



HOPTILLE, FROM STIGMA TO CHARISMA

P5 REPORT, DESIGN

*Image enhancing transformation of
post-modern architecture while retaining its identity*

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S2C: P5 report - Design
AR3AH105 - New Heritage
Graduation studio Adapting to 20th Century Heritage
Master Architecture, Urbanism and Building Sciences

**Dyslexia*



Hoptille low- mid- high-rise

Image from stadsarchief Amsterdam

Preface

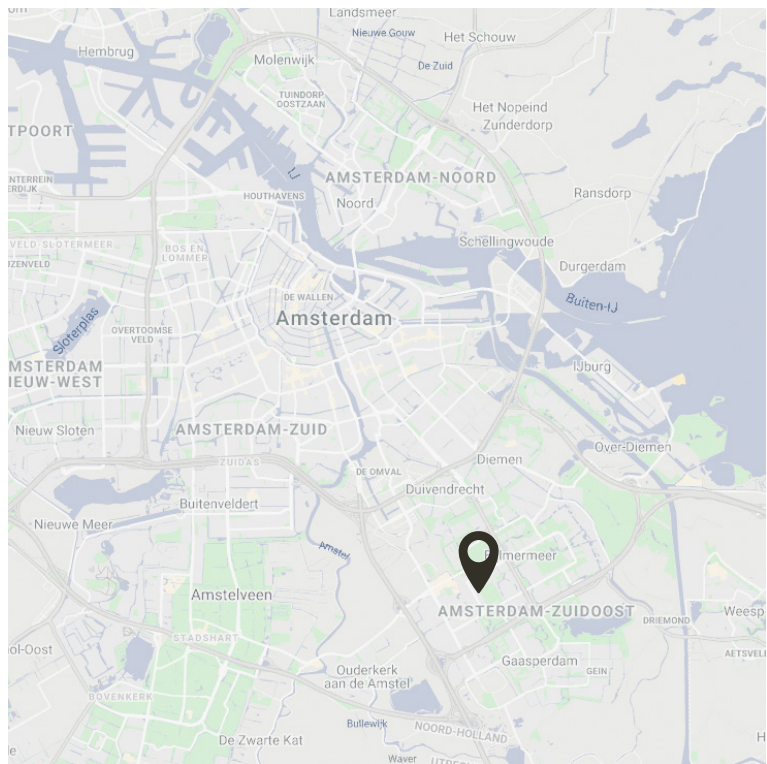
This report, together with the P5 presentation, forms the last stage before for the completion of the graduation study Adapting to 21st century heritage.

This document contains both process and design to provide an overall picture of the progress during the past year .

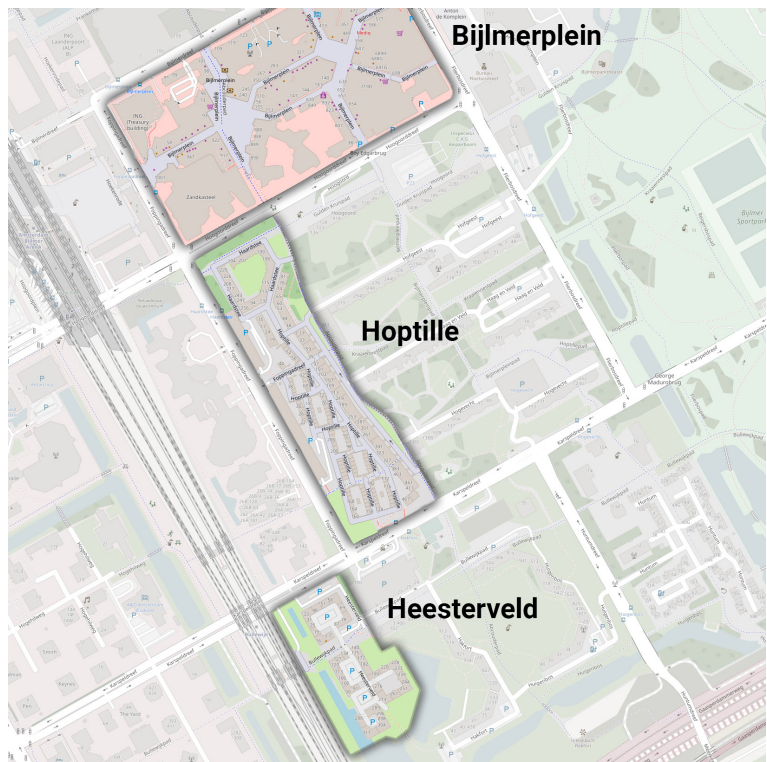
It answers the individual conclusions of the research question: 'What problems arise in Hoptille causing the prevailing stigma & negative choice of living?'

Secondly it answers the design question: 'How to transform the current neighbourhood in such a way that both insiders and outsiders would live in Hoptille by a neutral or positive choice?'

The design is divided into four interventions - densification, orientation, circulation and demountable characteristics - each addressing their own issues. All interventions were tested by means of an impact assessment showing its consequences.



Map Amsterdam



Map H-buurt

Introduction

The project site of the studio 'New Heritage' is located in the Bijlmermeer, which is a district in Amsterdam-Southeast. The Bijlmer has a negative image, comments are often made on the lack of safety.

The research has been done on 3 different areas within the H-buurt, one of the neighbourhoods in the Bijlmermeer. The applied research method was interviews, in which it became clear that Hoptille matches best the negative image people have on the Bijlmer in general.

This negative image arose after the completion of the district in 1982, caused by the experimental circulation through the mid-rise building. This building has already been renovated two years after completion. Still, the renovation has not resulted in an more appreciated neighbourhood. Nowadays, Hoptille has a stigma and there are many headlines to be found matching its negative image.

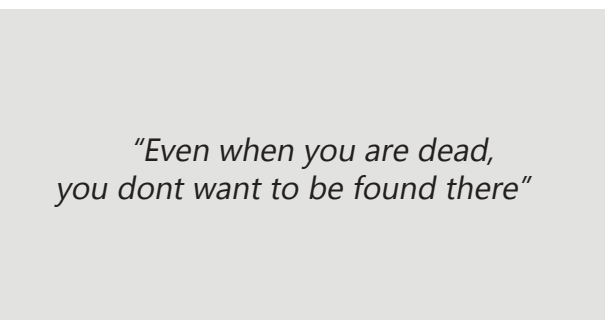
This project focuses on the stigma on post modern neighborhoods.

It is a topic that attracts my attention because I live in New Town Almere which also has a negative image among outsiders. This does not correspond to how I and my environment experience Almere.

I noticed many similarities between Almere and Hoptille. Both locations had to become the ideal city (expansion) by lowrise. Both locations resulted in areas with a negative image by outsiders while they were more appreciated by residents. Residents of Hoptille also have their remarks on their living environment, but are generally a lot more positive than outsiders.



