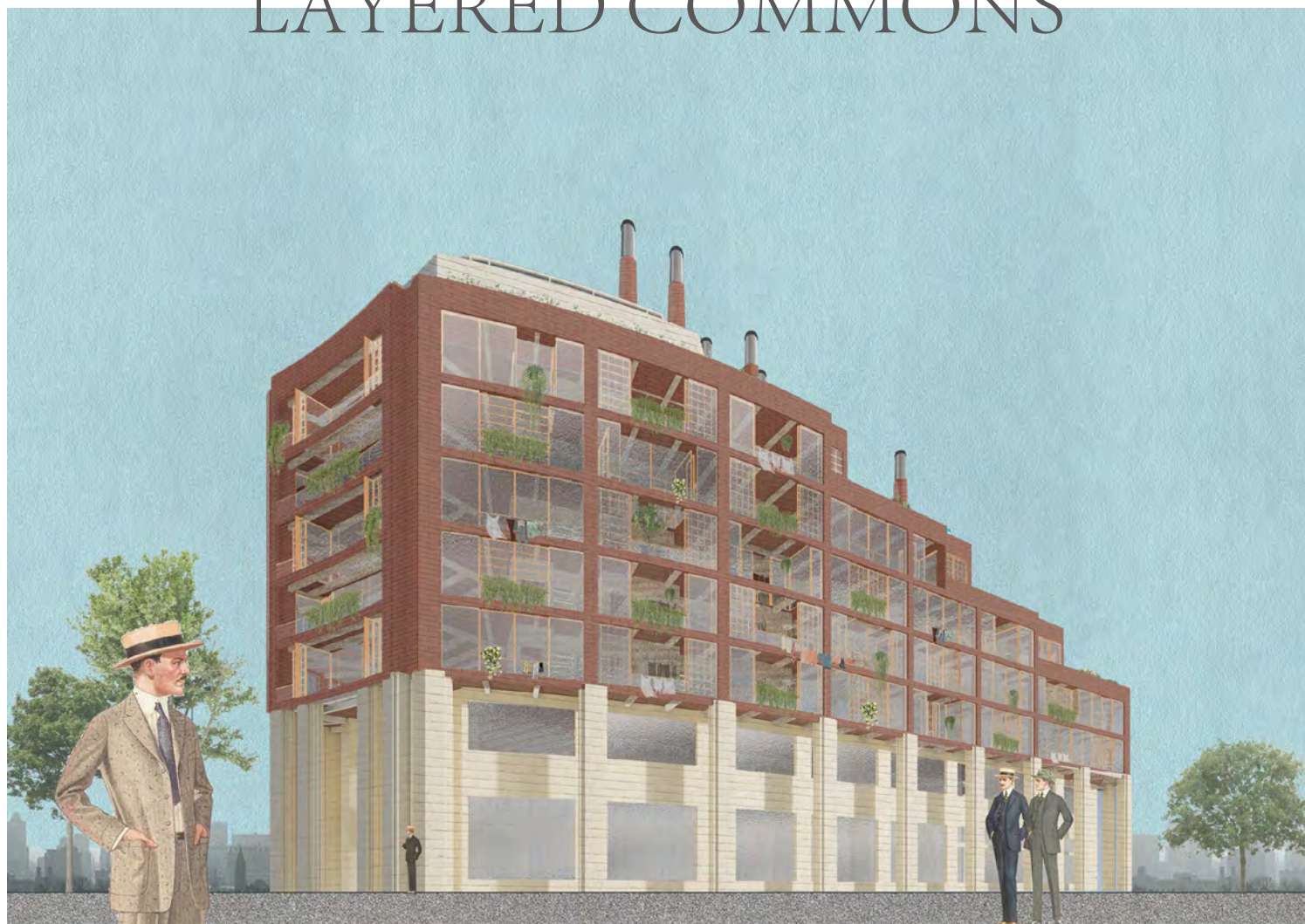
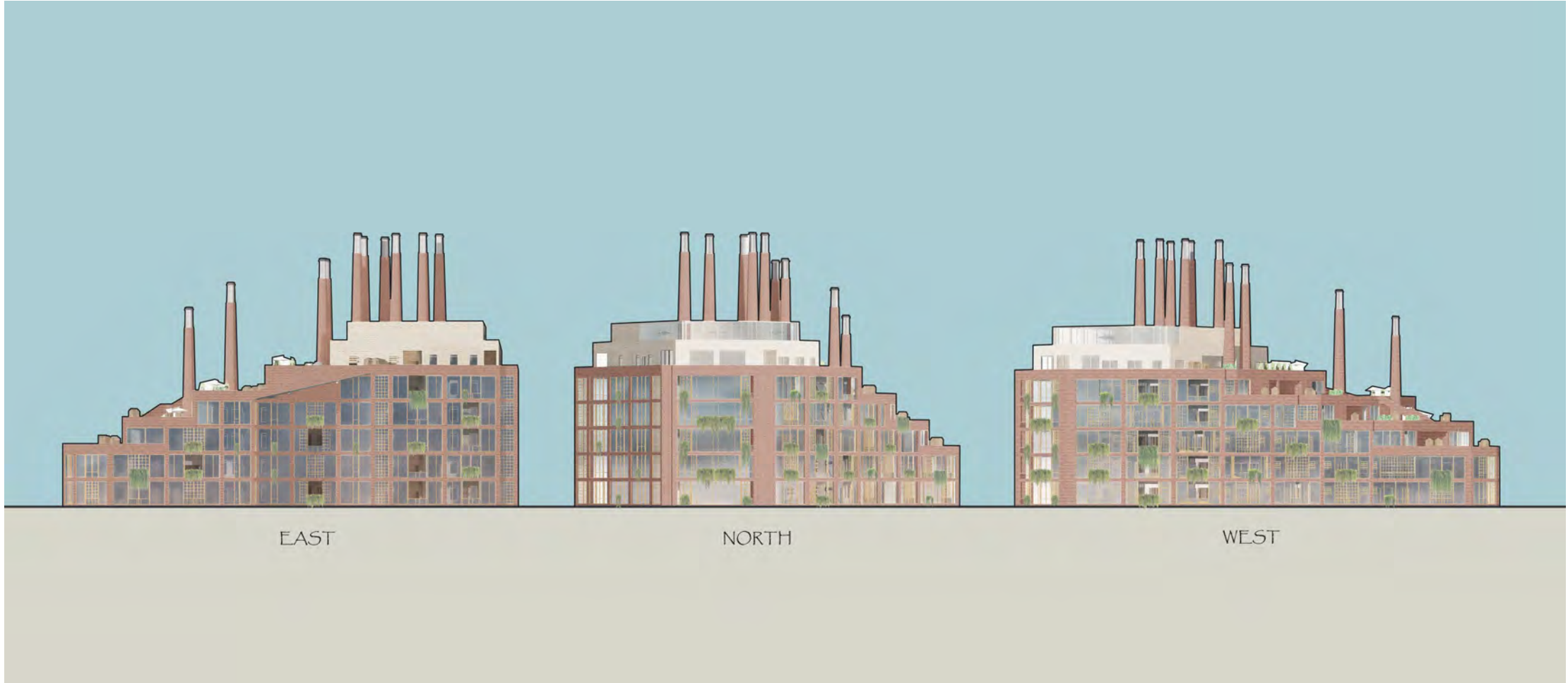


# LAYERED COMMONS



SICHEN LIU



# Layered Commons

A stepped habitat where community and cultivation thrive together.

