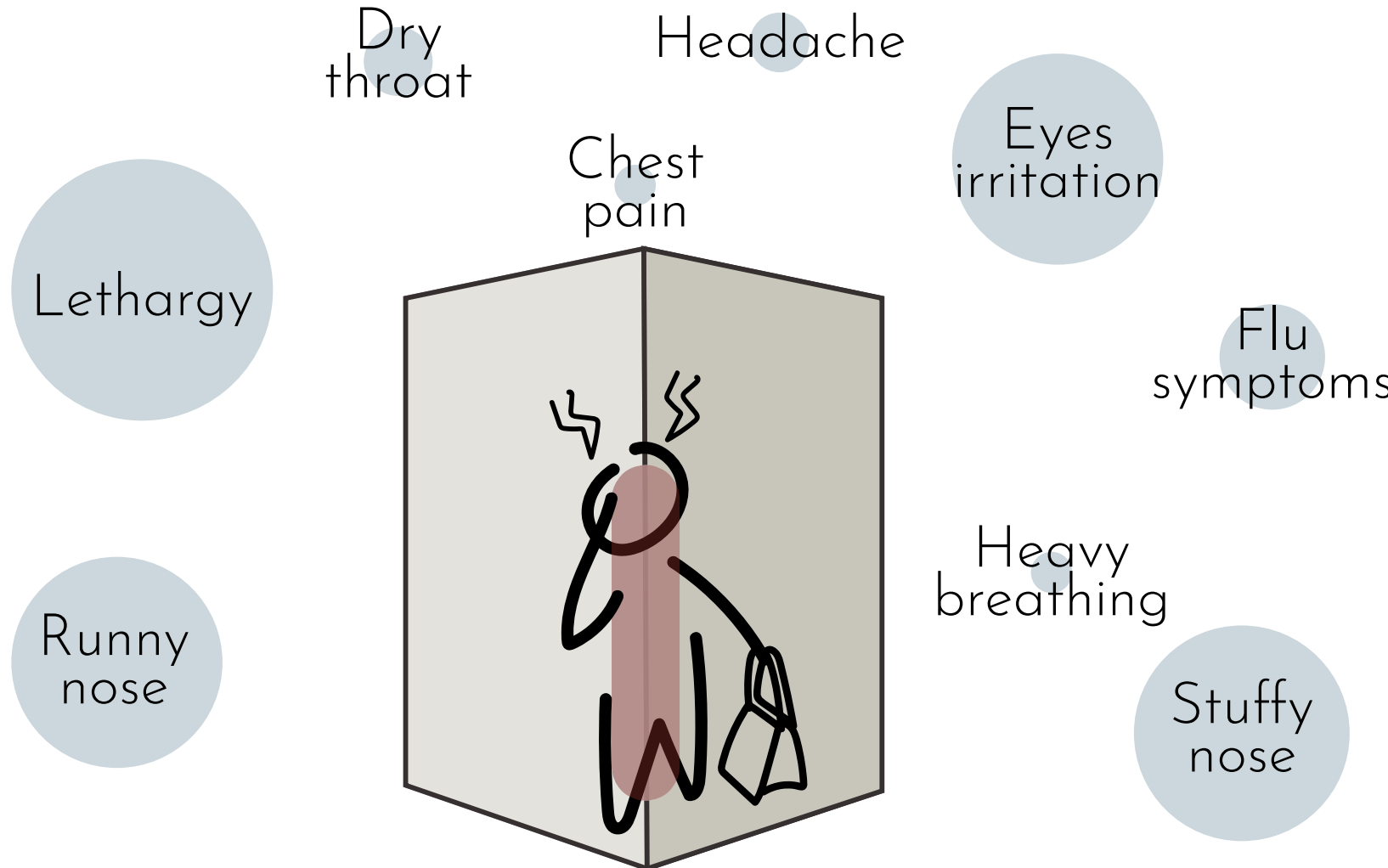


A healthy oasis in the centre of Apeldoorn

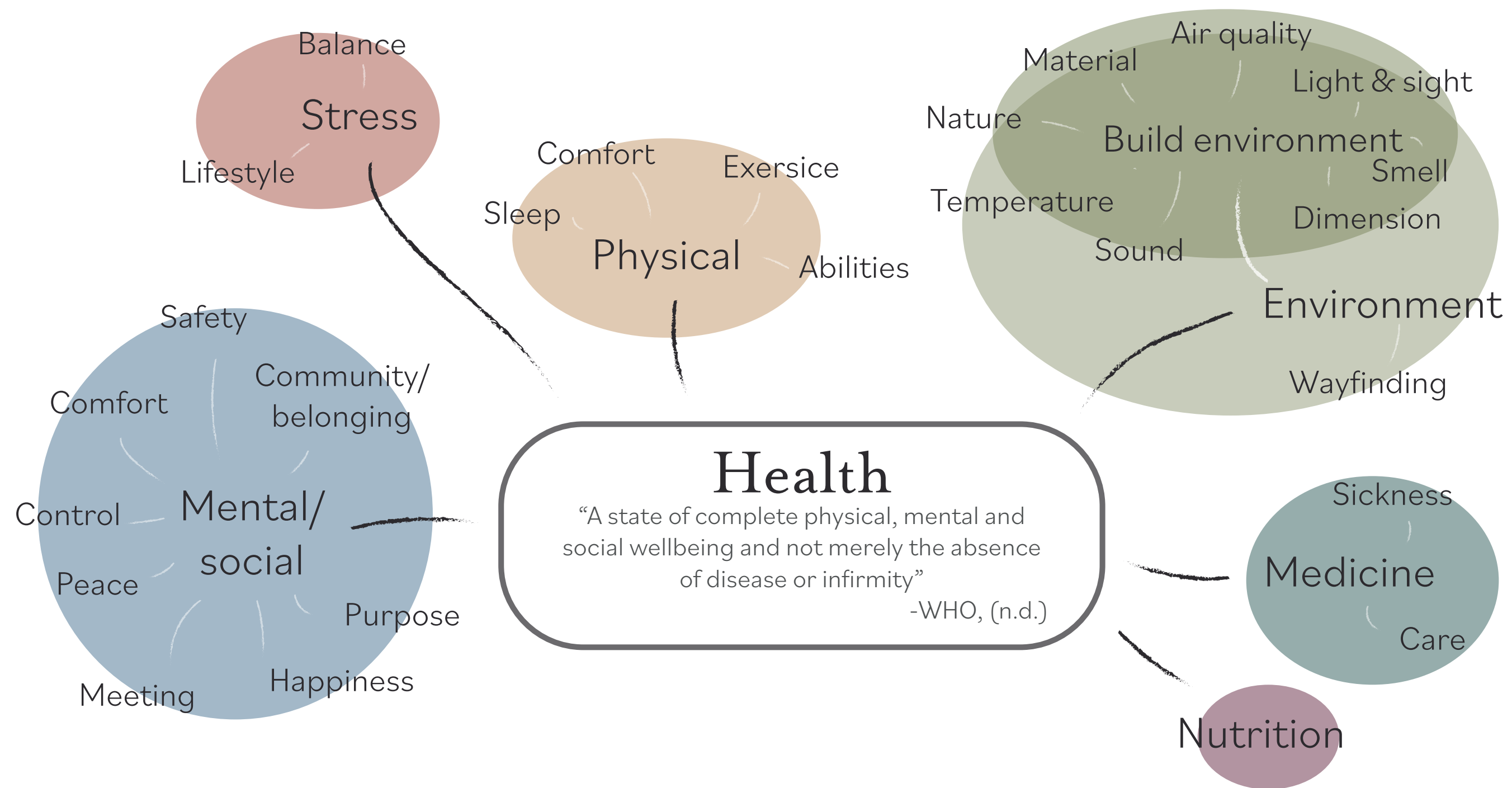


Heritage & Architecture
The modern mall
Judith Oosterhoff
4848152
18/01/2024

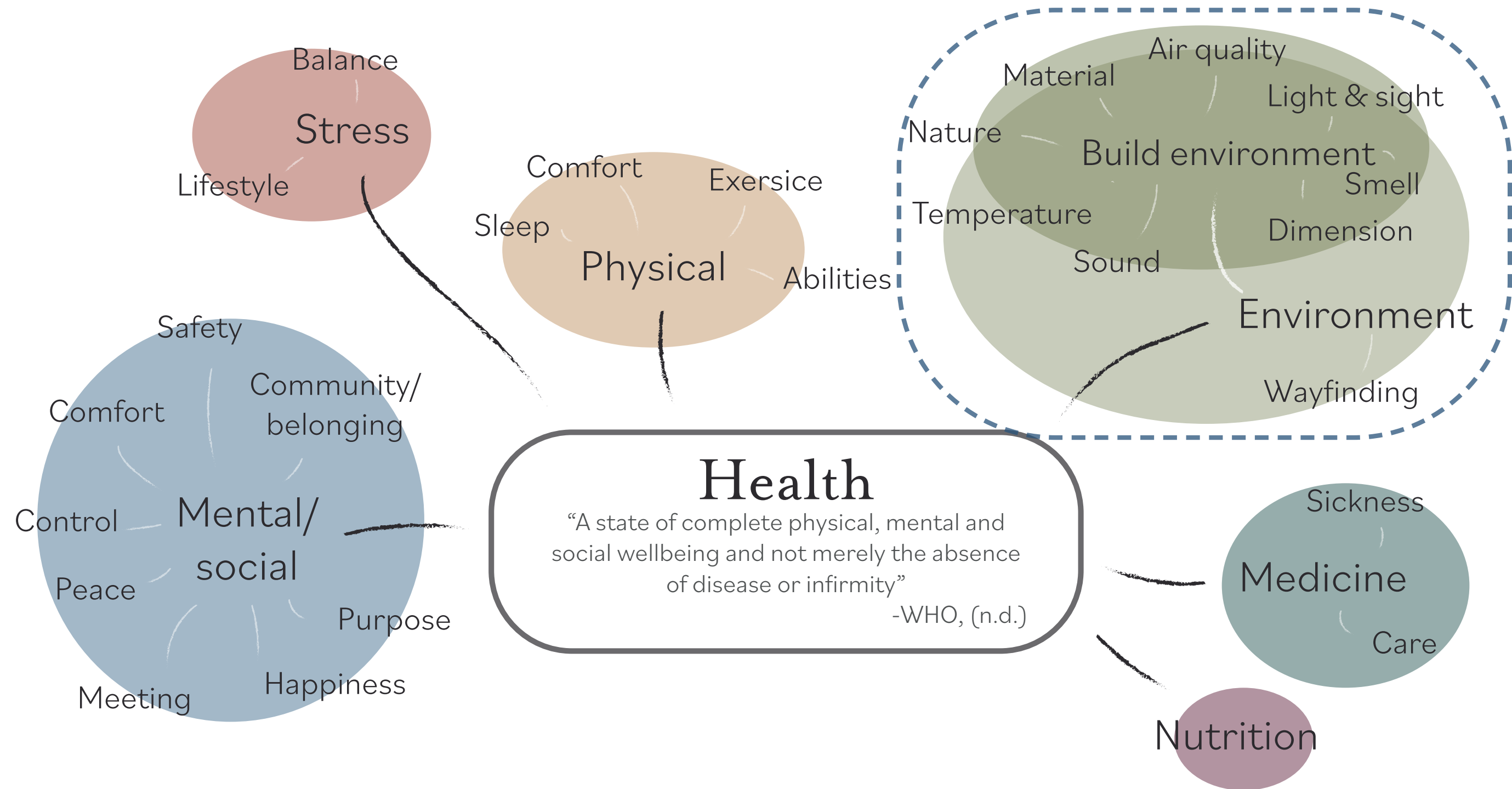
Personal problem



Health



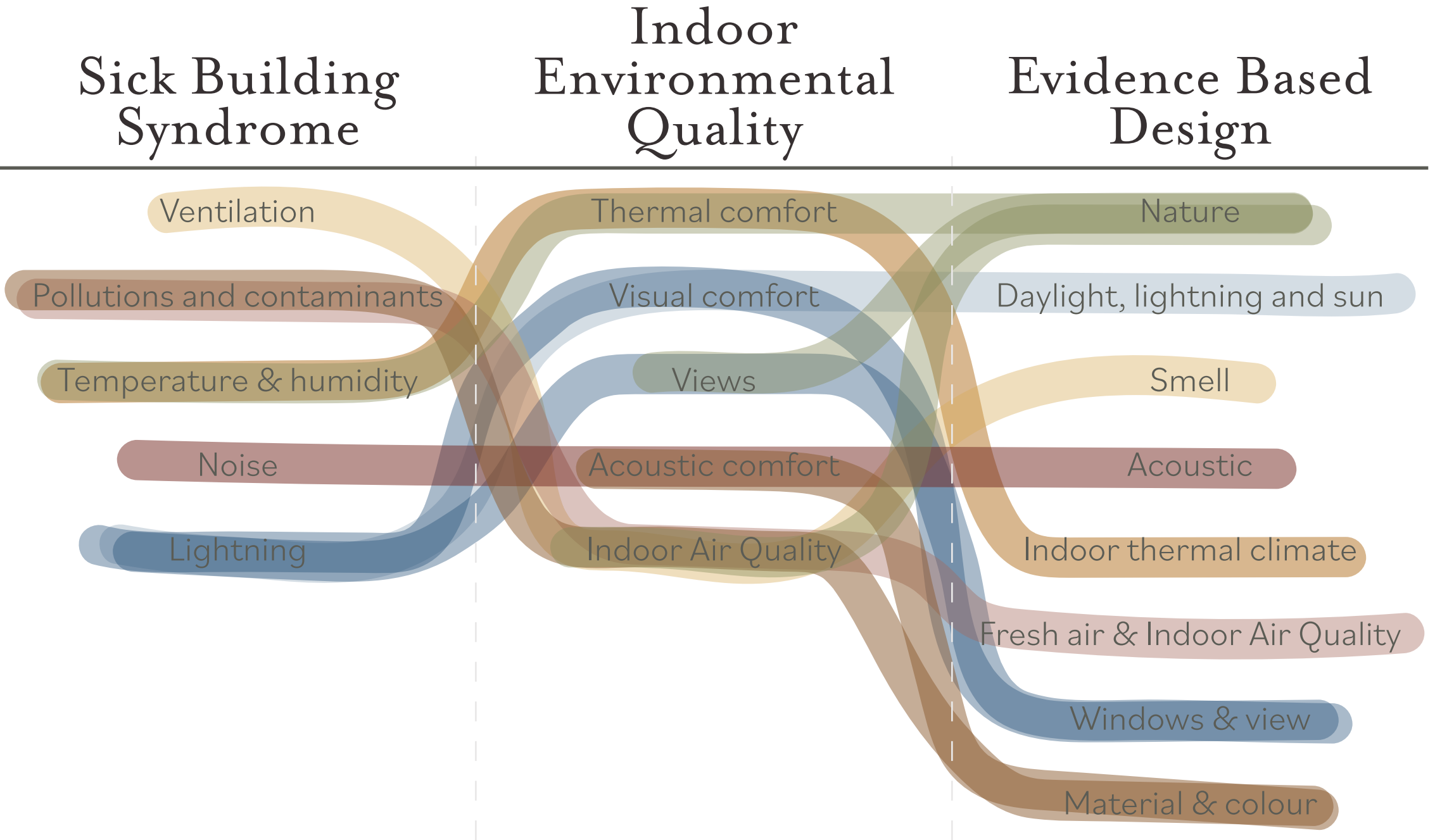
Health



Health build environment

Sick Building Syndrome	Indoor Environmental Quality	Evidence Based Design
Ventilation	Thermal comfort	Nature
Pollutions and contaminants	Visual comfort	Daylight, lightning and sun
Temperature & humidity	Views	Smell
Noise	Acoustic comfort	Acoustic
Lightning	Indoor Air Quality	Indoor thermal climate
		Fresh air & Indoor Air Quality
		Windows & view
		Material & colour

Health build environment



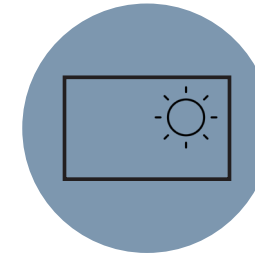
Physcial elements



Nature



Air

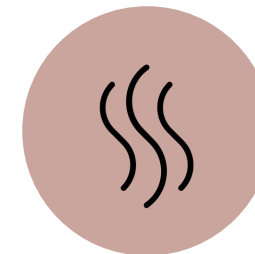


**Light and
sight**

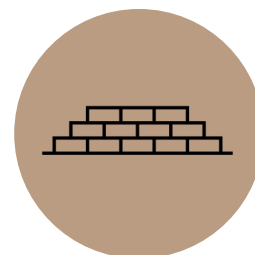


Sound

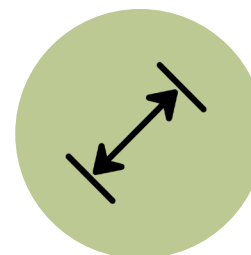
**Physical
elements**



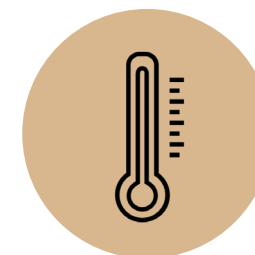
Smell



Materials



Dimensions



Temperature

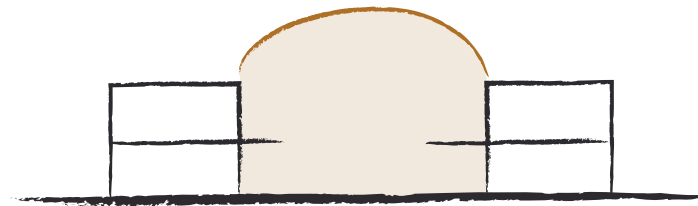
Shopping mall developments

Shopping mall

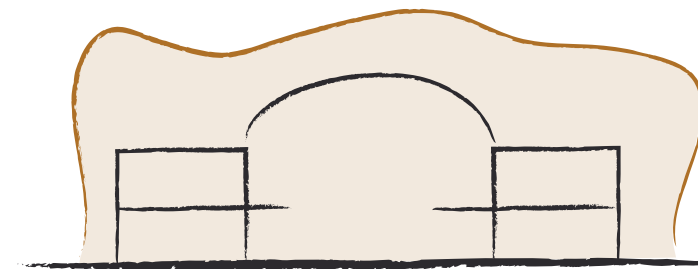
A very large - often covered - building or buildings containing a lot of stores and restaurants, usually with space outside for parking¹



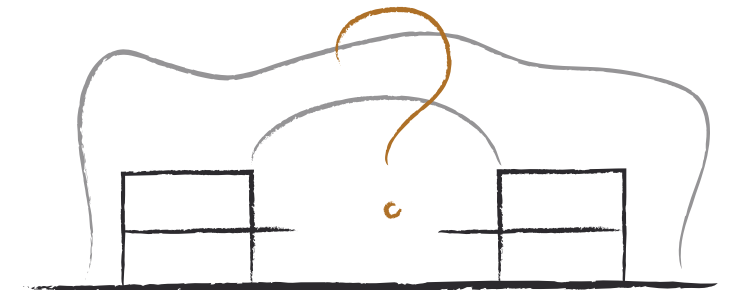
Canopies



Covered passage

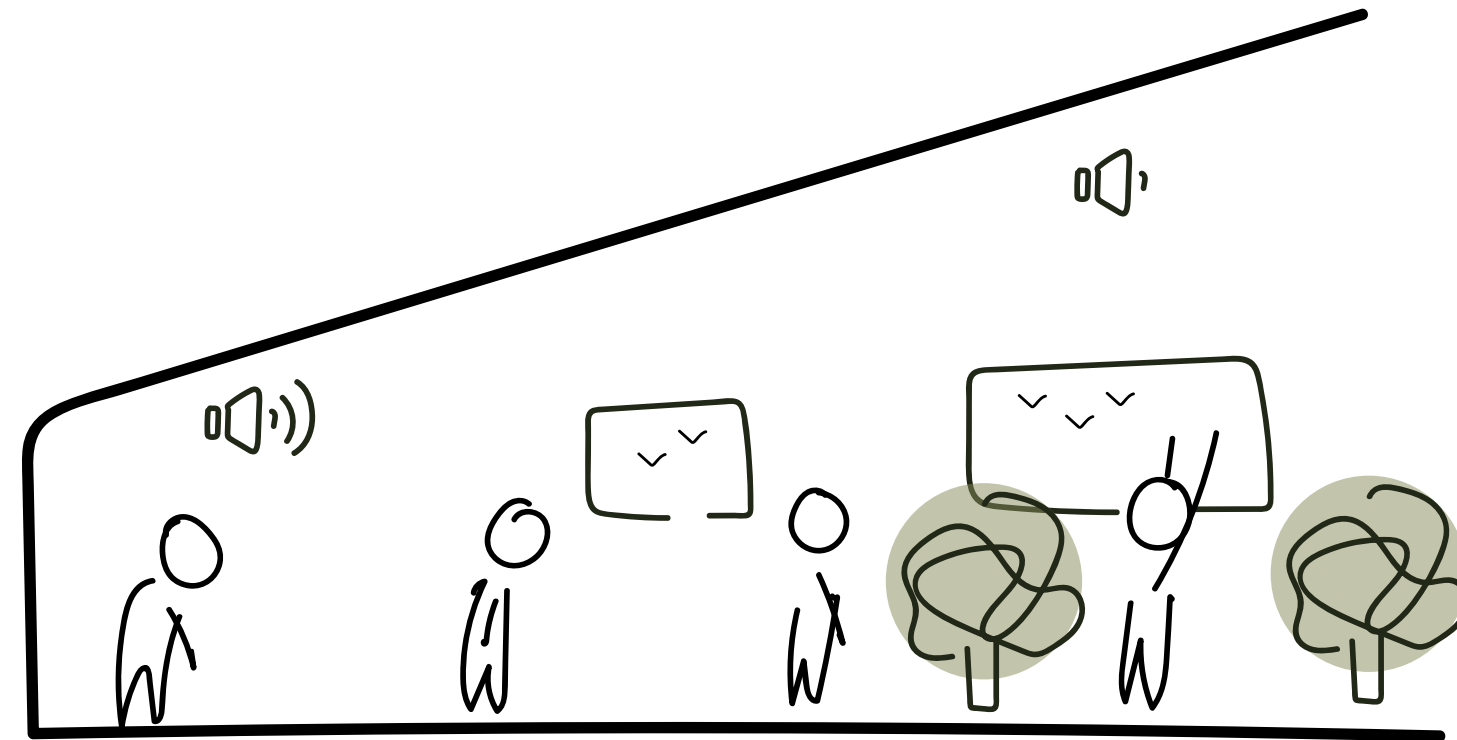


Freeshaped covered



?

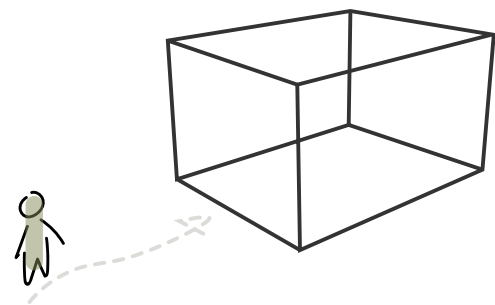
Goal



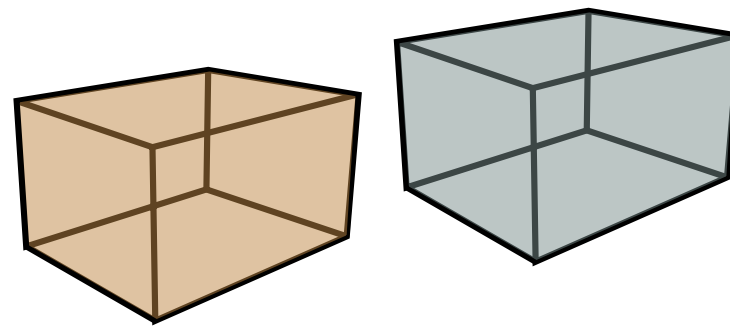
Creating a healthy space where people feel comfortable and is enjoyable.

Research question

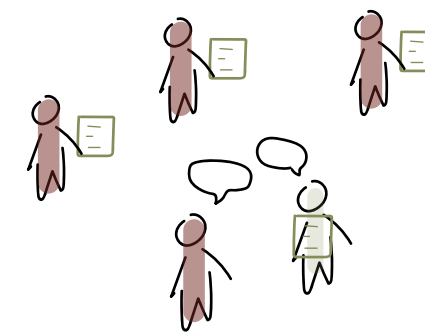
How to improve the experience of human wellbeing in a shopping mall by architectural interventions?



Visit



Case studies



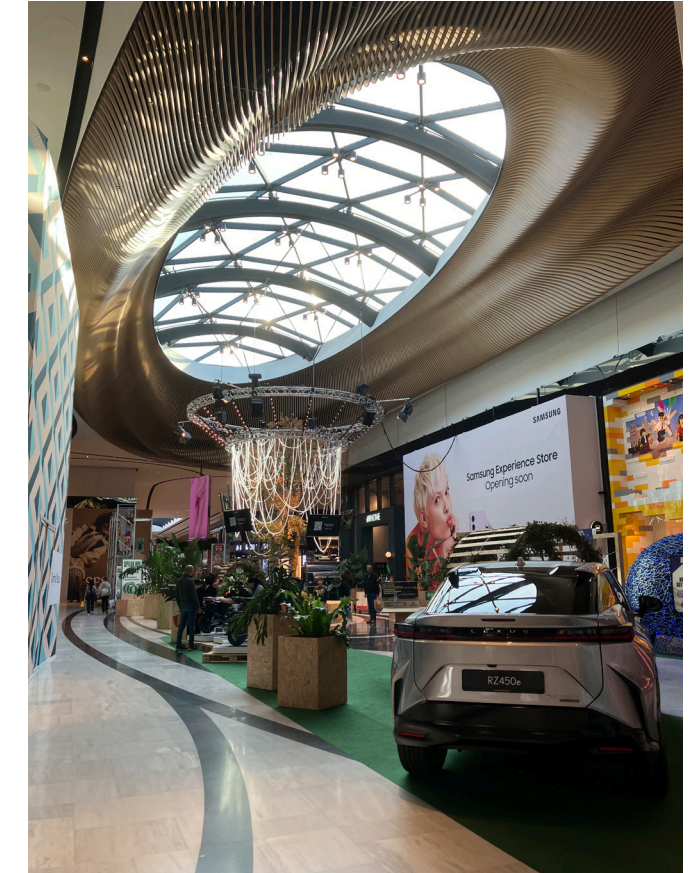
Interviews

Case studies

Oranjerie



Westfield mall



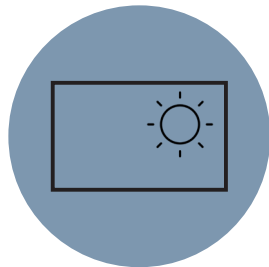
Case studies



Nature



Air



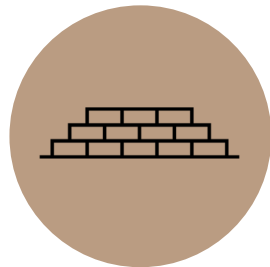
Light and sight



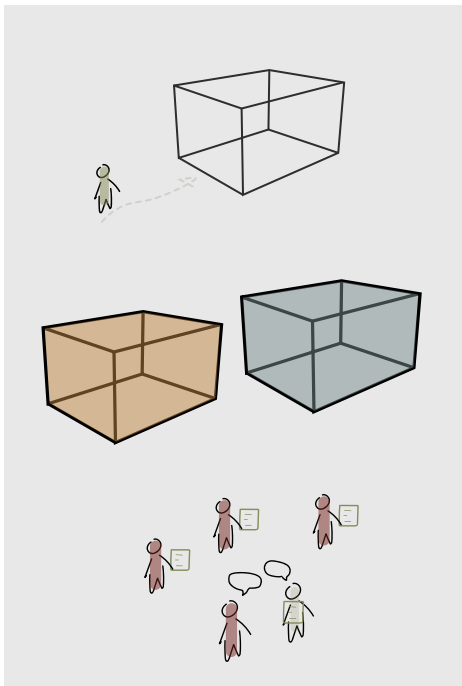
Sound



Smell



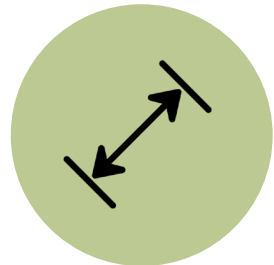
Materials



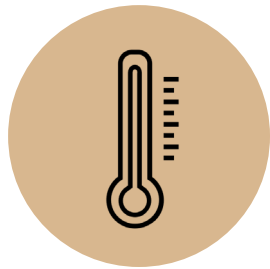
Oranjerie



Westfield mall

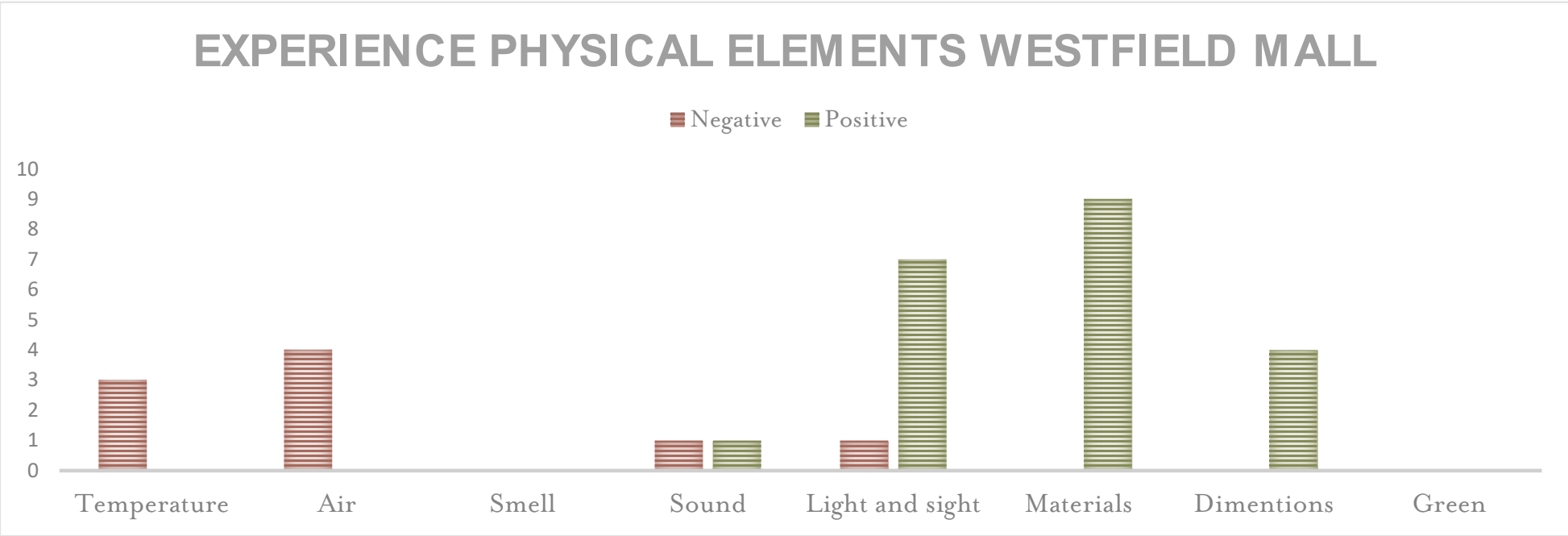
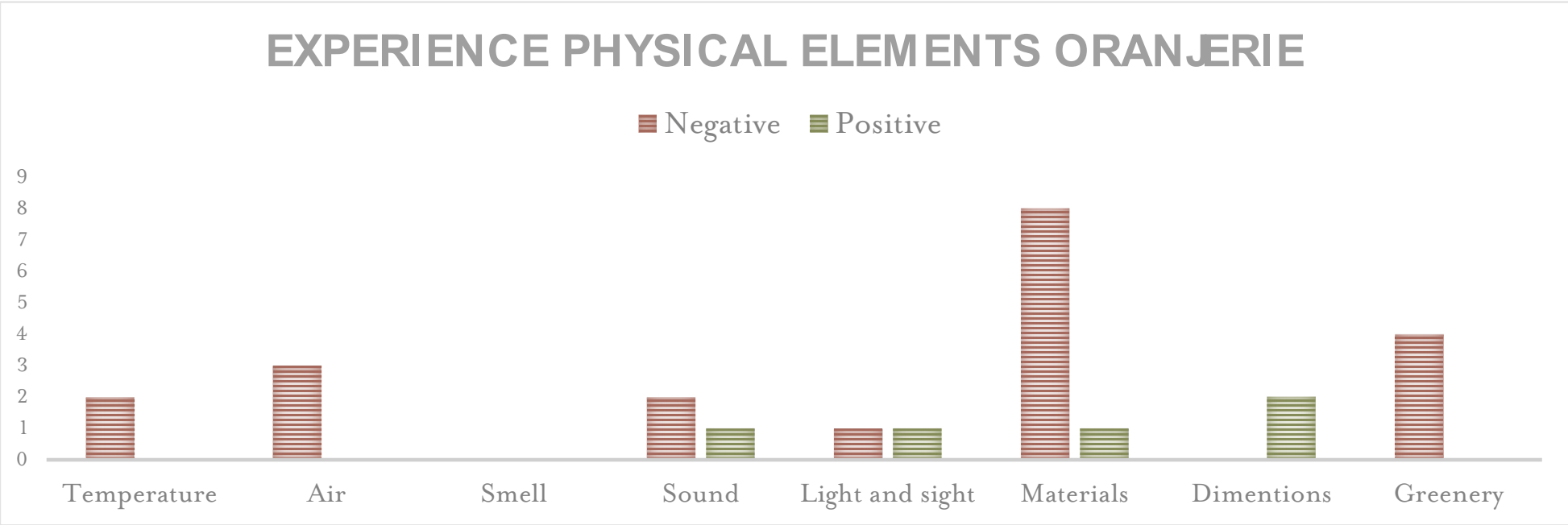