Negative quote Bijlmermeer



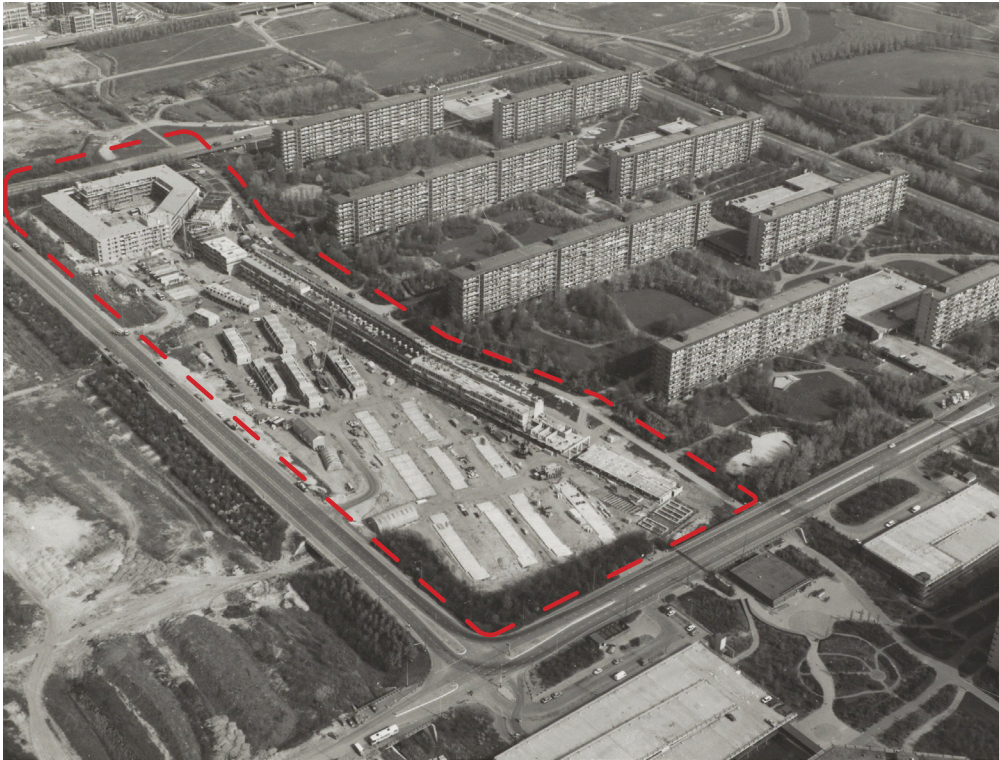
Negative quote Almere Haven



Hoptille negative in the media, present from www.digibron.nl



Hoptille negative in the media, present from www.ad.nl



Hoptille under construction, 1981
from stadsarchief Amsterdam



Hoptille after renovation, app. 1984
from stadsarchief Amsterdam

Location



Mid-rise northeast



Mid-rise southwest



Lowrise



Parking garage

The project site located in Hoptille covers an area of approximately 500 by 150 meters; roughly 1/3th of Hoptille (Google Earth, 2020). The residential buildings – single family houses and a mid-rise apartment block - were designed by the architects Kees Rijnboutt and Sjoerd Soeters and were built in 1982. Stakeholder Ymere owns these houses. The mid-rise apartment block is five stories high, approximately 300 meters long and contains a variety of different types of housing. The building is known for many technical and social omissions.

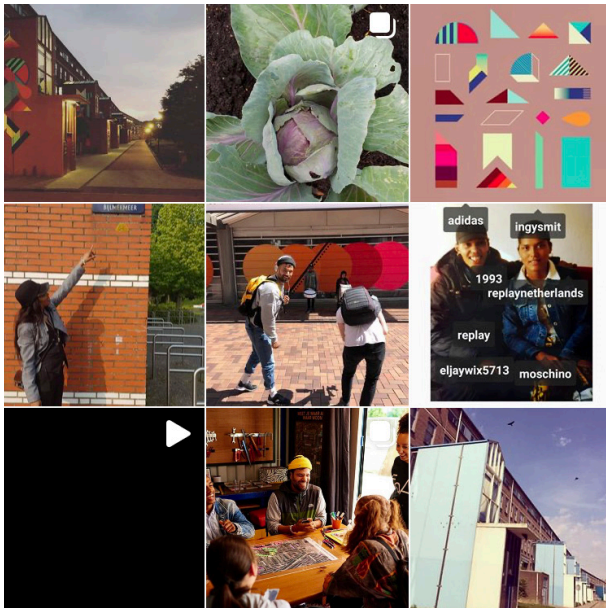
The architects had the utopian idea to design small scale architecture resulting in a better living environment. It was a counter reaction on the CIAM principles. A movement in the decades before in which a lot of the mega-structures of the Bijlmermeer were built.

The mid-rise building failed due to its utopian perspective on circulation. It led to so many problems that it was renovated only 2 years after it was built.

Methodology

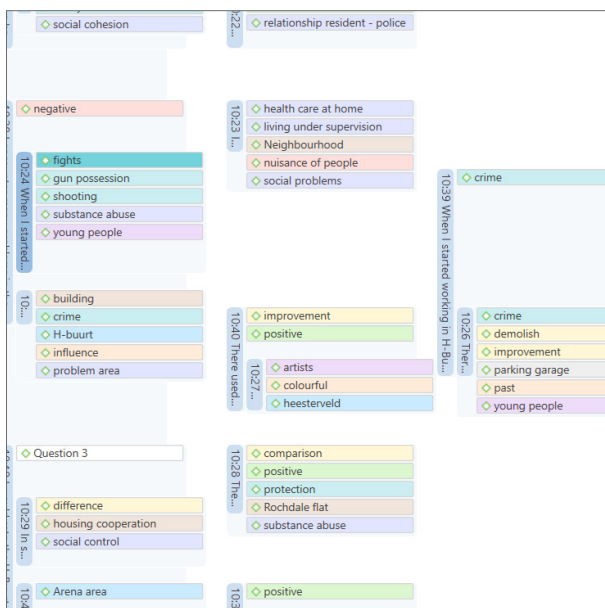
Collective

1. Social media research



Visual and textual social media were used to analyze users of the area that we did not speak to. For example Instagram - visual - and facebook community groups - textual - .

3. Coding: Atlas.ti



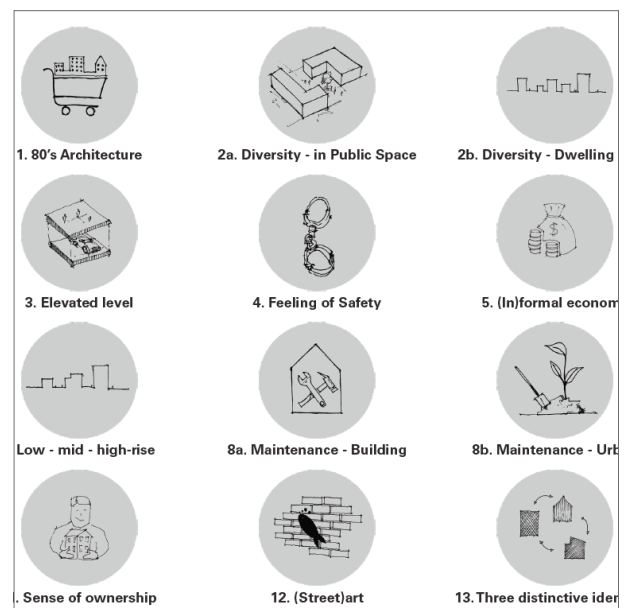
The information was documented and coded. This made it possible to do quantitative and qualitative analysis.

2. On site interviews



Four stakeholders - municipality, makers, owners and users - were interviewed about the 3 locations in the H-Buurt. Resulting in similarities and differences in stakeholders' perspectives.

4. Collective conclusions



The research has resulted in collective conclusions on 14 different themes. which can be found in the p1 report.

Methodology

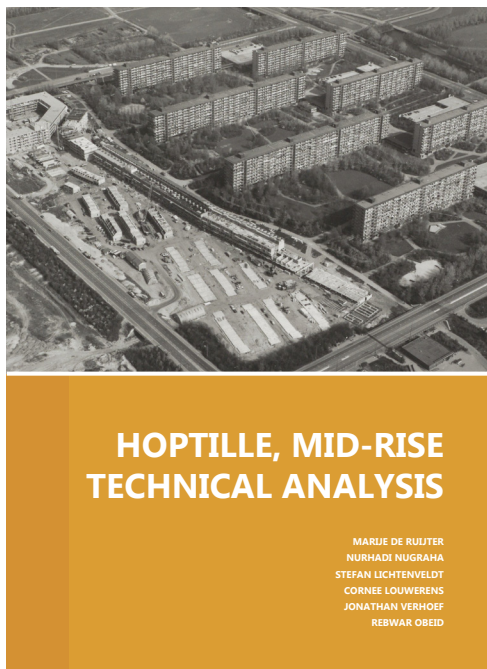
Semi collective & individual

The collective research resulted into understanding the different stakeholders. At the same time study was insufficiently complete to start designing regarding to the personal theme stigma to charisma.

Therefore additional research was needed. This has mainly been done by these 3 documents, focussed on the past, present and future.

Large housing estates: ideas rise, fall and recovery provided insight into the bigger picture than the H-buurt. And has been beneficial during the first phase of research by design because it responds to the problems of the specific location Bijlmermeer.

Together with 5 fellow students, we made a technical analysis of the building. Resulting in understanding skin, structure and services. Understanding the existing building is essential to be able to make interventions



Hoptille, Midrise technical analysis
Semi-collective - Present

Finally, the southeast structure plan that describes the ambitions of the municipality. Among other topics such as safety and densification.