## CATALOGUE

.CONTEXT

.DESIGN

- I .Layout
- II .Lighting
- III .Rooms
- IV .Planting
- V .System
- VI .Materials

Inside

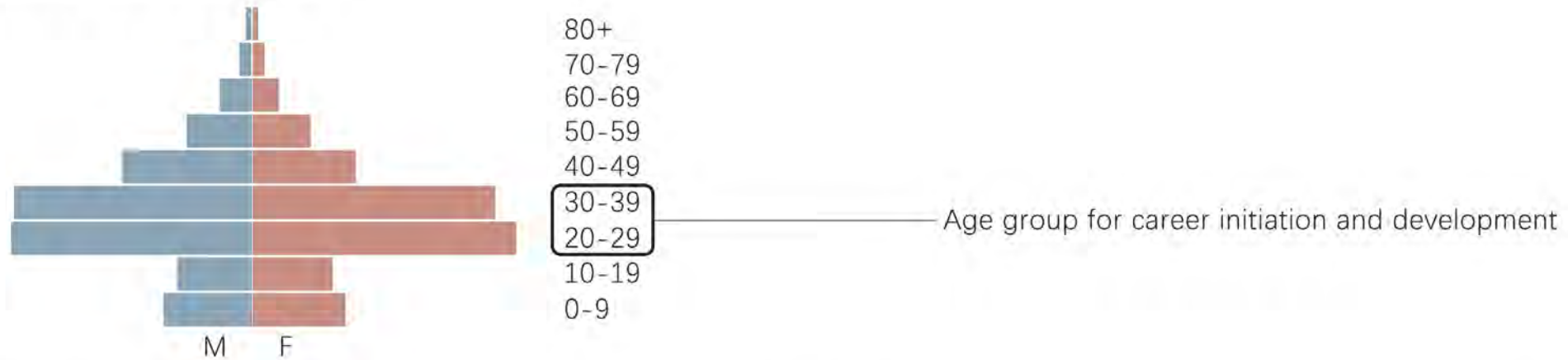
.SUMMARY



**CONTEXT**

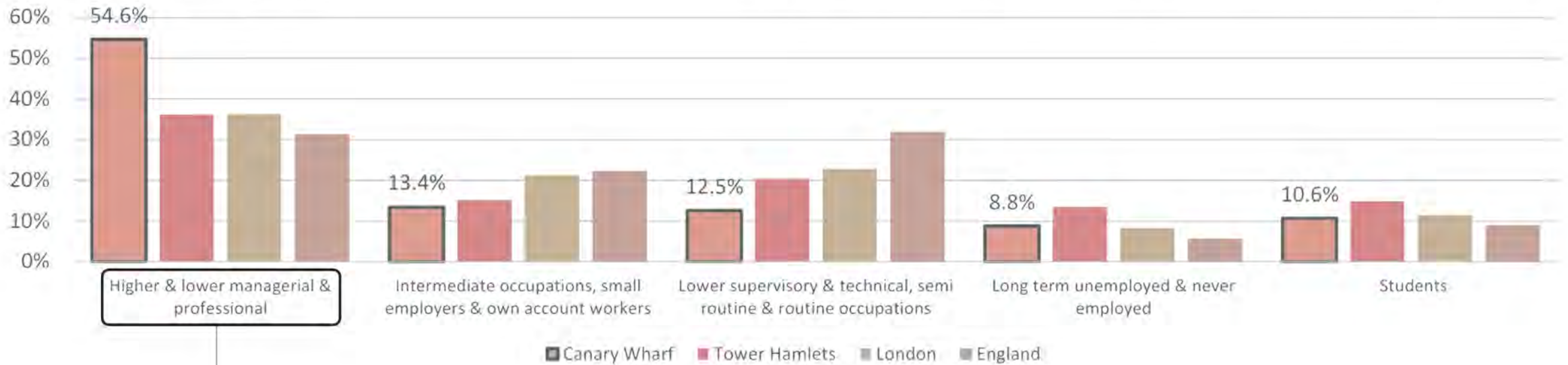
# Canary Wharf population analysis

Demographic composition



Social and economic groups

Source: [https://www.towerhamlets.gov.uk/Documents/Borough\\_statistics/Ward\\_profiles/Canary-Wharf-FINAL-10062014.pdf](https://www.towerhamlets.gov.uk/Documents/Borough_statistics/Ward_profiles/Canary-Wharf-FINAL-10062014.pdf)

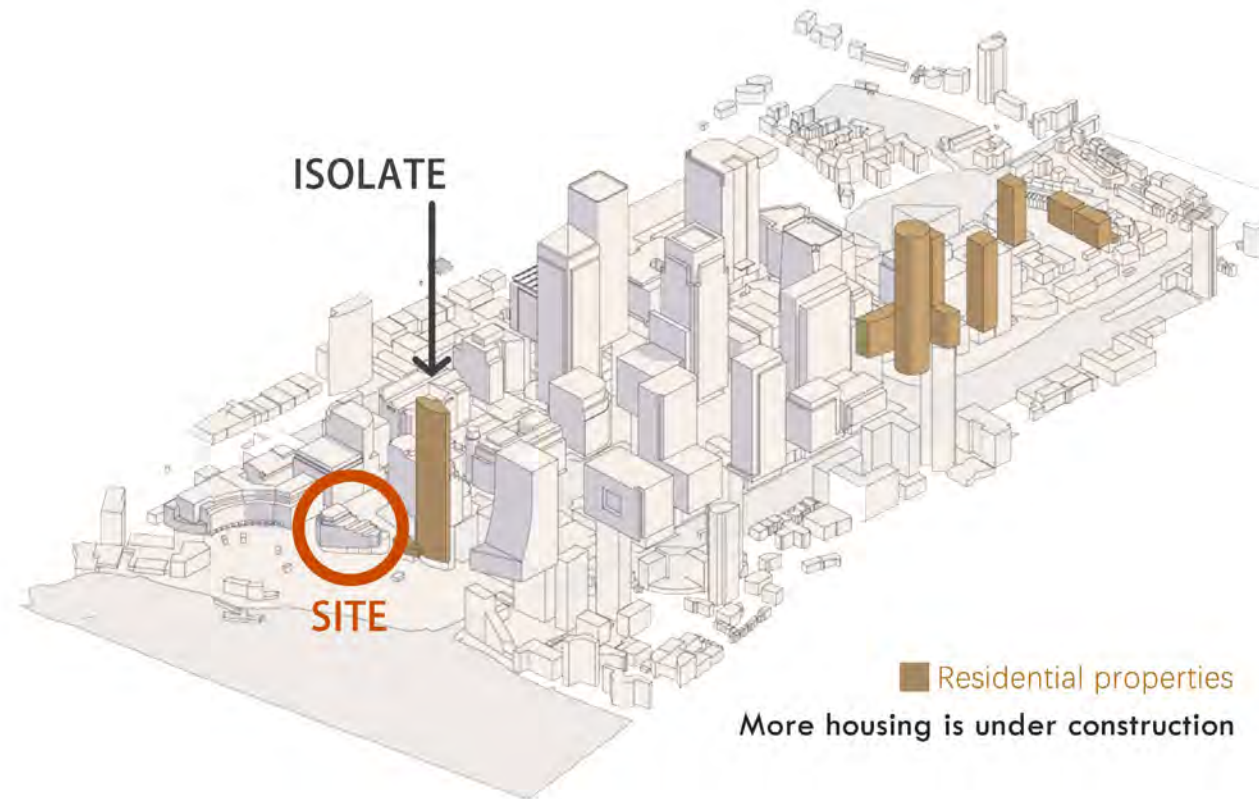


Middle and high income groups

# Canary Wharf demand analysis

According to CoStar data, the **office** vacancy rate in London's Docklands area, which includes Canary Wharf, has surged from around 4% in 2017 to nearly 17% as of september **this year**.

Source: Canary Wharf embraces mixed-use development in response to office market shift. PROP NEWS TIME



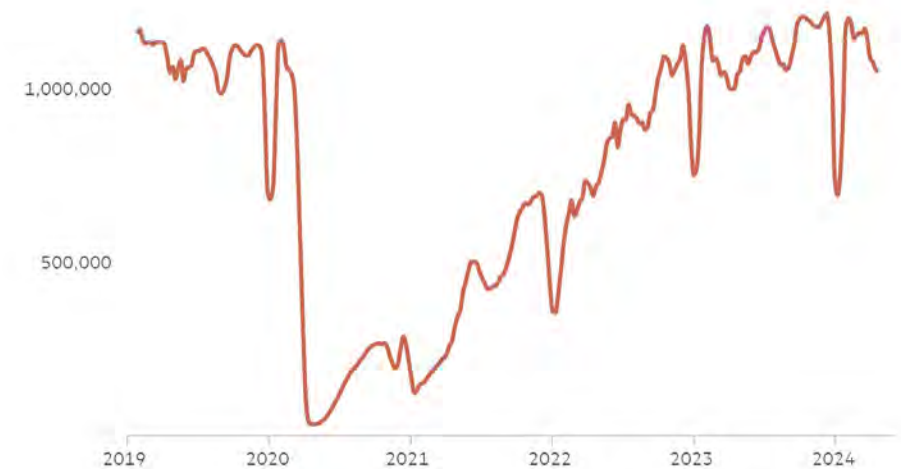
Source:  
<https://ig.ft.com/canary-wharf/#:~:text=CWG%27s%20reported%20vacancy%20rate%20was,estate%20data%20and%20analytics%20service.>

## Retail is well established

Canary Wharf is ranked as the UK's number one retail destination.

-Retail Health Index is published by Green Street

Travel to Canary Wharf is back to pre-pandemic levels  
The demand for tourism is high



# Analysis result

## **USER TYPE:** The young group with higher income

There is not enough wealth accumulation, but there are requirements for the quality of life

## **FUNCTION TYPE:** Residence

Help isolated apartment buildings form micro-communities and try to attract tourists with features.