Dimensions

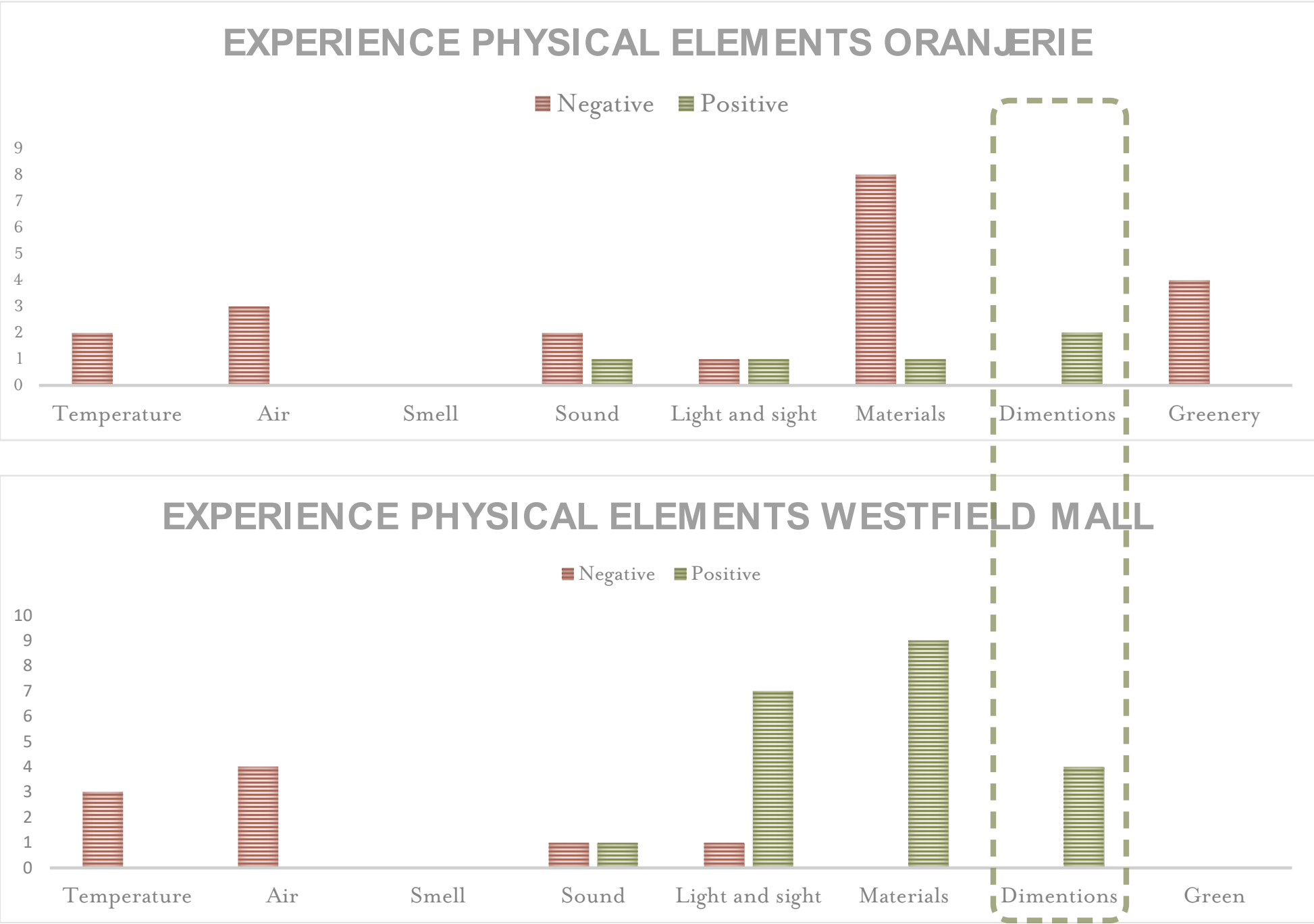


Temperature

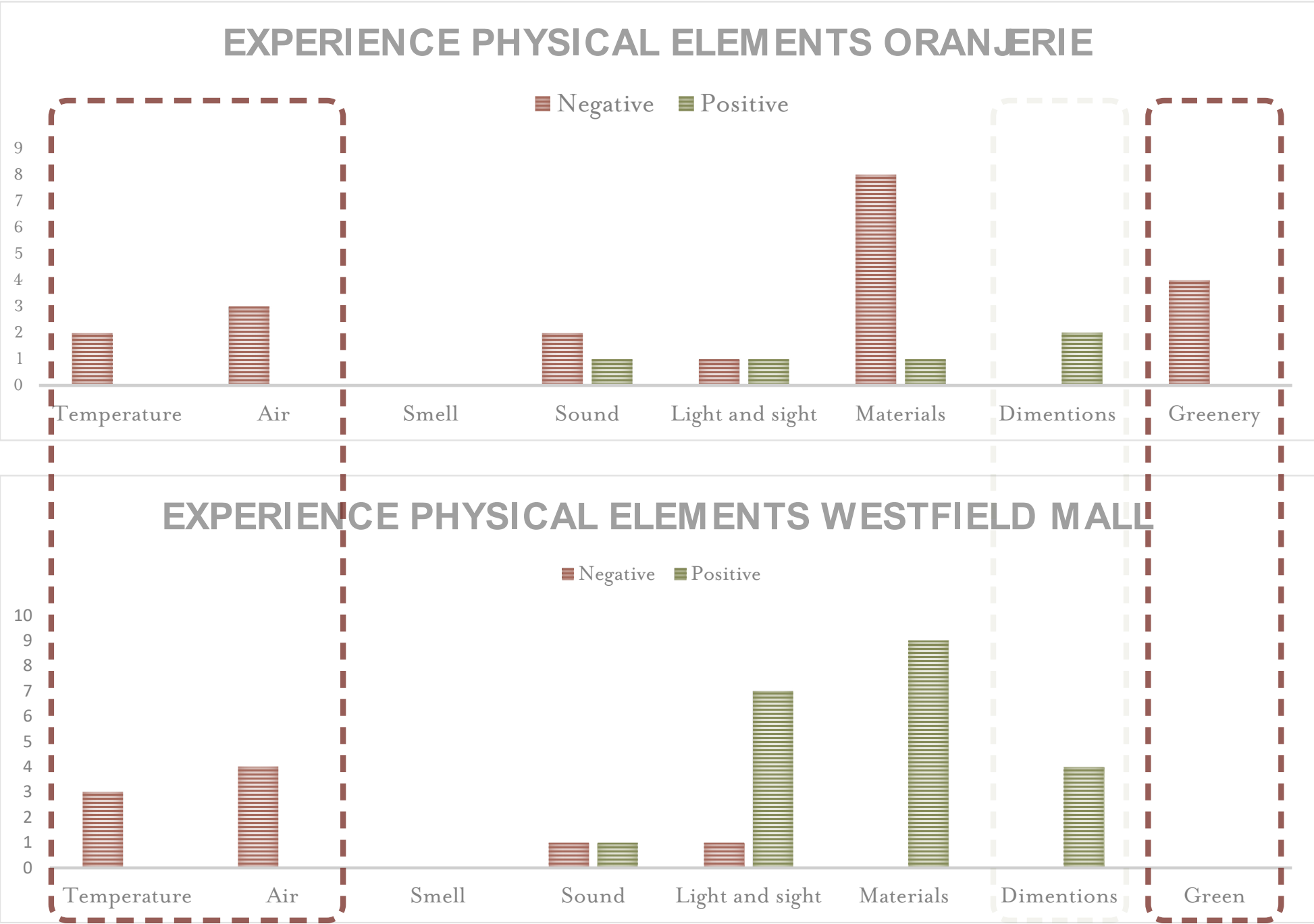
Results



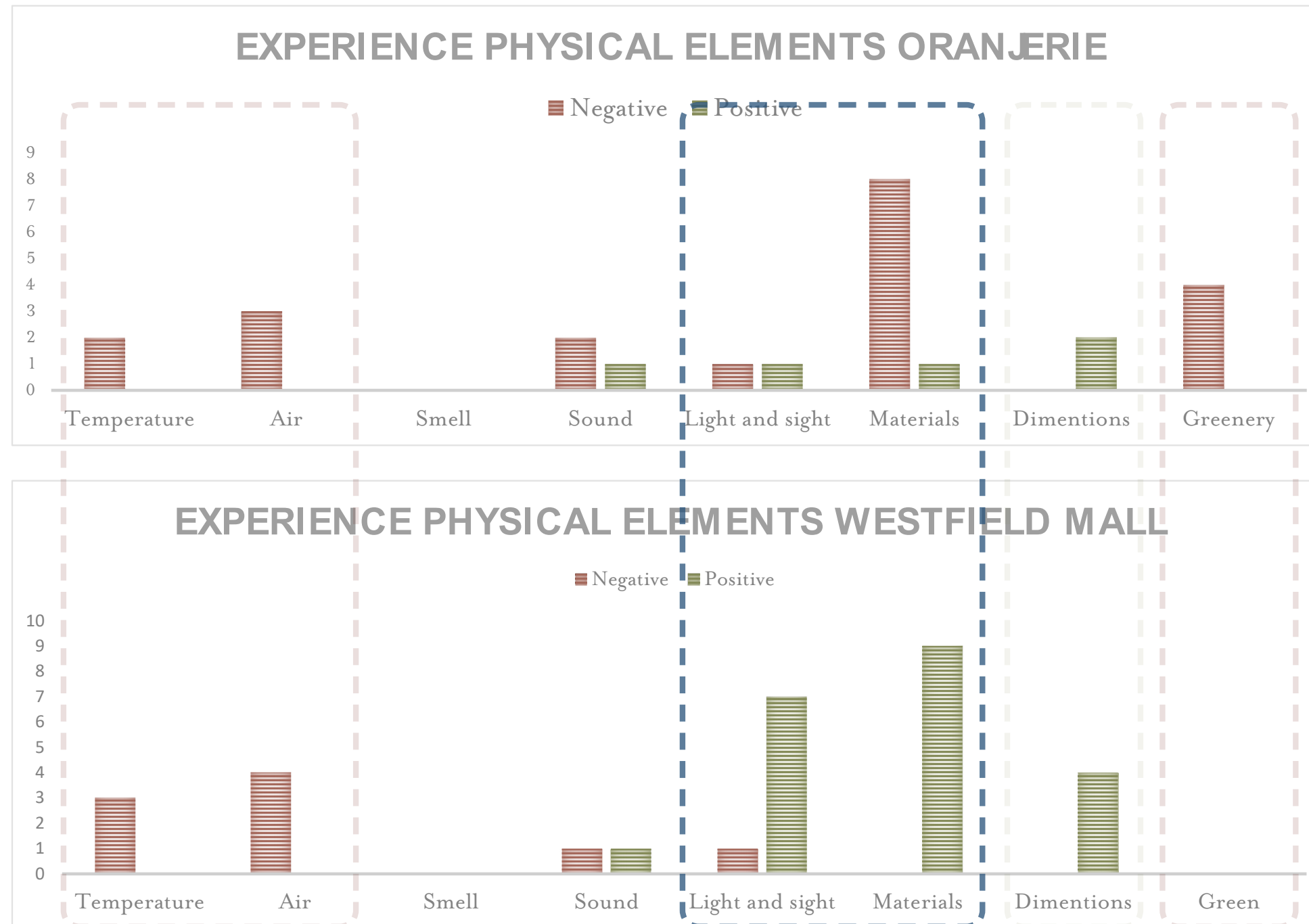
Results



Results



Results



Case studie comparison



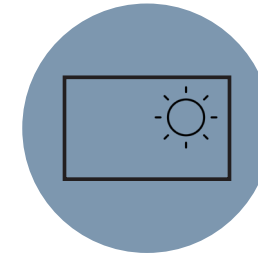
Conclusion



Nature



Air

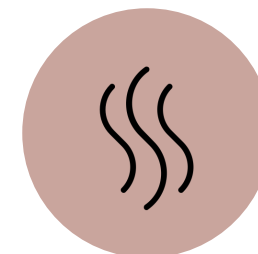


**Light and
sight**

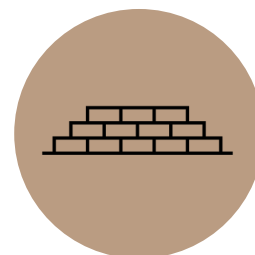


Sound

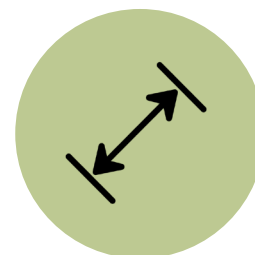
**Physical
elements**



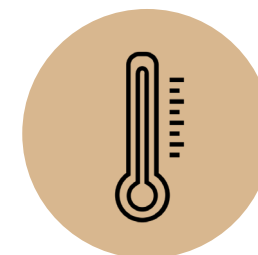
Smell



Materials



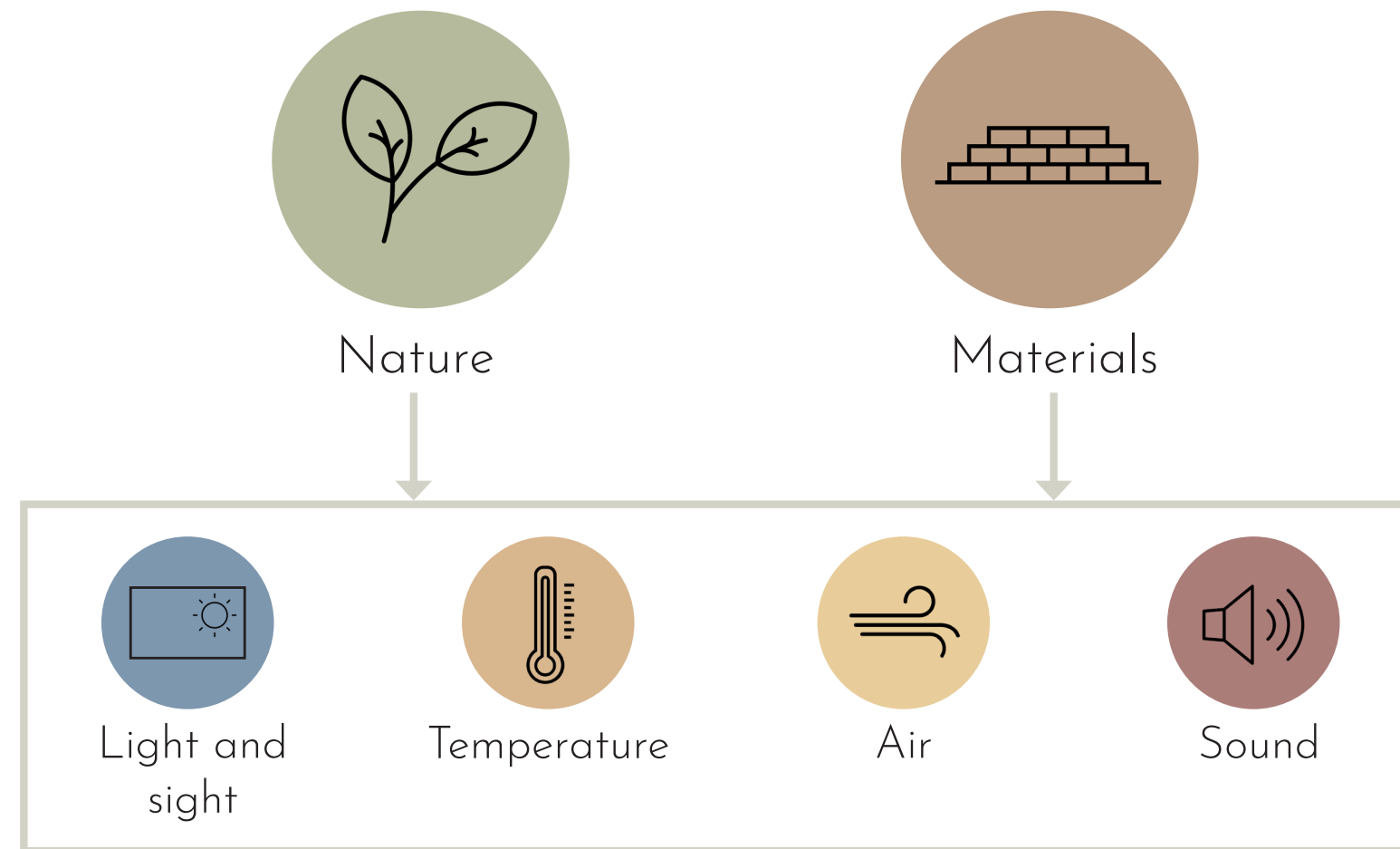
Dimensions



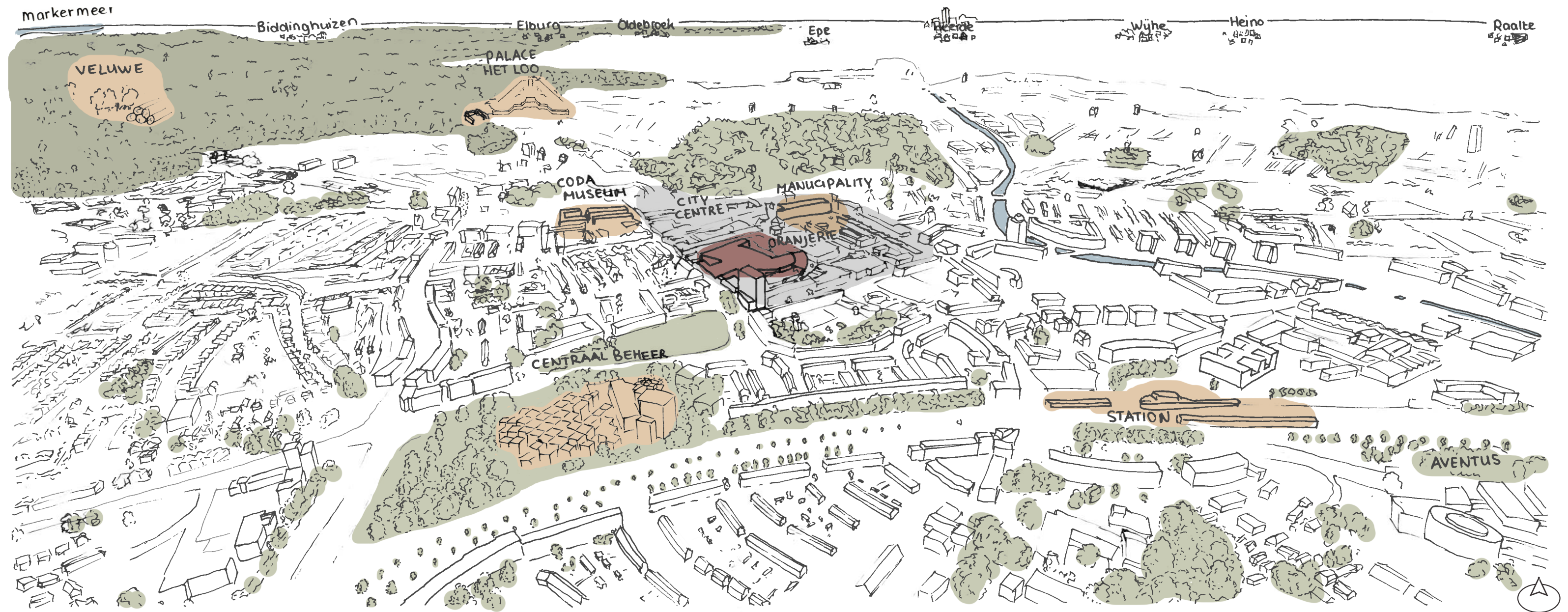
Temperature

Conclusion

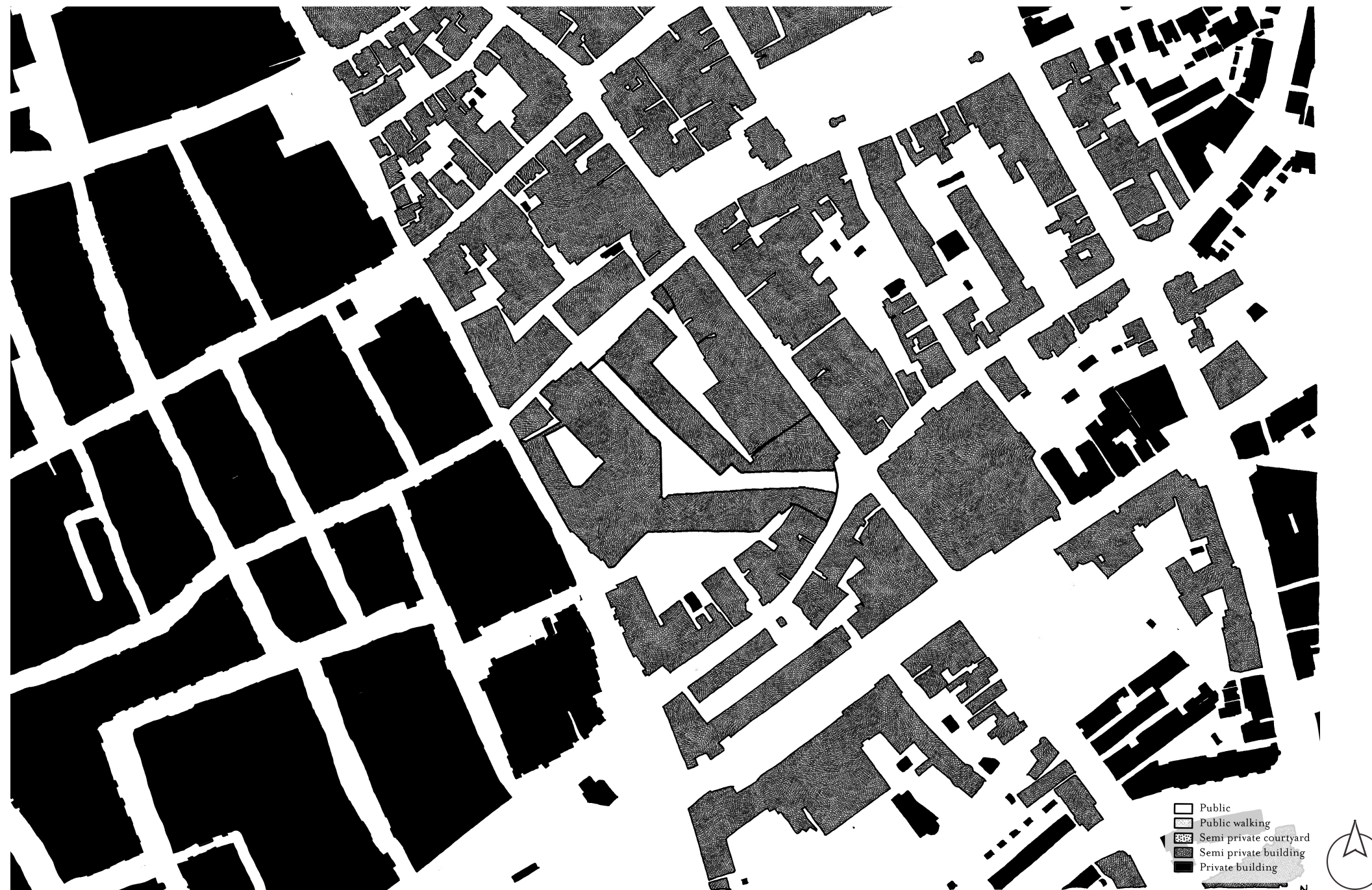
How to improve the experience of human wellbeing in a shopping mall by architectural interventions focussing on the physical elements?



Apeldoorn surroundings



Apeldoorn city centre



Apeldoorn city centre



Residential area

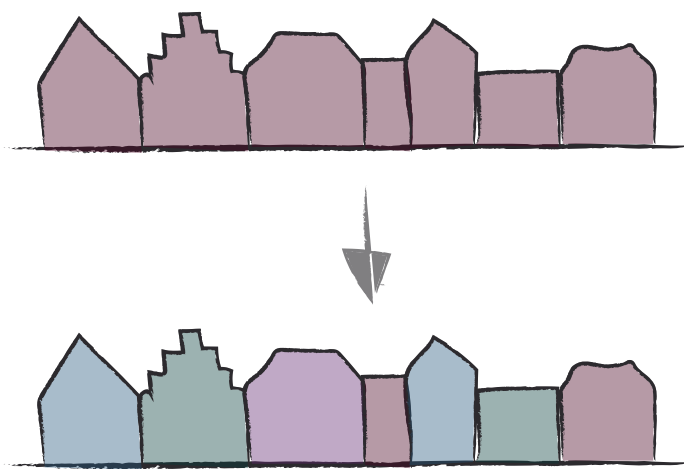


Market with municipality

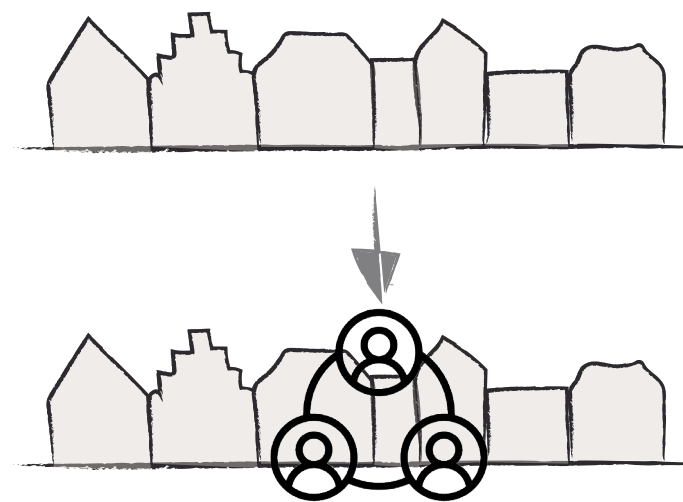


Hoofdstraat

Vision Apeldoorn



Mix of functions



City as a meeting
space



Densify



Healthy and green
outdoor

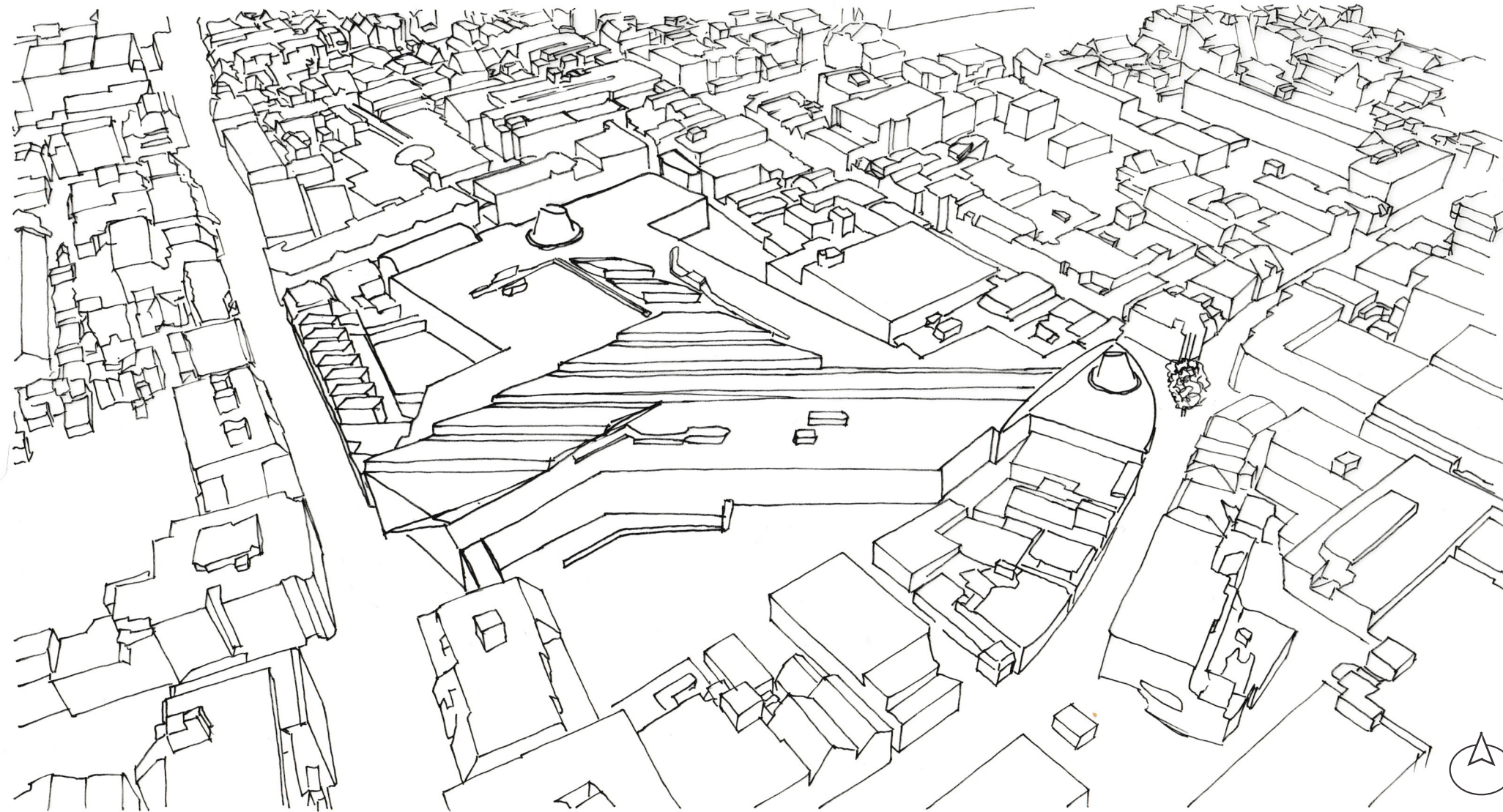
Typical Oranjeriers



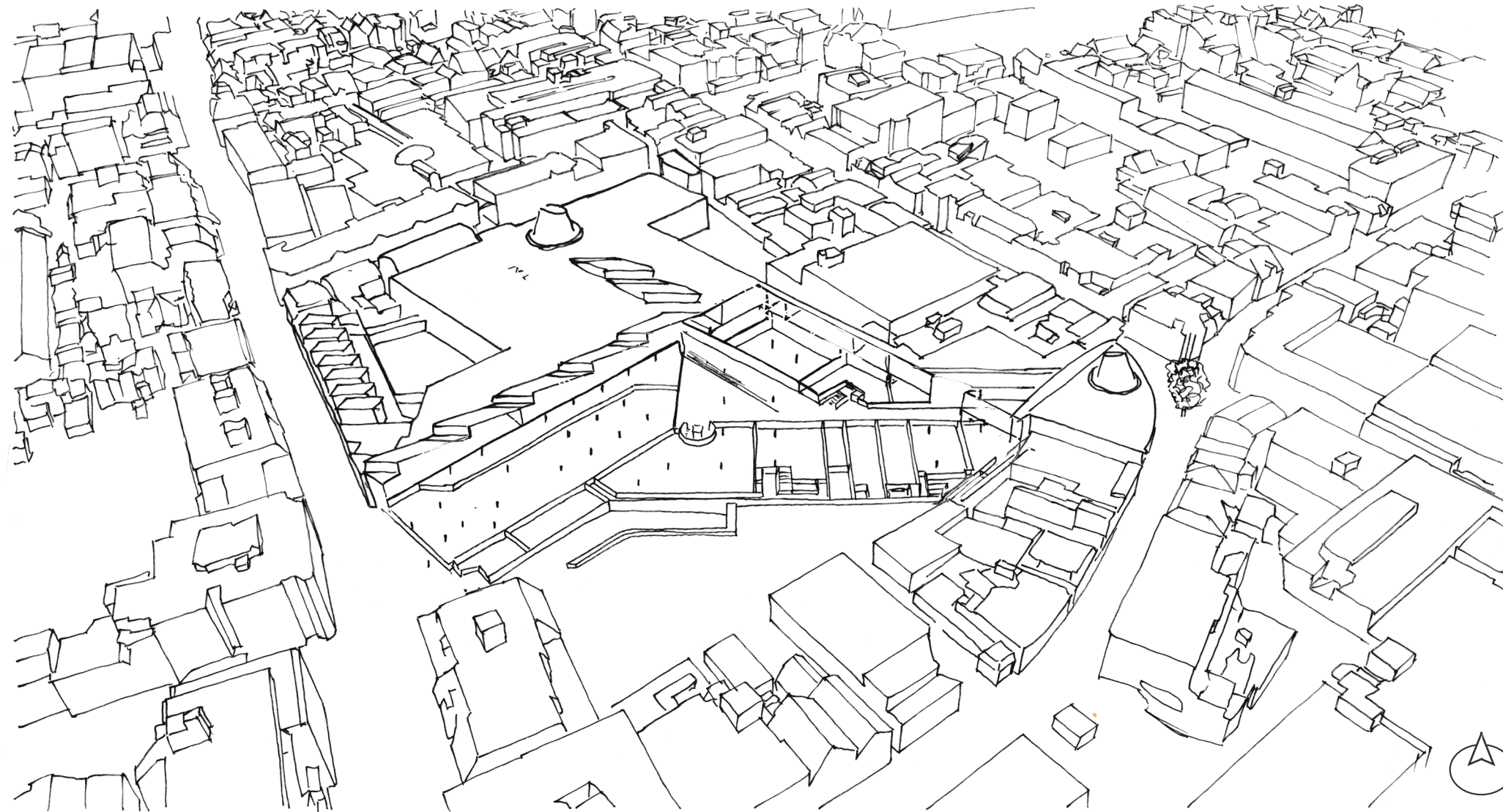
Big windows
A lot of glass
Sight outside - inside
Greenery in- and outside
Rounded shapes



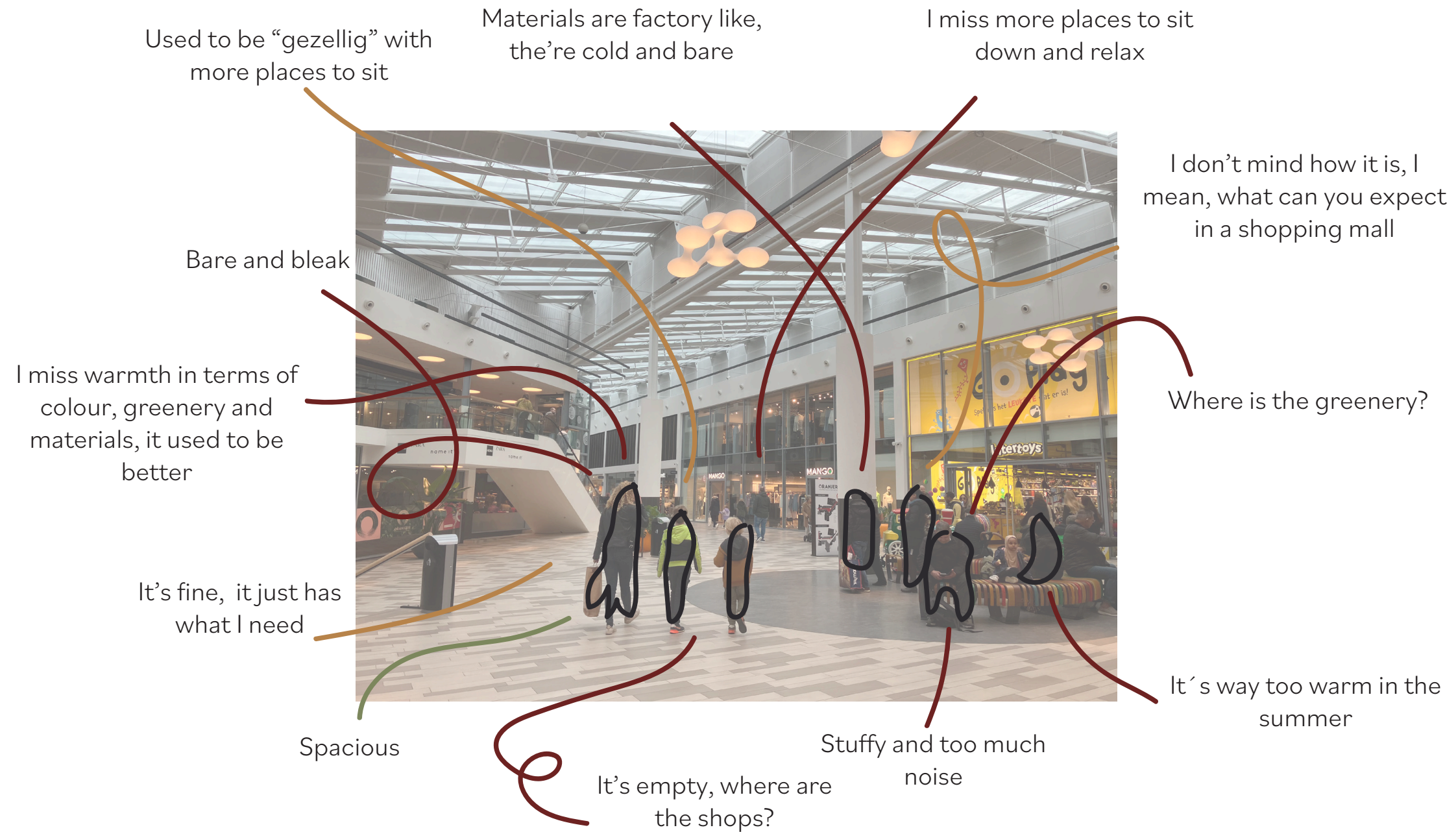
Oranjerie currently



Oranjerie currently



Experience Oranjerie



Value assesment Oranjerie original design

Natural material



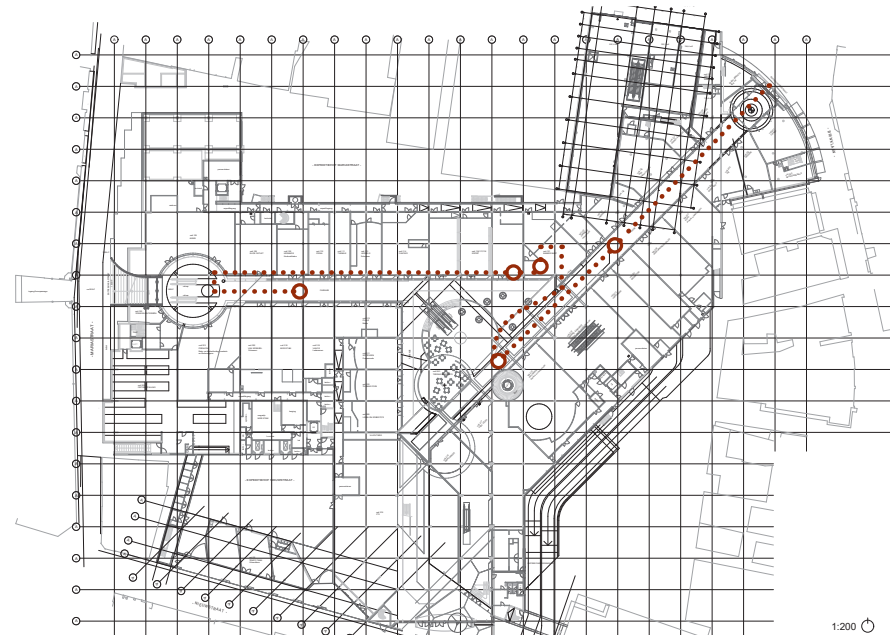
Restaurants



Heigh ceilings



Facade shops



Tree indoors and bridge

Value assessment Oranjerie current design

Width passage



Spacious square



Heigh ceilings



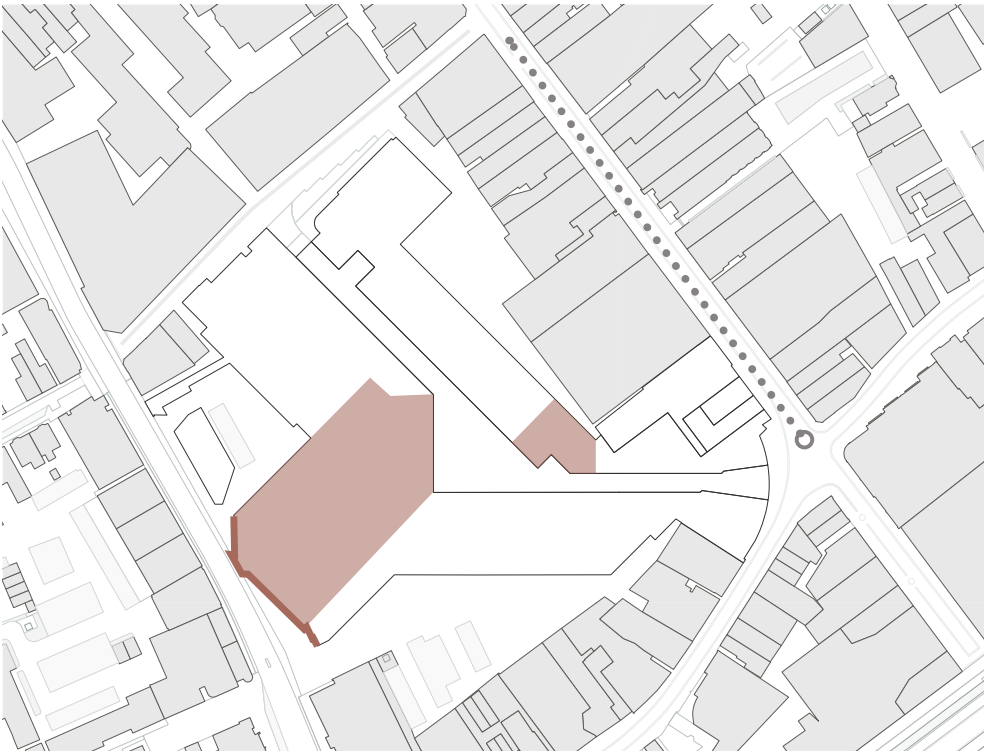
Skylight



Skylight

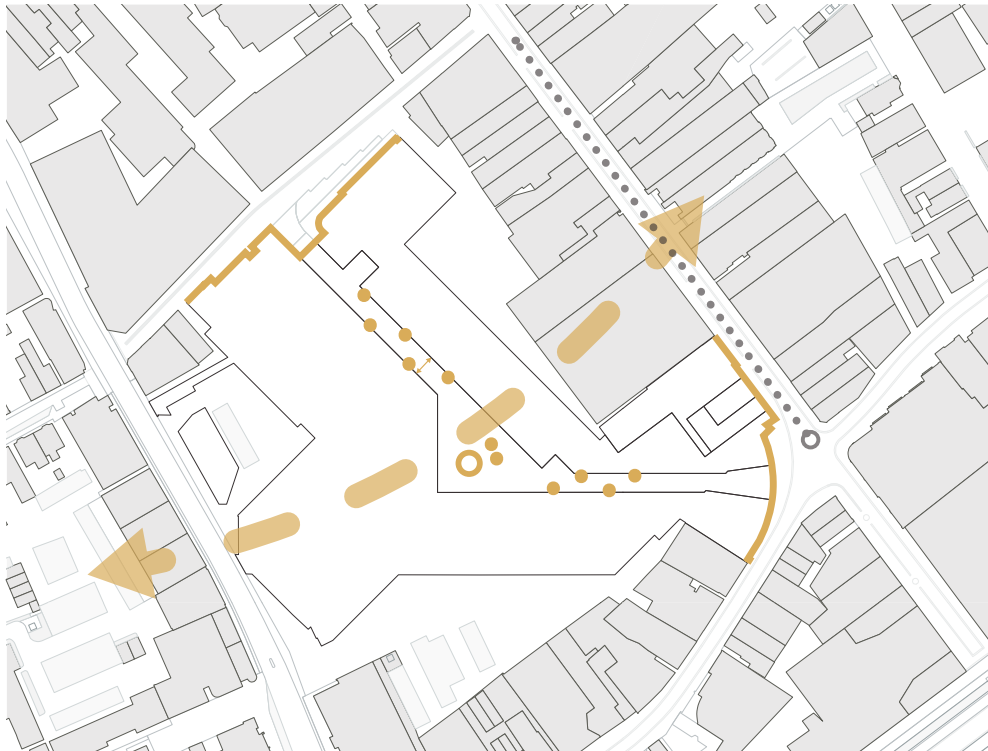
Value assessment overview

Low value



Floorplan

Medium value



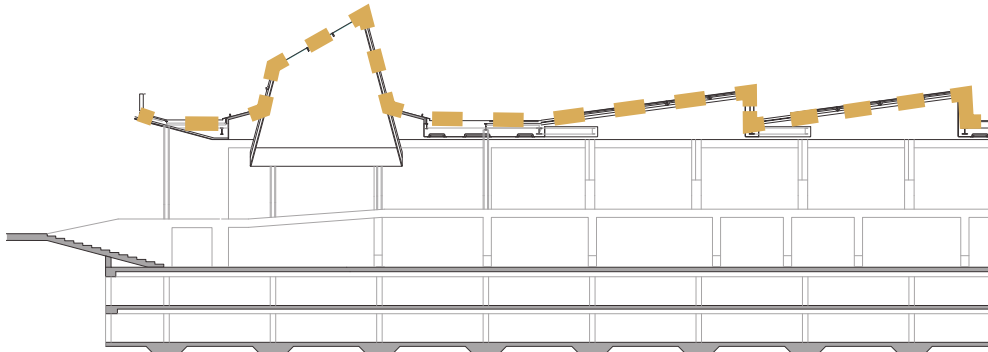
Floorplan

High value

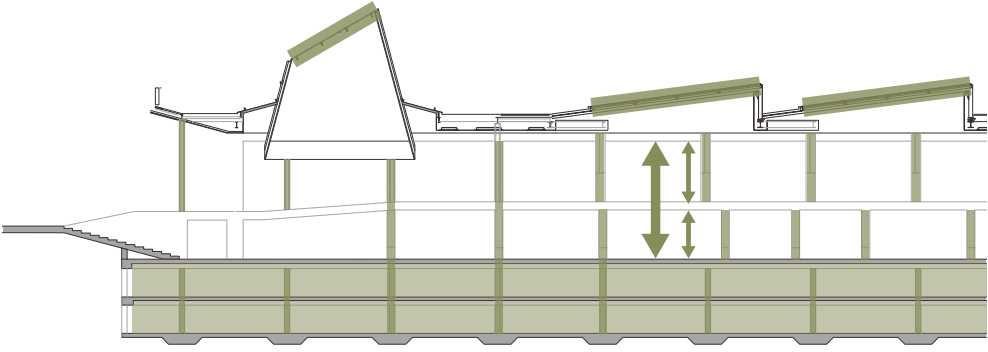


Floorplan

- High value
- Medium value
- Low value



Section



Section

Vision Oranjerie

Adding nature

Having view on nature from every p.o.v.