The Bijlmermeer and beyond
Frank Wassenberg (2013) - Past



Masterplan zuidoost 2021 - 2040
Municipality of Amsterdam, 2021 - future

Additional research

Statistics

The research method based on interviews entails a relatively large degree of subjectivity. The truth is obscured by the different opinions within stakeholders or between stakeholders. In order to position myself better, I started looking at statistics.

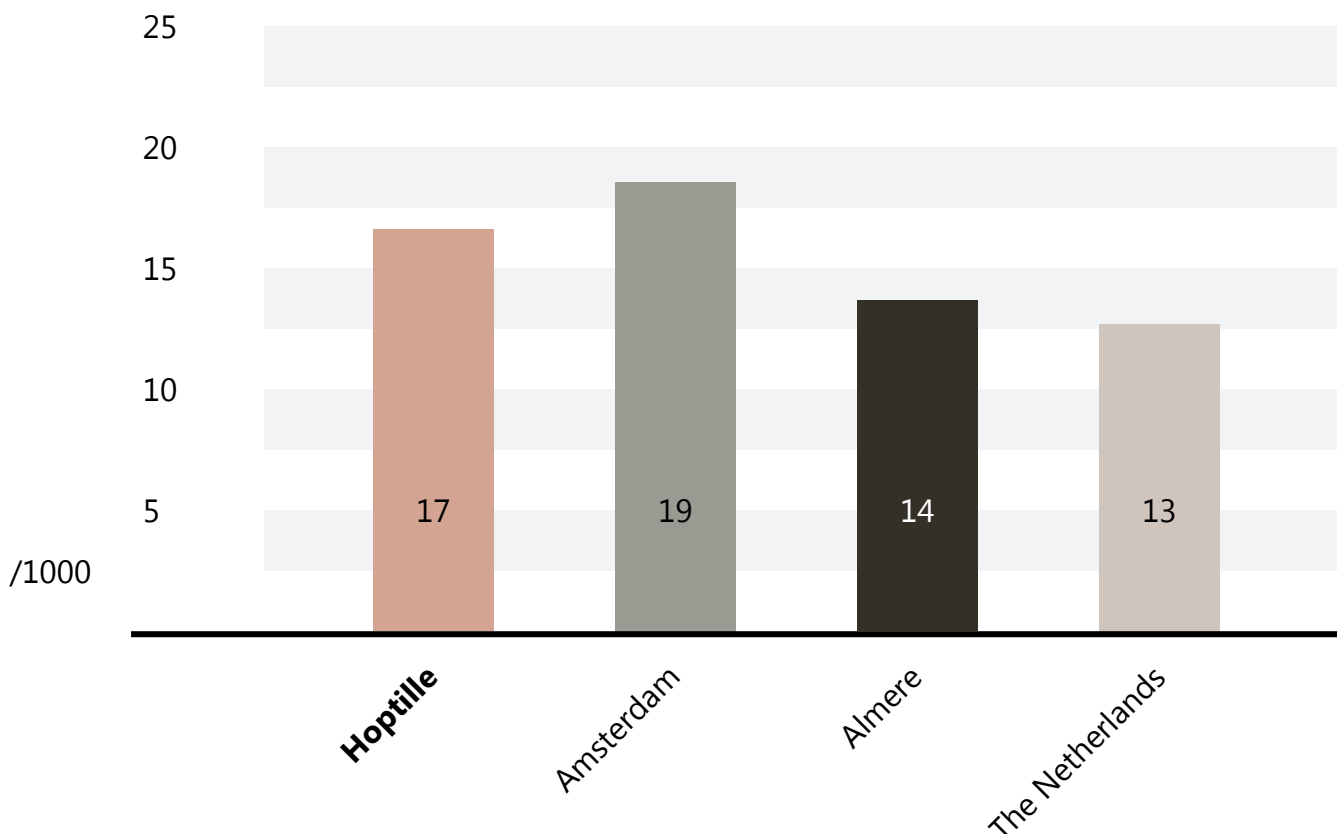
This objective method compares 4 locations with each other. Hoptille - the project location -, Amsterdam - the city in which Hoptille is located -, Almere - the city I come from, serving as a frame of reference for myself to put the statistics into perspective -, and the Netherlands - serving as the basis for the overall standard -

The outcomes resulted in confirmation, clarification, and surprise. For example, statistics confirm that the average gross annual income in Hoptille is very

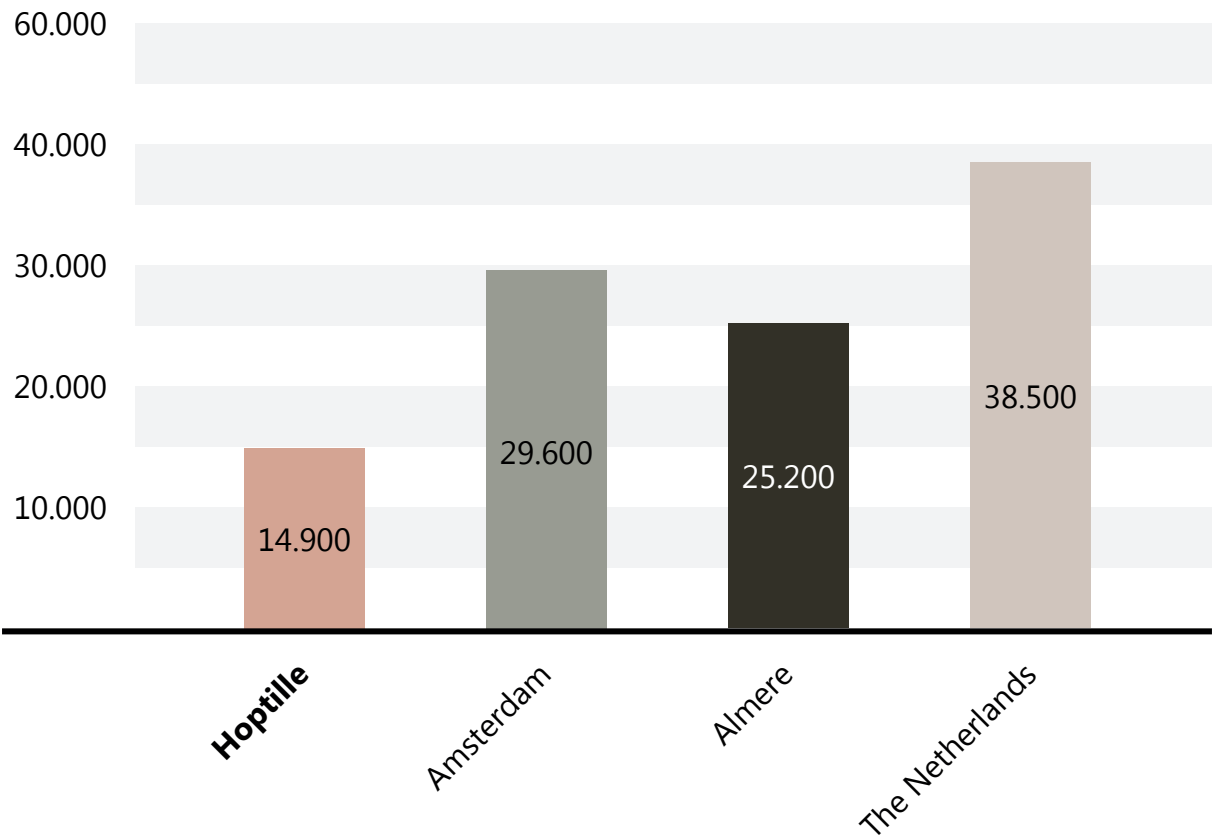
low. Diagram C clarifies the frequently mentioned aspect in the interviews that 'many' residents of foreign origin live in Hoptille. Indeed, hoptille differs significantly in population native, western or migration. Finally, statistics negate the aspect of safety. This frequently mentioned aspect is higher than the average in the whole of the Netherlands, but when we compare it with Amsterdam as a whole, it appears that Hoptille scores better with regard to incidents.

In addition to the three diagrams in the P4 report, I used statistics for address density, housing value, purchase-rent ratio, marital status, age structure, energy consumption, etc. This also helped me to position myself as the 3 elaborated diagrams, but also to be able to formulate my aims and to test interventions.