# Solution

Creating a **Garden / an Farm** residence for Canary Wharf

to

compensate for the unequal distribution of resources in this area

**- the lack of a sense of community -**

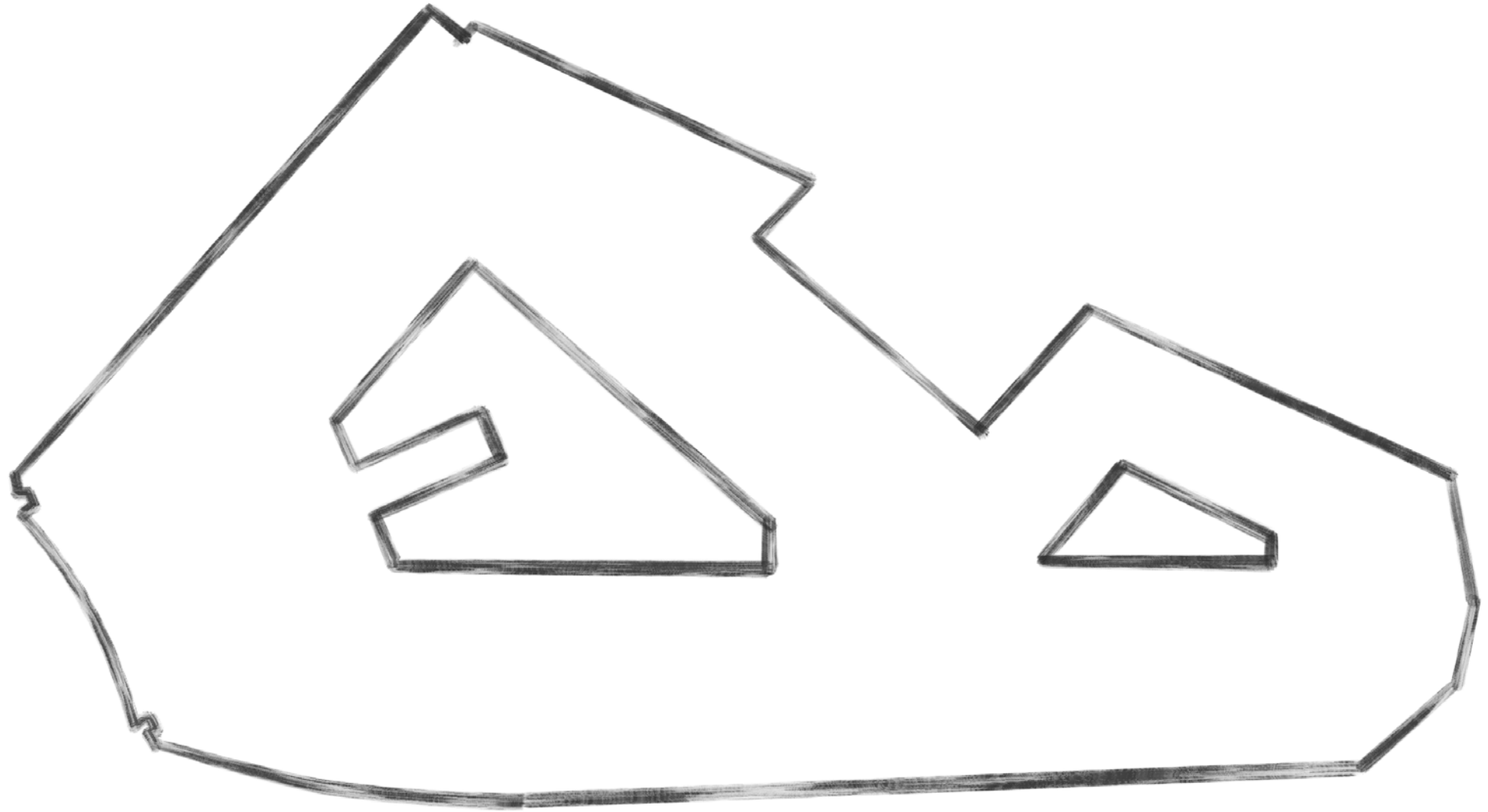
Bring **warm** residences to the commercial office area with **traditional activities**

