

# Micro-Farm Project

A Short project to design a small vertical farm attached to the facade of the London Rd Car Park.

DESIGN THESIS AI715

## **Name**

Diallo Mehi Younouss

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## **Year**

M.Arch 2

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## **Tutors**

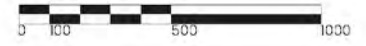
Andre Viljoen



ACCESSIBILITY






Providence Place, Brighton, UK

- Vehicle Route ———
- Blind Alley ■
- One-Way Road ←
- Pedestrian & Cycle Access Only Road ———
- Bus Route ———
- Bus Stop ●












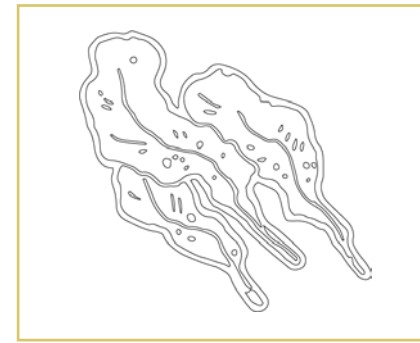
-  Kale
-  Indoor/Outdoor
-  Cool
-  55-75 Days
-  Partial Shade



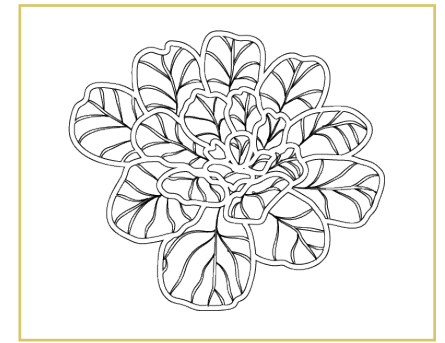
-  Lettuce
-  Indoor/Outdoor
-  Cool
-  4-6 Weeks
-  Partial Shade







-  Mustard Green
-  Indoor/Outdoor
-  Cool/Warm
-  30-40 Days
-  Partial Shade/Sunny








-  Sorrel
-  Indoor/Outdoor
-  Cool
-  6 Weeks
-  Partial Shade



-  Spinach
-  Indoor/Outdoor
-  Cool/Warm
-  1-2 Months
-  Partial Shade

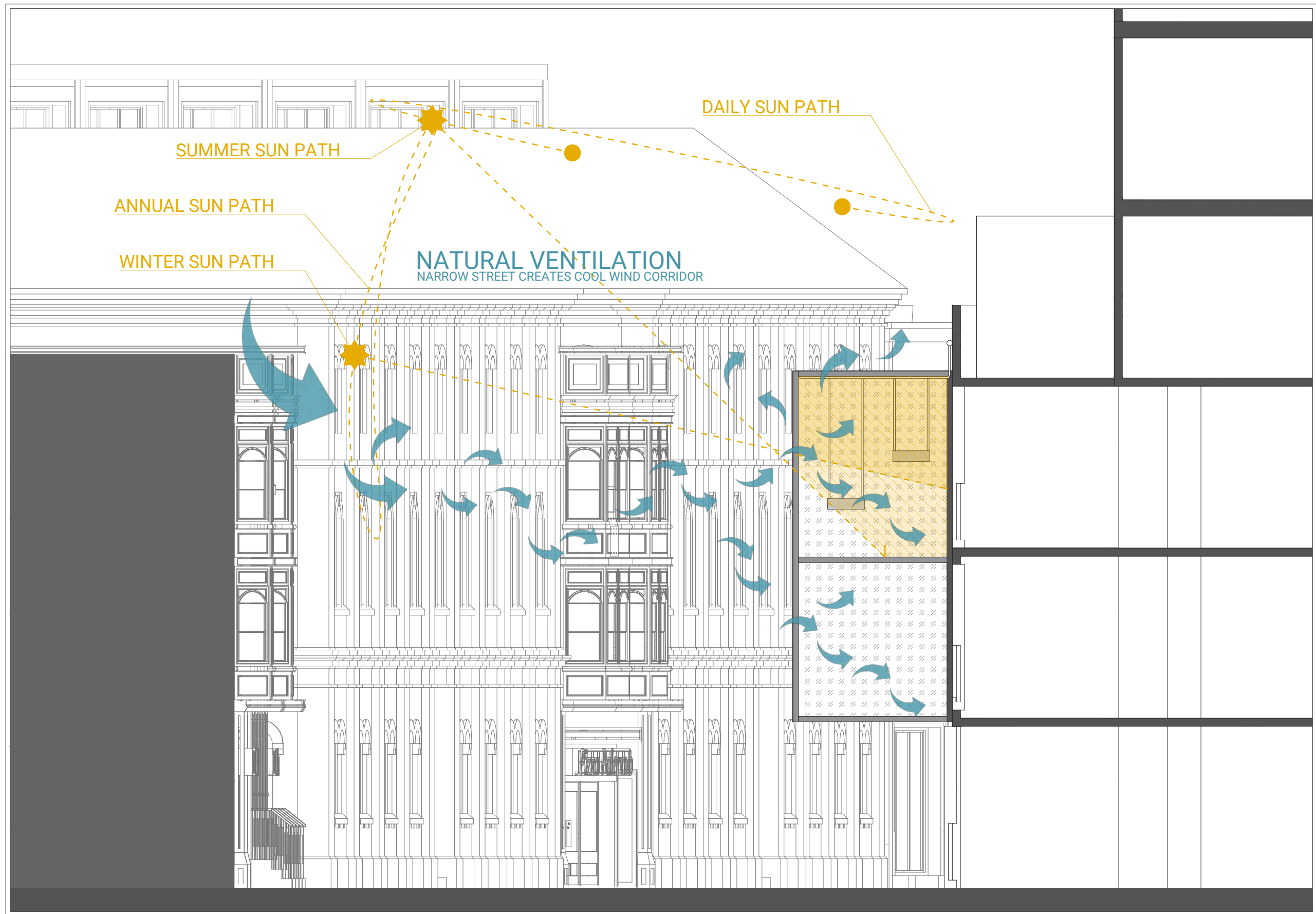
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
HRS	<b>7:30-10:00 AM</b>	<b>7:05-10:00 AM</b>	<b>6:40-10:00 AM</b>	<b>5:45-9:00 AM</b>	<b>5:15-9:00 AM</b>	<b>4:55-8:30 AM</b>	<b>5:10-8:45 AM</b>	<b>5:30-9:30 AM</b>	<b>6:00-9:00 AM</b>	<b>6:30-8:15 AM</b>	<b>7:15-8:00 AM</b>	<b>7:45-8:00 AM</b>
HRS	<b>2h30</b>	<b>2h55</b>	<b>3h20</b>	<b>3h15</b>	<b>4h45</b>	<b>3h35</b>	<b>3h35</b>	<b>4h</b>	<b>3h</b>	<b>2h45</b>	<b>45m</b>	<b>15m</b>

-  CROP
-  LOCATION
-  TEMPERATURE
-  GROWING TIME
-  LIGHT ENVIRONMENT

One year daylighting\_Car Park East Facade

*According to the site location and the amount of light that the east facade receive, I decided to select crops that grow well in shade with a cool temperature. The crops selected can grow in area with access to approximately 2-4 hours of sunlight each day.*

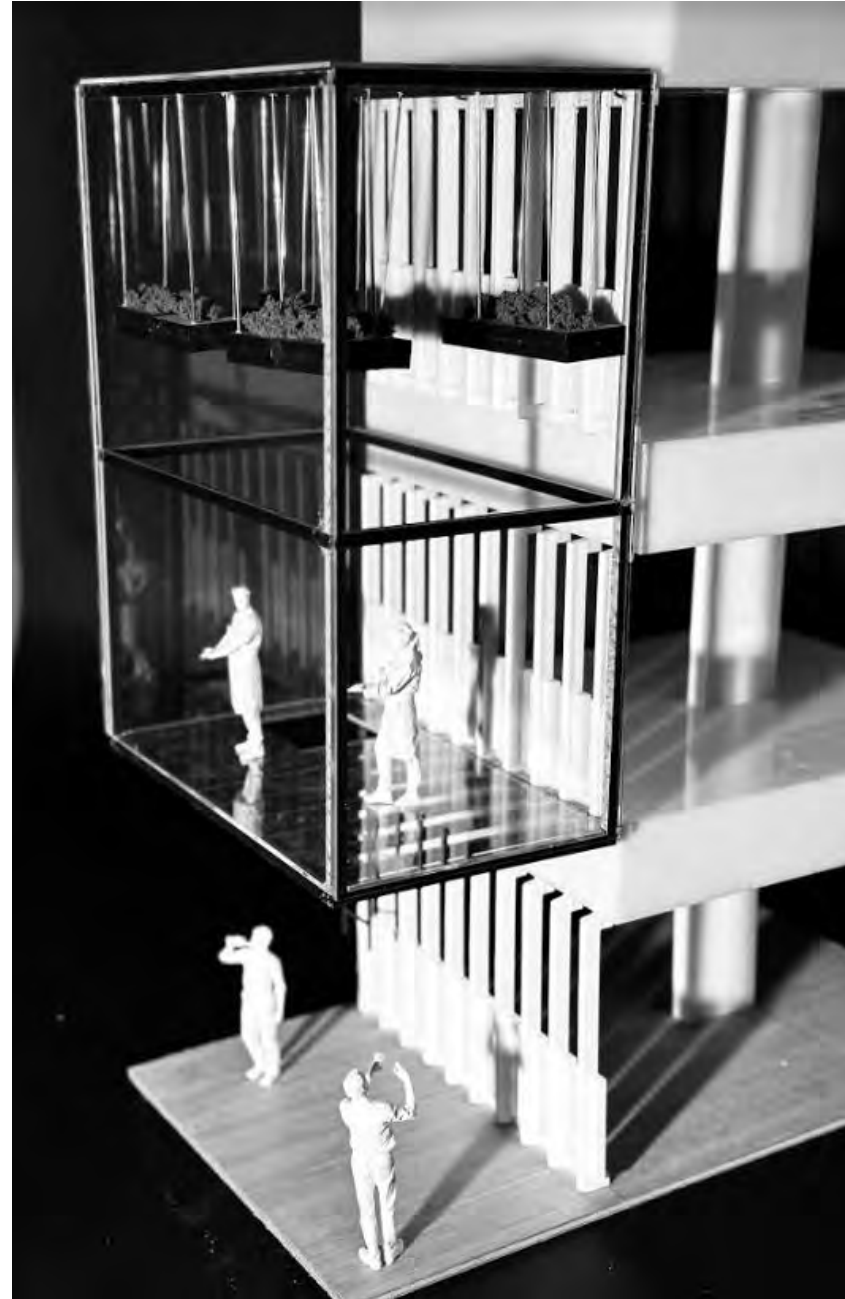
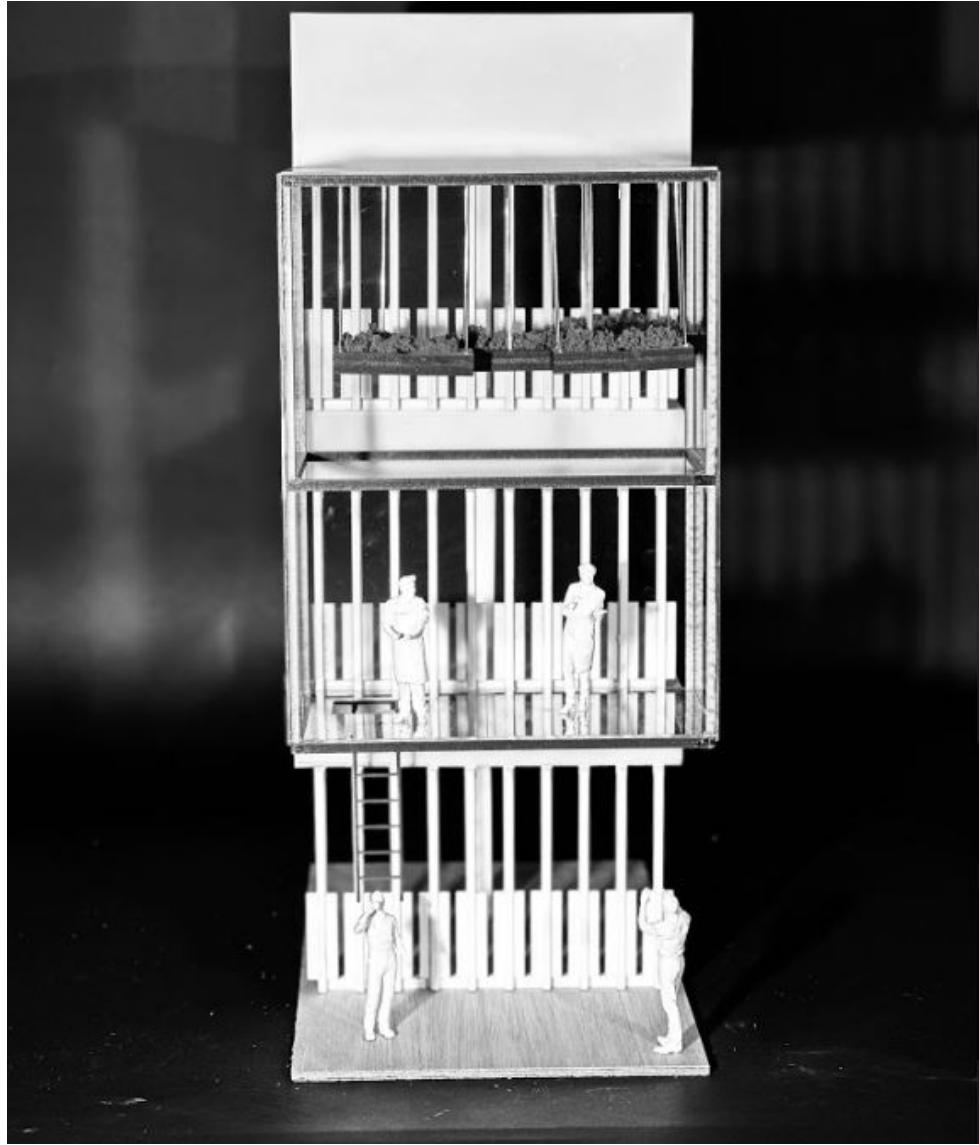
### CROPS SELECTION



