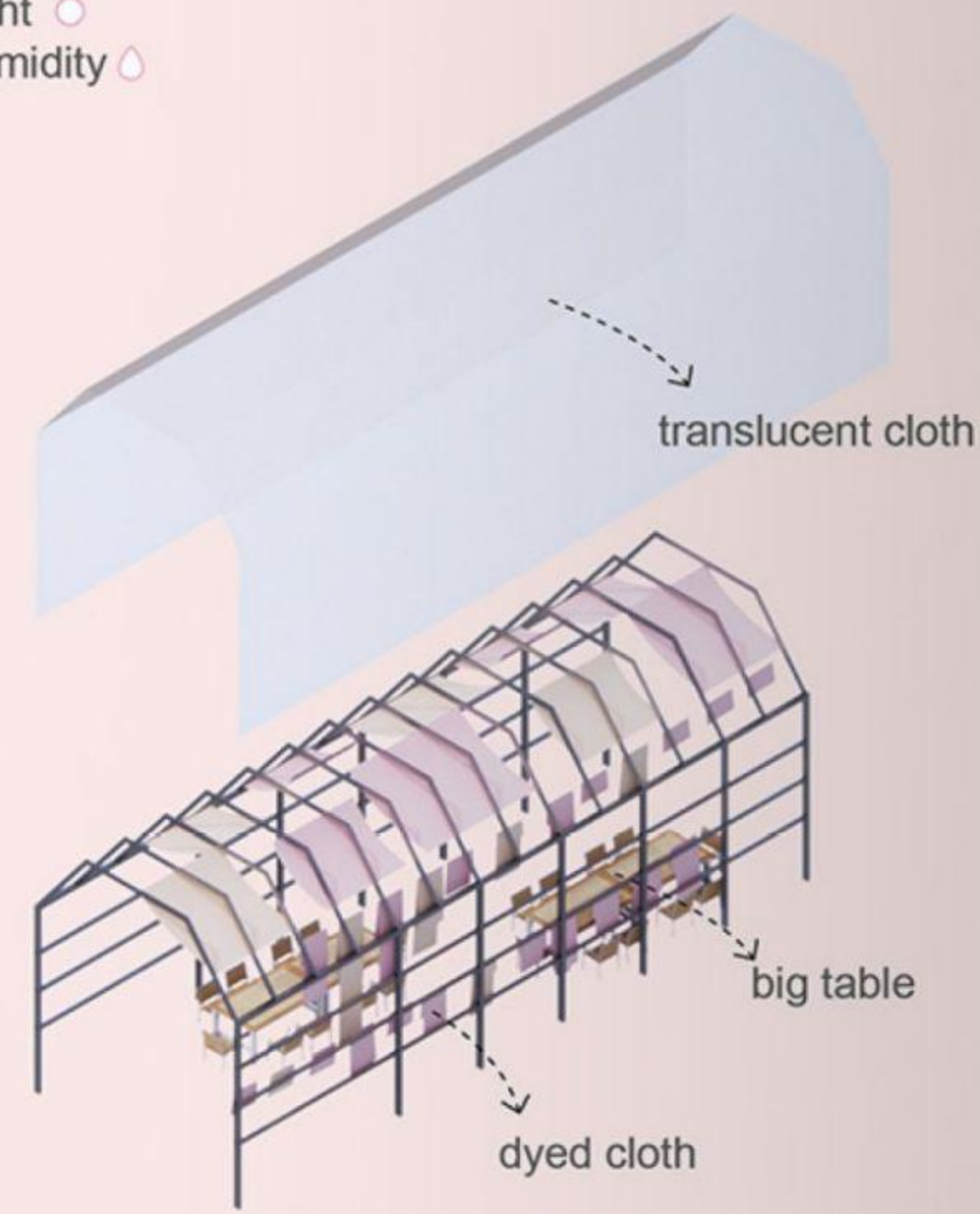
Greenhouse for Healthy Salad Workshop

Light ○○○
Humidity ○○○



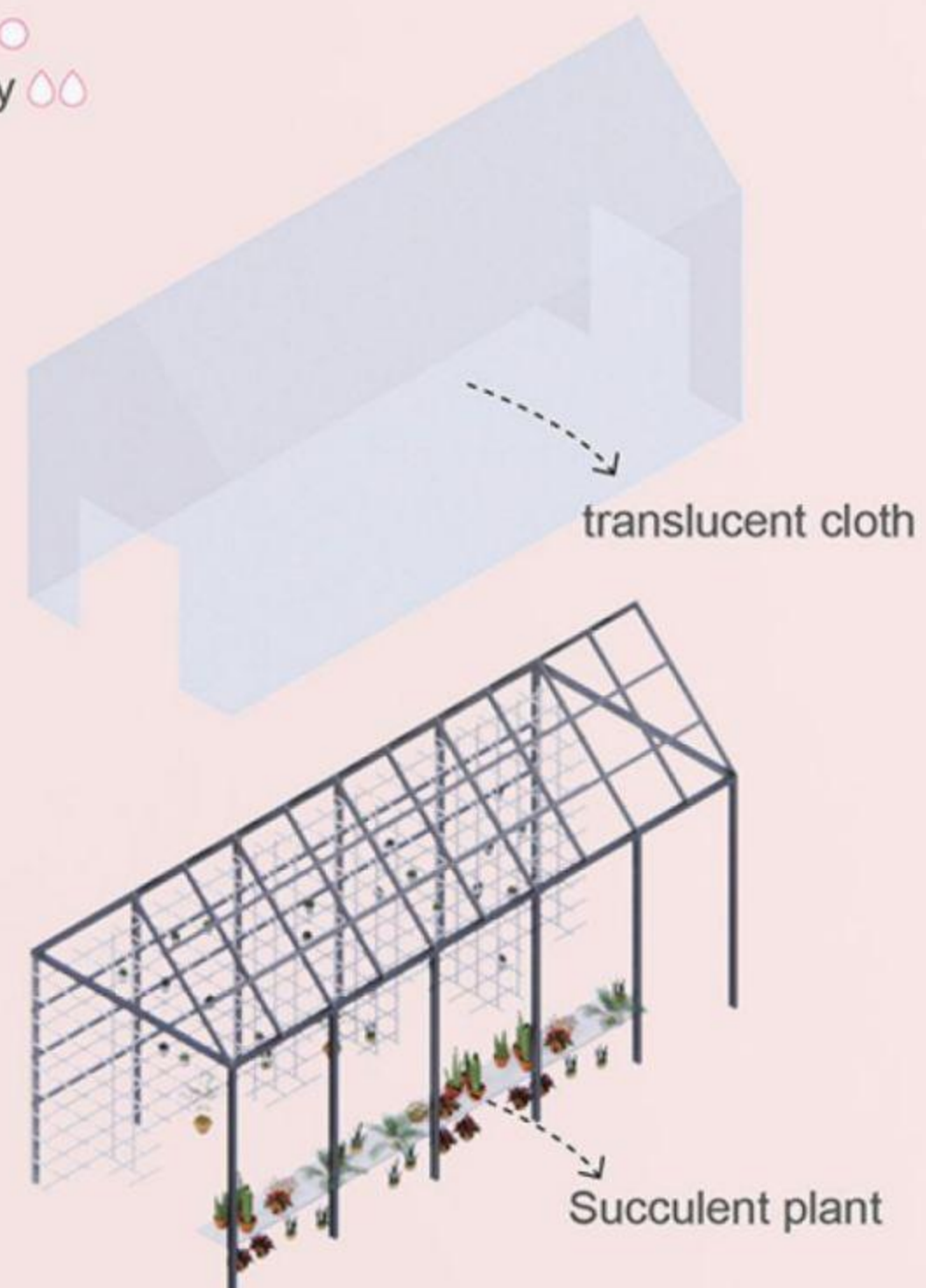
Greenhouse for Natural & Botanical Dye

Light ○
Humidity ○



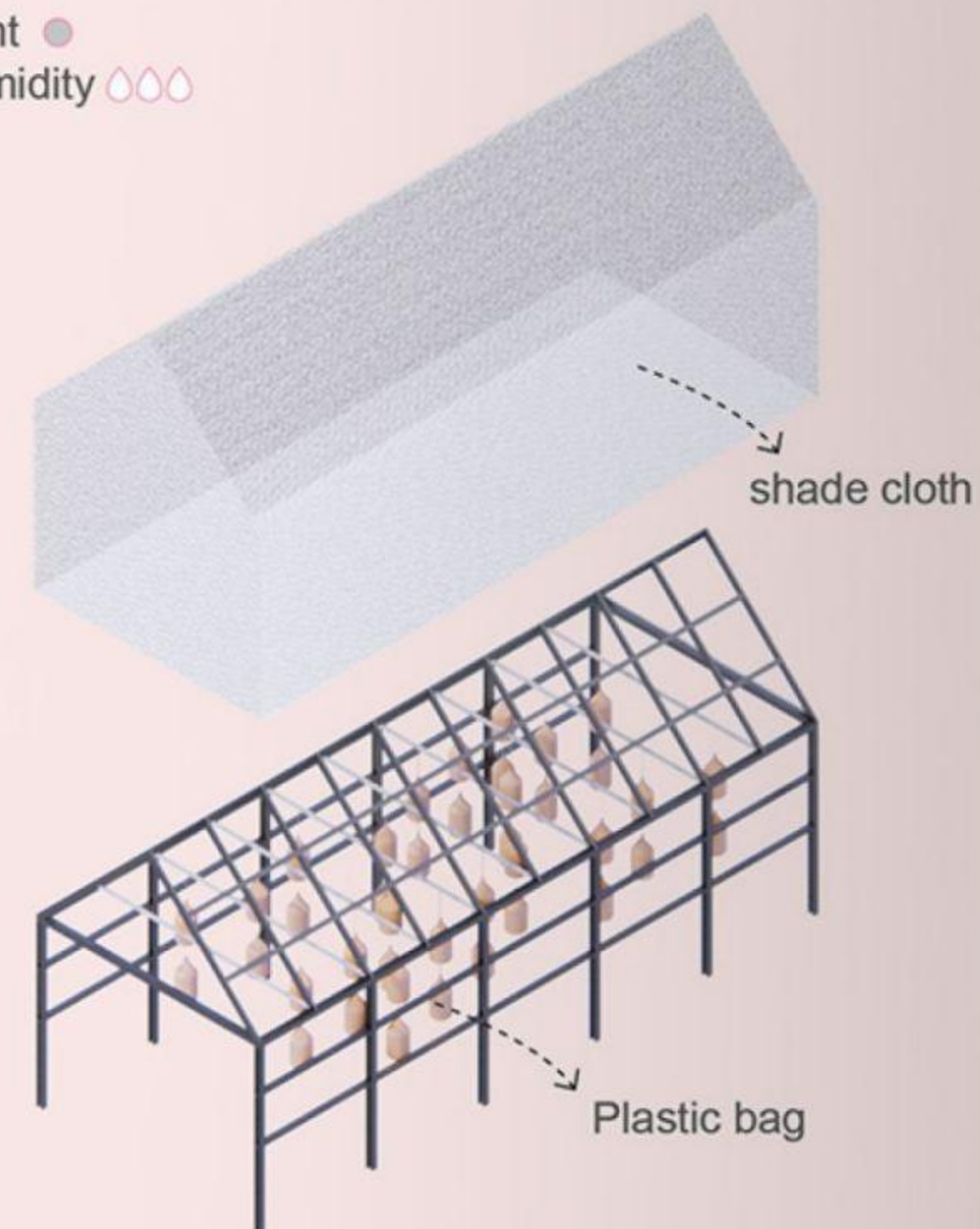
Greenhouse for Easy DIY Succulent Planters

Light ○○
Humidity ○○



Greenhouse for Mushroom Farming Class

Light ●
Humidity ○○○



YES | 2021 Octagon House's Summer Farm

Jul.21.2021



BACK TO TOP

KNOW MORE ABOUT OUR WORKSHOP!

- Natural & Botanical Dye