**DESIGN**

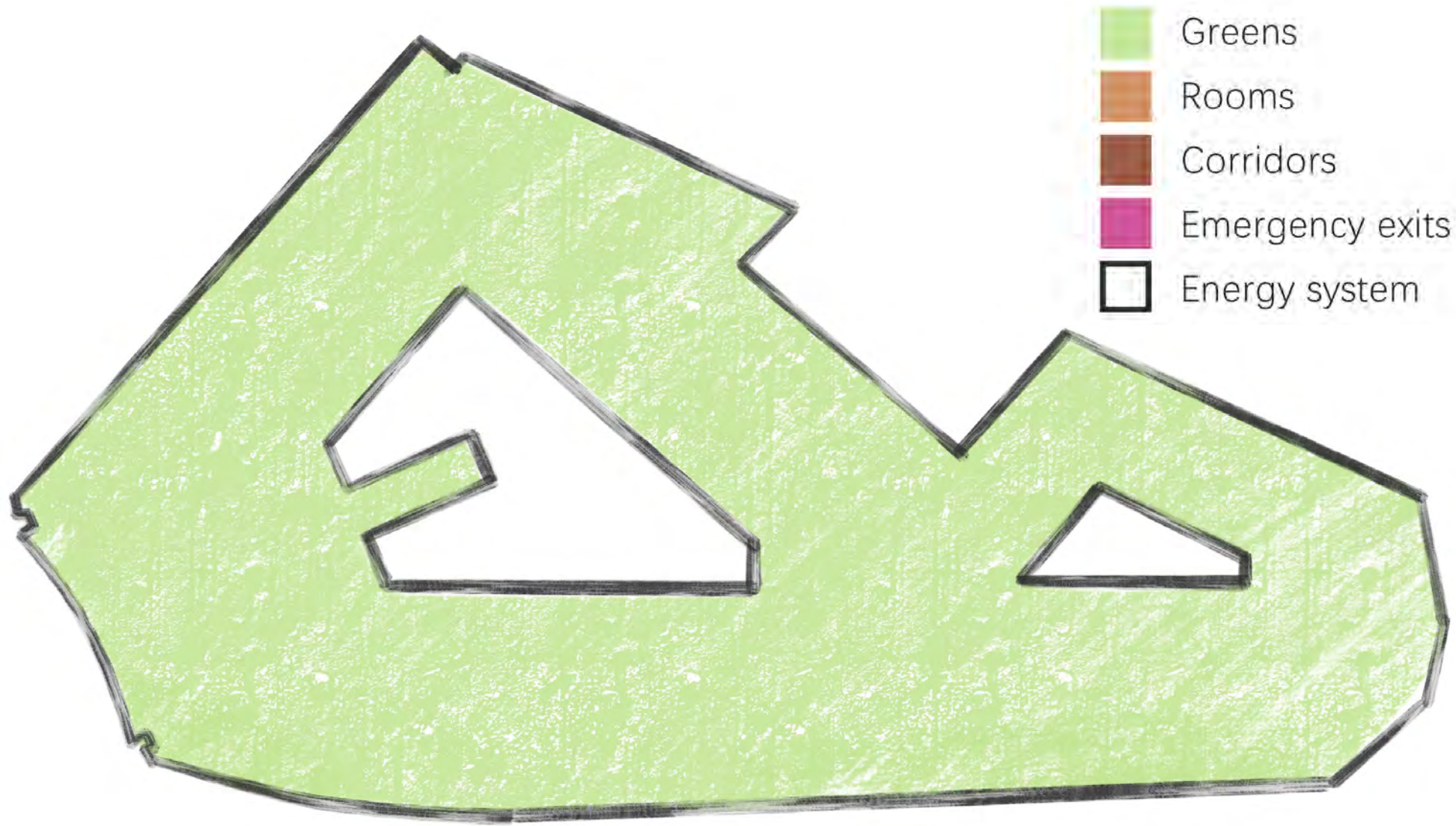
# I . **Layout**

**The generation process of the layout :**

1.The original plane



2.Assume the green plant space



3.Sunlight planting, rooms retreat



#### 4. Form a public corridor



5.Cores retreats to form corridors



## 6.Ensure accessibility



7.Rearrange the emergency exits



8.Connect the two areas



9. Imagine the possible problems: disturbance and busyness



10.Set up the corridor, equal division space



# 11. Route diversion solves the problem



**The effect display of floor plans:**



2F

3F





4F

5F



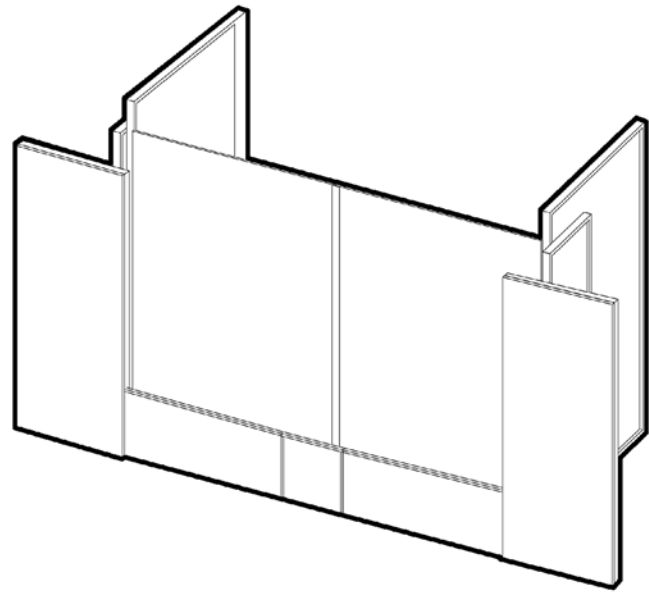


6F

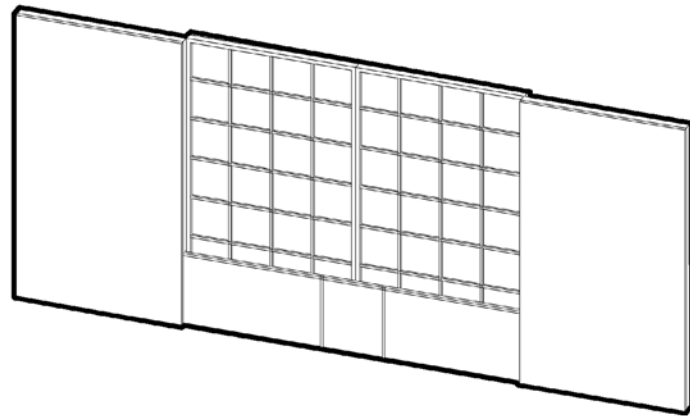


7F

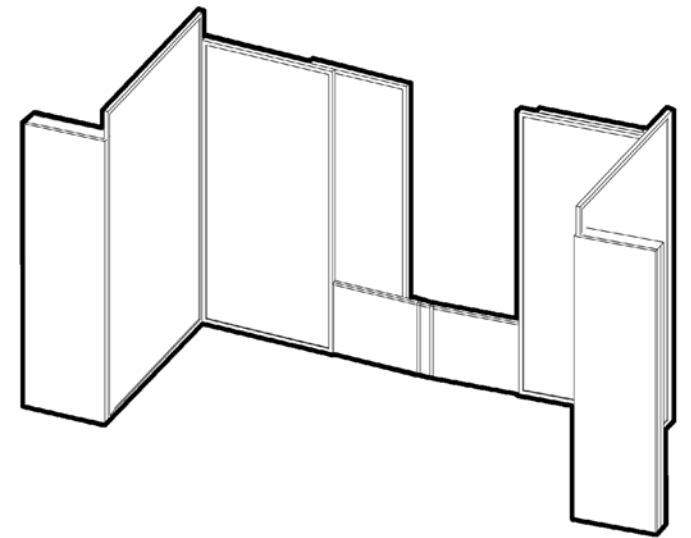
Since **plants need sunlight**, I removed all the walls except for the load-bearing structure and replaced them with **large glass sliding doors**, thereby freely **adjusting** the nature of the public space (**indoor or semi-outdoor**).



Path in front of hole



Sliding (without hole)



Path behind hole

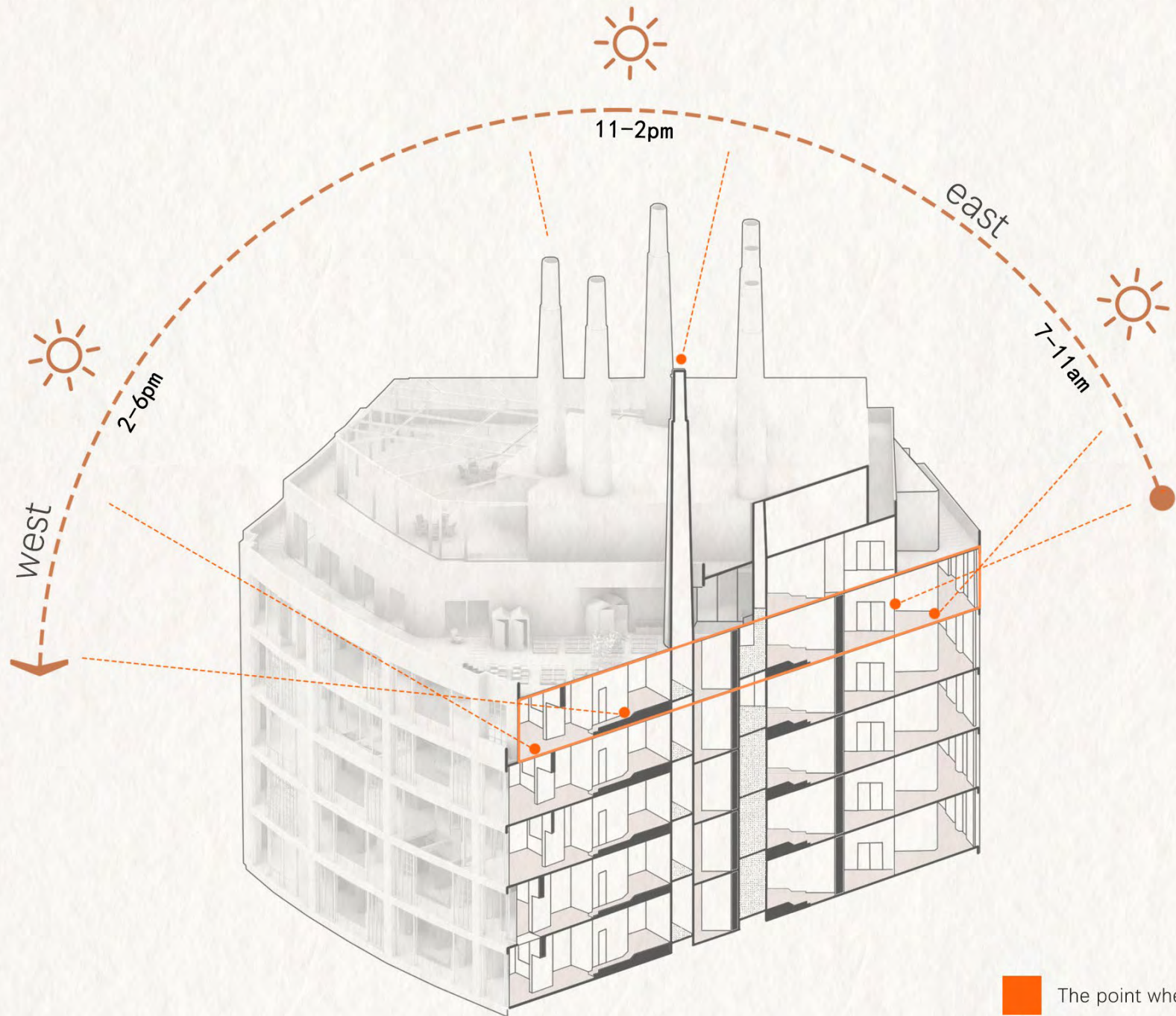
**The effect display of public Spaces:**





