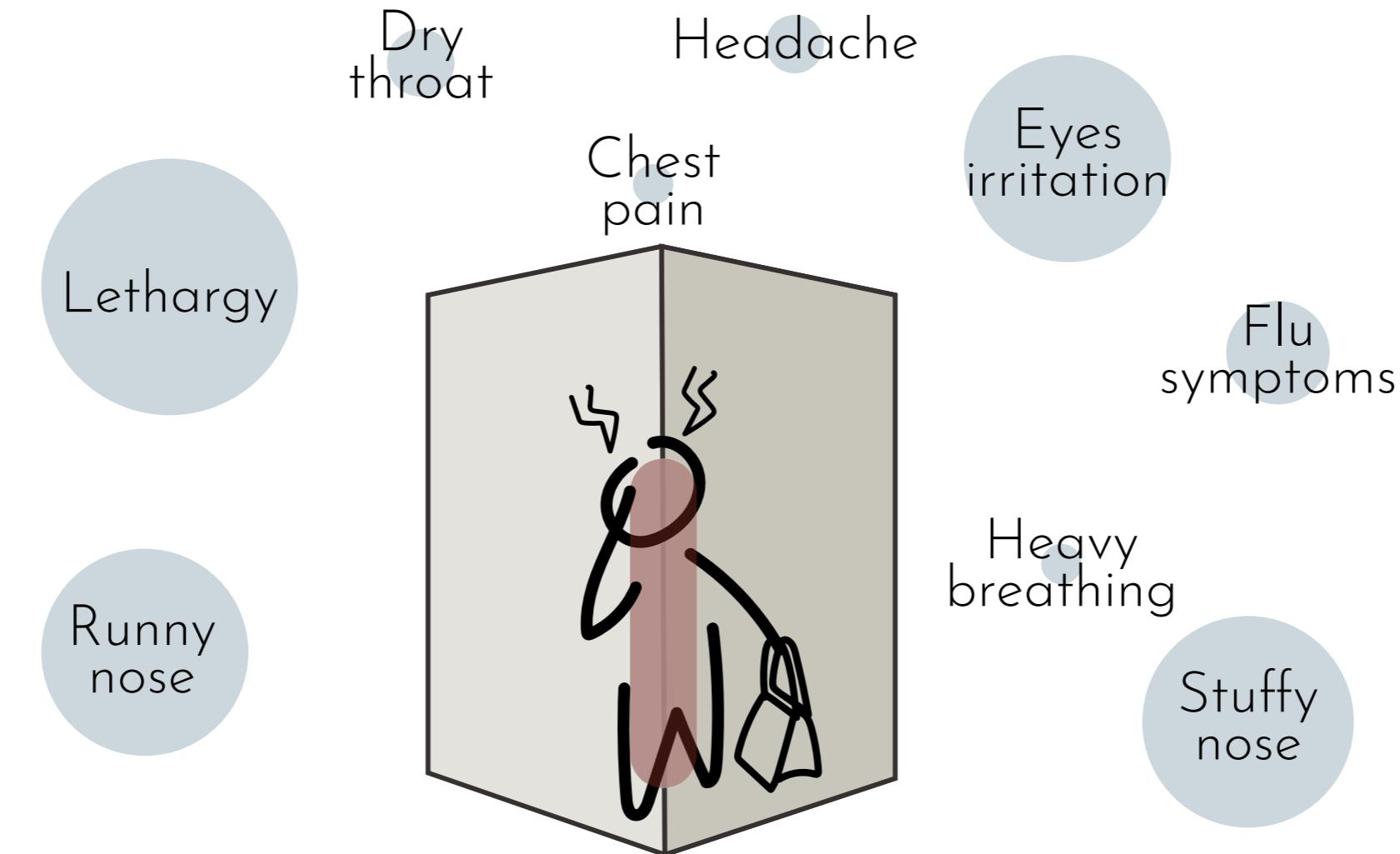


A healthy oasis in the centre of Apeldoorn

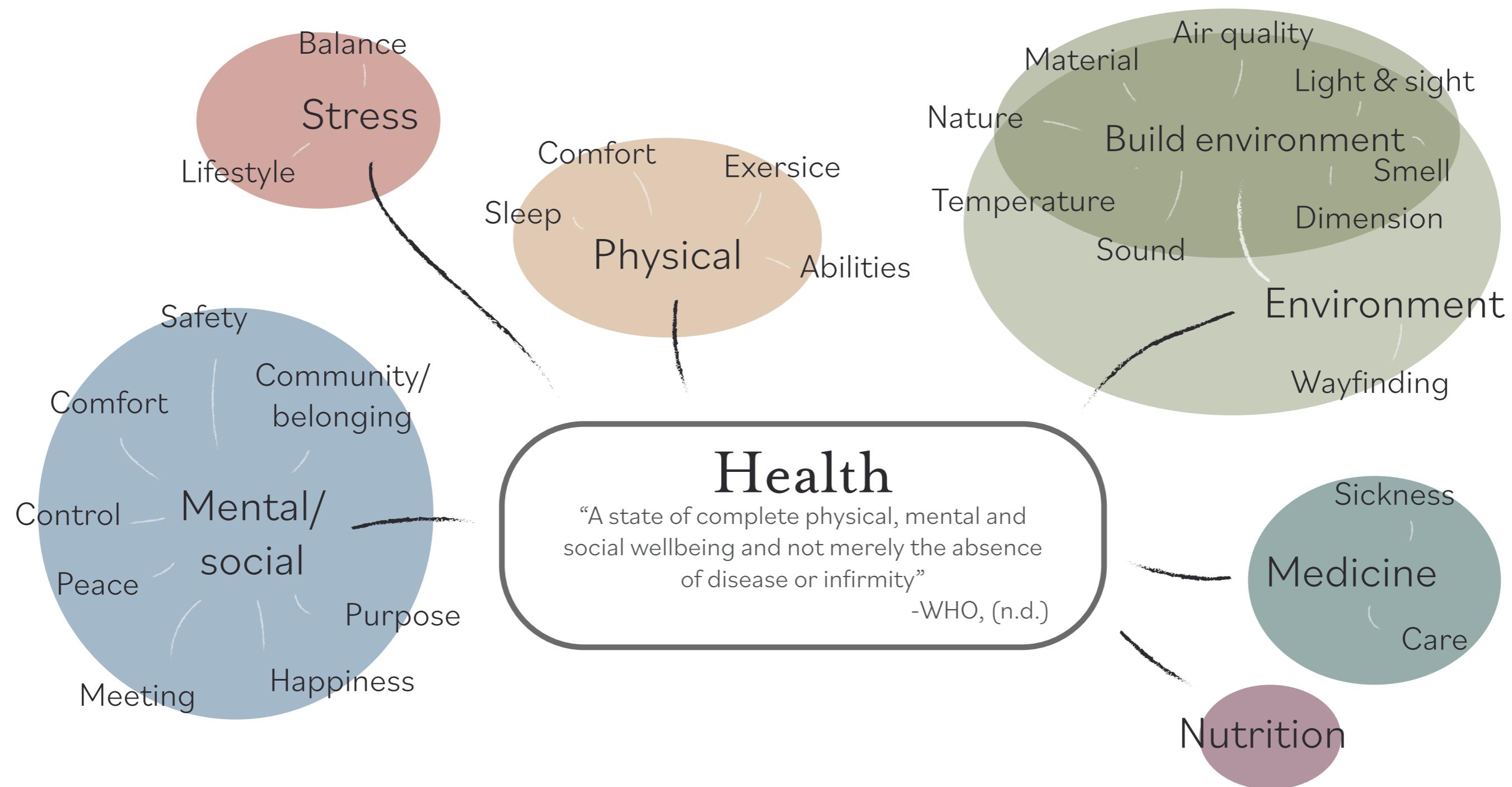


Heritage & Architecture
The modern mall
Judith Oosterhoff
4848152
18/01/2024

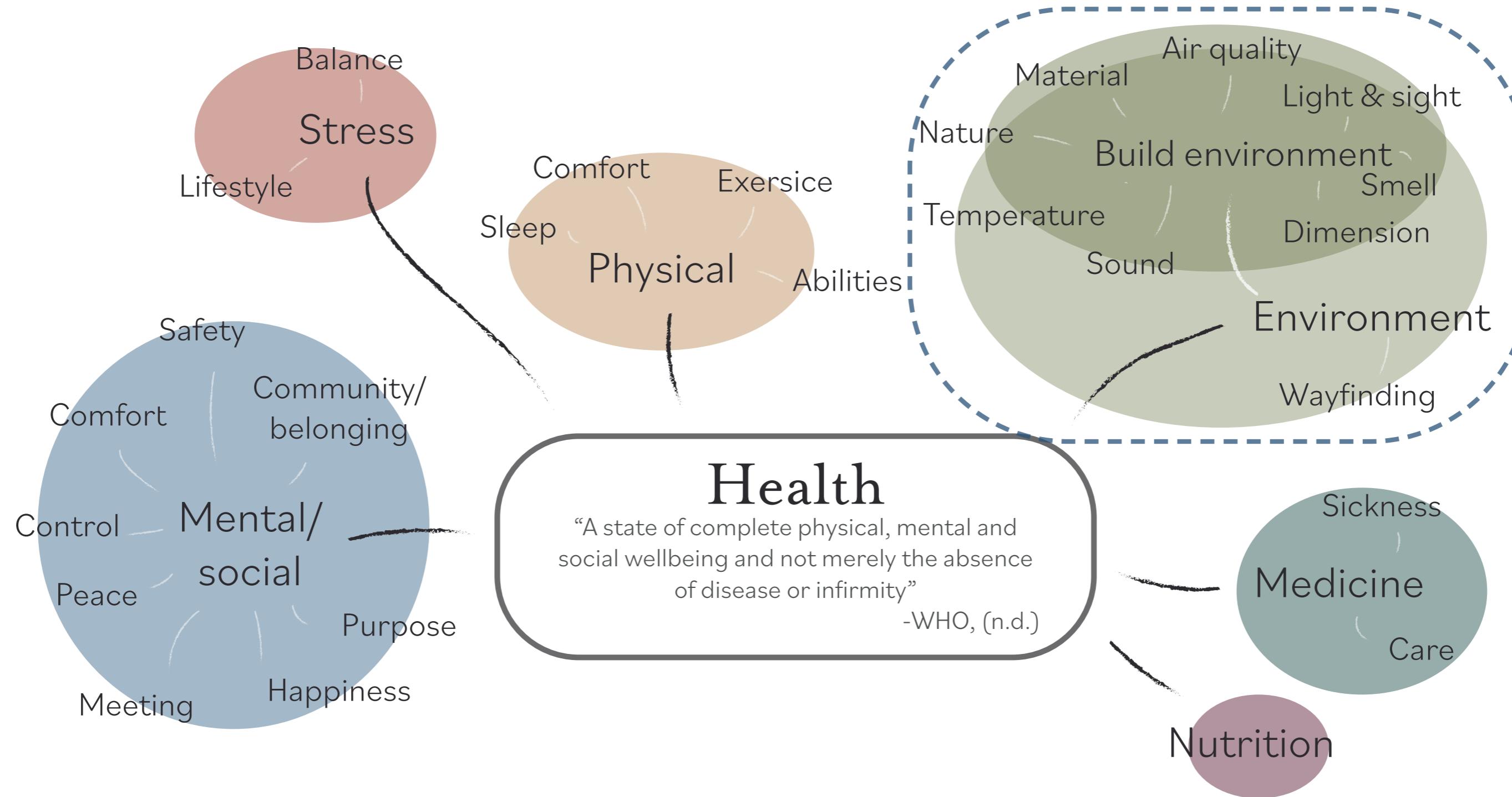
Personal problem



Health



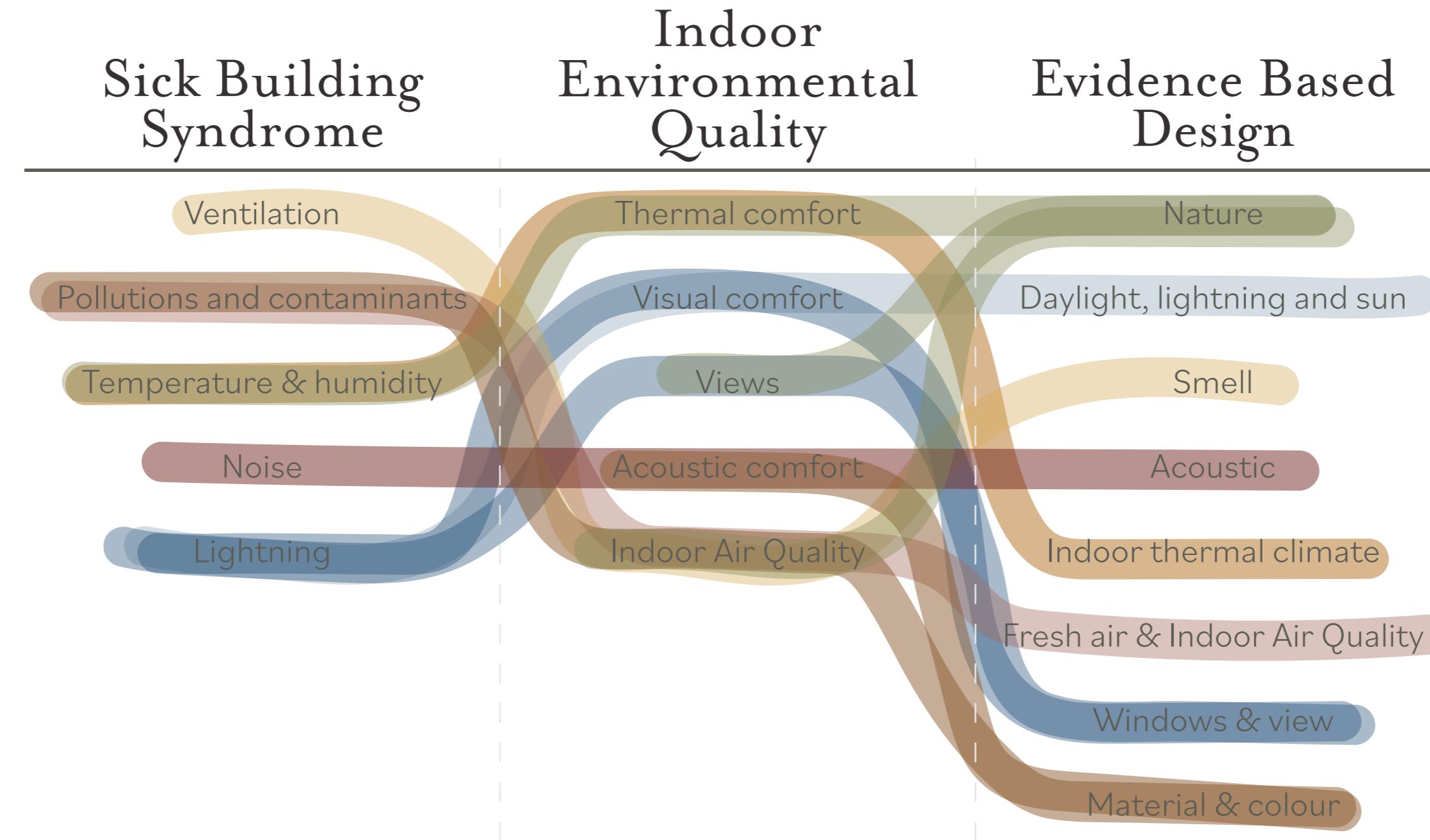
Health



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



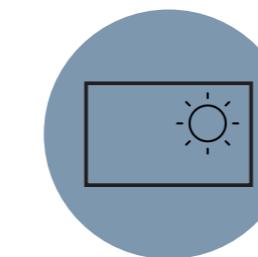
Physical elements



Nature



Air

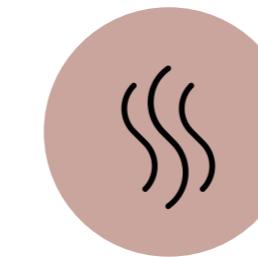


Light and
sight

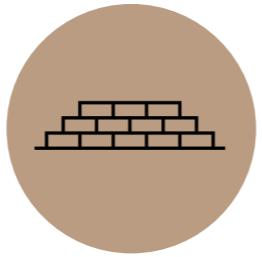


Sound

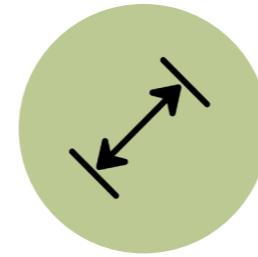
Physical
elements



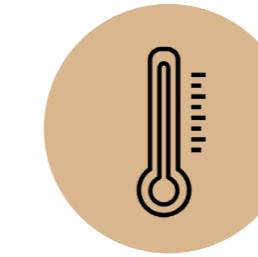
Smell



Materials



Dimensions



Temperature

Shopping mall developments

Shopping mall

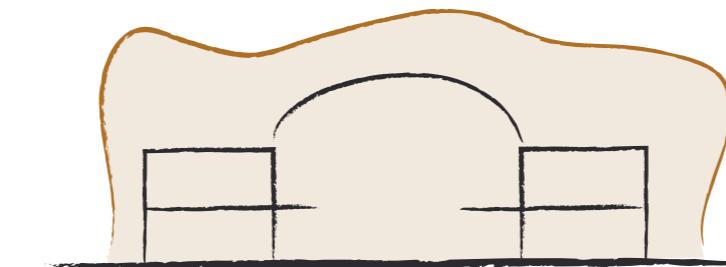
A very large - often covered - building or buildings containing a lot of stores and restaurants, usually with space outside for parking¹



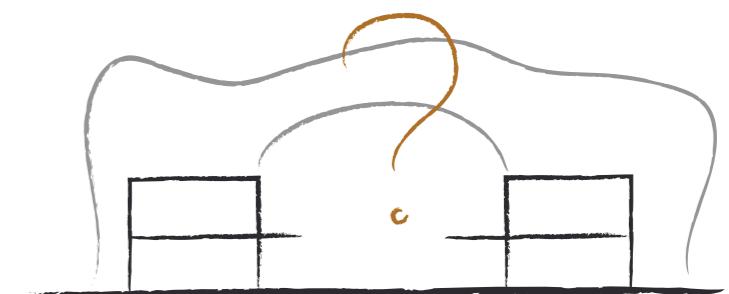
Canopies



Covered passage

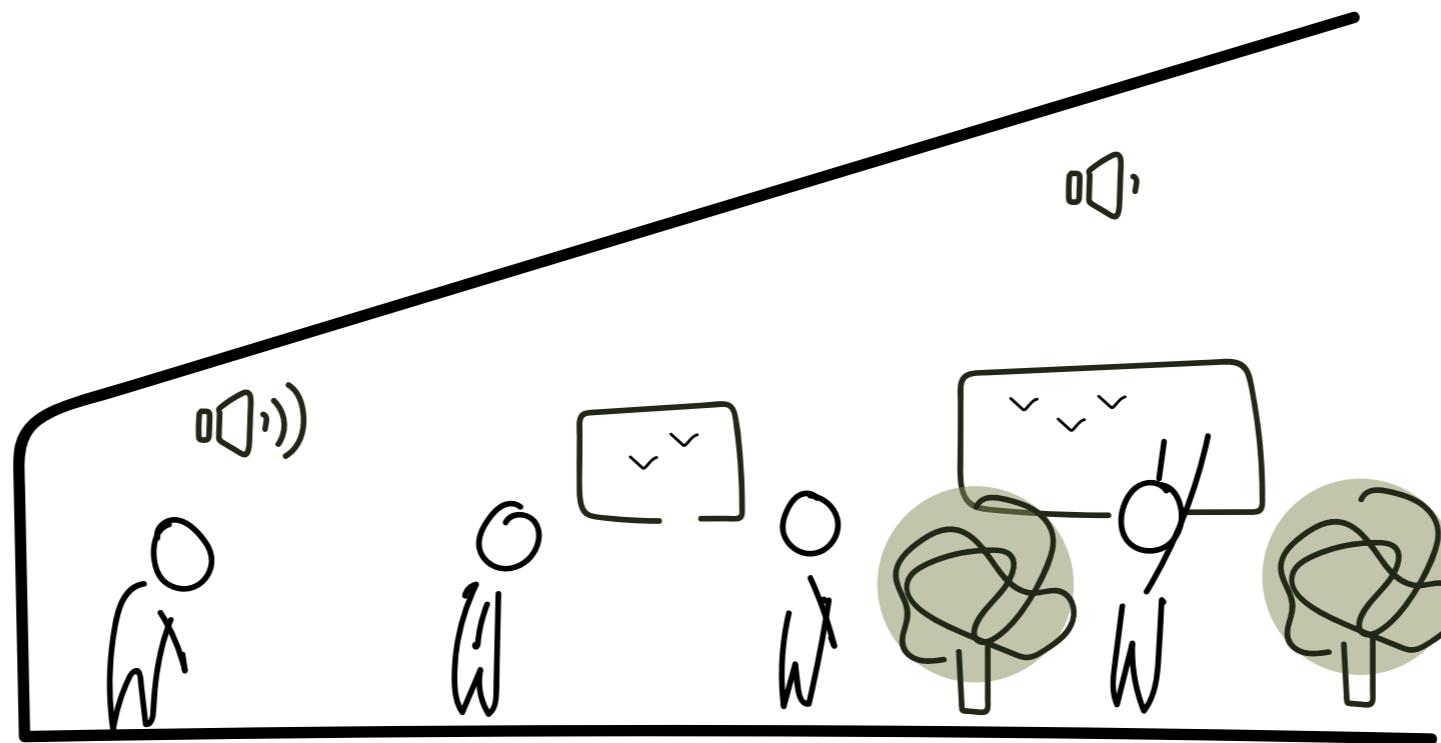


Freeshaped covered



?

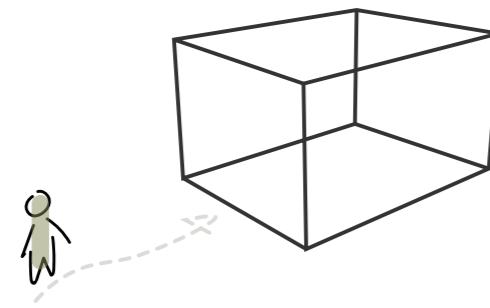
Goal



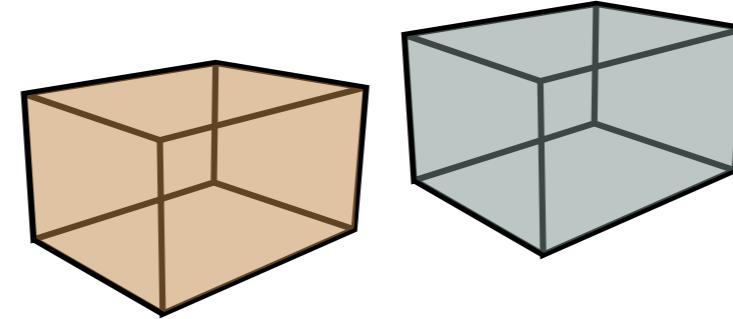
Creating a healthy space where people feel
comfortable and is enjoyable.

Research question

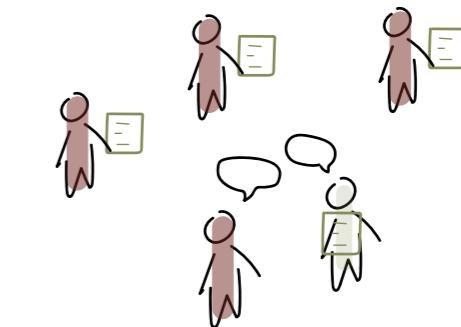
How to improve the experience of human wellbeing in a shopping mall by architectural interventions?



Visit



Case studies

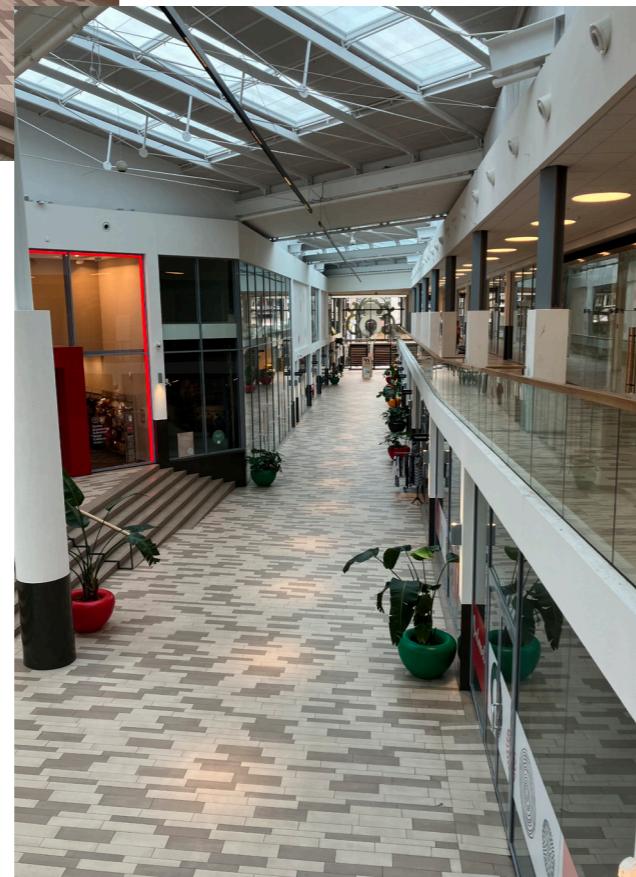


Interviews

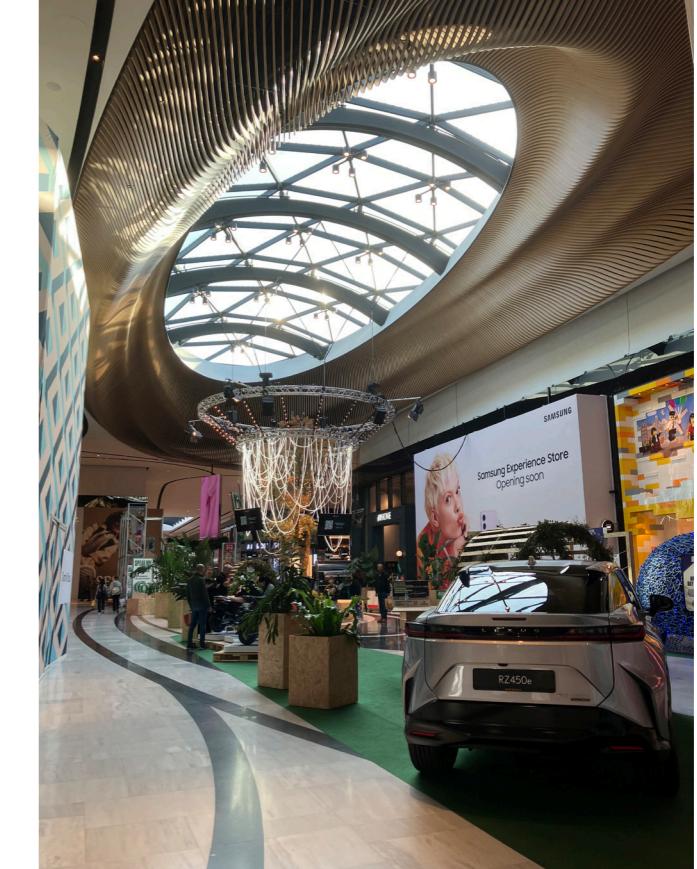
Case studies



Oranjerie



Westfield mall



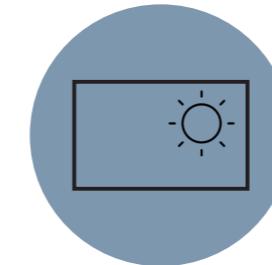
Case studies



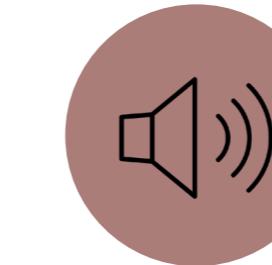
Nature



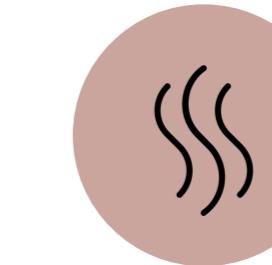
Air



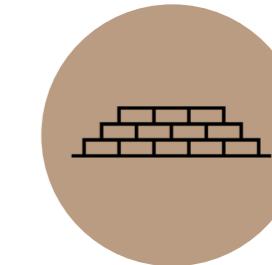
Light and
sight



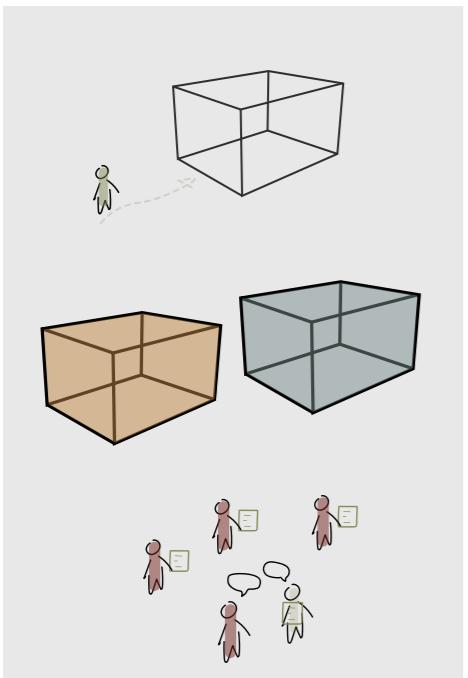
Sound



Smell



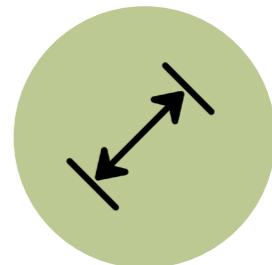
Materials



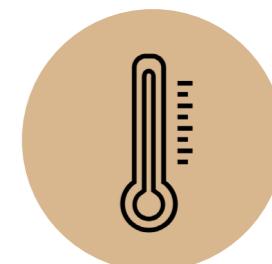
Oranjerie



Westfield mall

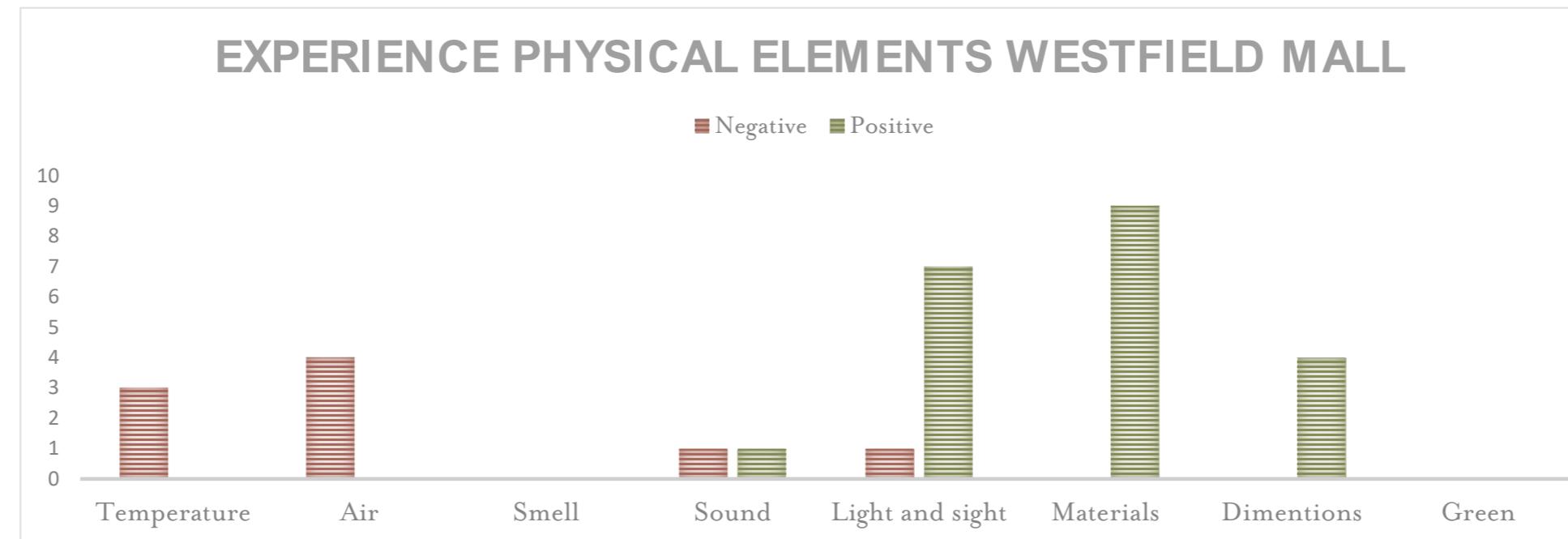
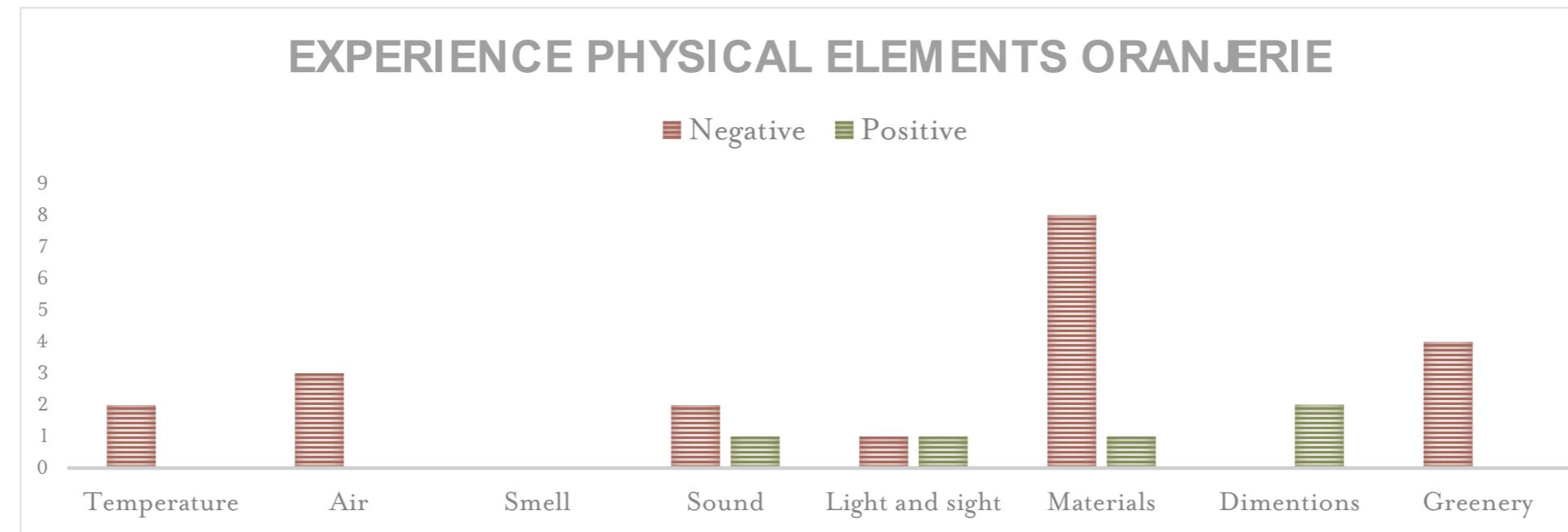