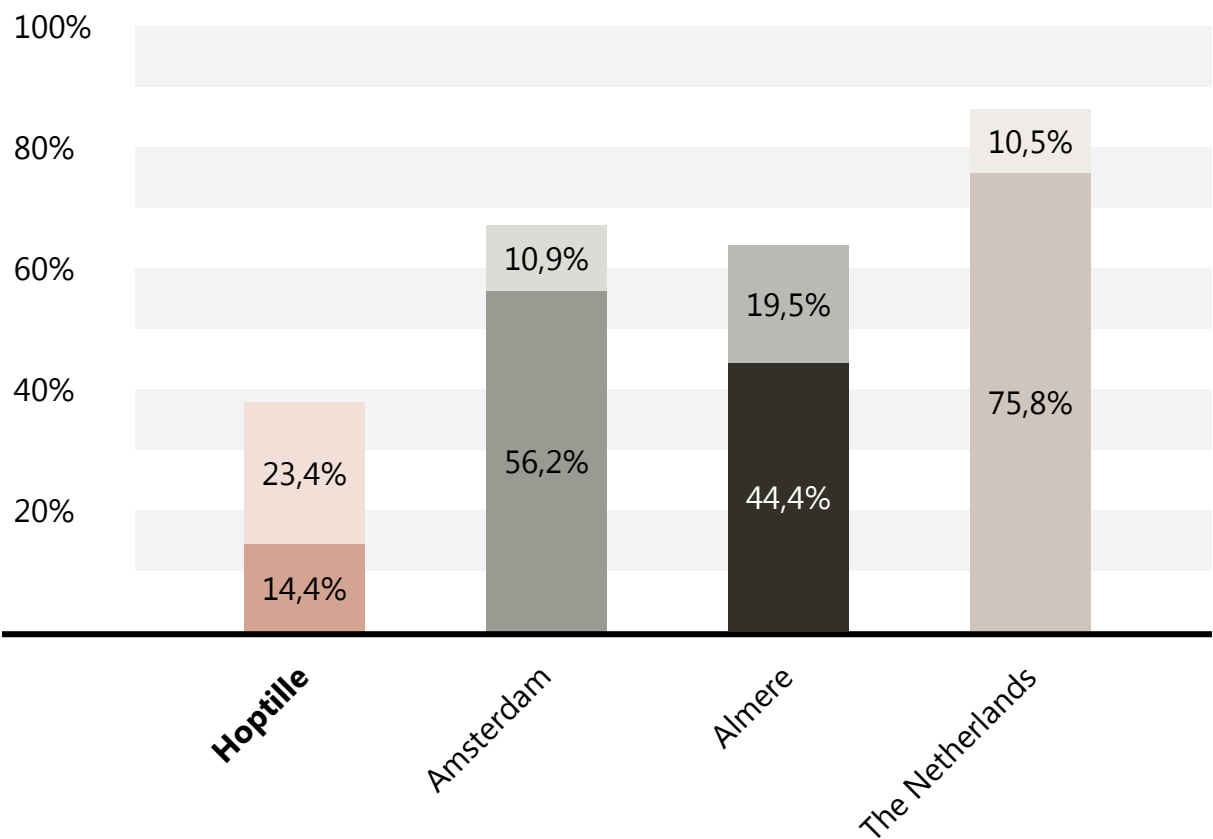
A. Theft, Destruction, Violent and Sexual Crimes



B. Average gross annual income

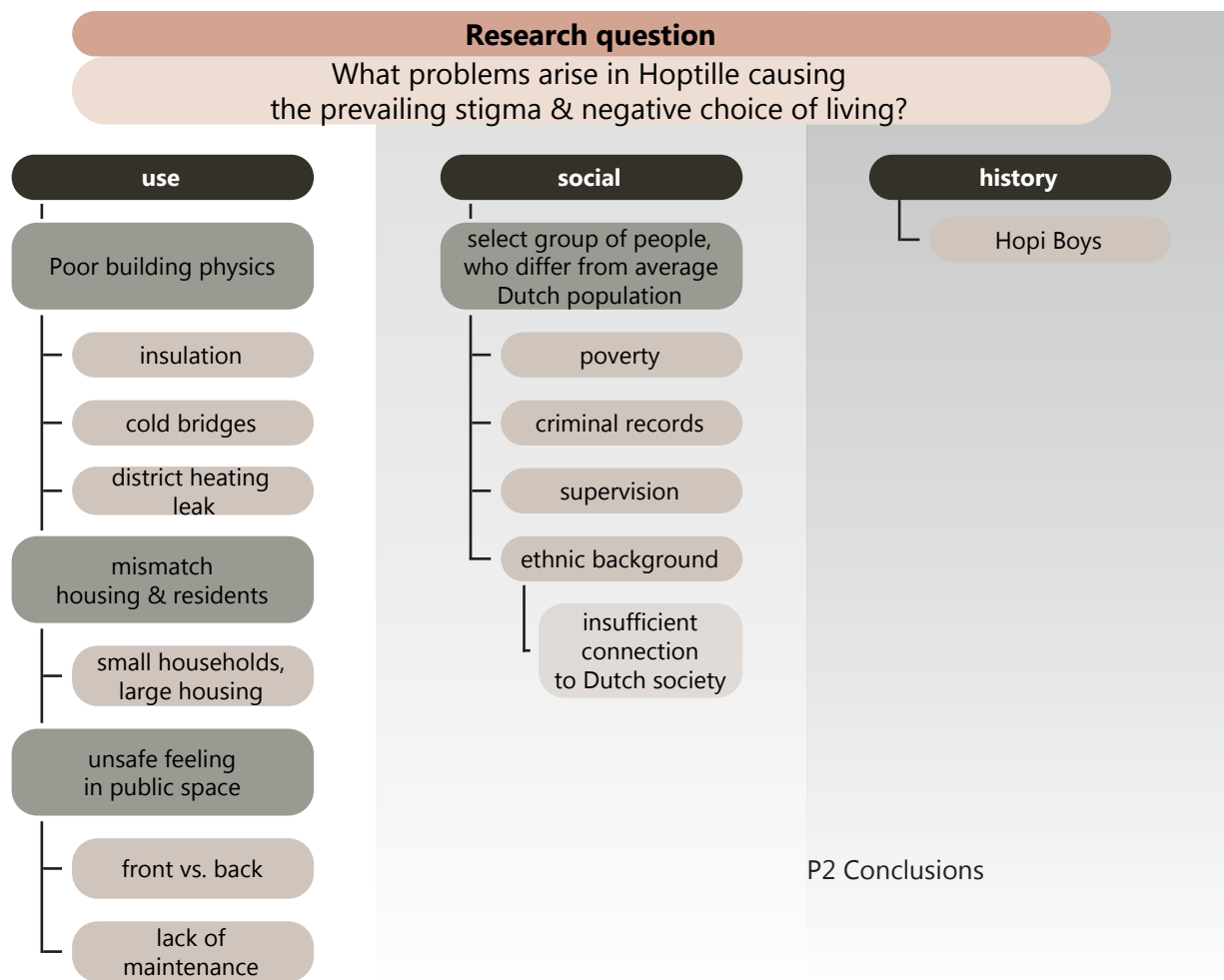


C. Native, western or migration





Research conclusions



The collective research has been used to answer the research question. This conclusion was used during the P2 and P3 presentations.

Towards the P4 presentation I have reflected whether my research question matched the design proposal, or that my design project answered another approach. I came to the conclusion that the research question was still accurate and matches well with the design proposal.

On the other hand, I was not completely satisfied with the conclusions which I formulated during the P2, answering the research question. These were in my opinion not fully effective, did not give a complete answer and were insufficiently balanced.

Three things in particular had to be improved.

- 1) Conclusions as a mismatch of housing compared to the small households is a relevant conclusion, but does not cause the stigma, while the diagram above suggests it does.
- 2) The select group of residents causing the stigma was too dominant, it seemed like this was the main topic while, as the new documented conclusions show, there are also other relevant aspects causing the stigma. The new documented conclusions are more well balanced.
- 3) The conclusions are now divided per stakeholder, this distinction shows the different motives. Separating conclusions provides more clarity.

The redefined P4 conclusions (pg 14 - 18) are provided with a quote that validates the quality/challenge.

Research conclusions

What causes the **stigma**?
According to Outsiders



Safety

"I don't like this area, it is like a ghetto with lots of crimes happening."



Select group of residents

Residents of Hoptille are ex-prisoners and people who live by supervision. There is no (or just one family) in this neighbourhood that can be described as a normal Dutch family



Building physics

The lady lived here for a short period (approximately 3 months) but left quickly because of the quality of the house.