- Easy DIY Succulent Planters
- Mushroom Farming
- Healthy Salad

HOW TO GET INVOLVED?

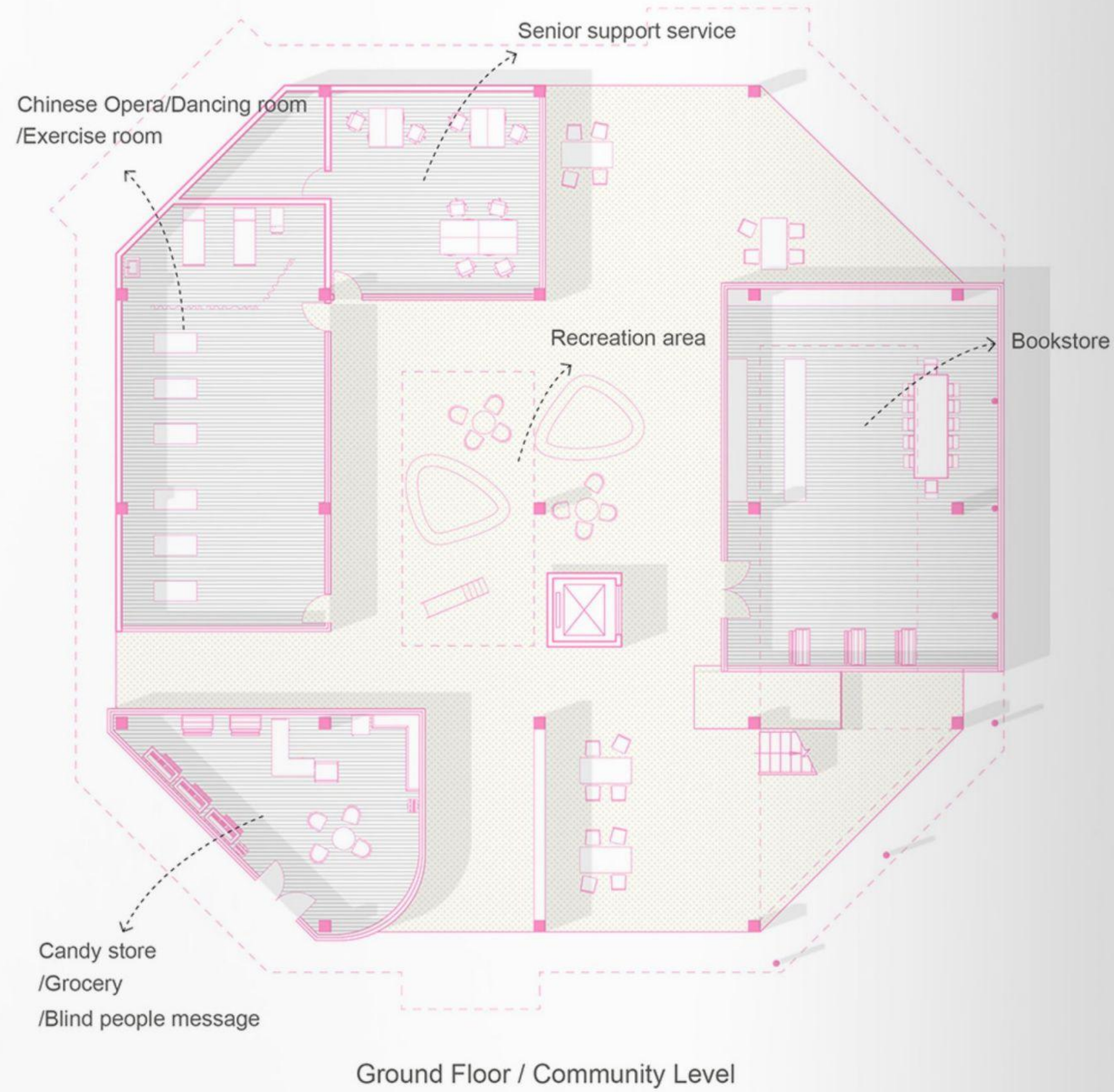
You may choose a proper way to get involved as individual volunteers, school groups or enterprise partners. Get Involved today!

Register or support

GO

Connecting with the community

Open the Ground Floor



Story of Residents



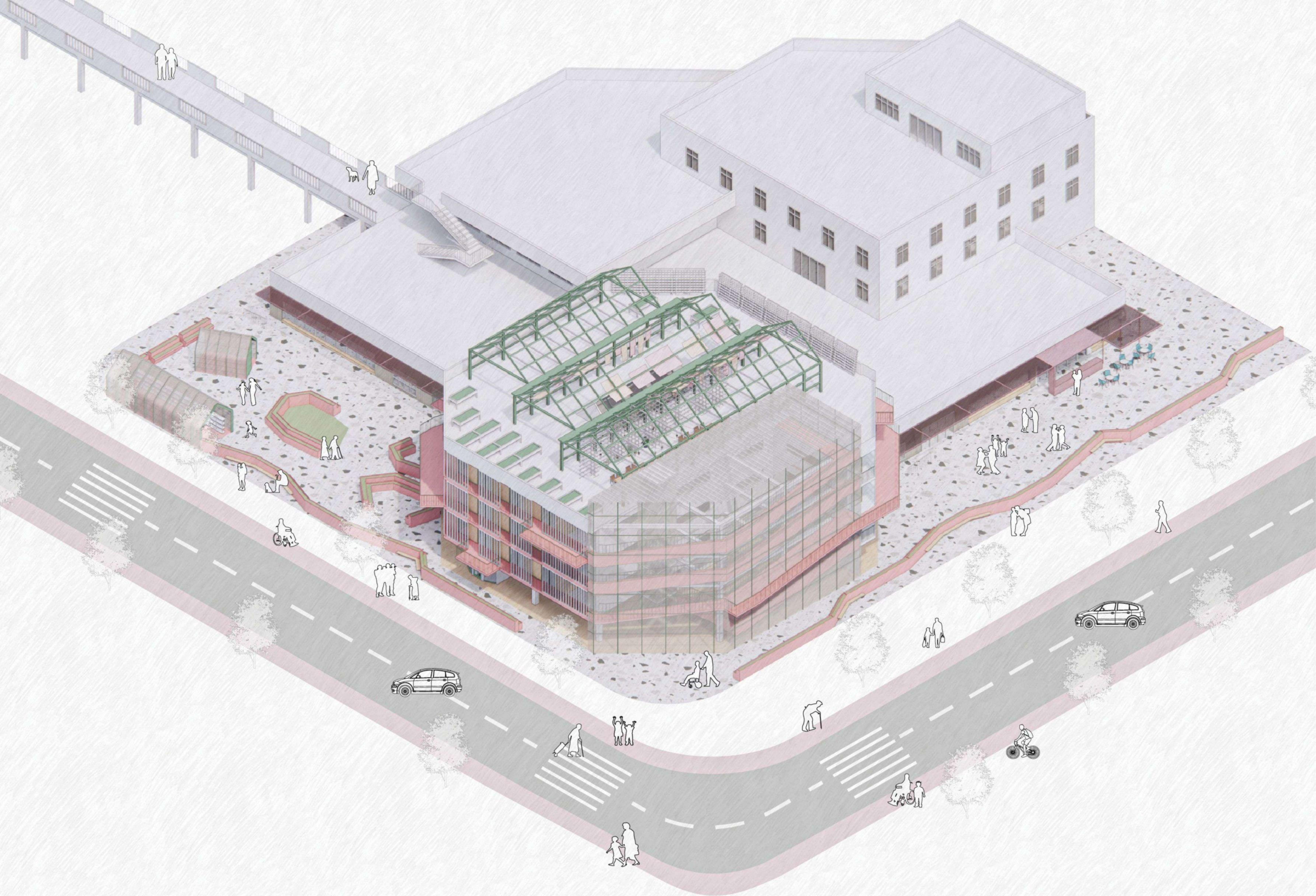
“
Recreation area
 on the open ground floor is good for my grandchild to play and stay with me.
 ”