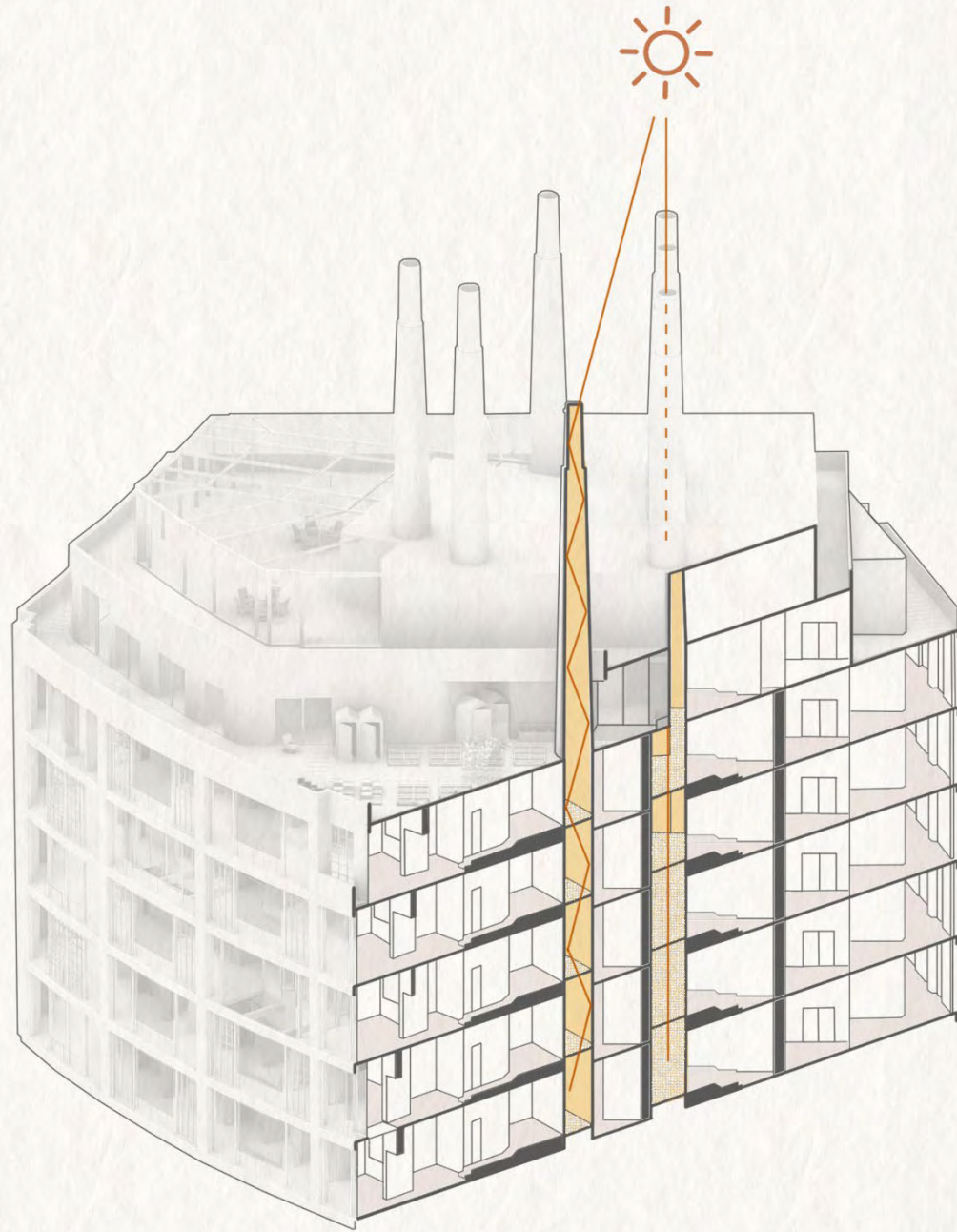
## II . Lighting

The **retreat** of the rooms will inevitably **reduce** the amount of **sunlight** obtained, and it is necessary to ensure sufficient indoor lighting.



The point where sunlight can reach

Solar tunnels





Make holes to promote lighting, allowing sunlight to be obtained even when the sun is at a high position.

# III . Rooms

For the sake of lighting, I use large areas of glass, which also causes **privacy issues**. How to **balance privacy and lighting** is the problem I need to solve in the rooms.

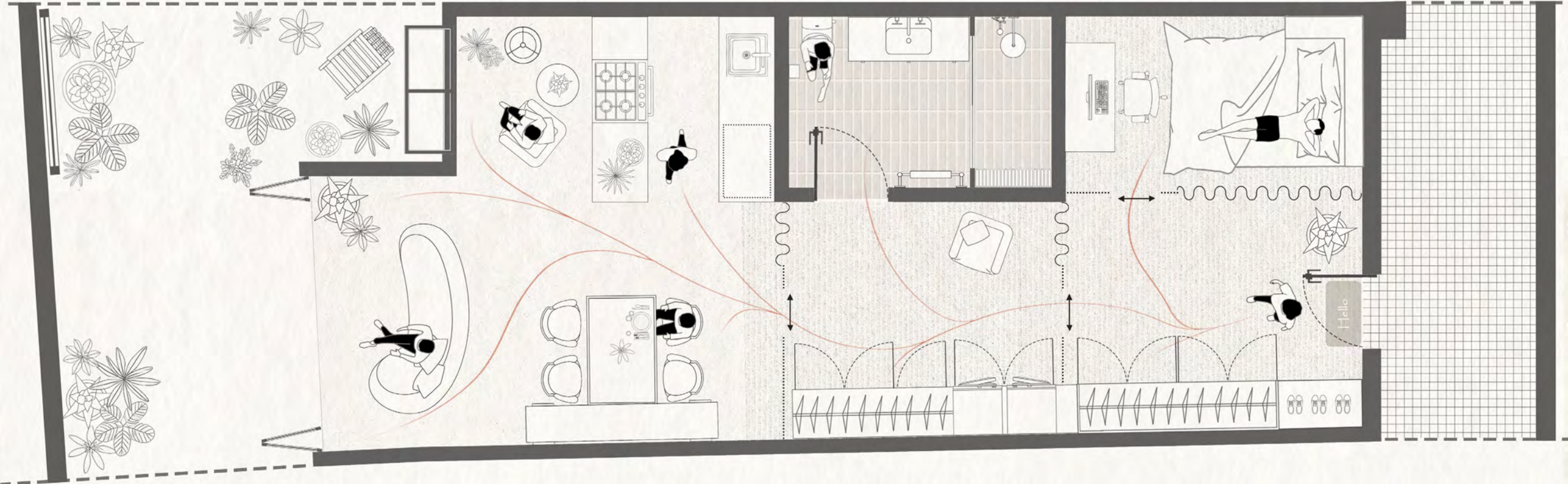
Layer 1

Layer 2

Layer 3

Layer 4

Layer 5



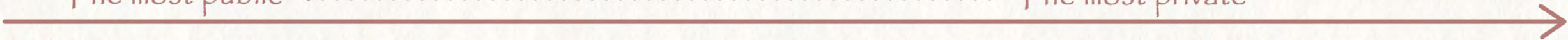
Main room layout



The most public



The most private



The height difference creates a privacy level



Blind



Textile curtain



louver



Trap door



Folding door



Revolving door

Balance privacy and lighting

Create a transitional space

**The effect display of rooms:**





# IV . **Planting**

**Plant varieties** need to be considered when **growing** in different environments, such as our **indoor** public spaces, and **rooftops**.