Maintenance

At the rear, both the gardens and the public outdoor space are poorly maintained. The balconies are full of rubbish from the residents. This ensures an neglected backside of Hoptille.



Circulation & Orientation

The mother also thinks it is a place where thieves will be because it is out of sight of many people.



80's architecture

She doesn't like the Hoptille apartment building. She doesn't like its architecture, in particular the stairs in front of it, the colours, some entrances that are tucked away in corners, and the 'lullige' blue garden fences.

Research conclusions

What is **valued** by insiders?



Location

I have a very nice house and the neighbourhood is very pleasant. The shopping centre is around the corner, you have highways, you have the park around the corner, you have the arena area around the corner.



Small scale architecture

I like the small houses. The people living there have their own gardens.



Greenery

The only positive aspect she mentions is the presence of a lot of green in the neighbourhood.



car-free zone



Social services

Research conclusions

What could be **improved**?
According to insiders



Apartment sizes



Greenery

He would like to see that this lawn is better used, for example for a children playground.



Circulation & Orientation

Unclear house numbering, messy design of porches, dark corners, many doors in corners, inside of the building, unsafe around the building



Building physics

The house has several defects. The house is smelly due to a problem with the drainage. The flushing of the toilets from all upper floors is clearly audible in the house.

Research conclusions

What could be **improved**?

According to Ymere, municipality & government



Sustainability

By 2050 the energy supply must be almost entirely sustainable and CO2 neutral. In December 2020, the heads of government of the European Union (EU) agreed to strive for a European CO2 reduction target of 55%.

<https://www.rijksoverheid.nl/>



Safety

What do we want to improve? Growing up and living in Zuidoost means that you can live and walk the streets well and safely;
Masterplan Zuidoost



Densification

In 2020, around 90,000 people will live in Zuidoost. Until 2030 there will be between 30,000 and 39,000 homes.

Until 2030 the expectation is that more than 60,000 new inhabitants will live in Amsterdam Zuidoost.

Masterplan Zuidoost Programma



Inclusive environment

Goal 2040: Zuidoost is a pioneer and an example of the inclusive, diverse, energetic society that the Netherlands aspires to be, in which everyone is involved and can participate. People from many cultures, backgrounds and different socio-economic positions not only live next to each other, but above all with each other.

Masterplan Zuidoost



Attract Outsiders

Goal 2040: Many of the new houses are occupied by people who used to live somewhere else in the district or in another part of the city.

Masterplan Zuidoost Programma



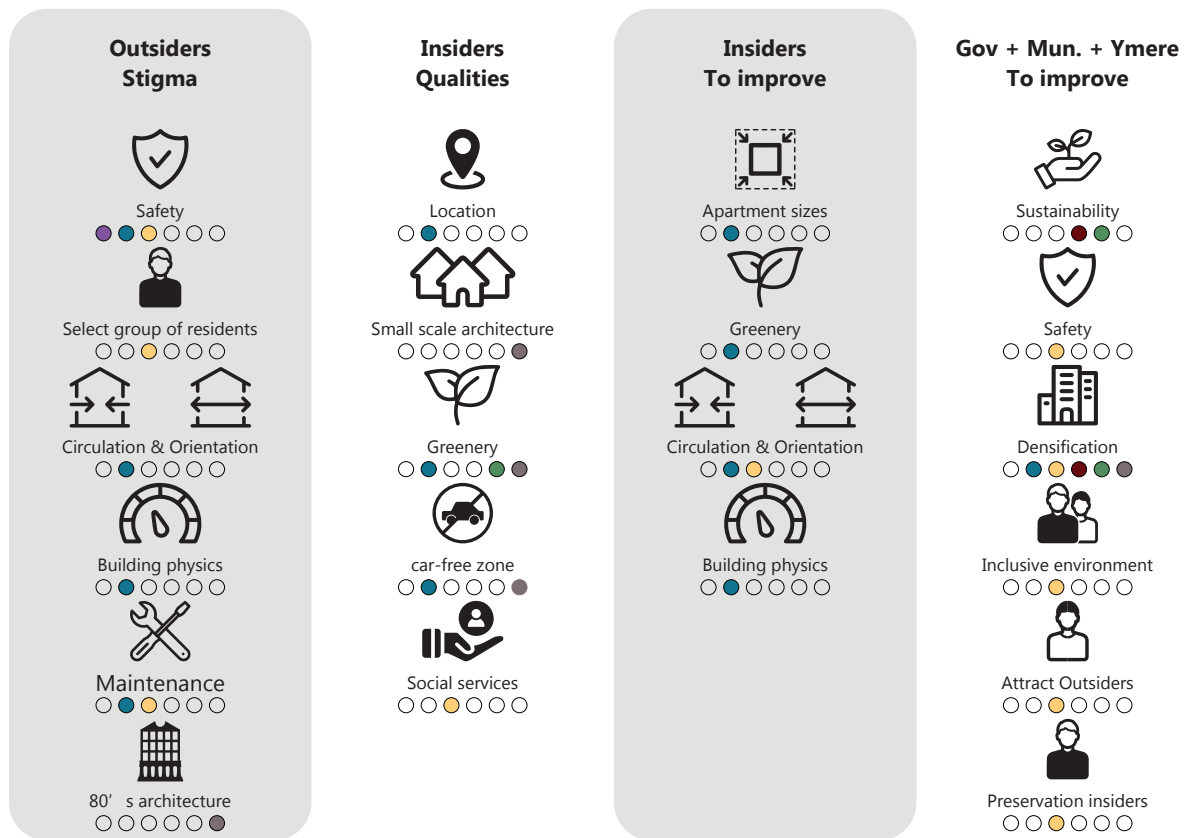
Preservation insiders

The district has maintained the social cohesion that is so characteristic of it. People with higher incomes can continue to live in Zuidoost. Current residents and entrepreneurs will be able to benefit fully from all developments.

Masterplan Zuidoost Programma

Research conclusions

By values



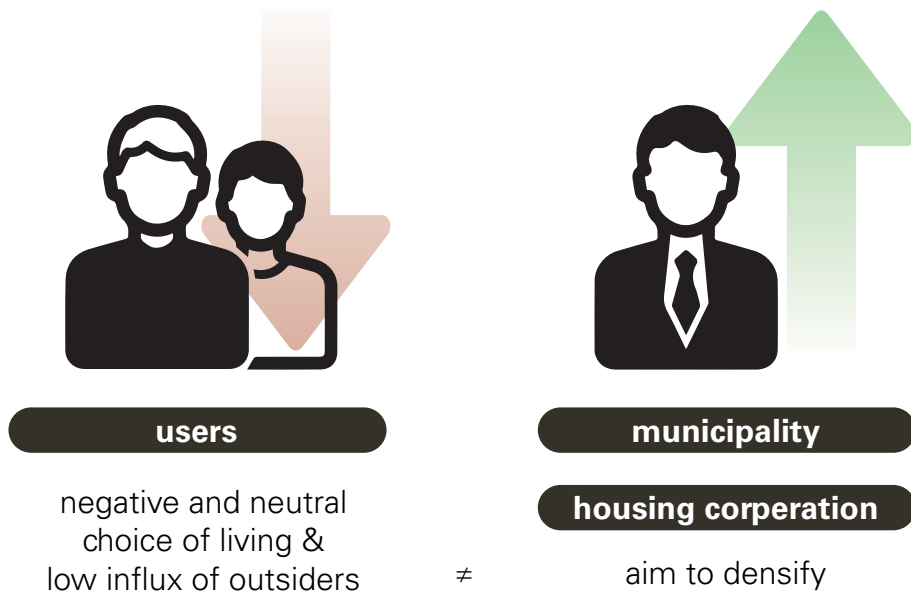
The primary values of all conclusions have been established. This provides insight into the interests of the various stakeholders. I am aware that many themes are related to multiple values. However, I have chosen to highlight only the core value in order to capture the essence.

The conclusions I have drawn from this are, firstly, that it was noticeable that insiders focus on the practical flaws,

related to the use value. While institutions such as housing corporation and municipality focus on major social issues. The challenges of the two target groups are therefore very far apart. This also visualizes that my project is best related to use, aesthetic and social values because these emerge most from the conclusions.