“
Bookstore
 is where I like to stay most of the time and it is popular among the community.
 ”



“
The Candy shop
 is where I work and I enjoy the job.
 ”



COMPUTAIONAL PRESCRIPTION

Program Solution for A Canopy Design

GSAPP Autumn 2021
Technology Elective

Mentors:
Danil Nagy

Work with:
Jiaying Qu
Lichong Tong
Ningyuan Deng
Shikang Ding

Step 01-

Space Division

Circulation of the people/ Sunlight

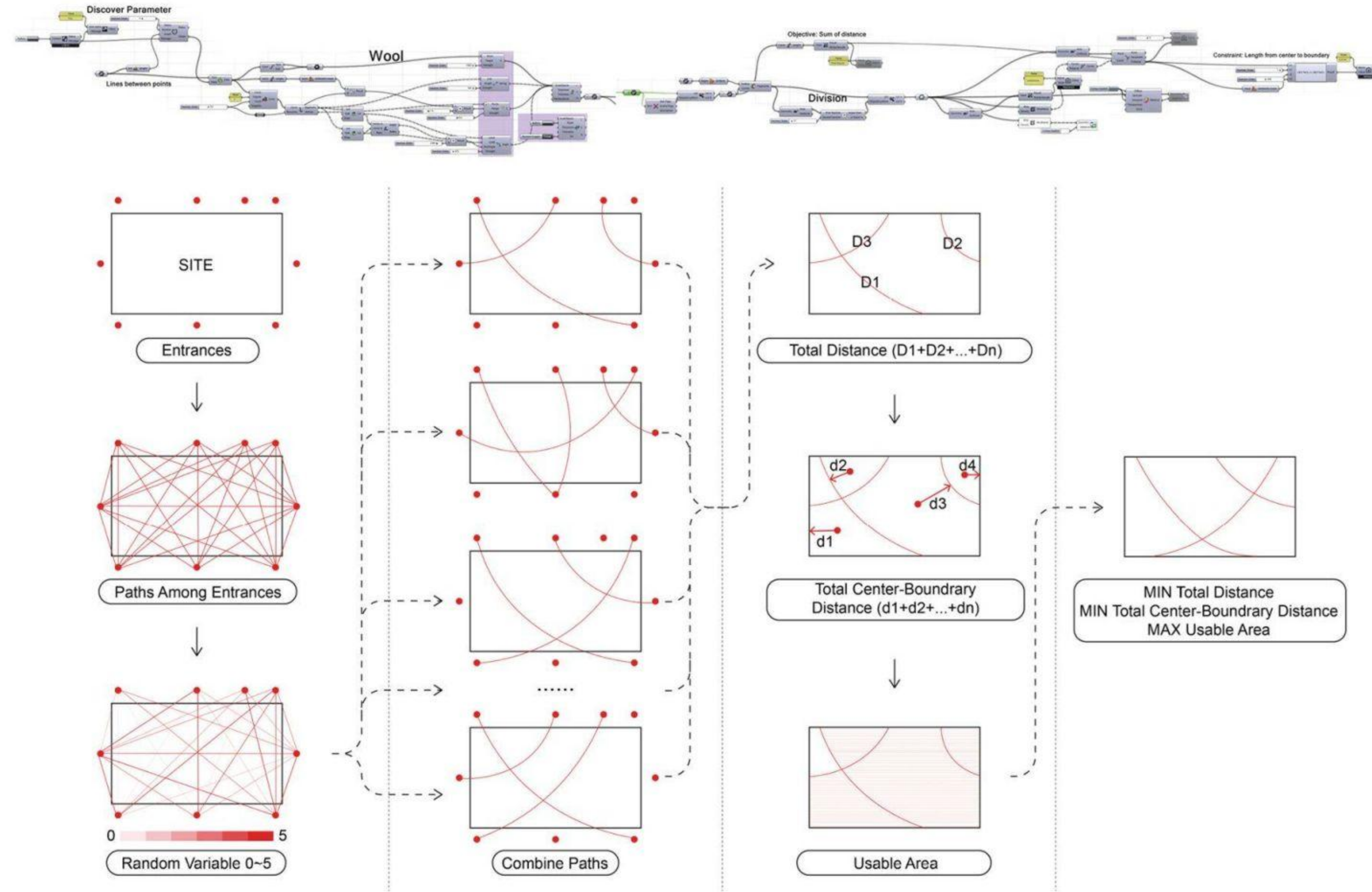
Step 02-

Plan Layout

Tables and chairs/ Space capacity

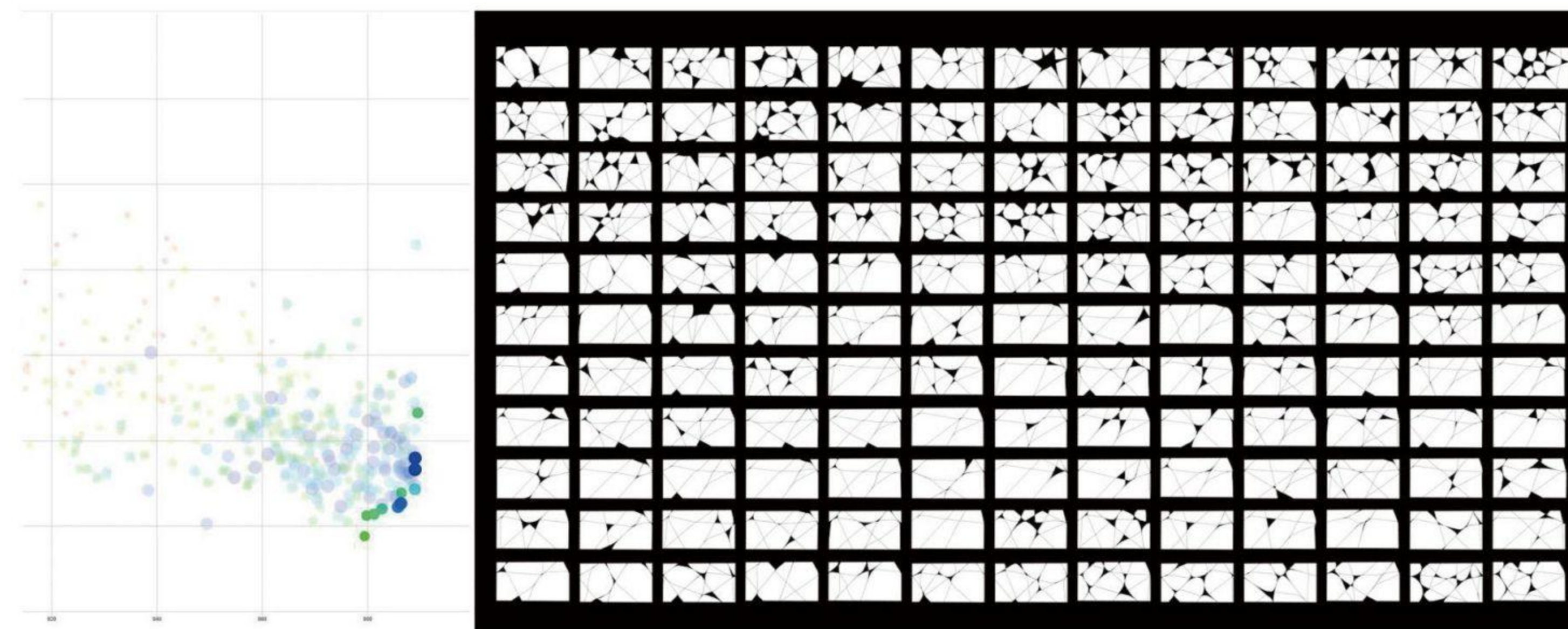
Considering the circulation of the people, sunlight and interior space capacity, the project use computational method to redesign the canopy at Columbia University. By creating algorithm models in grasshopper and using Discover, a grasshopper plugin to optimize the result, we finally get the best result.