Dimensions

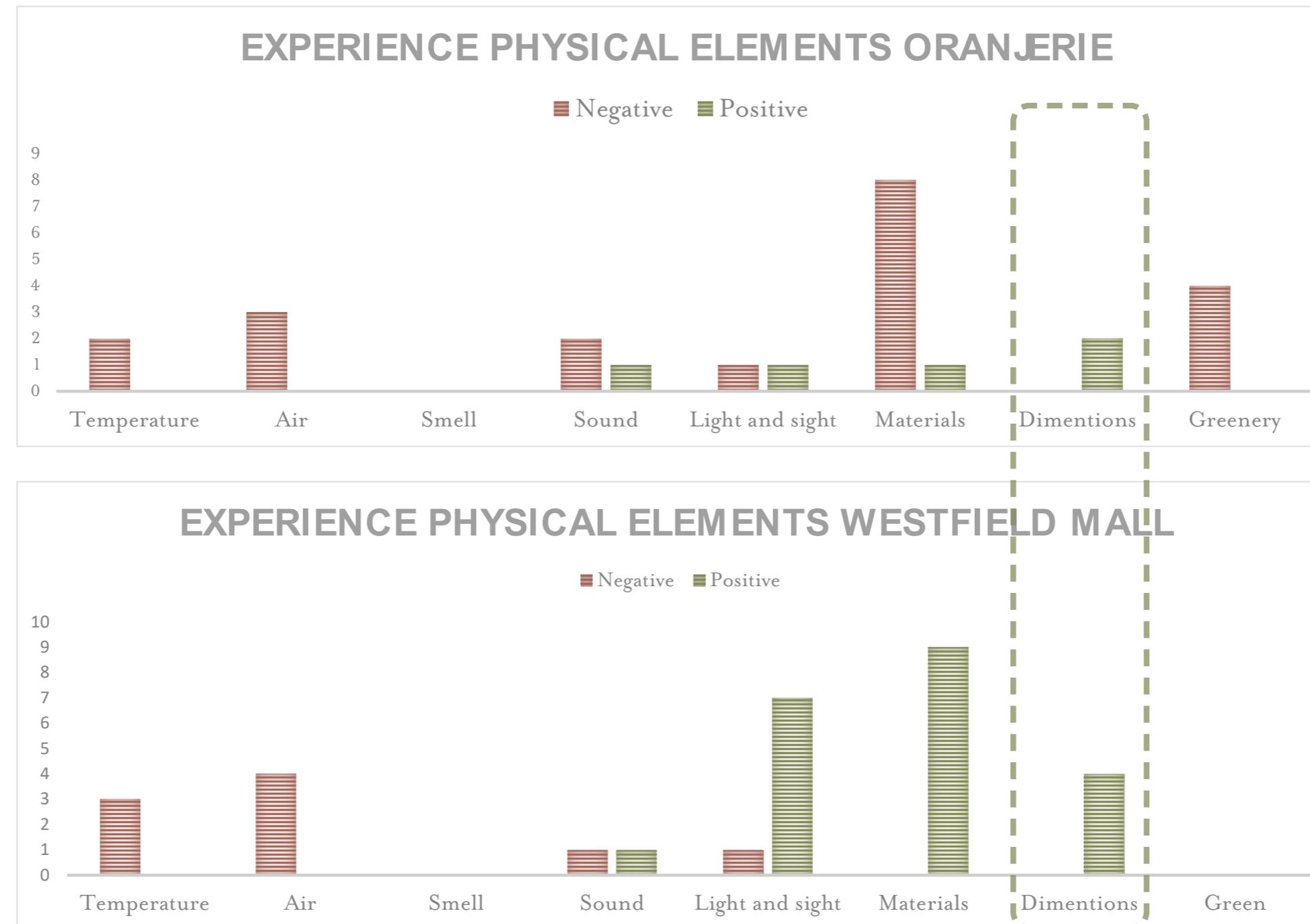


Temperature

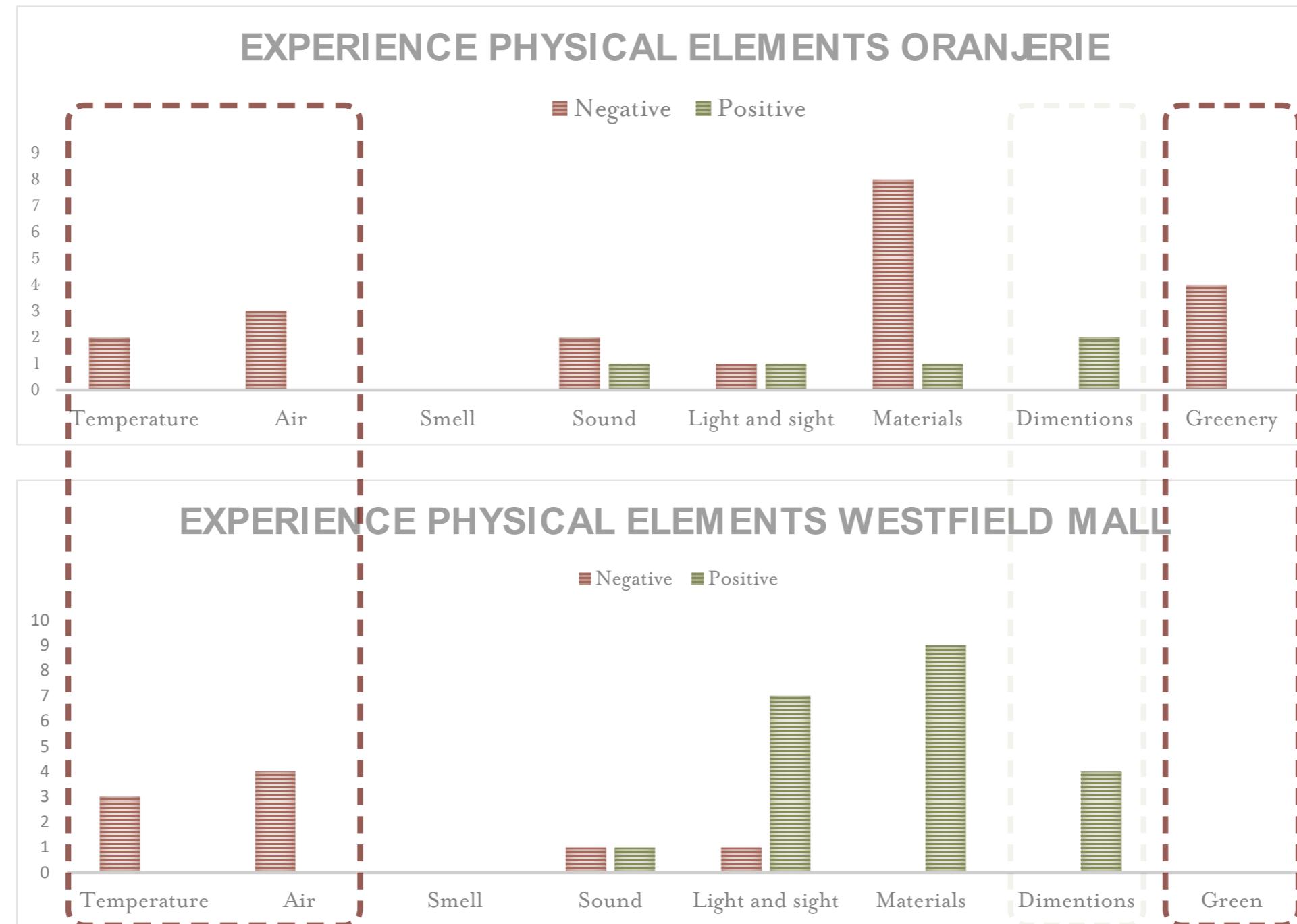
Results



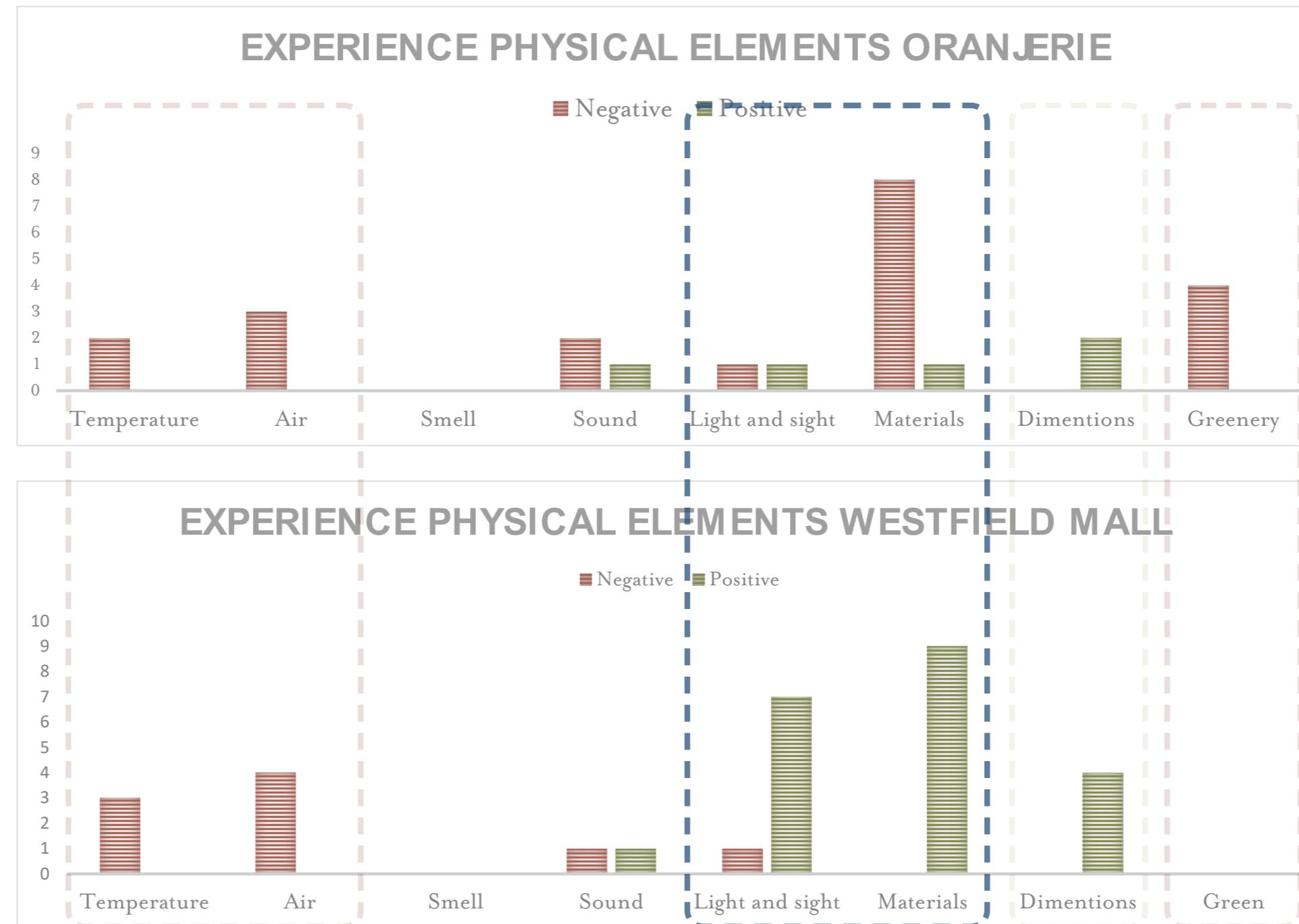
Results



Results



Results



Case studie comparison



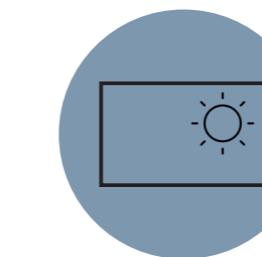
Conclusion



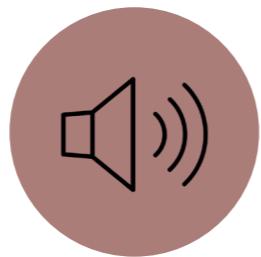
Nature



Air

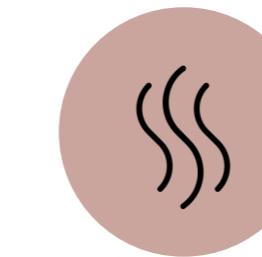


Light and sight

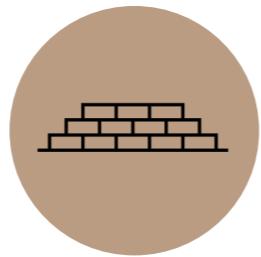


Sound

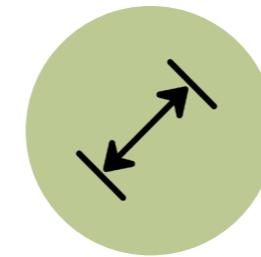
Physical elements



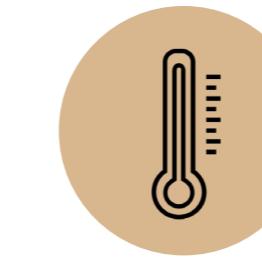
Smell



Materials



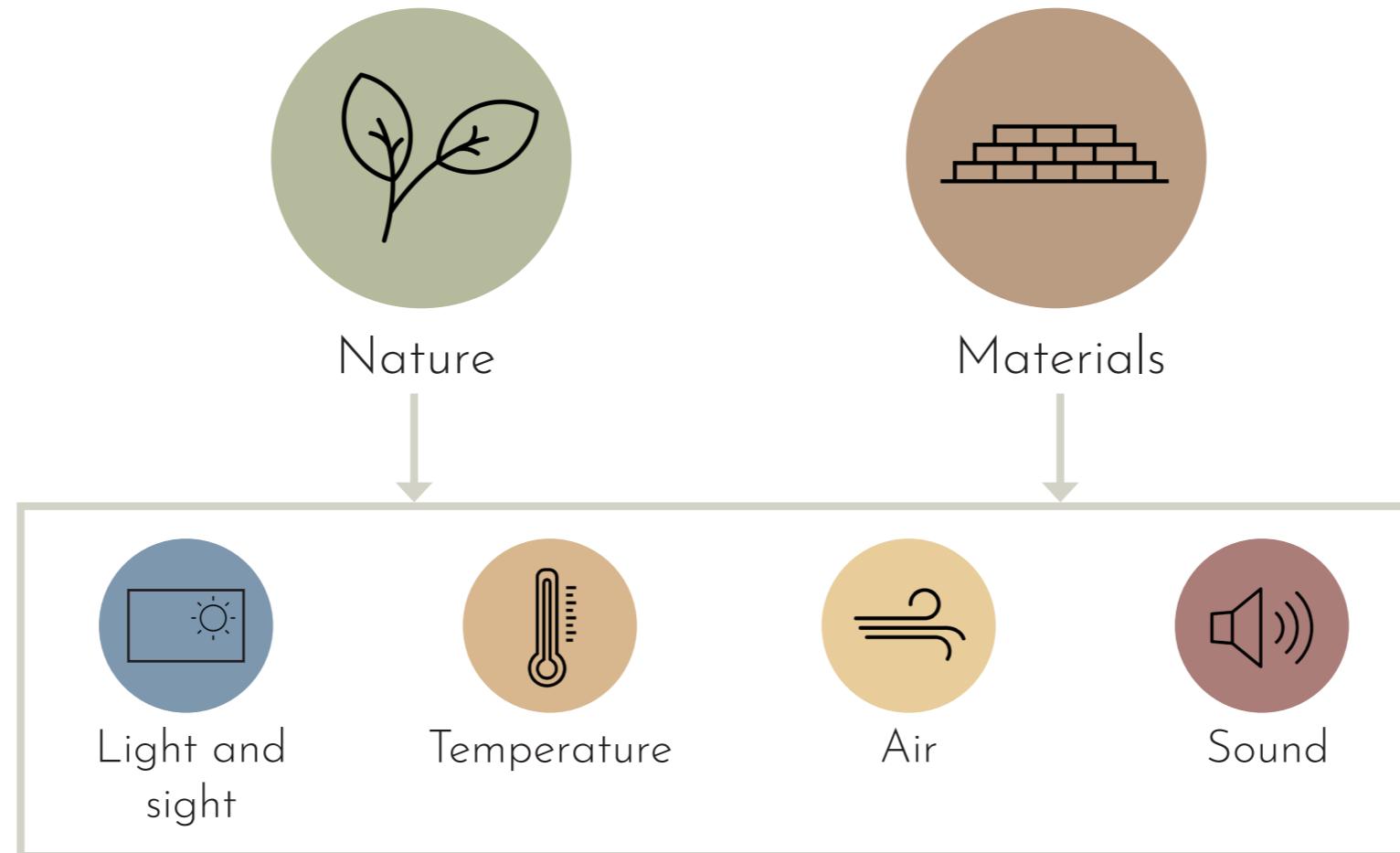
Dimensions



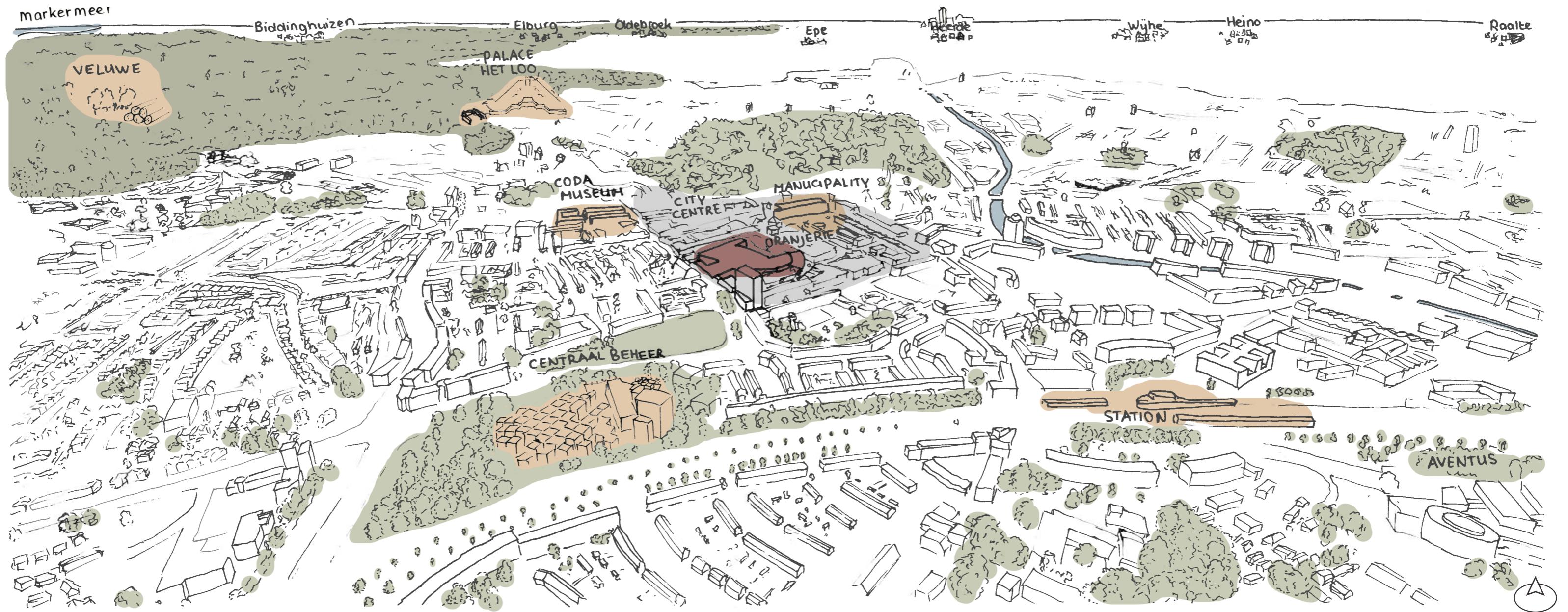
Temperature

Conclusion

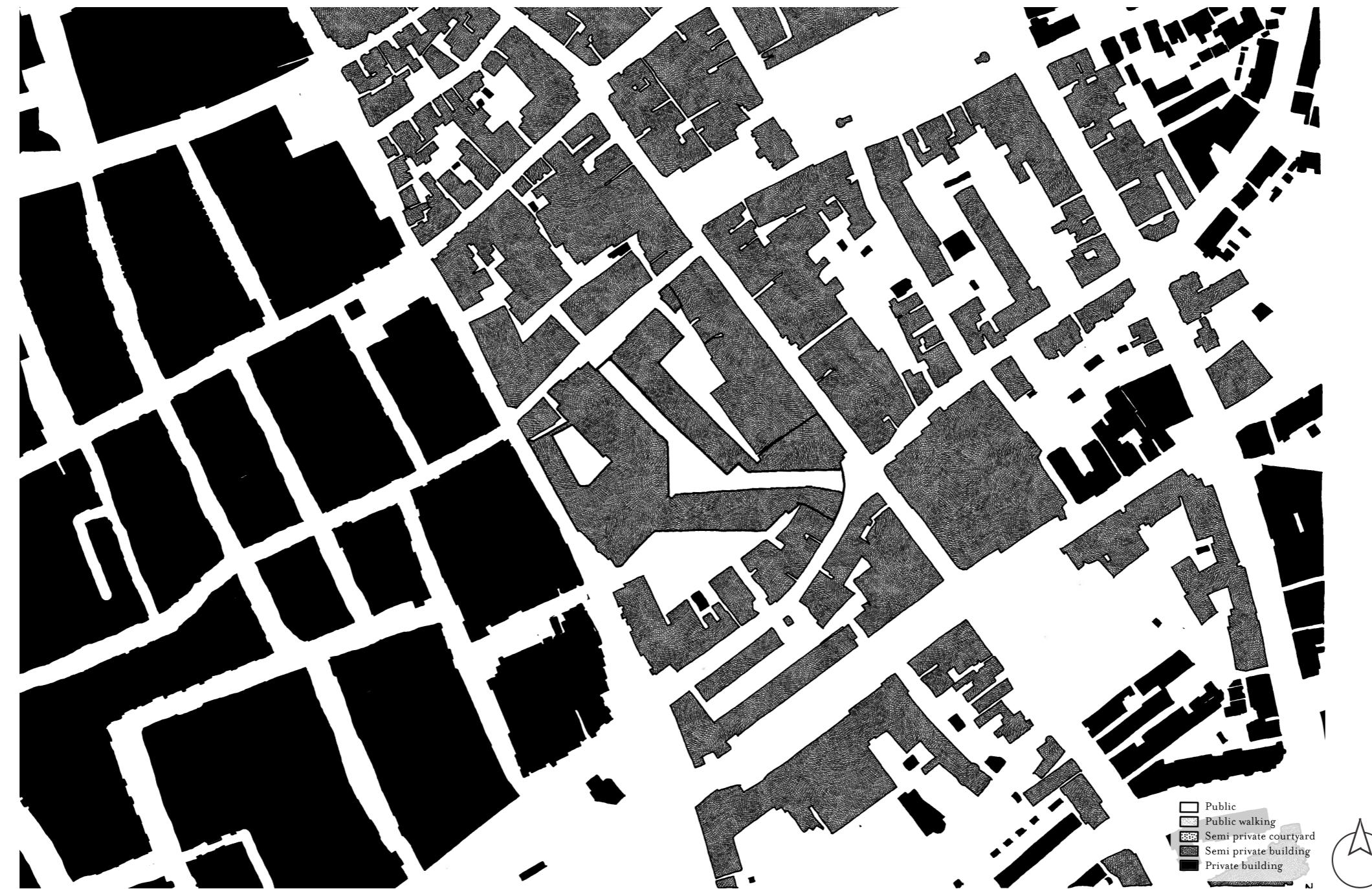
How to improve the experience of human wellbeing in a shopping mall by architectural interventions focussing on the physical elements?



Apeldoorn surroundings



Apeldoorn city centre



Apeldoorn city centre



Residential area

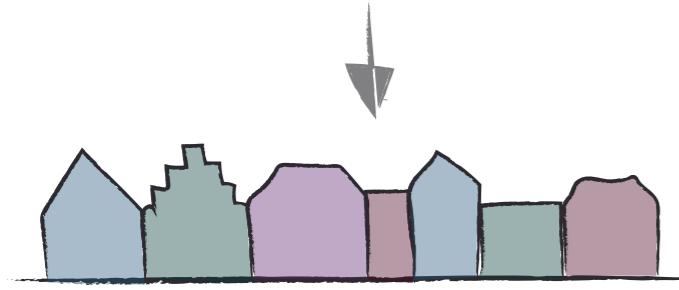
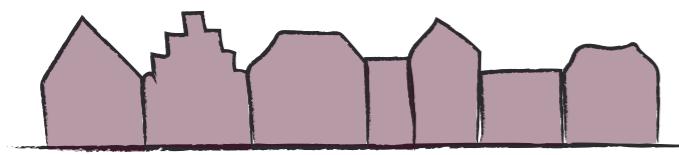


Market with municipality

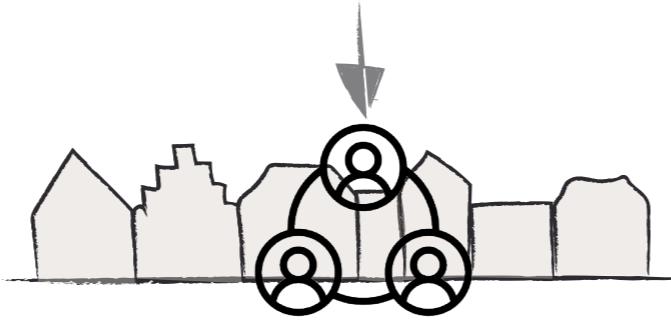
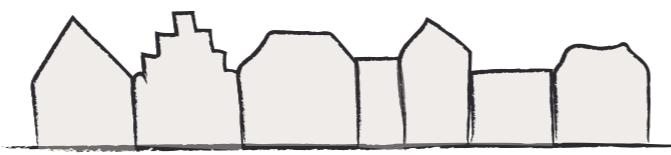


Hoofdstraat

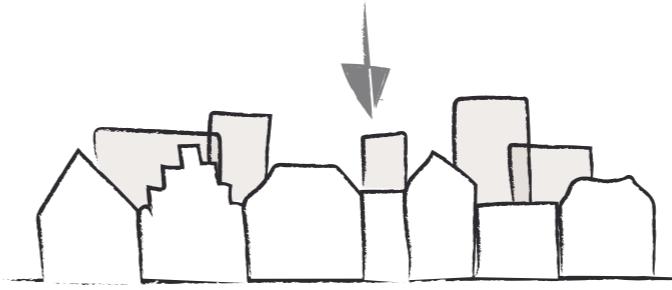
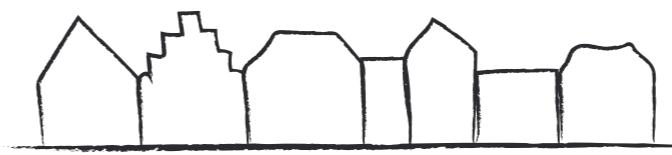
Vision Apeldoorn