My objective further describes how these values are expressed in my design proposal

Problem statement



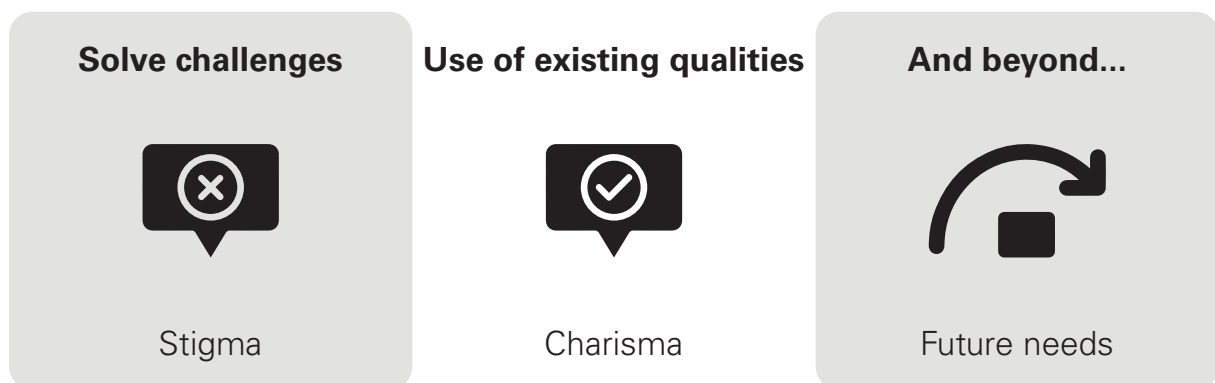
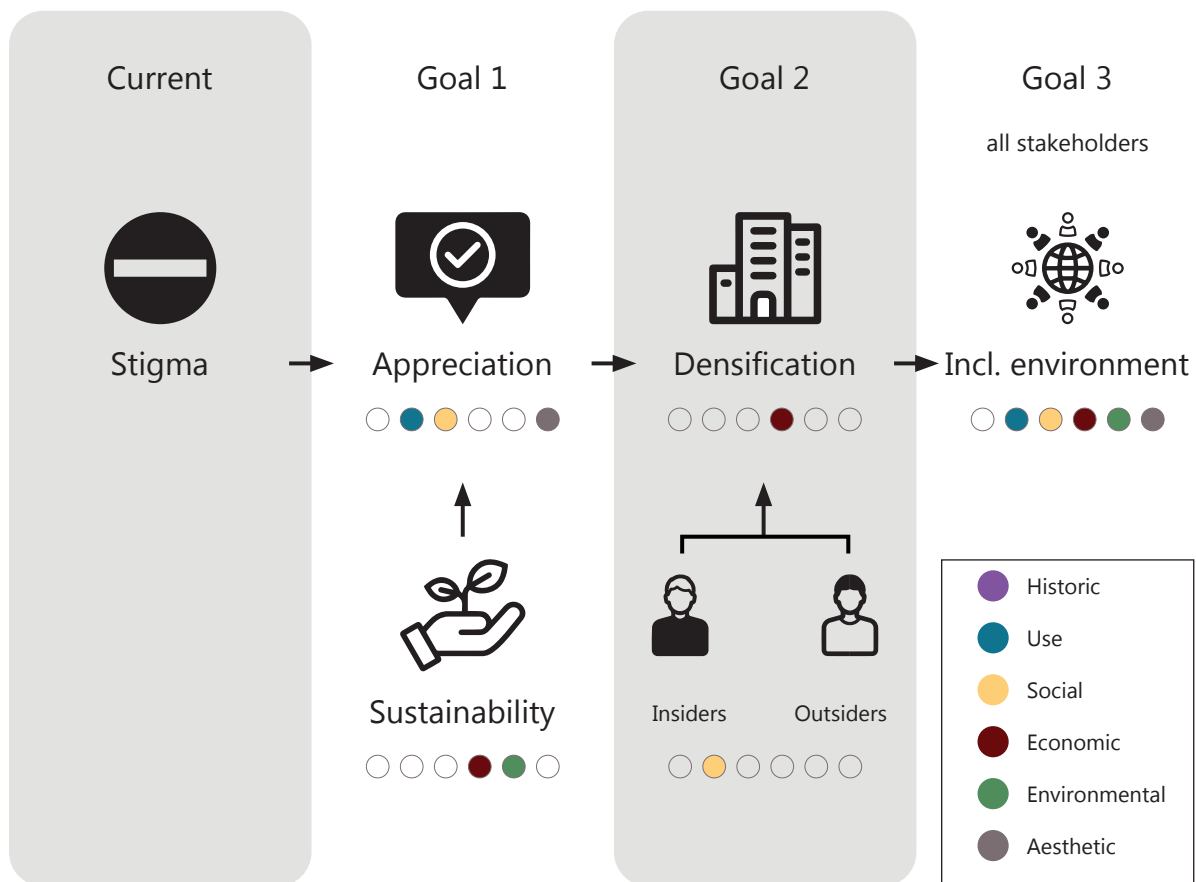
Design question

"How to transform the current neighborhood in such a way that both insiders and outsiders would live in Hoptille by a neutral or positive choice?"

During the interviews I noticed a big difference how insiders and outsiders perceive Hoptille. Insiders won't describe Hoptille as the ideal neighbourhood and are aware of the challenges. At the same time they do see the qualities the area offers. Outsiders tend to be much more negative. Almost none of them would consider living in Hoptille.

This doesn't match the ambitions of Ymere and the municipality to densify. The design question - "How to transform the current neighborhood in such a way that both insiders and outsiders would live in Hoptille by a neutral or positive choice?" answers this challenge;

Objective



As identified Hoptille has a Stigma. I came up with three goals. Step one is to create appreciation for the neighbourhood. This makes it possible to densify resulting in the final goal; creating an inclusive environment

Objective

The main focus during this project is appreciation, but what exactly is it and how will this be achieved? First and primary by solving the challenges Hoptille is facing at the moment. By doing so the beauty of Hoptille will already become visible.

This will be strengthened by empathizing the current qualities Hoptille already offers.

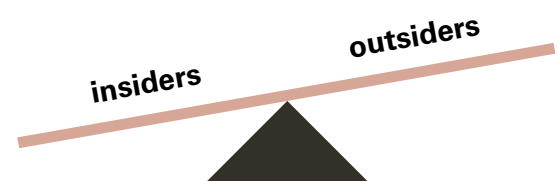
It will not only be a design which the current performance and appreciation, but also the future perspective will be taken into account.

To make this project succeed, it is important to take the interests of both stakeholders into account.



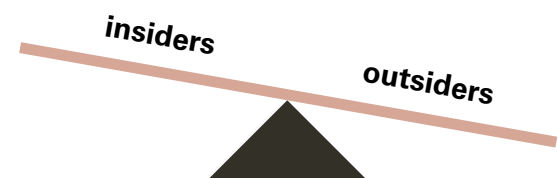
Aim:

balancing the interests of stakeholders:
preservation of identity & image
enhancement



Threat:

too small interventions won't change the
image of the neighbourhood



Threat:

too large interventions causing the loss
of identity and social disconnection of
residents to their neighbourhood