01- Space Division Optimization



Algorithm Model Analysis

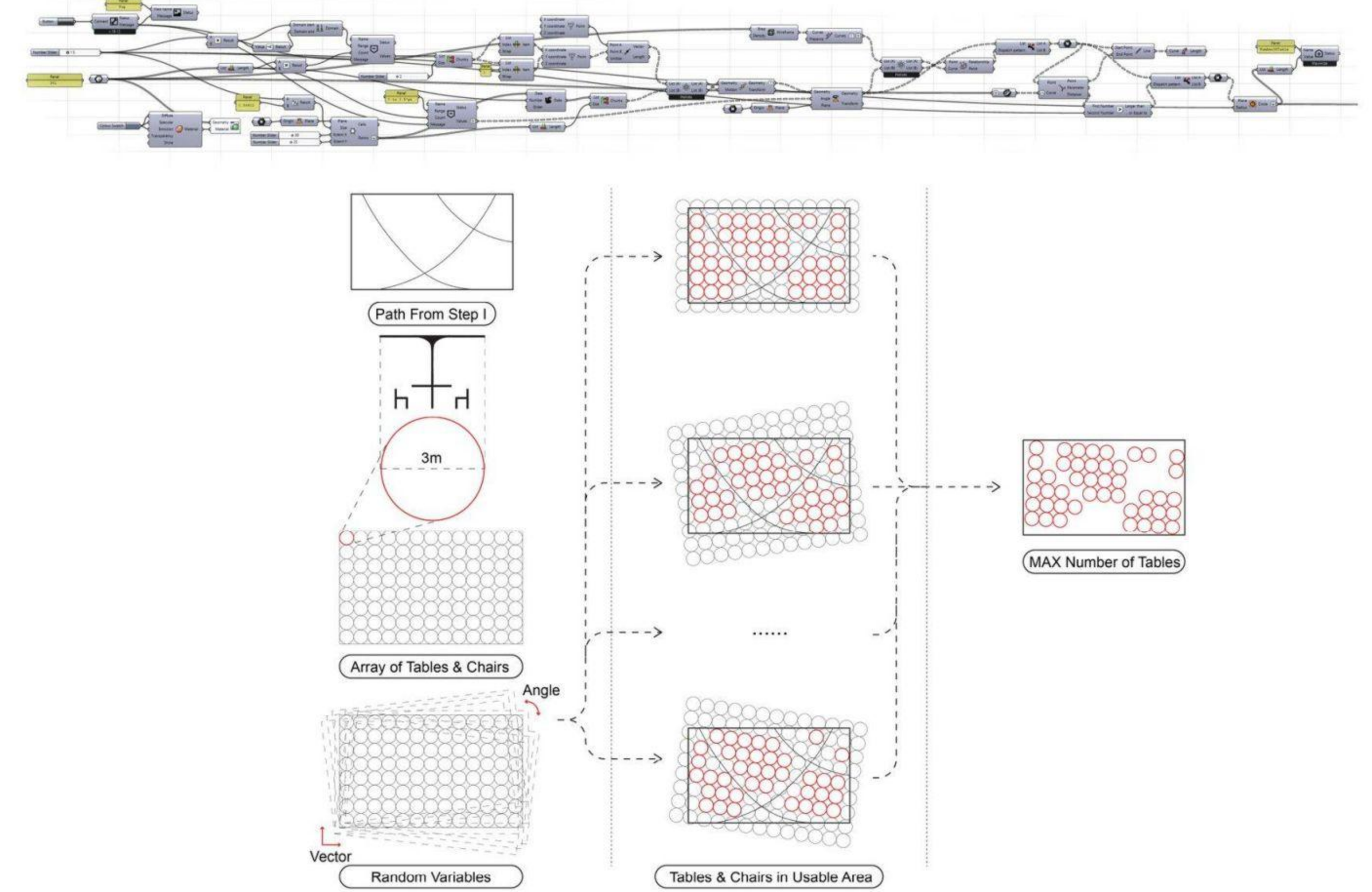
In the first step, the goals are optimizing the circulation and maximizing indoor lighting conditions. We created the algorithm model to get the minimum total path distance, minimum total distance from the center to the boundary, and the maximum dining area.



Optimization in Discover - Performance Matrix

By giving continuous parameters for different paths to simulate the flow of the paths, the results are optimized and calculated in the Discover by the set objectives. Finally, by comparing all possible results that appear in the performance matrix we can get the optimal solutions.

02- Plan Layout Optimization



Algorithm Model Analysis

In the second stage, we try to maximize the space capacity by repositioning tables and chairs. We set the size of individual table units and then place an array of units covering the base area. Input a group of continuous numbers to move and rotate the array, then calculate the number of tables each time.



Optimization in Discover - Performance Matrix

In this step, the objective is to get the maximum number of tables. By connecting our algorithm model with Discover, all the results are shown visually from the matrix. In this diagram, the result with the largest Y value is the best choice.