Flowers



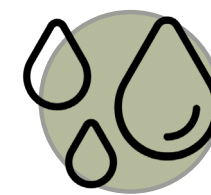
Shrubs



Trees



Grass



Water

Vision Oranjerie

Adding nature

Having view on nature from every p.o.v.

Using healthy materials

Biobased

Reusing/Recycling materials



Guidelines/Vision Oranjerie

Adding nature

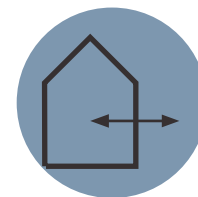
Having view on nature from every p.o.v.

Using healthy materials

Biobased

Reusing/Recycling materials

Connection inside outside



Vision Oranjerie

Adding nature

Having view on nature from every p.o.v.

Using healthy materials

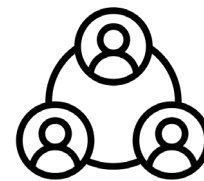
Biobased

Reusing/Recycling materials

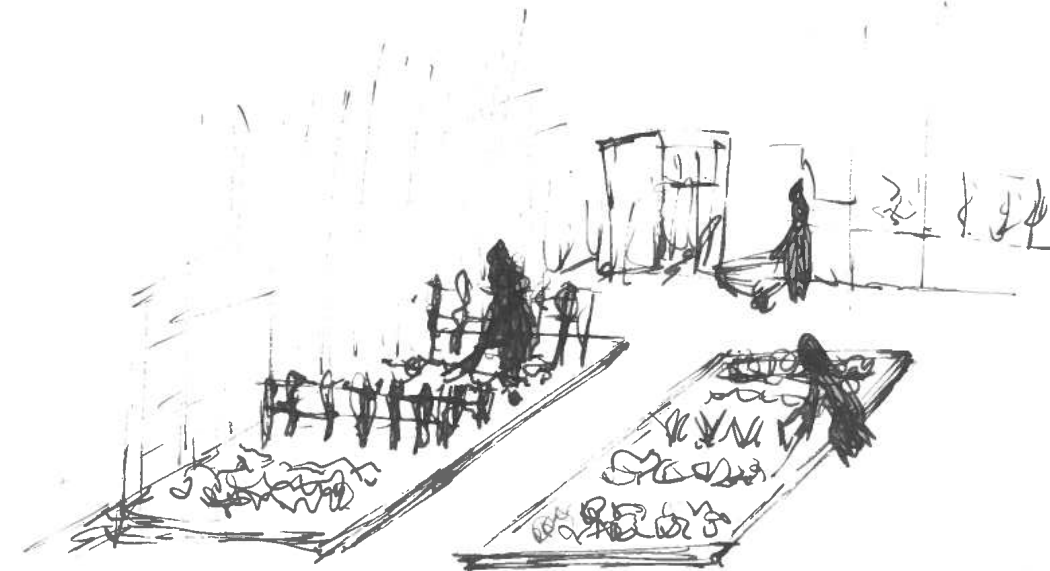
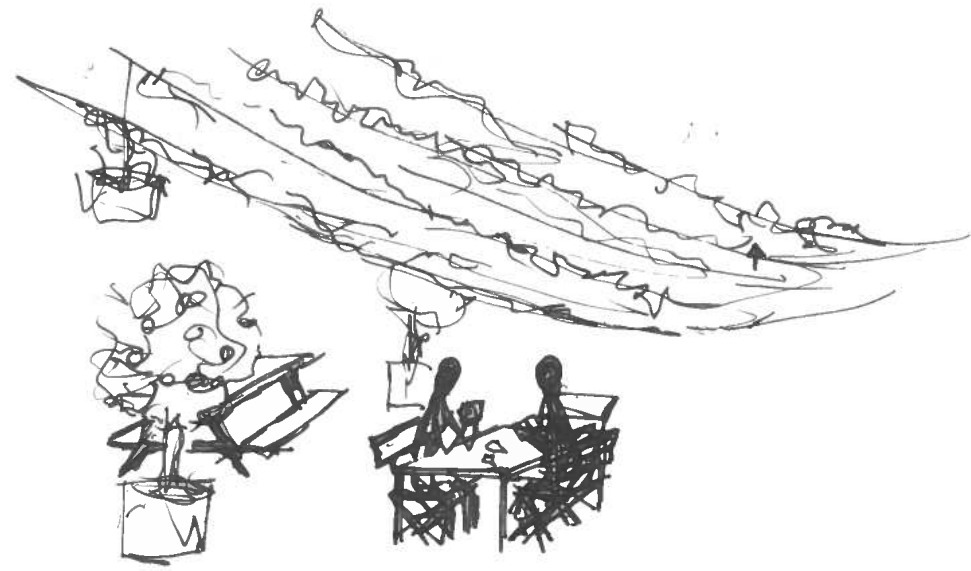
Connection inside outside