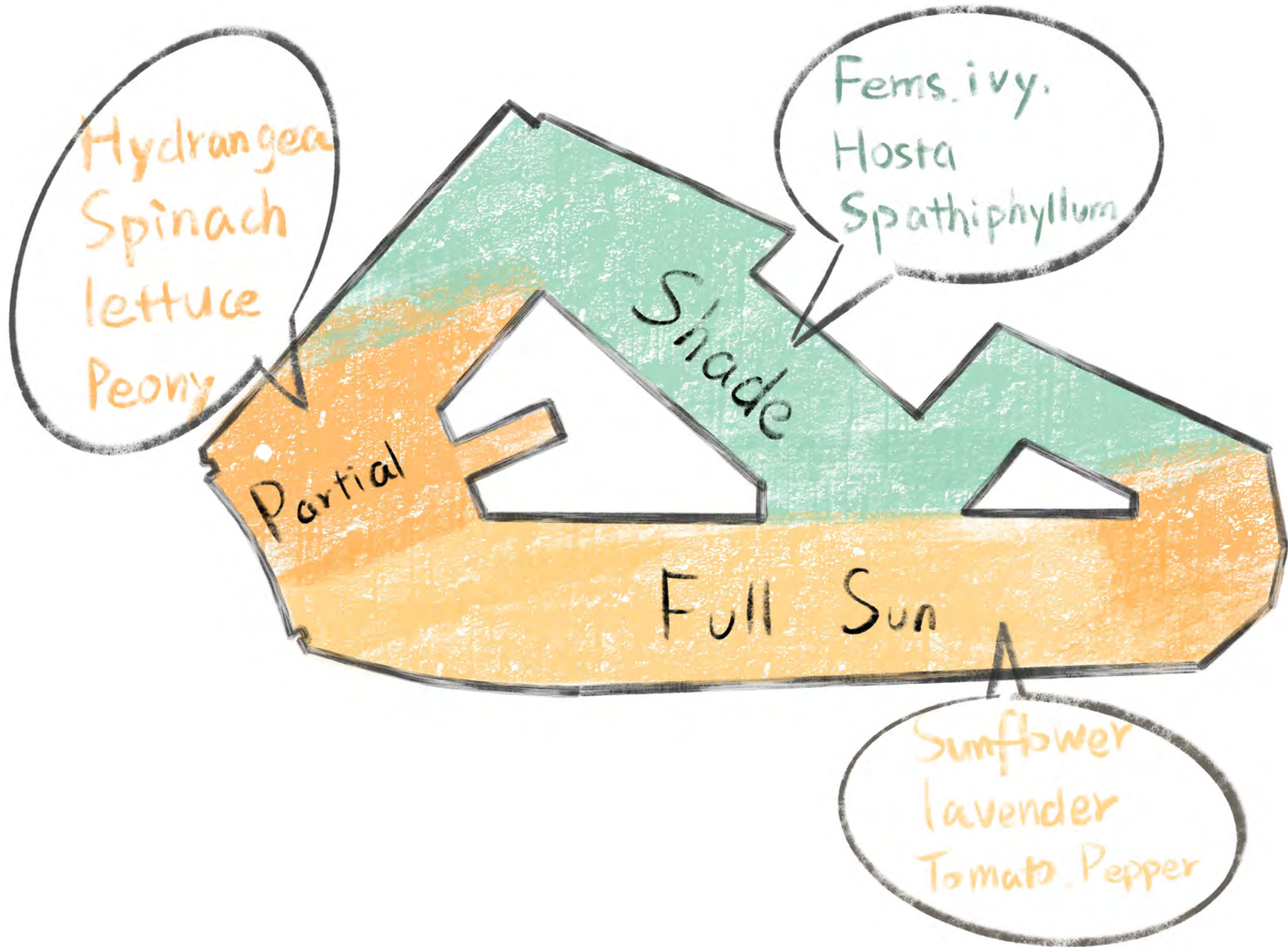


Ornamental: Ferns, Fiddle Leaf Fig, Areca Palm,  
Dracaena fragrans, Syngonium, Ficus elastica...

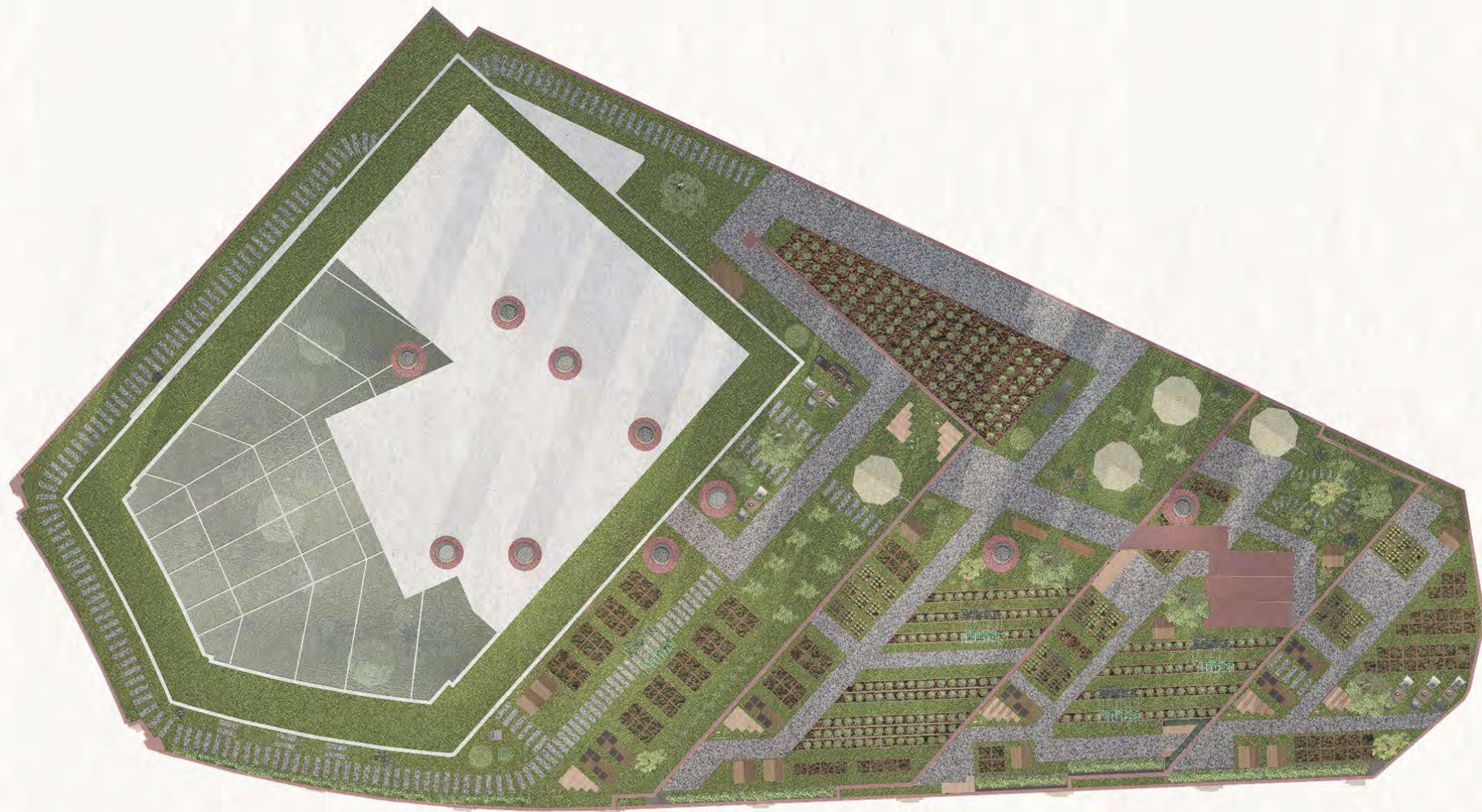


Plants: lettuce, tomatoes, strawberries and  
peas, herbs (basil, mint), cucumbers, Pak choi ...

According to **different light conditions**, different plants can also be planted in **different areas**.



**Rooftops** are the best choice for **allotments** planting. They are completely open, free from shade, and have ample space.