**THIRD PROPOSAL ENVIRONMENTAL SECTION**





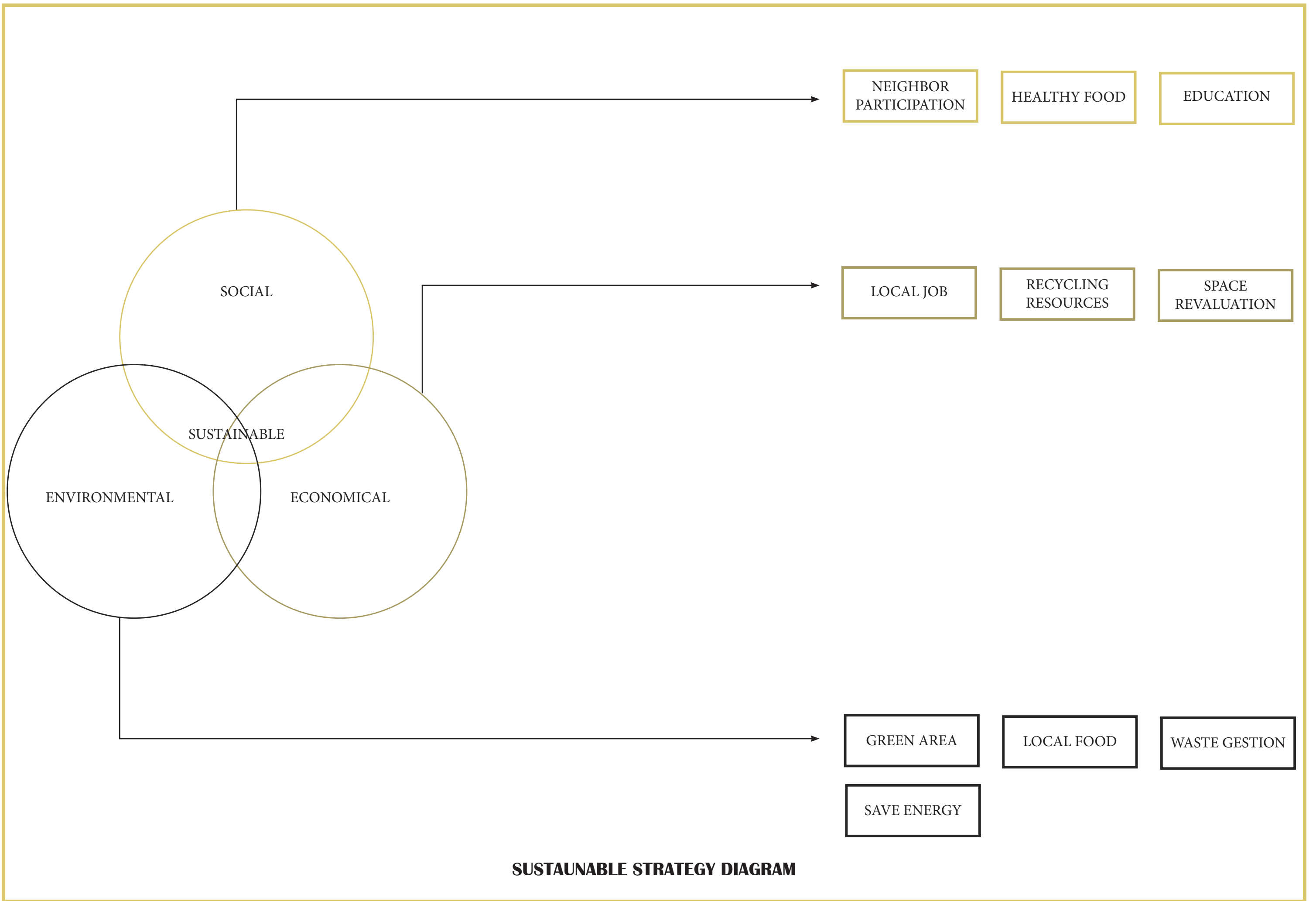


**PHYSICAL MODEL**









NEIGHBOR PARTICIPATION

HEALTHY FOOD

EDUCATION

SOCIAL

LOCAL JOB

RECYCLING RESOURCES

SPACE REVALUATION

SUSTAINABLE

ENVIRONMENTAL

ECONOMICAL

GREEN AREA

LOCAL FOOD

WASTE GESTION

SAVE ENERGY

**SUSTAUNABLE STRATEGY DIAGRAM**

**BIOPHILIC DESIGN:**  
CREATING HEALING  
ENVIRONMENTS

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Mehi Y Diallo  
Studio Design 2  
2022-2023  
Pr Andre Viljoen



## UNDERSTANDING THE PROJECT

The promotion of harmony between people and nature should be a priority for architects. Through our structures, it is critical to spread knowledge about ways to safeguard the environment. In fact, nature has a cure for our ills. This is why I made the decision to create a **herbal medicine hotel**, a place where people can learn about and gain from nature.

This project aims to promote the safe and effective use of herbal remedies for health and wellness while raising awareness as well as understanding of the uses of medicinal plants. Additionally, it will support **circular economy** and highlight the benefits of **urban agriculture** for a **sustainable society**.





**Catherine Lin**  
Taipei, Taiwan  
Pharmacist  
67 years old

I usually expect clean, bright, quiet and wide space. Variety of foods, especially local food.



**Nathan Ackerman**  
Mississippi, USA  
Construction Project  
Coordinator  
24 years old

The basic expectations I would have when traveling would be to be able to have a clean, well kept room. Activities that I would want from the hotel would be that the hotel had a full gym, when traveling it can be hard to maintain a consistent to a routine without a full gym.



**Laurence Djan**  
Maryland, USA  
Project Manager  
29 years old

My expectations for the hotel as a traveler will be the following: great customer service, comfort, cleanliness, free breakfast, 24h room service, and activities from the hotel. Yoga is something important for me.



**Wilfredo Chicoma**  
Lima, Peru  
General Manager  
56 years old

I expect a very cozy hotel with restaurant service, bar, sauna, heated pool, good staff, and close to tourist places.



**Emanuel Yale**  
Abidjan, Ivory Coast  
Professional Footballer  
22 years old

As a traveler to Brighton, UK, my basic expectations in terms of hotel choice will be: The cost, a tourist service to have assistance to enjoy the sites of the city, a room that offers ease of movement.

In terms of activities within the hotel, my eyes will be on: relaxation with a SPA, a swimming pool, a lounge.



**Aminata Ouattara**  
Rabat, Morocco  
Student  
22 years old

For a stay in Brighton, my basic expectations for a hotel are hotels that are not too expensive, have an entertainment area (pool, spa), beautiful, pleasant staff, not far from tourist sites.



**Israel Sagbohan**  
Paris, France  
Lawyer  
27 years old

The best option will be a hotel close to transport, not very far from the airport (35-40 min) and ideally in the city center to take advantage of amenities (restaurants, pubs, bars, etc.). Regarding activities, a gym, a spa, and a tourist service will do the trick.



**Aziza Hamid**  
Manchester, Uk  
Travel Agent  
47 years old

Location, reviews, distance from city centre, good price are my expectations. Yoga, nature exploring, and cultural activities are my favorite activities.

## INTERVIEW

*Consider yourself searching for a hotel for your vacation in Brighton, UK. As a traveller, what amenities do you look for when selecting a hotel? What types of activities do you aspire that the hotel you picked will offer?*

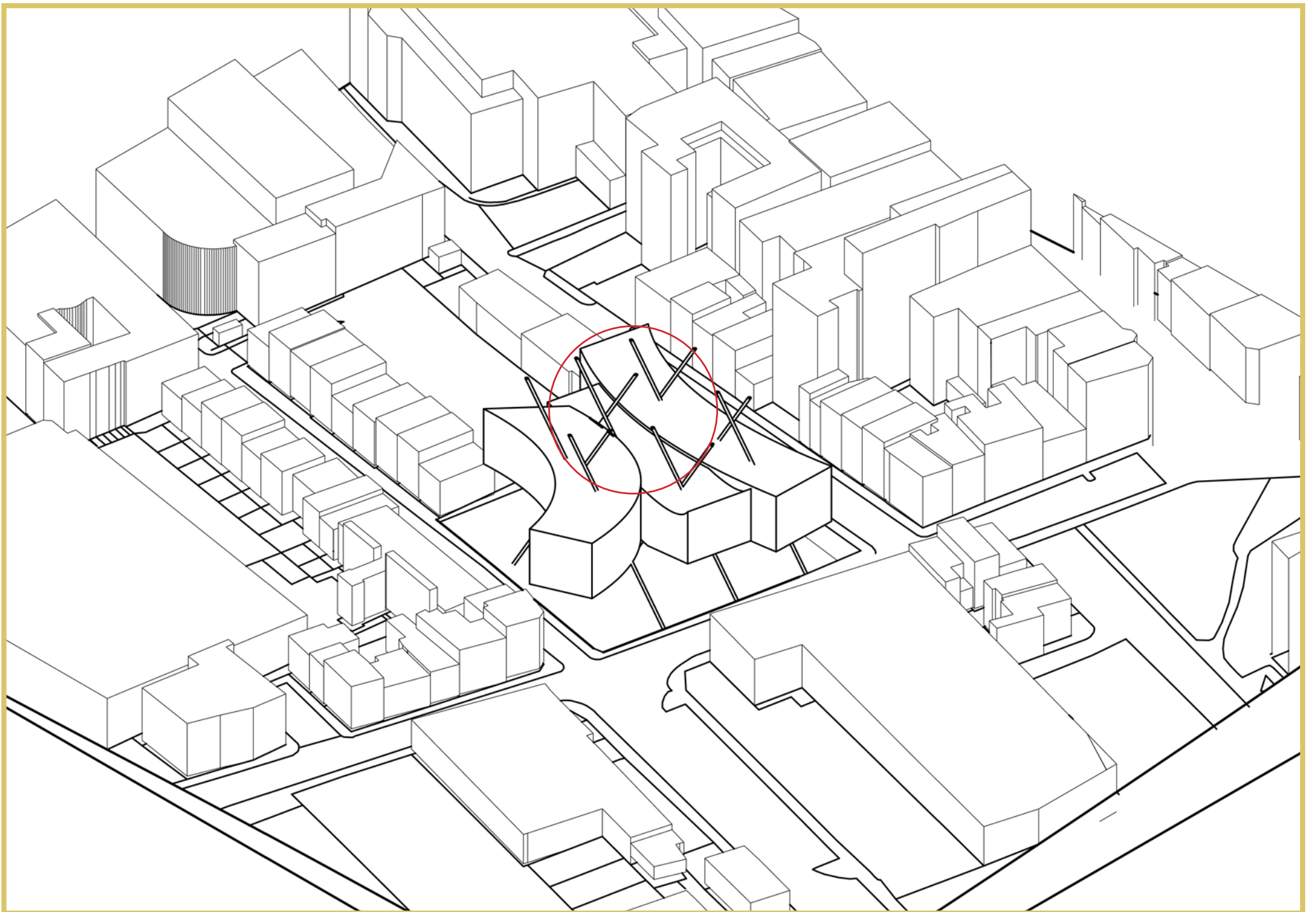
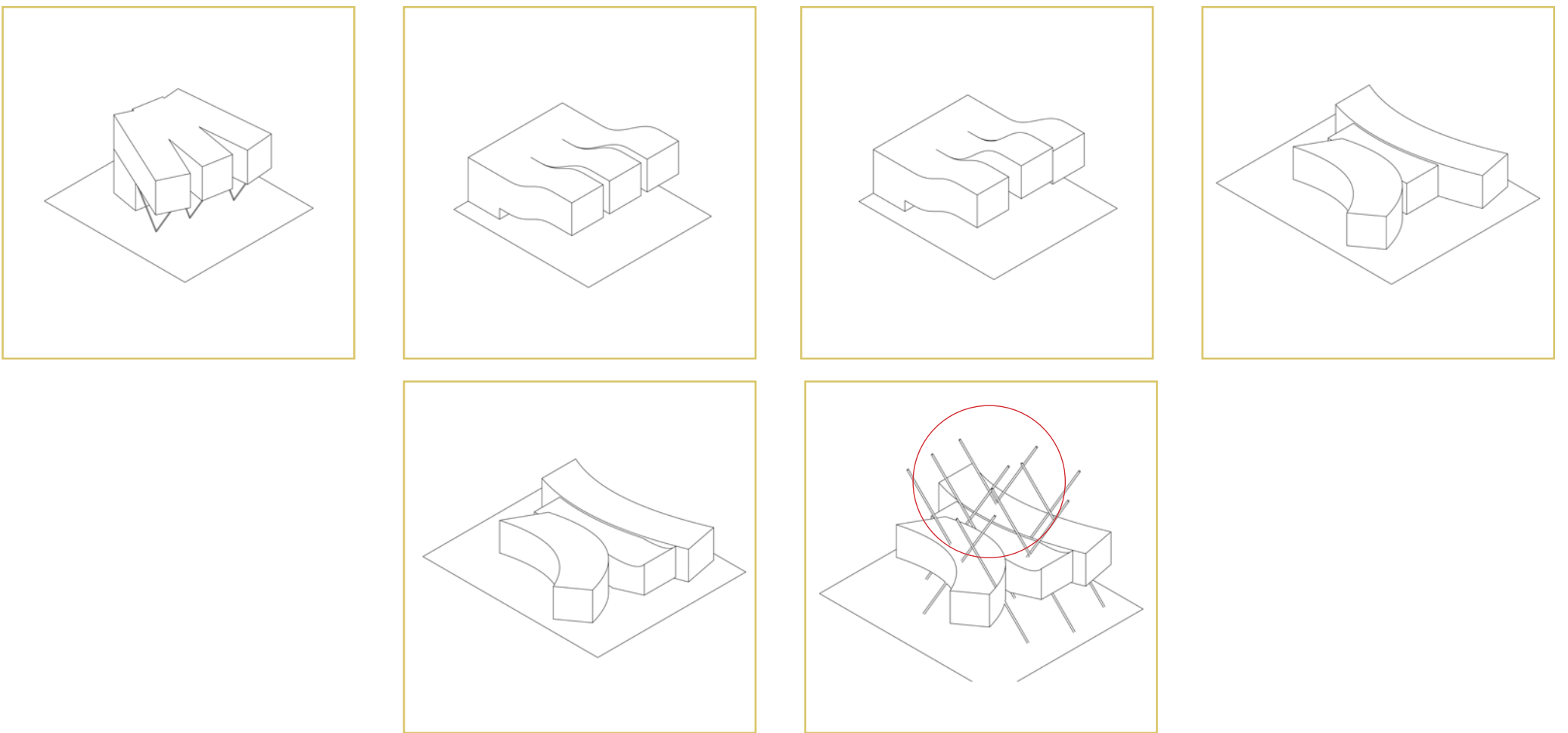