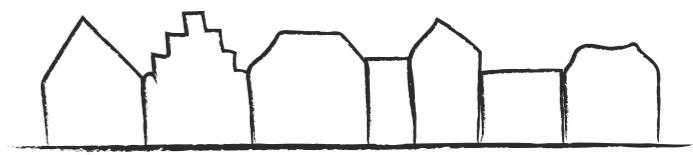
Mix of functions



City as a meeting
space



Densify



Healthy and green
outdoor

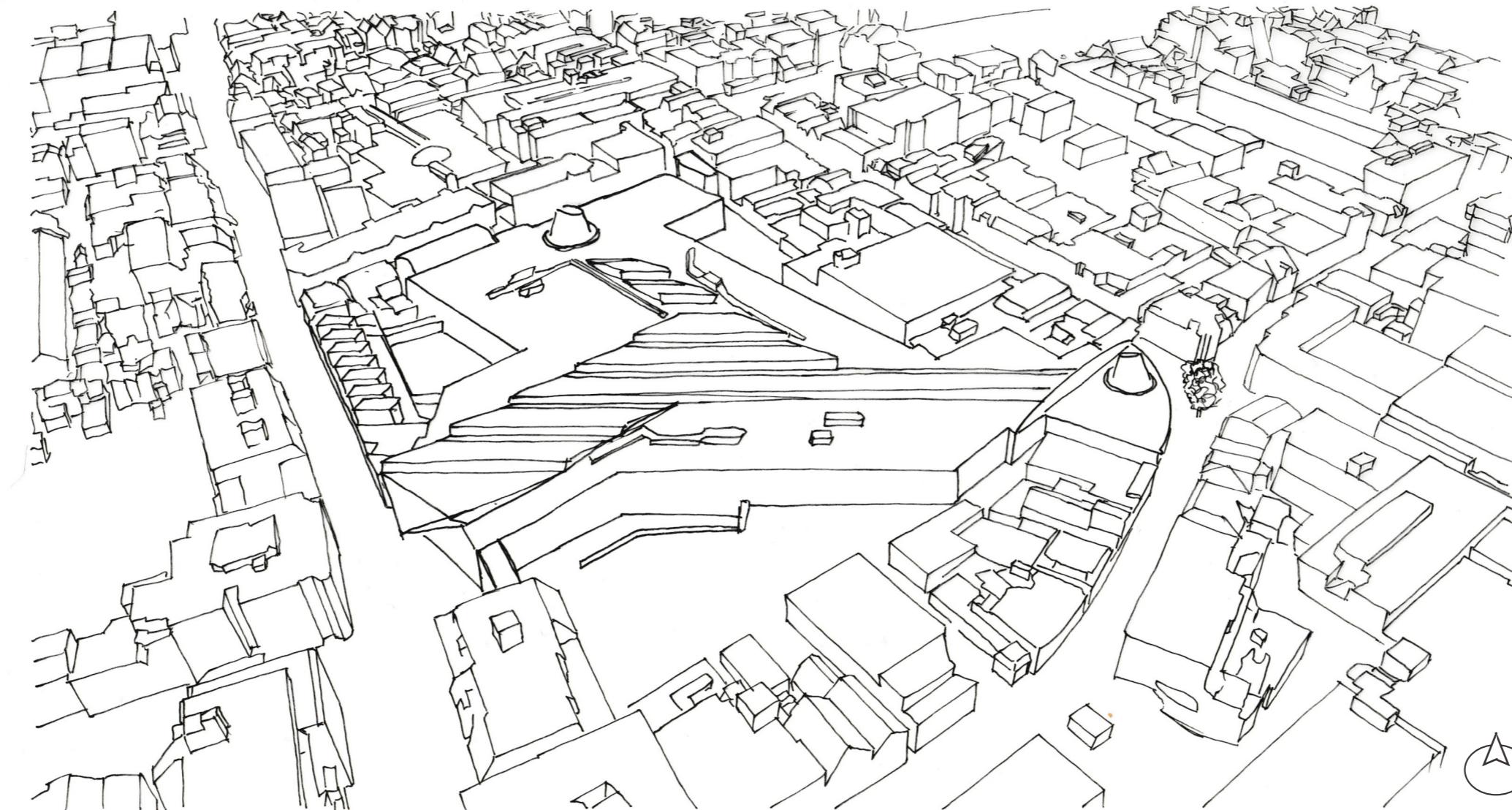
Typical Oranjeries



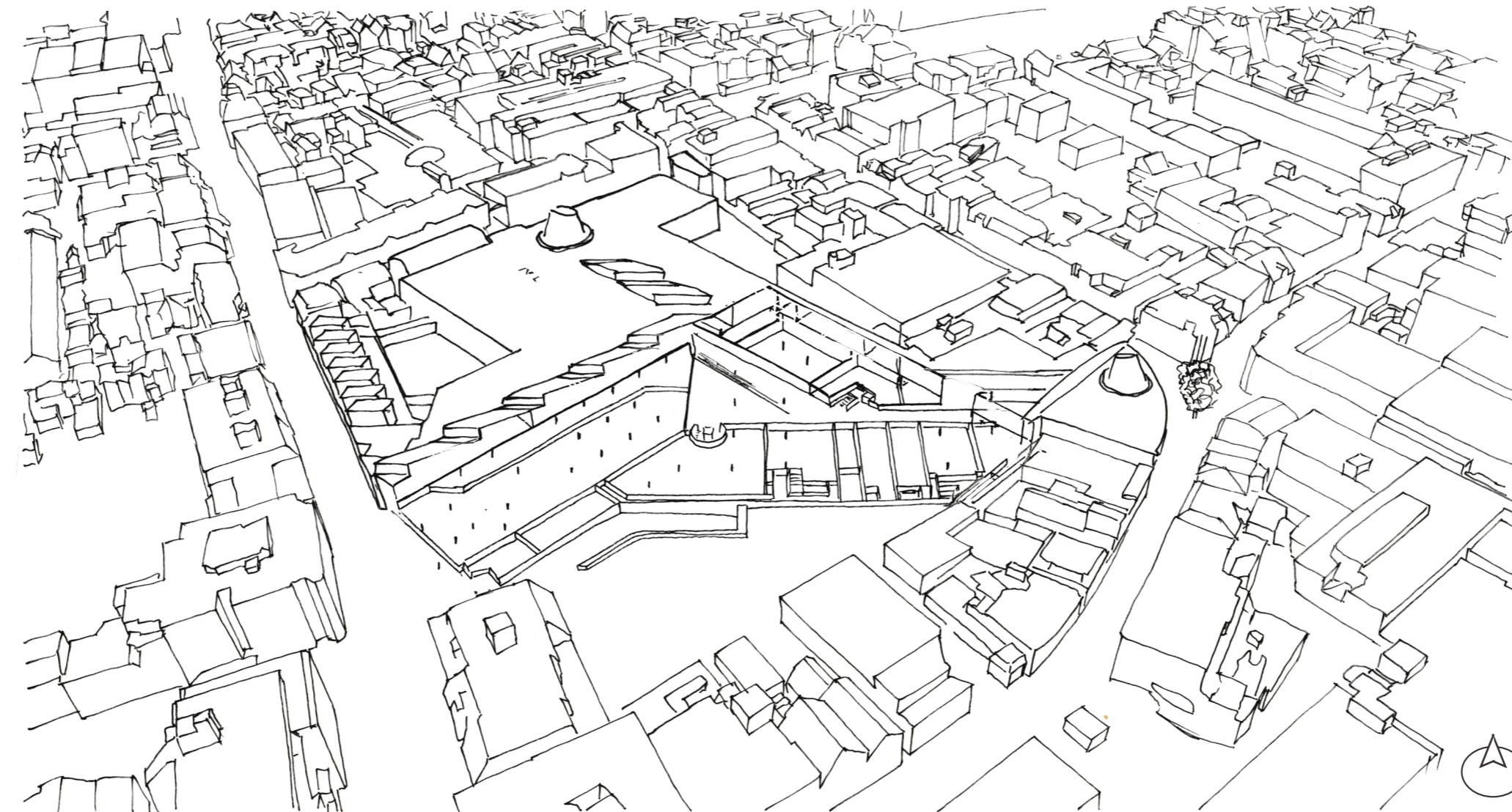
Big windows
A lot of glass
Sight outside - inside
Greenery in- and outside
Rounded shapes



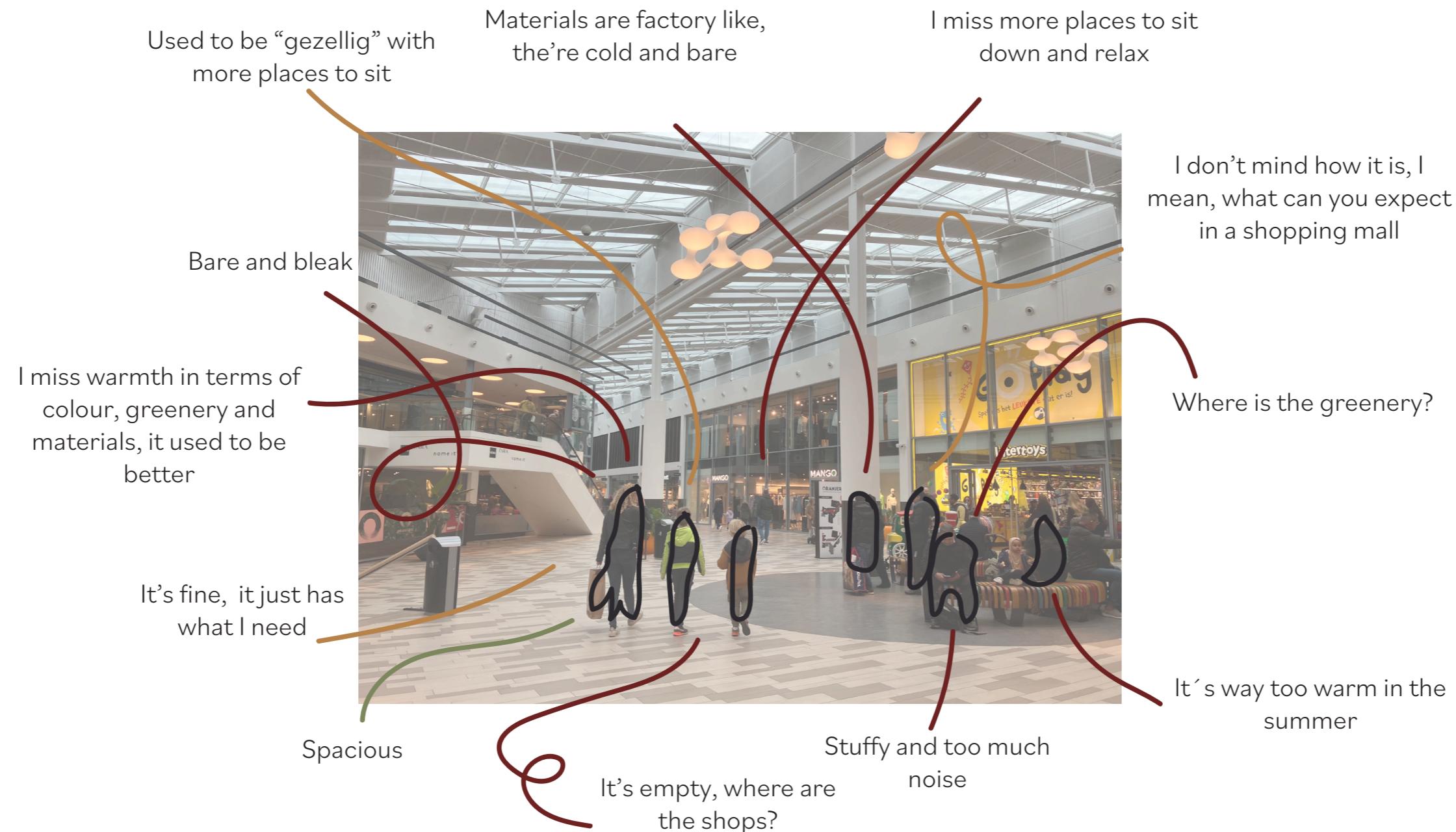
Oranjerie currently



Oranjerie currently



Experience Oranjerie



Value assesment Oranjerie original design

Natural material



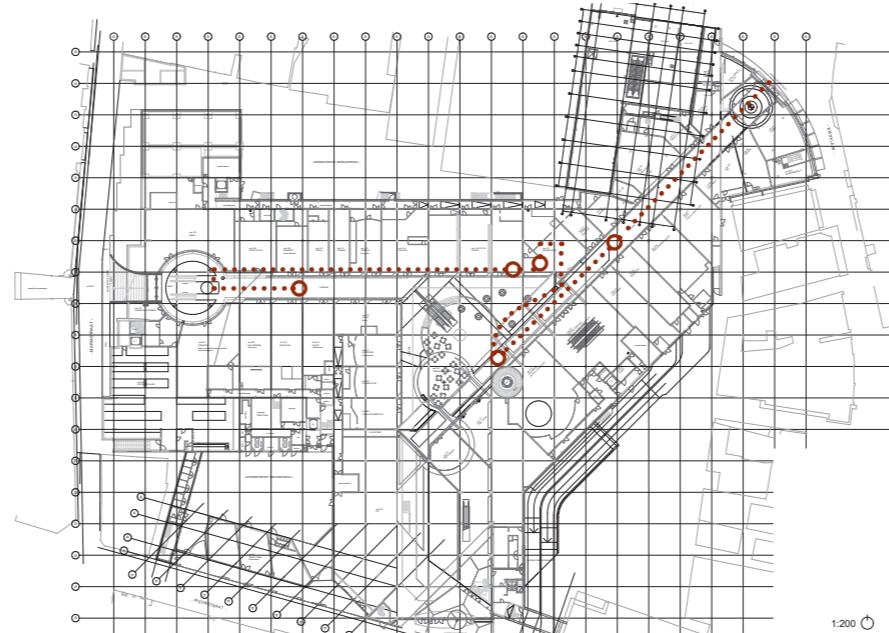
Restaurants



Heigh ceilings



Facade shops



Tree indoors and bridge

Value assessment Oranjerie current design

Width passage



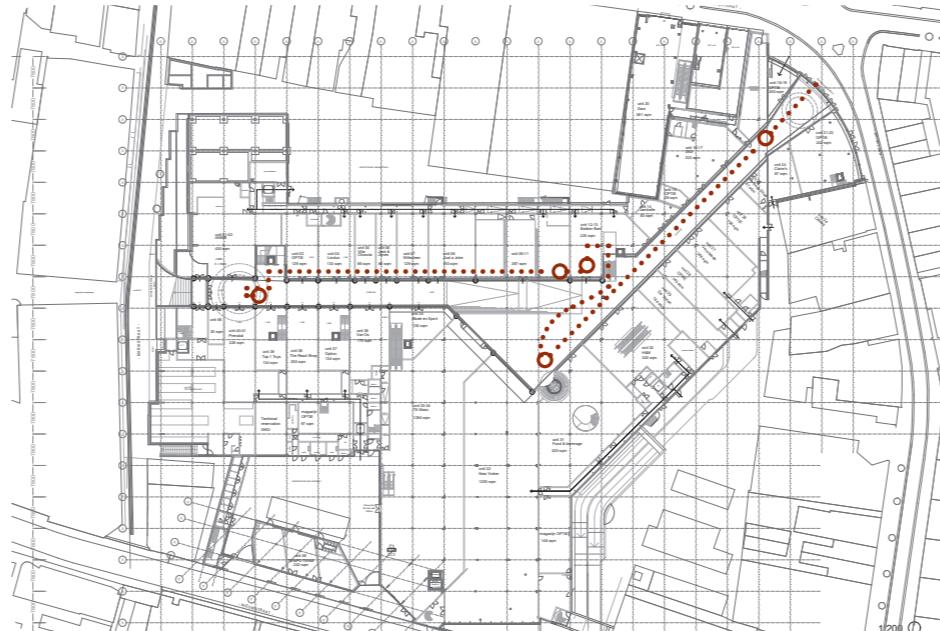
Spacious square



Heigh ceilings



Skylight



Skylight

Value assessment overview

Low value



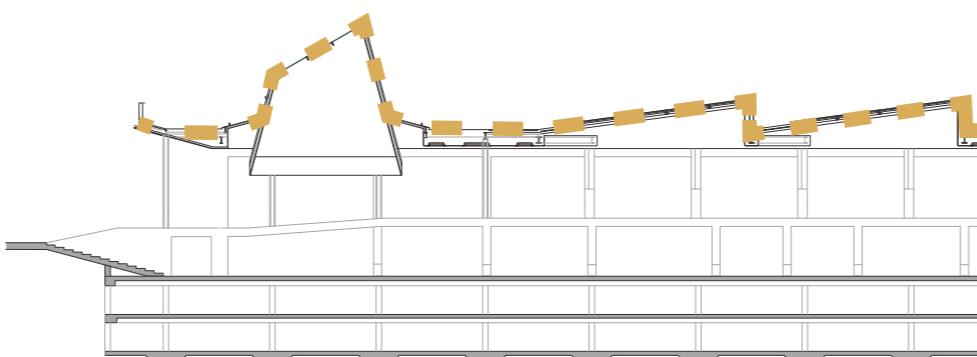
Floorplan



Medium value



Floorplan

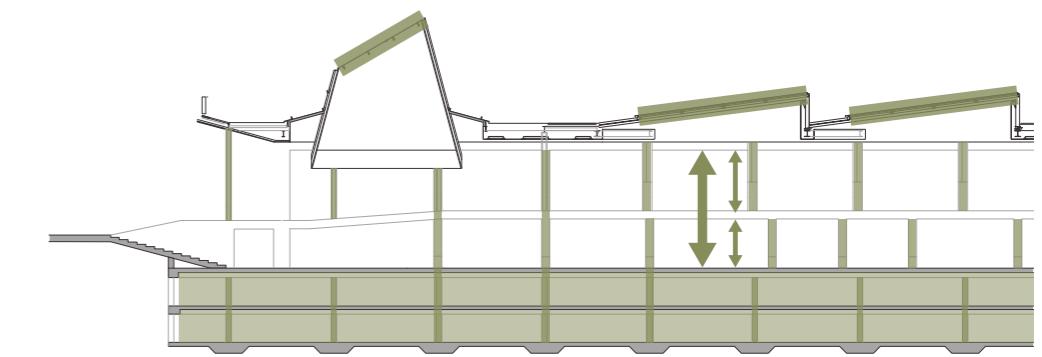


Section

High value



Floorplan



Section

Vision Oranjerie

Adding nature

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



Flowers



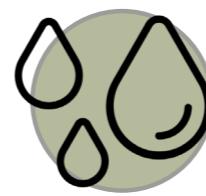
Shrubs



Trees



Grass



Water

Vision Oranjerie

Adding nature

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

Using healthy materials

Biobased

Reusing/Reclycling materials



Guidelines/Vision Oranjerie

Adding nature

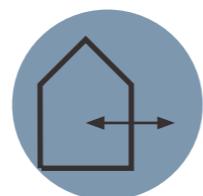
Having view on nature from every p.o.v.