**The effect display of rooftops:**



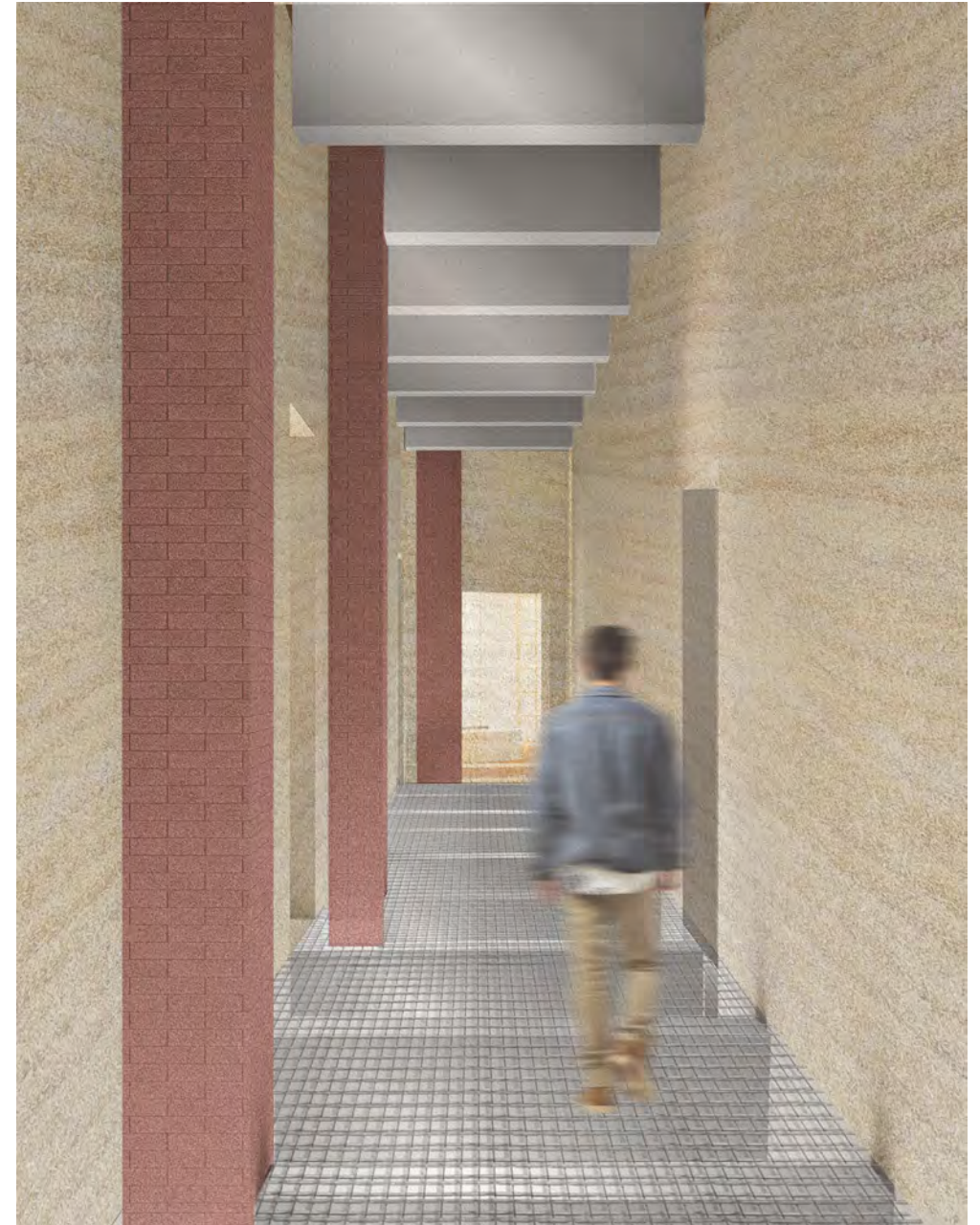
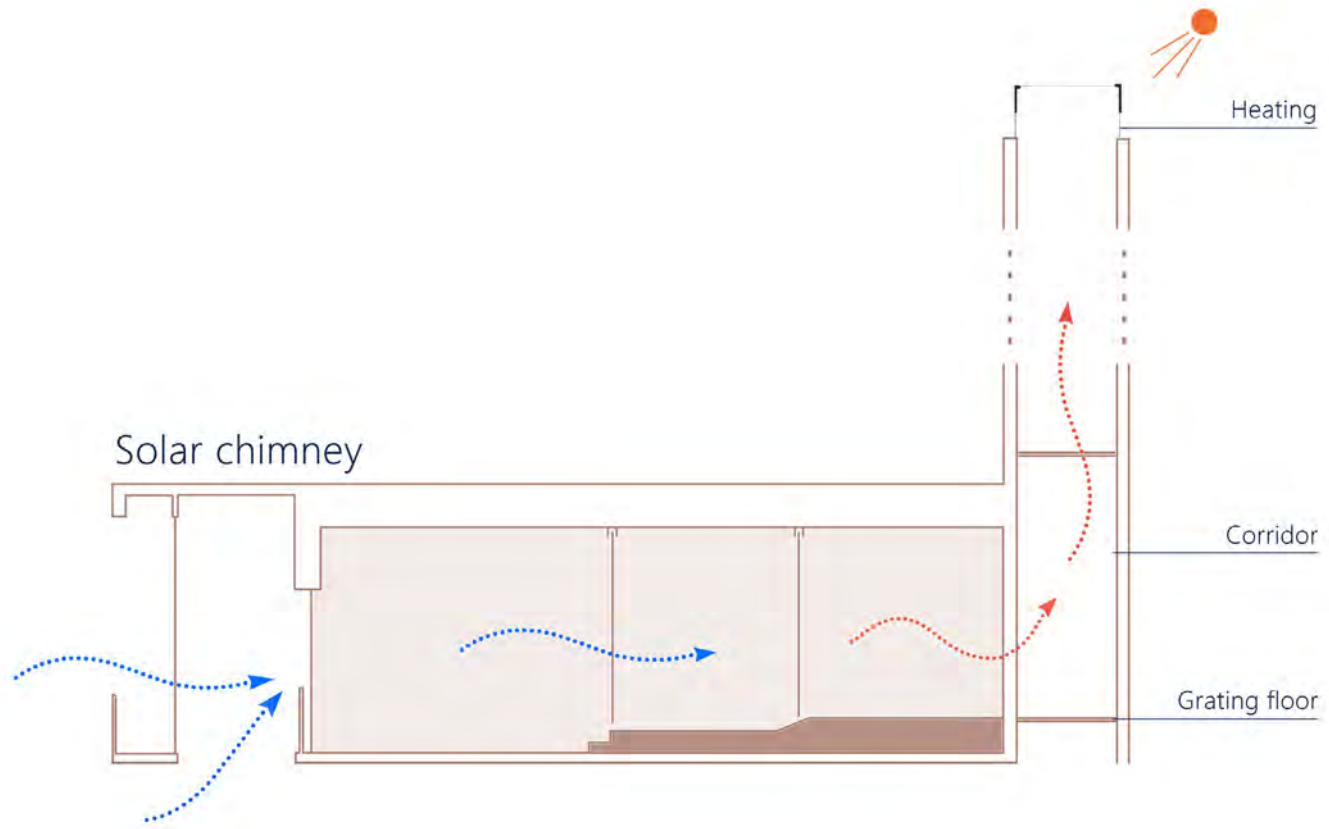