	BAR	SPA	Restaurant	Disable Access	Fitness Center	Herbal Medicine	STARS
Royal Albion Hotel	✓	✗	✓	✗	✗	✗	★★★★☆
YHA Brighton Hotel	✓	✗	✓	✓	✗	✗	★★★★☆
Queen's Hotel	✓	✓	✓	✓	✓	✗	★★★★☆
Jurys Inn	✓	✓	✓	✓	✓	✗	★★★★☆
Old Ship Hotel	✓	✗	✓	✓	✓	✗	★★★★☆
Hotel du Vin & Bistro	✓	✗	✓	✗	✗	✗	★★★★☆
Brighton Harbour Hotel & Spa	✓	✓	✗	✓	✓	✗	★★★★☆
Smart Brighton Hotel	✗	✗	✗	✗	✗	✗	★★★☆☆
Travelodge Brighton Seafront	✓	✗	✓	✓	✗	✗	★★★★☆
Grand Hotel	✓	✗	✓	✓	✗	✗	★★★★☆
Hilton Metropole Hotel	✓	✓	✓	✓	✓	✗	★★★★☆
The Granville Hotel	✓	✗	✓	✓	✗	✗	★★★★☆
Cecil House Hotel	✗	✗	✗	✗	✗	✗	★★★☆☆
The Queensbury Hotel	✗	✗	✓	✗	✗	✗	★★★☆☆
Beach Hotel	✗	✗	✓	✗	✗	✗	★★★☆☆
West Beach Hotel	✓	✗	✓	✗	✗	✗	★★★★☆
Holiday Inn Brighton Hotel	✓	✗	✓	✓	✗	✗	★★★★☆
King's Hotel	✓	✗	✓	✗	✗	✗	★★★★☆

**EXISTING HOTELS  
&  
PROGRAMS**

**KING RD/REGENCY SQUARE**



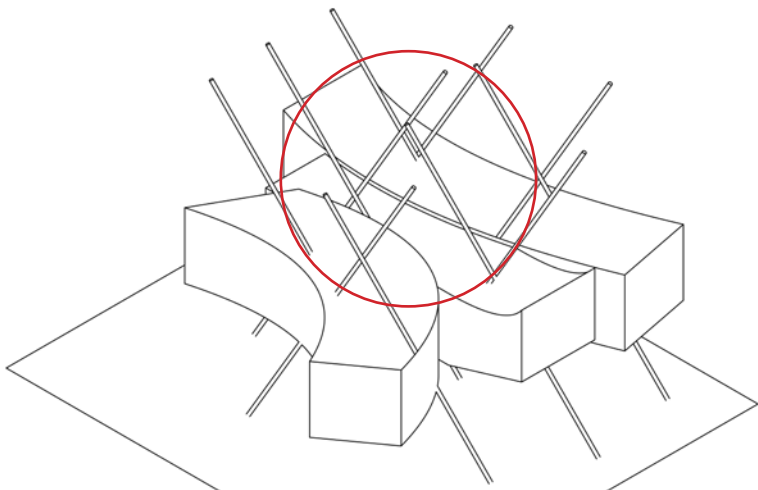


It is critical for an architect to understand what he needs to design and where he needs to design it. Which existing realities will he confront? What context does he fit into, and what characteristics does he have? However, I was looking for a unique way to express myself, so I took a different approach to the design process. Indeed, I was tempted by the idea of creating a design entirely from my imagination. When it comes to hotels, I envision an imposing and impressive structure that will not leave anyone indifferent. I think more about Zaha Hadid, Frank Gehry, Dubai... As a result, I begin to create a shape that corresponds to my idea. Regardless, it was time to return to reality and begin thinking like a normal architect. Instead of erasing the fruits of my imagination, I decided to take one element from it and develop it to respect the concept of **circular economy**. It is important to consider certain parameters for the smooth running of a design, but that does not mean that I will give up on my ideas of what a hotel should look like.

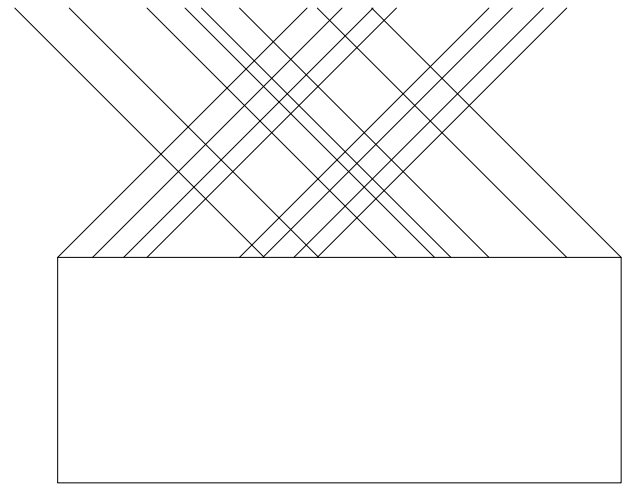
## DESIGN PROCESS

PRE-DESIGN PHASE\_ABSTRACT IDEA

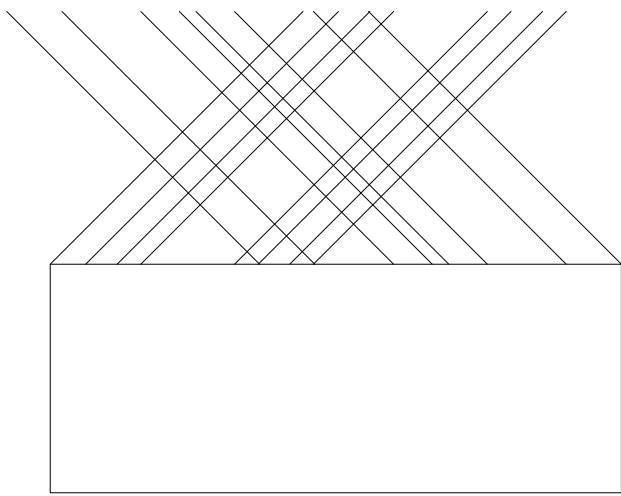




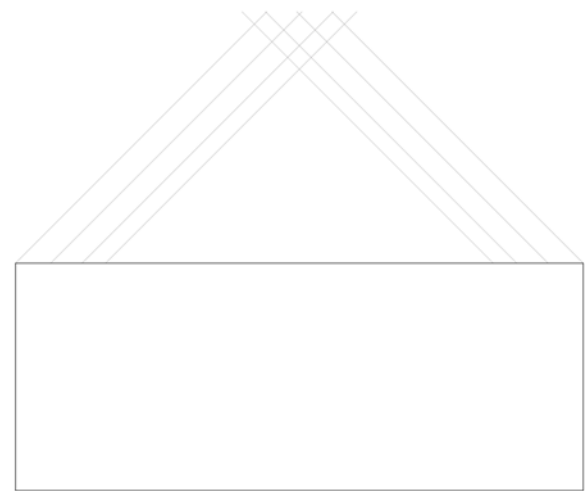
Creative idea represented with randomness, disorder, and unpredictability.



Selection of most interesting element.



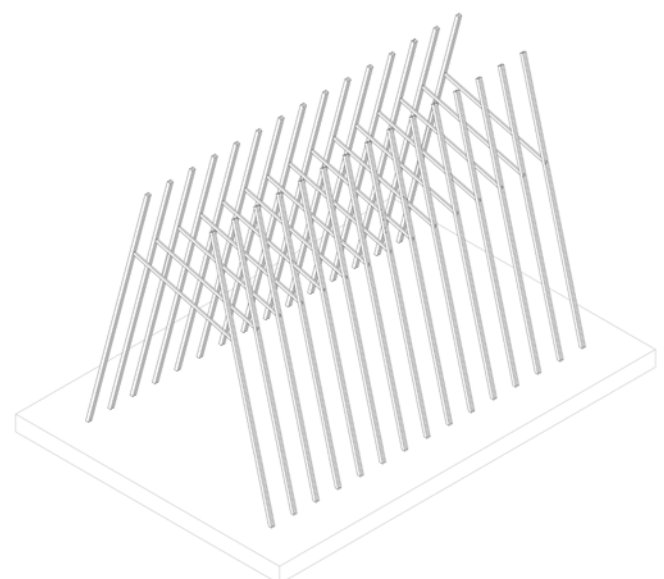
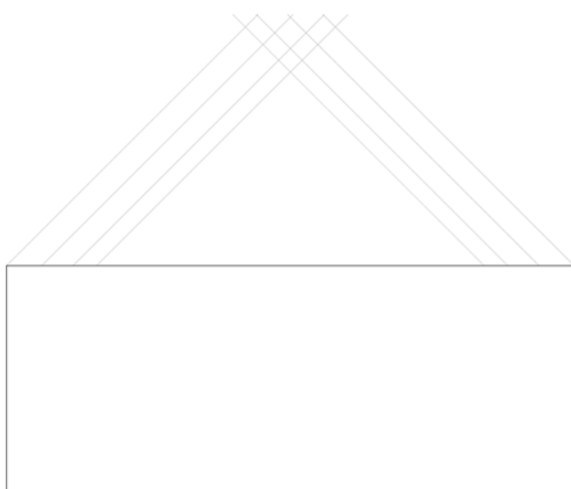
Seeking order by cleaning the drawing



Getting a shape that can generate an instantaneous experience of architecture

“The ability to see order in chaos is called creativity”