Project 05

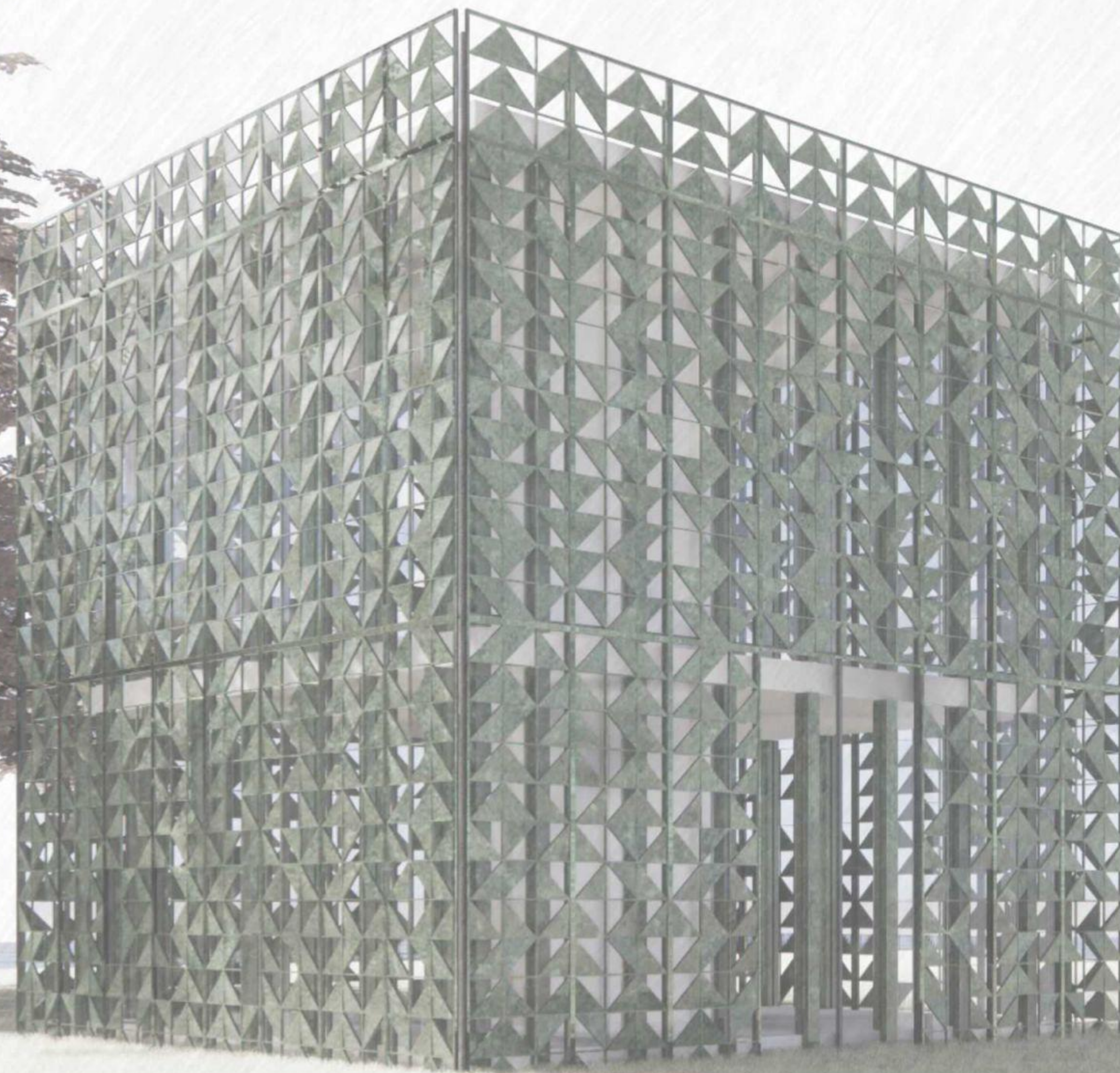
FACADE DETAILING

Terracotta Sunshade & Pre-tension Mullion Design

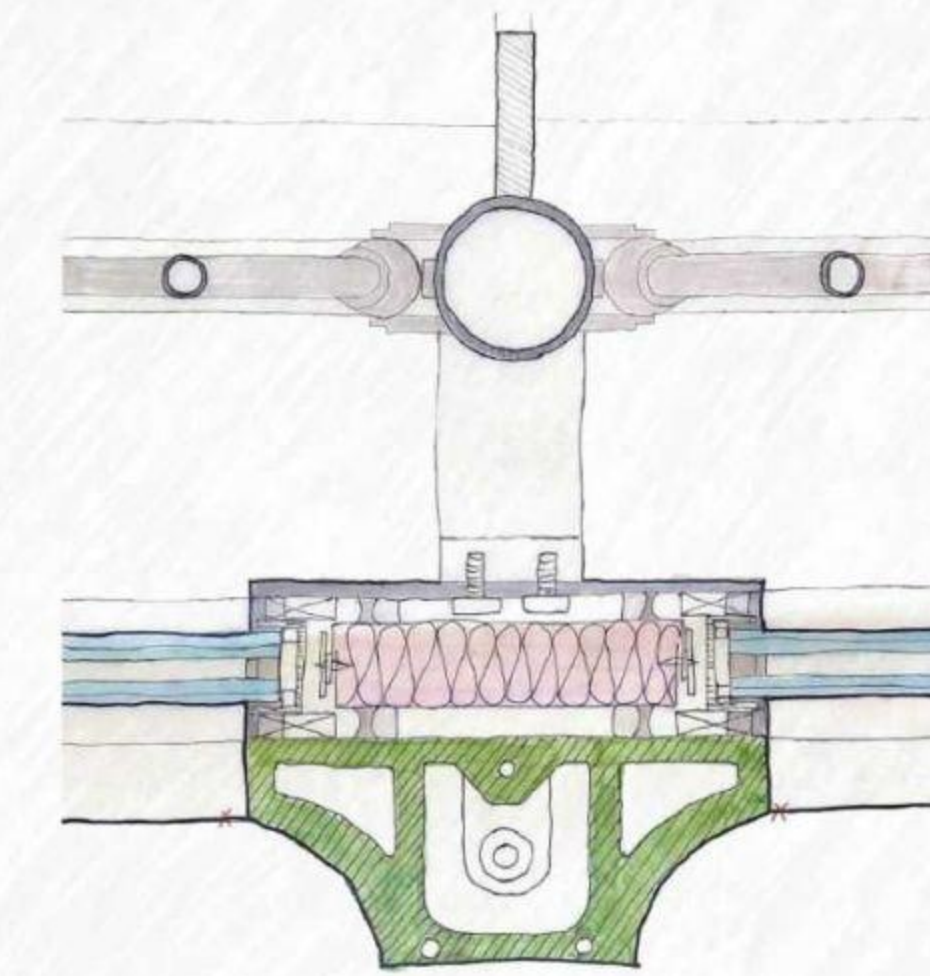
GSAPP Sprint 2022
Technology Elective

Mentors:
Kevin Schorn

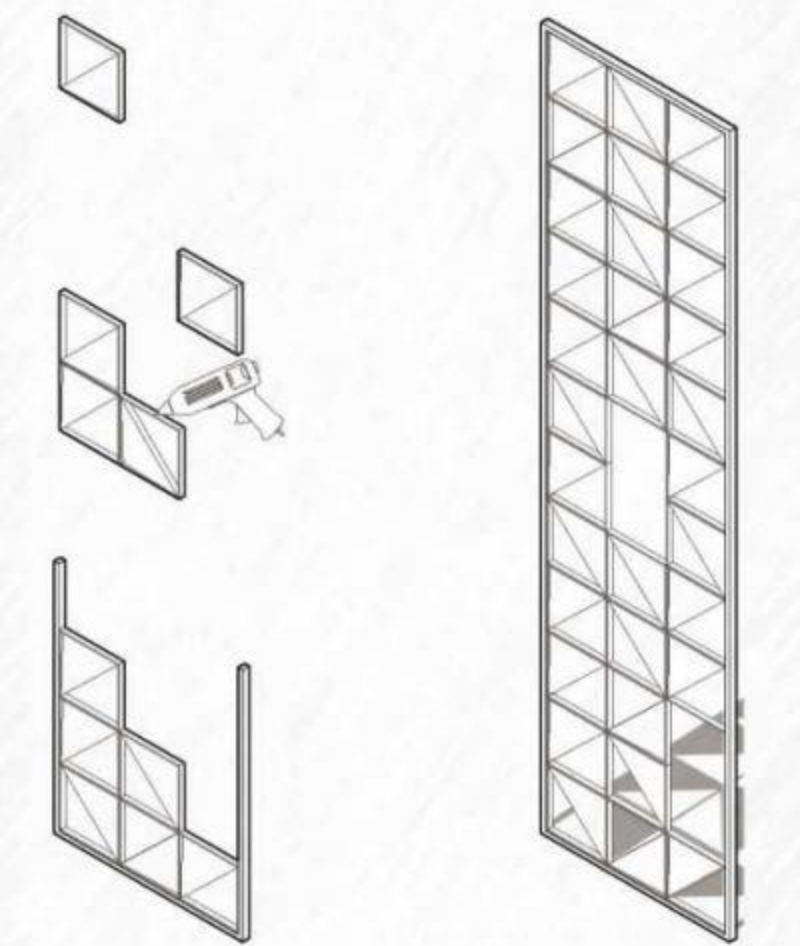
Work with:
Yingying Zhou
Chuji Huang



Facade Detailing

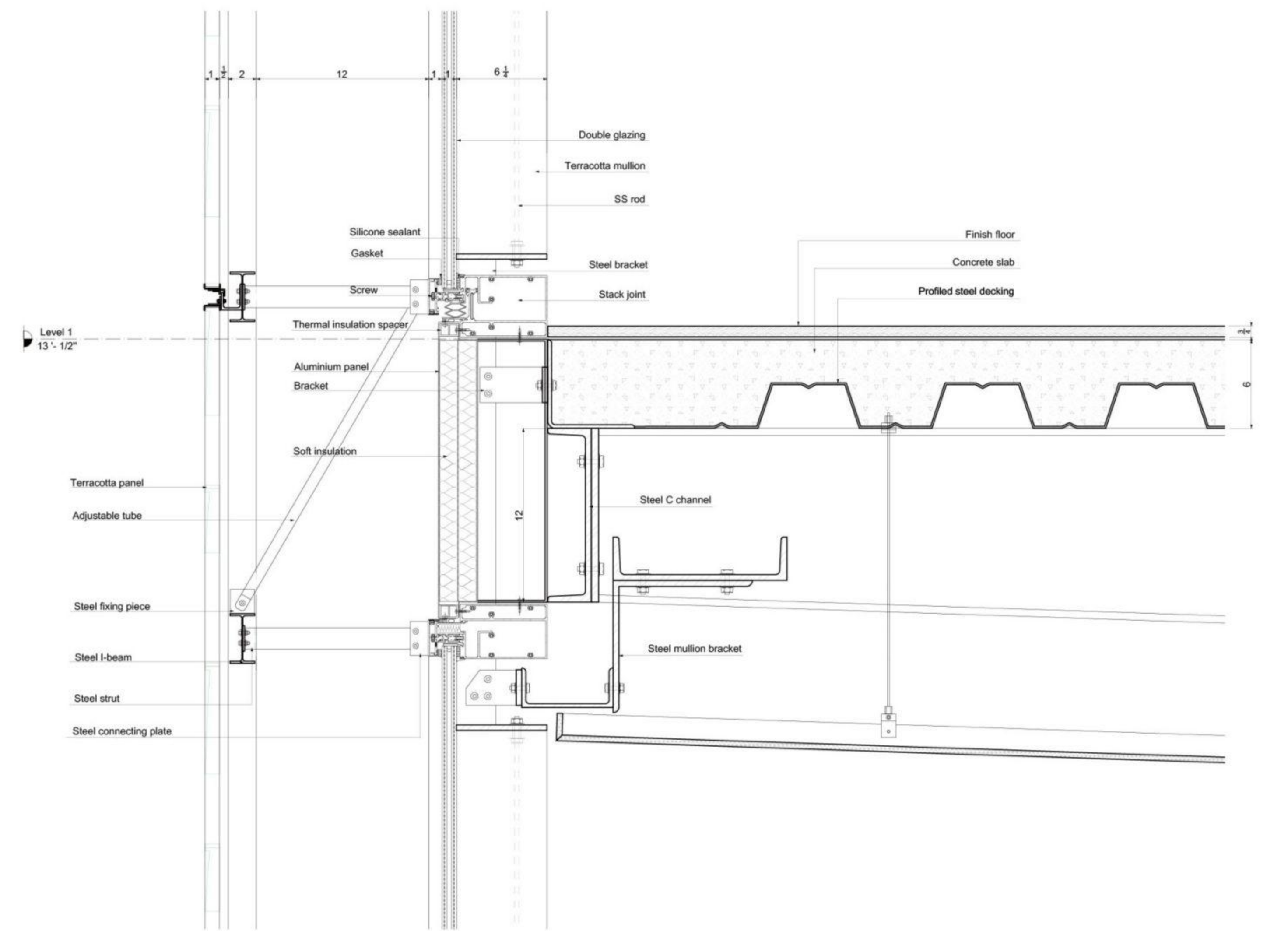
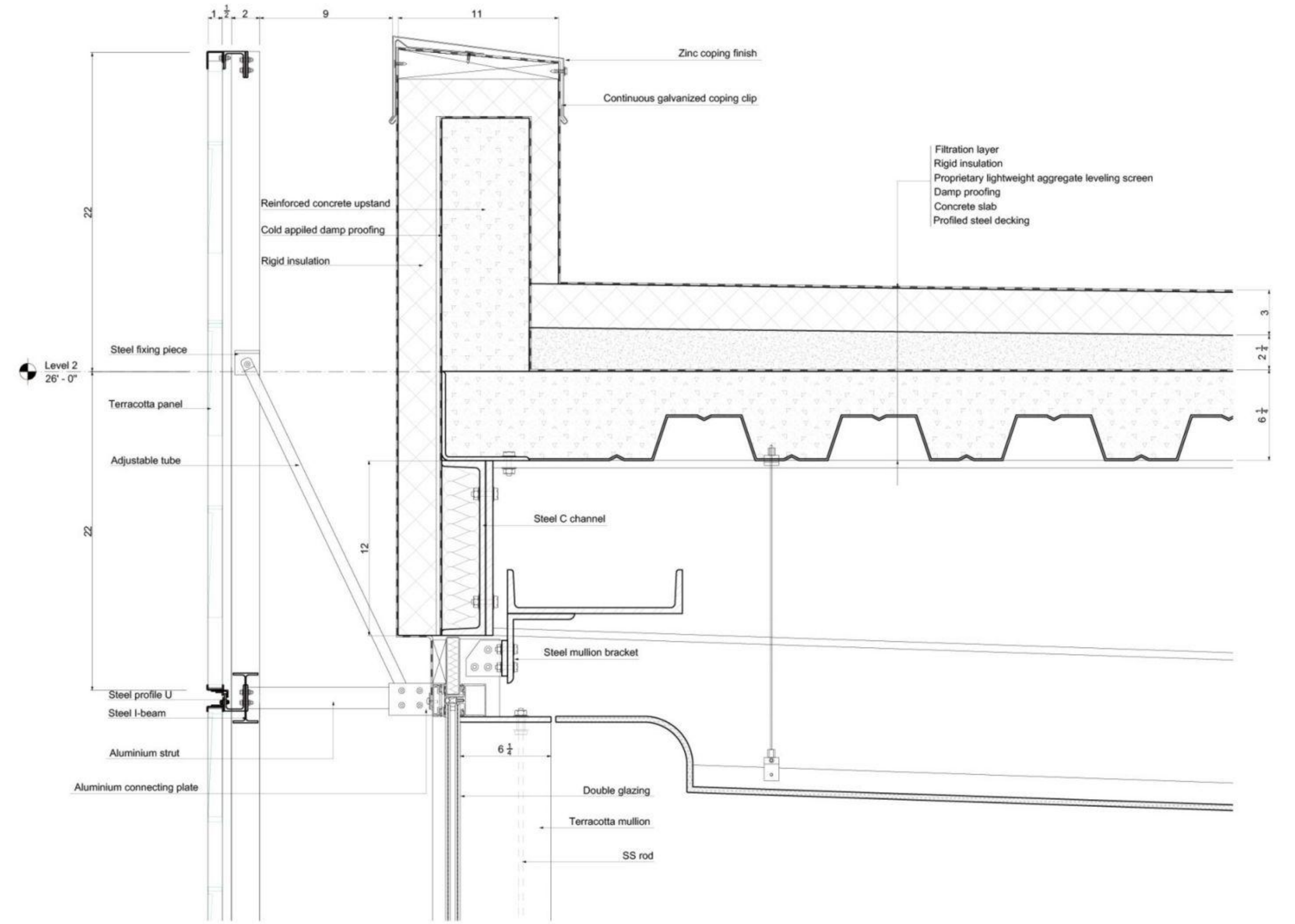
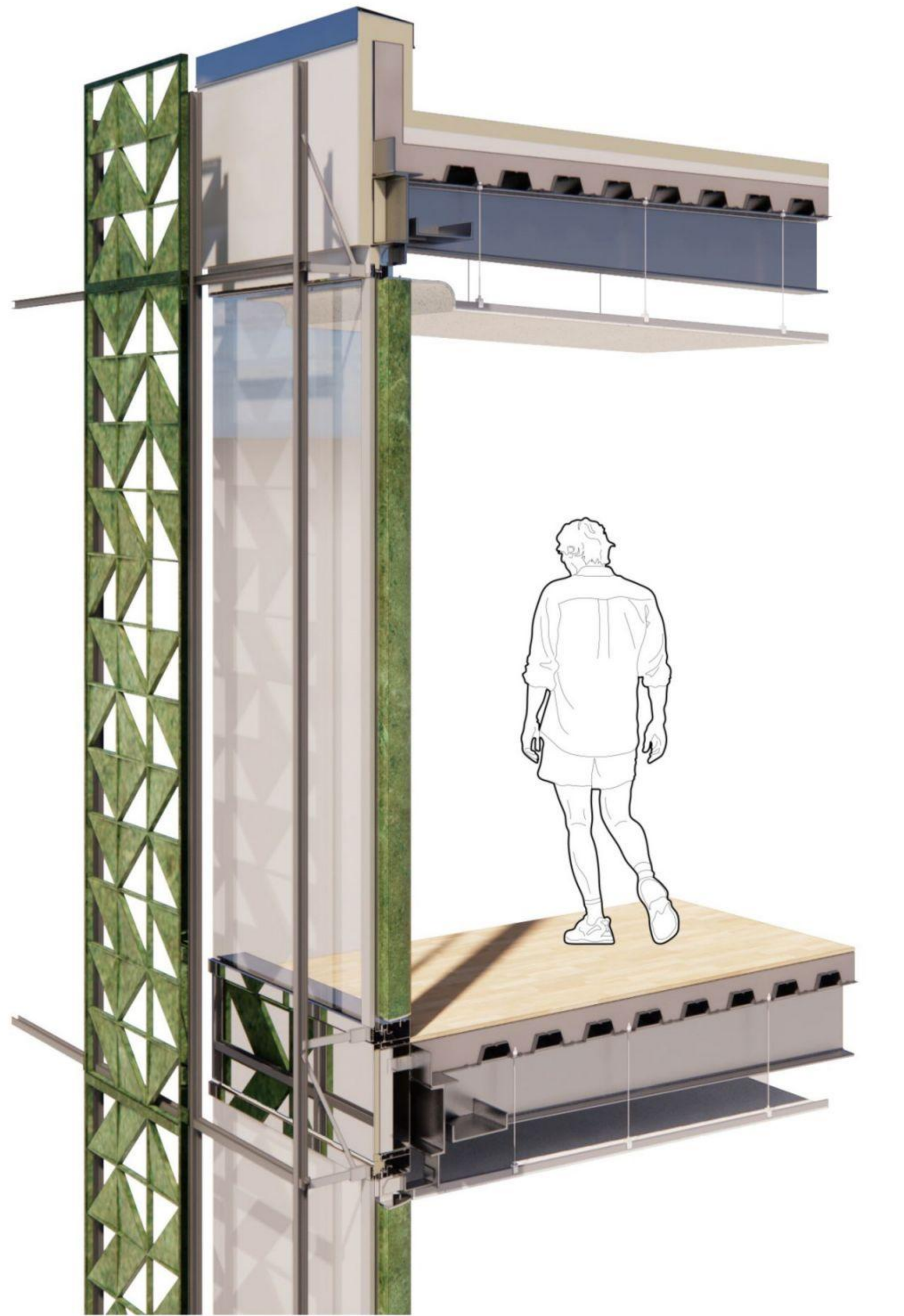


Mullion concept drawing



Sunshade concept drawing

The double-layer facade system uses terracotta as sunshade and mullion. The detail design focus on the pre-tension mullion with rod inside and its connection with roof, floor and terracotta sunshade.



FOOD DESERT IN SANDTOWN, BALTIMORE

Points Unknown - Storytelling with Web Mapping

GSAPP Autumn 2021
Visual Studies

Mentors:
Juan Saldarriaga Chaux
Michael Krisch

Work with:
Leon Duval
Ruben Gomez Ganan

Website:
<https://pointsunknown.nyc/final-projects/GSAPP-Spring-2022/Justice-1/index.html>

Chapter 01-
Story Pitch
Food justice / Sandtown / Baltimore

Chapter 02-

Storytelling with Web Mapping

Grocery stores / Race / Household income / Lot vacancy

A WRAP-UP ON SANDTOWN REALITY



[Jeremy Ashkenas /The New York Times](#)