Using healthy materials

Biobased

Reusing/Reclycling materials

Connection inside outside



Vision Oranjerie

Adding nature

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

Using healthy materials

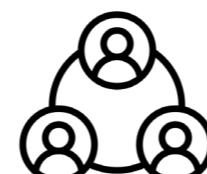
Biobased

Reusing/Reclycling materials

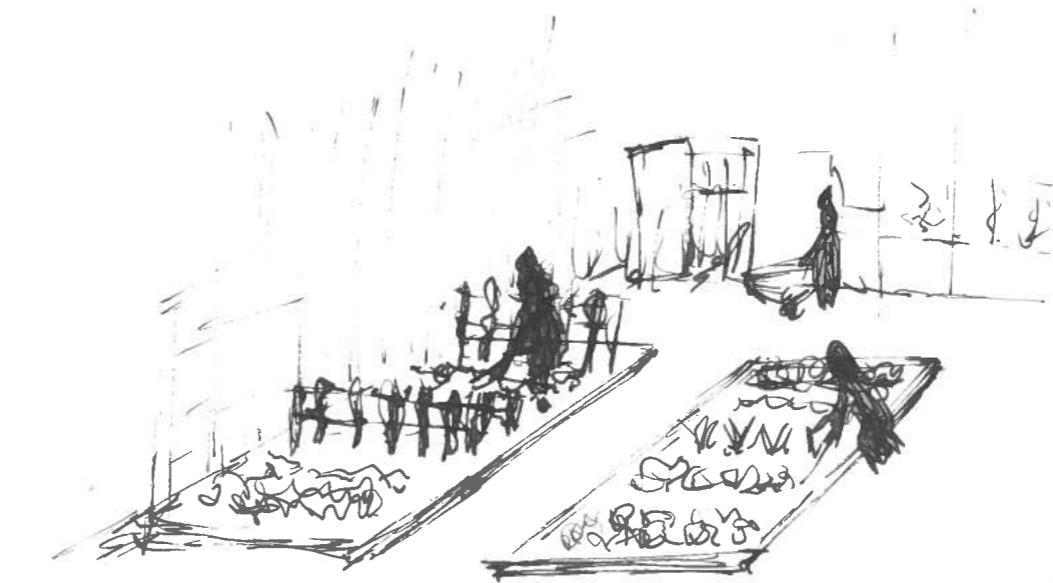
Connection inside outside

Several meeting spaces

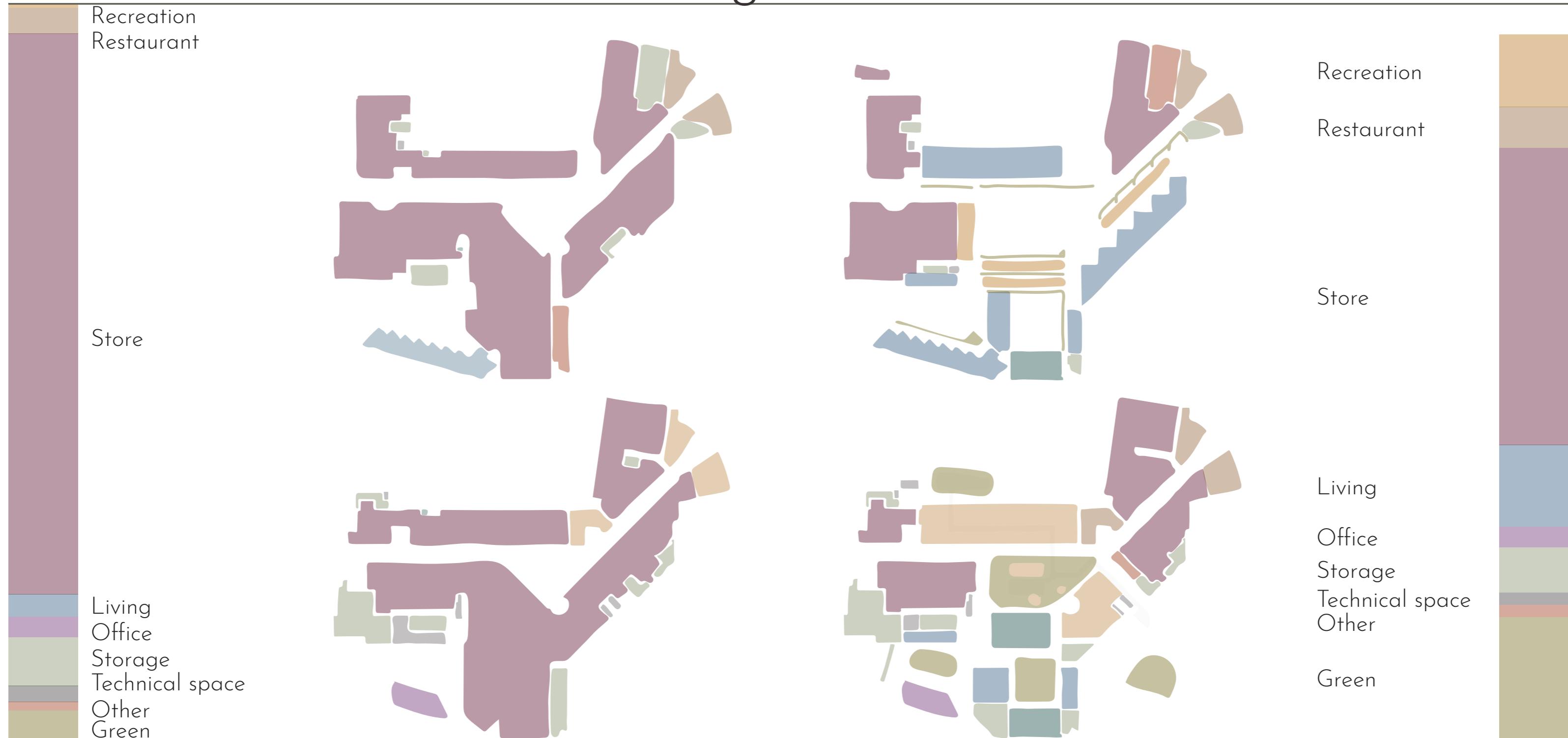
Diversity of functions



Programme

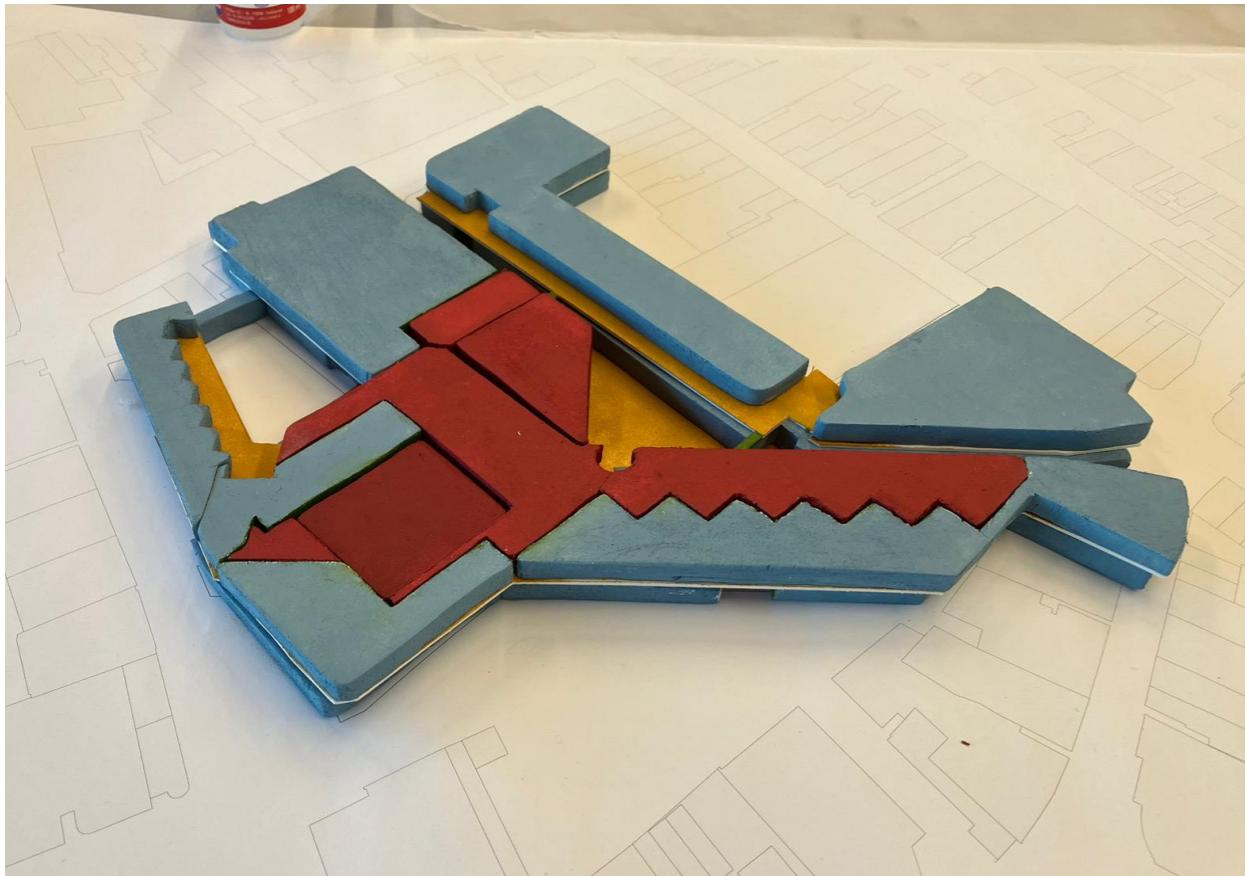


Programme

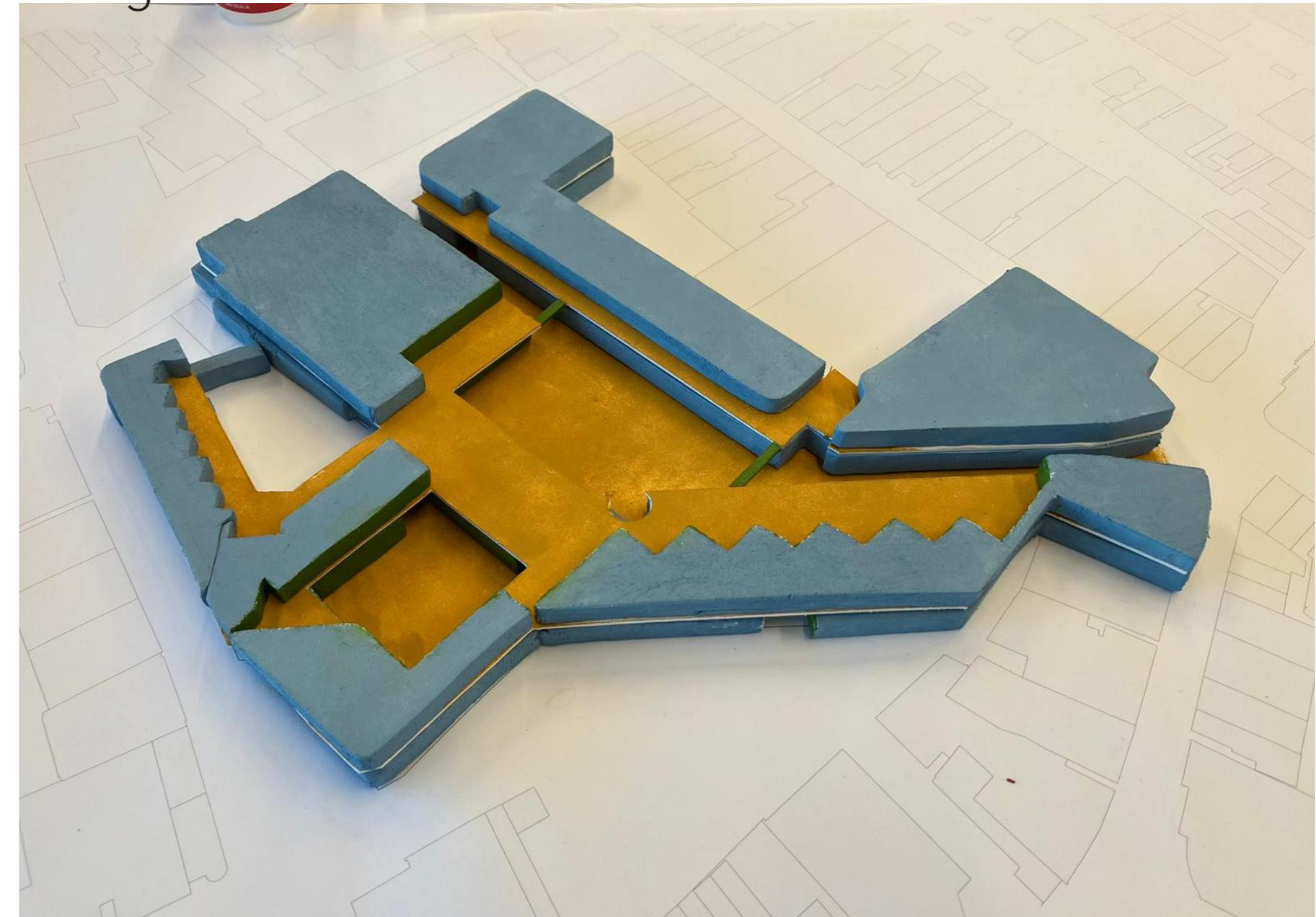


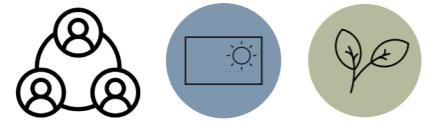
Model

Current



Design





Functions floorplan design and current

Current

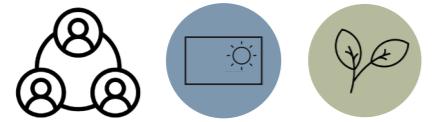


- Recreation
- Restaurant
- Store
- Living
- Office
- Community

- Storage
- Technical space
- Other
- Green
- Water

Design





Functions floorplan design and current

Current



Recreation
 Restaurant
 Store
 Living
 Office
 Community

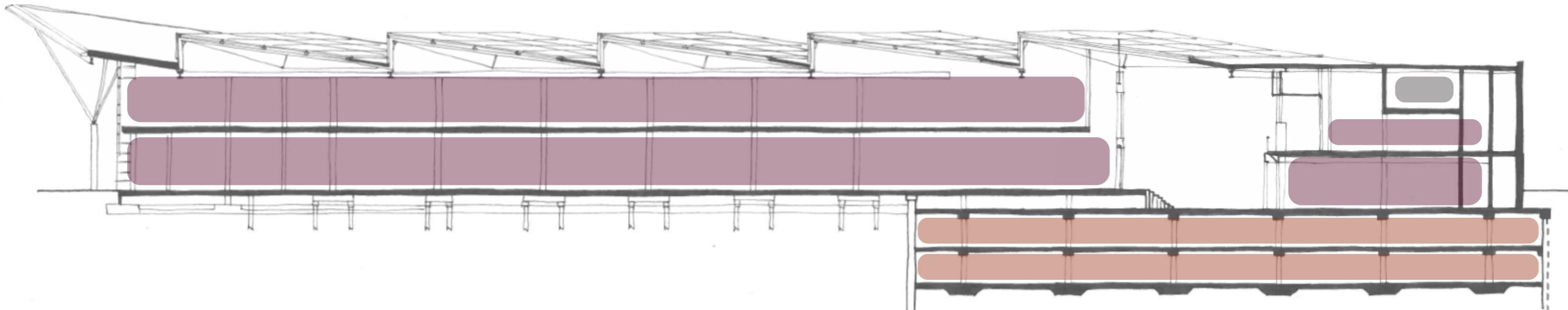
Design



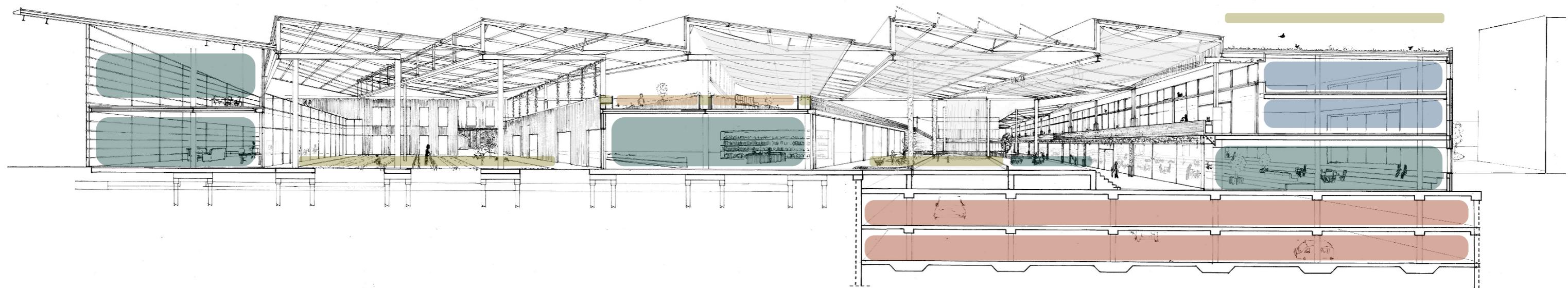
Section

Abstracted version

Current

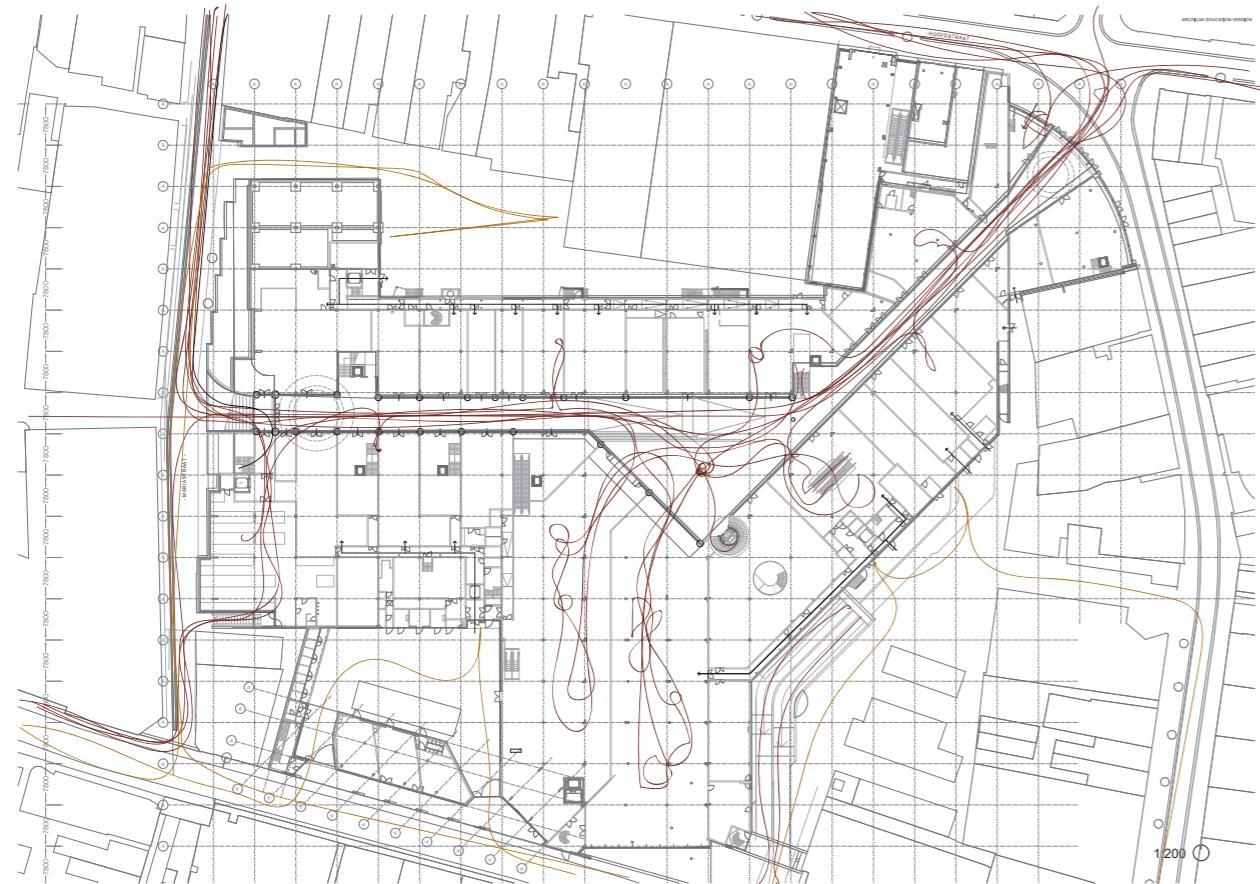


Design



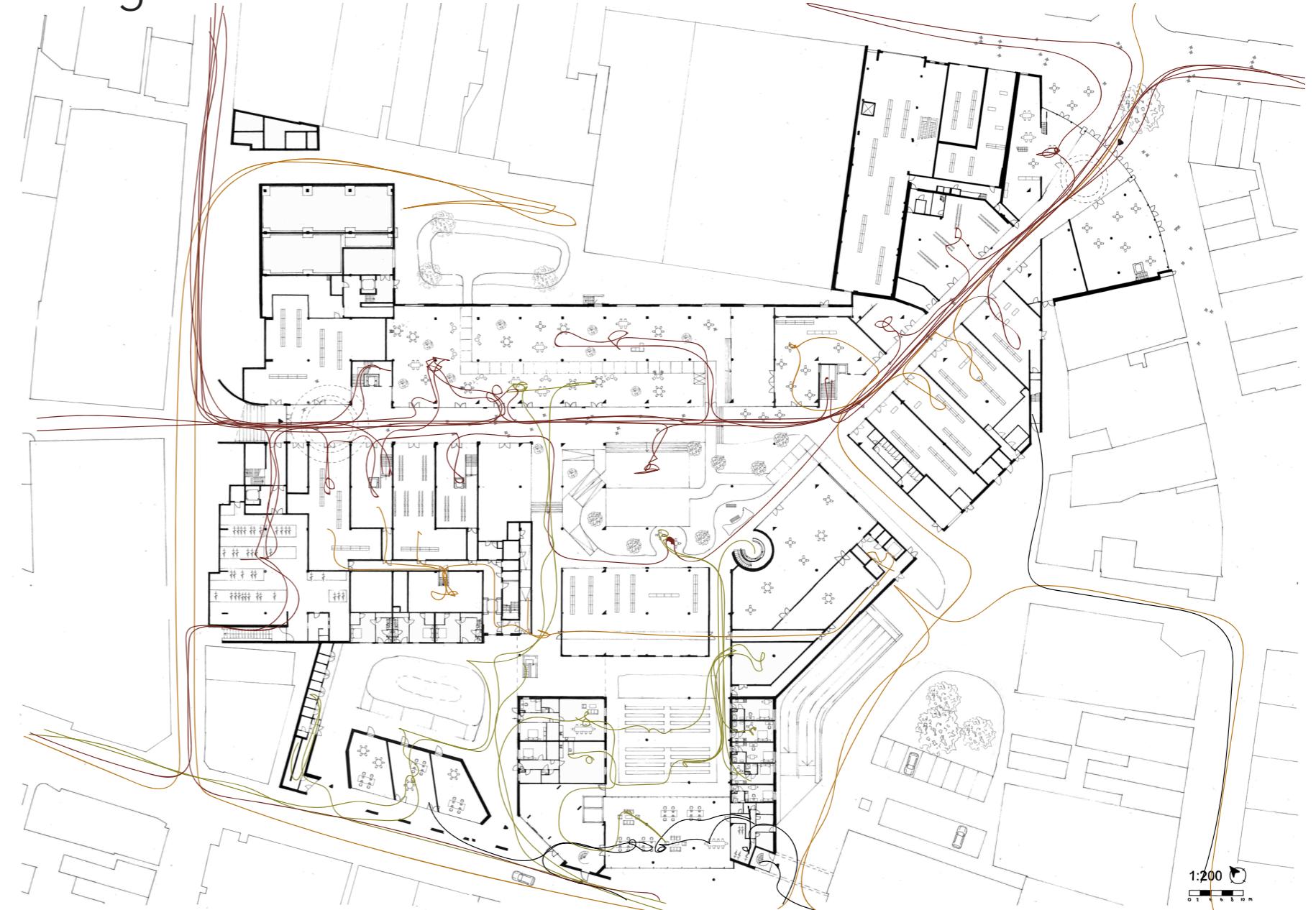
Routing current and design

Current

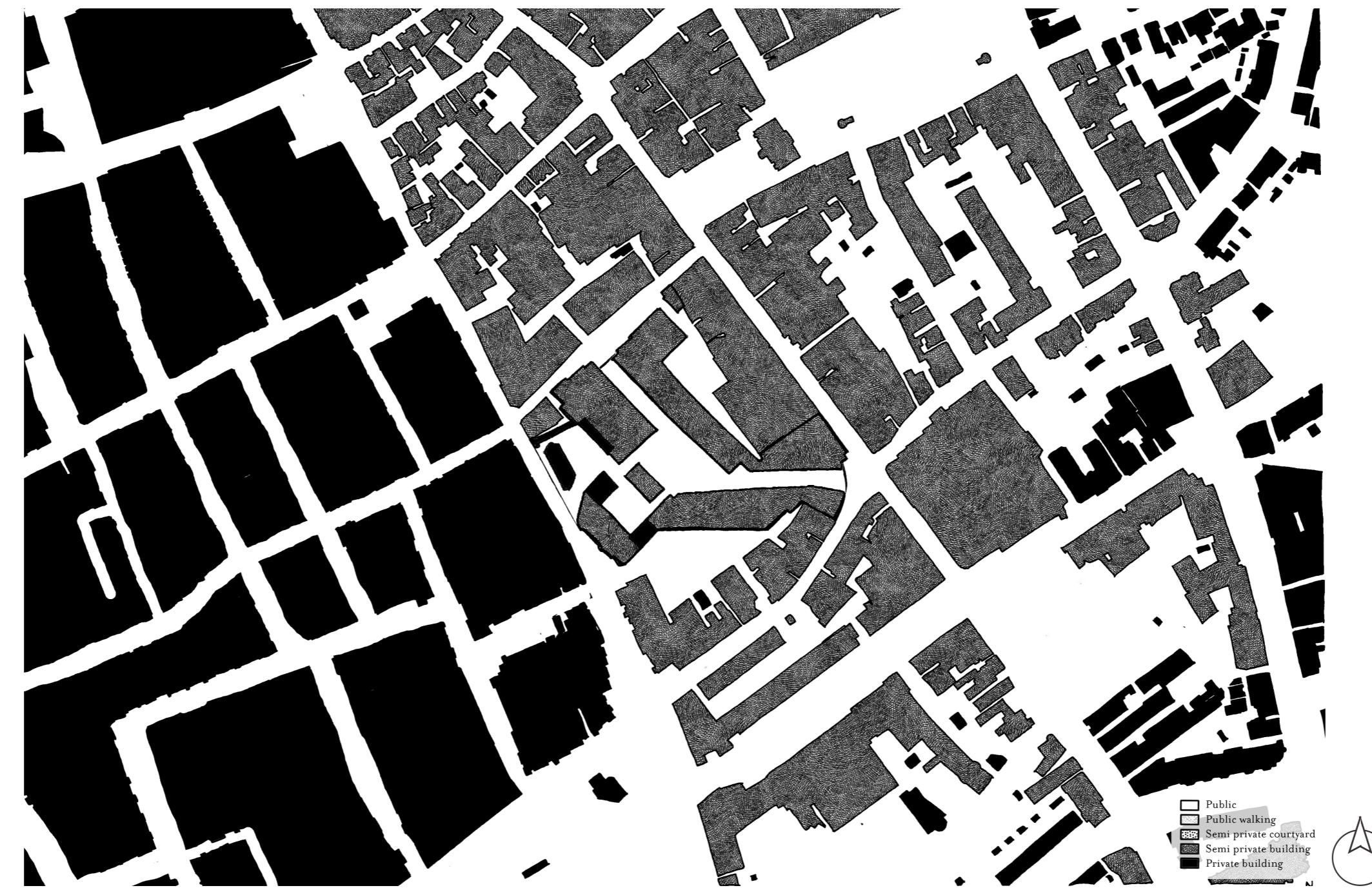


- Shopper
- Resident
- Logistic

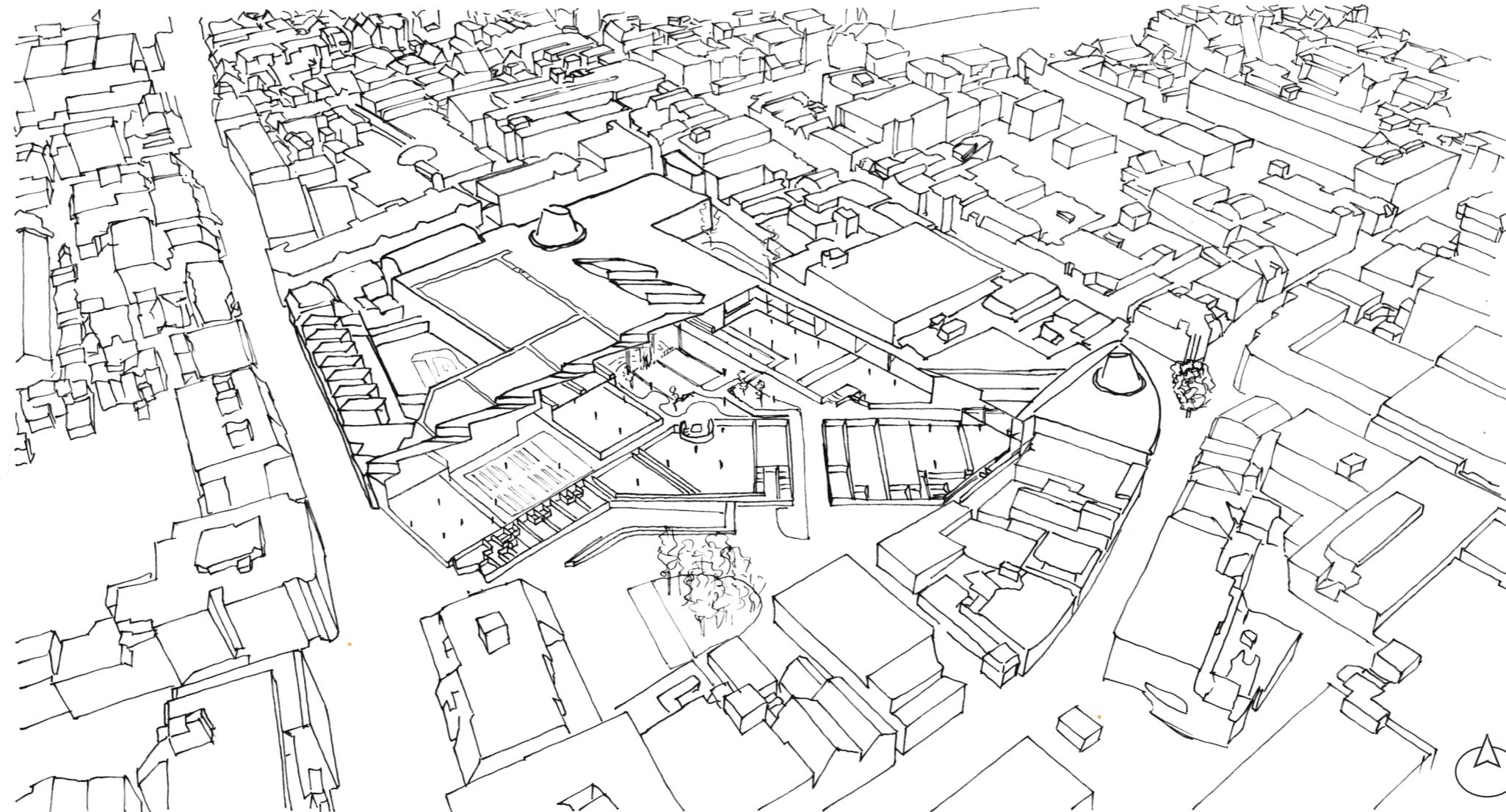
Design



Nolli map design



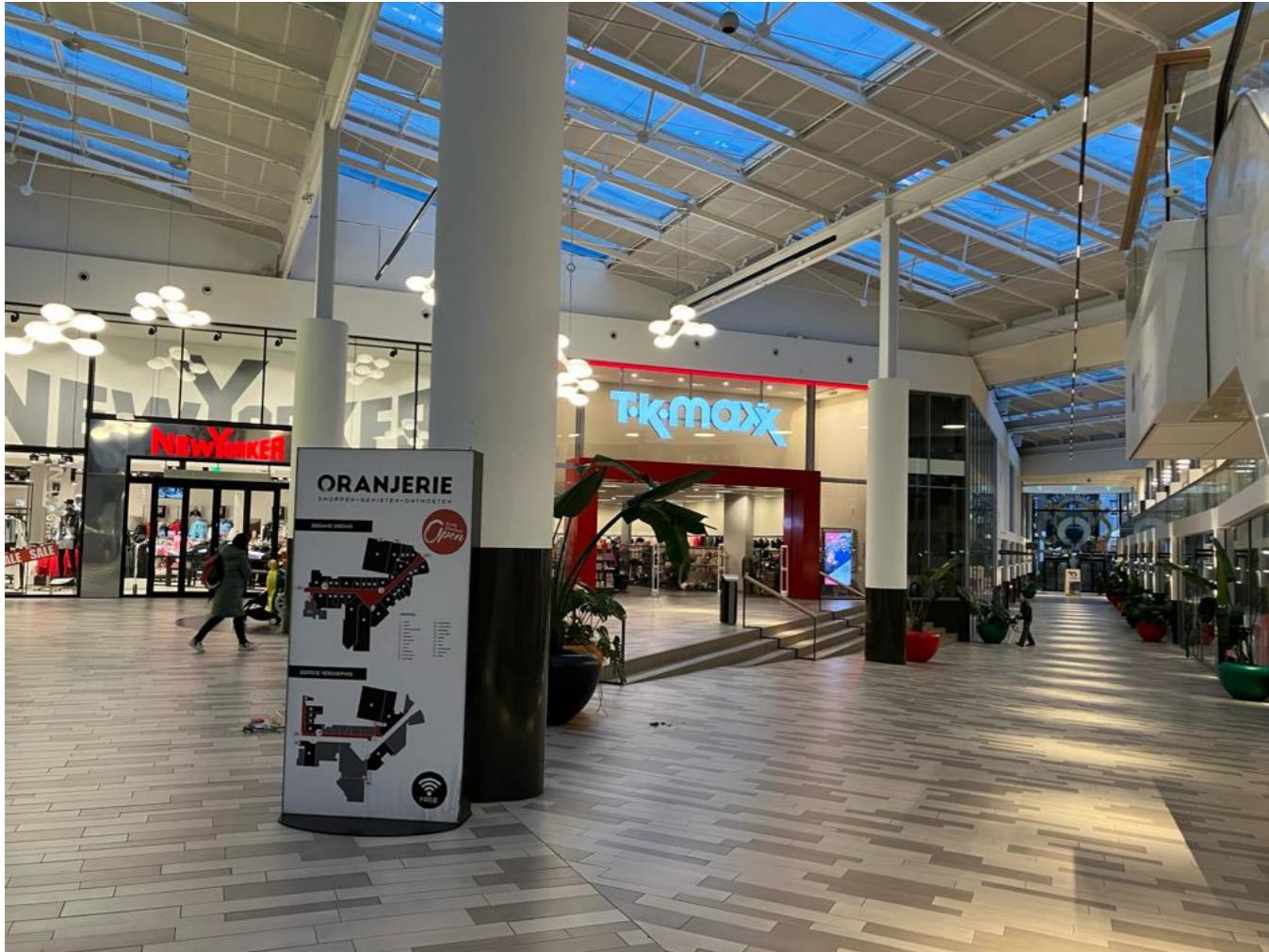
Overview design



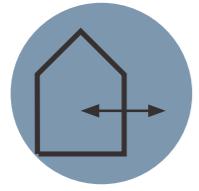
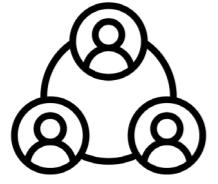
Main square