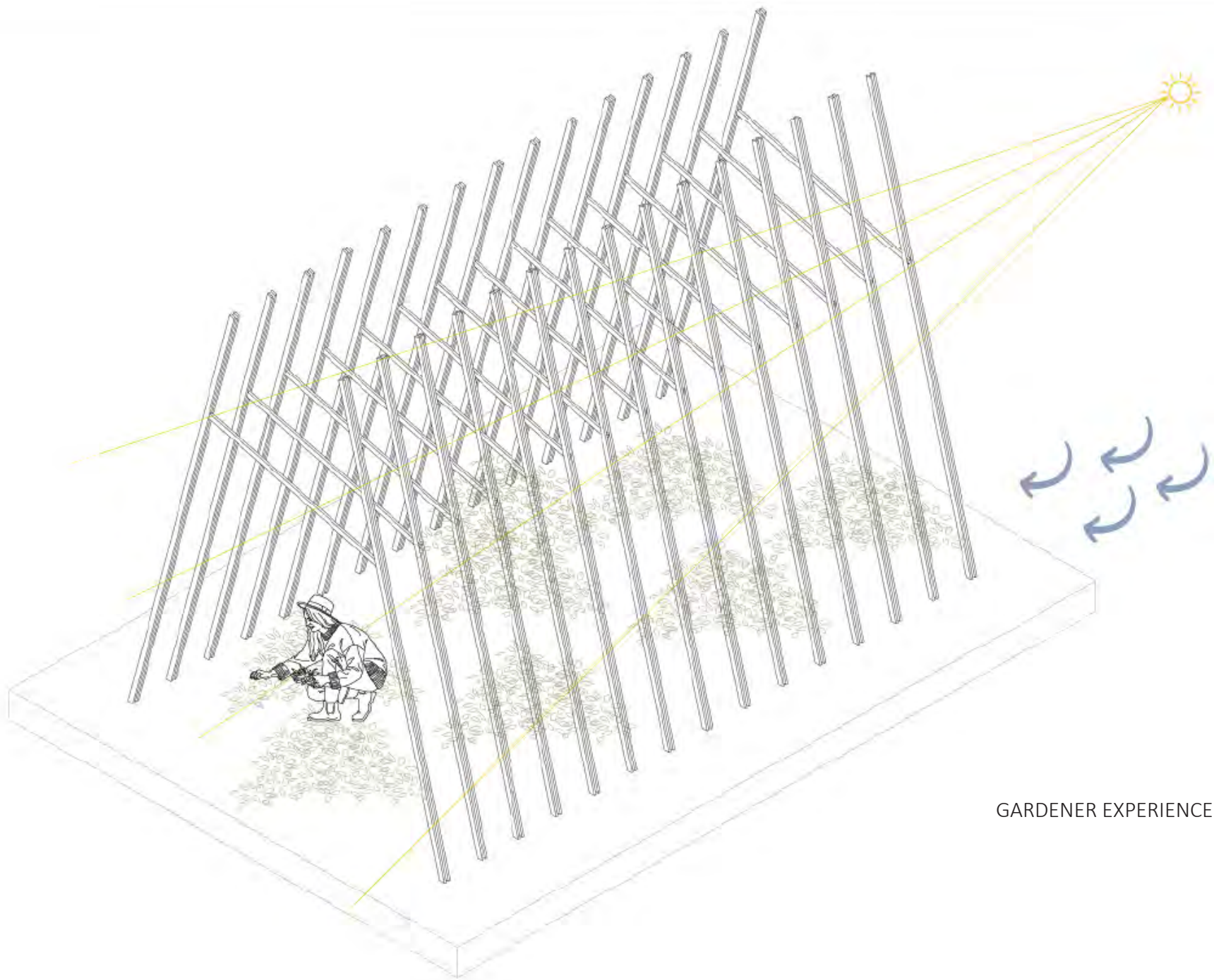
Simon Sinek



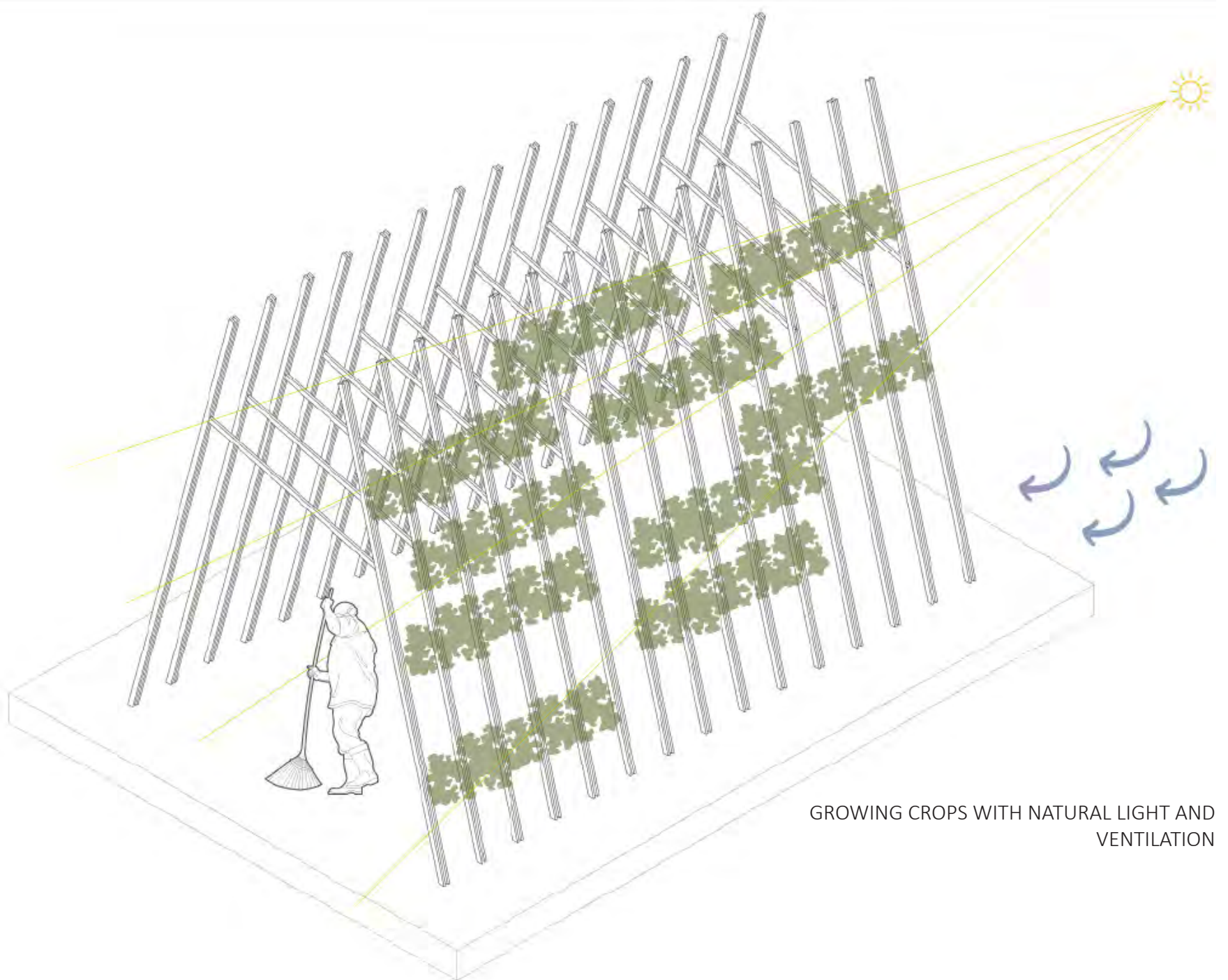
From randomness, disorder, and unpredictability, I was able to get what I called a conceptual object that respect the characteristics of order. The next phase is to make some testings and see how this object can be developed and generate an experience of architecture. Also, How it will meet the social, environmental, and economical requirements of sustainability.