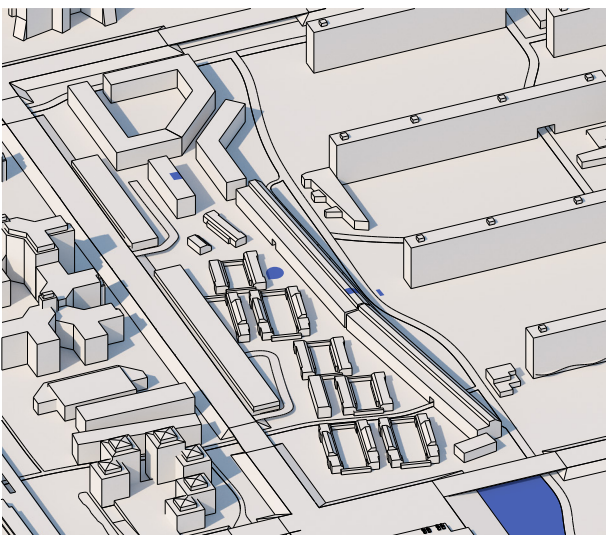
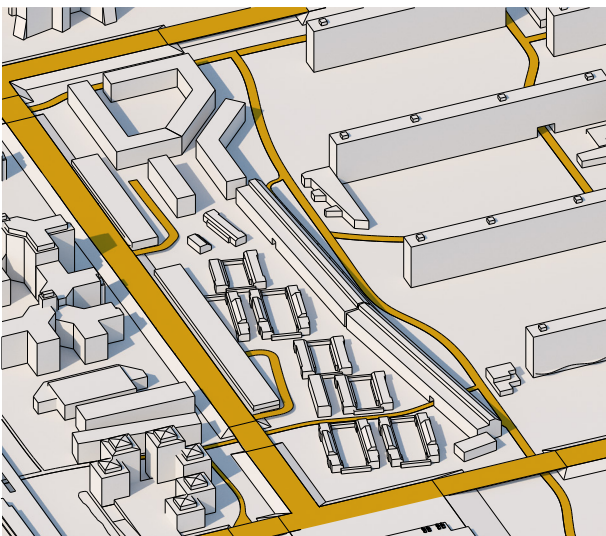
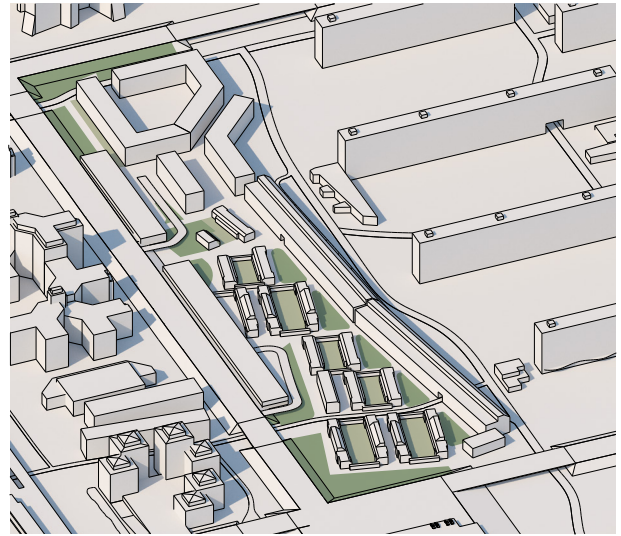
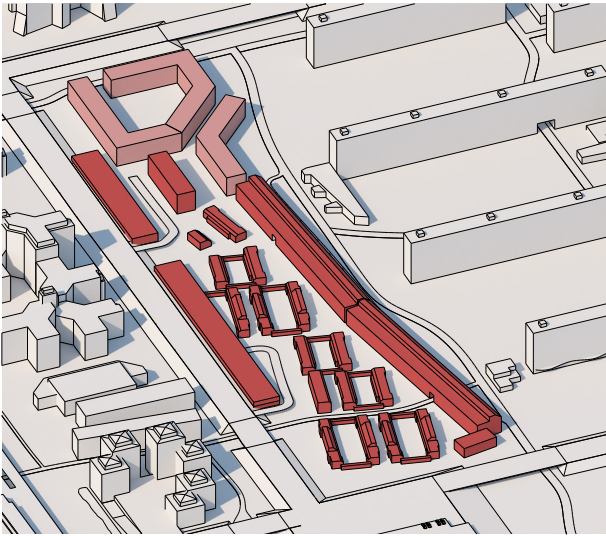


Threat:

Loss of (potential) heritage

Individual building analysis

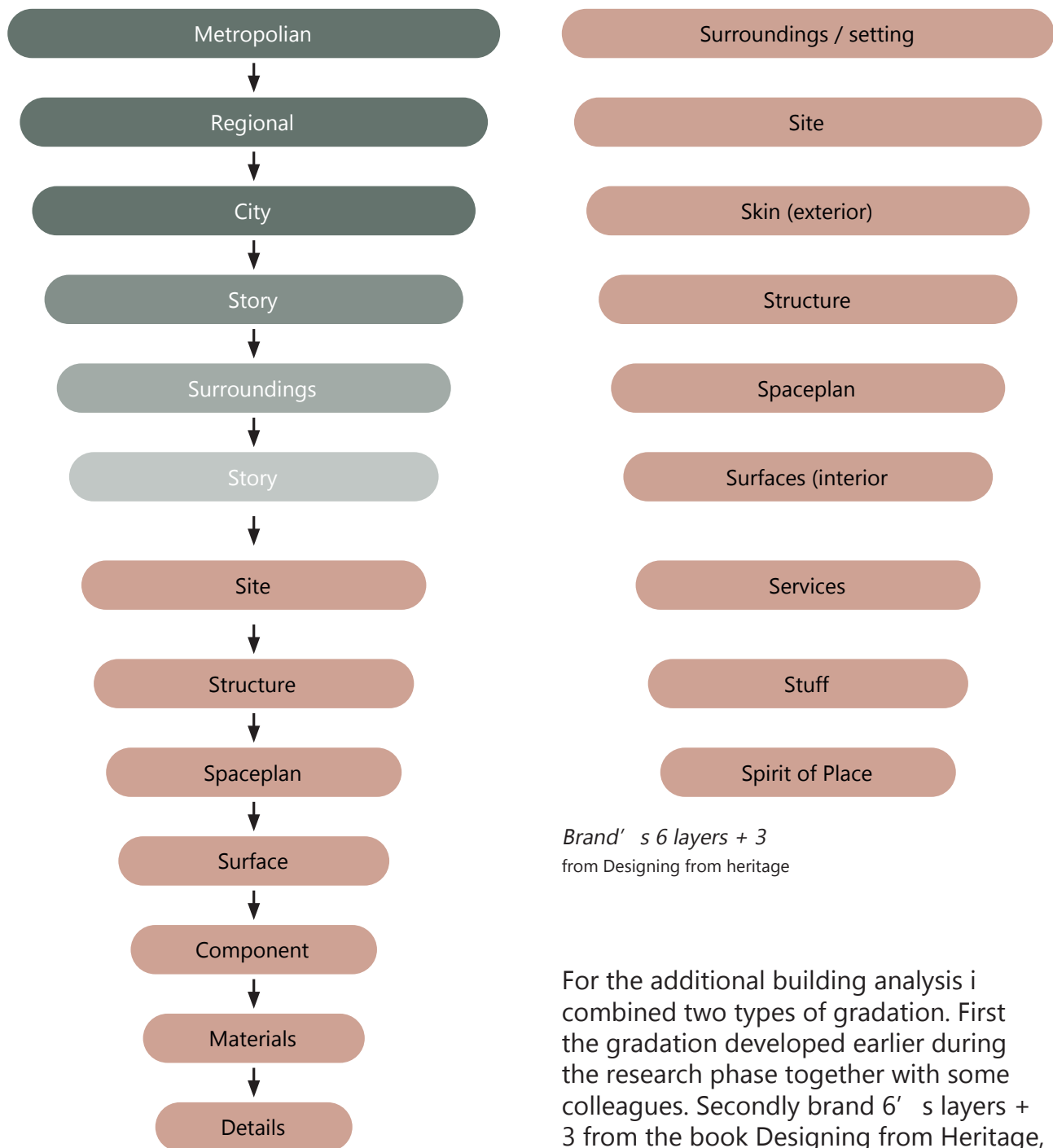
Method



For the P2 presentation the following 5 drawings were made as an additional urban analysis. This Approach was in my opinion minimalistic and did not provide to much additional information.

For this reason I assessed the building an its context by the different scales - defined during the the first semester - in combination with (literature).