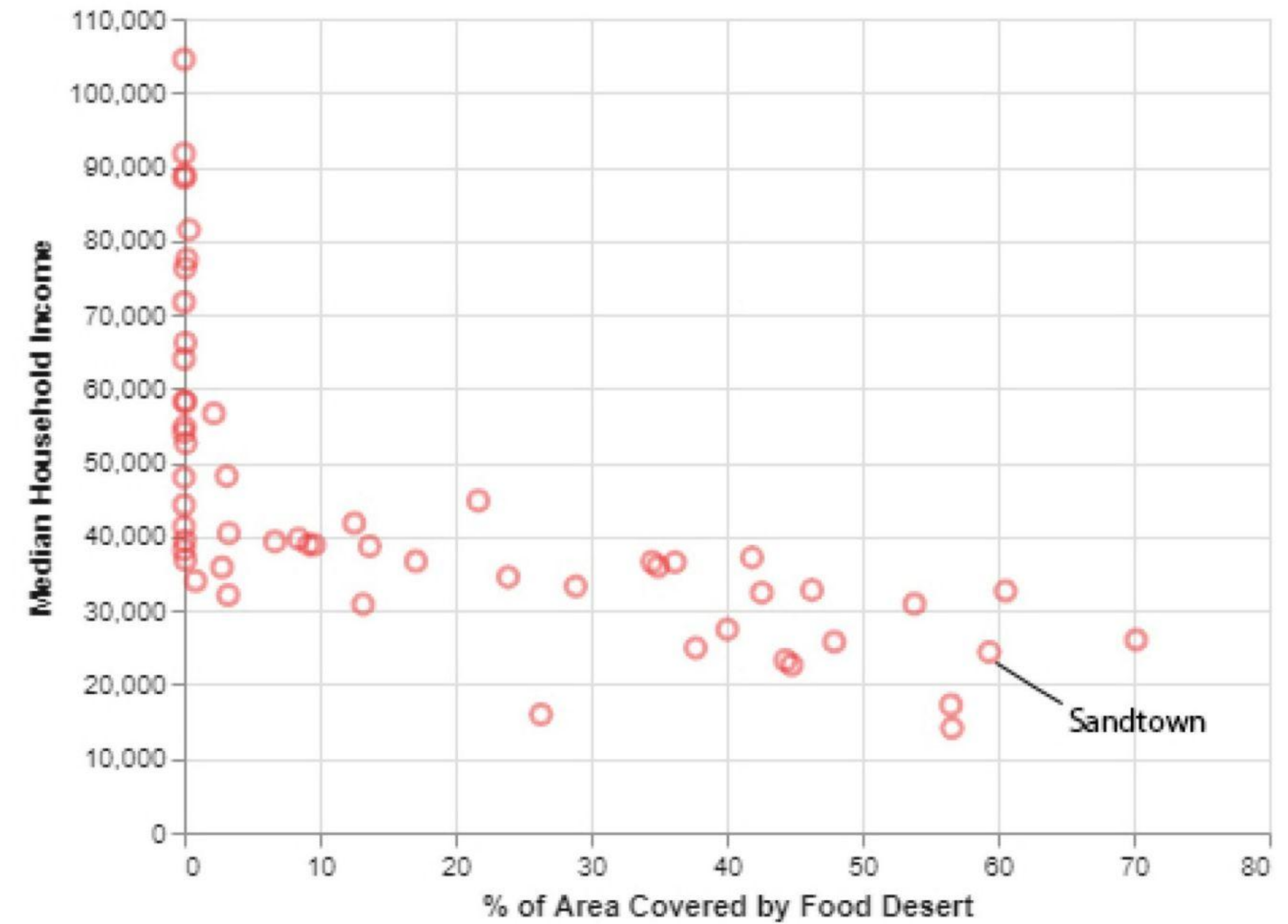
After reviewing the most incident factors related to food availability in Sandtown, it is possible to notice the severe damage caused not only for structural scarcities and racial injustices occurring since the 1970s but also because of an extreme food desert that harms the existing population affecting them with health complications. There aren't enough markets nearby where the residents of Sandtown could buy fresh and healthy food, but they also have to commute long distances, wasting time and expending extra money. On top of that, the existing supply in the neighborhood is extremely low, directly affecting the entire population of Sandtown, especially the most vulnerable people. But, there isn't only bad news. Even though the implemented food programs aren't having much success until today, there is a positive signal on the variety of programs that the Baltimore City Health Department is applying in conjunction with the [Johns Hopkins Center for a Livable Future](#) along with the Bloomberg School Of Public Health. Programs such as the Baltimarket, the Virtual Supermarket Program, the Healthy Stores, the Food Justice Forum, [the Baltimore Food Policy Initiative](#), and the Mapping the Food Environment are trying to revert these issues. Hopefully, in the near future, these public initiatives and other types of programs could start to change the reality of this postponed neighborhood.

Poor existing food supply is harming, even more than the dramatic existing food desert, the depressed community of Sandtown, Baltimore.

In 2015, the Sandtown-Winchester' citizen Freddy Gray was arrested and later killed by the police creating a massive social outbreak, firstly on a city scale and later on a national scale, and placing a point of attention in the neighborhood of Sandtown, which is nowadays reflected in the successful TV series "We Own This City" ,released in 2022 and based on the homonymous book by the Baltimore Sun reporter Justin Fenton. Today, as a structural and unsolved problem, the community of Sandtown is dealing with a frightening food desert, where poor quality and availability worsen the residents' current problems and especially

damage their health, adding more troubles to a place full of them. The history of decay of Sandtown started in the late 1960s, particularly after the May 68 riots and the increase of drug use and violent crimes in the 1970s, which led many residents to flee and stores to close, despite government efforts made since the 1980s nothing has changed. Before this, Sandtown was known as "Baltimore's Harlem" and inspired many cultural expressions across the US. Today it's easily possible to see the decay of the neighborhood in the high percentage of vacant building density; a high percentage of working-age

residents unemployed; high rate of community population incarcerated; a low average household income; but especially in the high percentage of area covered by food desert, which is complemented by an insufficient provision of healthy food among the existing markets and grocery stores. So, even though the Baltimore City Health Department and the John Hopkins Center for a Livable Future have started research and programs, their implementations and the urban renewals haven't had any positive repercussions on the community of Sandtown so far.



02- Storytelling with Web Mapping | Grocery stores, Race, Household income, Lot vacancy



AN AFRICAN-AMERICAN NEIGHBORHOOD

Jeremy Ashkenas / The New York Times

Sandtown is a neighborhood of Baltimore composed of 15,518 inhabitants, with 96.7% of the Black or African-American population, making it the third-largest proportion in the city. At the same time, Baltimore City had a 62.8% of Black or African-American population.

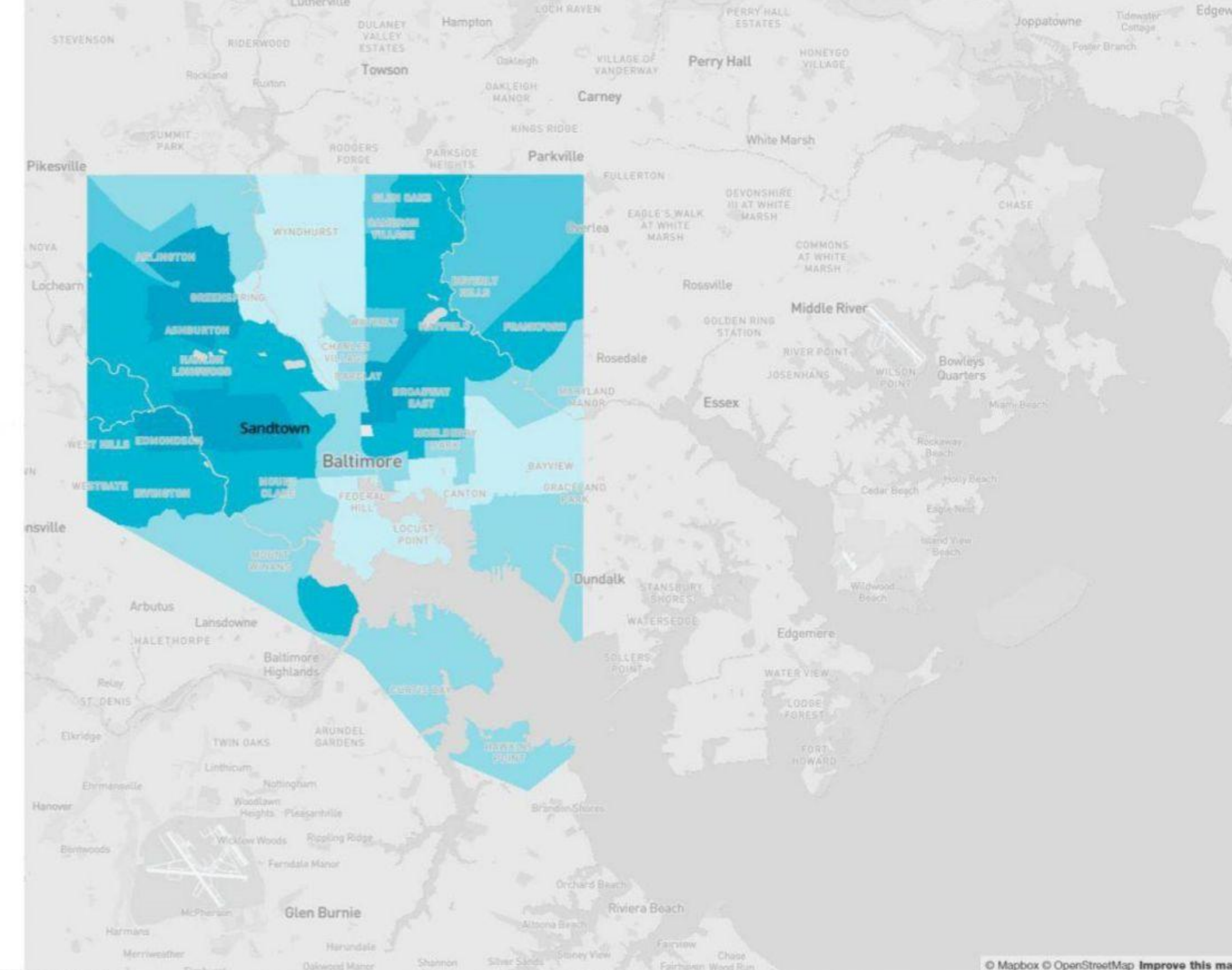
The racial makeup of Sandtown is crucial to understand, while racial injustices and police harassment have been increasing throughout the years. This reality was crystallized by the murder of Freddy Gray, which has shaped the public opinion about Sandtown and the inner relationships of the neighborhood. Besides, with 3% of the population incarcerated, it has more residents in prison than any other neighborhood in Baltimore. This creates a direct relationship between race makeup and police harassment, and social injustices.

In addition to these issues, it is important to highlight that the percentage of children in single-parent households is 86.8%.