## DESIGN PROCESS

### PRE-DESIGN PHASE



GARDENER EXPERIENCE

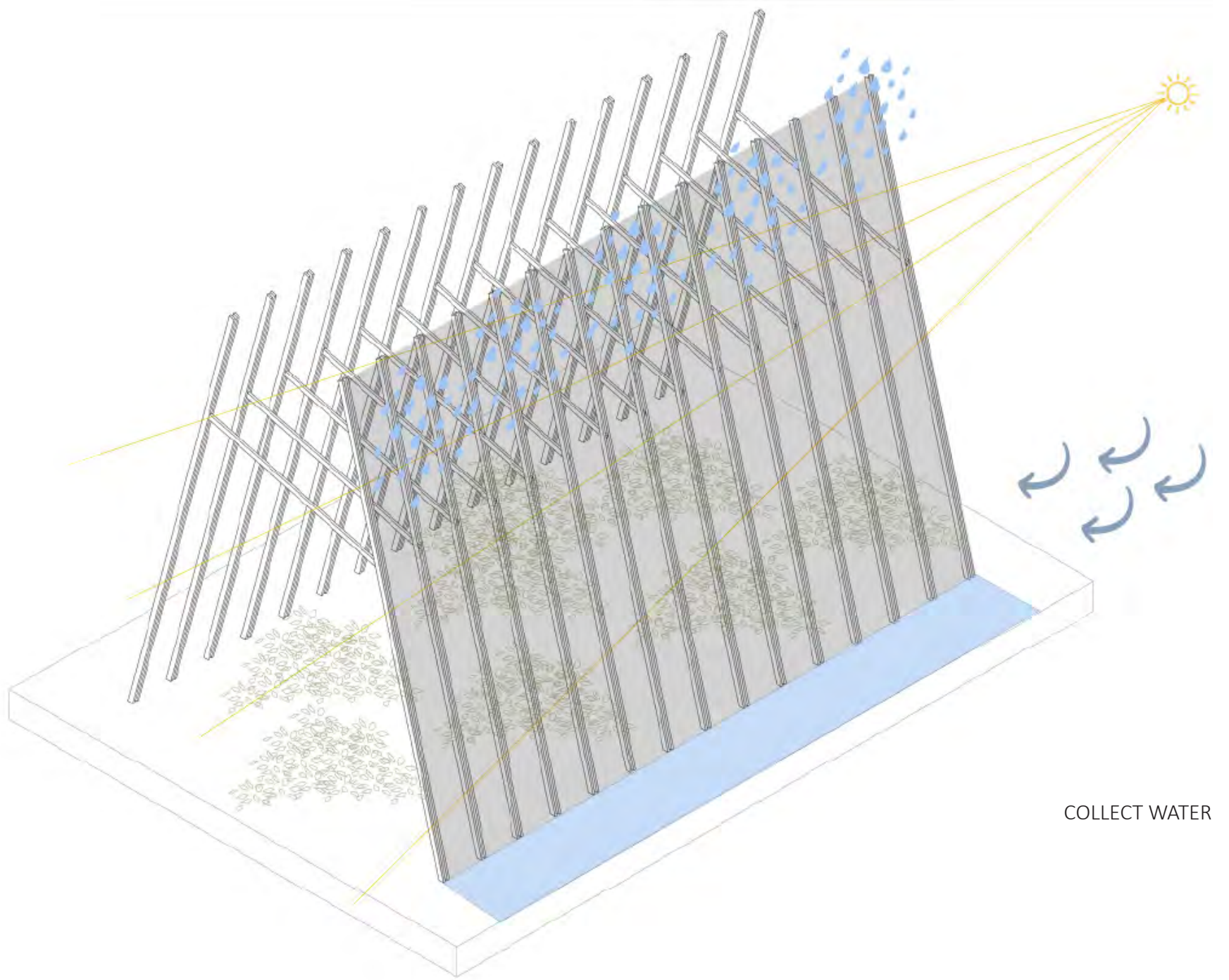


GROWING CROPS WITH NATURAL LIGHT AND VENTILATION

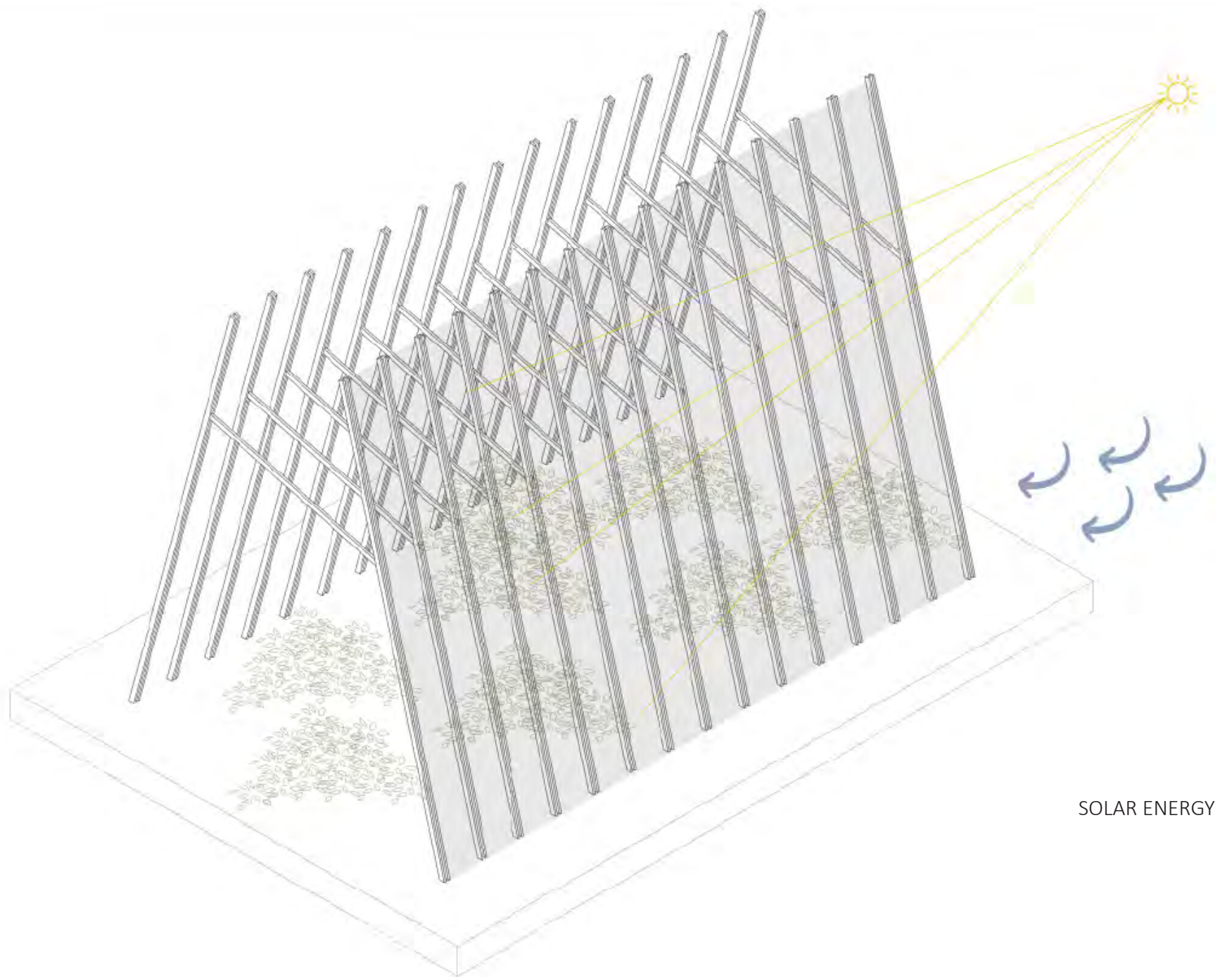
**DESIGN PROCESS**

PRE-DESIGN PHASE





COLLECT WATER

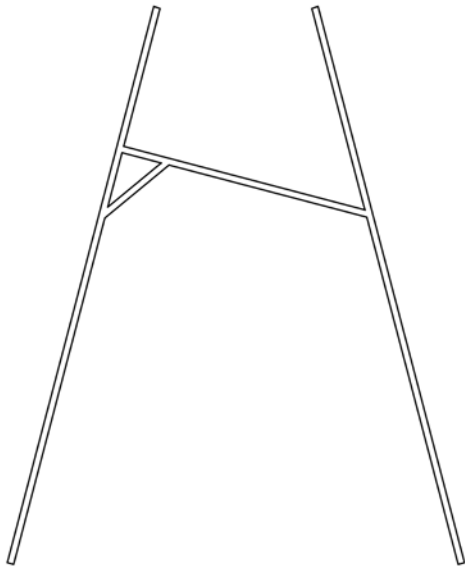


SOLAR ENERGY

**DESIGN PROCESS**

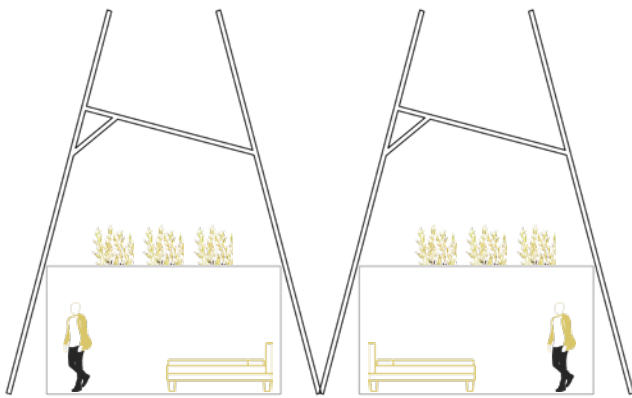
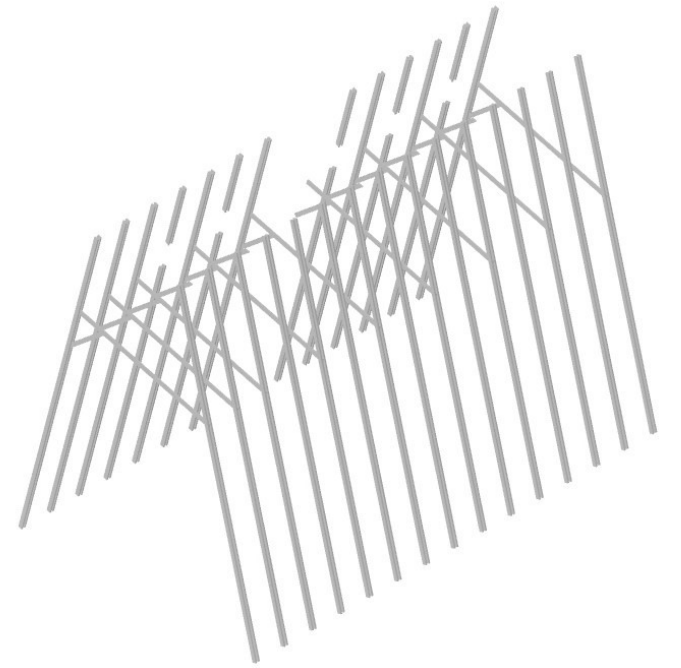
**PRE-DESIGN PHASE**





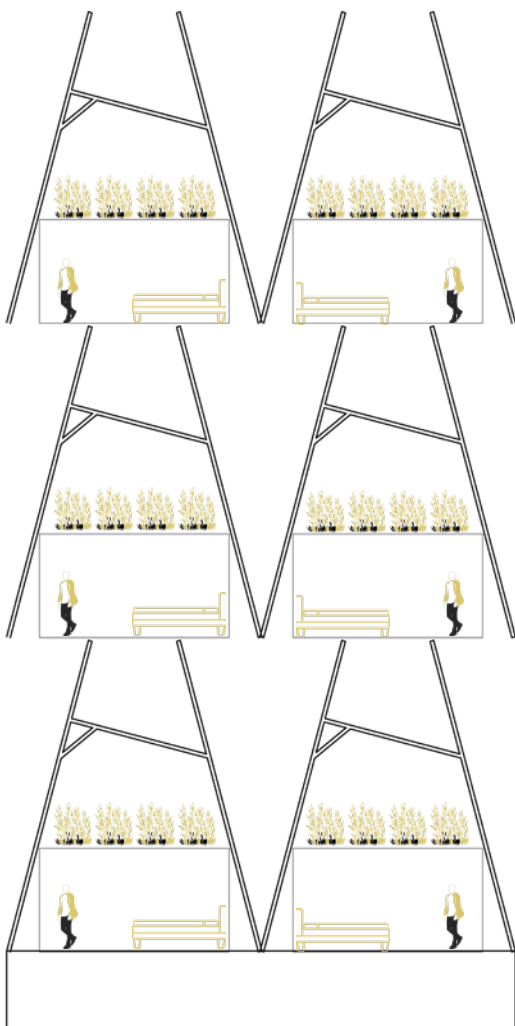
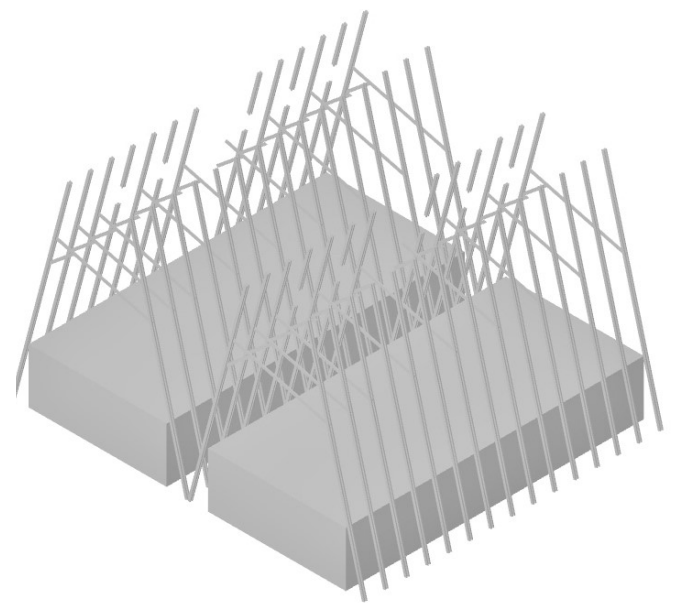
**CONCEPTUAL OBJECT**

The goal is to test different configurations in order to get a workable form for the design



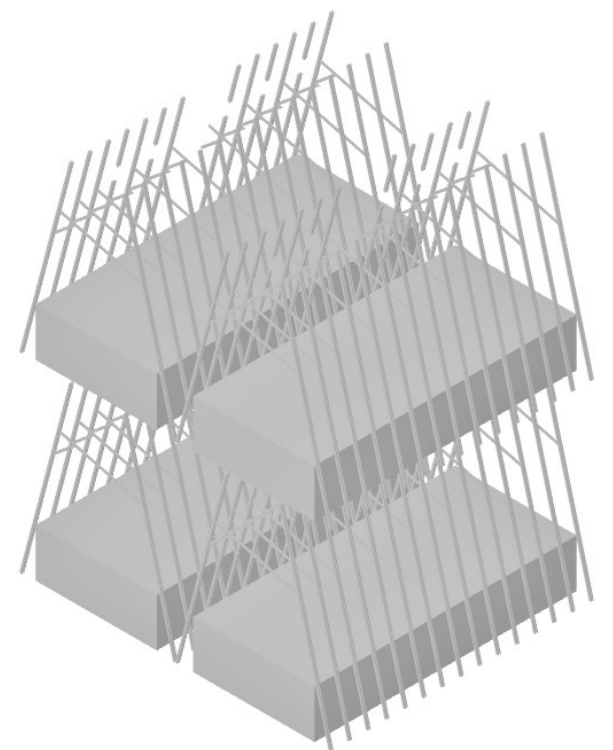
**CONFUGURATION 1**

The conceptual object work with the different strategies of sustainability (see pre-design phase). This configuration is workable since it's pretty much a representation of the conceptual object attached to modules.



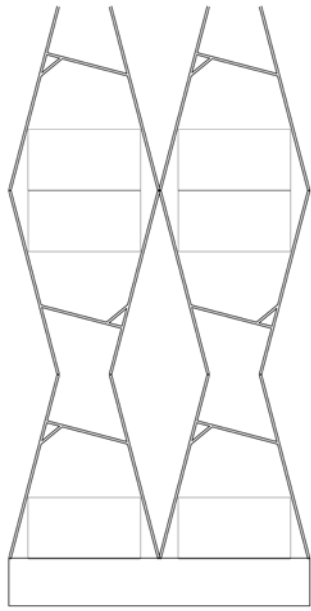
**CONFUGURATION 2**

By overlapping the object, we start seeing a form. However, this configuration could face a lot of issues, such as shadow, structure, and circulation.



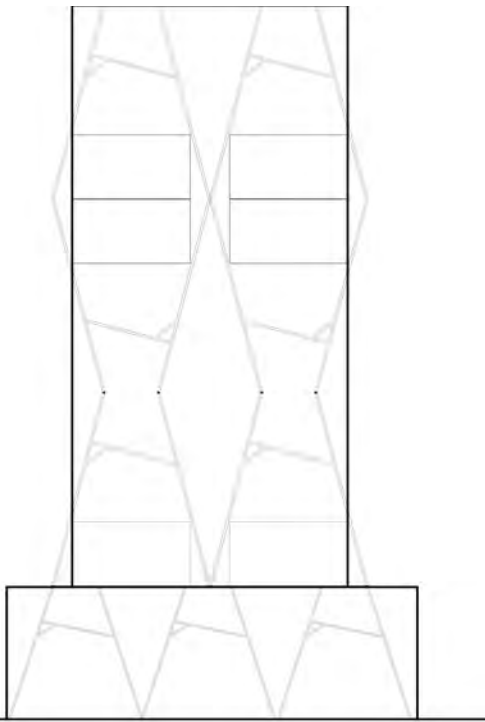
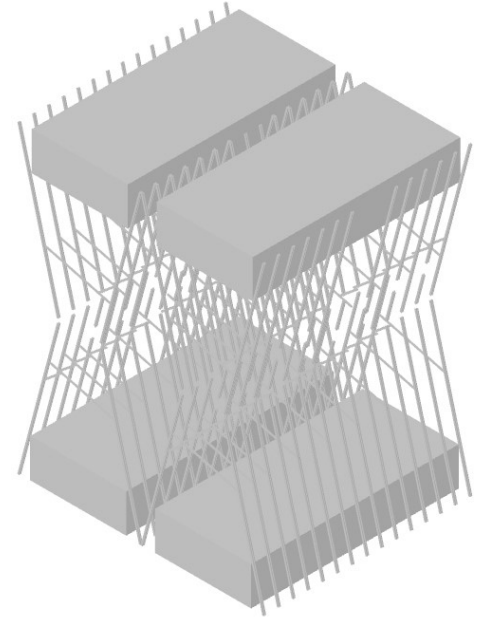
**DESIGN PROCESS**

**TESTING**



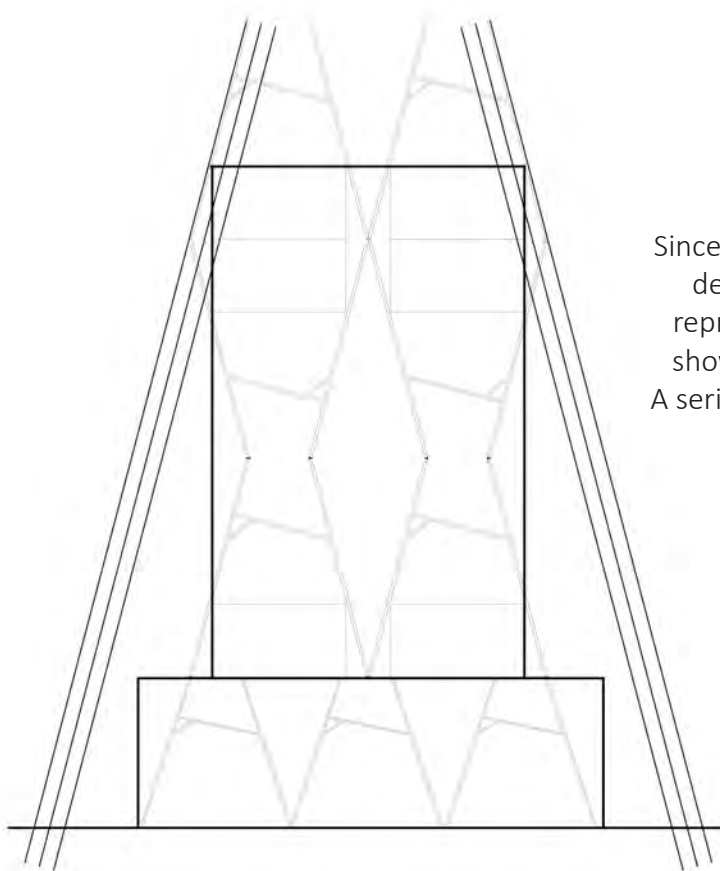
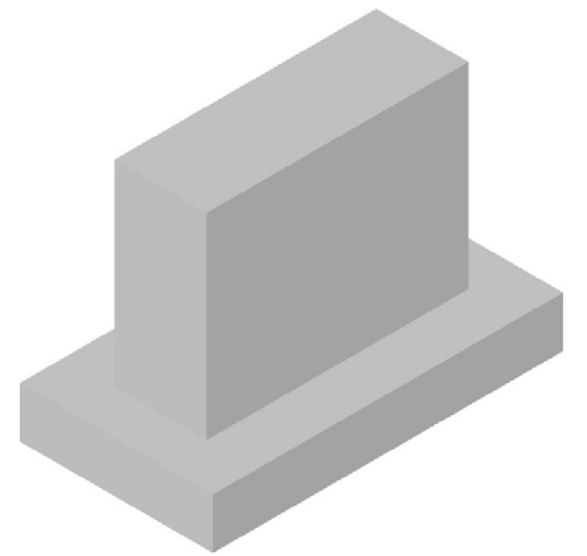
*CONFUGURATION 3*

By flipping the objects and overloping them, I was looking for another design that could facilitate my form. I found this confuguration really interesting, and decided to develop it.