Comparison current and design



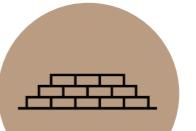
Themes design



Inside
Outside



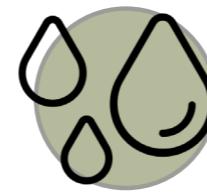
Nature



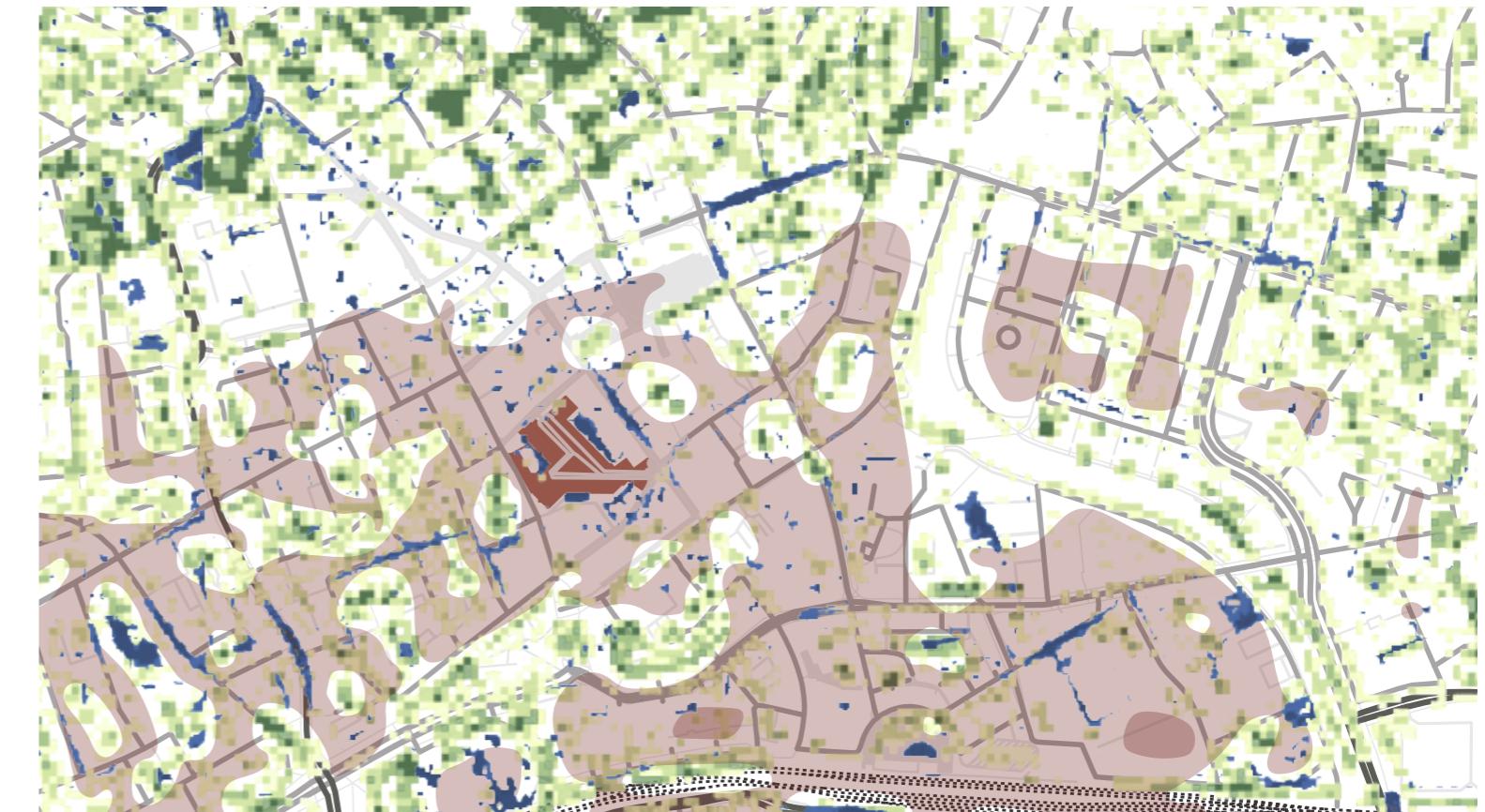
Materials



Nature - Water

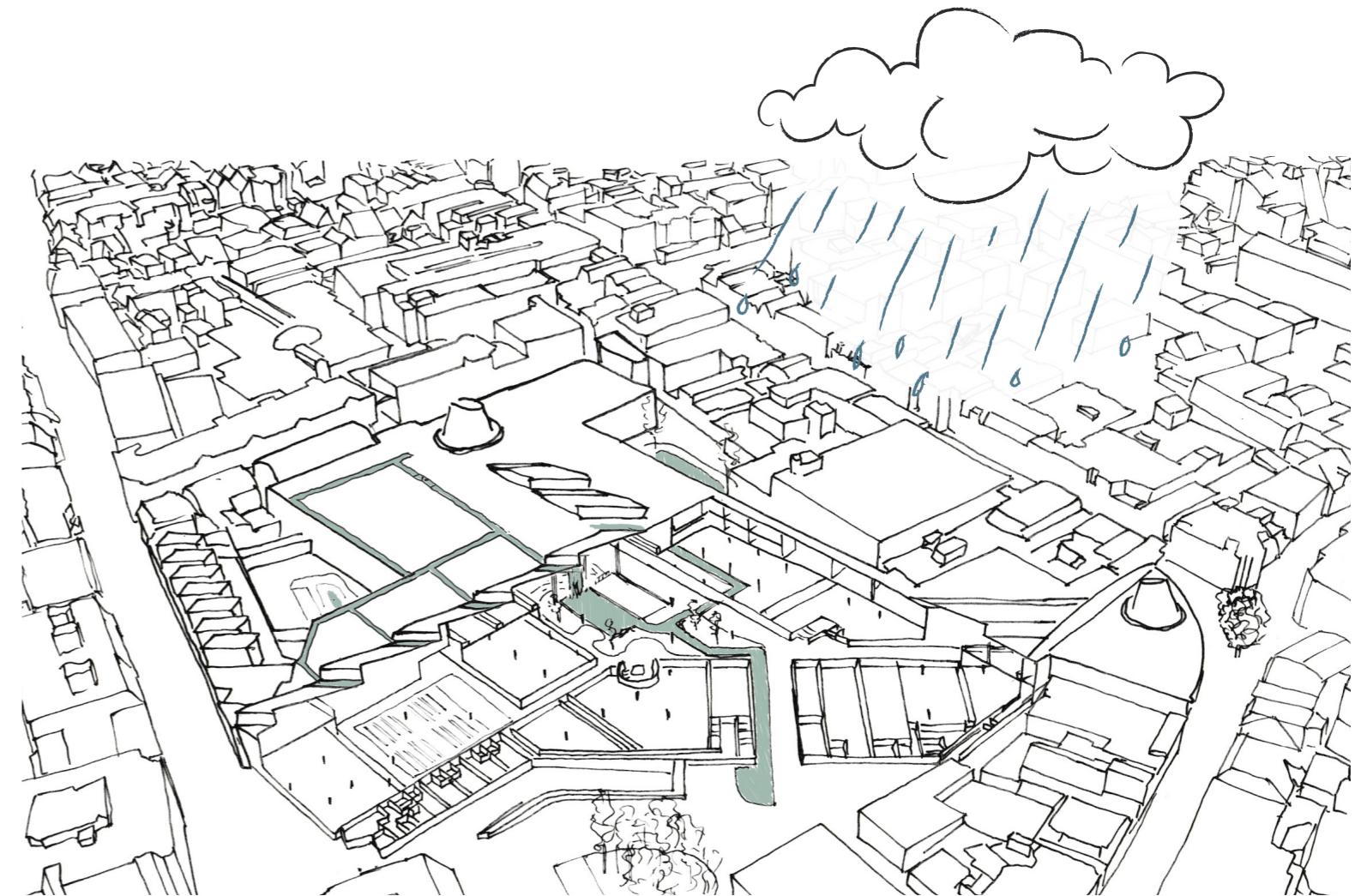


Water



Water

1. Rain



Water

2. Water roof and collection

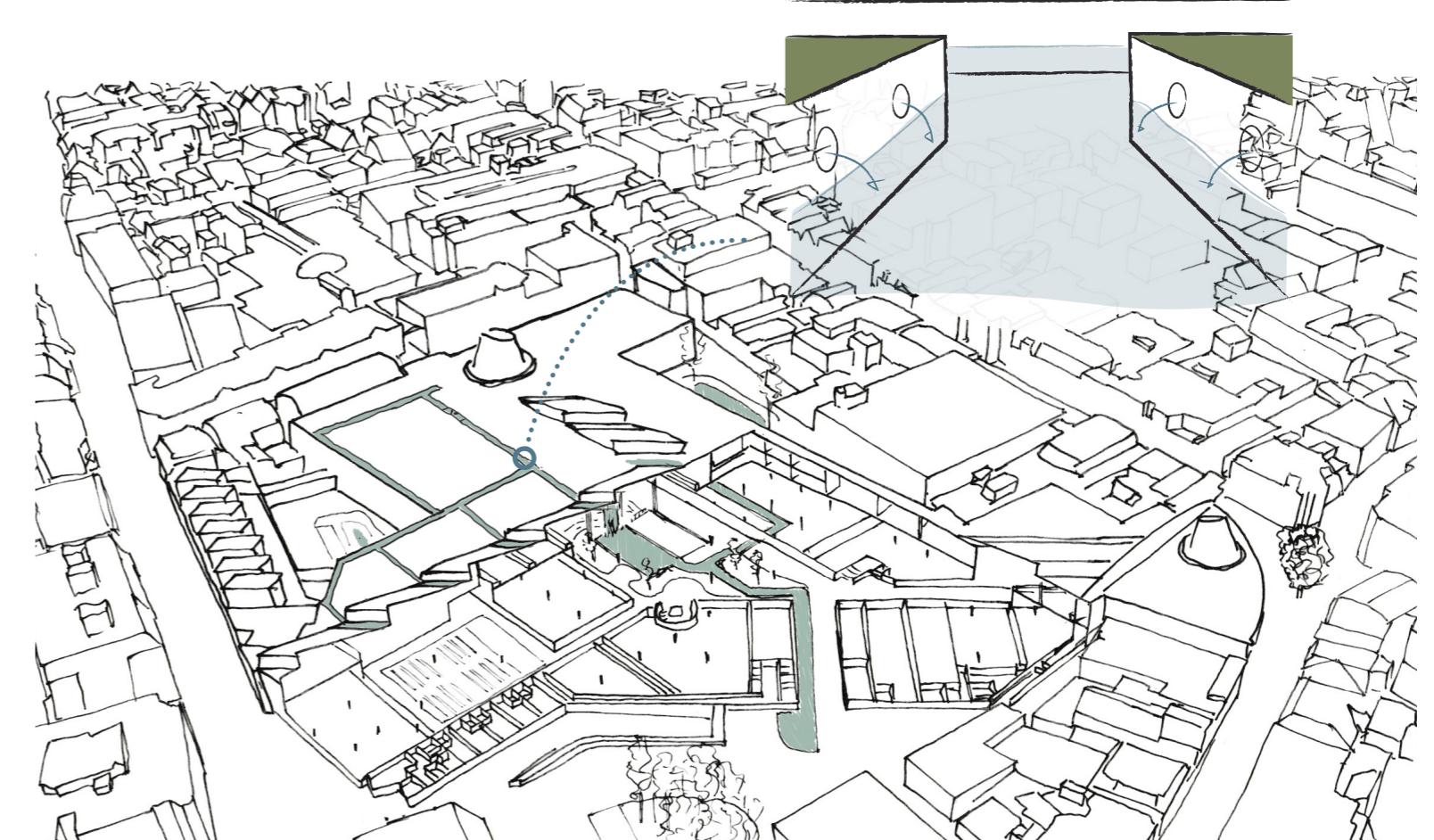


160 m³ liter
water storage



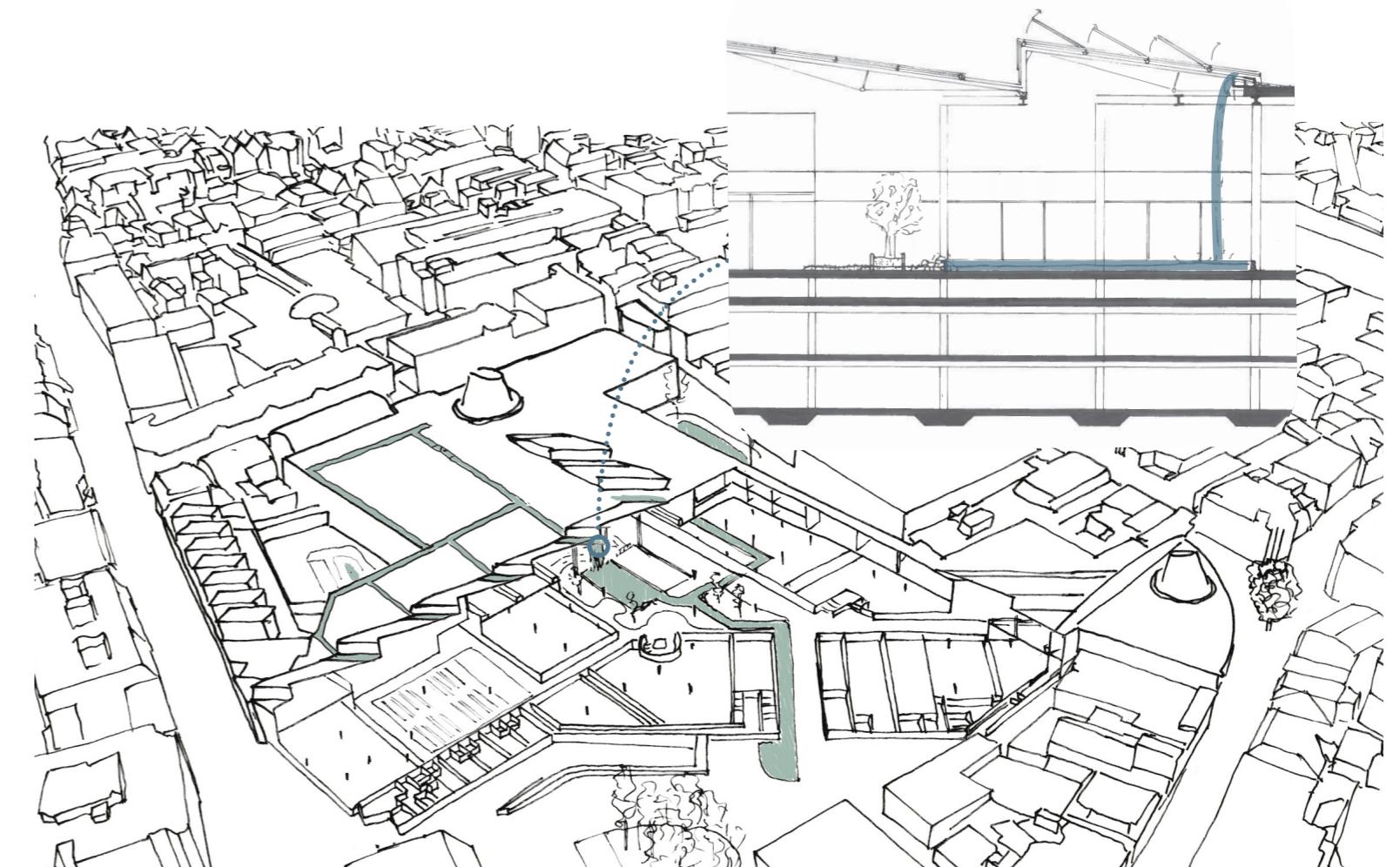
Water

3. Drainage



Water

4. Waterfall

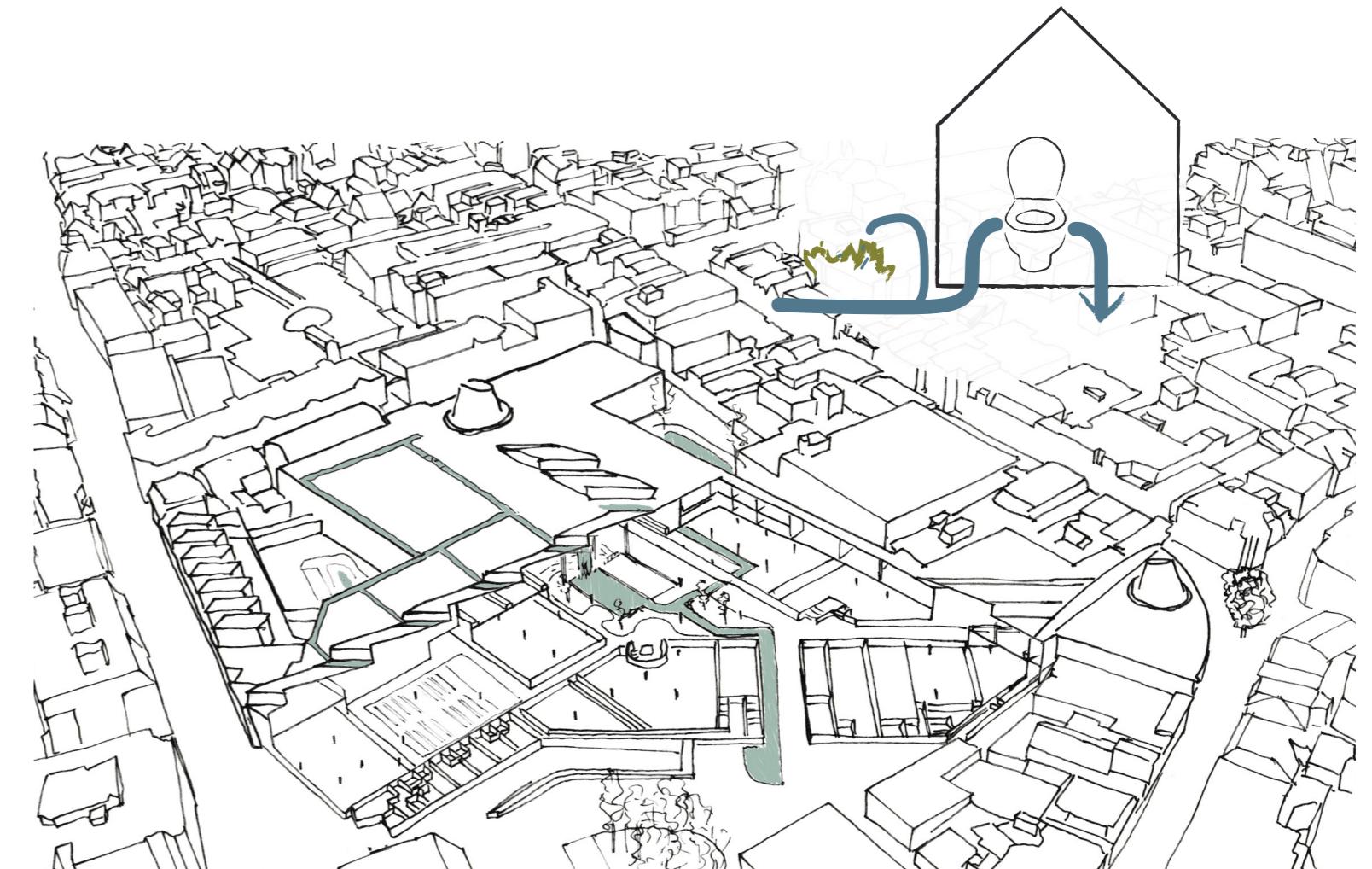


Water

5. Reuse water



Planten water geven

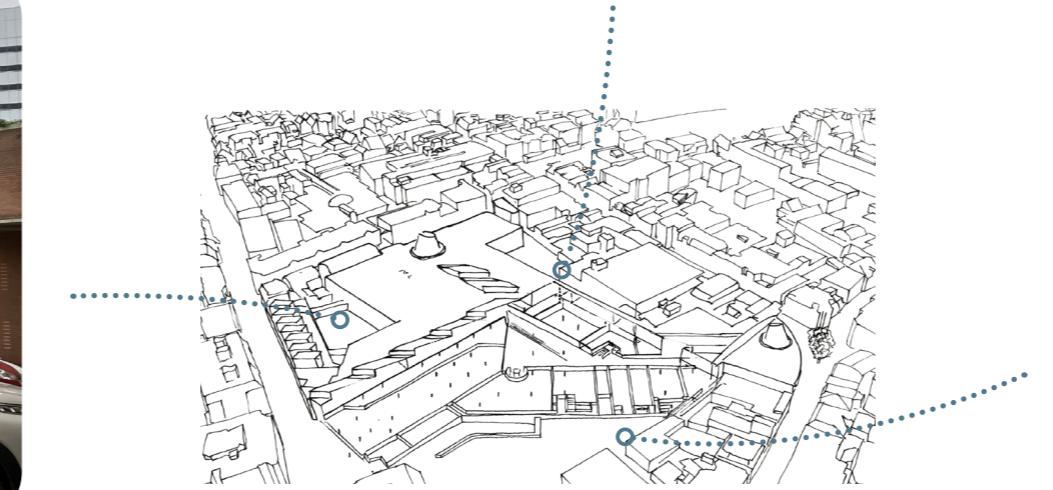


Water

6. Water collection surroundings



Impression water back wall current



Impression water back wall design



Nature - Greenery



Greenery



Grass



Trees



Plants



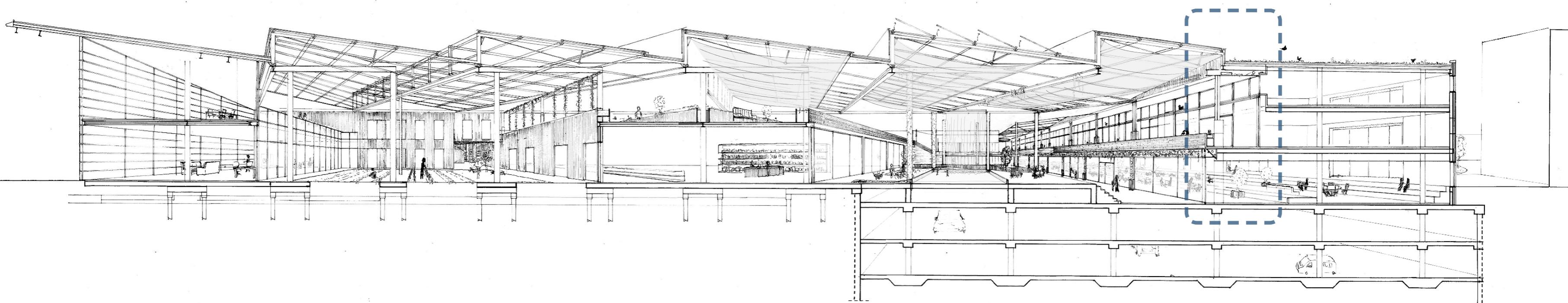
Green surface



Green wall

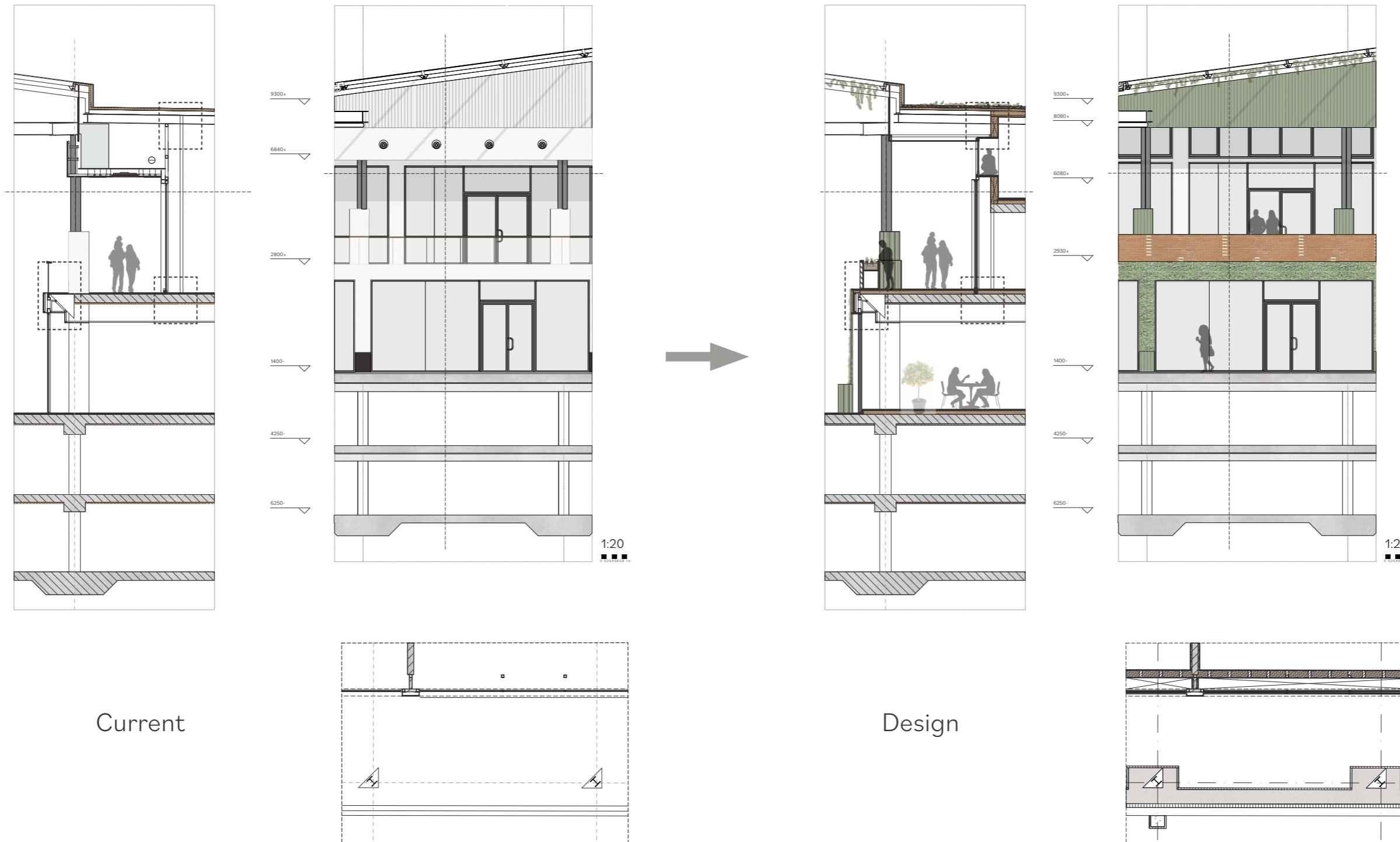
Green roof

Section

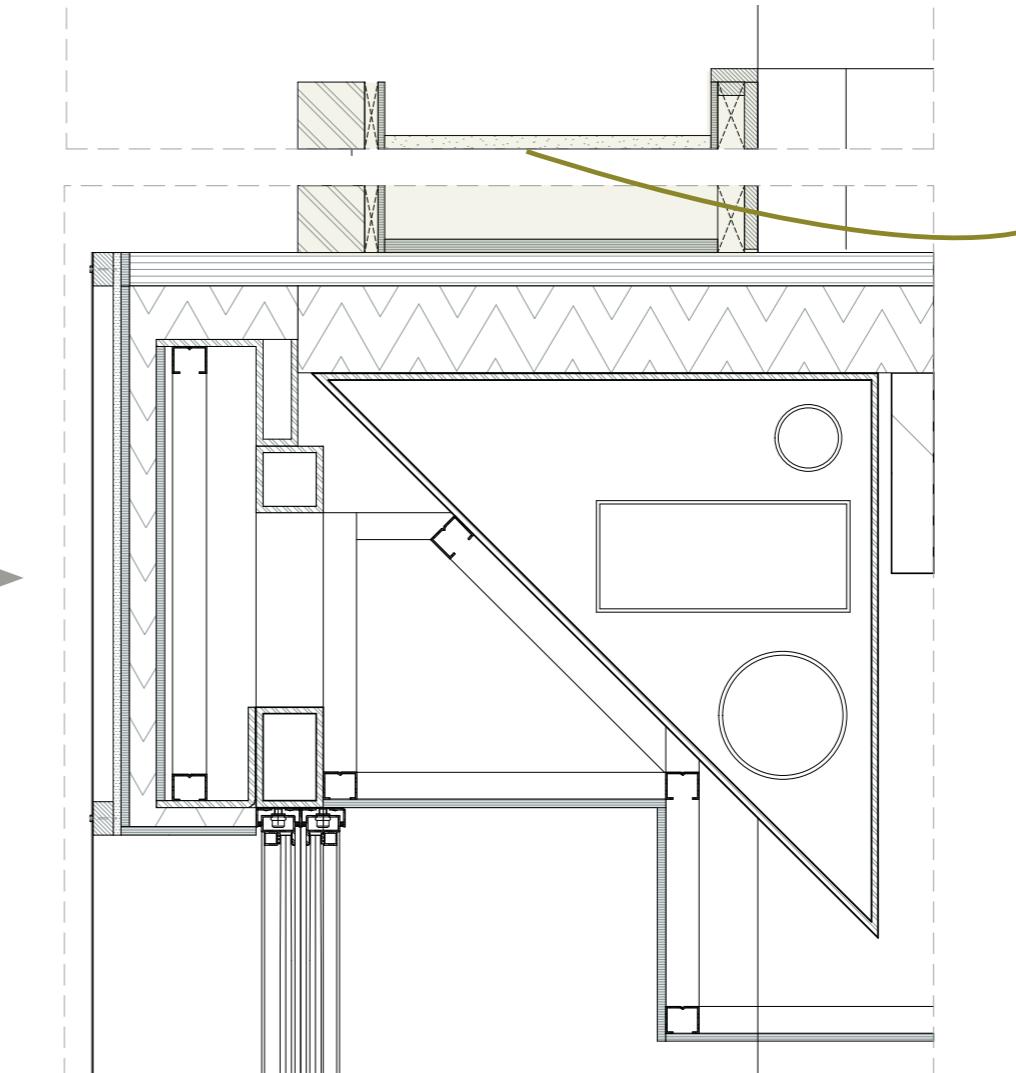
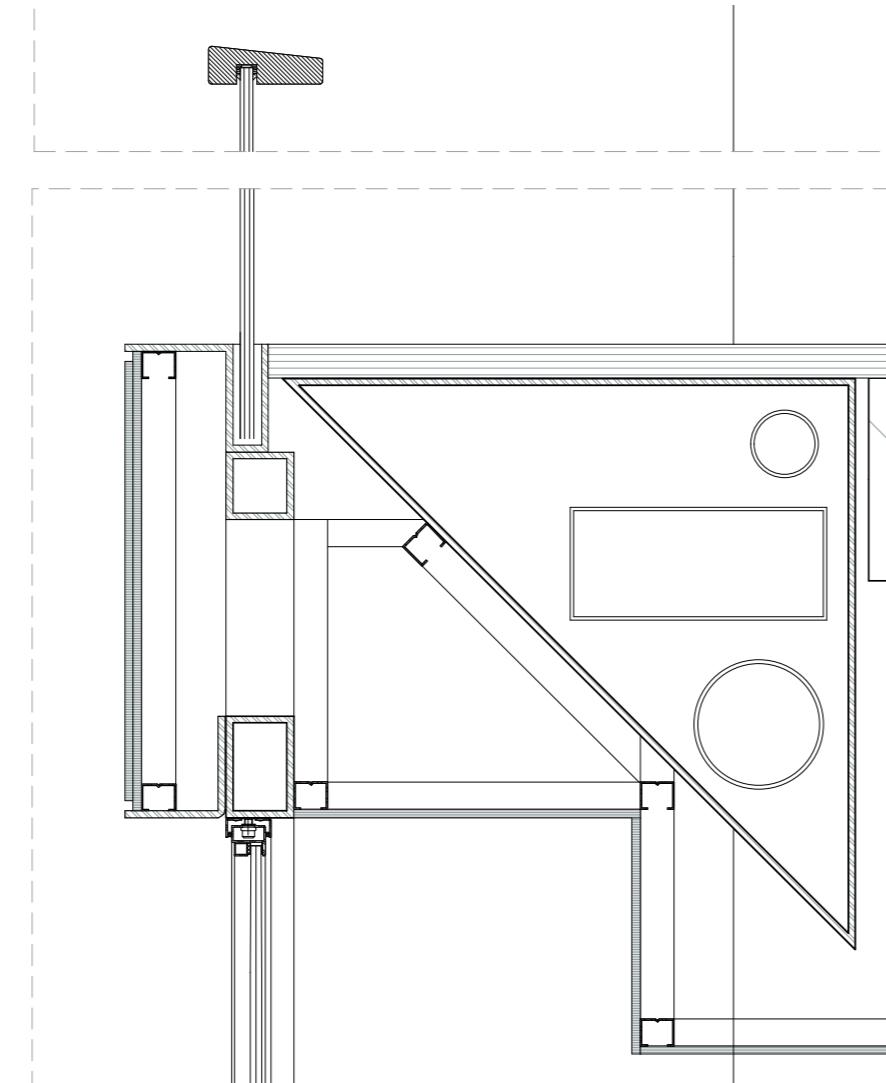
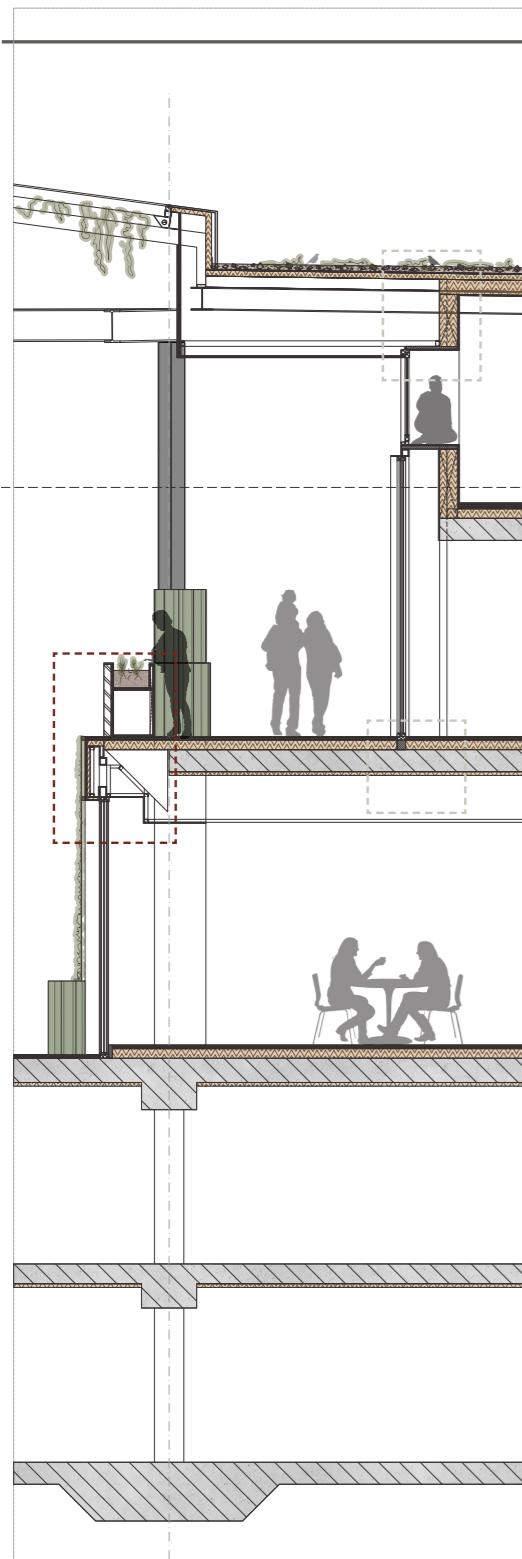


Abstracted version

Fragment

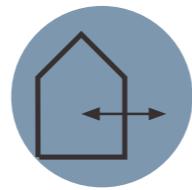


Detail green balustrade



Adding plants for
more privacy and
more greenery for
health

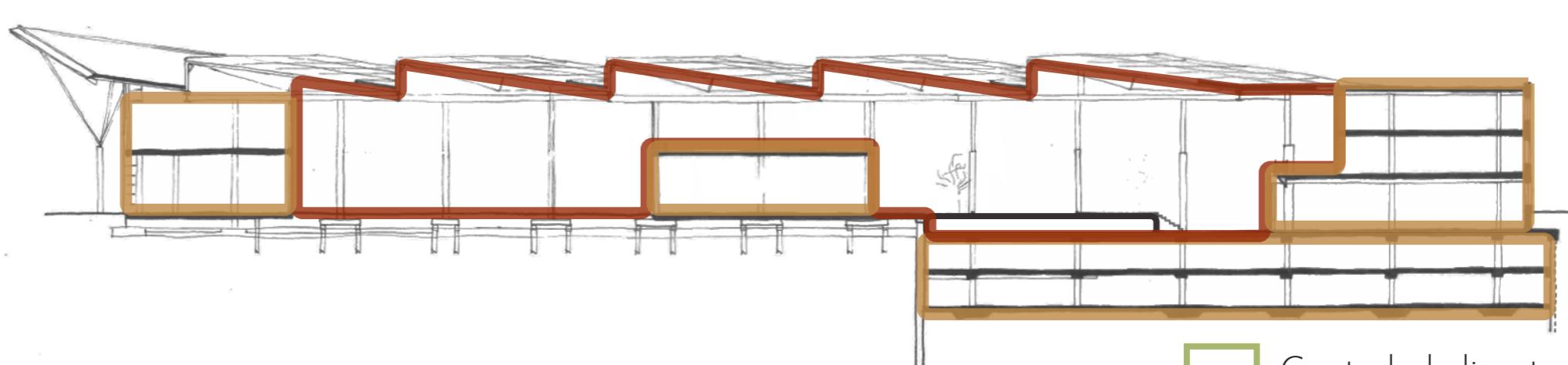
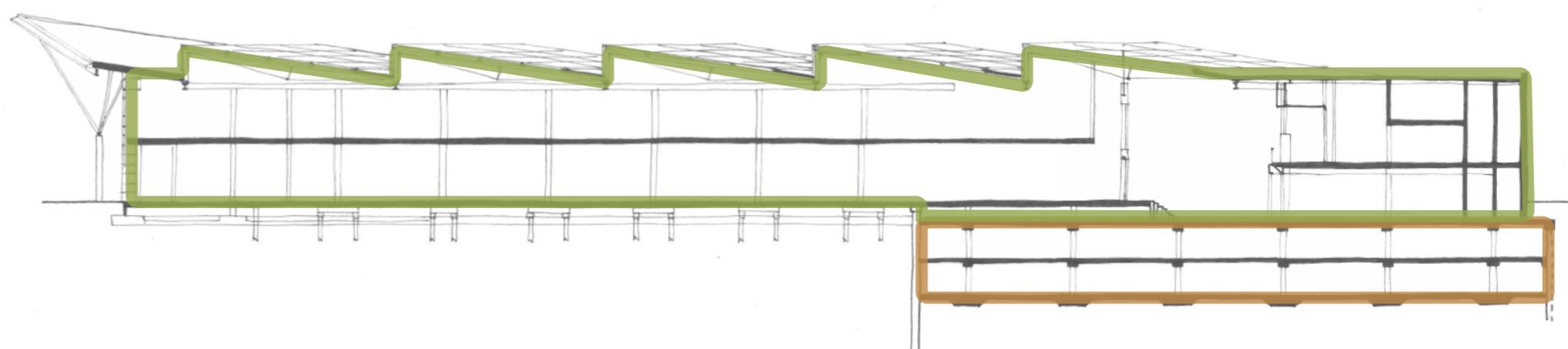
Inside outside climate



Comparison current and design

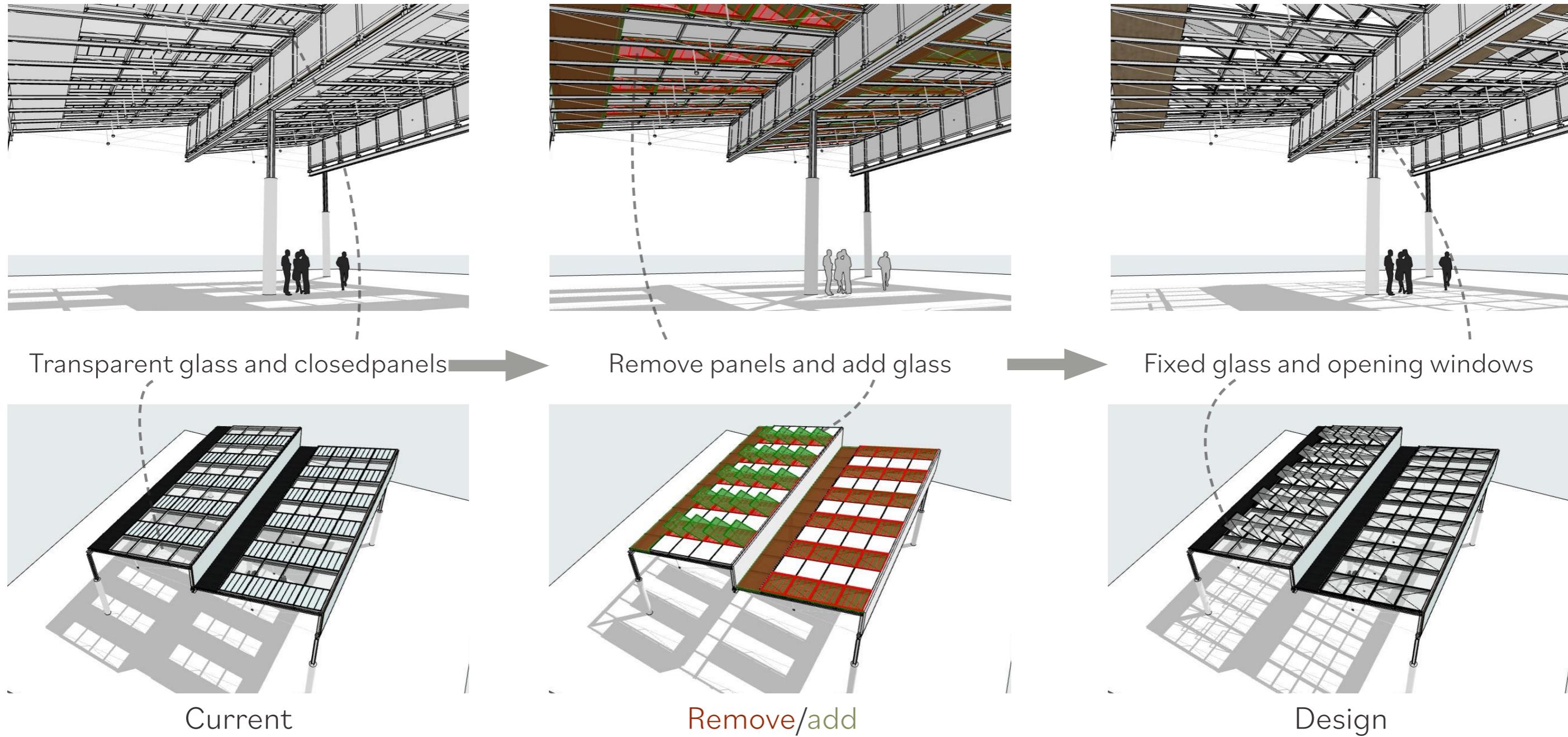


Climate spaces

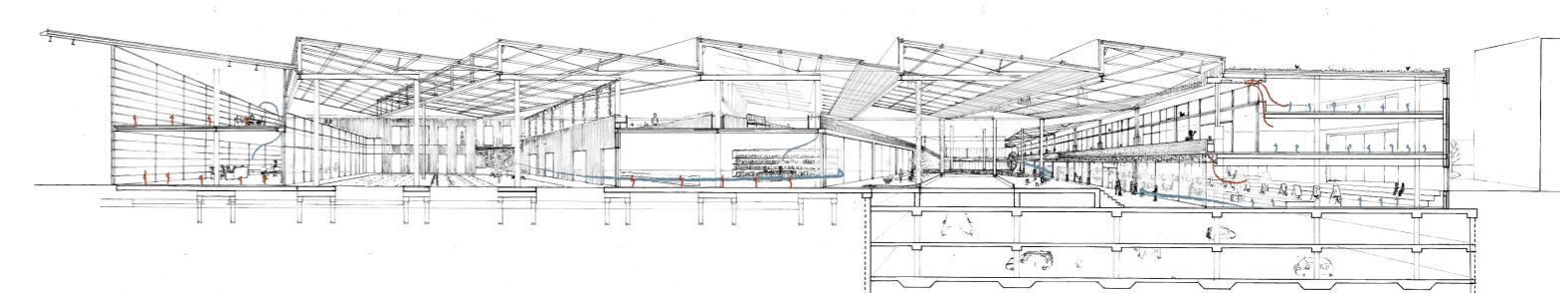
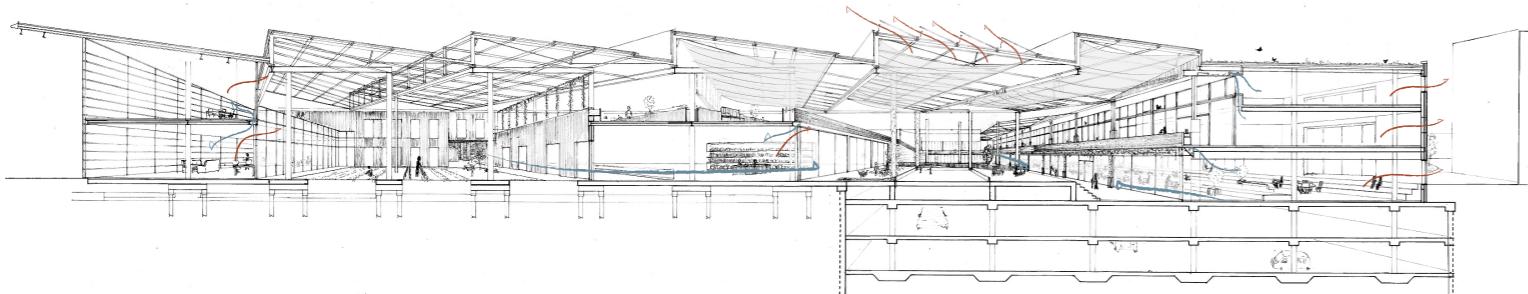