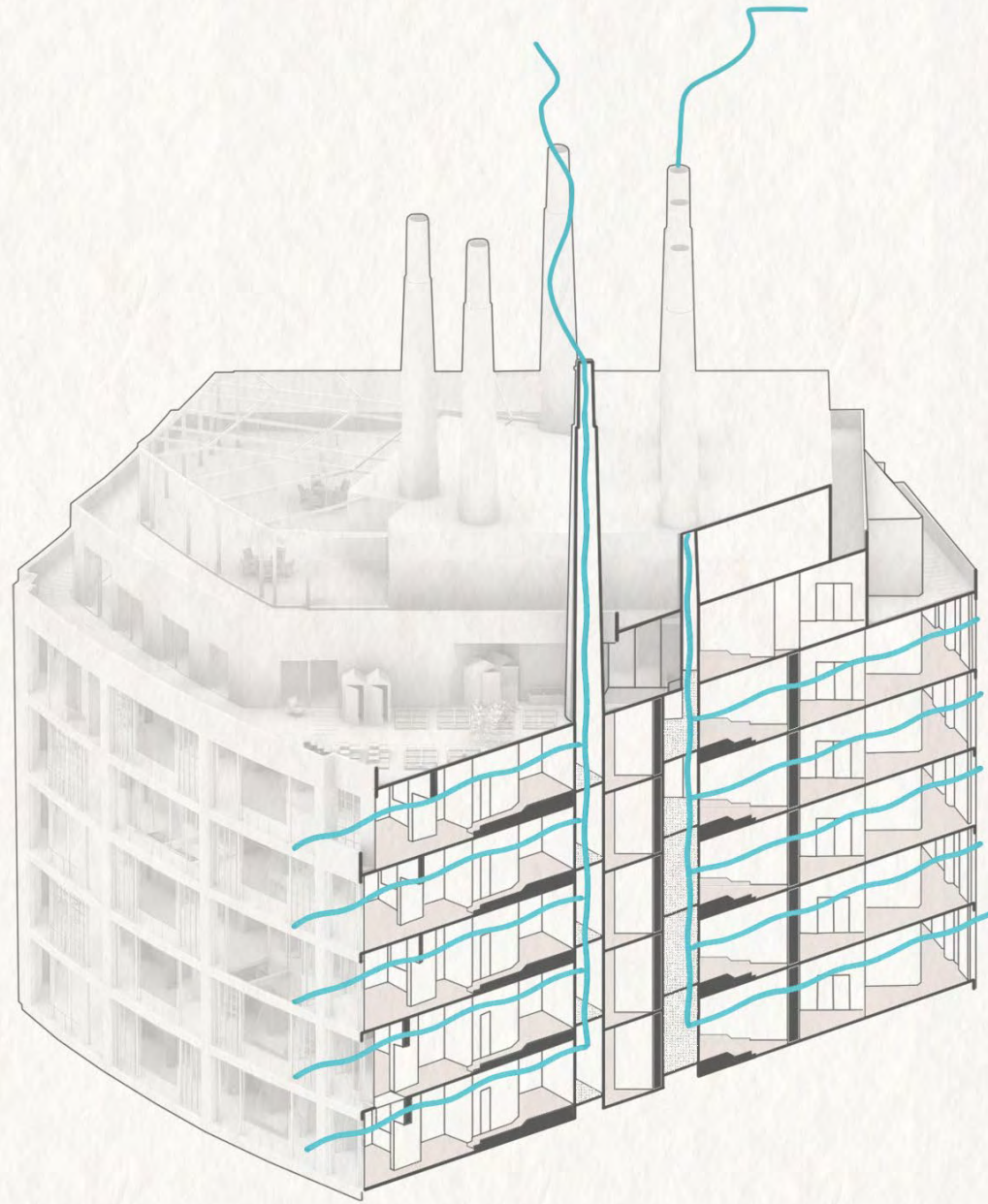




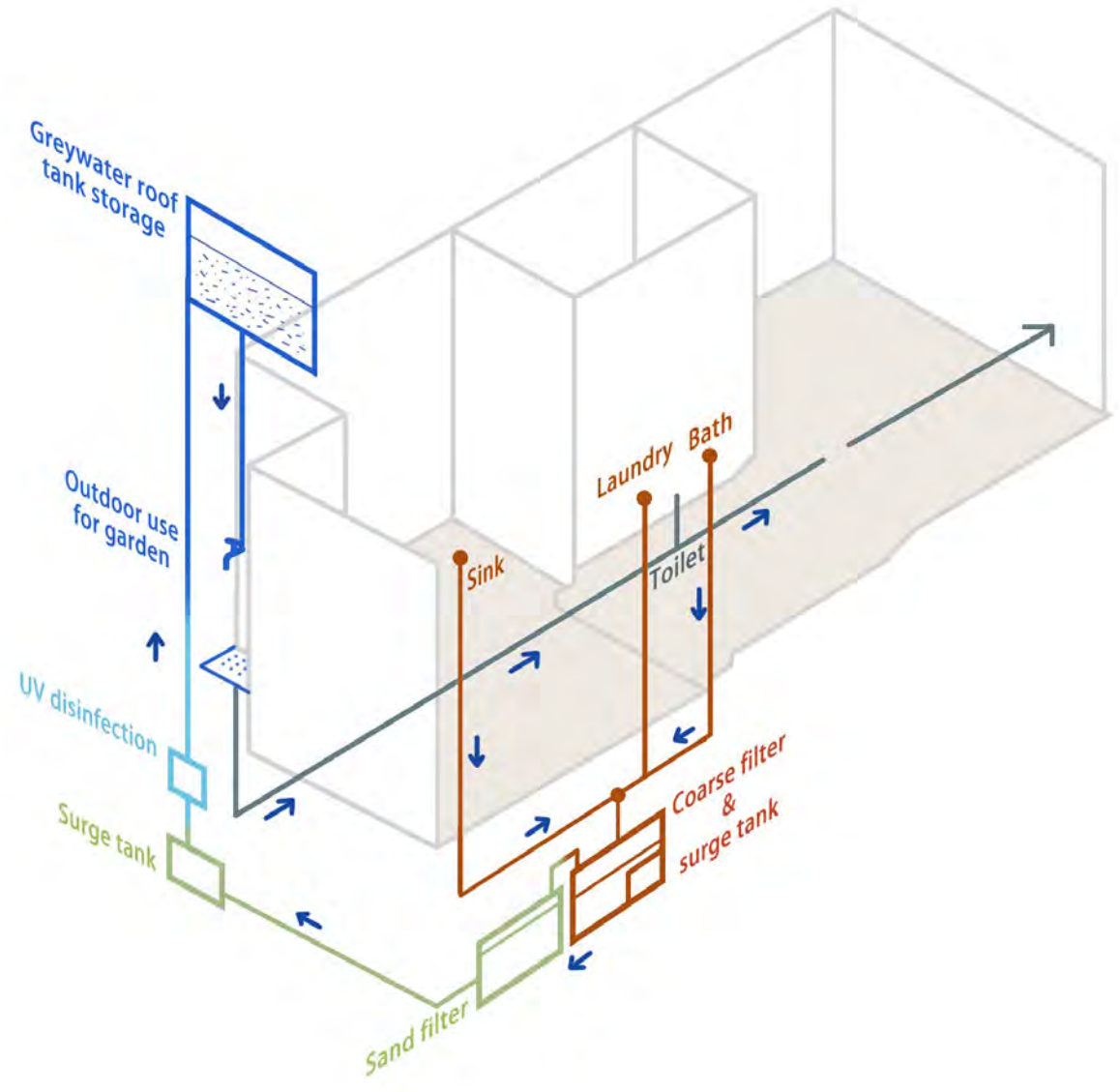
V . System

The huge **chimneys** on the roof not only provides light but is also part of the **sustainable system** in this project. Unlike **traditional solar chimneys**, I use the **entire corridor** as part of it and use **grating floor** to ensure air circulation.

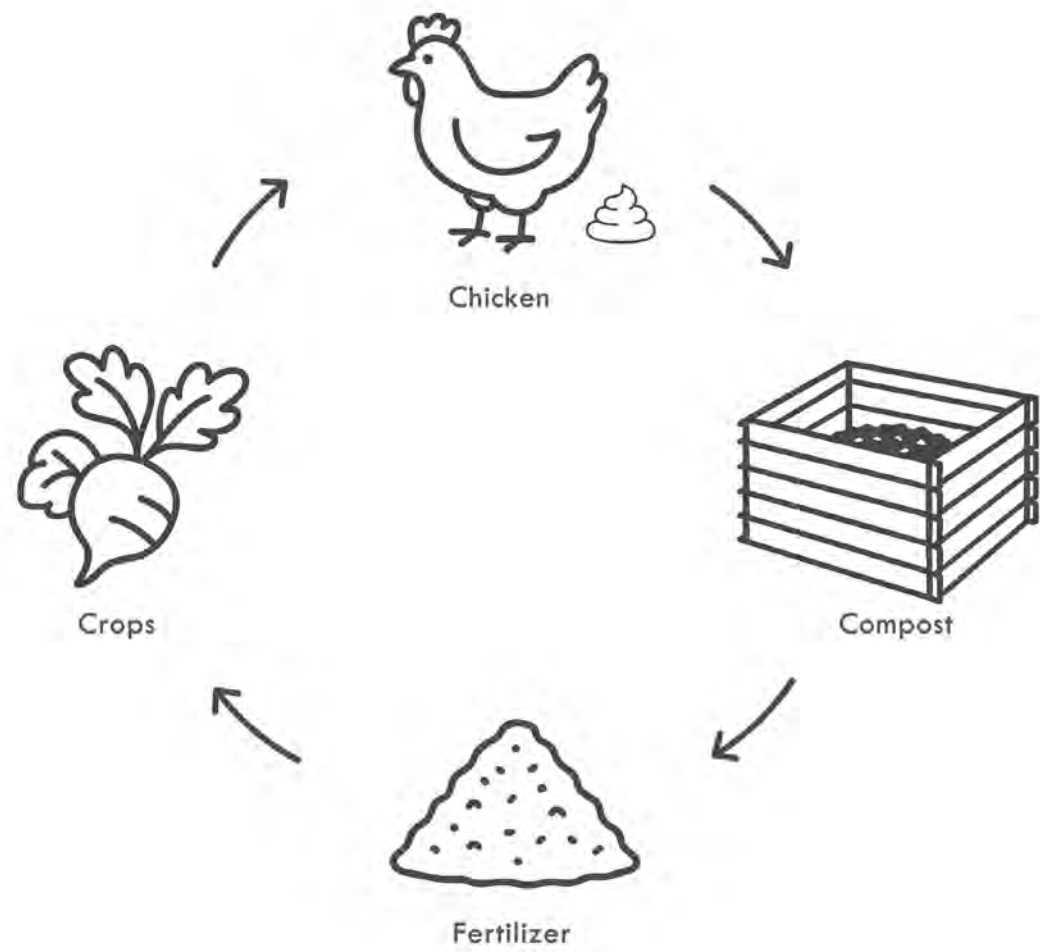




The second system is the **grey water** system. There are many **green plants** in the public space, and it is **impossible** for residents to travel between rooms to collect water to **water the plants**. So the water needs to be **connected to the exterior wall**.



The third system is a **circular composting system**, which is achieved by **feeding chickens** on the **rooftops**. Not only can use the resources generated by the building to achieve the entire planting process, but can also obtain additional eggs as food.



# VI . **Mateirals**

As a **reuse project**, the goal should be to leverage the **advantages of the original items** and save costs. The red bricks and green plants complement each other very well. The **new materials** have also all chosen **eco-friendly** materials.



OLD:

Original wall



Stone bricks



Beam



Metal

NEW:

Wall



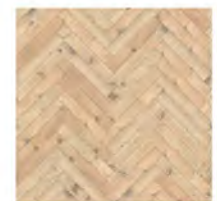
Hempcrete

Frame



Birch Plywood

Floor



Reclaimed lumber

# SUMMARY

In summary, this residence is **not only** a redefinition of human **living space** , but also a building that is close to an **organism** - breathing, regulating and creating resources.

It not only responds to the practical problems of urban development, but also offers **a warm and vibrant possibility for urban life**, especially in highly modernized areas like **Canary Wharf**.

**END**