"It's a peaceful neighborhood when it wants to be," said Mr. Taylor, who says he has lived in the area his entire life. But he said that the police are a "harassing presence" even when people are not doing anything wrong. Calhoun & Cumberland Tavonne Taylor, 25

% of residents Black or African American

source: [Open Baltimore](#)



LOT VACANCY

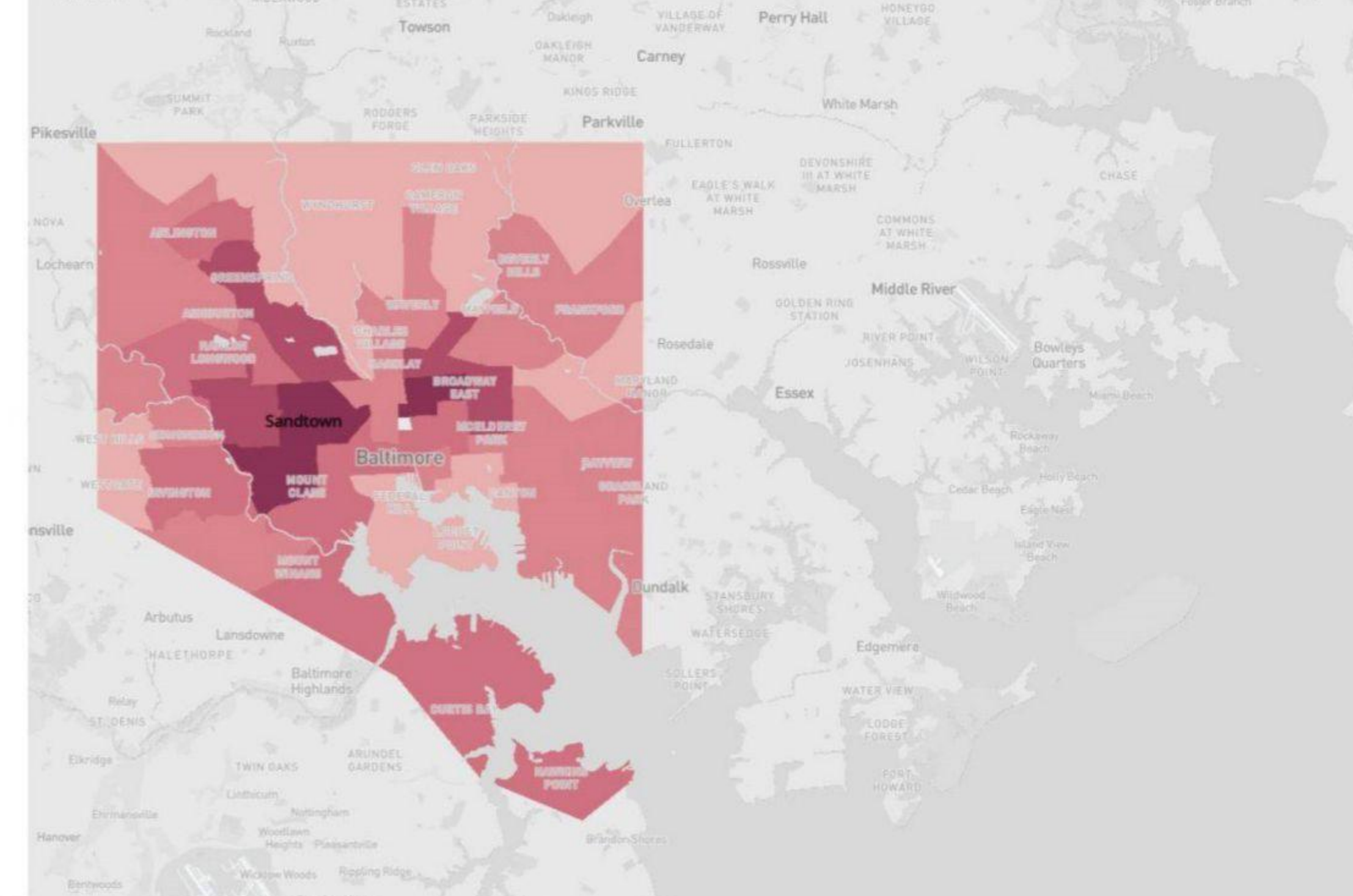
Jeremy Ashkenas / The New York Times

The vacant building density in Sandtown is extremely severe and in the latest census of 2020 was 31.9% (2,560.4 points), positioning this place as the third in the city (the City has 562.4 points). The vacant lot density goes up to 1,589.3 points while the City has 677.3 points. Sometimes, this fact means that one resident can be living in the only occupied building on their block. Added to this factor, Sandtown has 18.4% of the land covered by green space, while the City has 33.1%. It has 28.3% of the land covered by pavement (the City has 25.5%) and has a rate of rat complaints of 759.5 points, while the City has only 408.8 points.

"I see way more vacant houses now than when I was younger around here" said Mr. Rivera, who says he has lived in the area for 40 years. "I don't know where everybody moved to, but there are vacant houses everywhere." North & Carey José Rivera, 43

% of residential properties that are vacant and abandoned

source: [Open Baltimore](#)



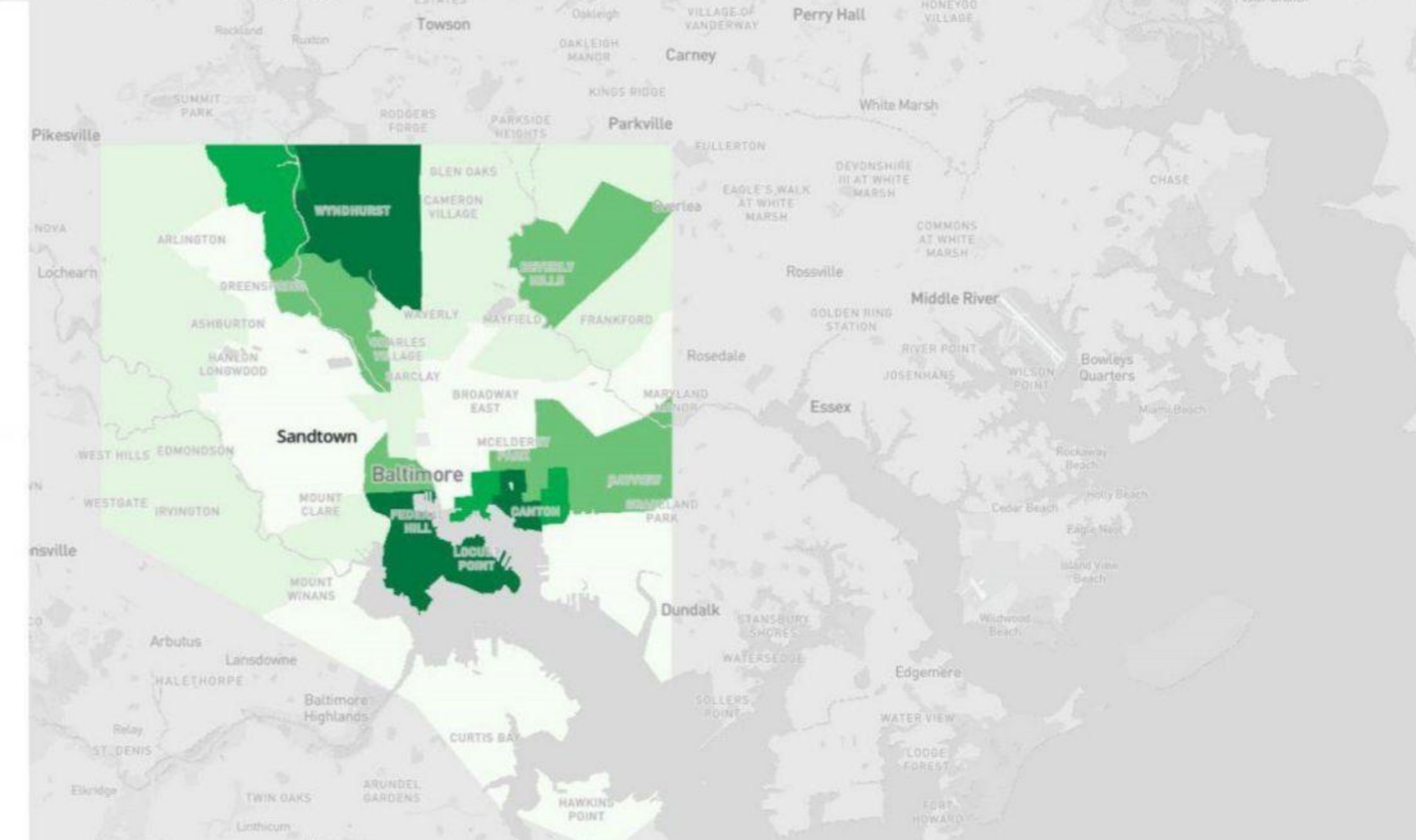
MEDIAN HOUSEHOLD INCOME IN BALTIMORE CITY

Jeremy Ashkenas / The New York Times

Sandtown is not only one of the poorest areas in the city, with a median of 50.3%, a way worse than the 28.8% of the City, but also this situation is aggravated by the fact that over 30% of households don't have any vehicle available. On the other hand, it has a high unemployment rate of 20.7%, making it the sixth highest within Baltimore's areas, with a median of 13.1%. Also, the median household income is \$24,374, ranking 50 among 55 areas in the city, and it's at or below 18% of the Federal Poverty Level. Baltimore City's median household income is about \$41,819.

median household income

source: [Open Baltimore](#)



The video above displays a daily trip of one resident throughout Sandtown searching for healthy food which is meant to expose the quotidian dilemma of the residents of Sandtown .

GSAPP 2022

HAOTONG XIA
PORTFOLIO GSAPP 2022