- Controloed climate
- Hybride climate
- Uncontrolled climate

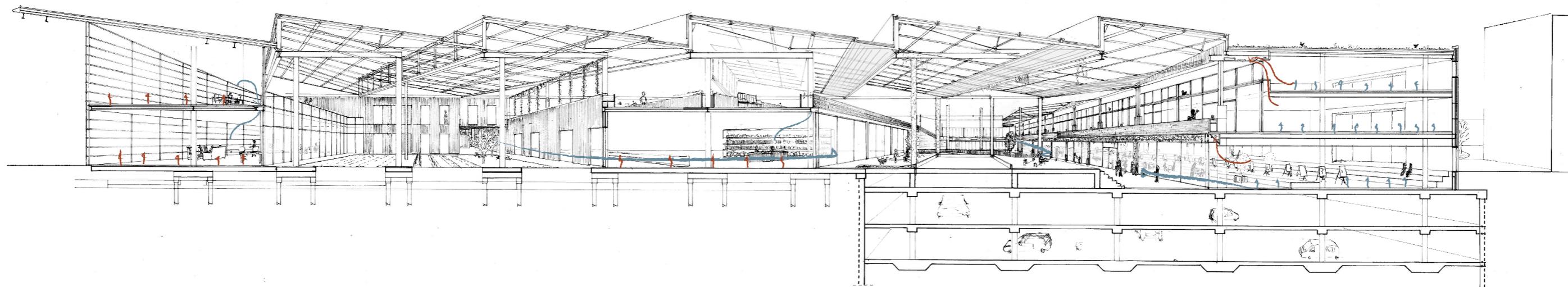
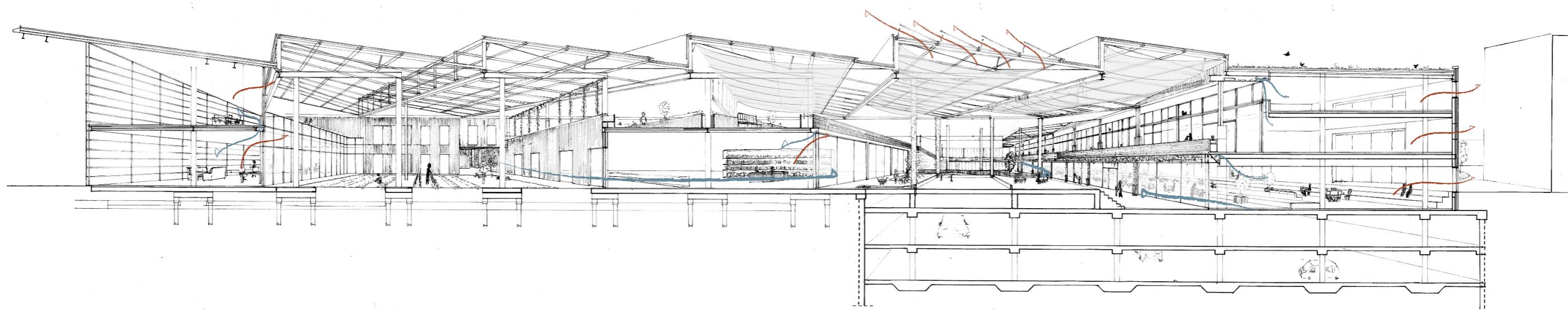
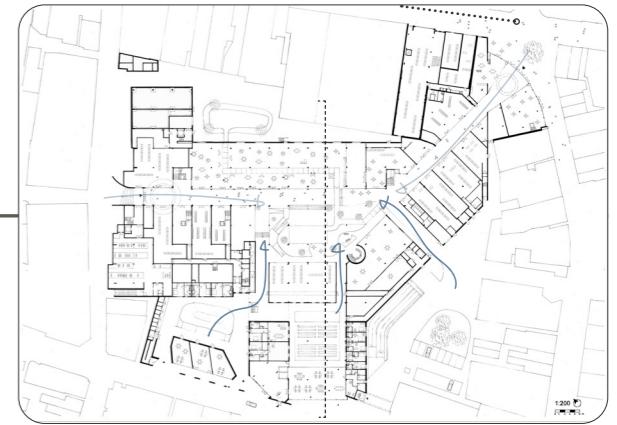
Adaptable roof



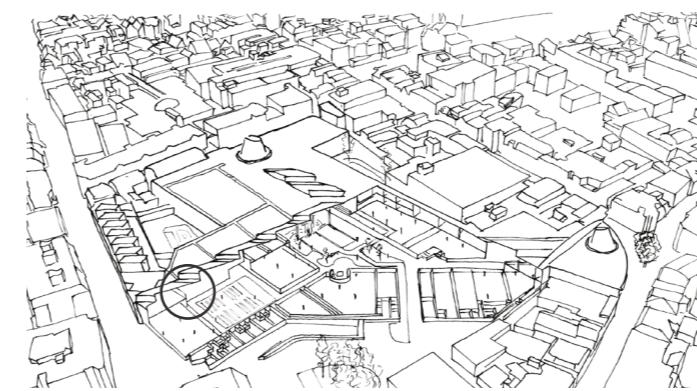
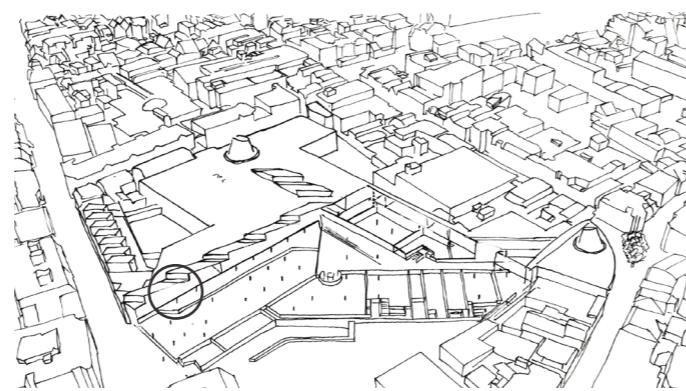
Design scenario's



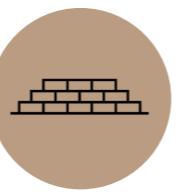
Climate section



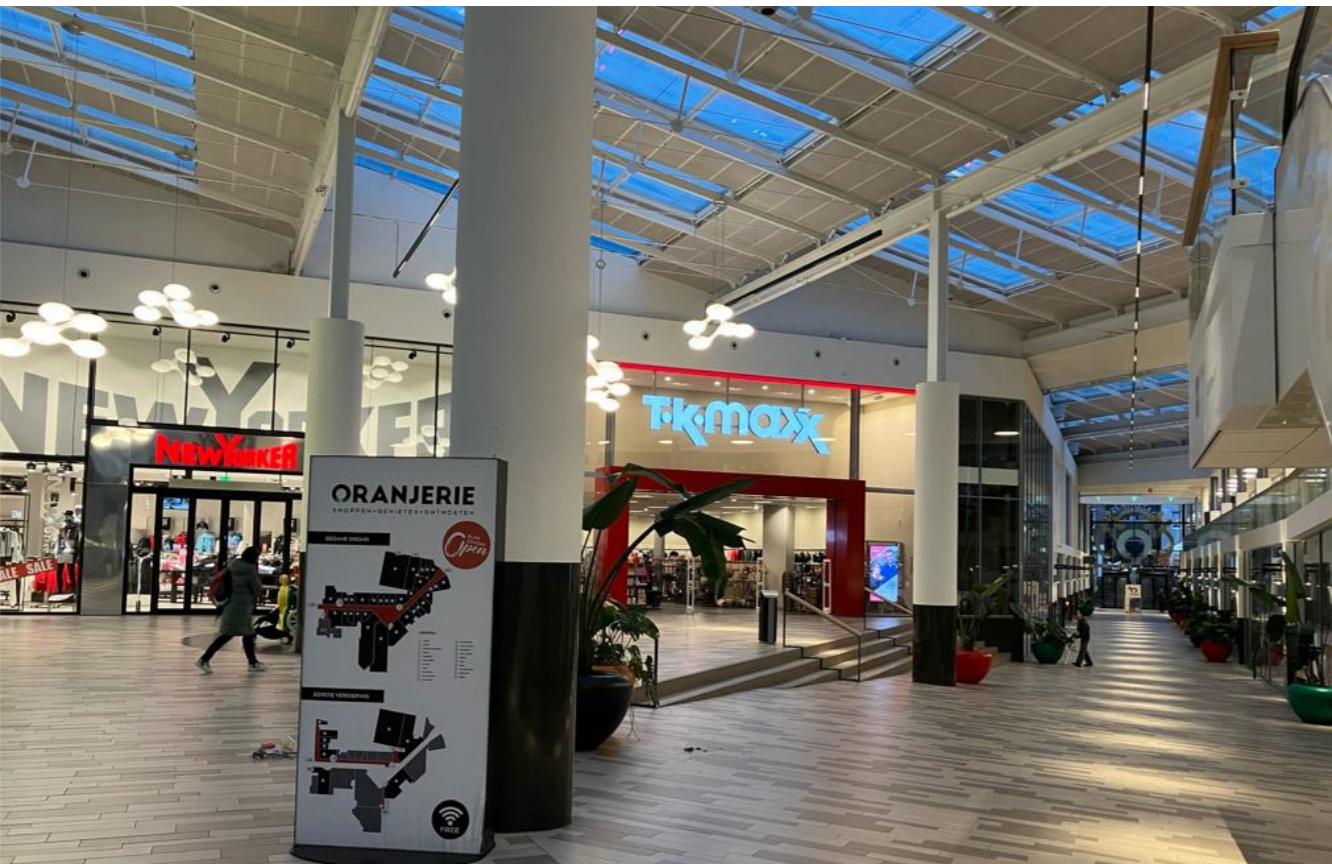
Impression inside - outside



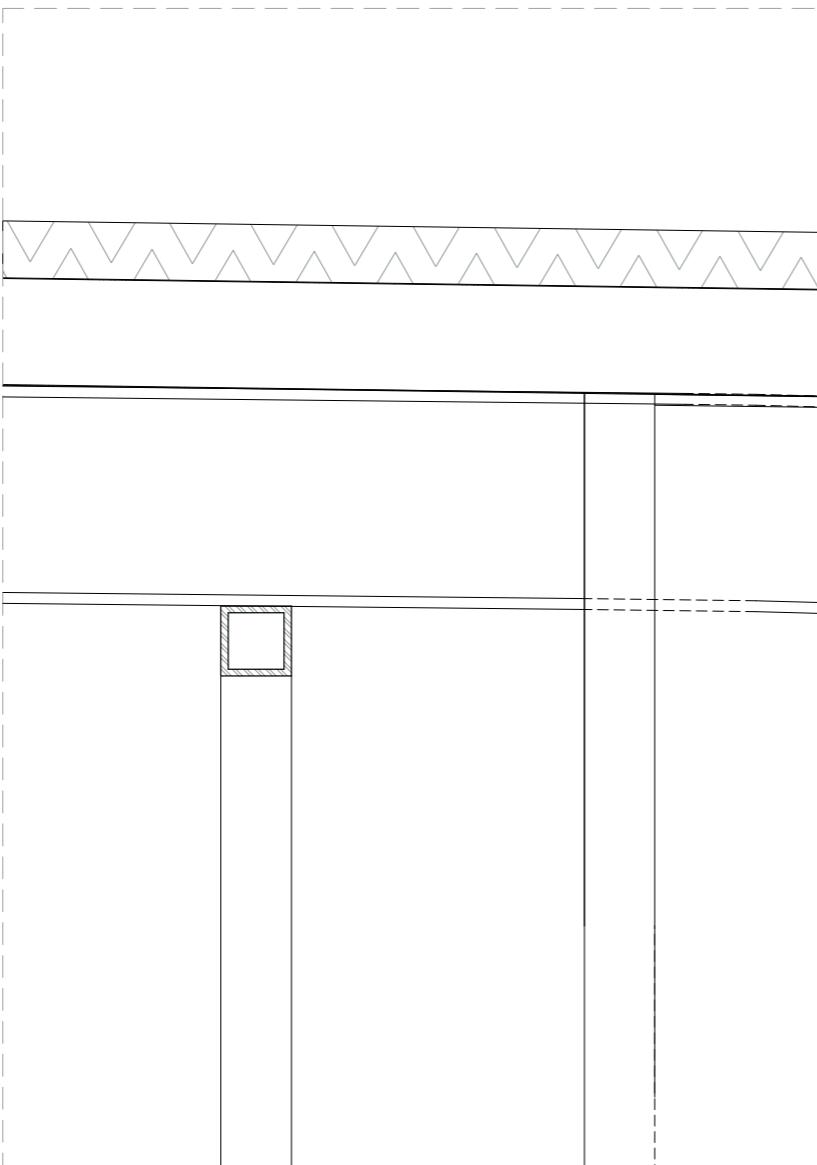
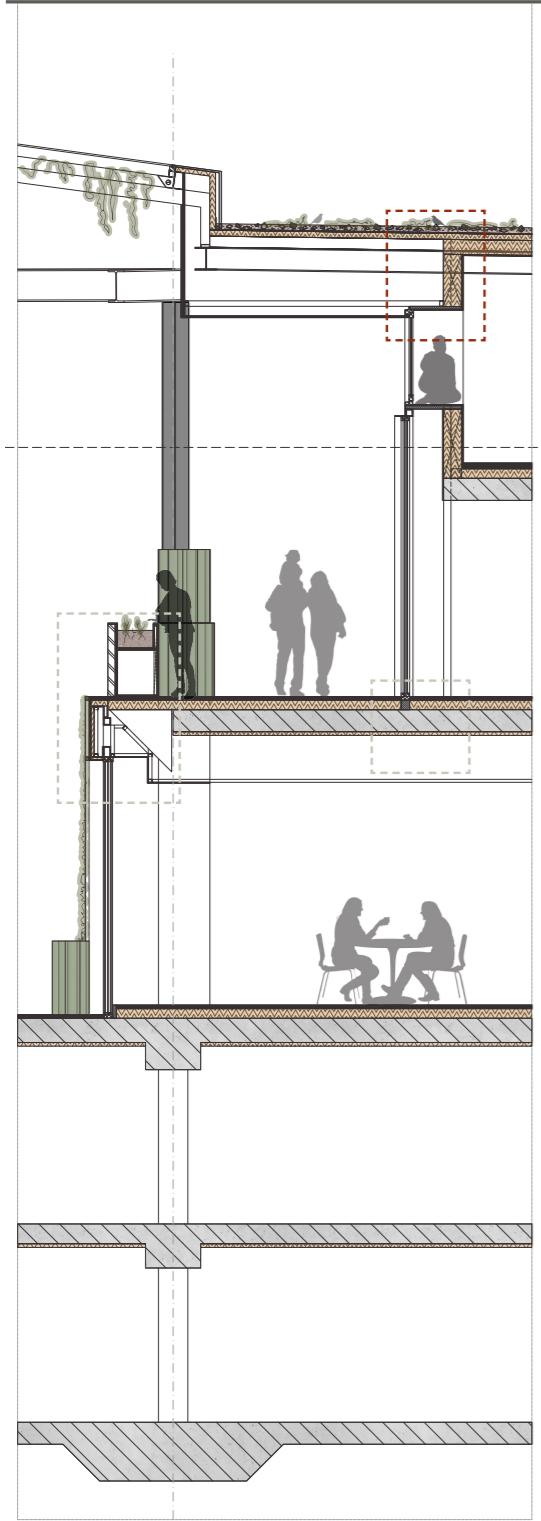
Material



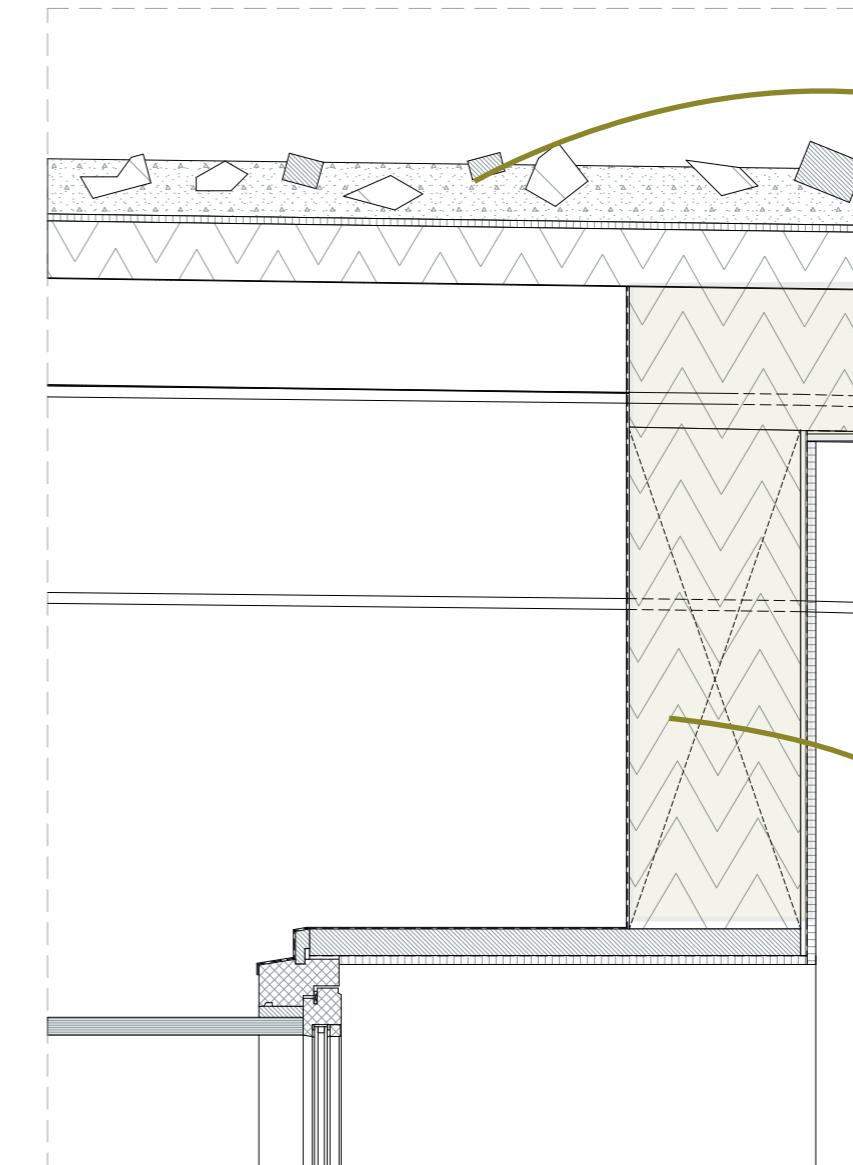
Comparison current and design



Detail roof



Current



Design

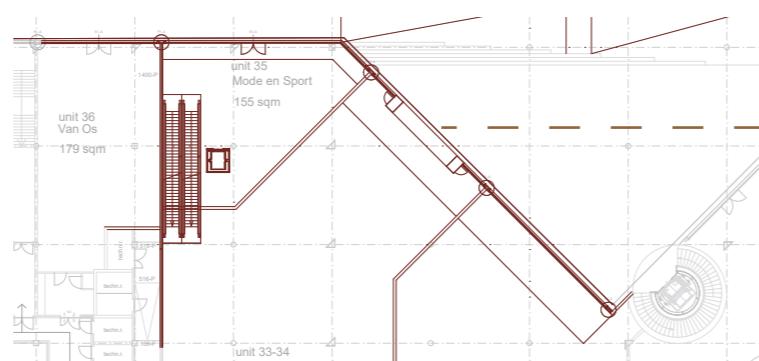
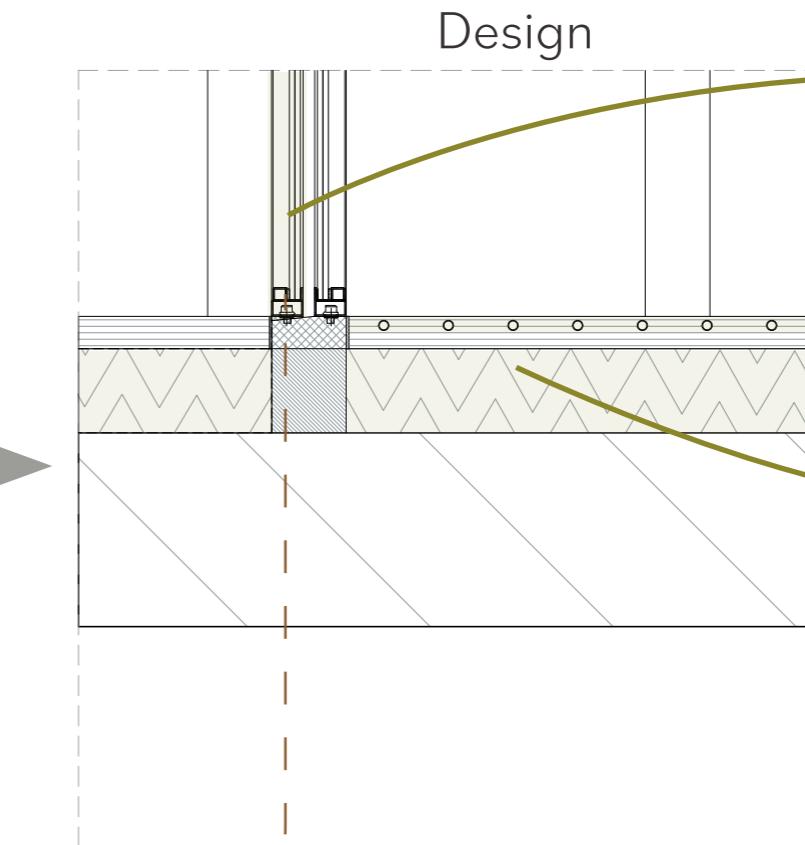
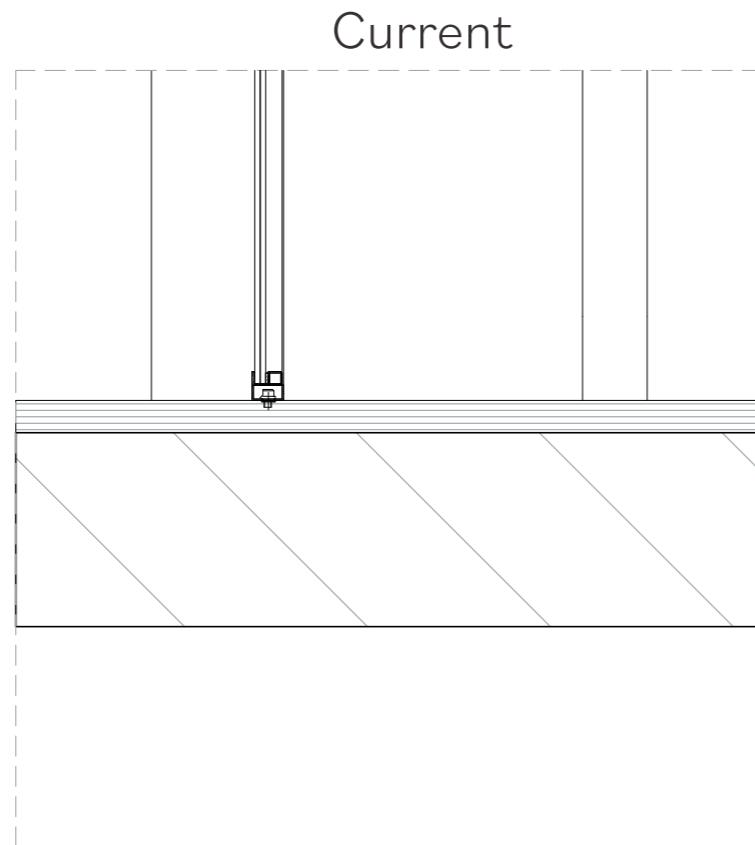
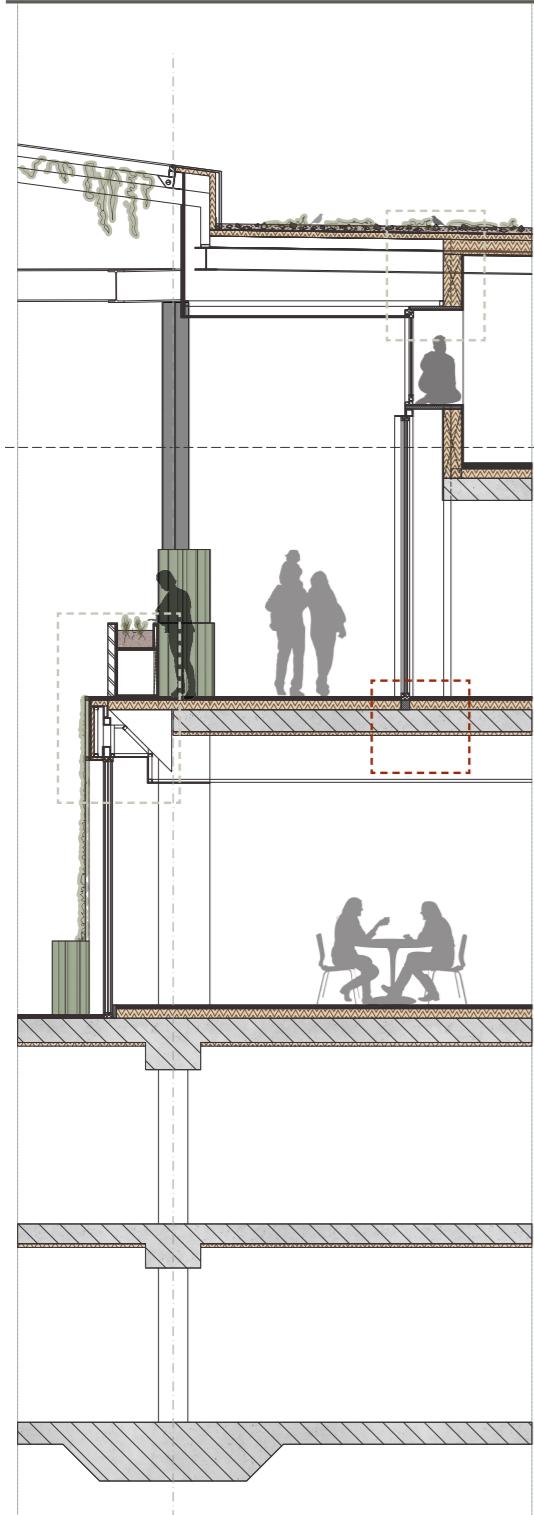


Brown roof



Adding
insulation
wood wool

Detail adding facade

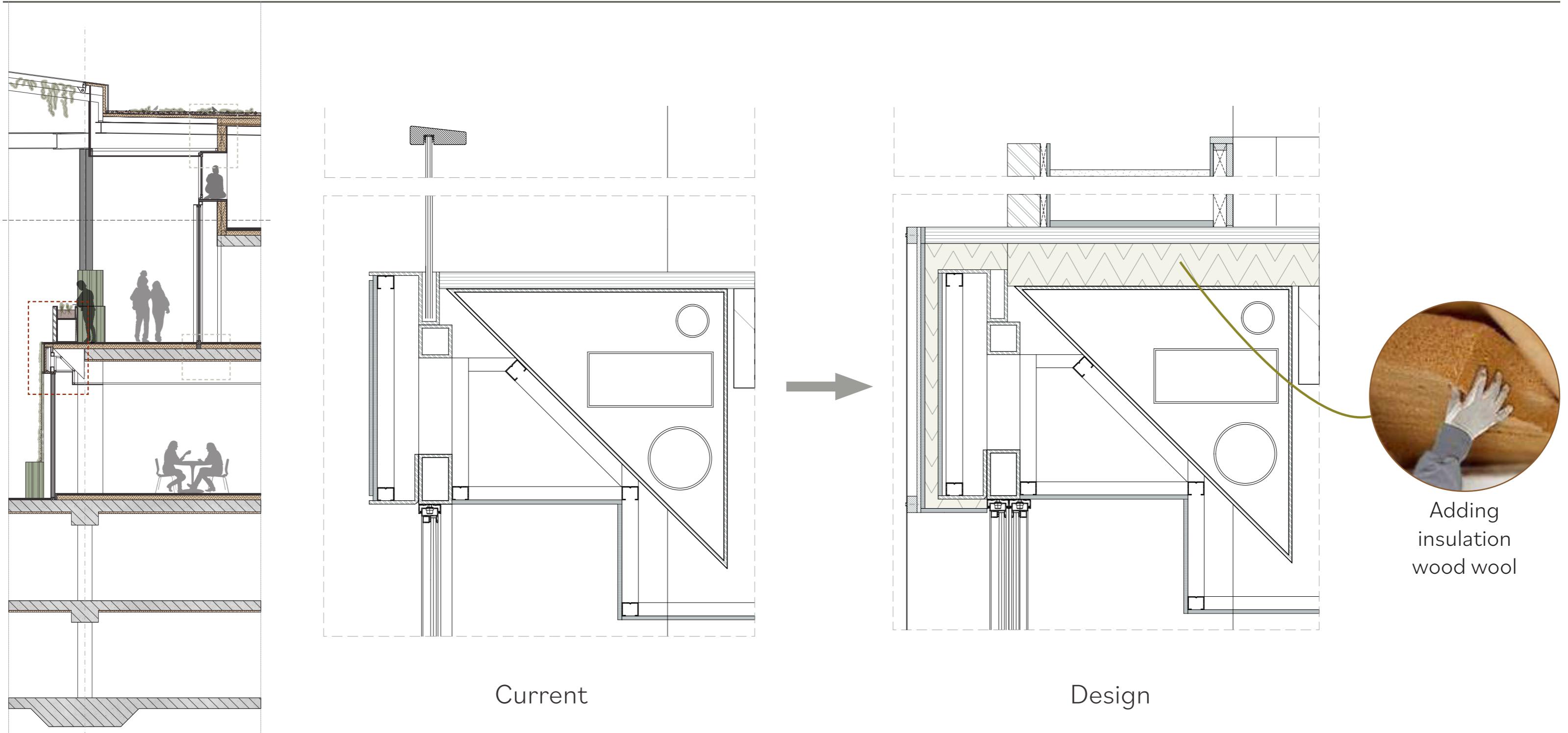


Adding second glass
panel for insulation from
demolished glass facade

Adding second glass
panel for insulation from
demolished glass facade

Adding insulation

Detail balustrade

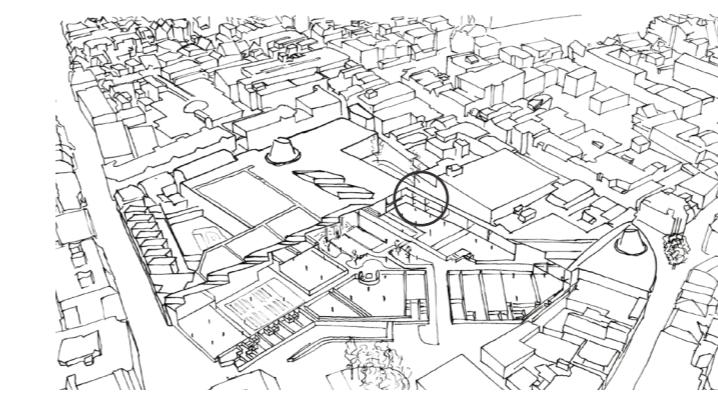
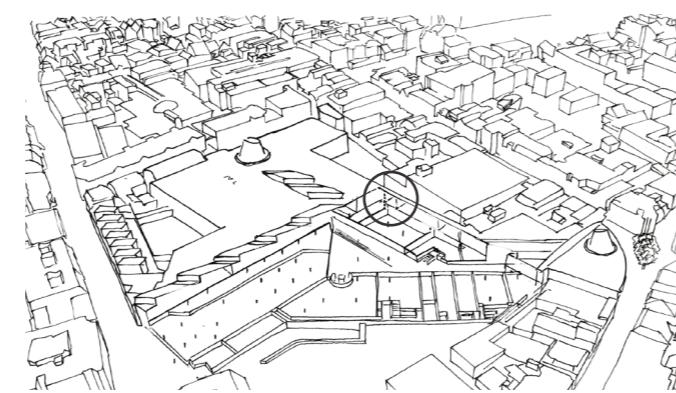