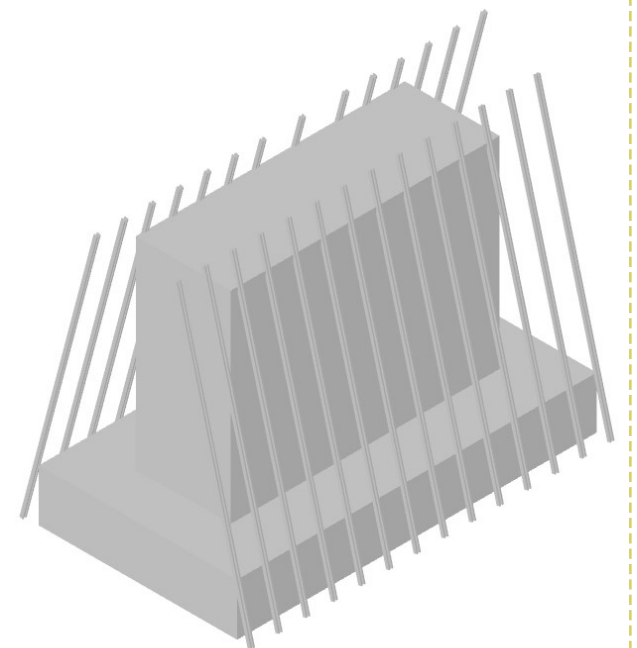
*CONFUGURATION 4*

At this stage, instead of having separated module held by the structure, I decided to have a full block that will cover the structure I got in the previous phase to facilitate its compliance with the city's context.



*CONFUGURATION 5*

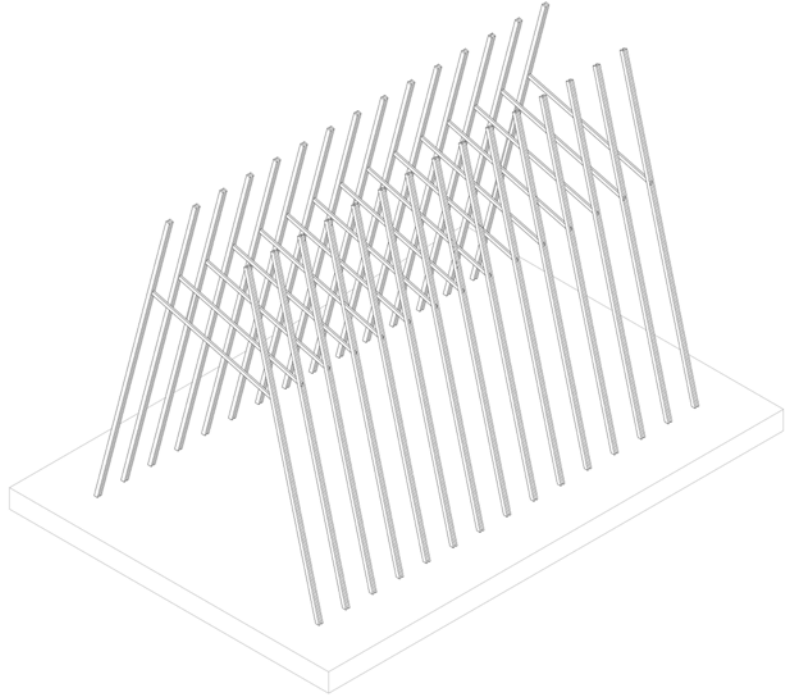
Since the conceptual objects is workable for sustainable design, I wanted to make it visible in my design by representing it at the outside. The final configuration show how the conceptual object turn into a building. A serie of drawings is needed to prove the workability of this design.



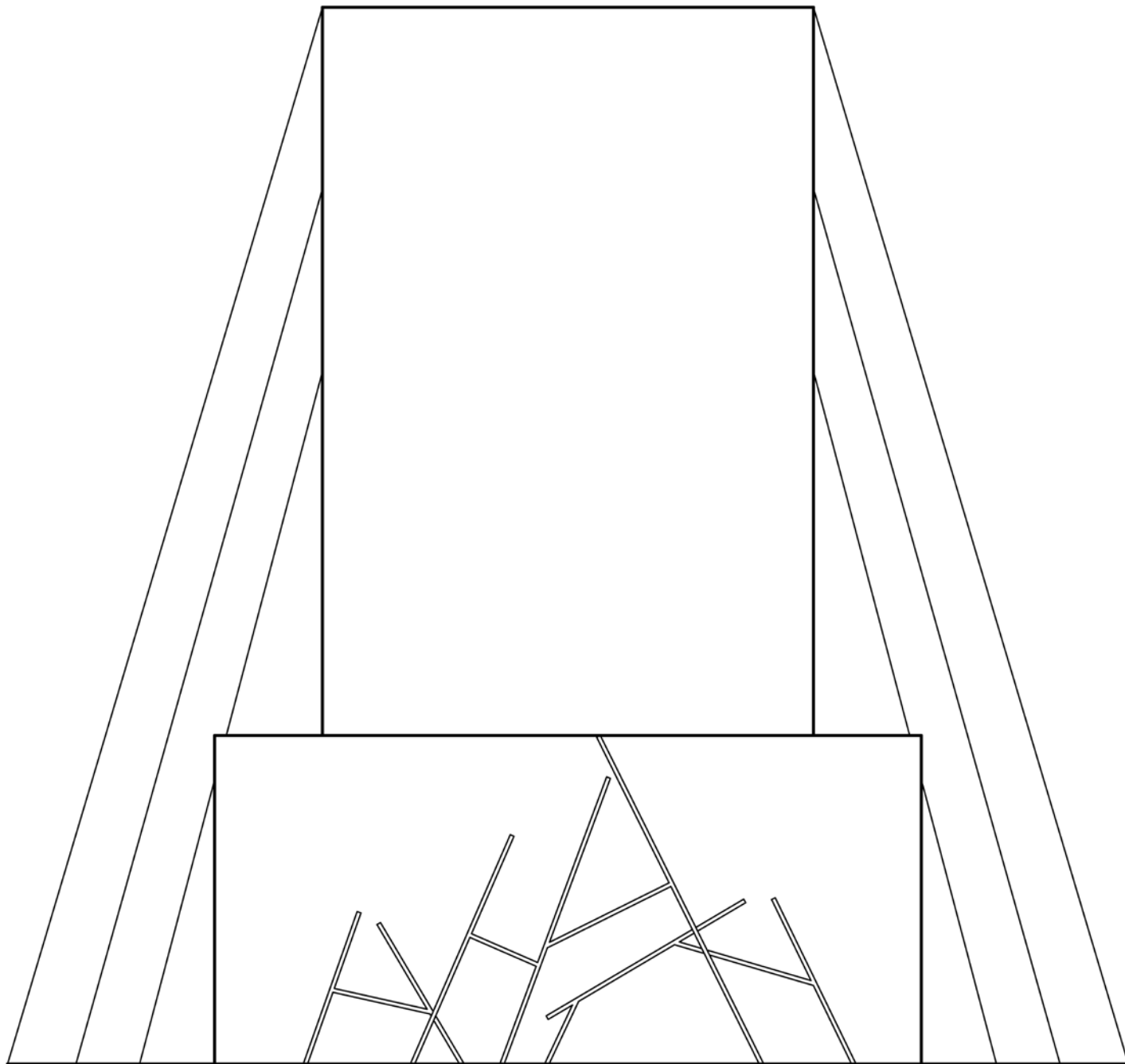
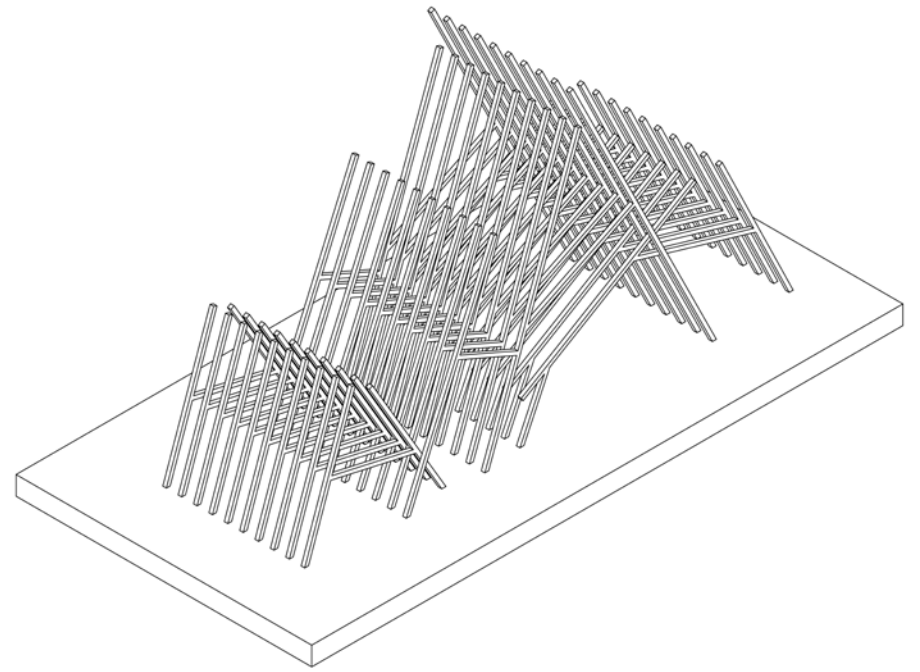
**DESIGN PROCESS**

**TESTING**

CONCEPTUAL OBJECT



DEVELOPED VERSION



INSERTING THE OBJECT INTO THE DESIGN

Due to a lack of space, having the conceptual object everywhere could create different issues in the design (circulation, narrow spaces...). Consequently, I made the decision to develop the object into something more architectural and use it as a structure to grow crops inside the proposal. Instead of having the conceptual object as a building structure, now it will serve as a growing structure for plants.