Several meeting spaces

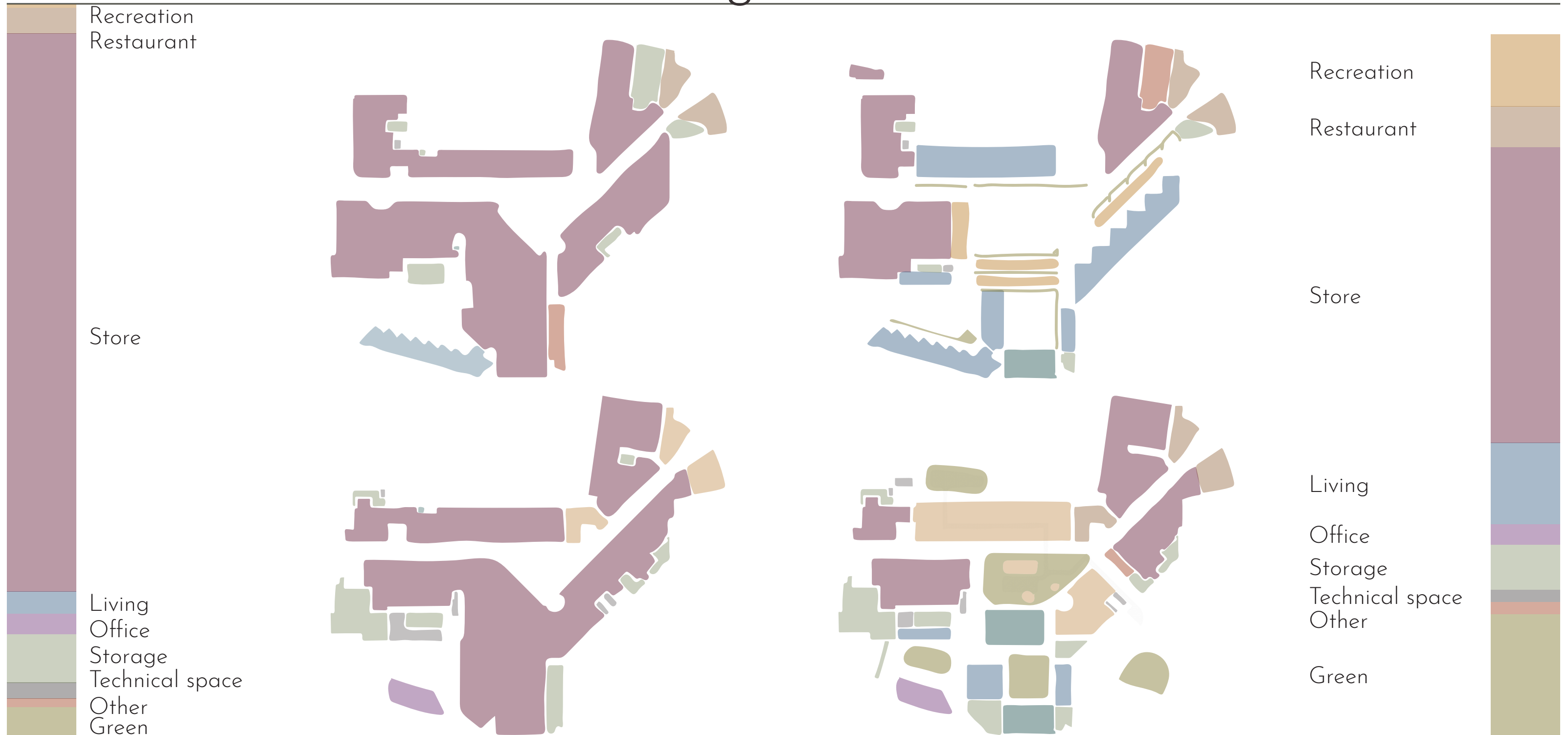
Diversity of functions



Programme

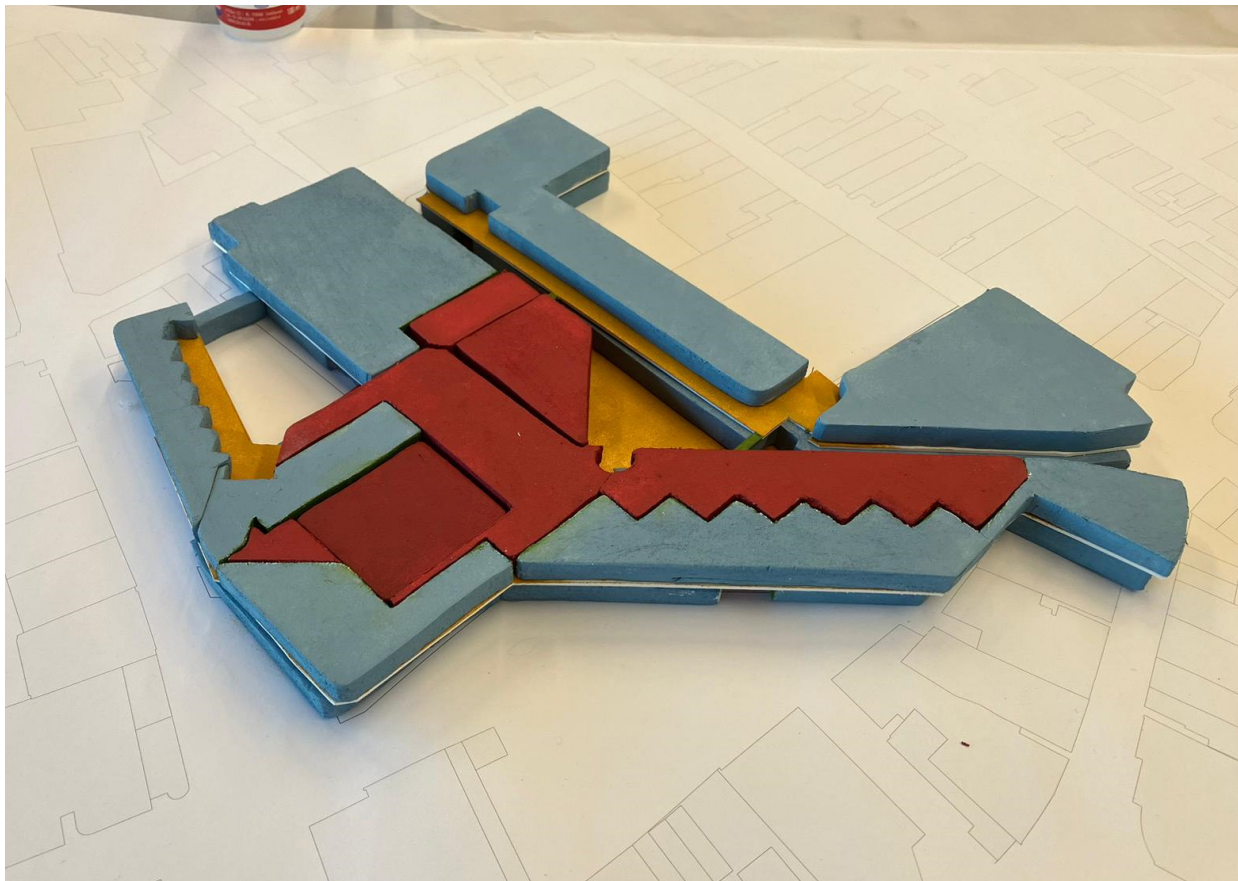


Programme

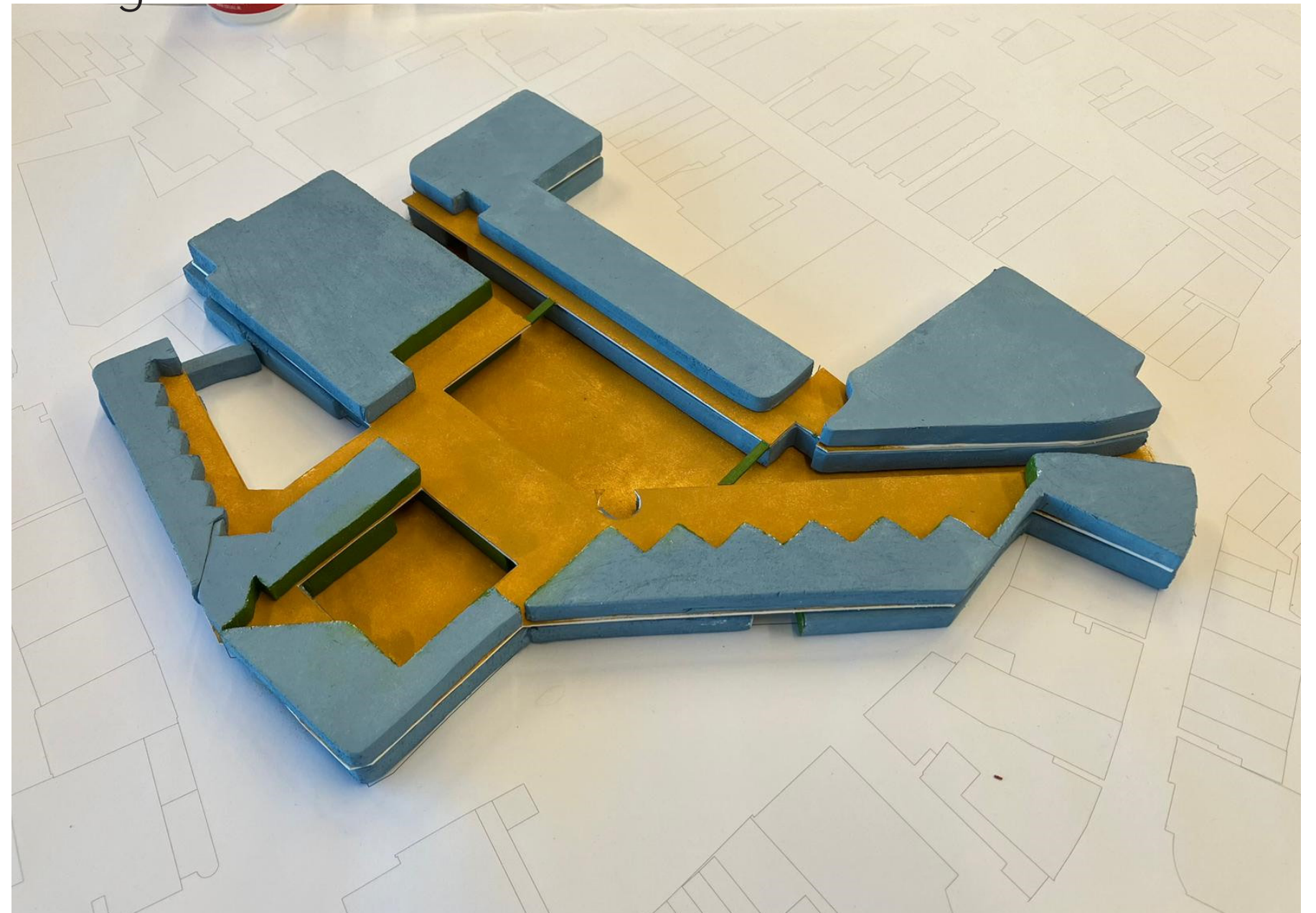


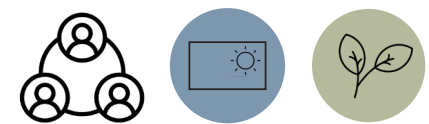
Model

Current



Design





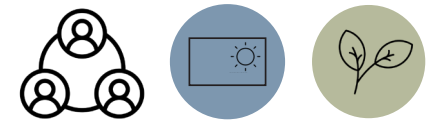
Functions floorplan design and current

Current



Design



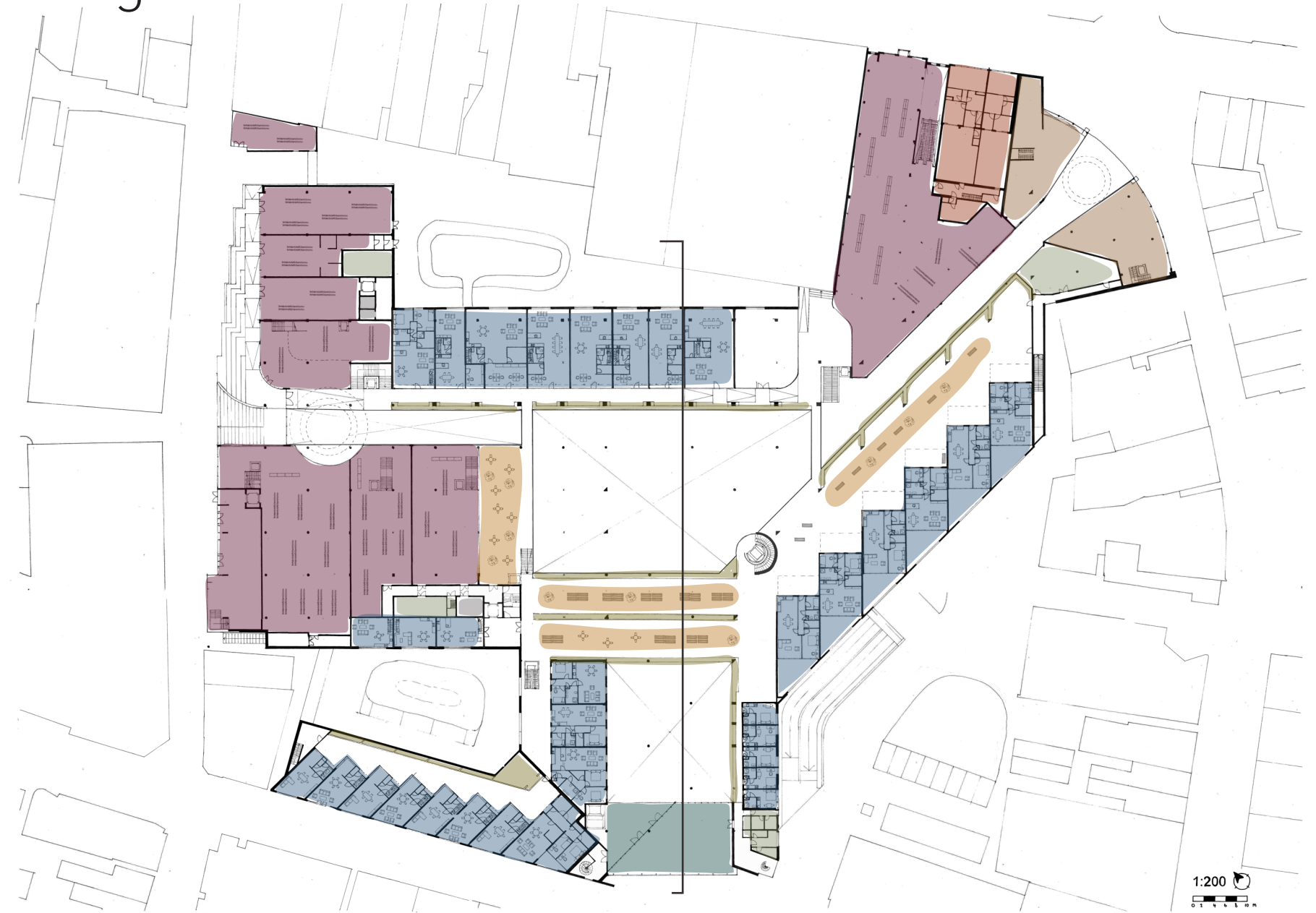


Functions floorplan design and current

Current



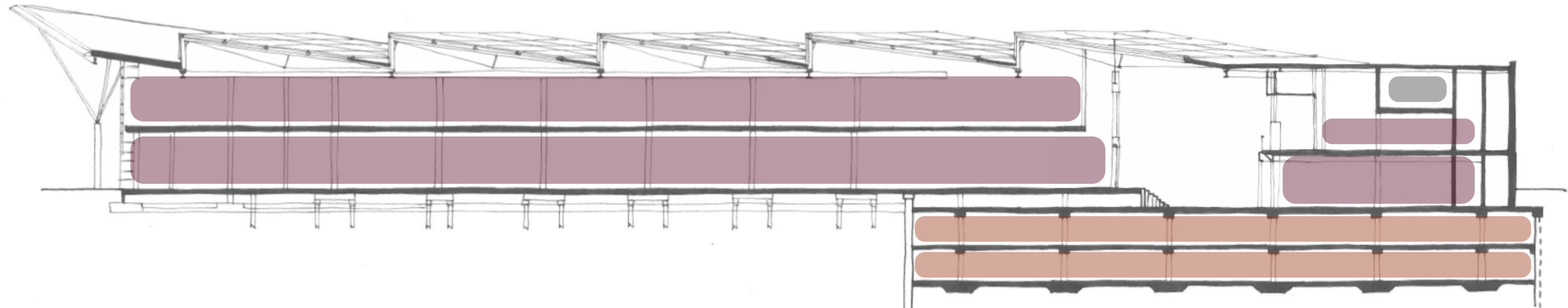
Design



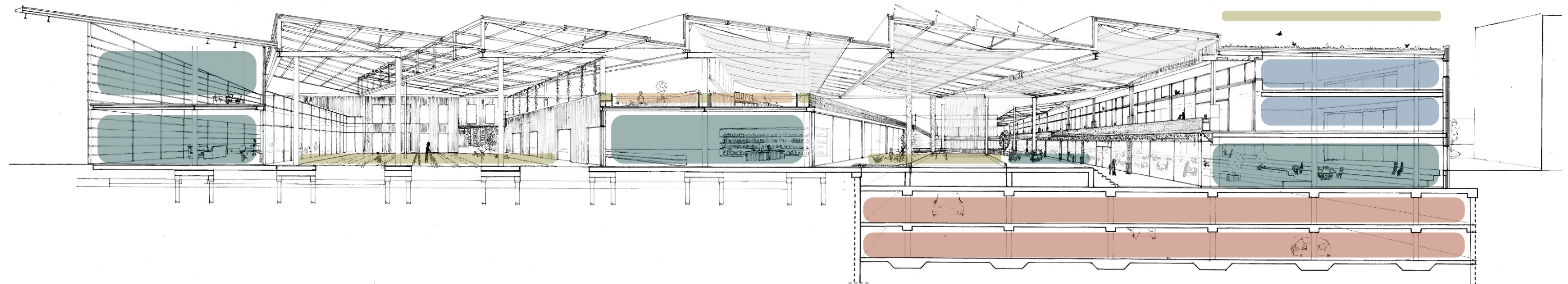
Section

Abstracted version

Current



Design



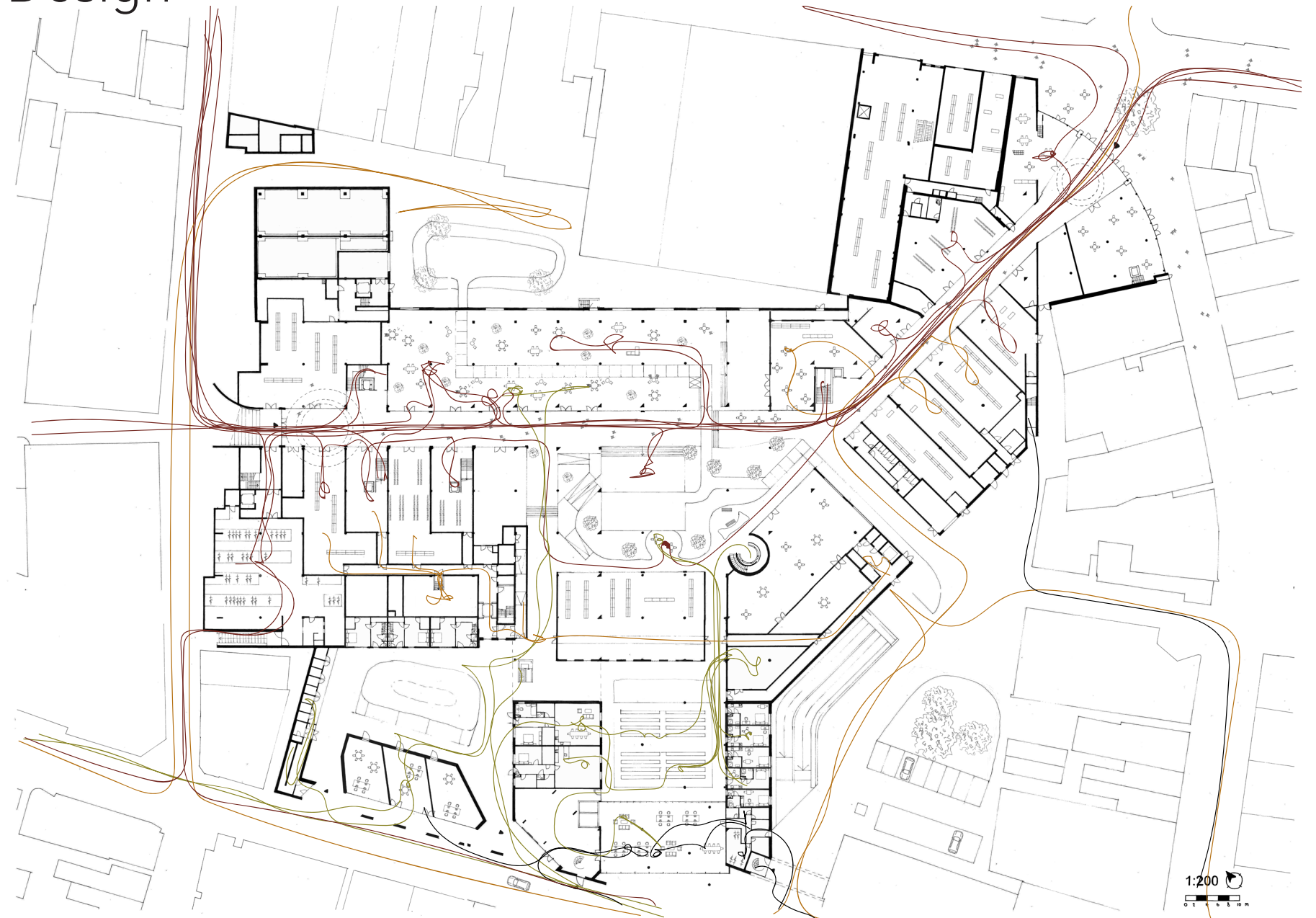
Routing current and design

Current

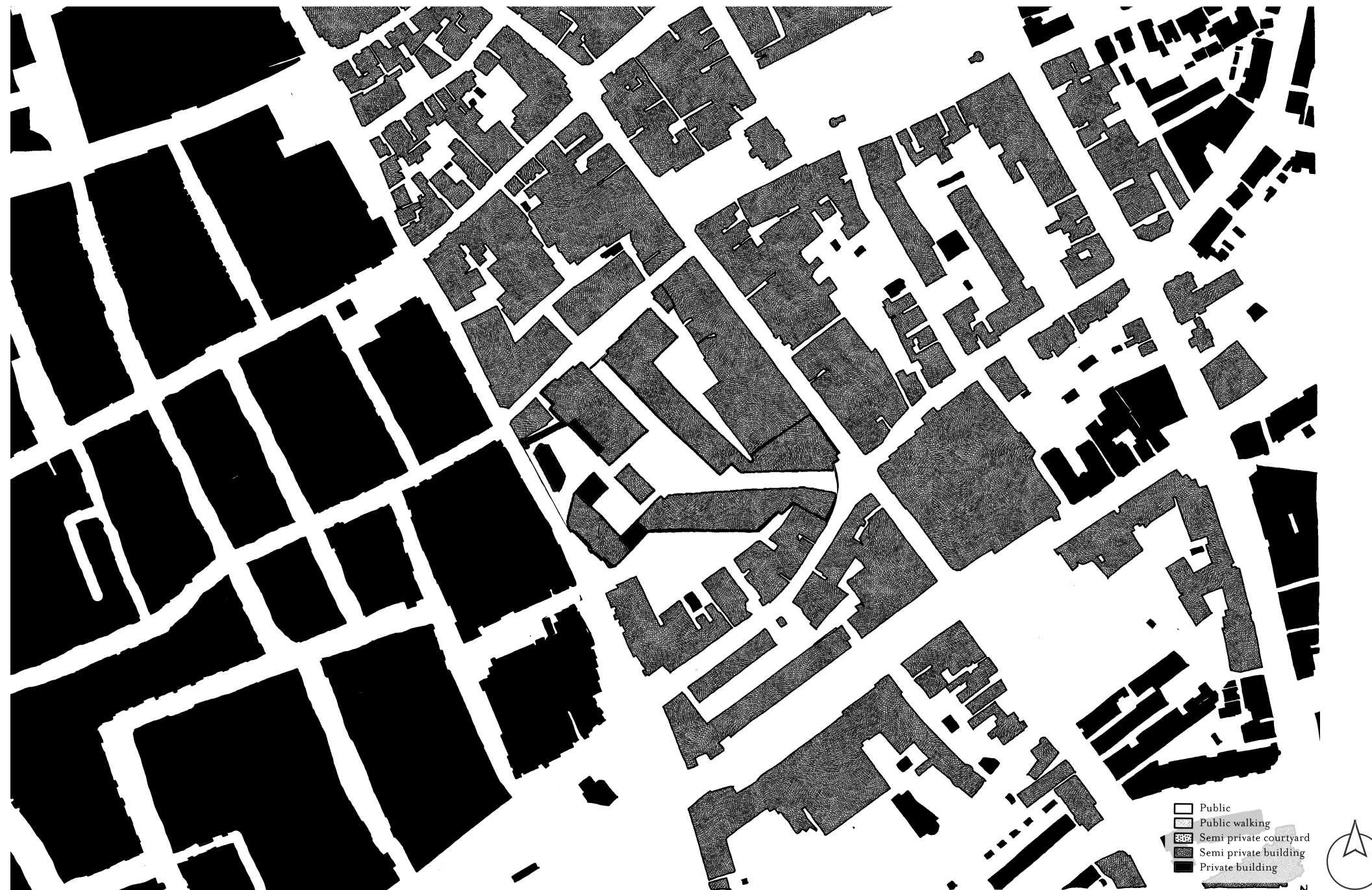


- Shopper
- Resident
- Logistic

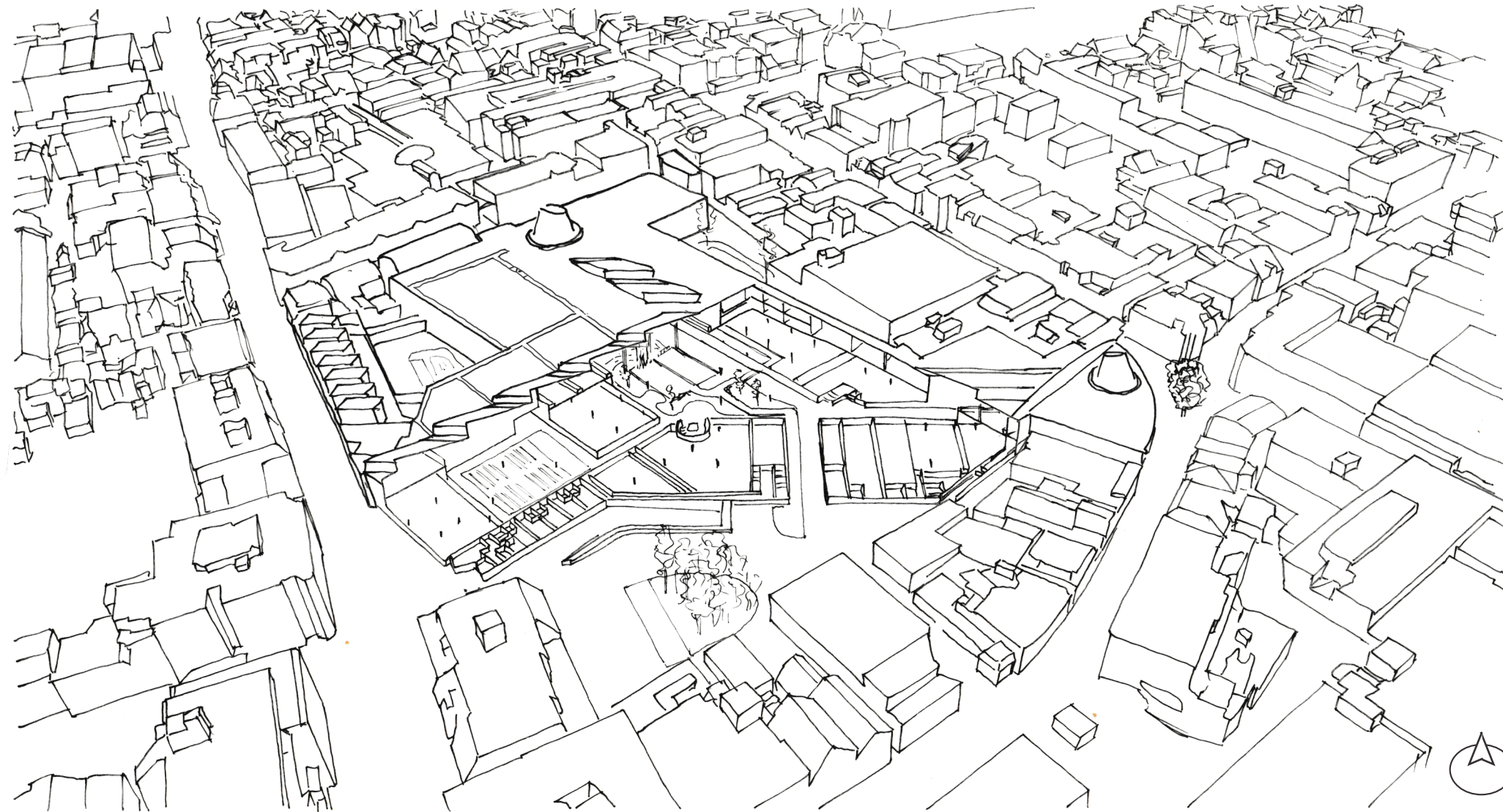
Design



Nolli map design



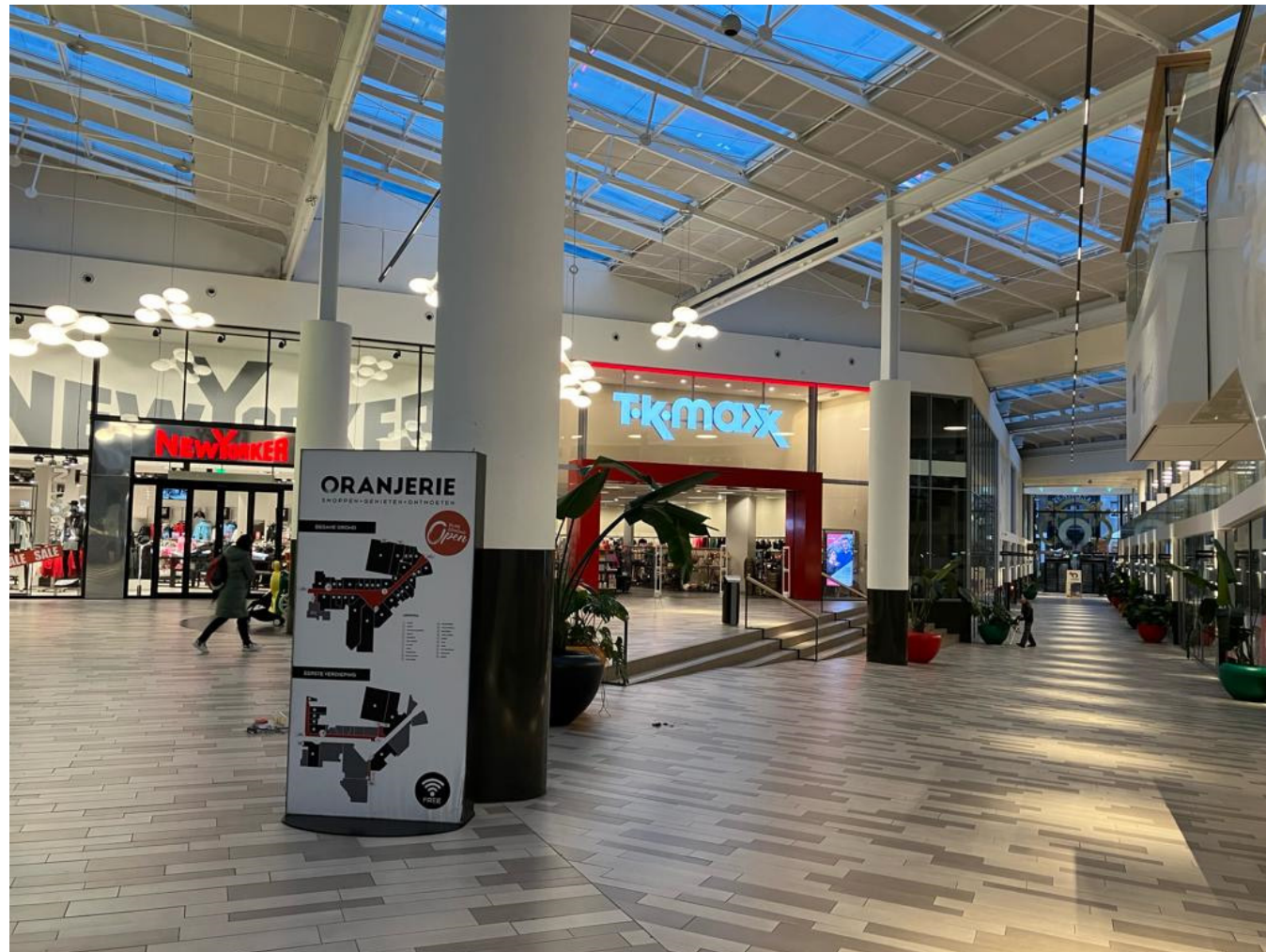
Overview design



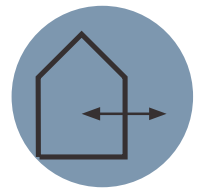
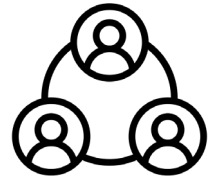
Main square



Comparison current and design



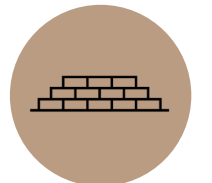
Themes design



Inside
Outside

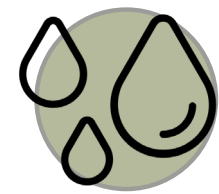


Nature

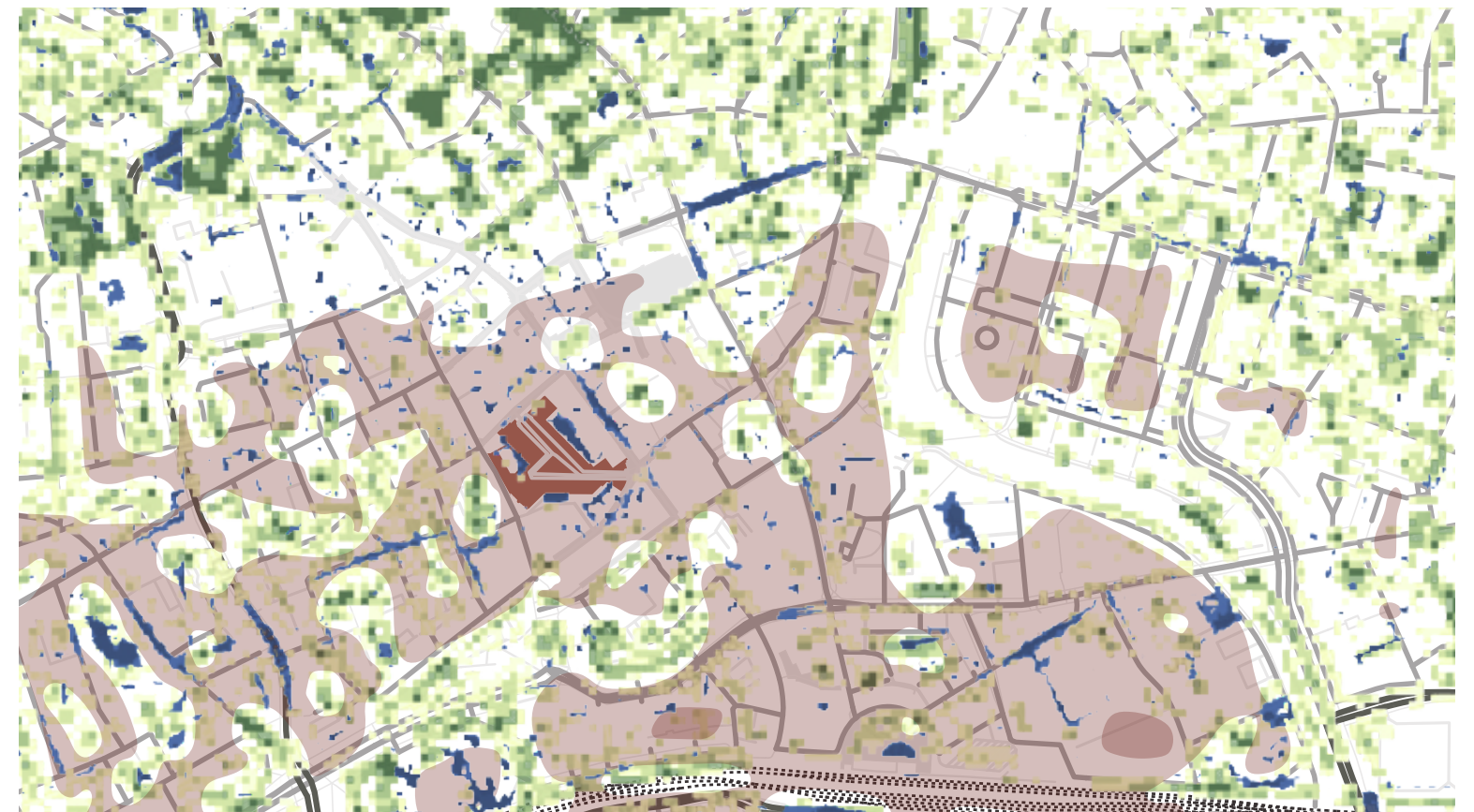


Materials

Nature - Water



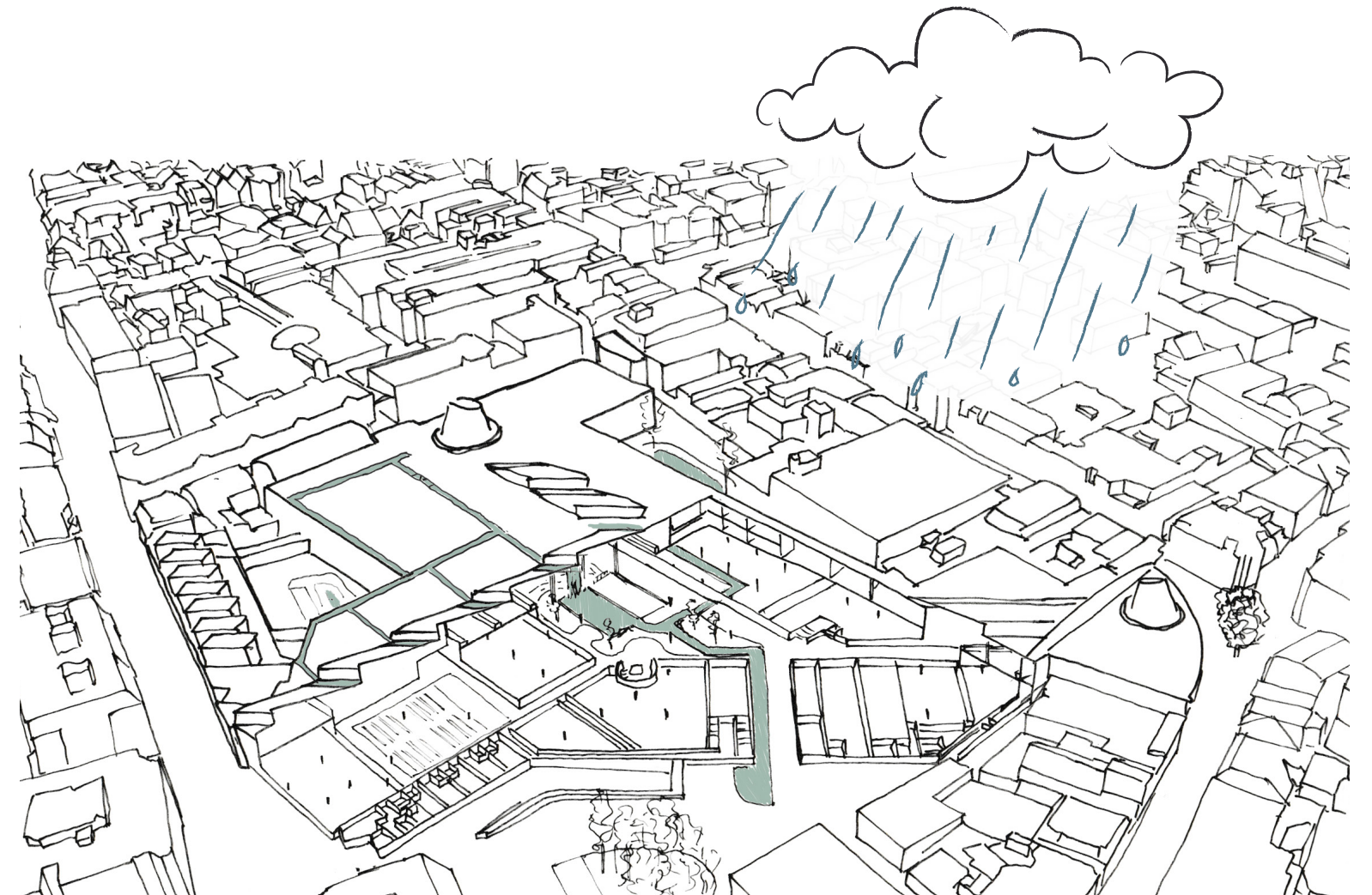
Water



0 50 100 150 200 250 m 1 : 5.000

Water

1. Rain



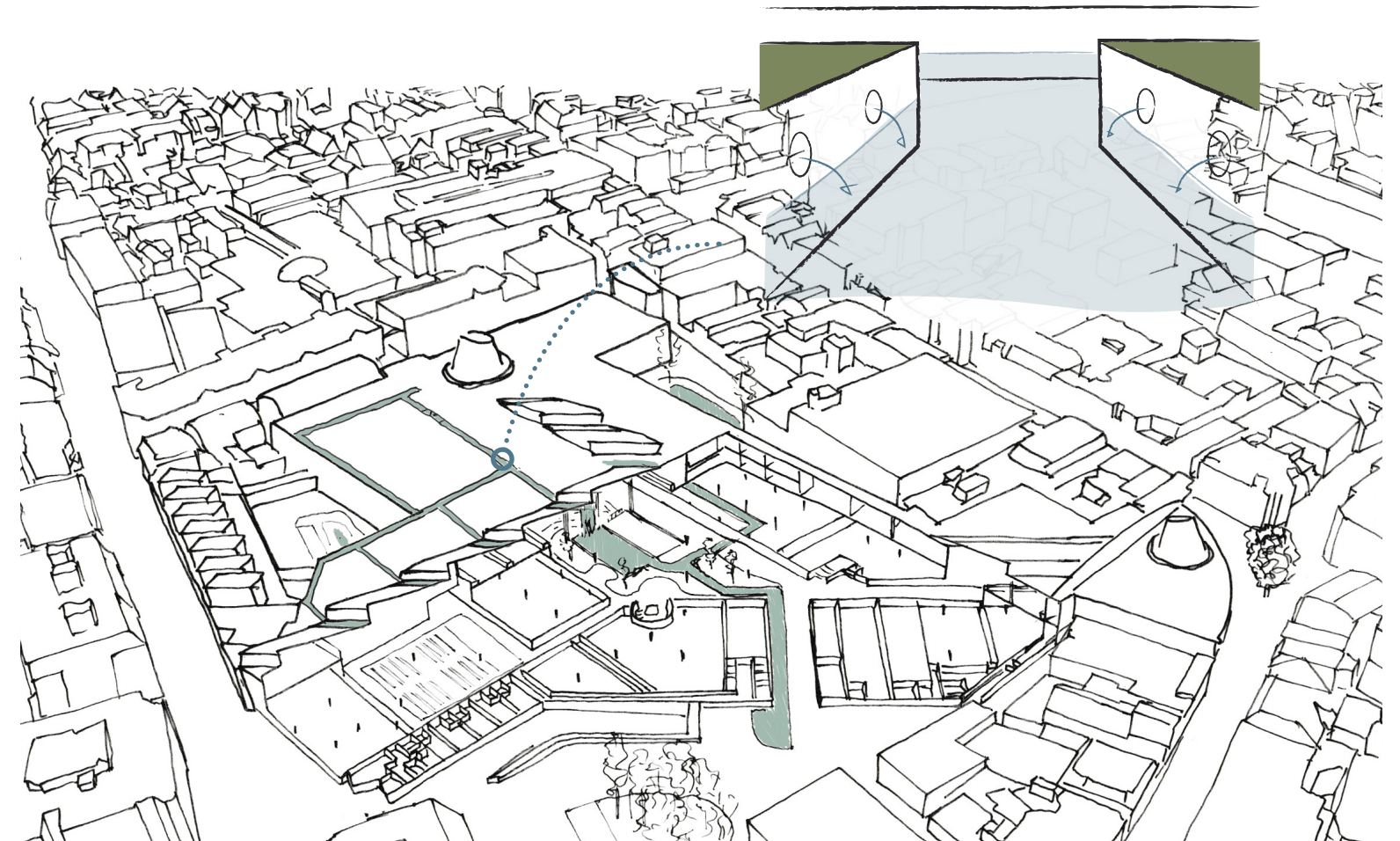
Water

2. Water roof and collection



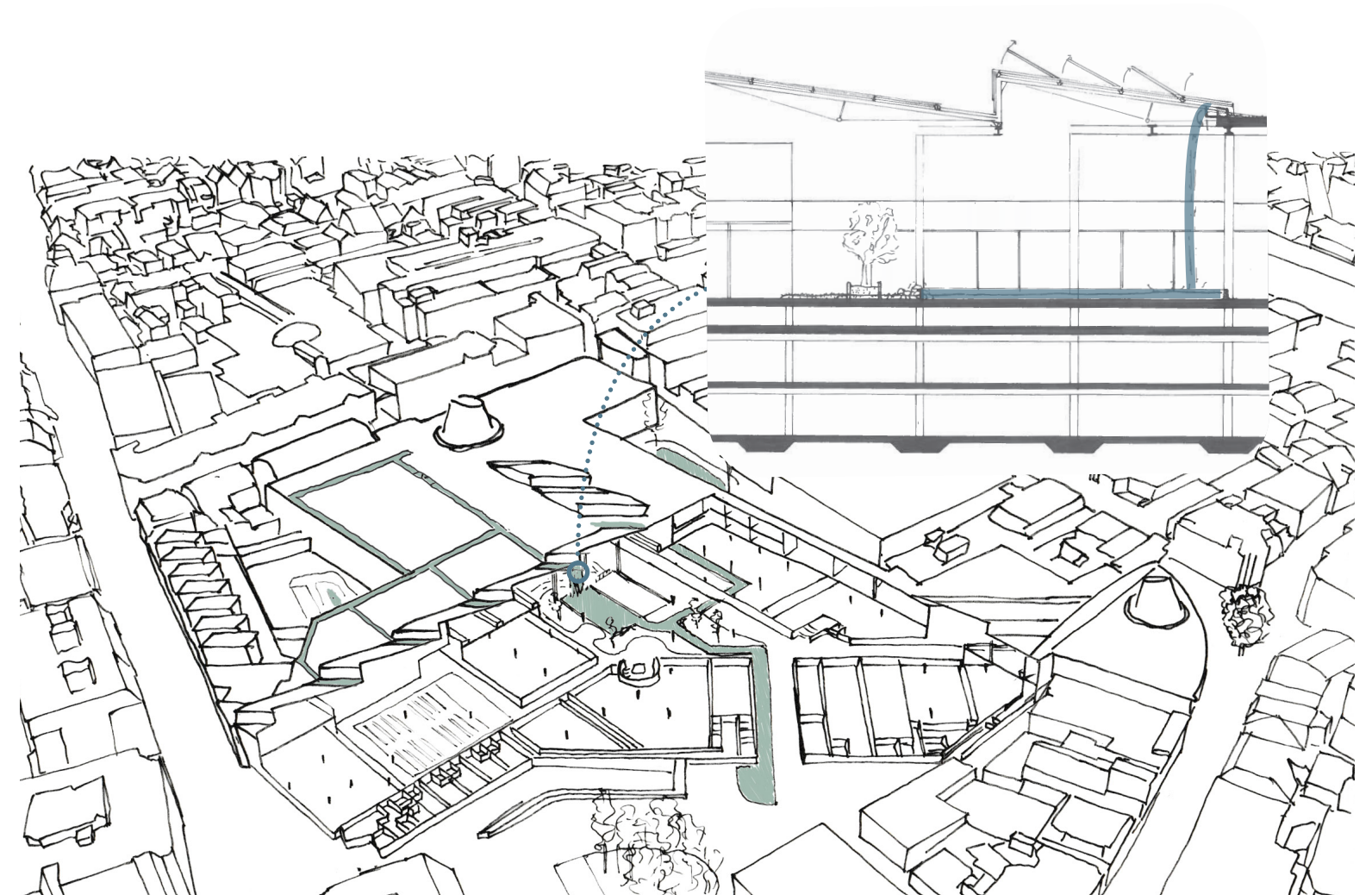
Water

3. Drainage



Water

4. Waterfall

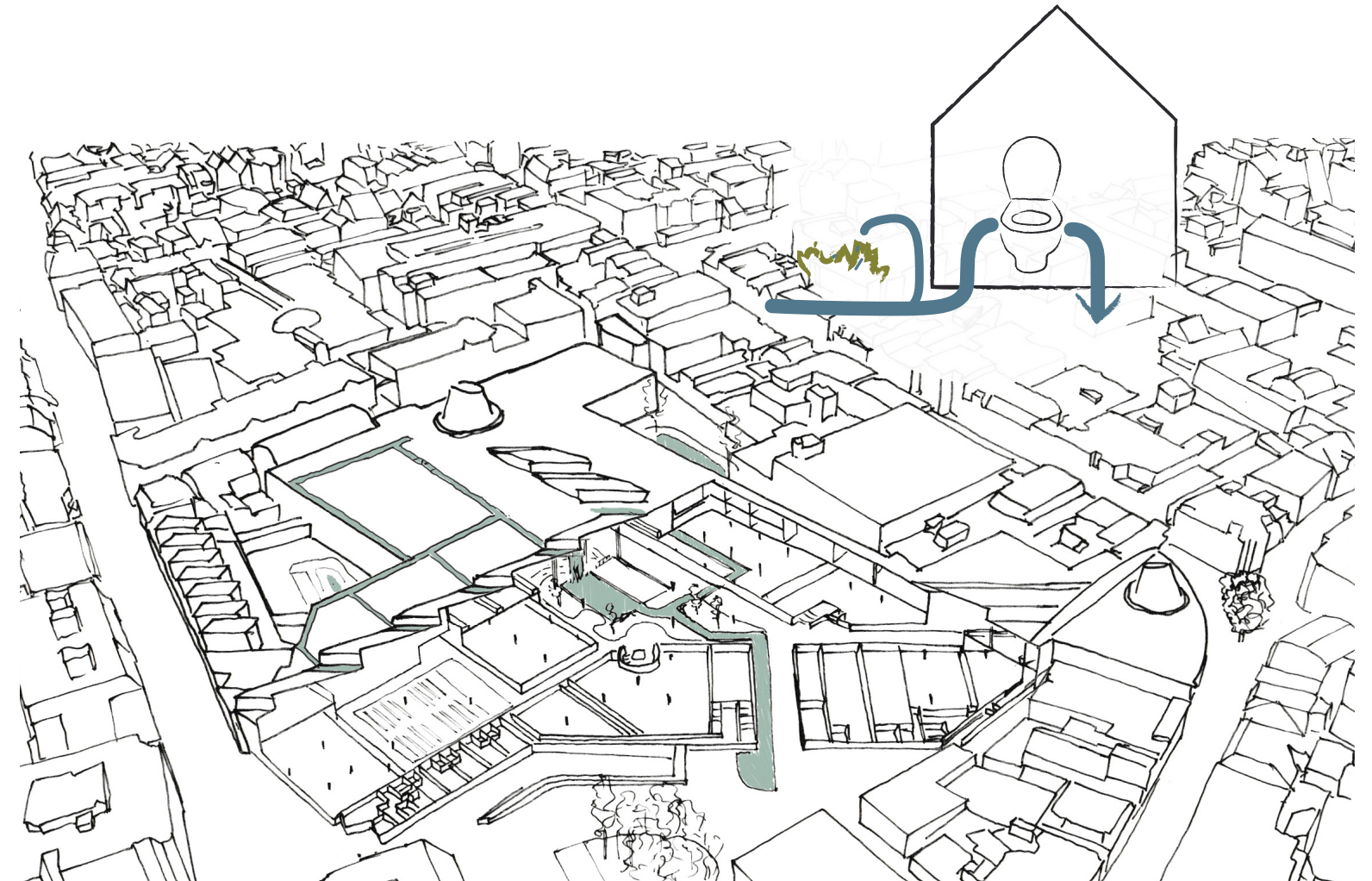


Water

5. Reuse water

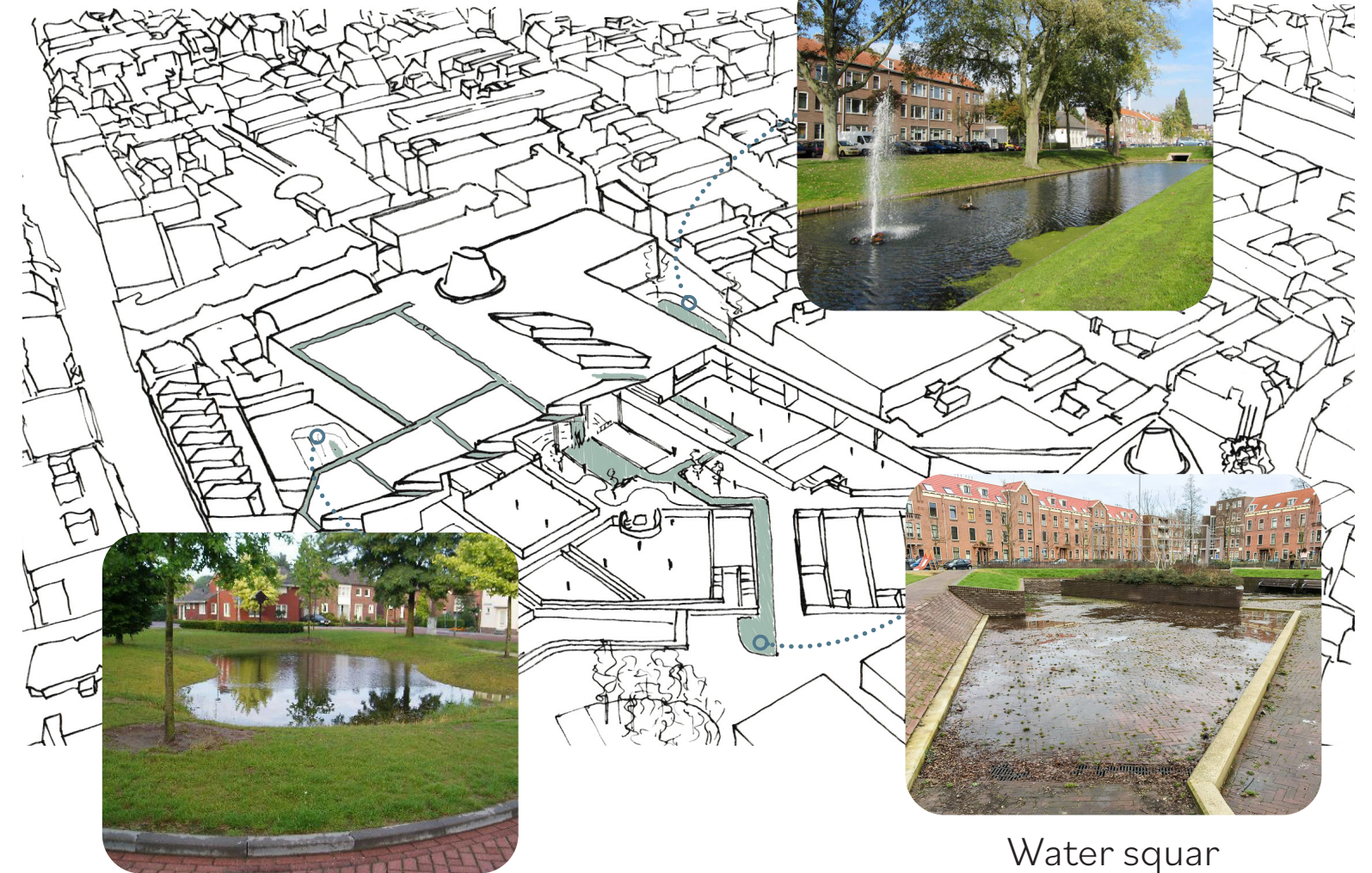


Planten water geven



Water

6. Water collection surroundings

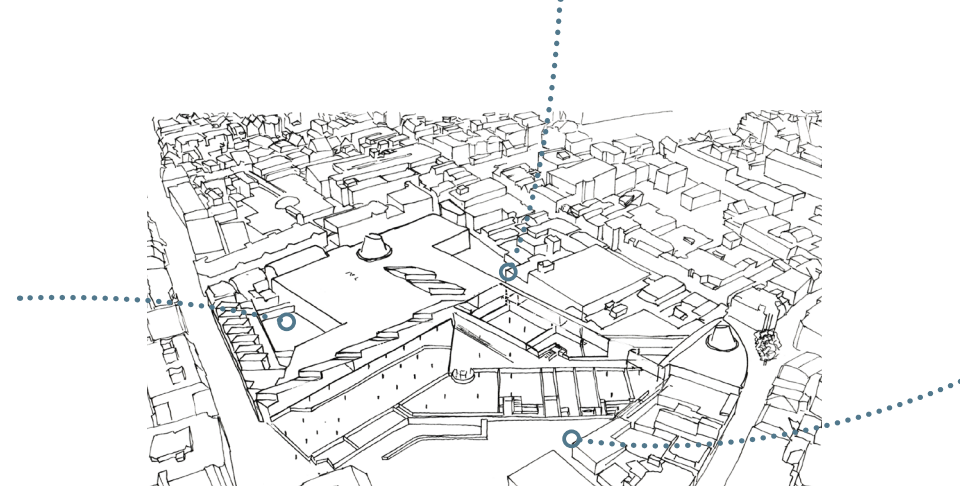


Pond

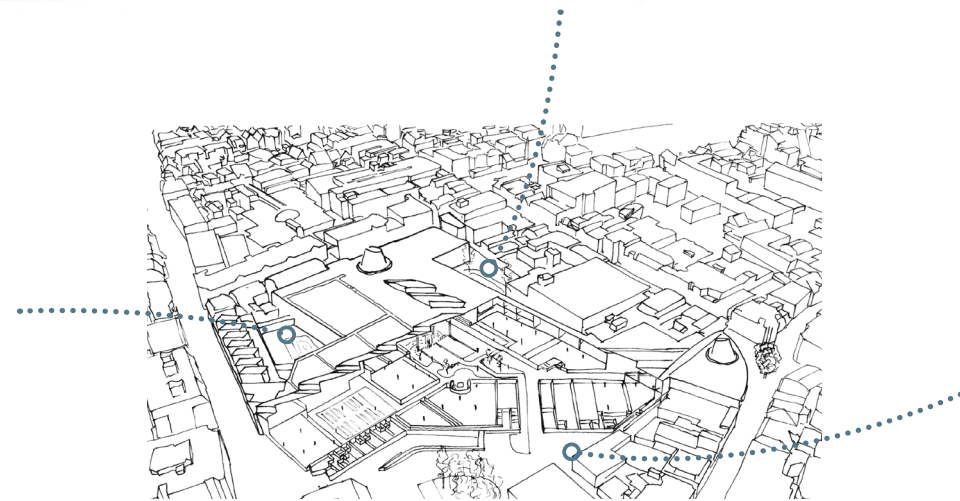
Swale

Water squar

Impression water back wall current



Impression water back wall design



Nature - Greenery



Greenery



Grass



Trees



Evergreen



Decidious



Orange

Plants



Ferns



Ivy



Rubber plant

Green surface

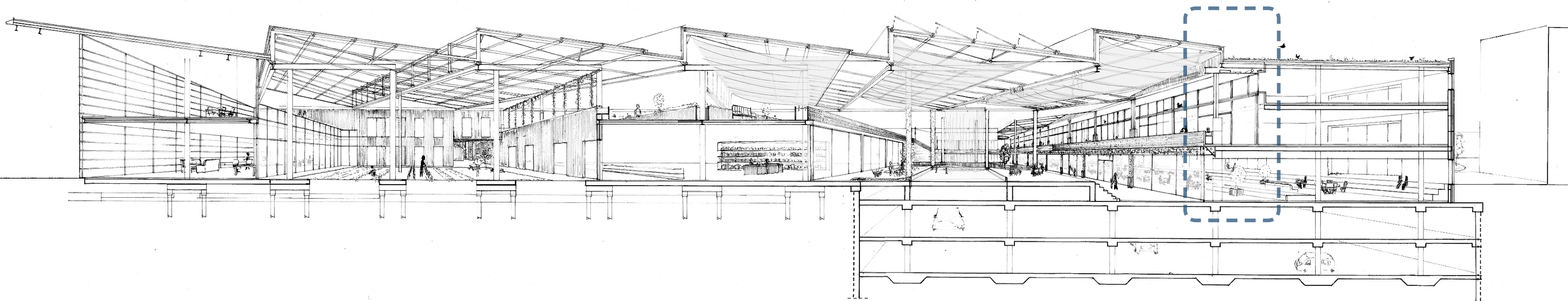


Green wall



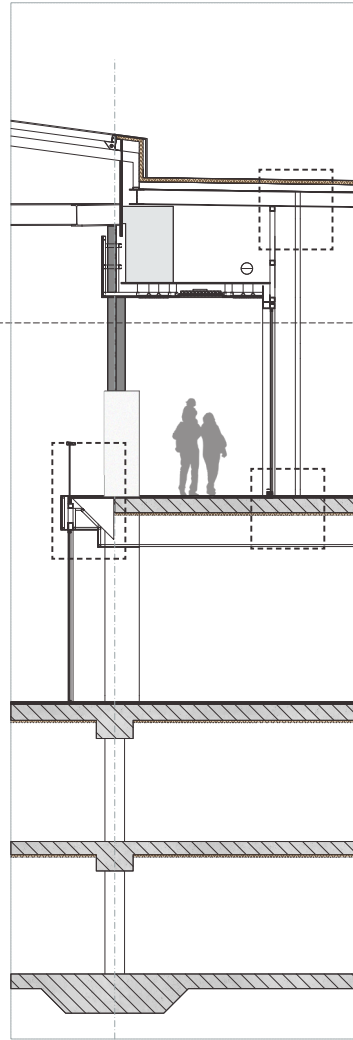
Green roof

Section

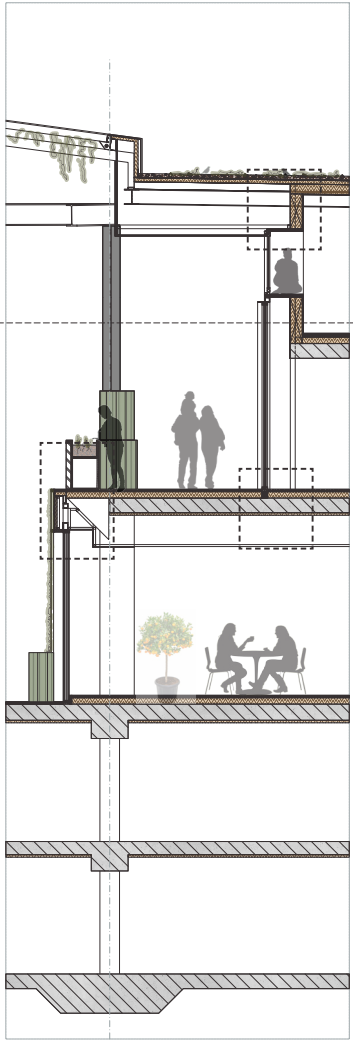
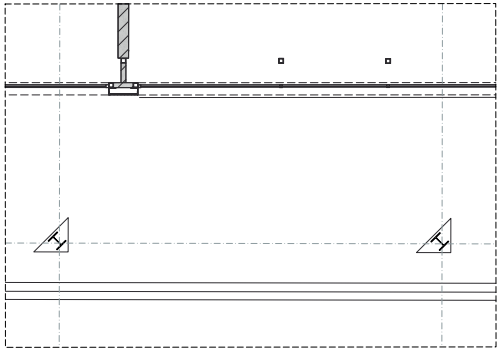
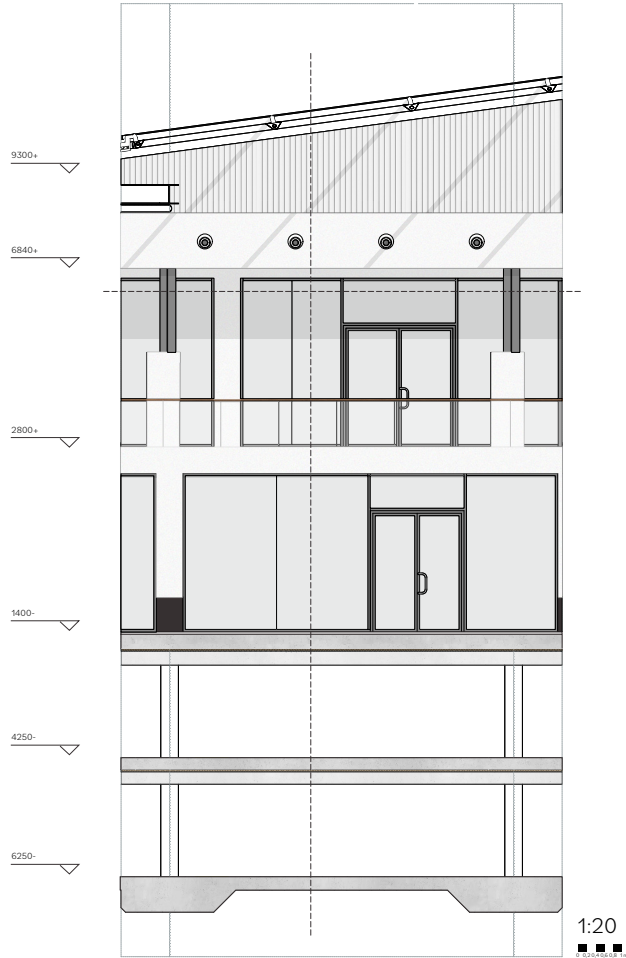