Materials

Reusing, recycling and biobased



Impression materials



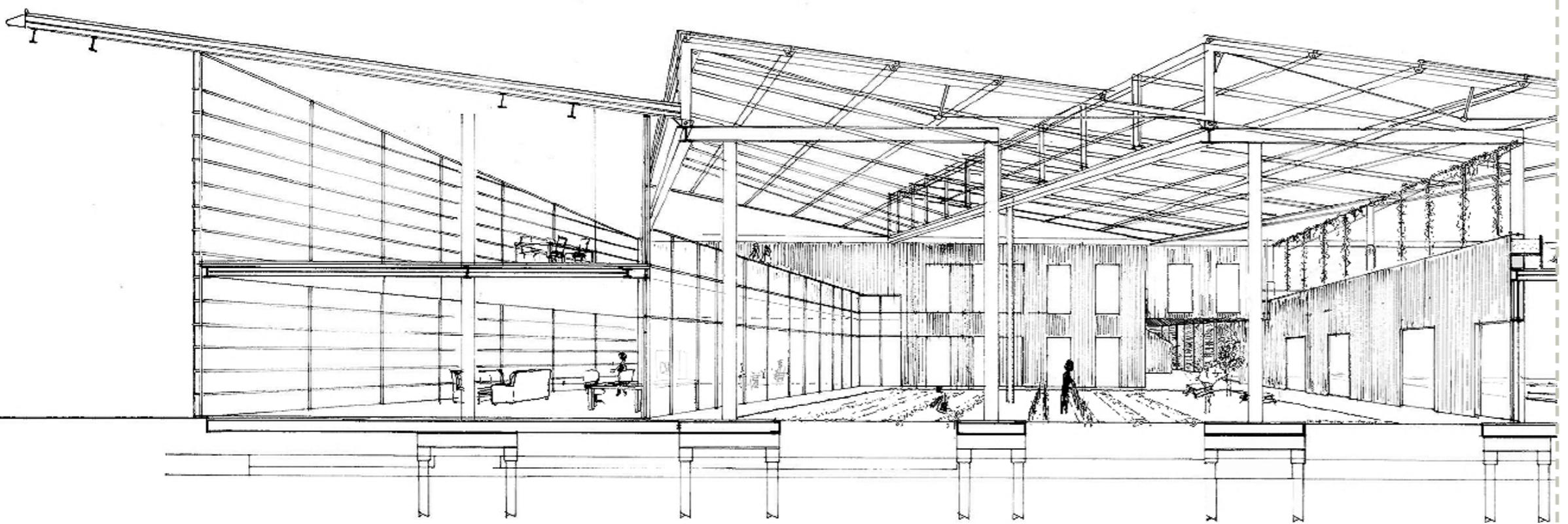
Community and living



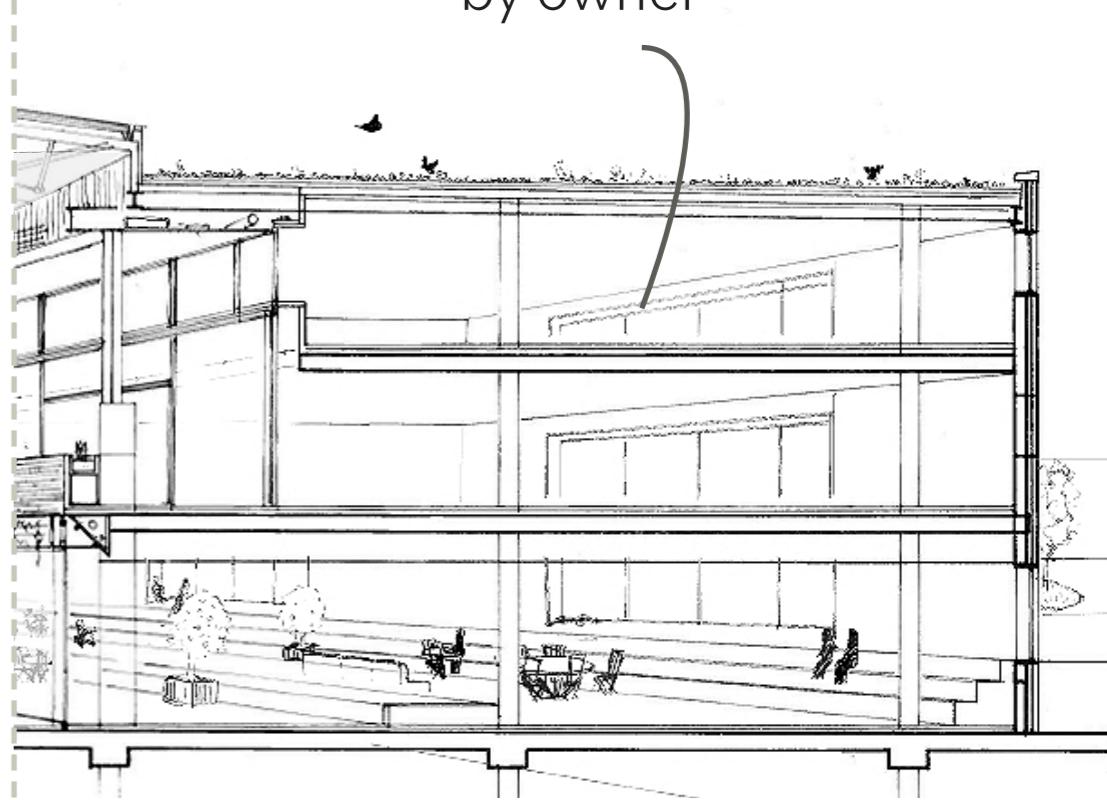
Community and living



Community and living



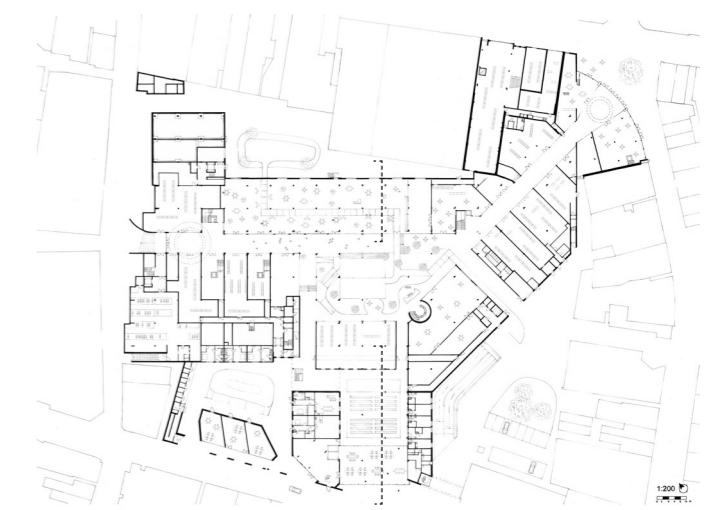
To be designed
by owner



Community work space



Community vegetable garden



Added housing floorplan and community



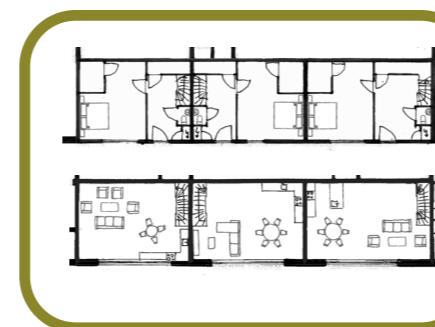
Typologies



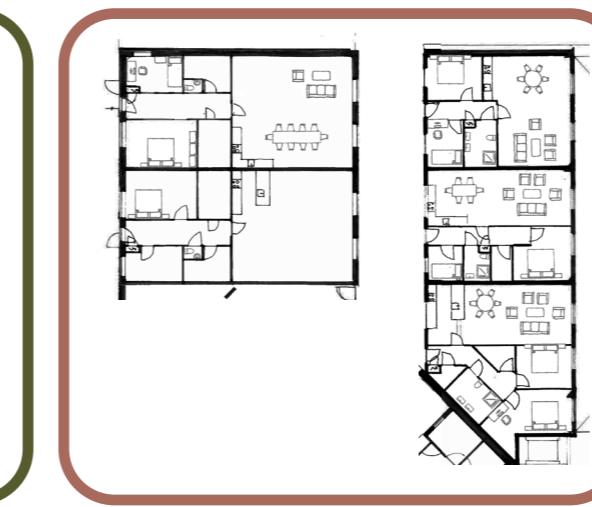
Studio



2 room apartment
2 floor levels



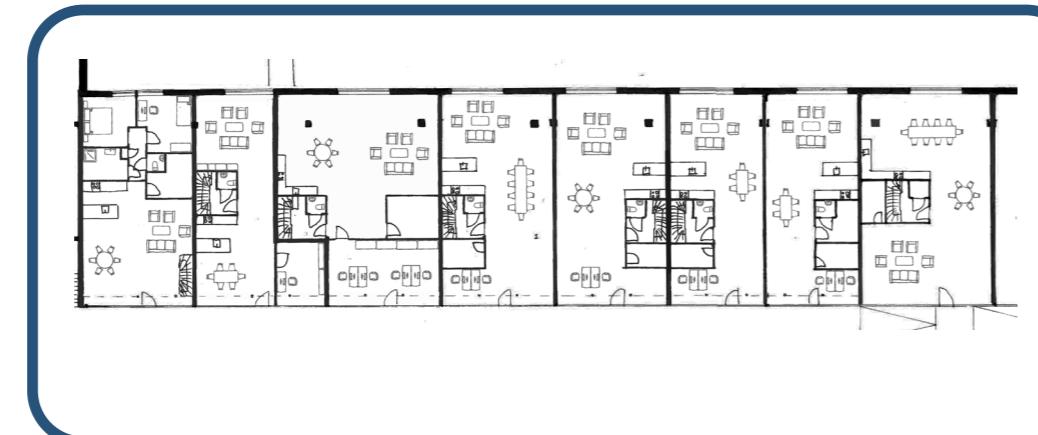
To be determined



3 room apartments



3 room
apartments



3 room apartment
2 floor levels

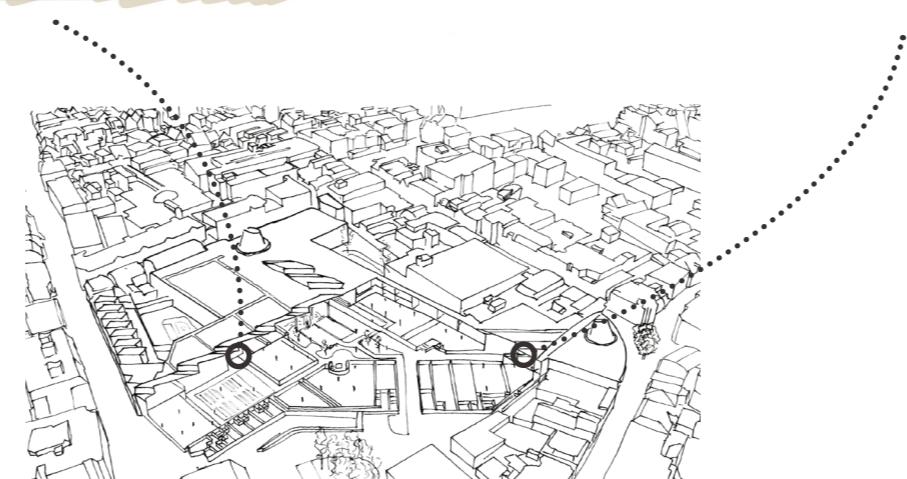
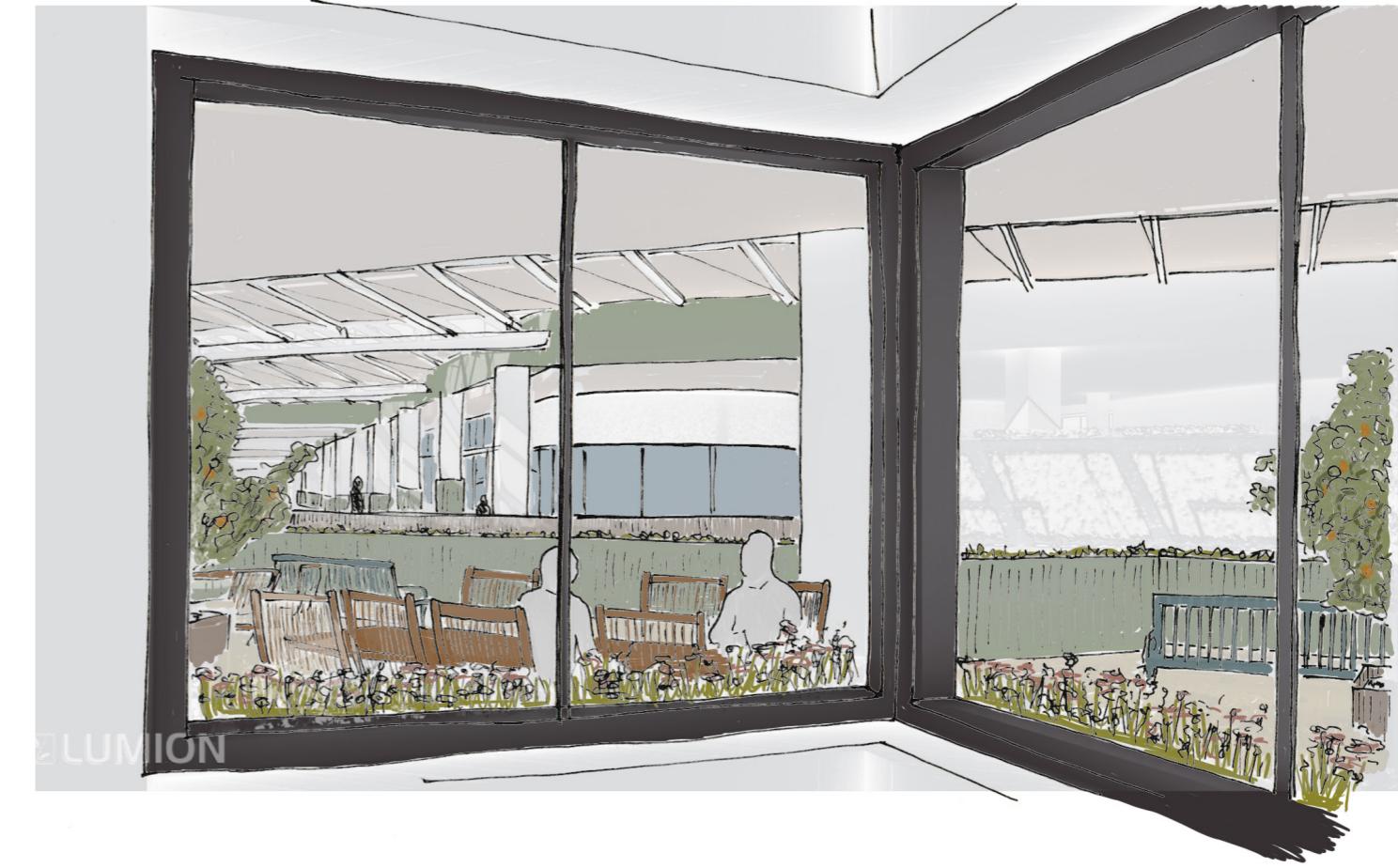
40 houses
32 added

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

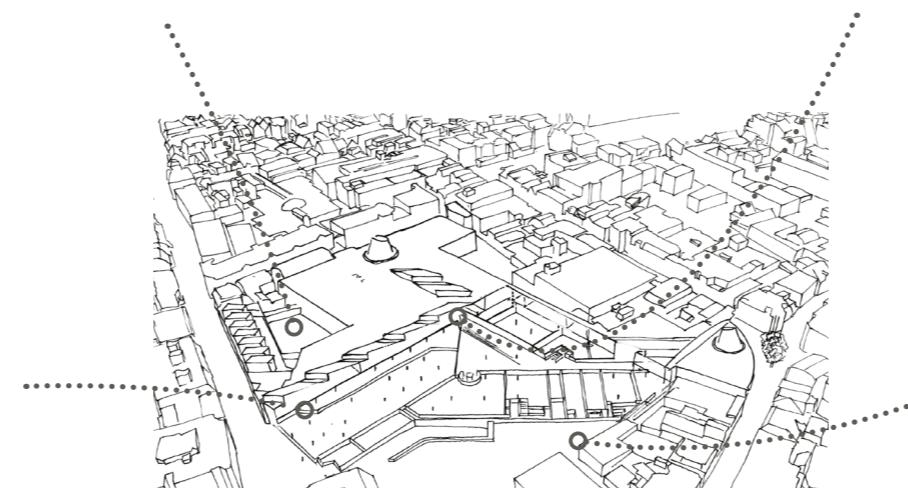
Reusing/Reclycling materials

Connection inside outside

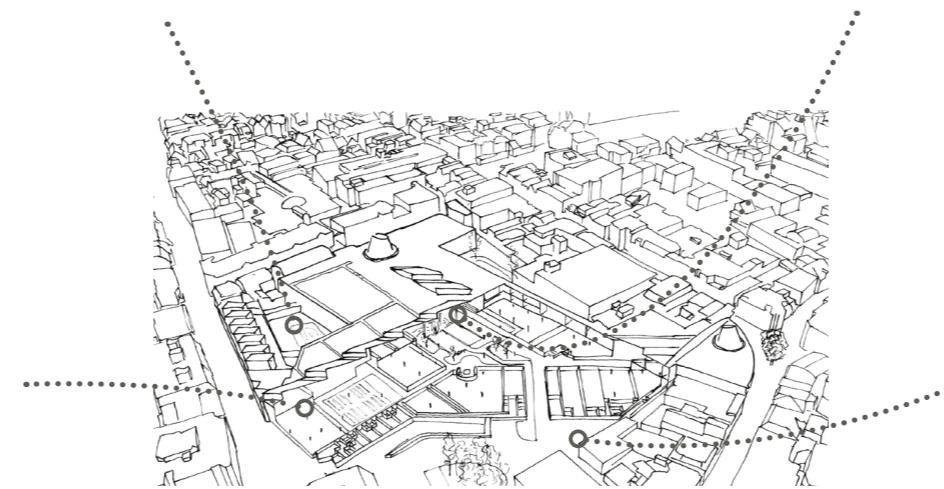
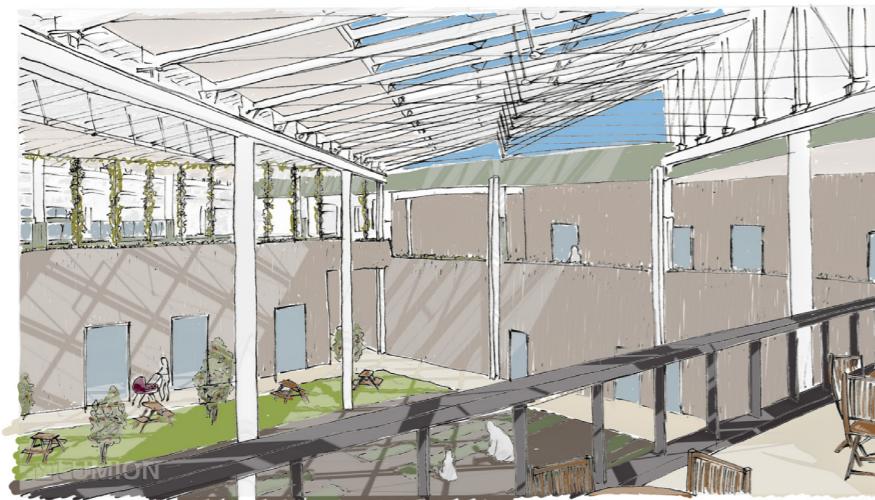
Several meeting spaces

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

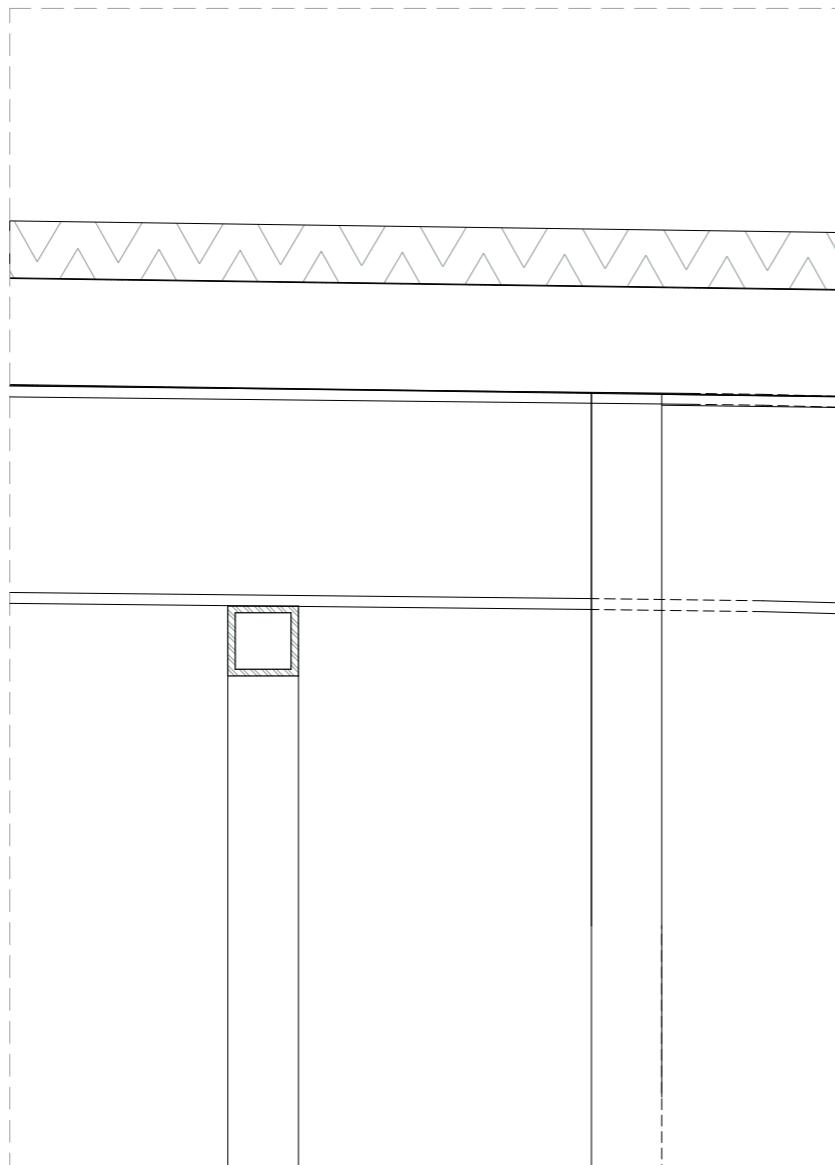
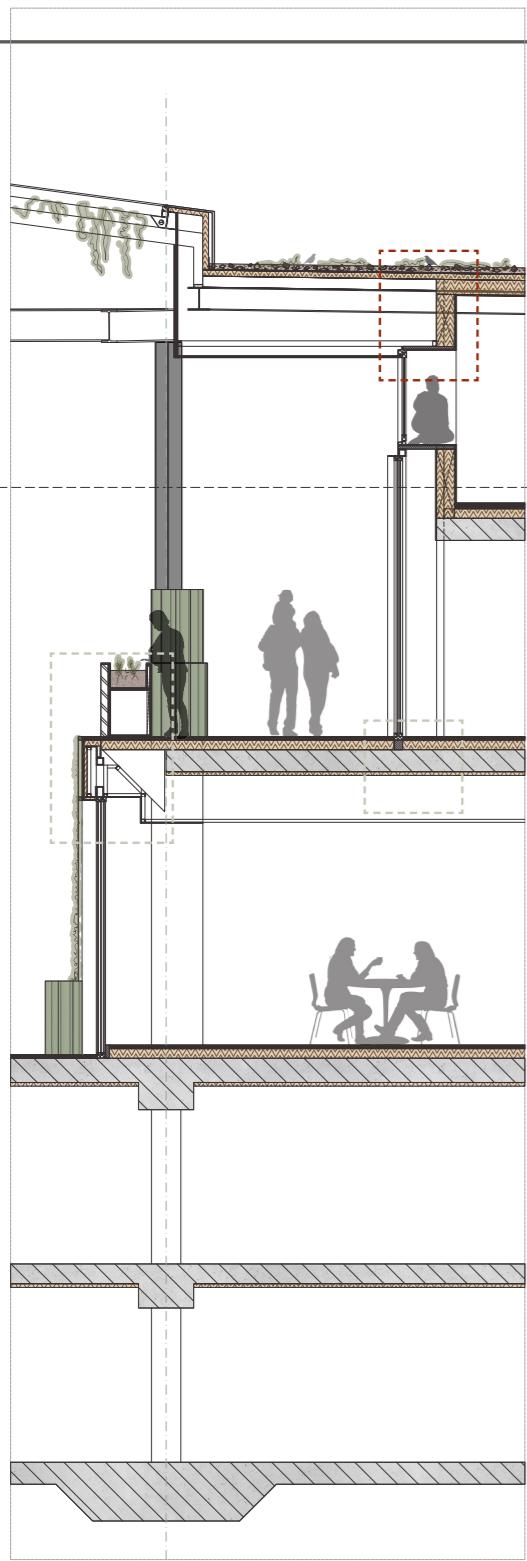


Climate/health overview

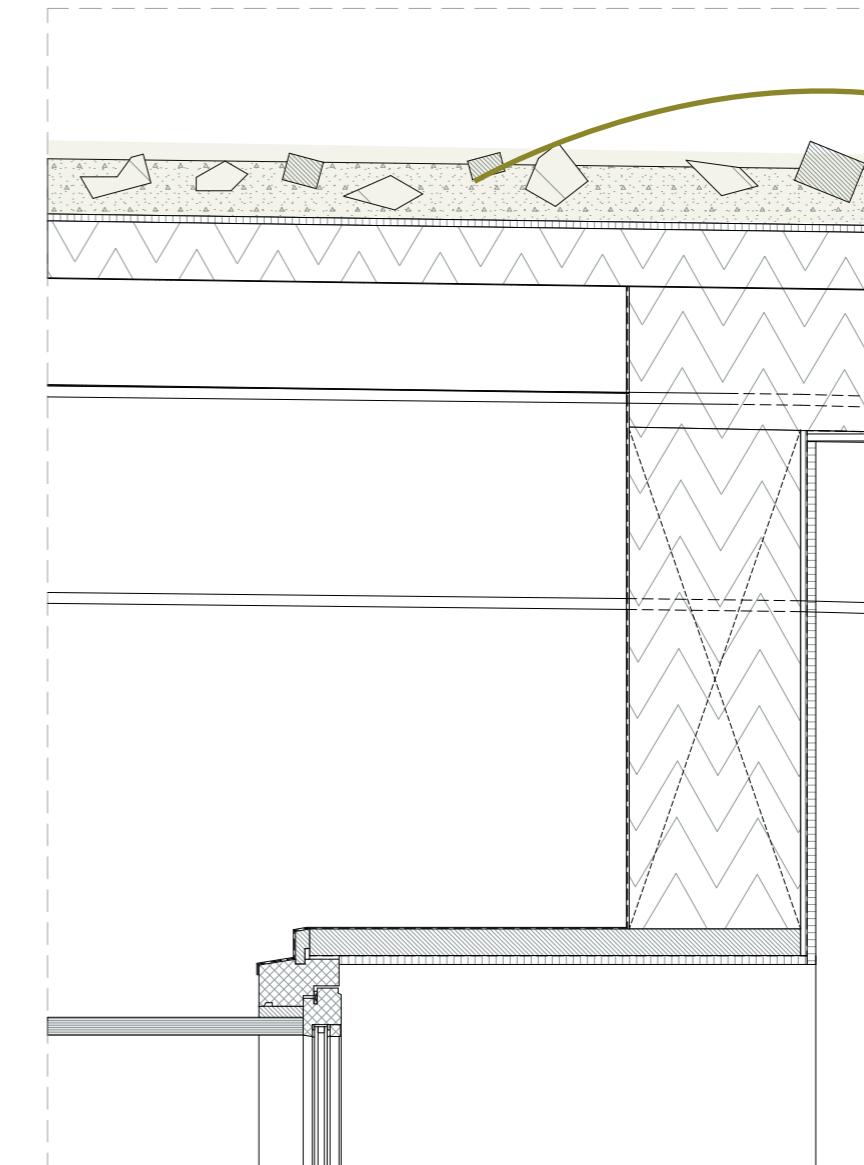
- 01 Waterfall
- 02 Biobased material
- 03 Animal housing
- 04 Blue green roof
- 05 Brown roof
- 06 Water drainage
- 07 Green facade
- 08 Facade garden
- 09 Wadi
- 10 Pond
- 11 Flowers around tree
- 12 Wall of wilderness
- 13 Vegetable garden
- 14 WKO & heatpump
- 15 WTW
- 16 Hybride ventilation
- 17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