## DESIGN PROCESS

### DECISION TAKING AFTER TESTINGS

FINAL DRAWINGS

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RENDERINGS



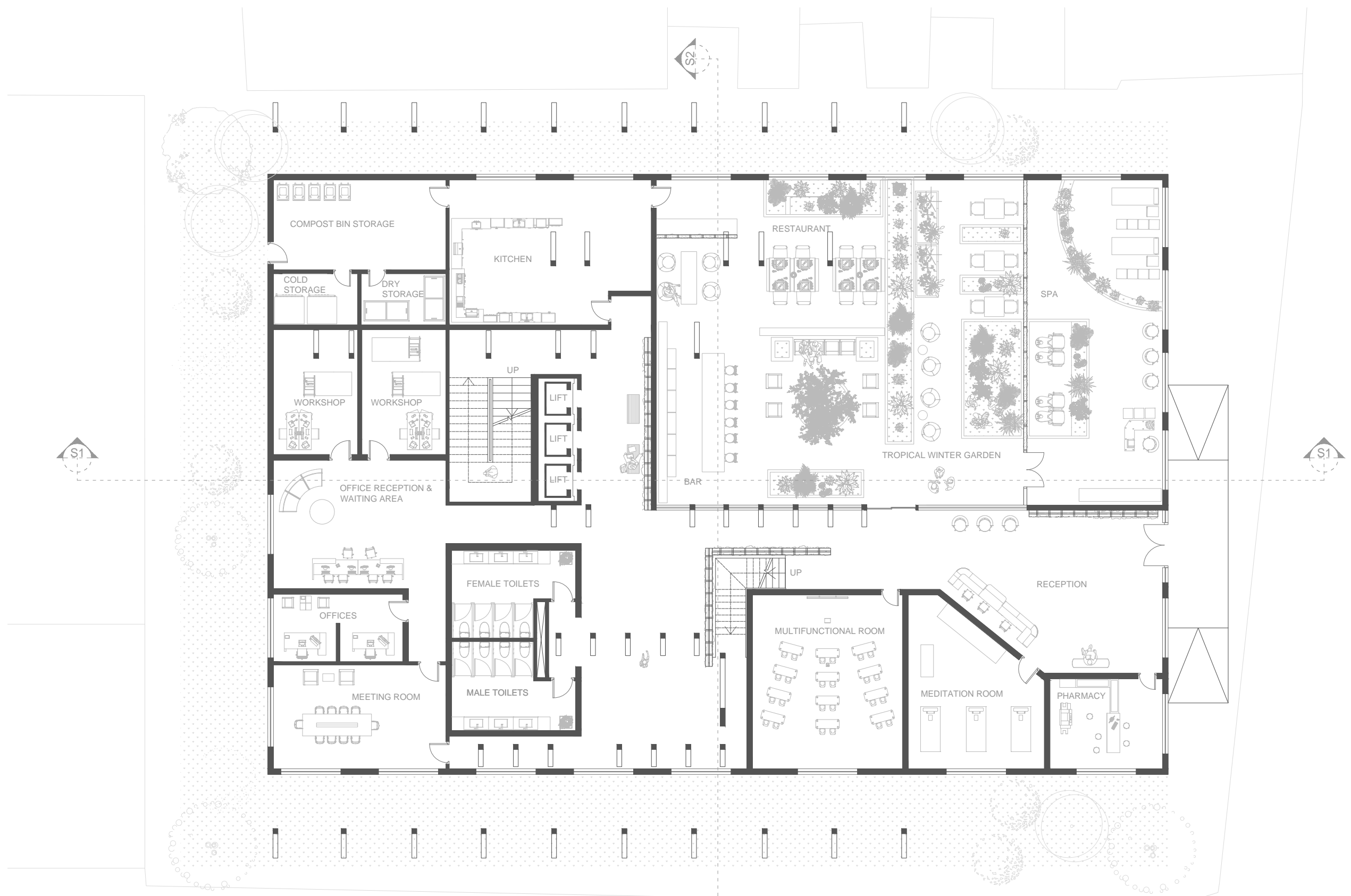
SITE PLAN



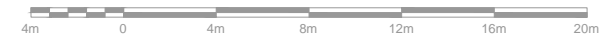


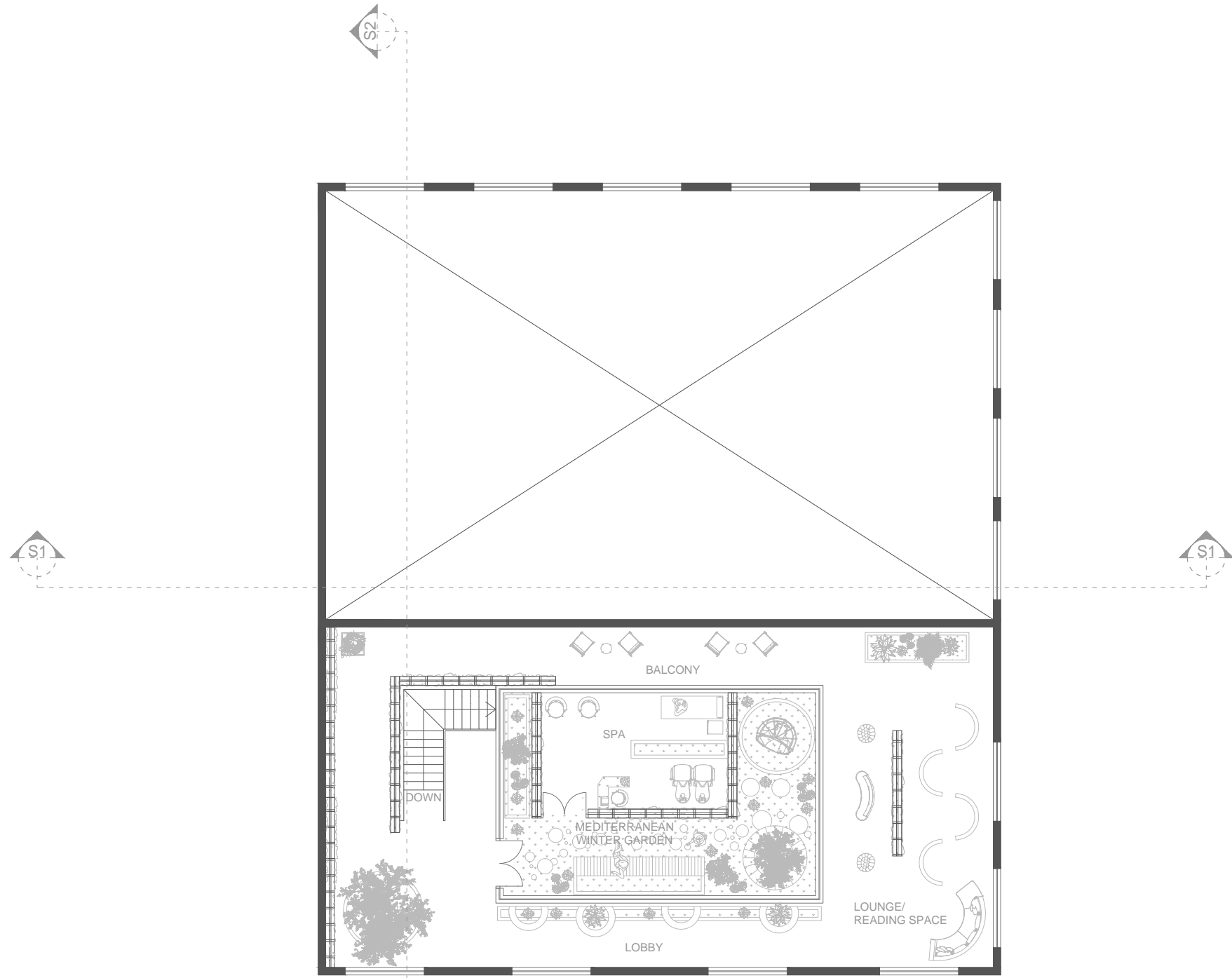


BASEMENT FLOOR PLAN



GROUND FLOOR PLAN

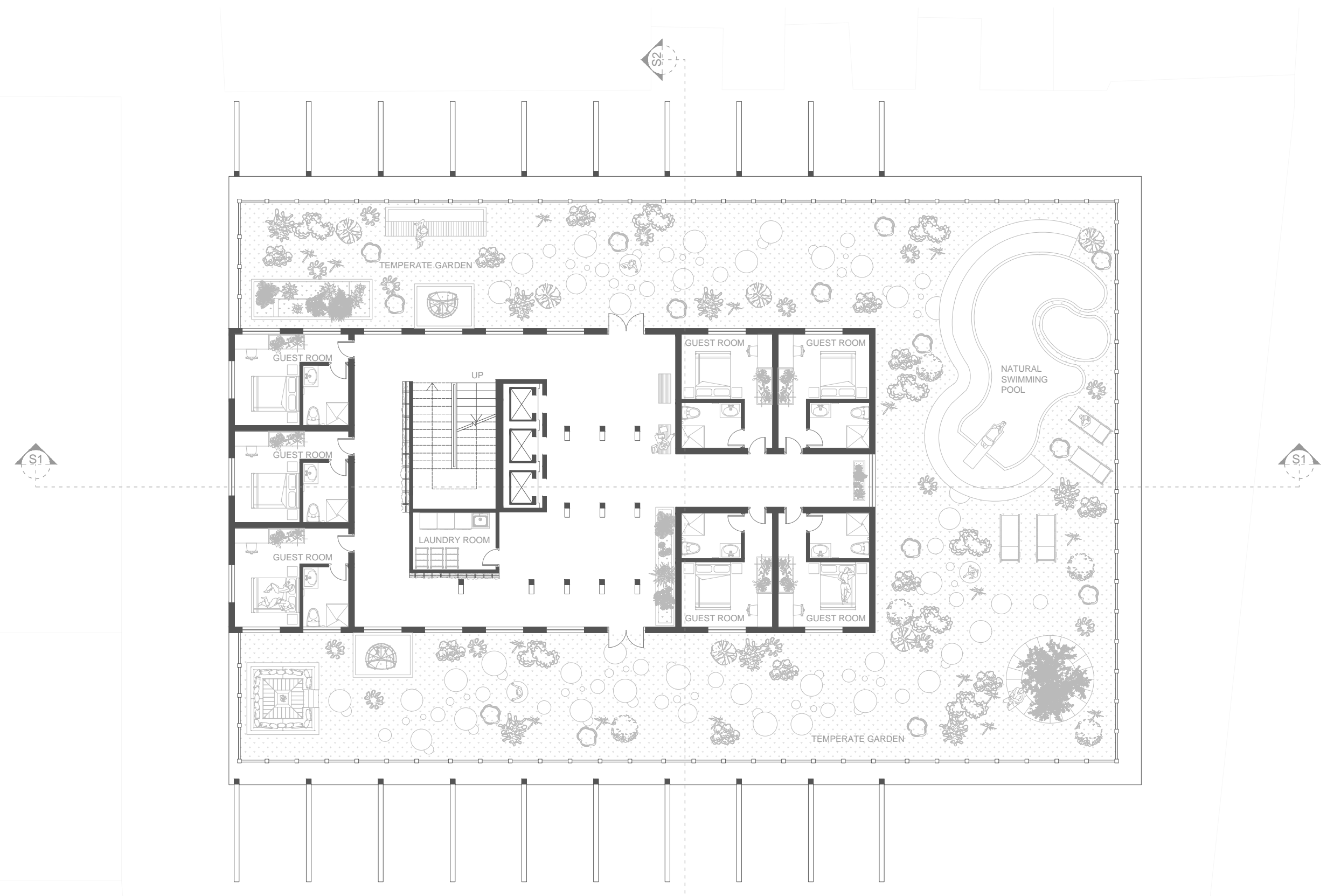




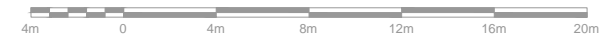
MEZZANINE FLOOR PLAN

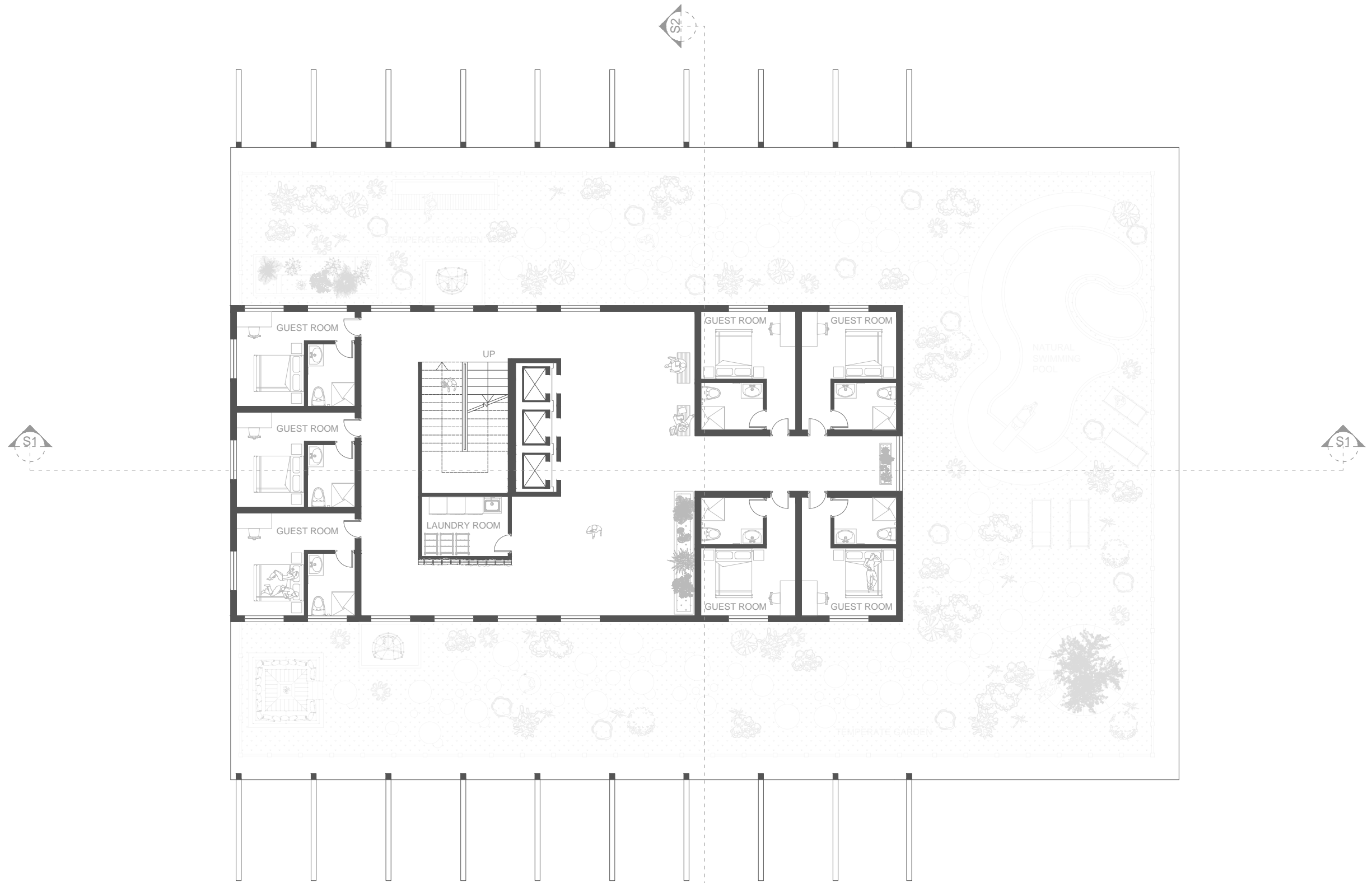






FIRST FLOOR PLAN

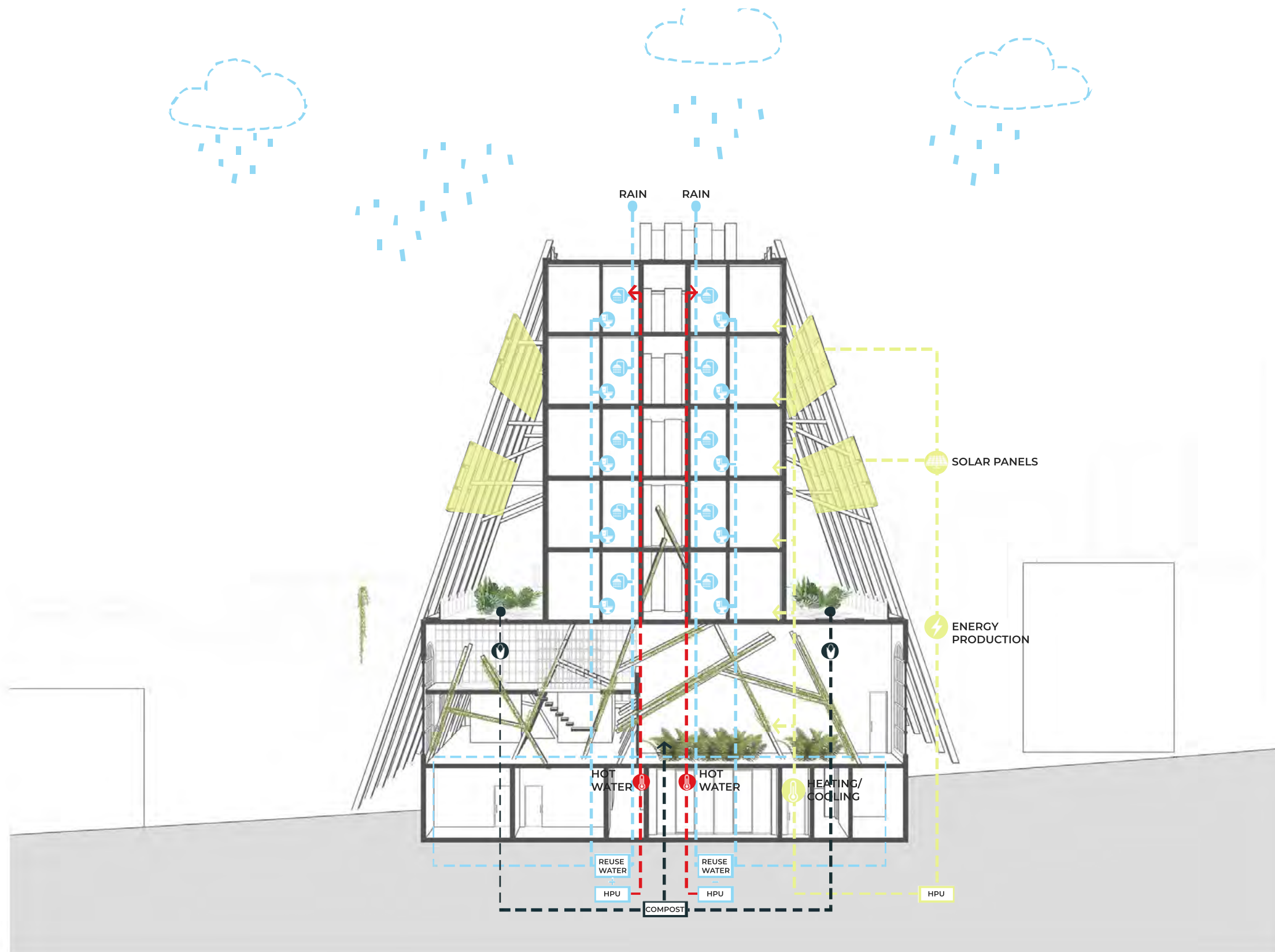




SECOND, THIRD, FOURTH, FIFTH FLOOR PLAN

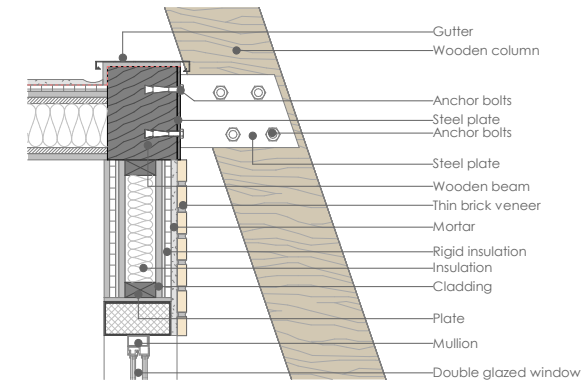
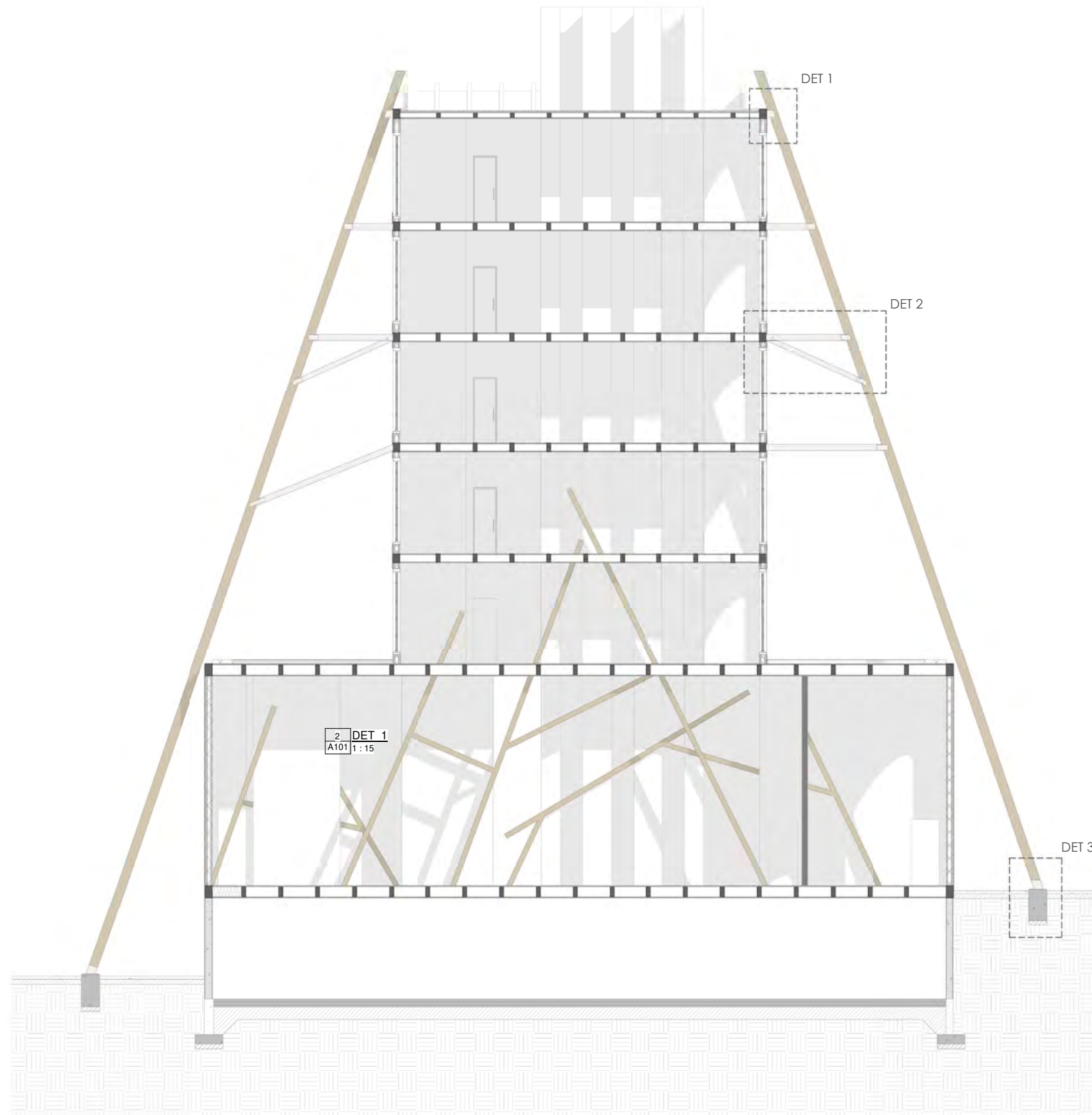




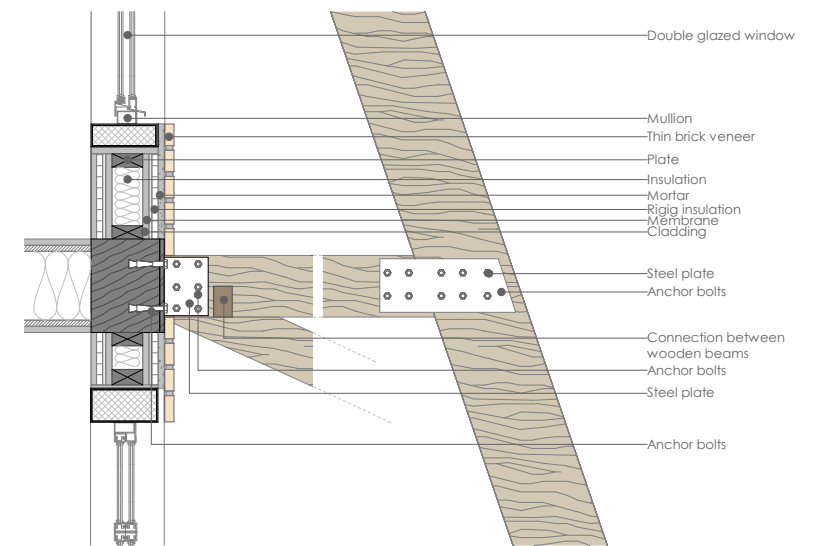


SECTION 2-2 (ENVIRONMENTAL SECTION)

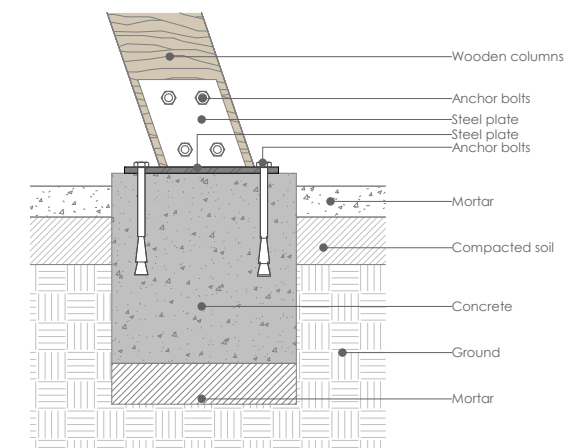
SECTION\_SCALE 1:100



DET 1\_SCALE 1:10



DET 2\_SCALE 1:10



DET 3\_SCALE 1:10













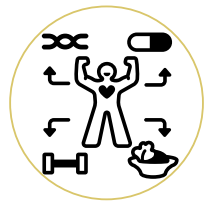






**DESIGN FOR COMMUNITY WELLNESS**

- **Educational Wellness** encourages exploration and growth through creative and stimulating activities. the proposal hosts a number of classes that allow the community to learn how to grow and make natural remedies from herbs.
- **Nutritional Wellness** Healthy food options not only help prevent illness, but also keep your body functioning at its best. the proposal offers a wide array of healthy and locally sourced foods.
- **Physical Wellness** is a key to achieving long-term health. Regular physical activity strengthens bones and muscle, reduces the risk of disease, and can improve overall health.
- **Environmental Wellness** promotes a balance between human and natural environments. The proposal will raise awareness about ways to protect the environment through the building.



**DESIGN FOR BIODIVERSITY**

The green spaces and the structures are creating a sustainable environment where the local and foreign vegetation are growing. They also create a space for birds and insects to compose a great ecosystem, and allow a reduction of CO2 pollution to provide clean oxygen.



**DESIGN FOR DISCOVERY**

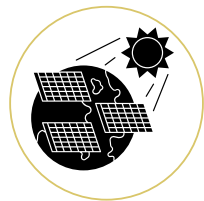
From this project I learned that architects are not only bringing creativity and beauty to people. They are playing a more important role. They create buildings that feature social and ecological sustainability. Also, they promote the health of the building's occupants as well as reduce the building's negative effects on the environment. By minimizing waste, limiting the consumption of non-renewable resources, and using environmentally friendly materials, building designers can create greener, more energy-efficient facilities .