Abstracted version

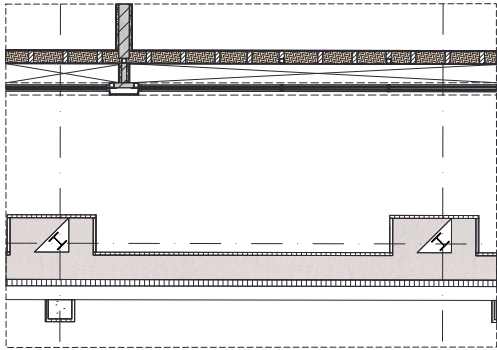
Fragment



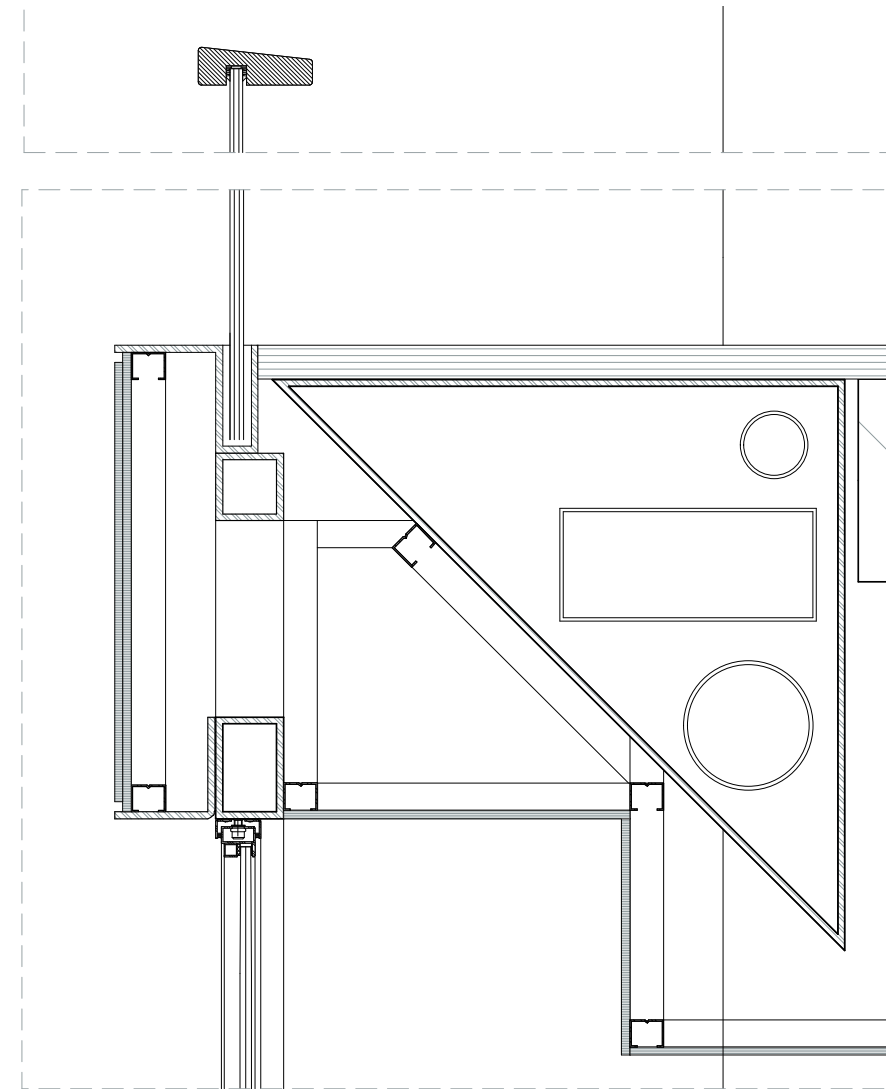
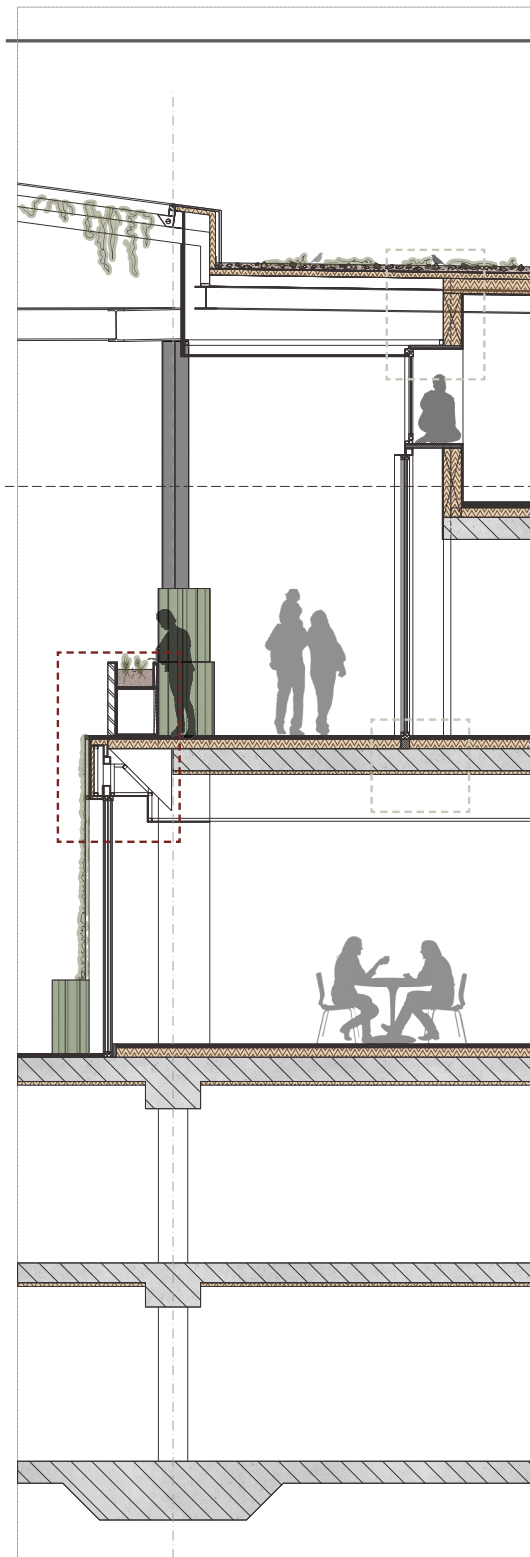
Current



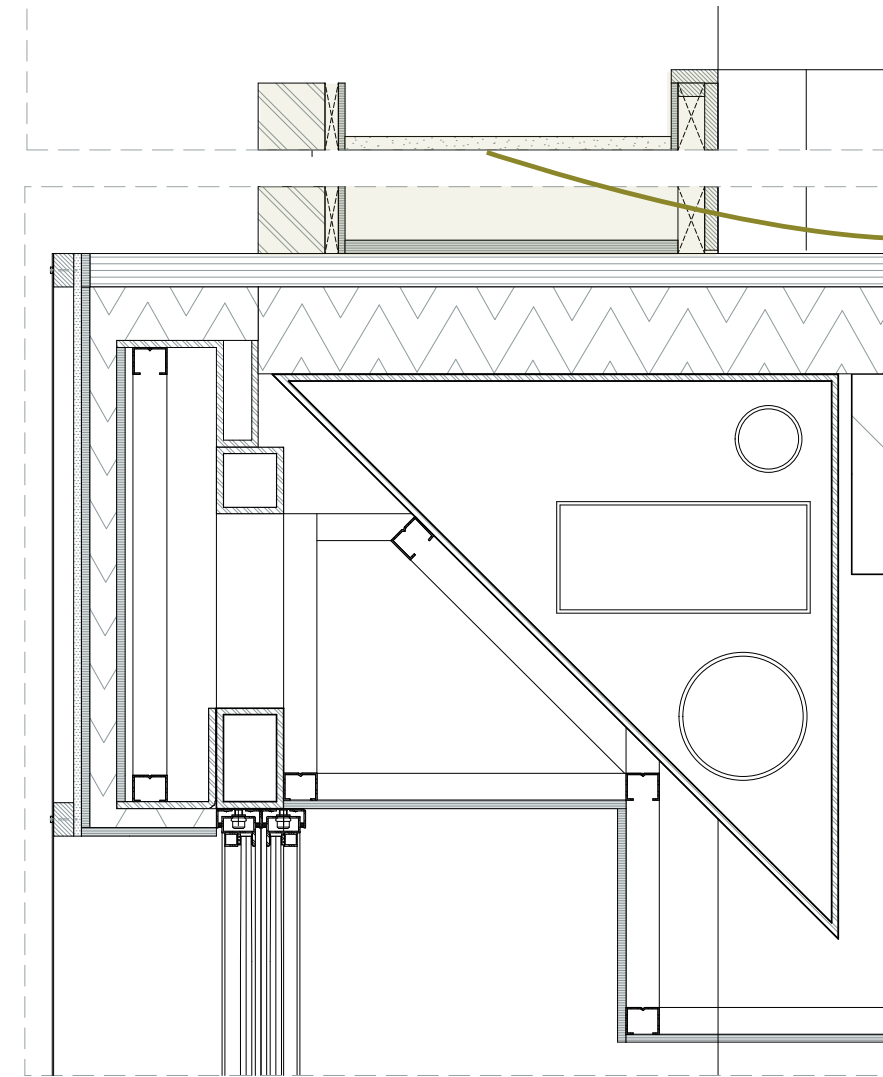
Design



Detail green balustrade



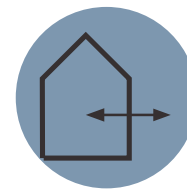
Current



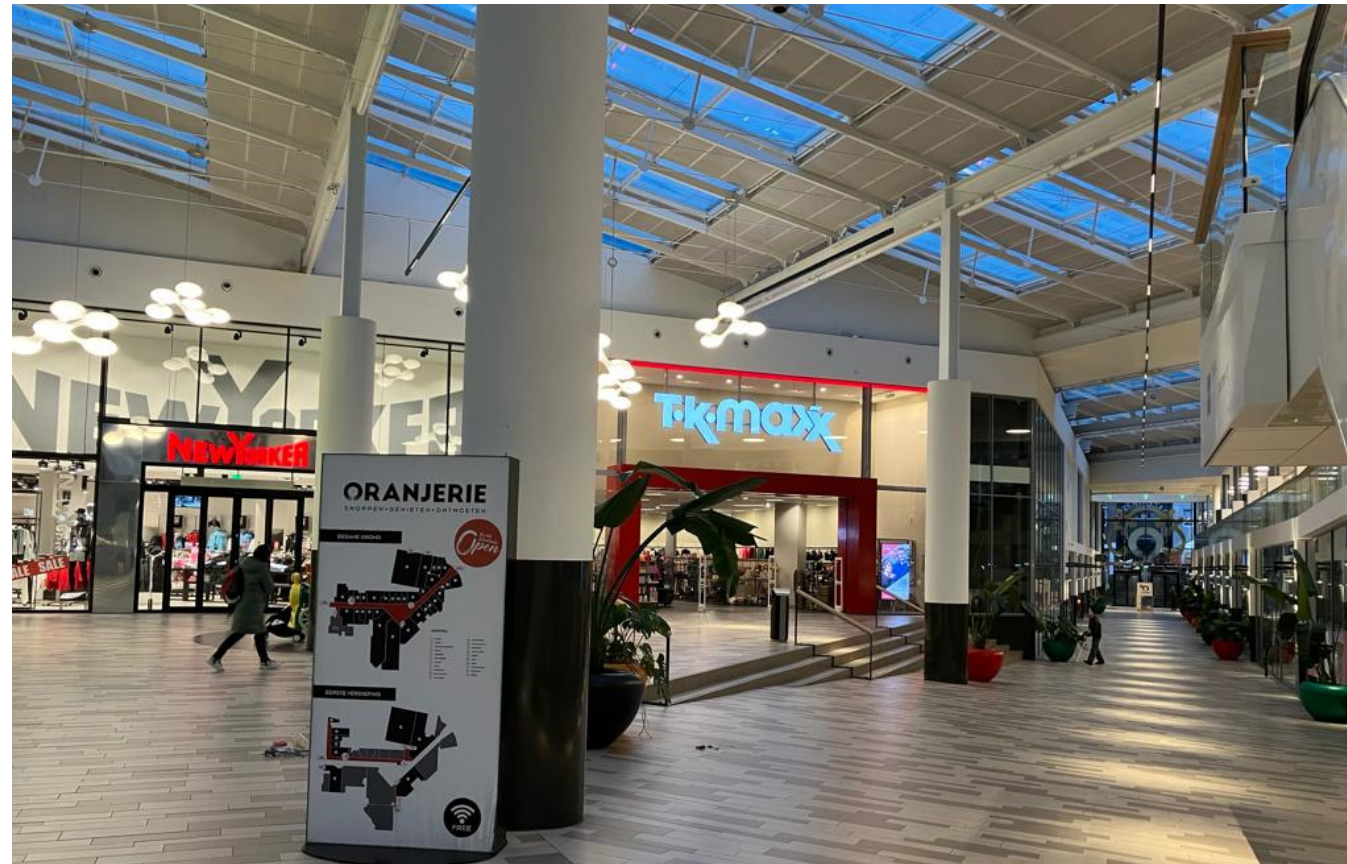
Design

Adding plants for
more privacy and
more greenery for
health

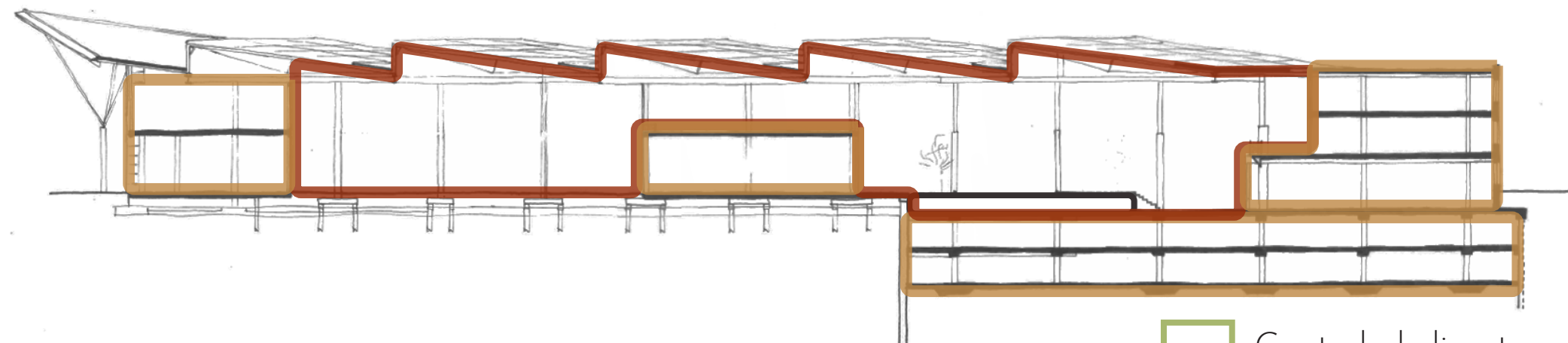
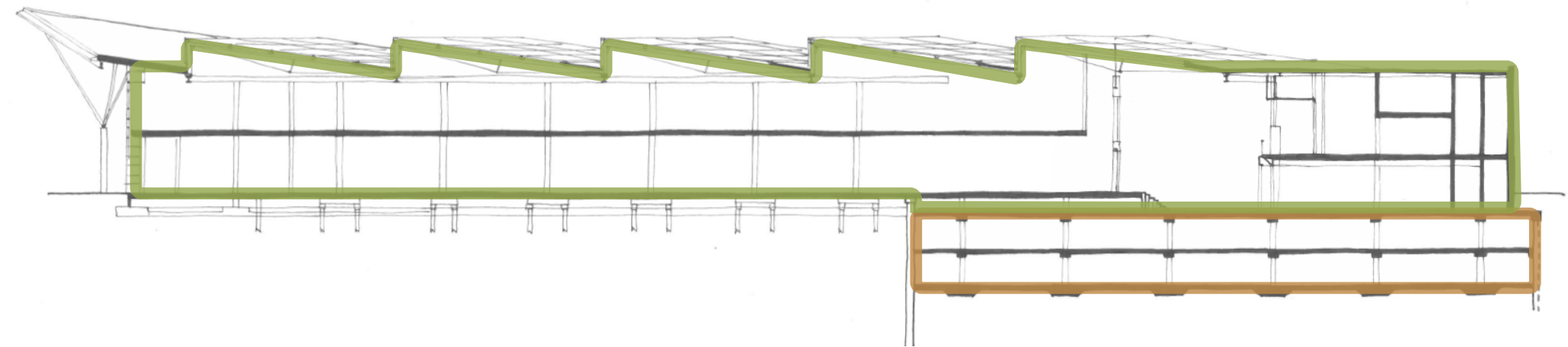
Inside outside climate






Comparison current and design

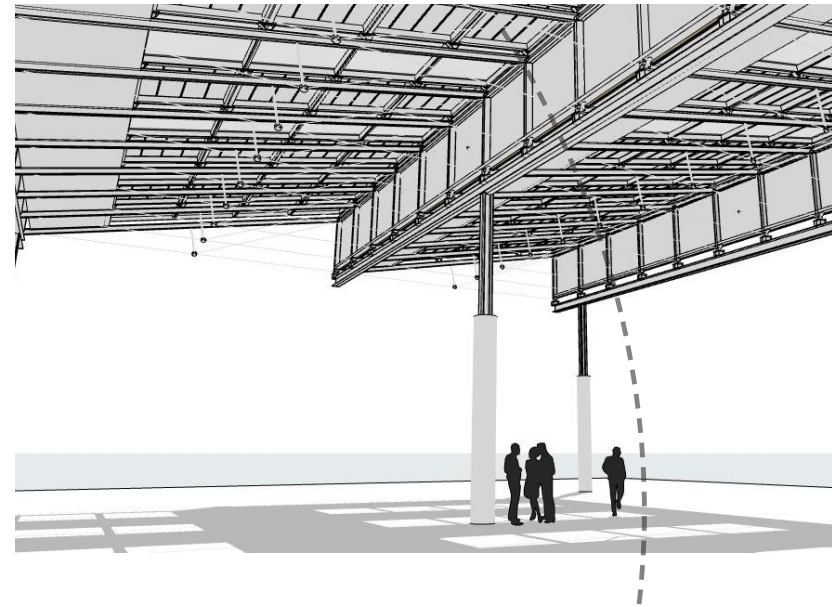


Climate spaces

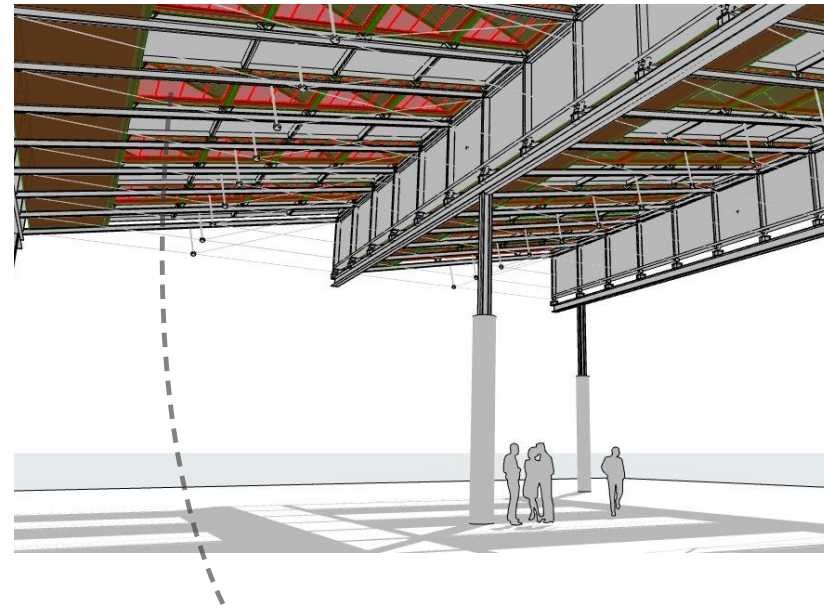


-  Controlled climate
-  Hybride climate
-  Uncontrolled climate

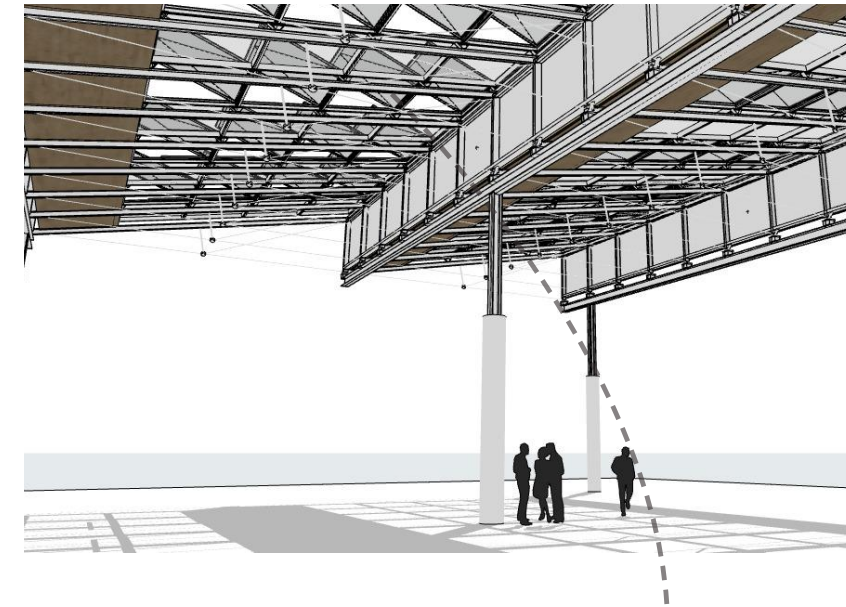
Adaptable roof



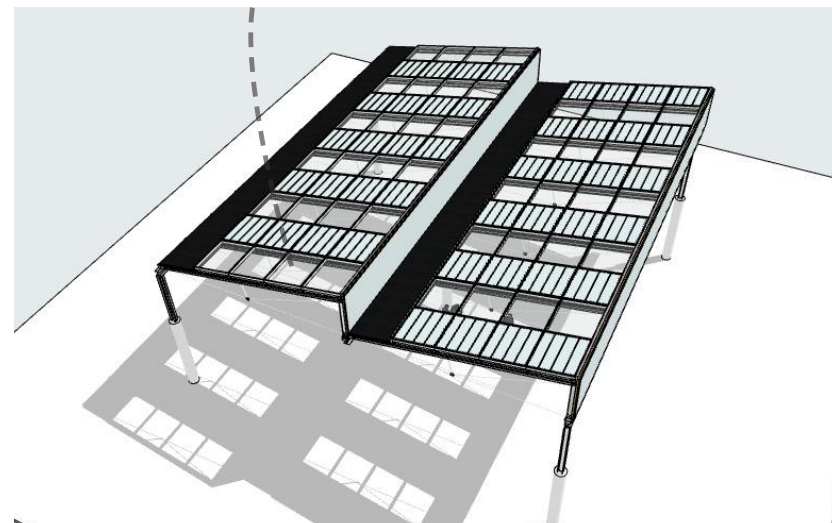
Transparent glass and closed panels



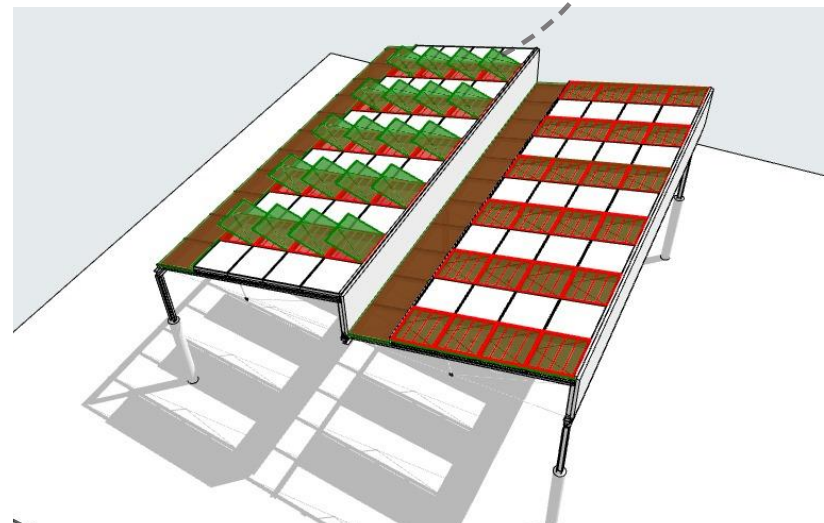
Remove panels and add glass



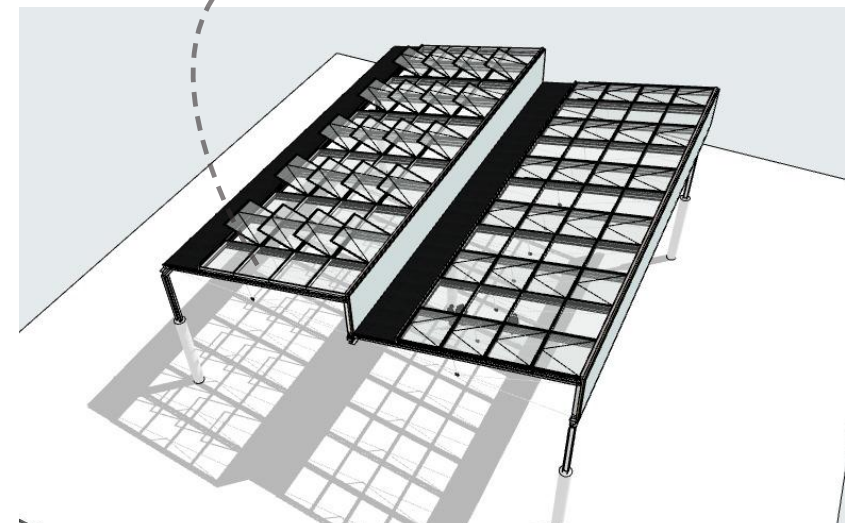
Fixed glass and opening windows



Current

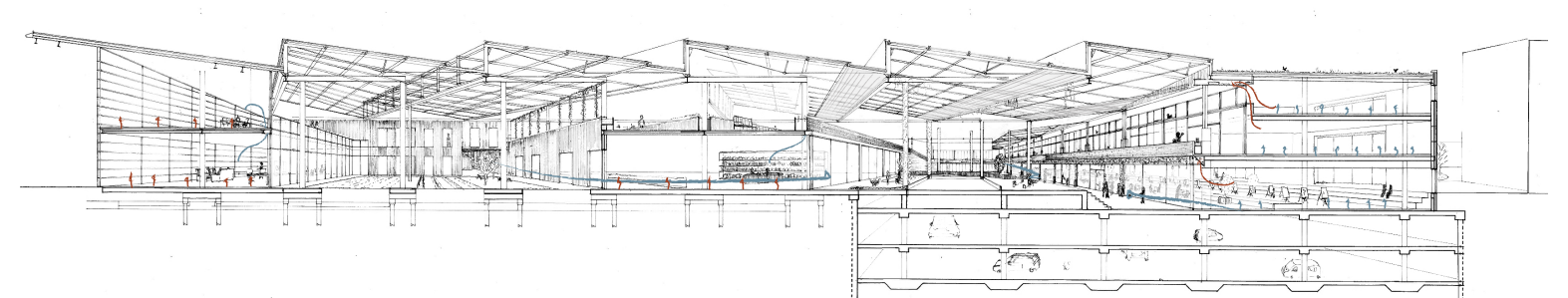
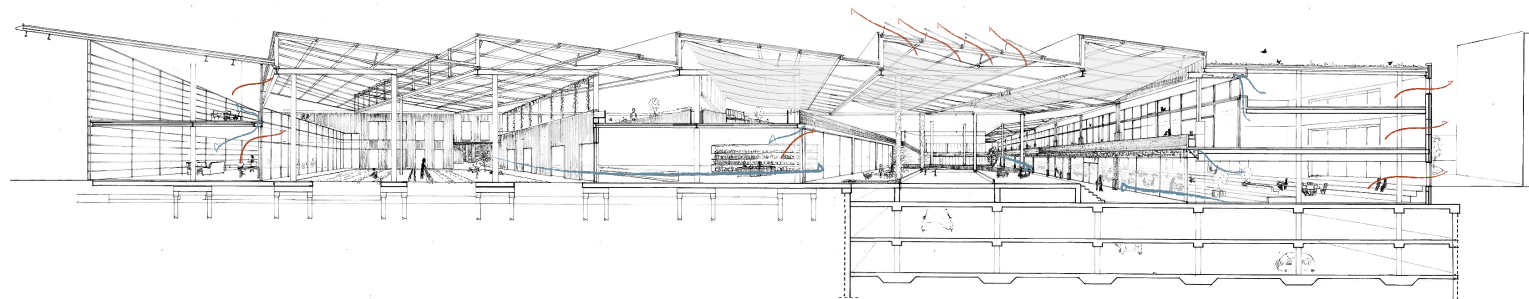


Remove/add

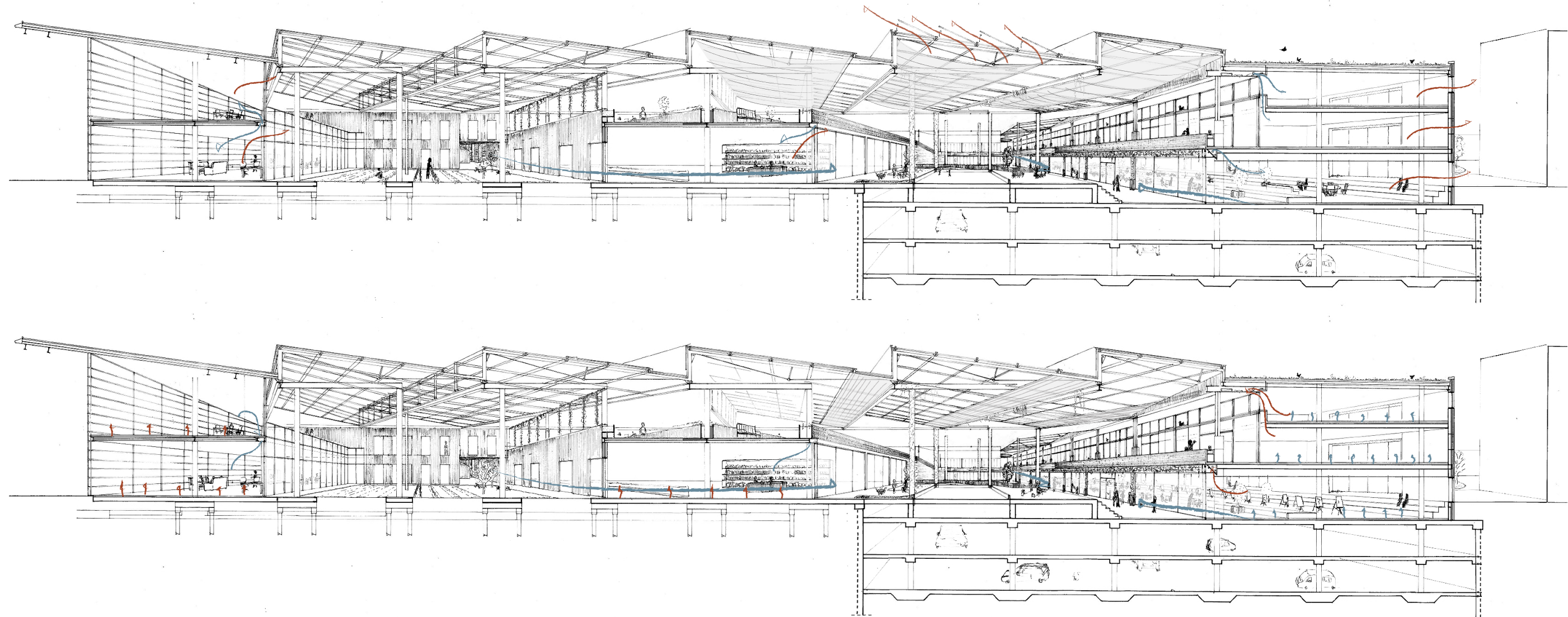
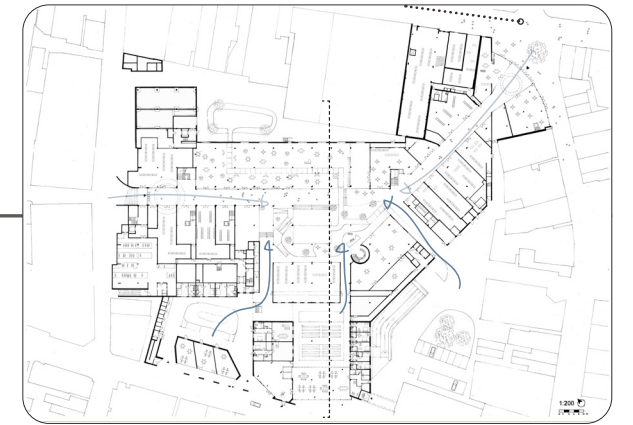


Design

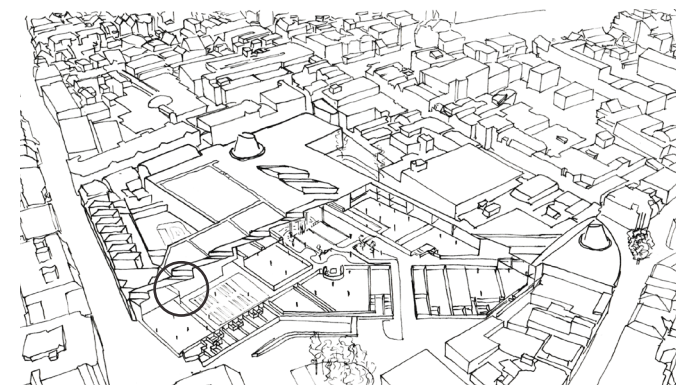
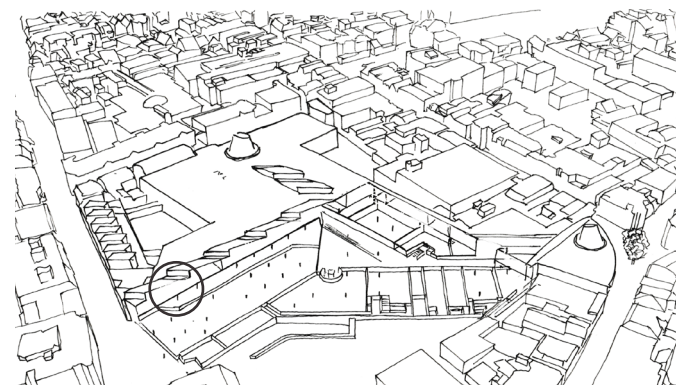
Design scenario's