Detail brown roof



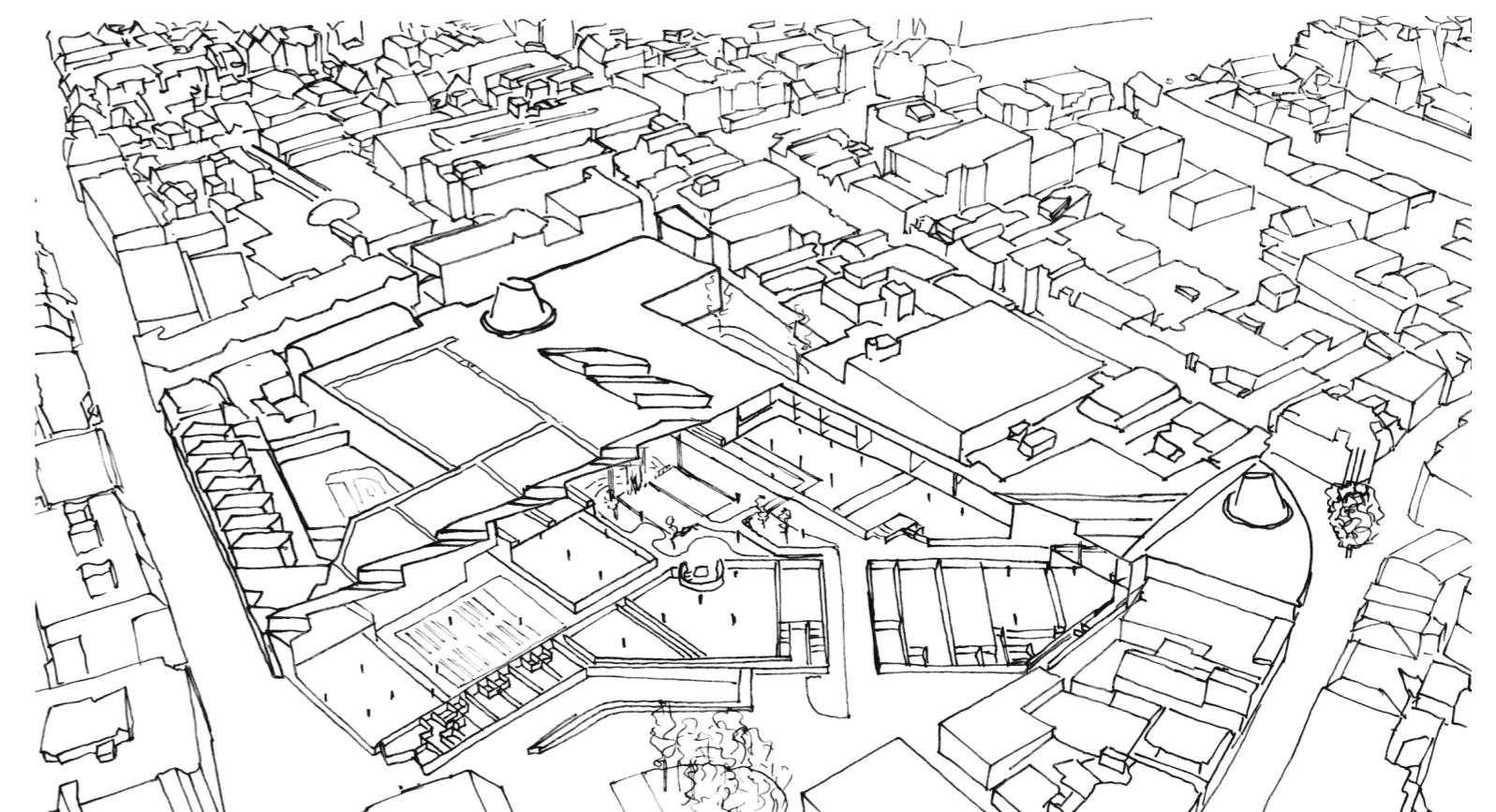
Current

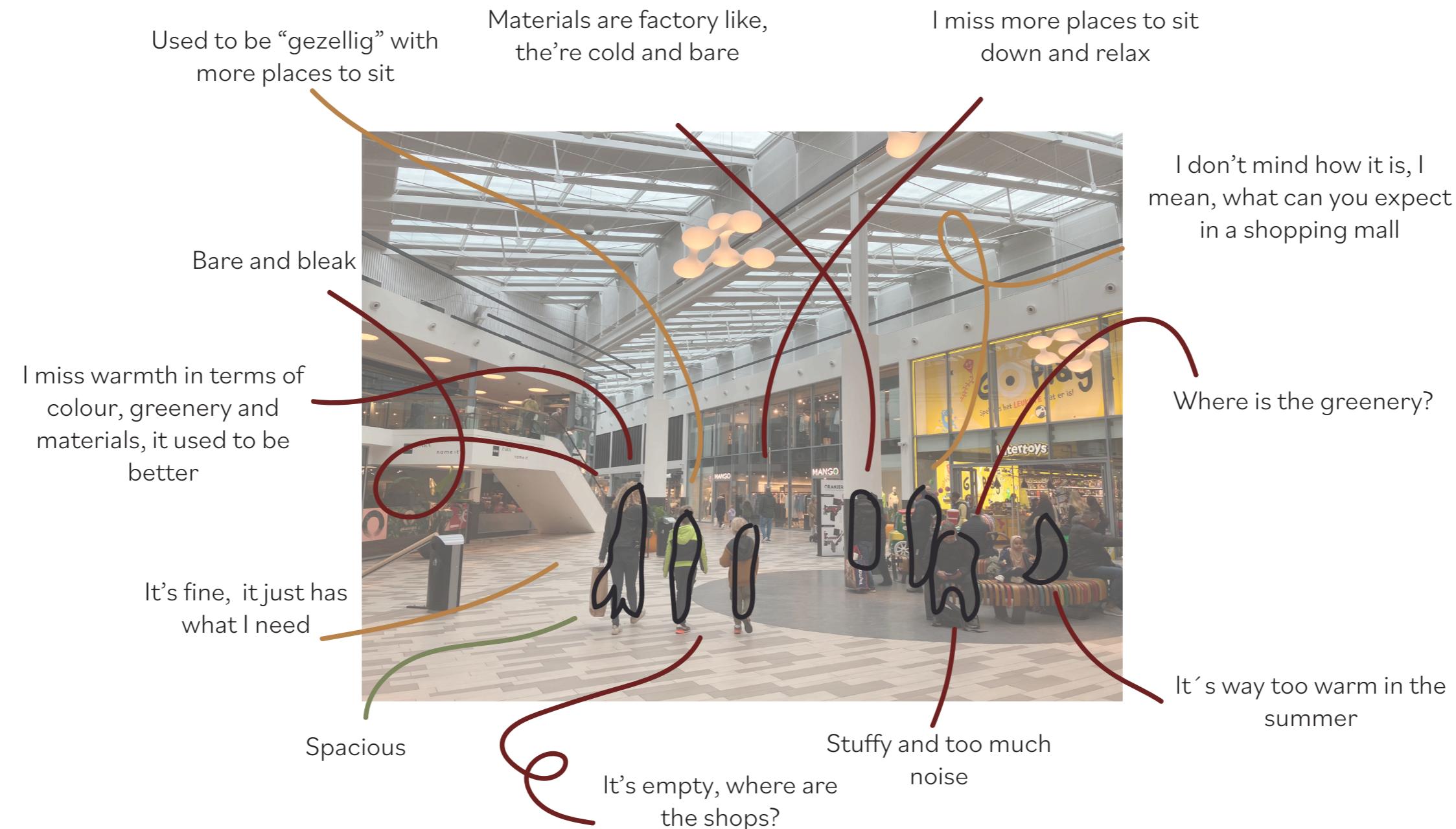


Design



Brown roof





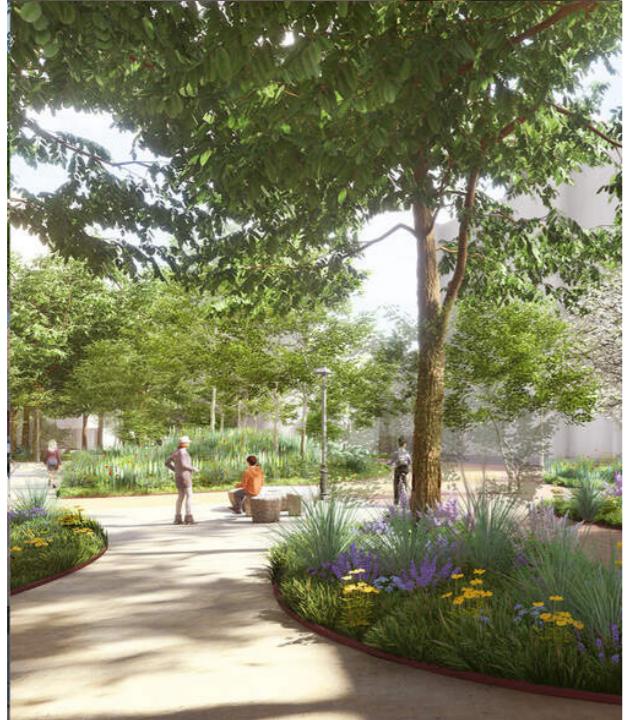


Vision Apeldoorn



Mix of functions

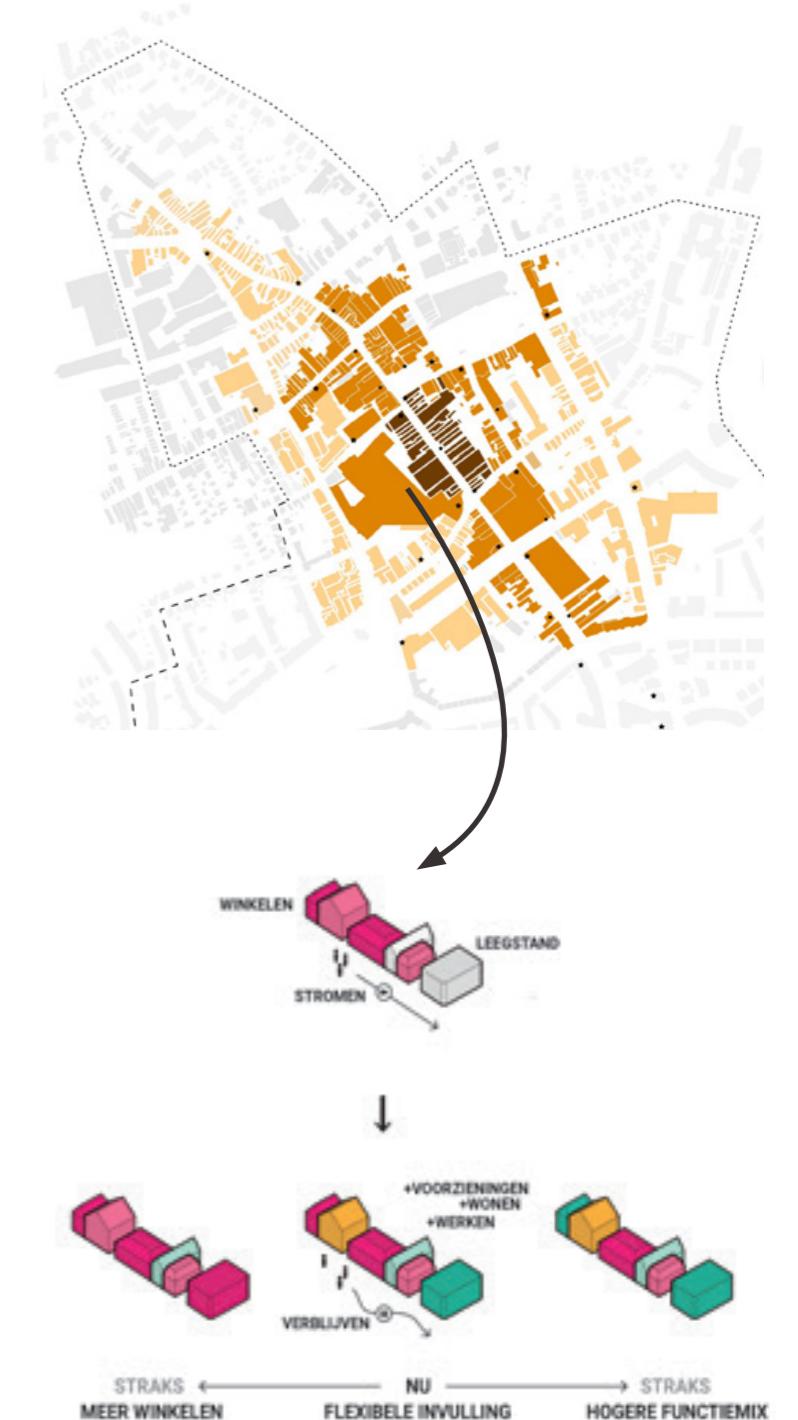
- Distribute shops over city
- Add housing



Healthy and green outdoor space

Densify and adding green

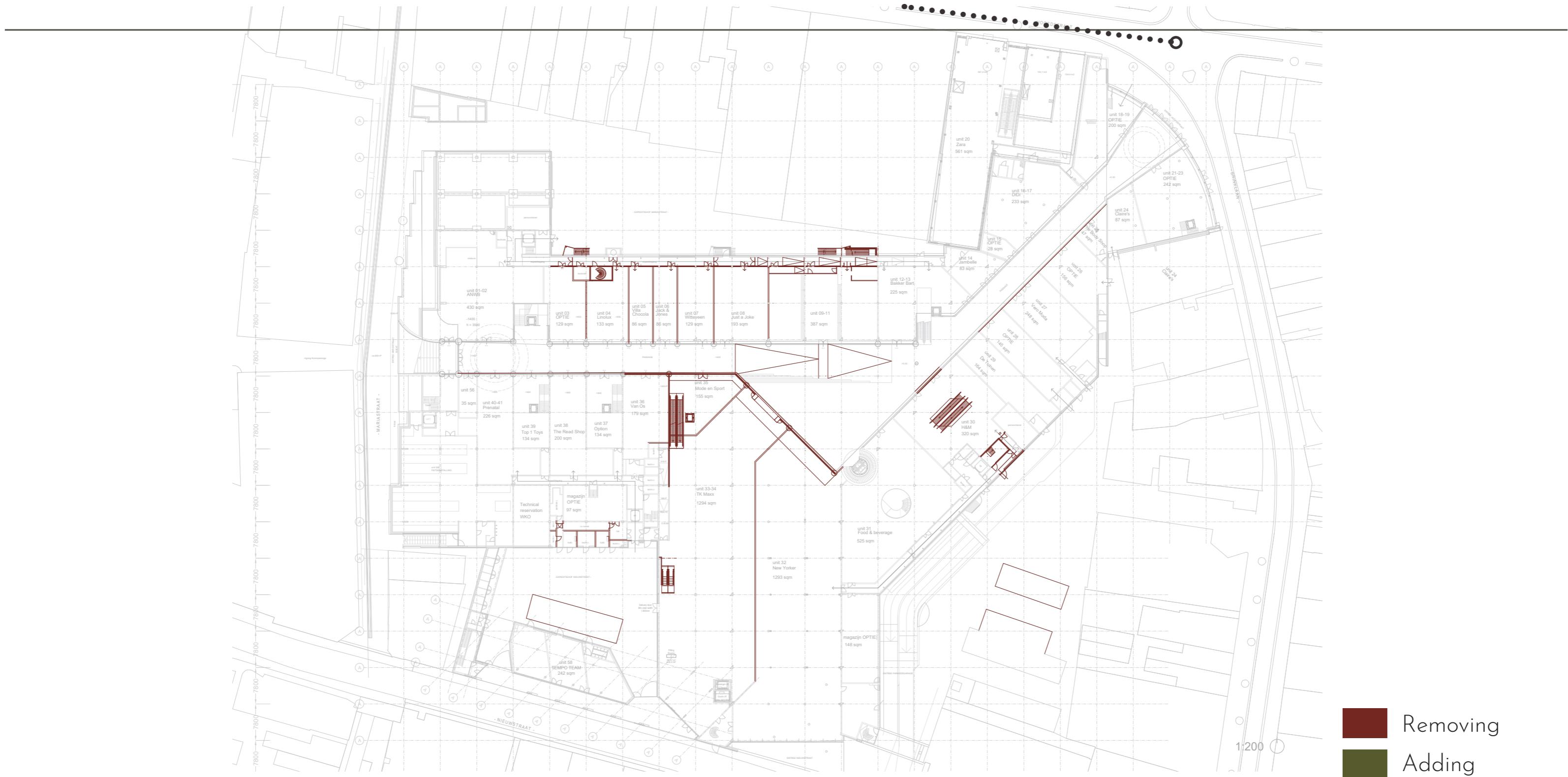
- Highrise
- Green structures
- Less shops
- More residential and work spaces



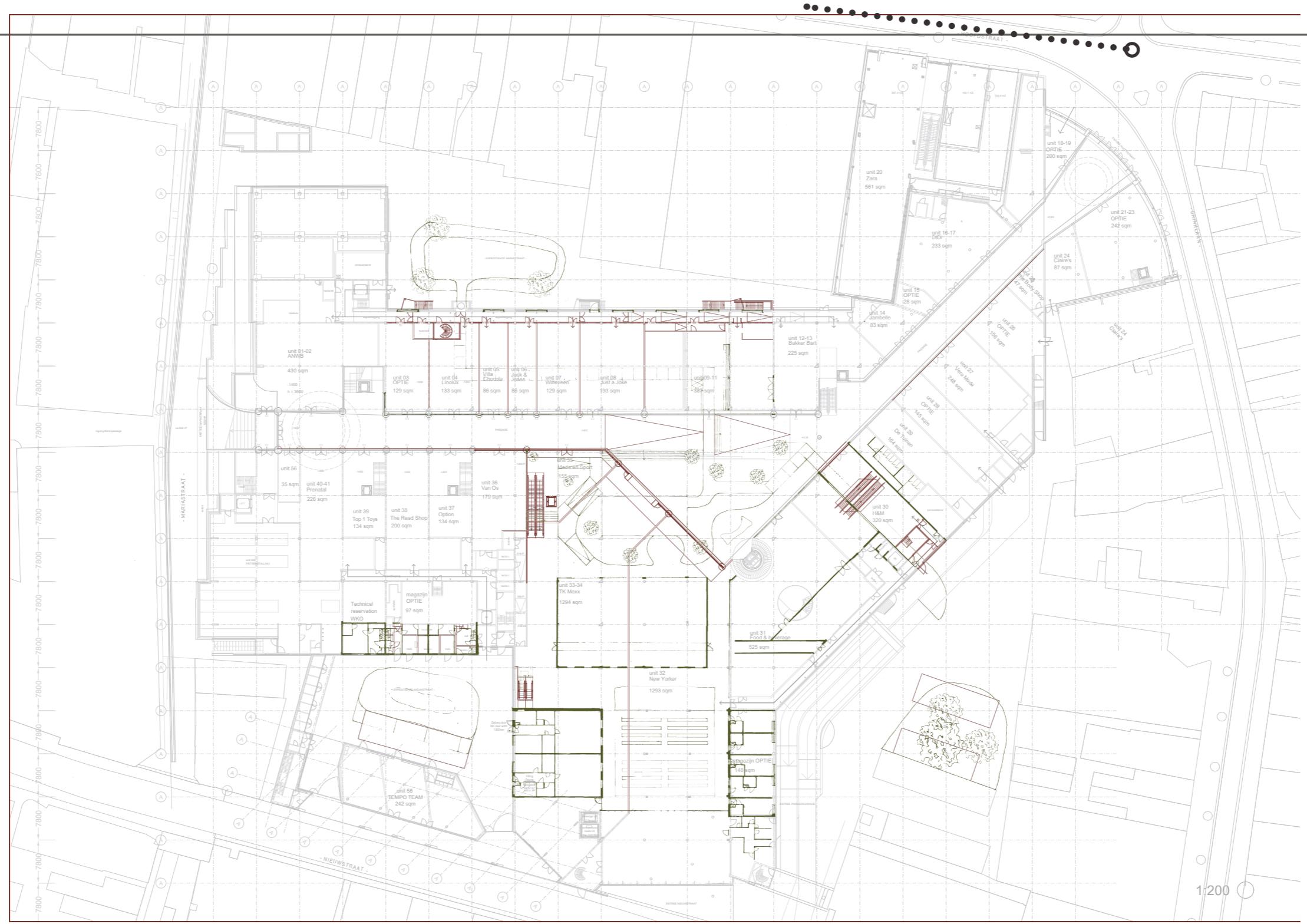
Floorplan | Ground floor



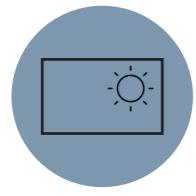
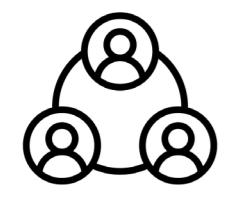
Floorplan | Ground floor



Floorplan | Ground floor



Removing Adding



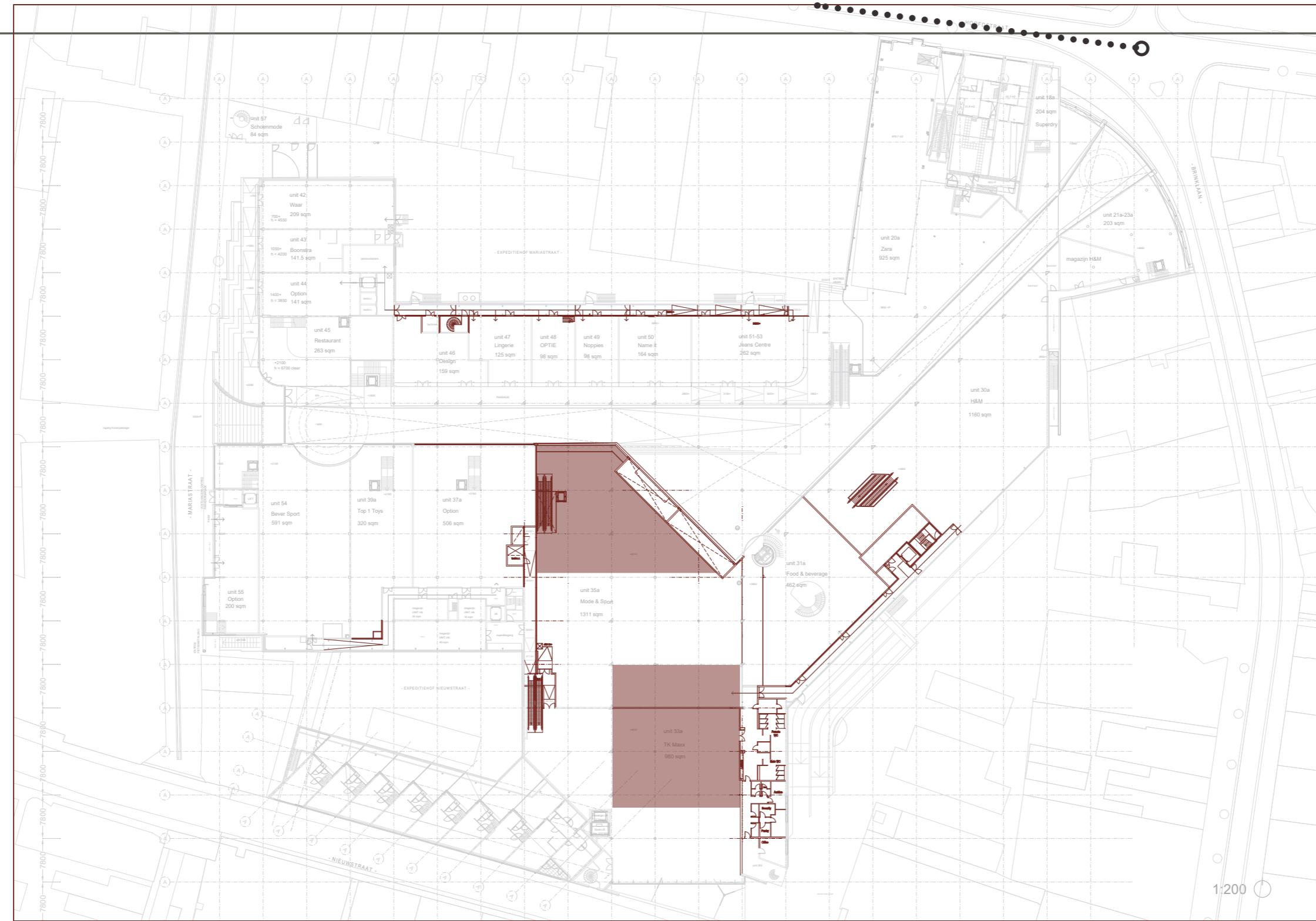
Floorplan | Ground floor



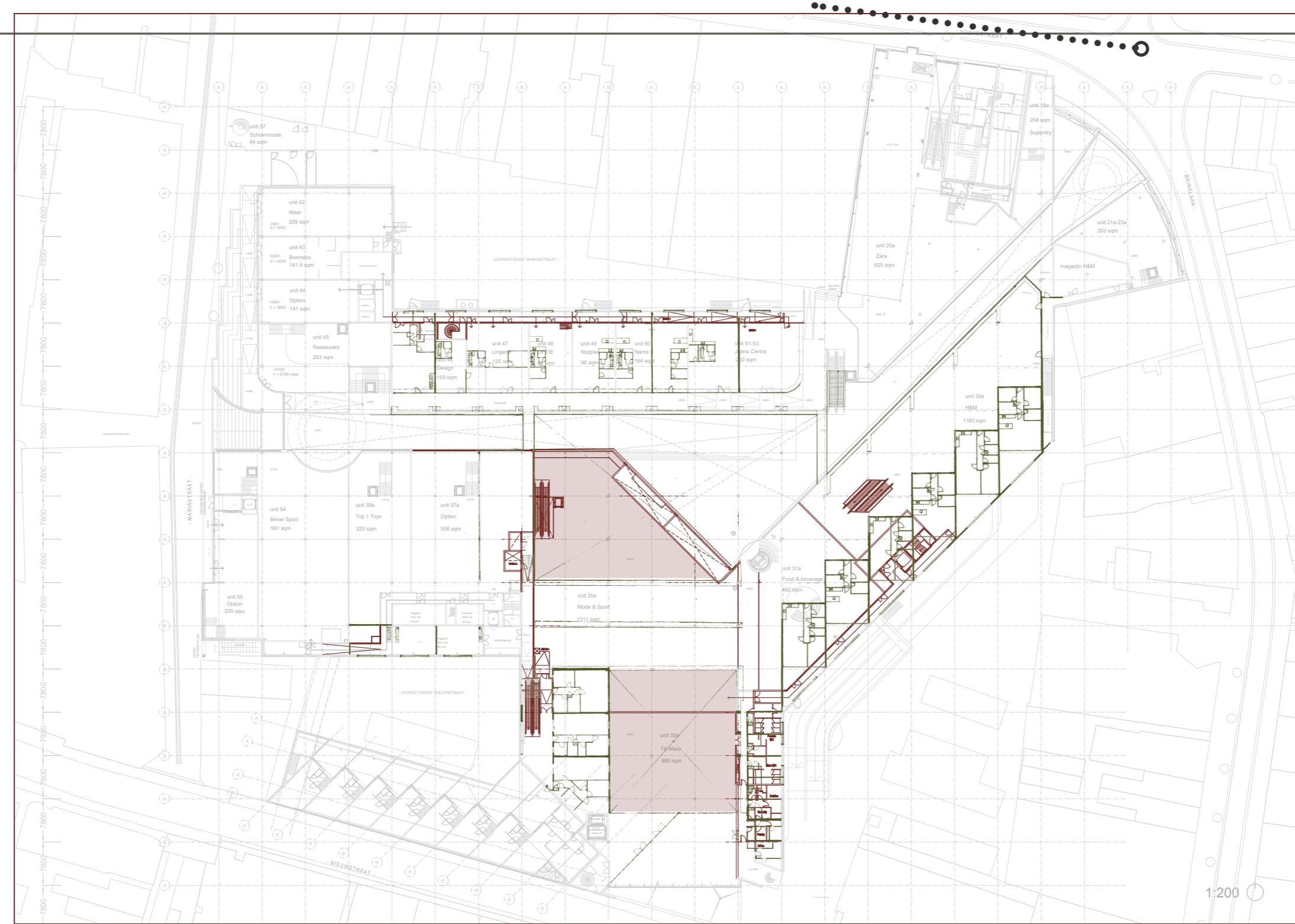
Floorplan | First floor



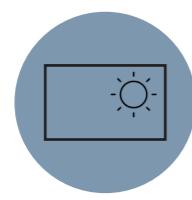
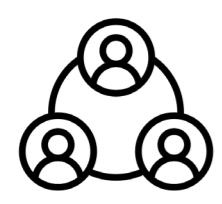
Floorplan | First floor



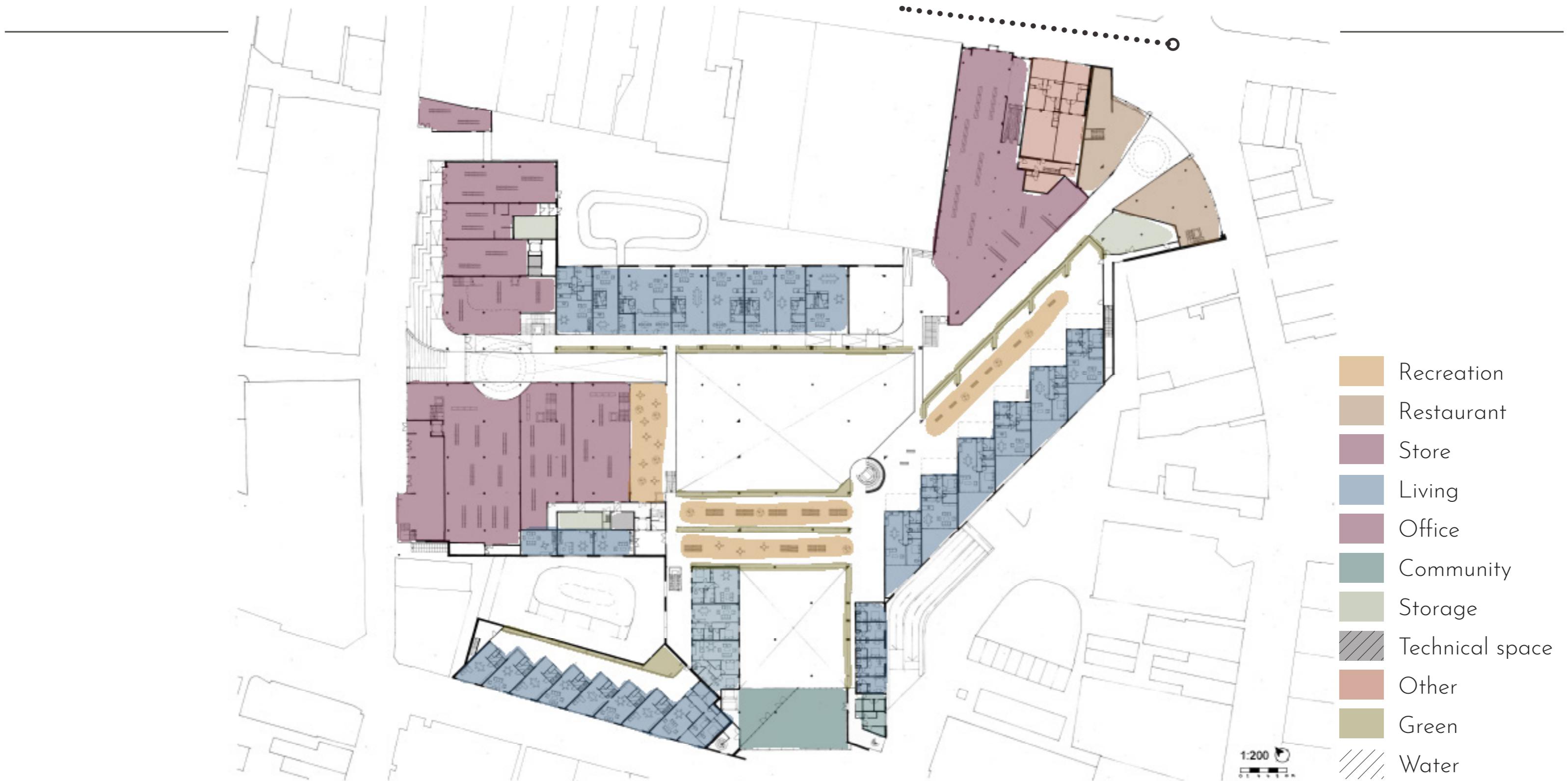
Floorplan | First floor



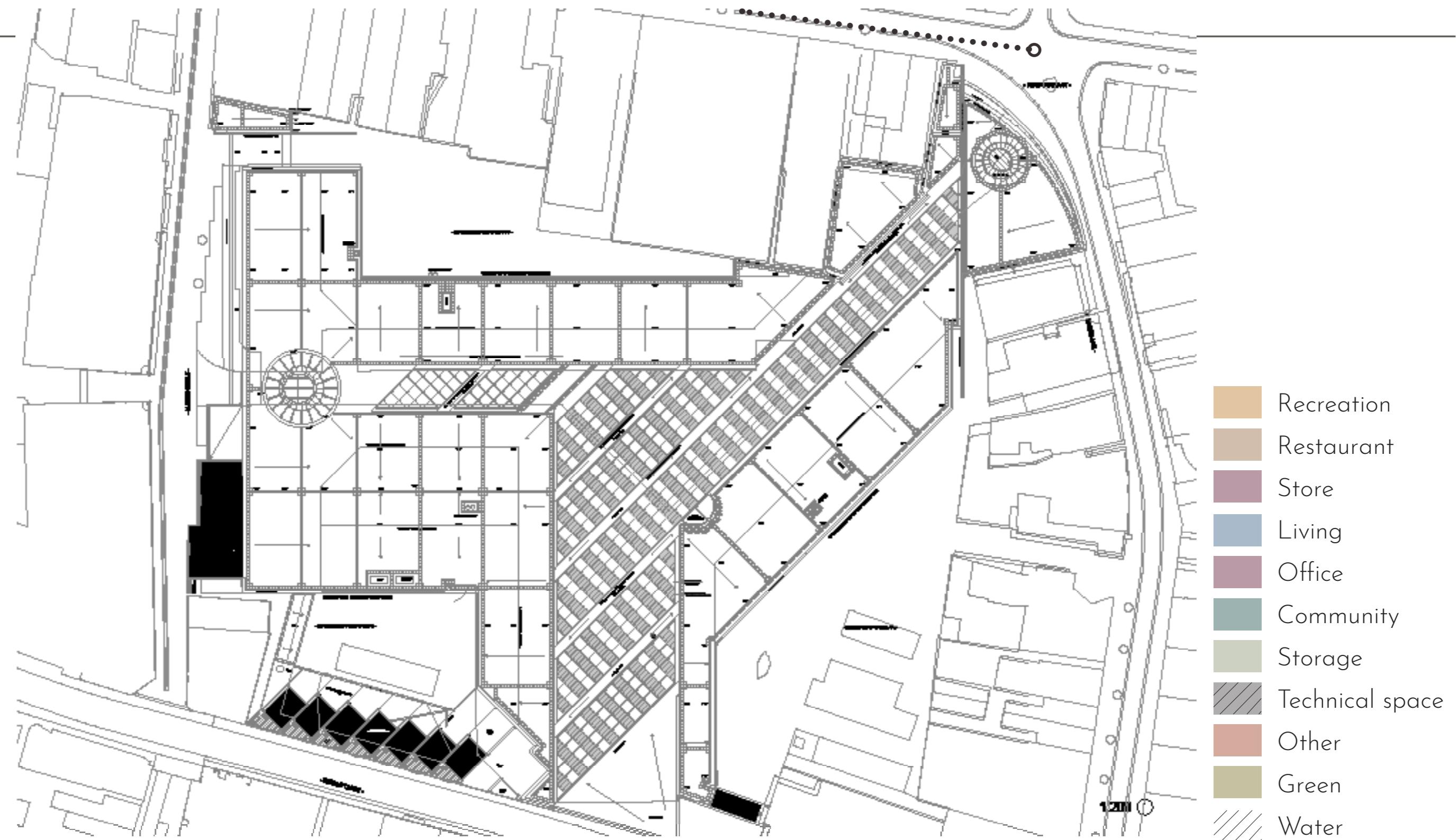
Removing
Adding



Floorplan | First floor

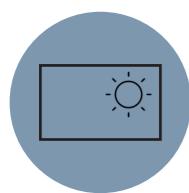


Floorplan | Roof



Floorplan | Roof





Floorplan | Roof