**DESIGN FOR ENERGY**

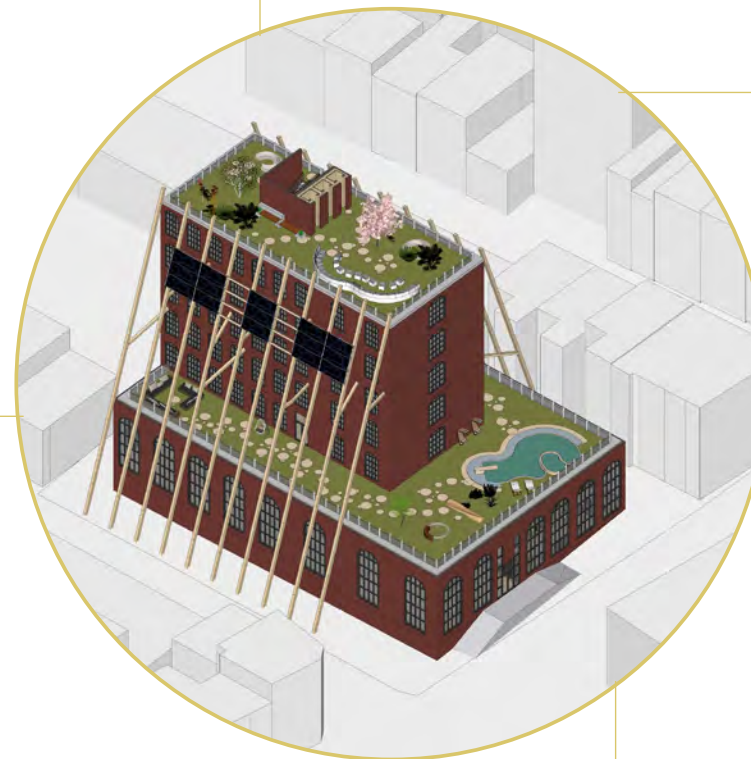
The proposal aims to implement clean technologies that reduce environmental impact, reduce energy consumption, and improve user health. To achieve these objectives, various long-term strategies have been established.

- **Collect Water** to cool the building and grow crops
- **Indoor Garden** to reduce usage and moderates temperature in hot spots
- **Daylighting** to lightens the building and reduces the cost of the electricity
- **Natural Ventilation** to supply and remove air from indoor spaces without using mechanical systems.
- **Solar Panel** to convert light from the sun into electricity that can be used to power electrical loads.



**DESIGN FOR RESOURCES**

- **Red Bricks** are much durable and hard that they can withstand severe wind and extreme weather conditions. Red bricks are great insulators, they store heat energy absorbed during daytime and release heat after the sun set. This helps in keeping the house warm in winter and cool in summer.
- **Wood structures** are built to last. From thousands-year old wood buildings that have stood the test of time to modern tall timber towers rising ever higher, wood structures are strong and durable.
- **Glass** is virtually inert and impermeable, making it the most stable of all packaging materials. There is no risk of harmful chemicals getting into the food or drinks that are packed in glass. No additional barriers or additives are needed.



**DESIGN FOR WATER**

According to the precipitation in Brighton, the proposal will have structure and green spaces to facilitate the collection of water. This water source will cool the building and be used to grow the different crops.



SOLAR PANEL	RED BRICK	CONCRETE	TIMBER
Expensive, Can't be harnessed without sun.	Expensive.	High from cost.	Expensive.
Completely renewable resource.	Non-combustible, don't assist the spread of fire	100% recyclable.	Renewable source that reduces landfill waste
Very little maintenance	Can last 100 years with minimal maintenance	Low maintenance cost	Help curb deforestation



**SUSTAINABLE STRATEGIES**

DIAGRAM