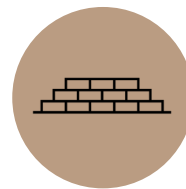
Climate section



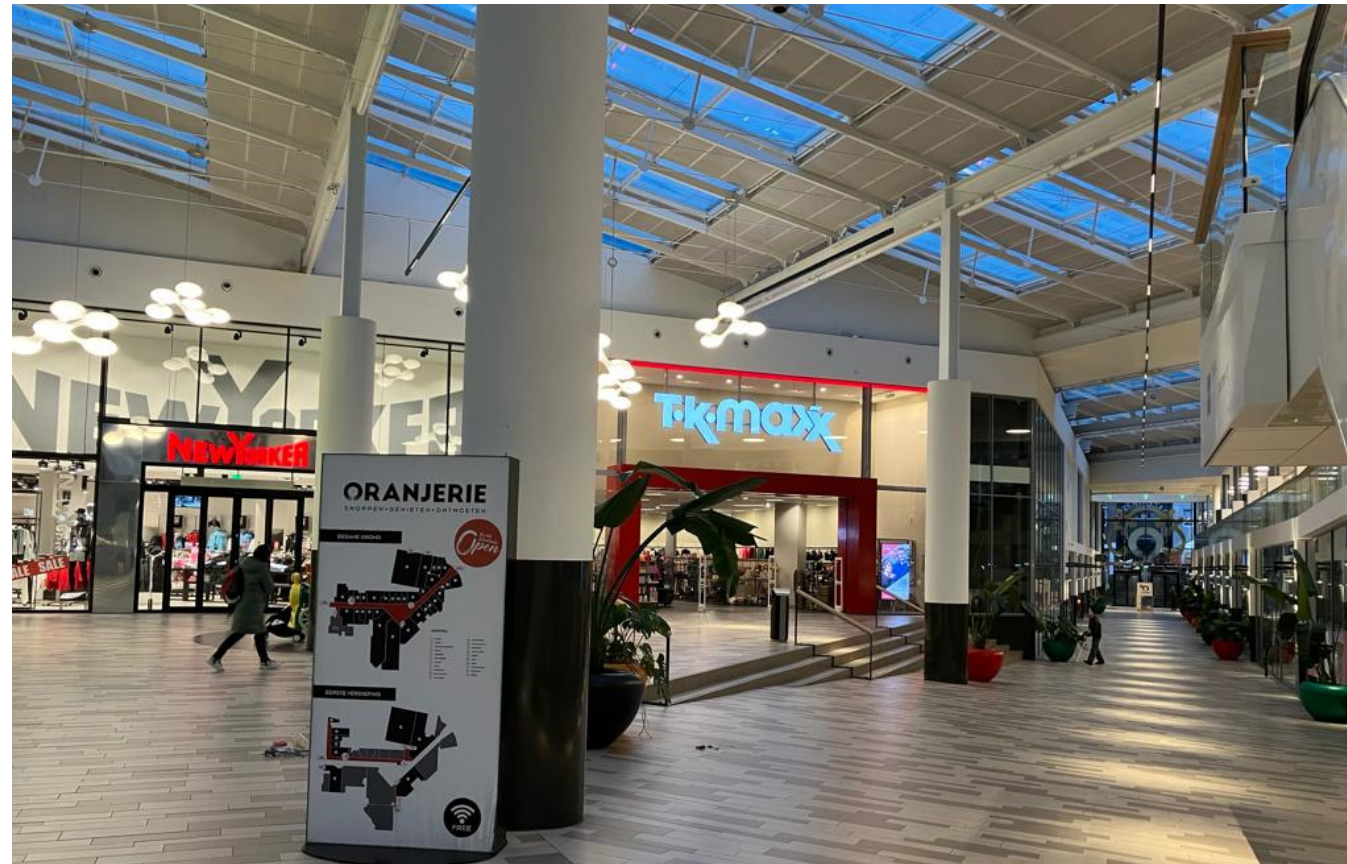
Impression inside - outside



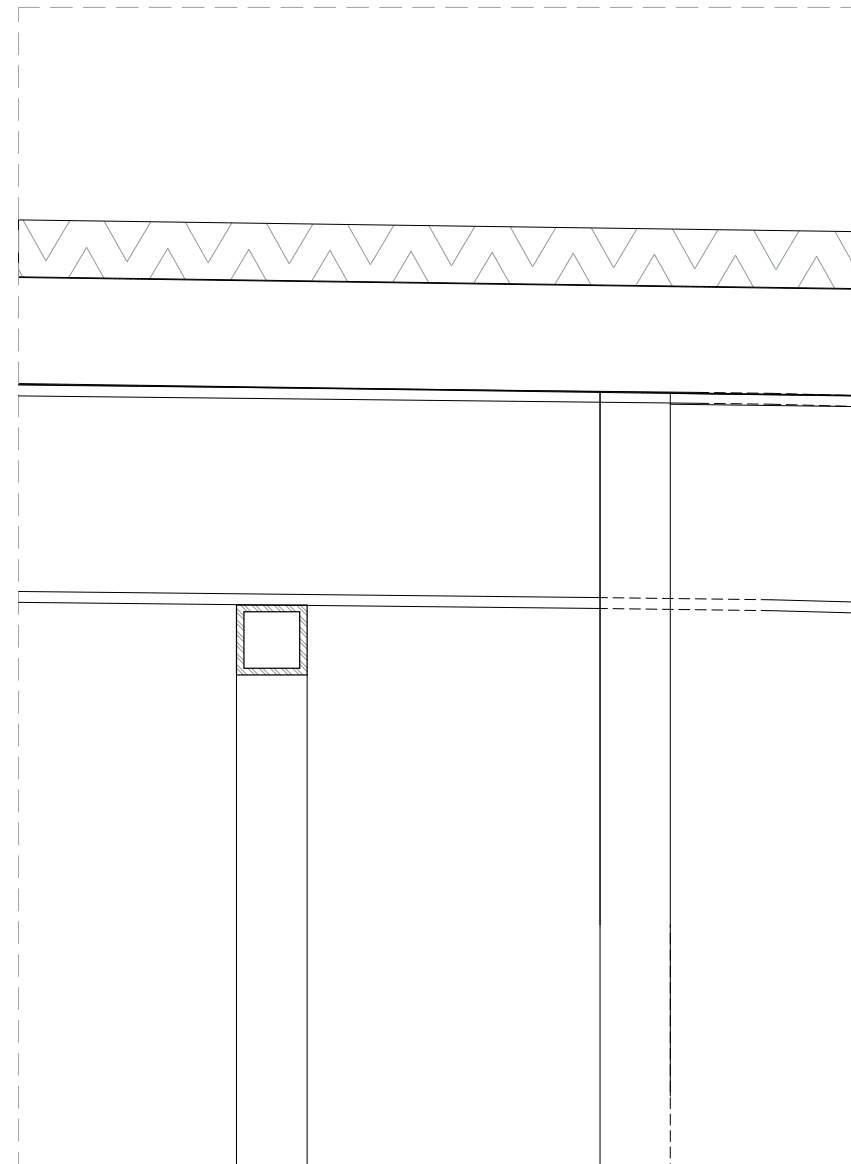
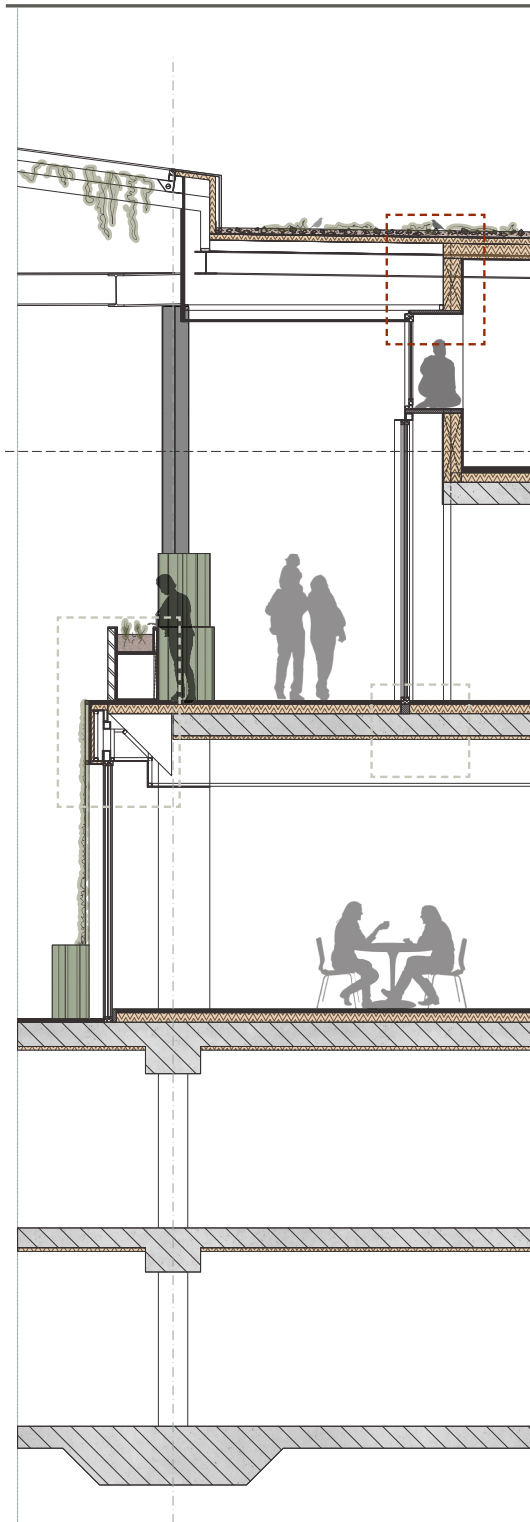
Material



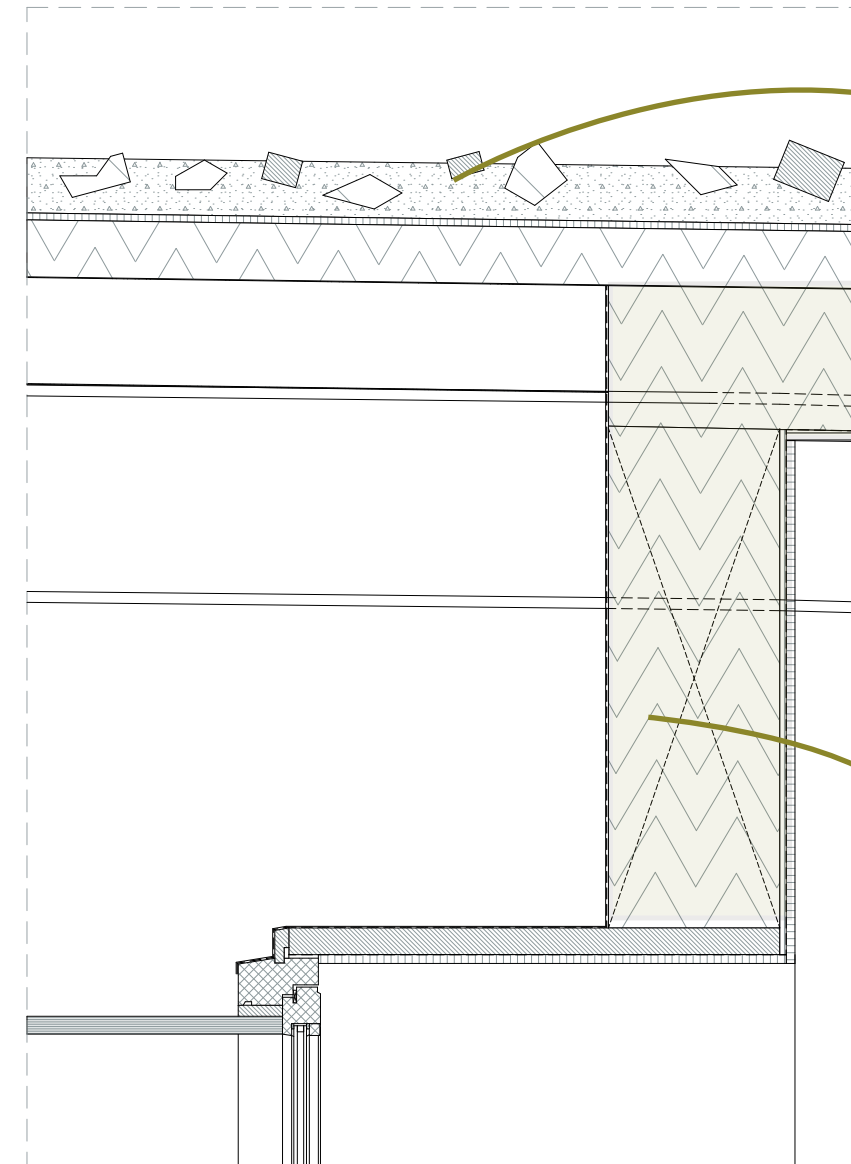
Comparison current and design



Detail roof



Current

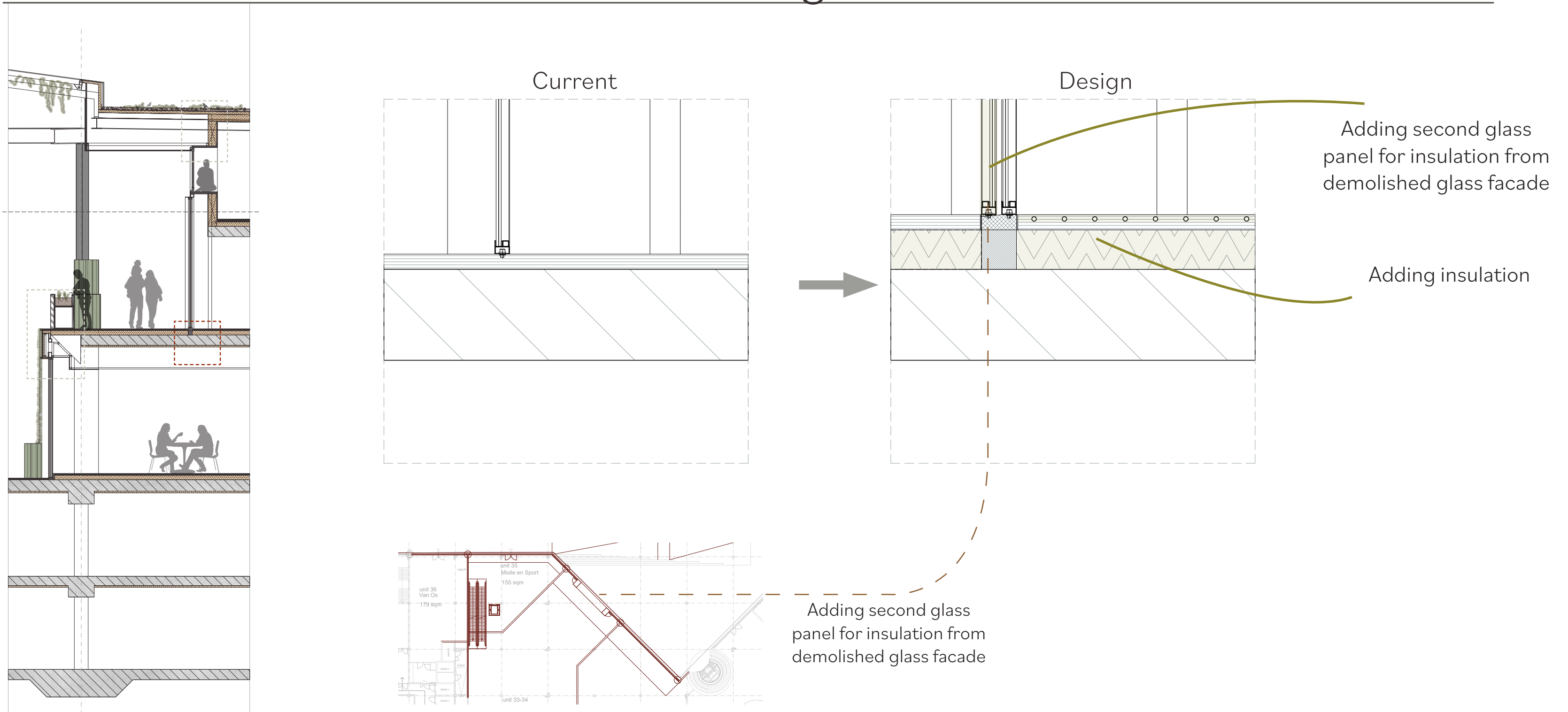


Brown roof

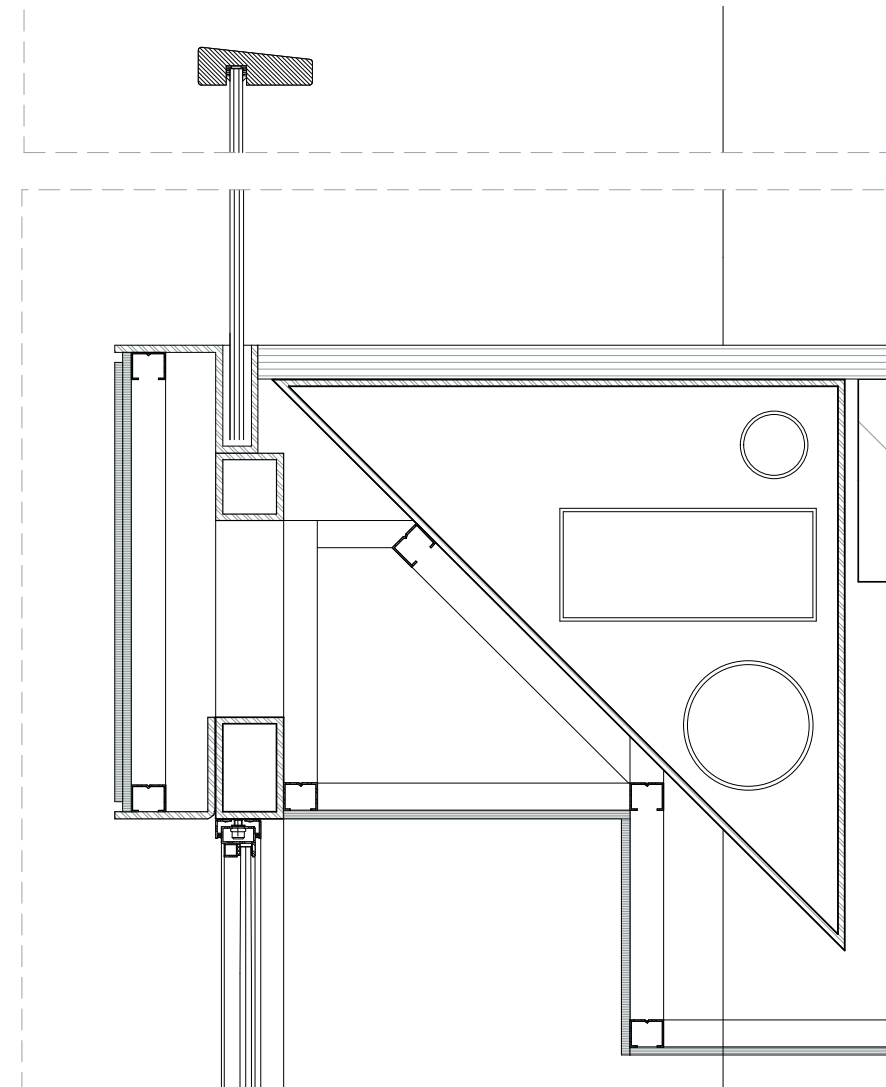
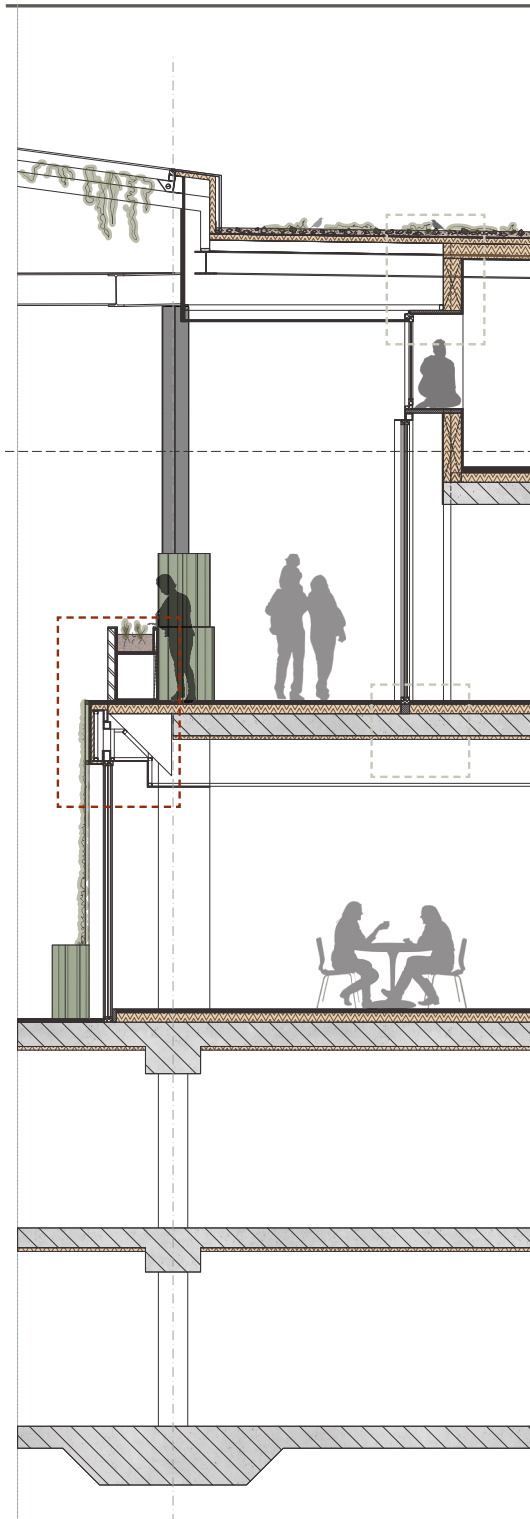


Adding insulation wood wool

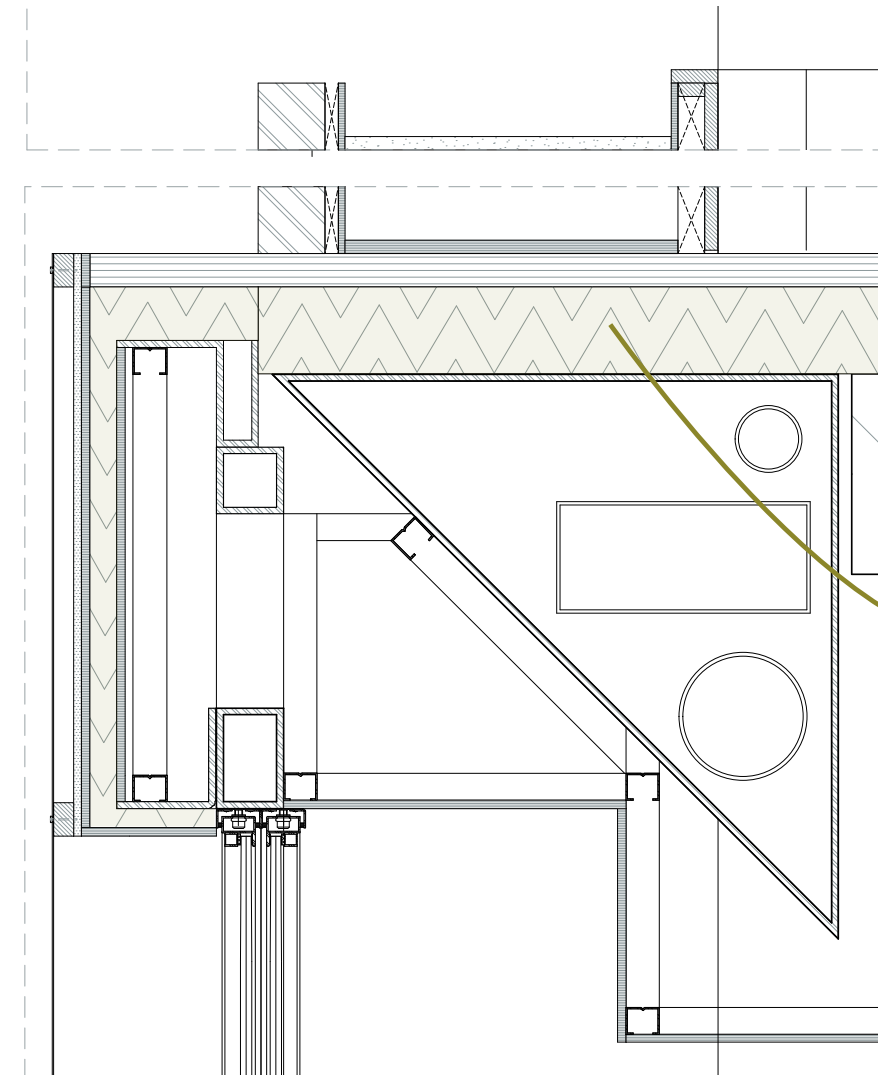
Detail adding facade



Detail balustrade



Current

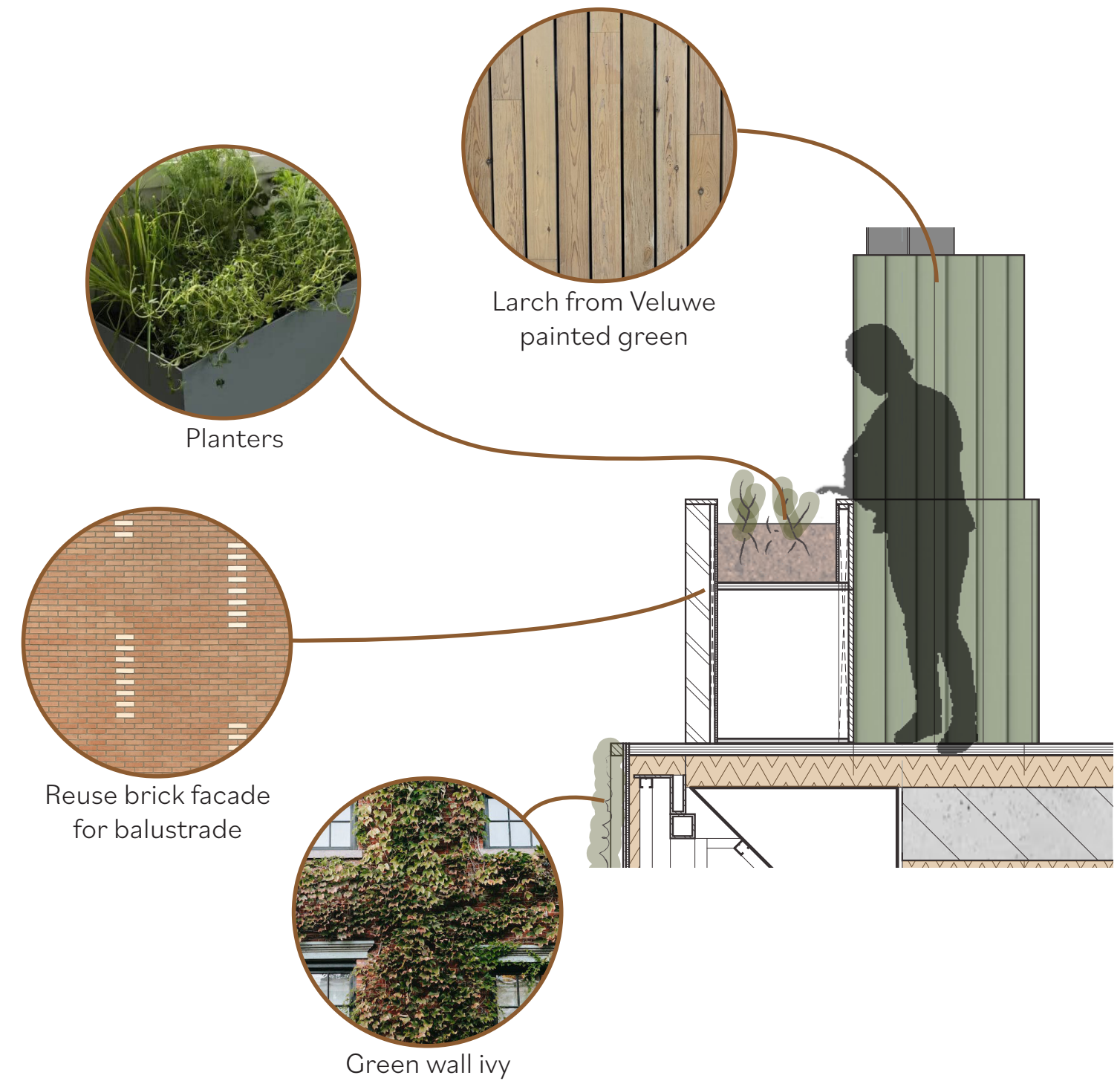


Adding
insulation
wood wool

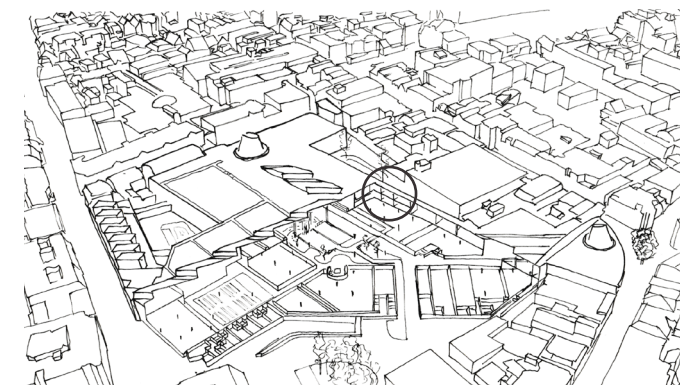
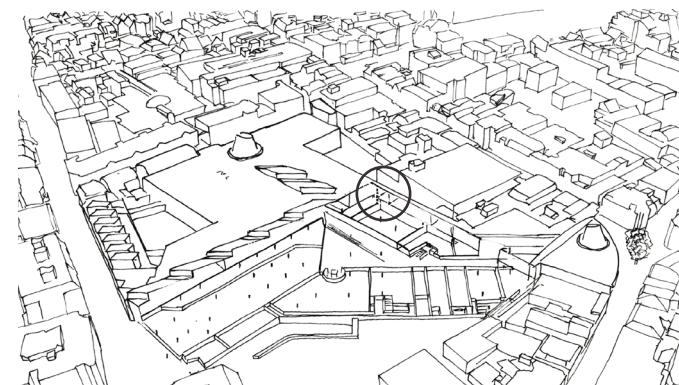
Design

Materials

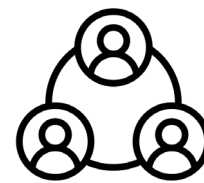
Reusing, recycling and biobased



Impression materials



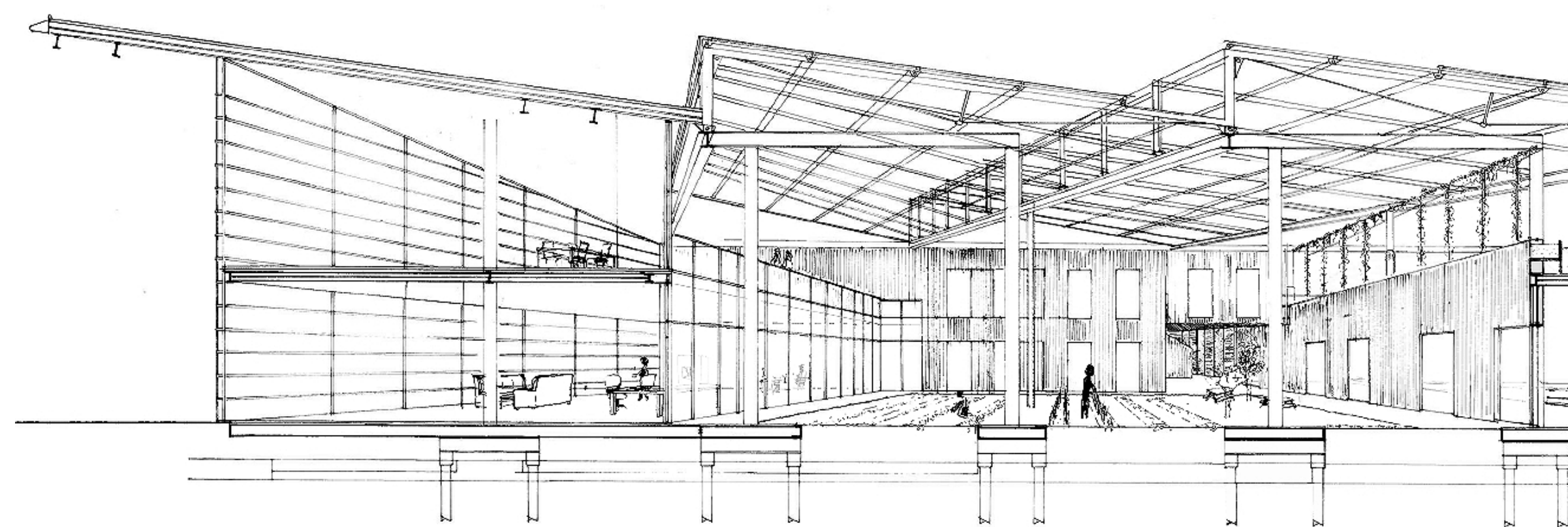
Community and living



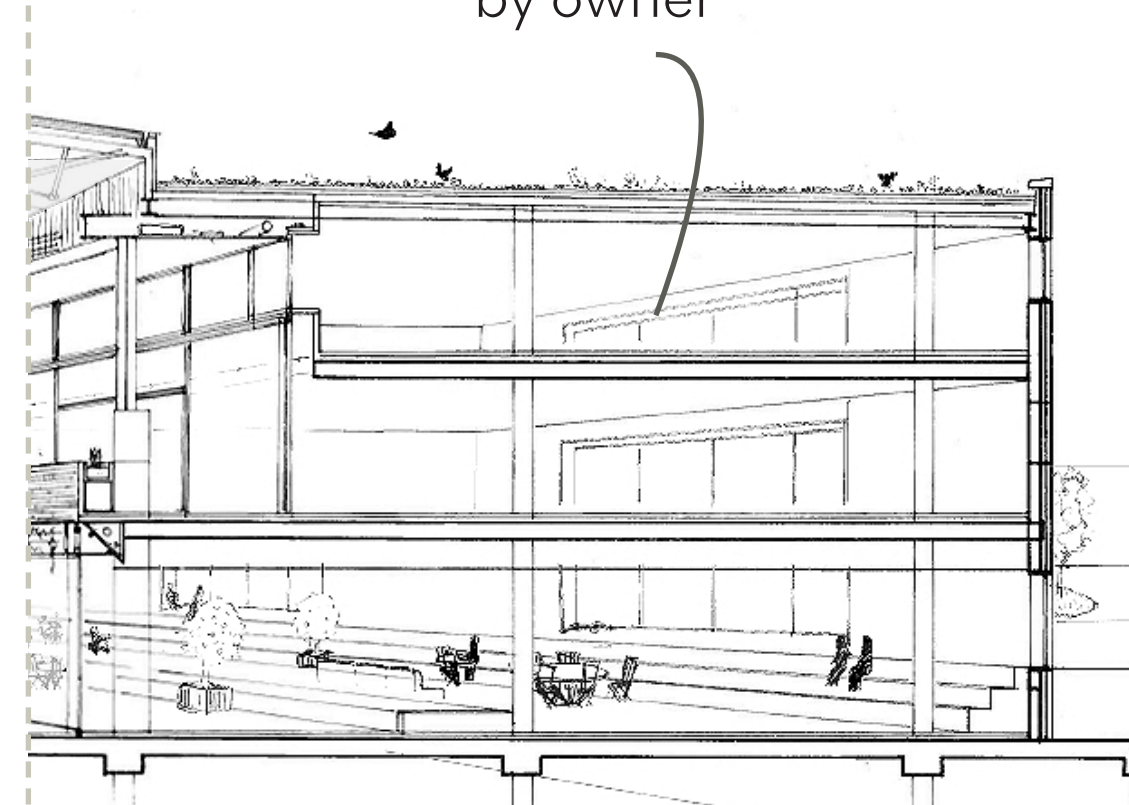
Community and living



Community and living



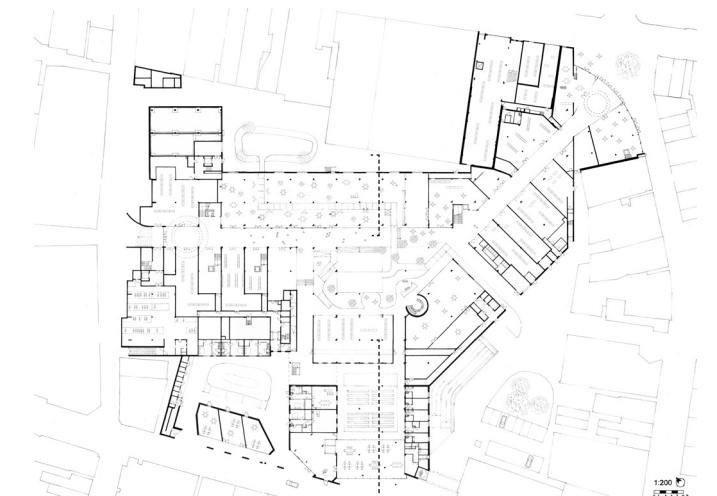
To be designed
by owner



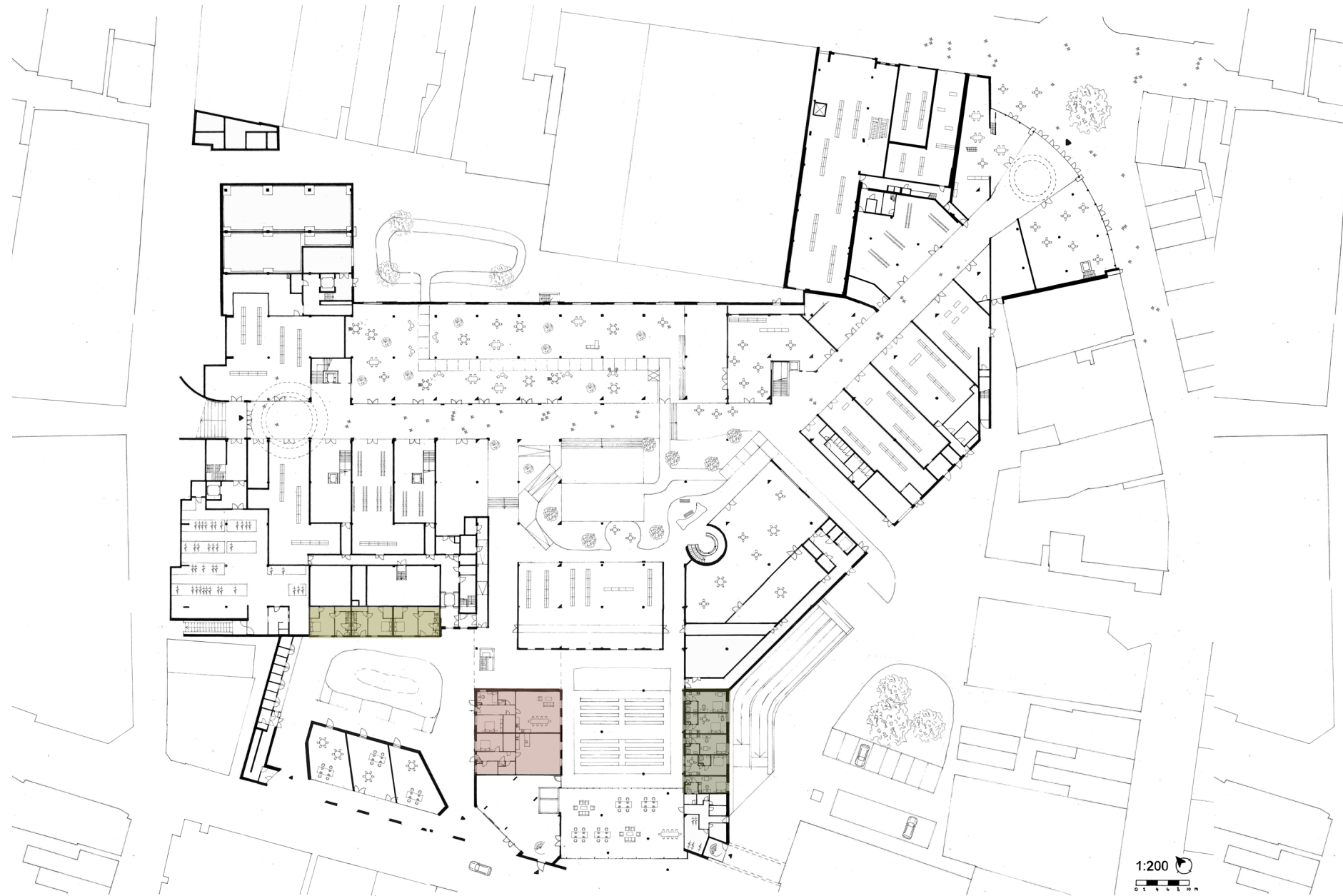
Community work space



Community vegetable garden



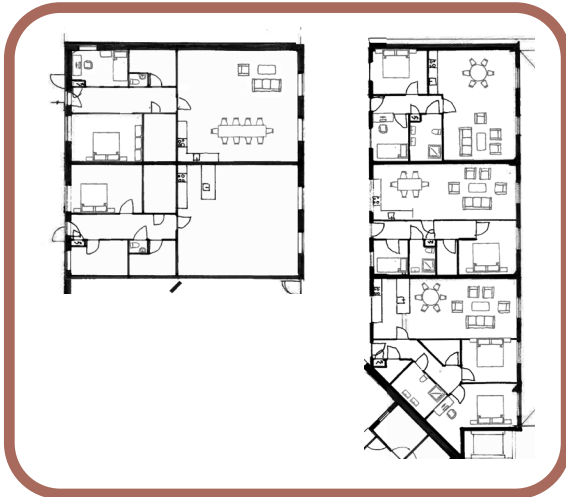
Added housing floorplan and community



Typologies



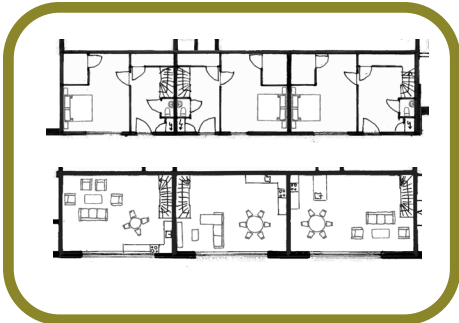
Studio



3 room apartments

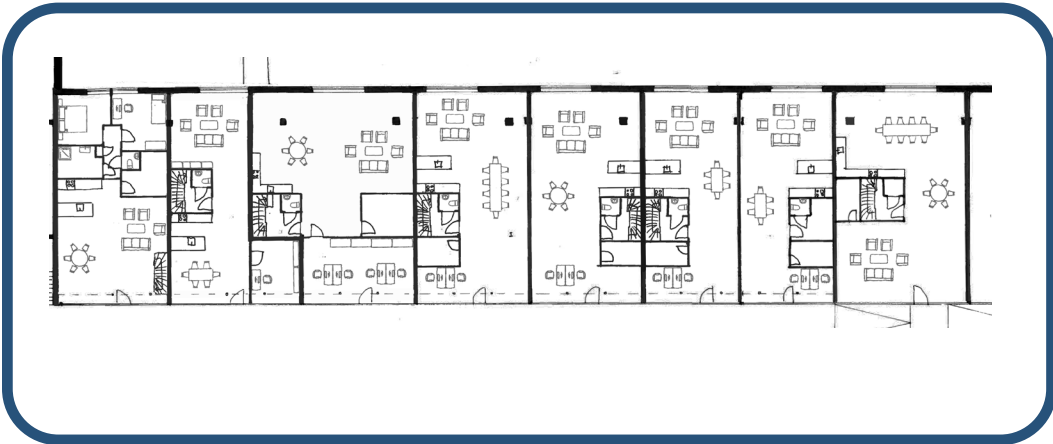
40 houses
32 added

2 room apartment
2 floor levels



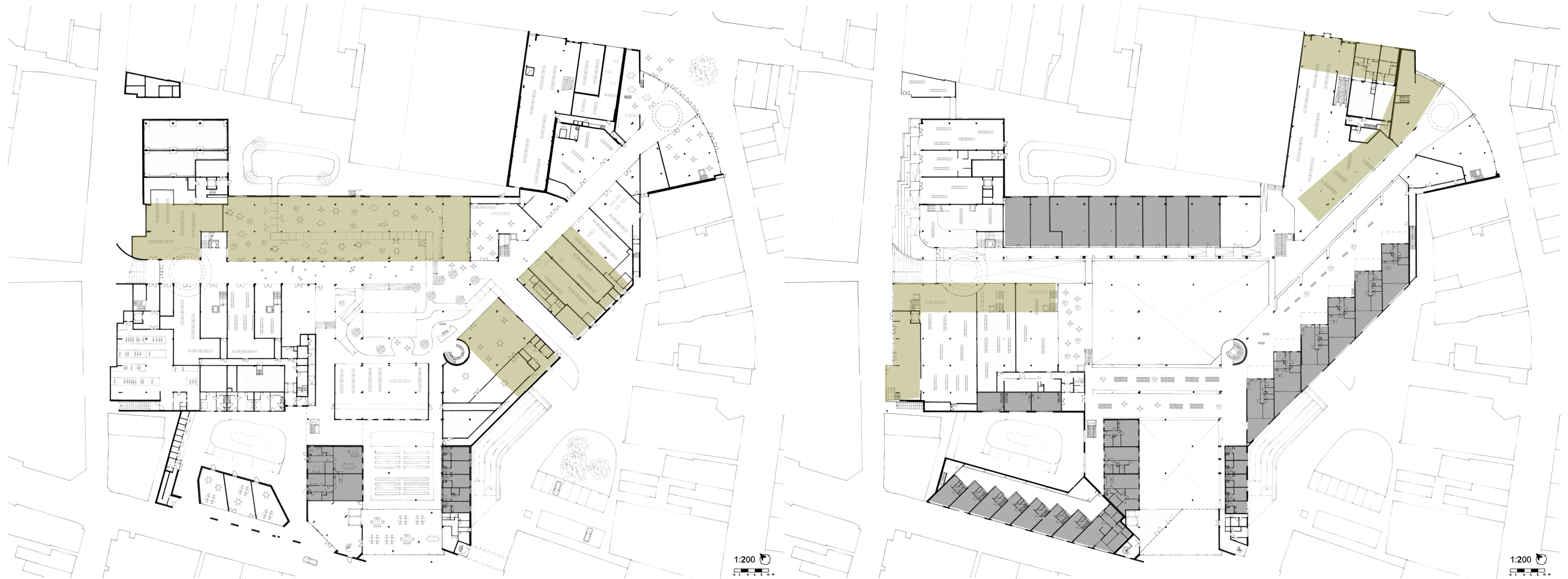
3 room
apartments



To be determent



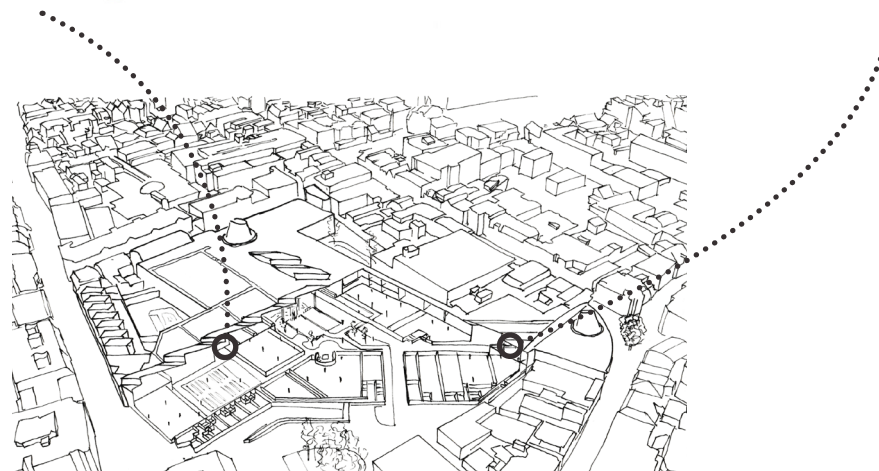
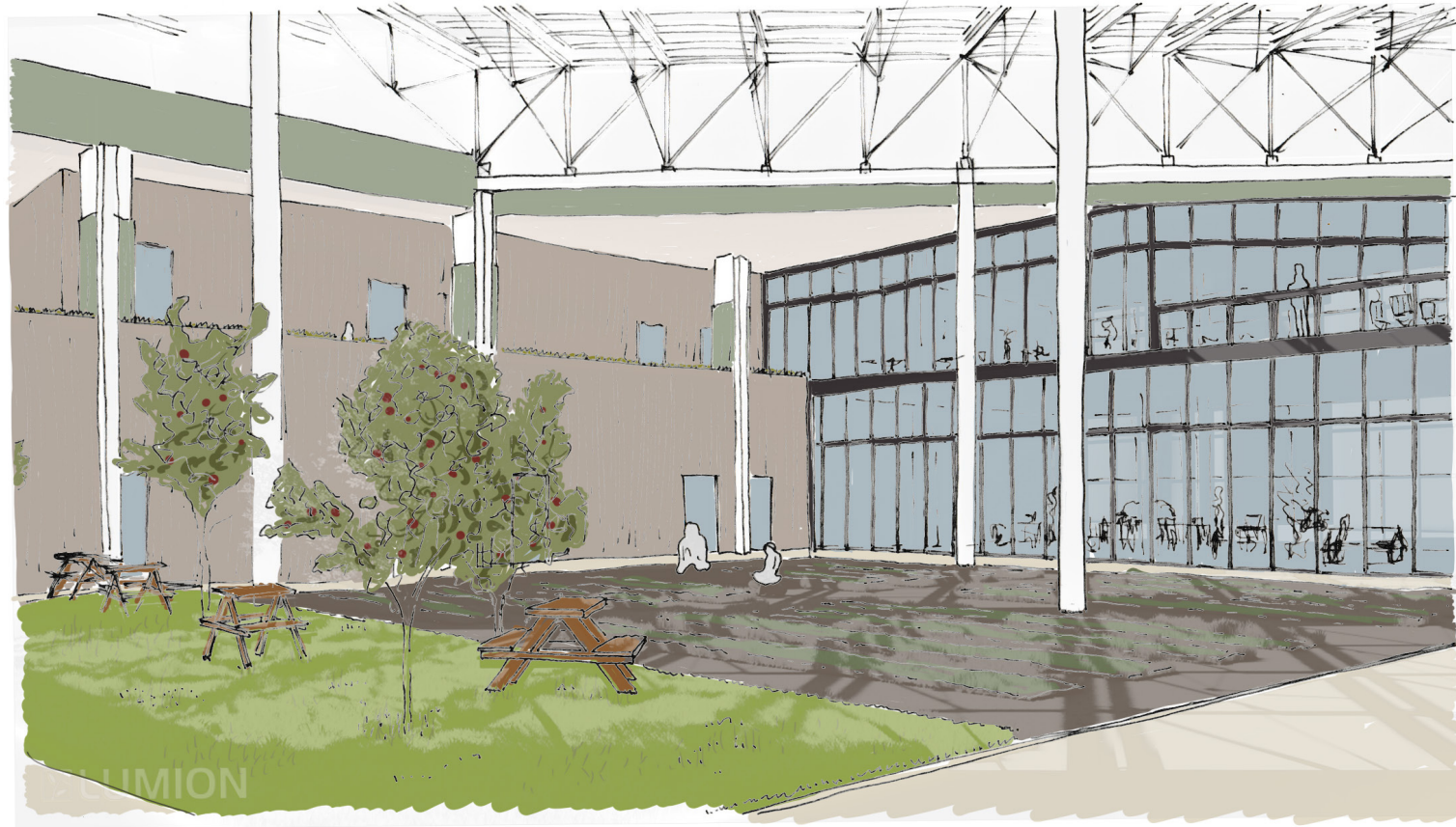
3 room apartment
2 floor levels

Future scenario's



 Housing future
 Housing design

Impression living and community



Vision Oranjerie

Adding nature

Having view on nature from every p.o.v.

Using healthy materials

Biobased

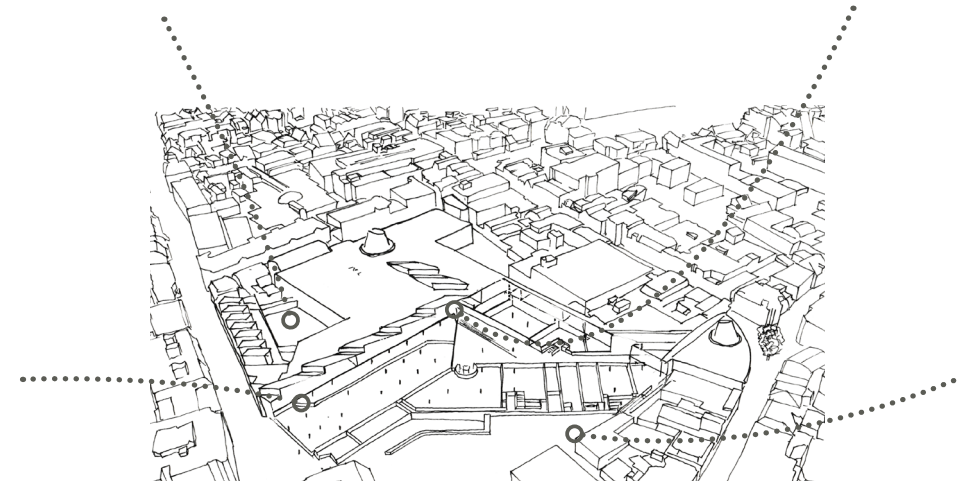
Reusing/Recycling materials

Connection inside outside

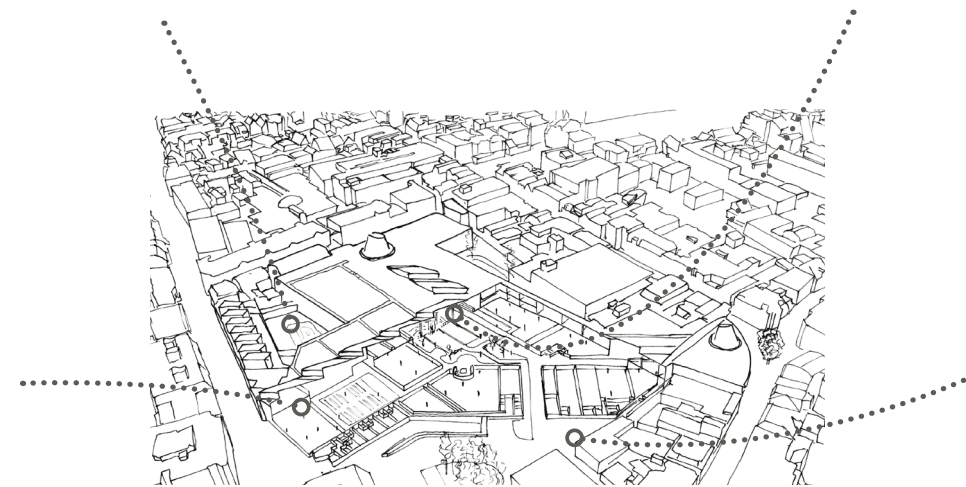
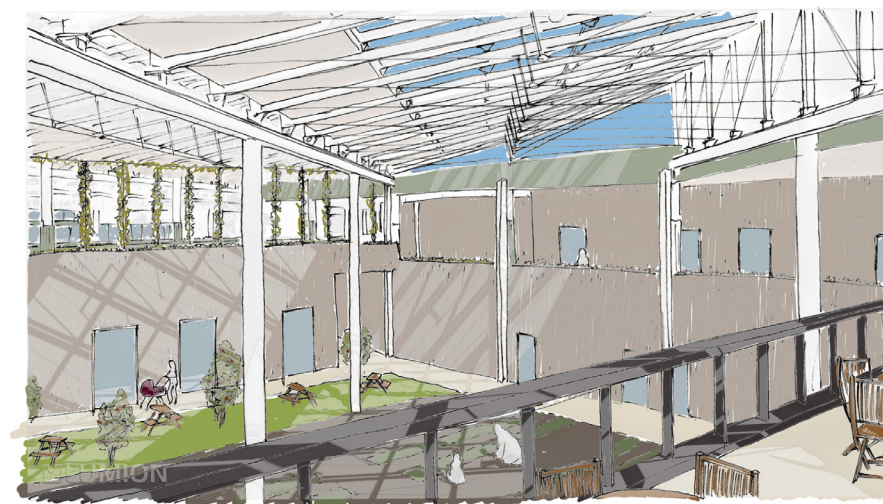
Several meeting spaces

Diversity of functions

Overview current



Overview design



Recommendation

Recommendations for promoting healthier buildings, including malls:

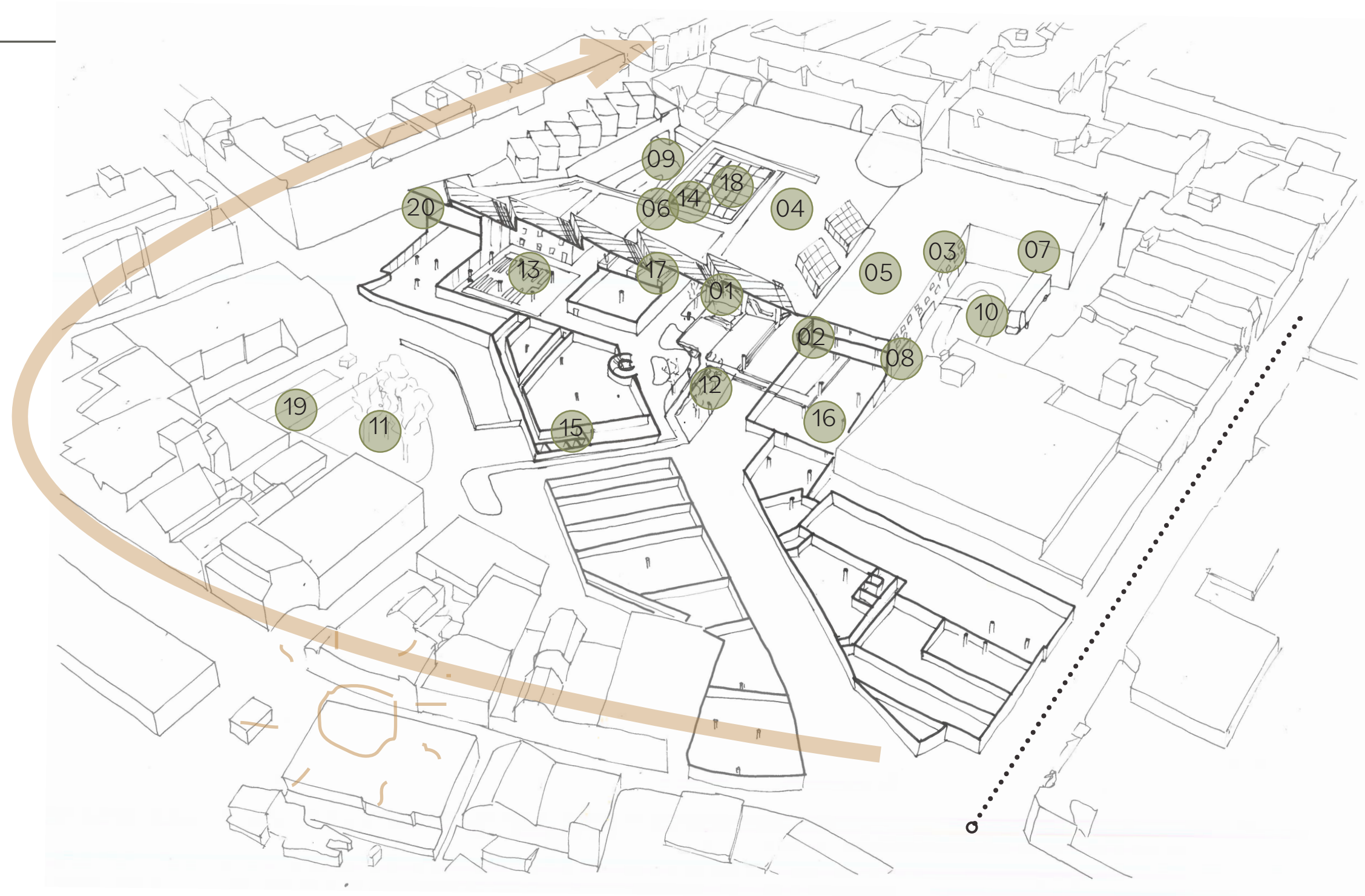
- Hybrid climate for traffic spaces
 - Mixed-use spaces
- Sightlines with views of greenery
 - Enhance greenery
- Adding a water feature

Thank you

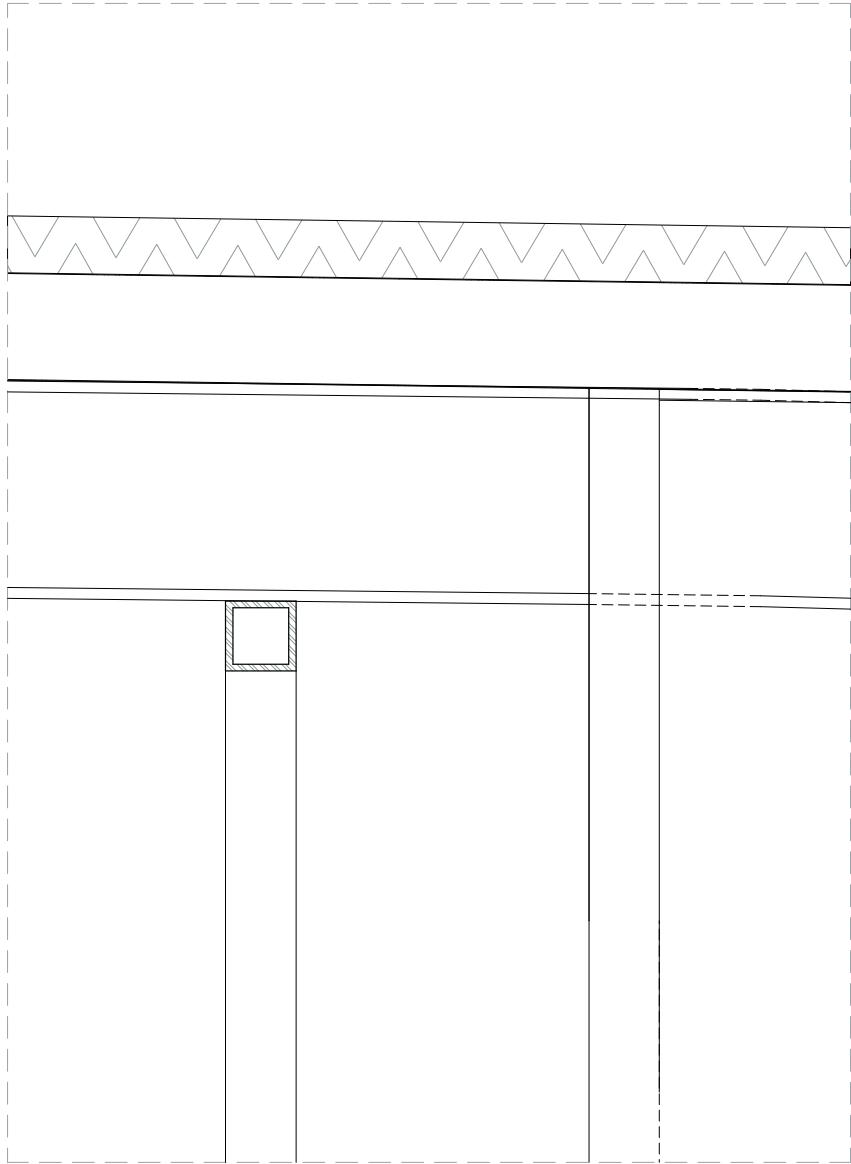
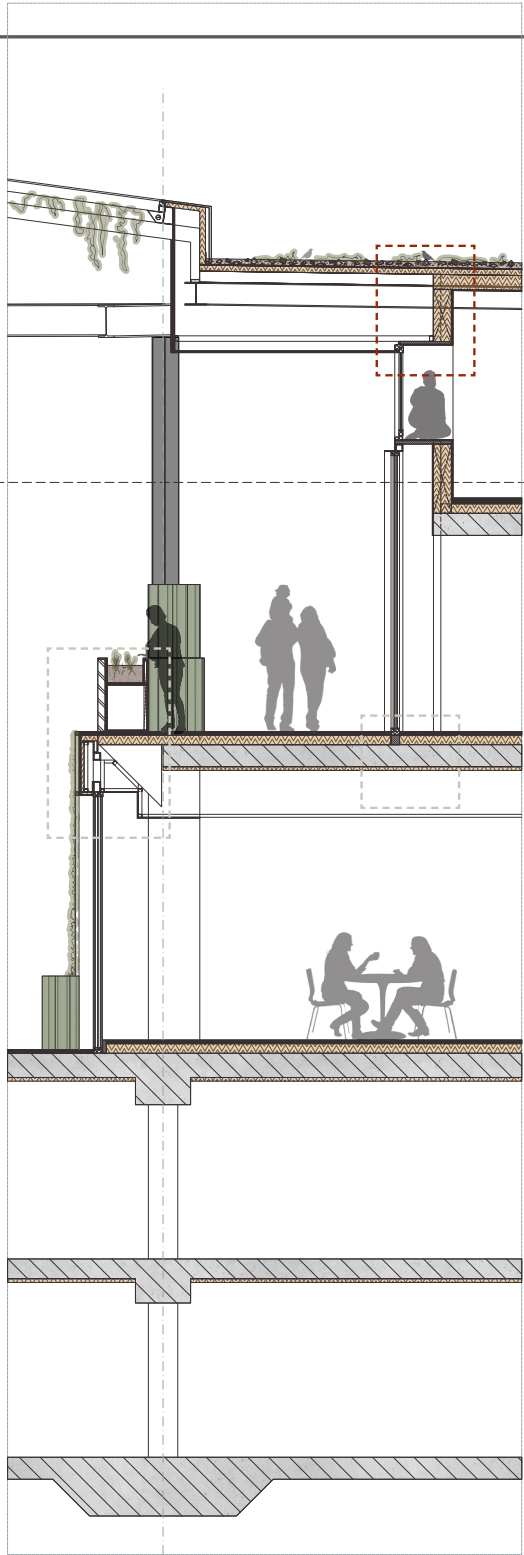


Climate/health overview

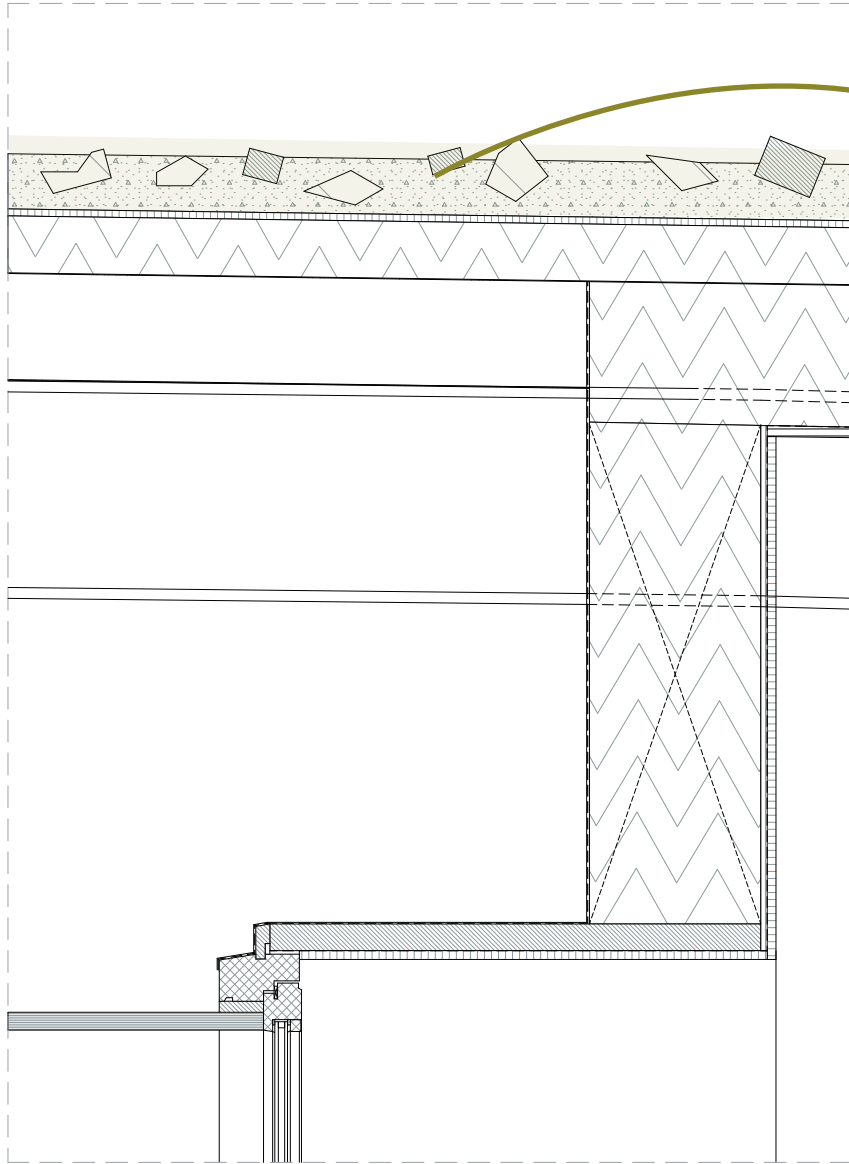
- 01 Waterfall
- 02 Biobased material
- 03 Animal housing
- 04 Blue green roof
- 05 Brown roof
- 06 Water drainage
- 07 Green facade
- 08 Facade garden
- 09 Wadi
- 10 Pond
- 11 Flowers around tree
- 12 Wall of wilderness
- 13 Vegetable garden
- 14 WKO & heatpump
- 15 WTW
- 16 Hybride ventilation
- 17 Adaptive roof
- 18 Solarpanels
- 19 Semi paving
- 20 Overhang



Detail brown roof



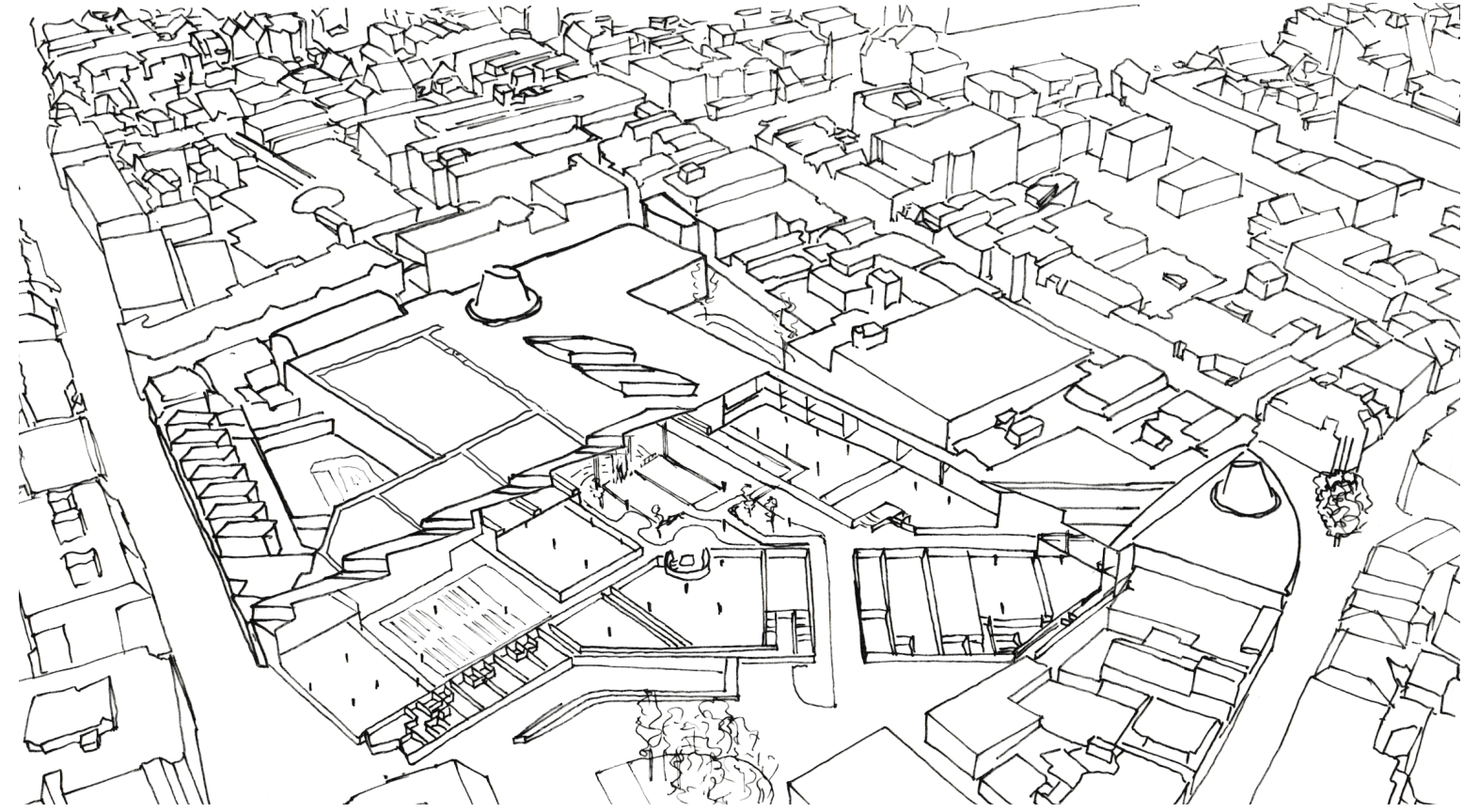
Current

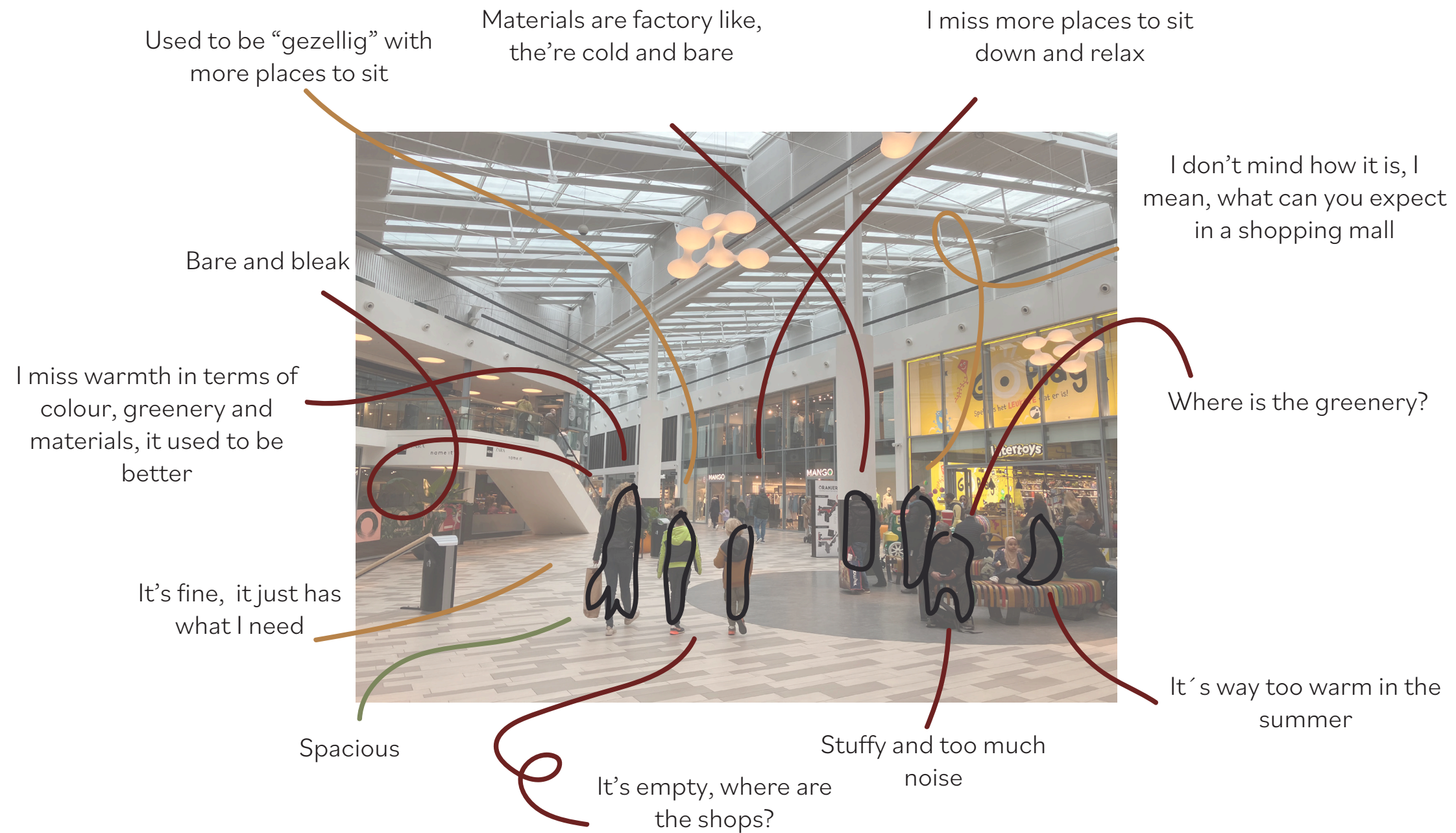


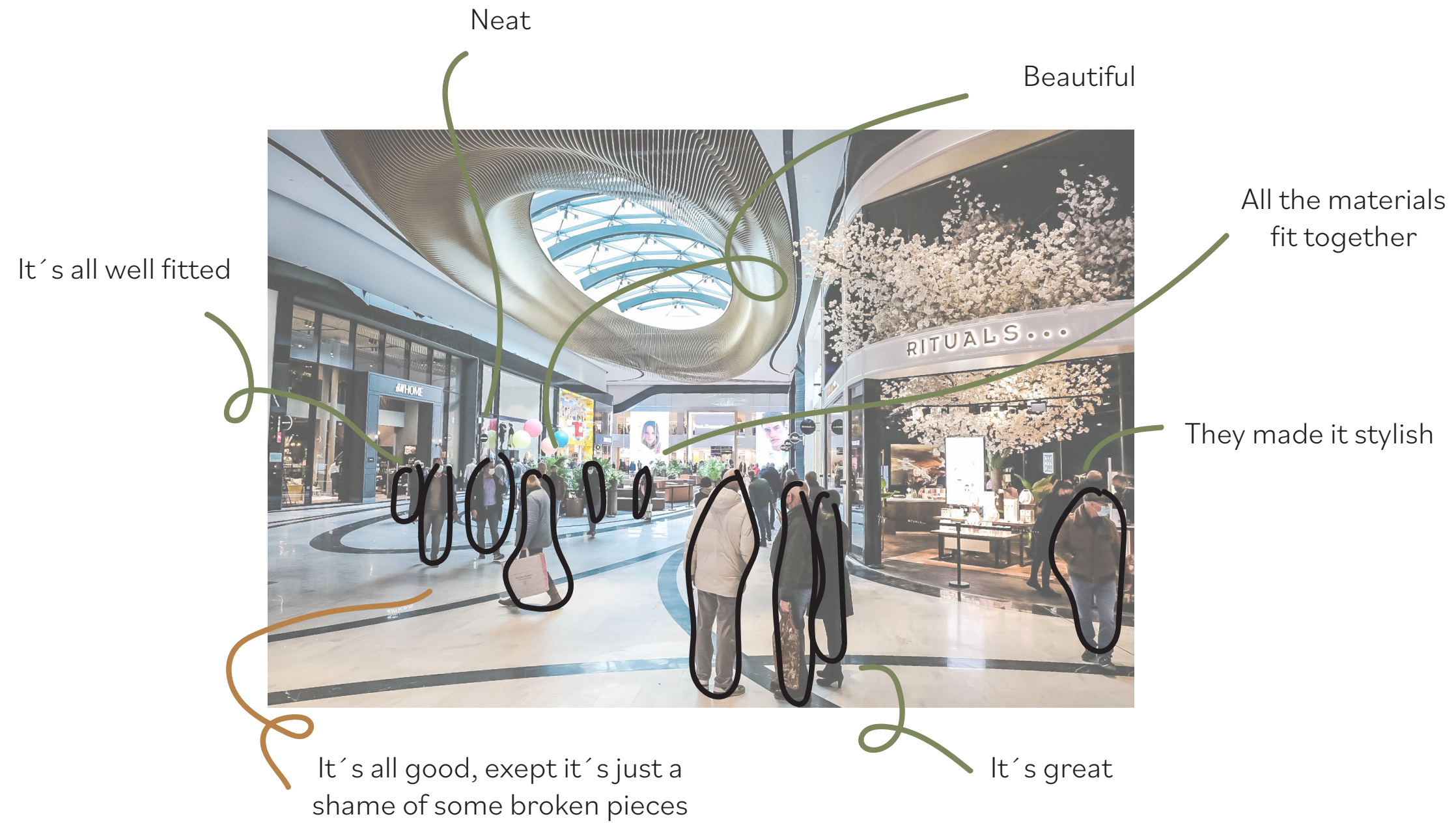
Design



Brown roof







Vision Apeldoorn

Mix of functions

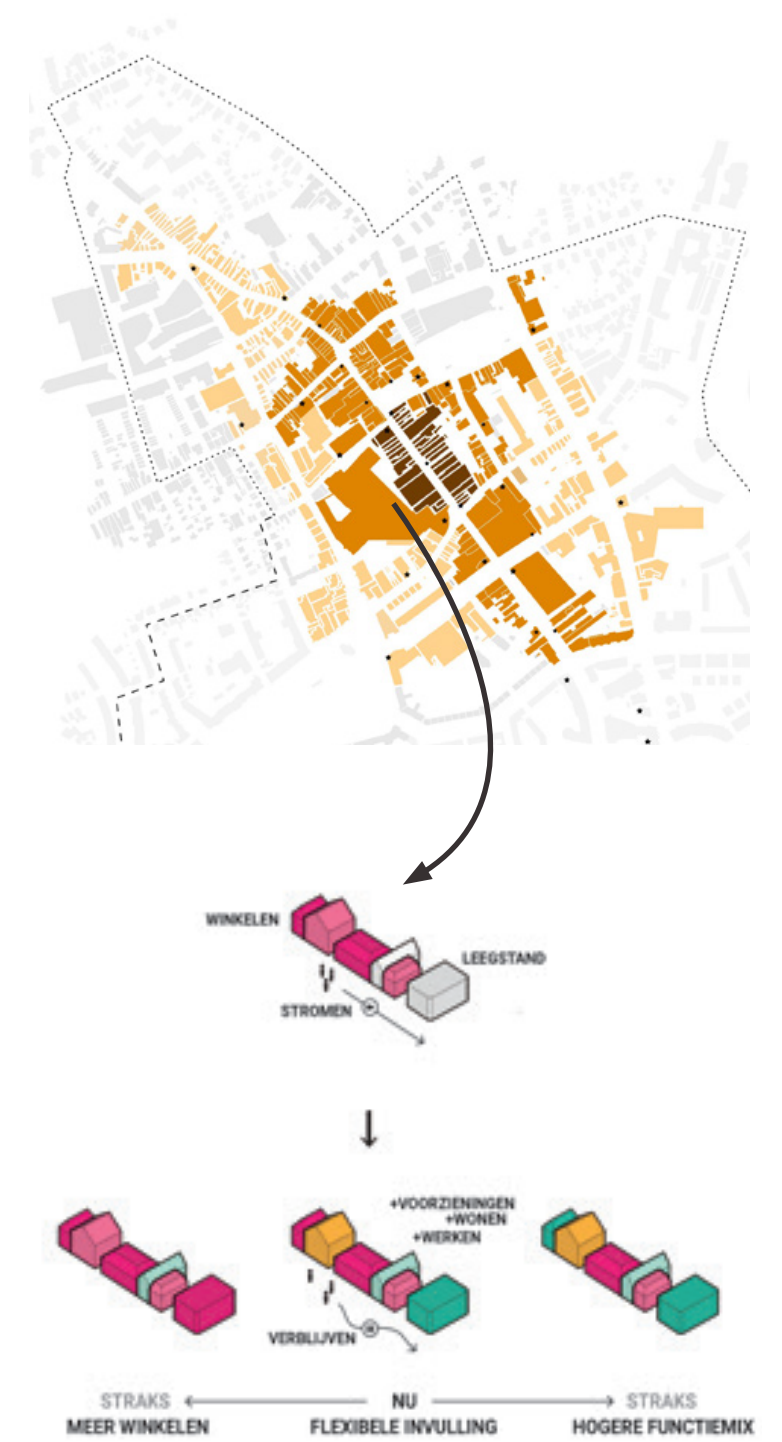
- Distribute shops over city
- Add housing

City as a green and lively meeting space

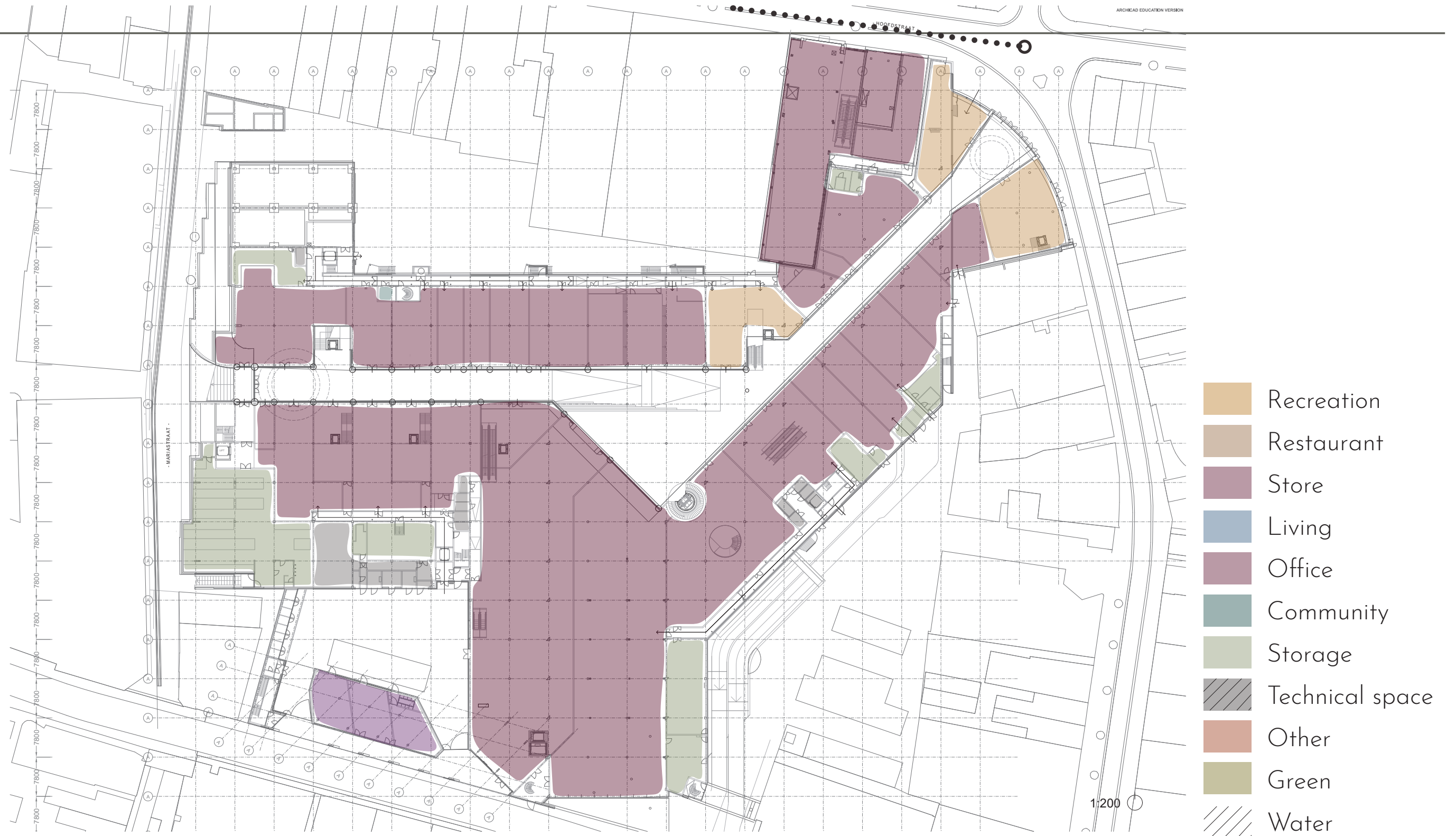
Healthy and green outdoor space

Densify and adding green

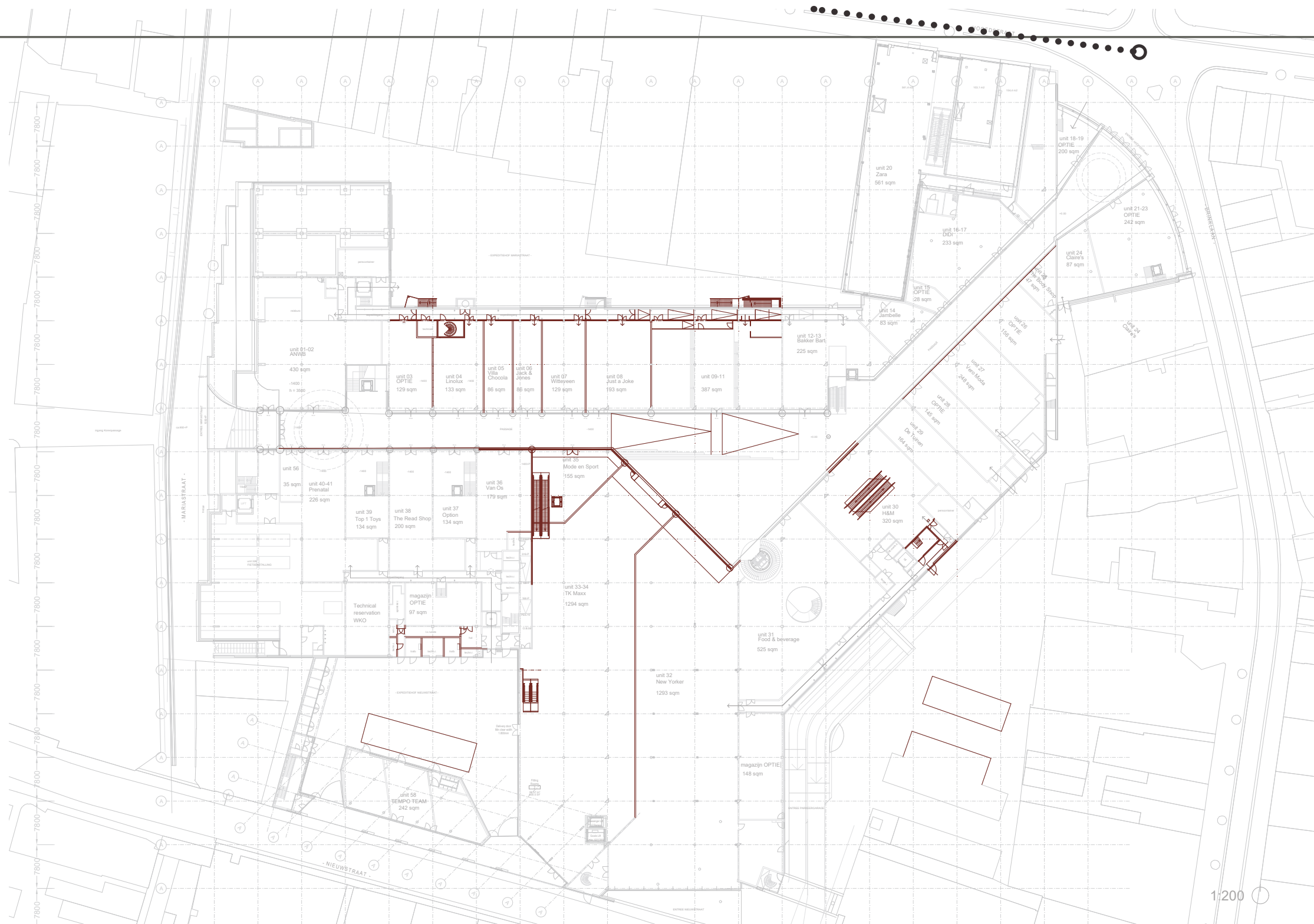
- Highrise
- Green structures
- Less shops
- More residential and work spaces



Floorplan | Ground floor

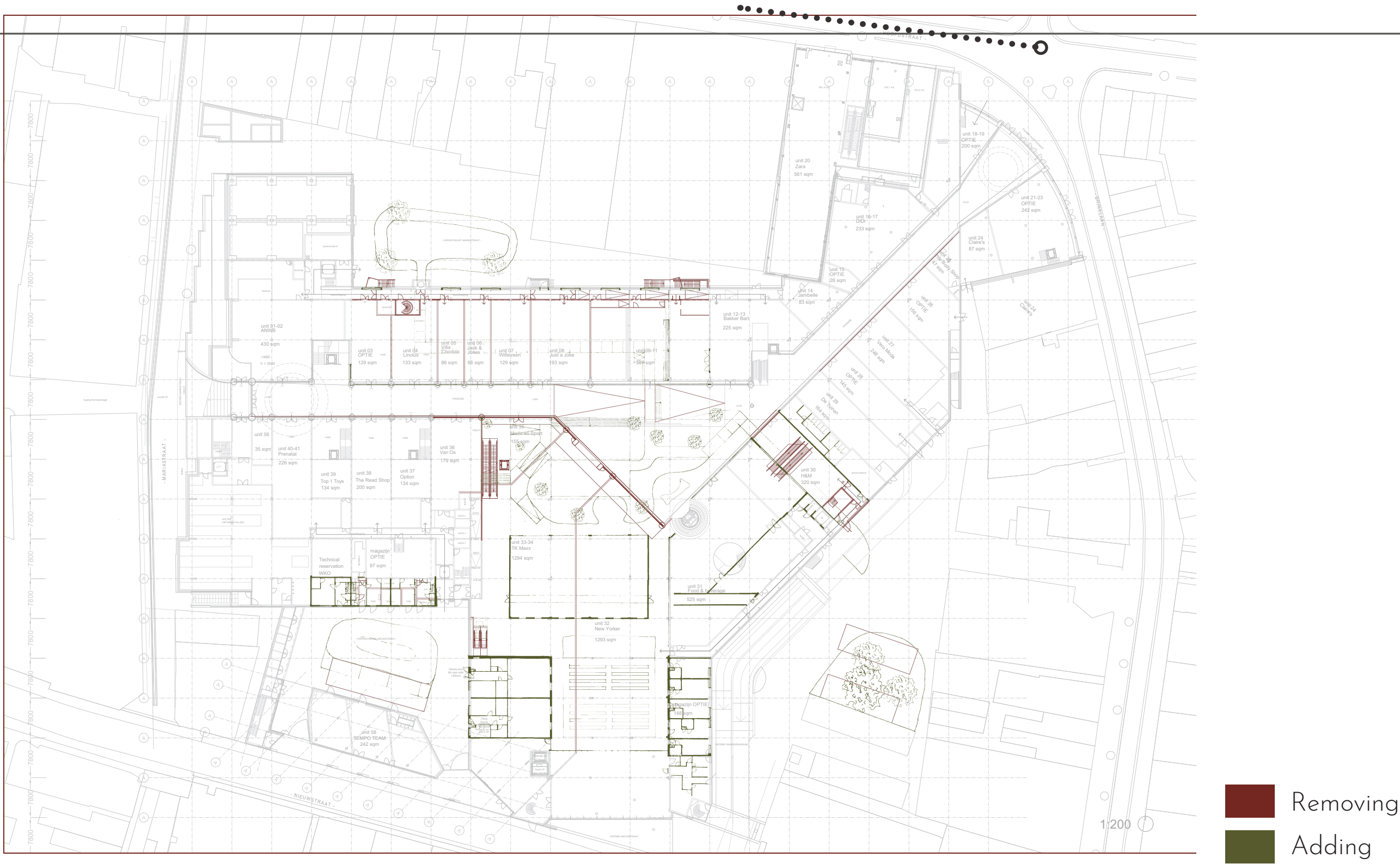


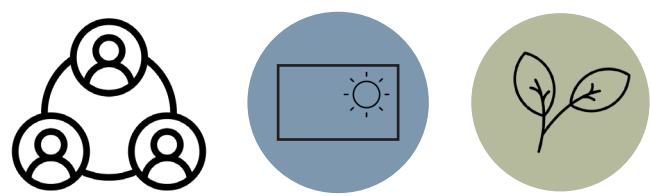
Floorplan | Ground floor



- Removing
- Adding

Floorplan | Ground floor





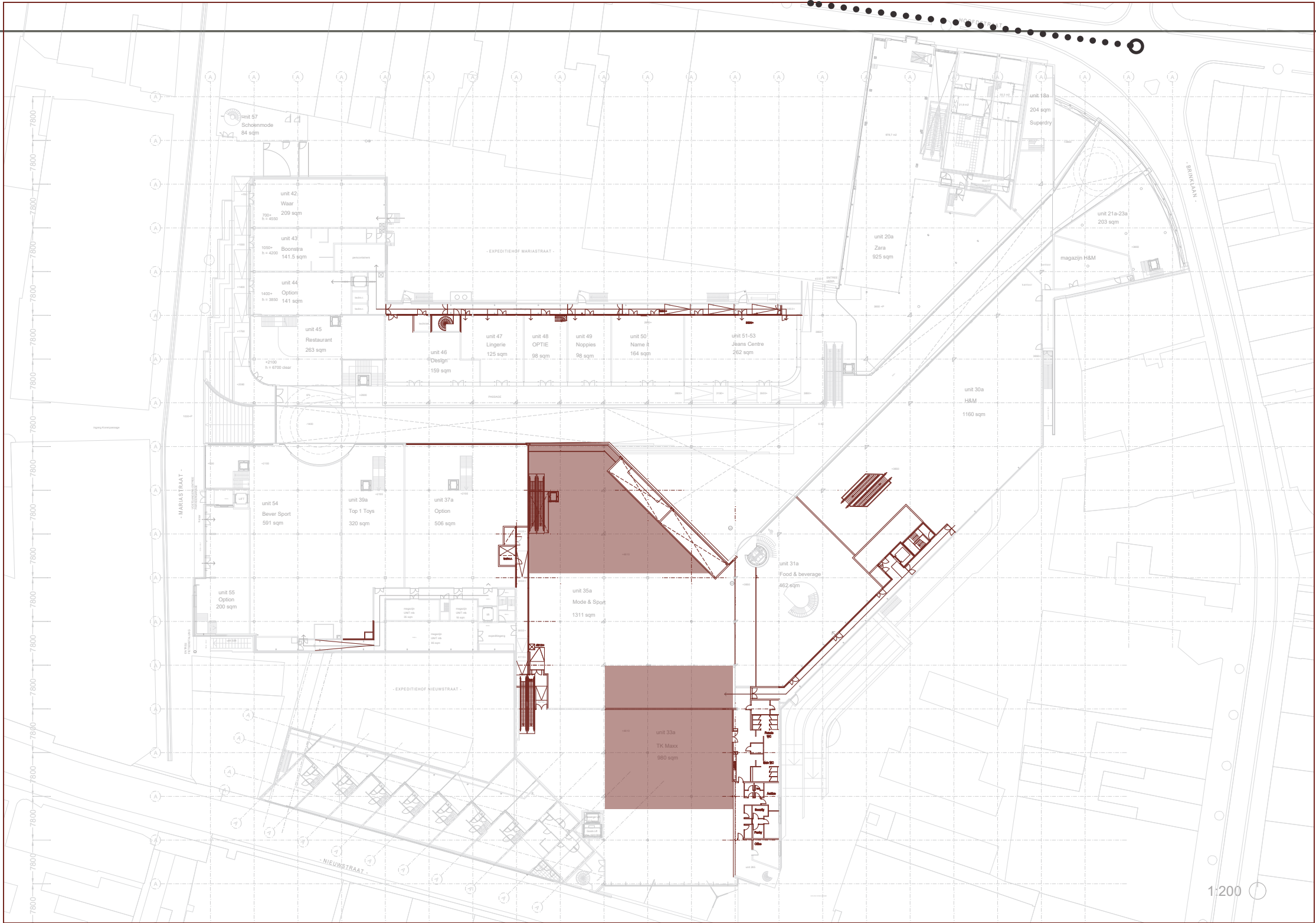
Floorplan | Ground floor



Floorplan | First floor



Floorplan | First floor

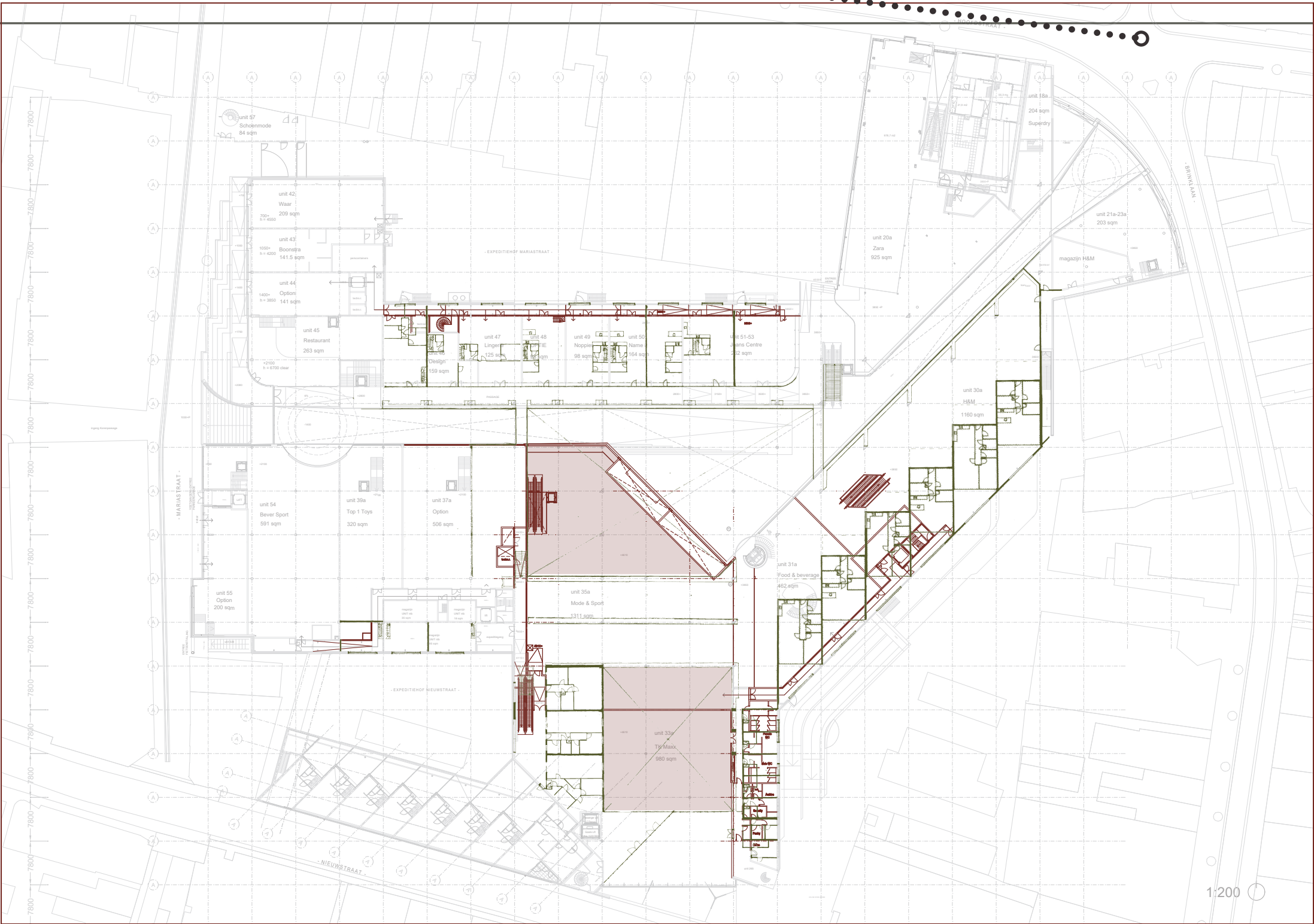


Removing

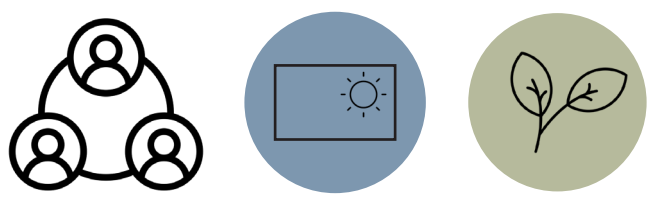


Adding

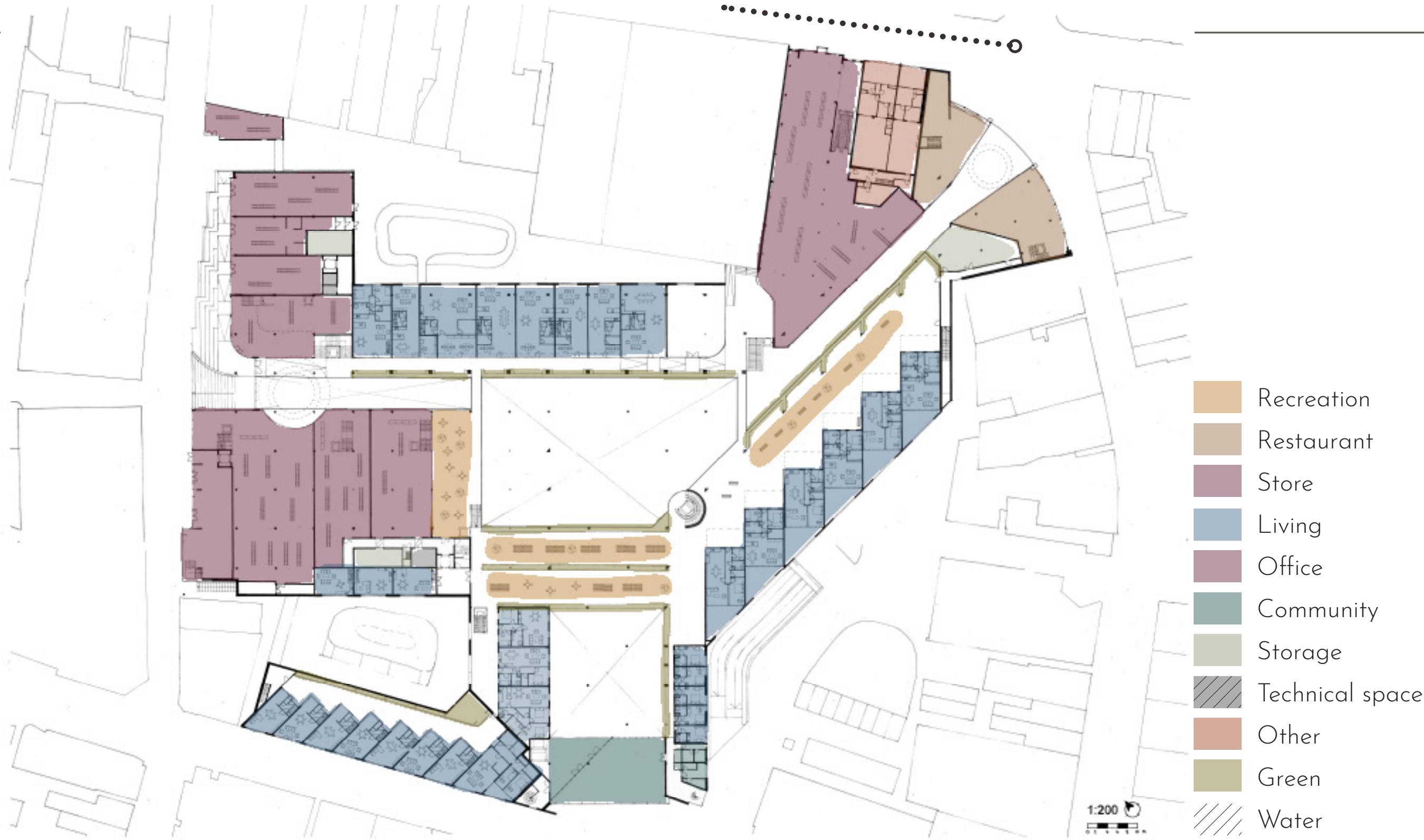
Floorplan | First floor



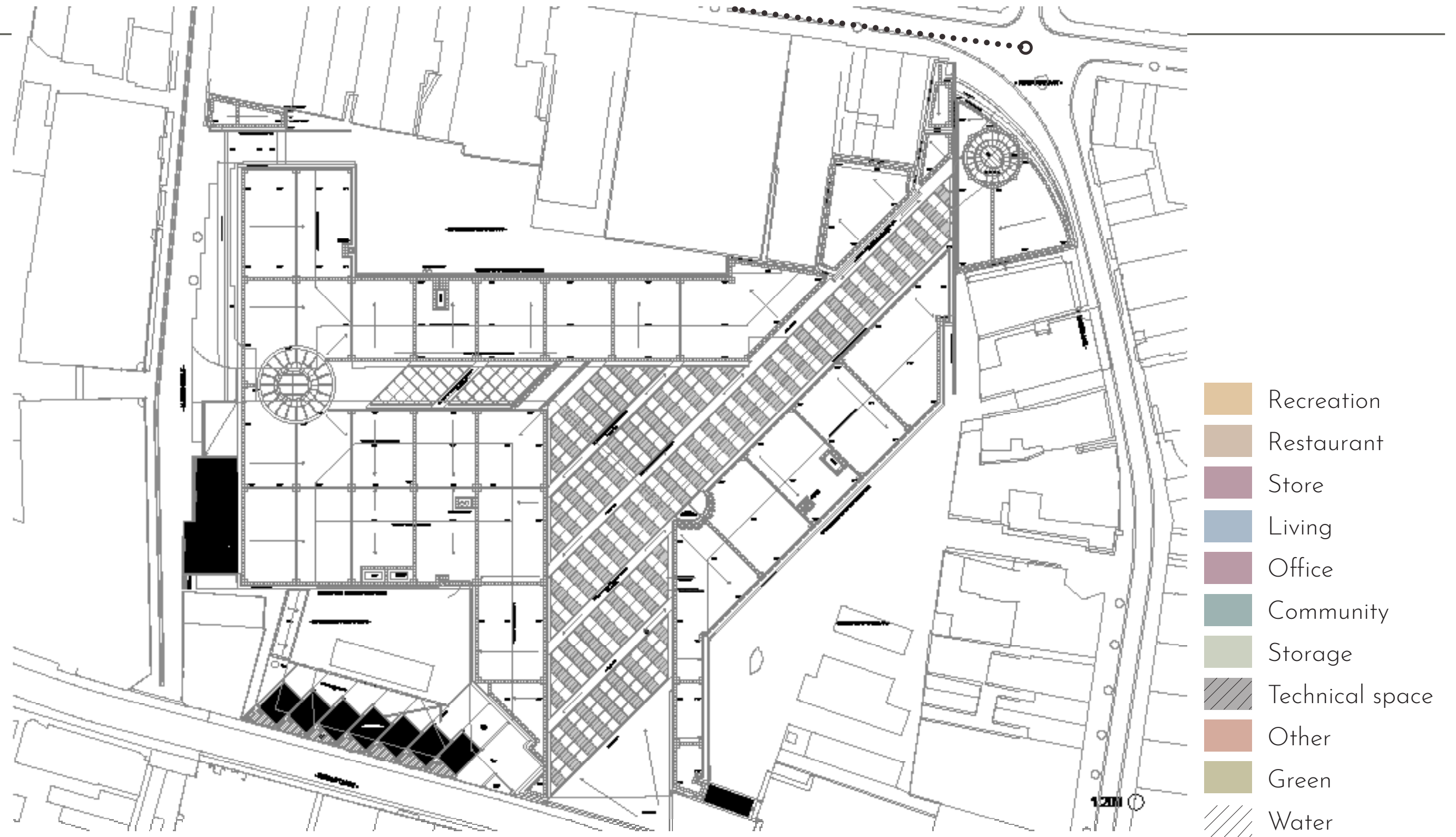
Removing
Adding



Floorplan | First floor



Floorplan | Roof



Floorplan | Roof

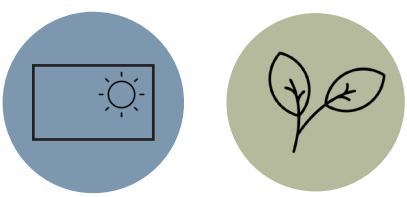


Removing



Adding

1:200



Floorplan | Roof