Individual building analysis Method



Gradation of scales

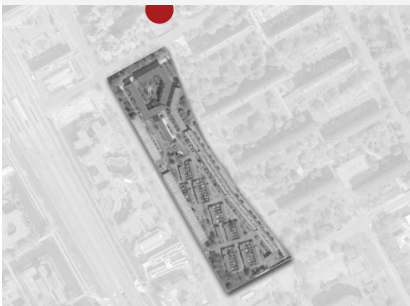
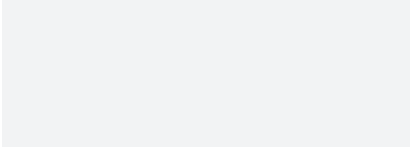
Brand' s 6 layers + 3
from Designing from heritage

For the additional building analysis i combined two types of gradation. First the gradation developed earlier during the research phase together with some colleagues. Secondly brand 6' s layers + 3 from the book Designing from Heritage, by Marieke Kuipers and Wessel de Jonge. I have chosen for the combination because not everything is addressed in the self-developed scheme. While it enhances its focus towards the skin. Which was one of the priorities during this research

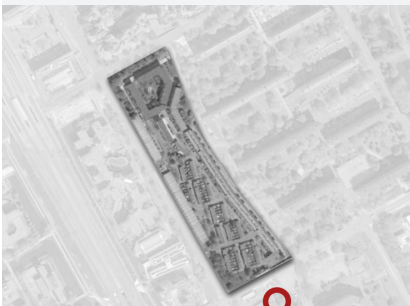
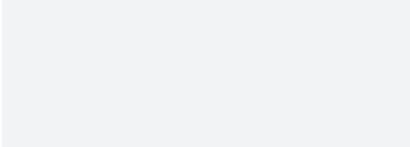
Individual building analysis

Surroundings & Story

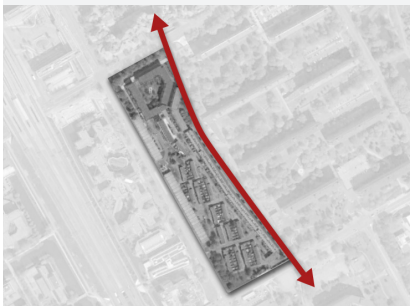
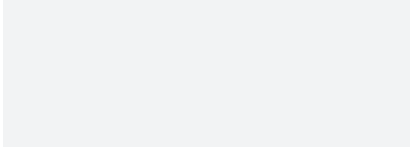
Surroundings



Hotspot Bijlmerplein
Metro- & train station and retail

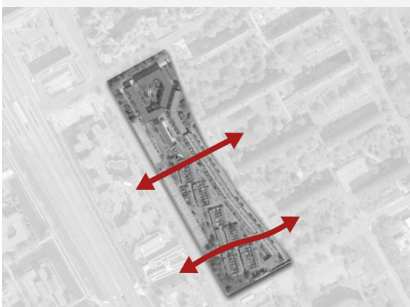
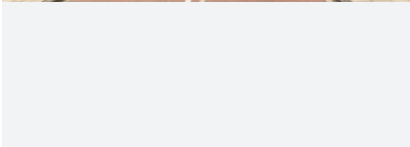


Potential hotspot Heesterveld
Metro station and creative hub

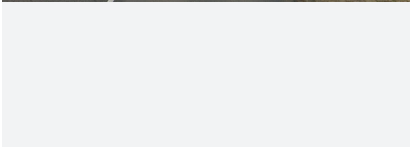


Connecting route, frequently used
Pedestrians & cyclists

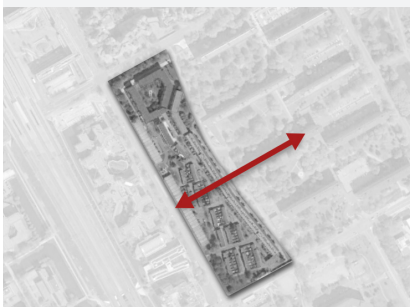
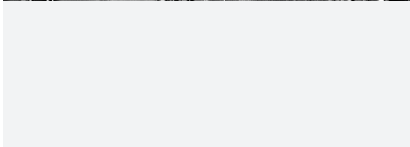
Story



Continuous routes
Pedestrians & cyclists



Elevated roads
Cars



Reaction on CIAM Principles;
Small scale architecture
Wall deviding low-rise from high-rise

Individual building analysis

Site

Buildings



Mid-rise housing
North-east
1982



Low-rise housing - single family
Middle
1982



Parking garage
South-west
1982

Greenery



Greenery 'rechte H-buurt'
North-east
1970



Triangular 'inner' gardens
Middle
1982



Private gardens
Middle
1982

Infrastructure



Footpath, bicycle-path & highway
North-east
≈ 1970



Car free zone
Middle
1982



Foppingadreef
South-west
≈ 1970

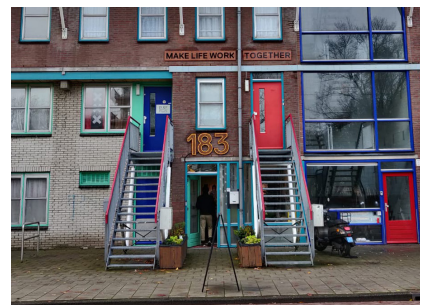
Services



Housing: 2.378 addresses*
1982



BuurtWerkKamer - de handreiking



Hoptillehuis 183

Individual building analysis

Components

North-east



Stairwell entrance
North-east facade
1984



Underpasse
1982



Recessed facade
North-east facade
1982



Exterior staircase
North-east facade
1984



Balcony
North-east facade
1984



Glass facade
North-east facade
1984

South-west



Rectangular balcony
South-west facade
1982



Circular balcony
South-west facade
1982



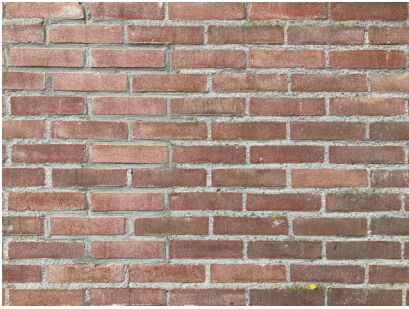
Concrete slabs
South-west facade
1982



Entrance
South-west facade
1982-1984

Individual building analysis

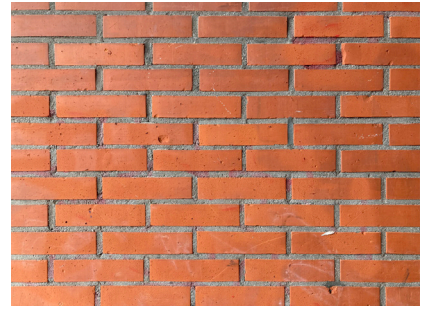
Materials



Brown brick
Cladding
Facade, North-east
1982



White brick
Cladding
Facade, North-east
1982



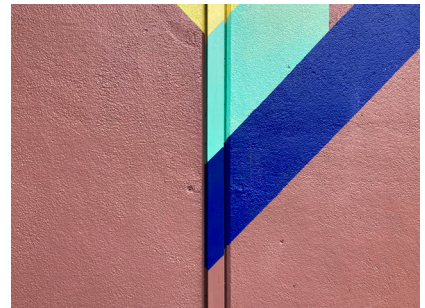
Orange brick
Cladding
Facade, South-west
1982



Raw concrete
Structure
Full building
1982 - present day



Semi smooth concrete
Components
Balconies & concrete slabs
1982 - present day



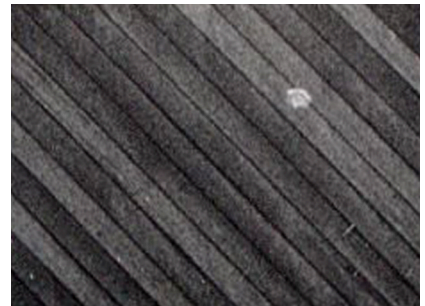
Painted concrete
Component
Entrance
1984 - present day



Wood wool cement board
Cladding
Underpasses roof
1982 - present day



Yellow & white tiles
Cladding
Underpasses
1982 - present day



Wood
Cladding
Entrance
1982-1984



Wood outer-, Aluminium inner-
Window frame
Frame
1982 - present day



Double glazed windows
Window frame
Window
1982 - present day



Stainless steel
Component
Exterior staircase
1984 - present day

Position - Urban

Value assessment



Mid-rise

Historical: ★★★★★ Early Sjoerd Soeters
 ★★★★★ Reaction on CIAM
 ★★★★★ 80' s architecture

Use: ★★★★★ Front- back
 ★★★★★ Fitting to user
 ★★★★★ Circulation

Environmental: ★★★★★ Embodied energy
 ★★★★★ Building physics

Economical ★★★★★ Embodied energy
 ★★★★★ Density

As a conclusion of the analysis, the mid-rise building will be preserved. The prior reason is its historic value for 4 reasons: physical representation on reaction on CIAM principles, early Sjoerd Soeters, 80s architecture, and lastly for its rarity value.

Additionally the environmental and economic value where taken into account.



Low-rise

Historical: ★★★★★ Early Sjoerd Soeters
 ★★★★★ Reaction on CIAM
 ★★★★★ 80' s architecture

Use: ★★★★★ Private garden
 ★★★★★ Fitting to user

Environmental: ★★★★★ Embodied energy
 ★★★★★ Building physics

Economical ★★★★★ Embodied energy
 ★★★★★ Density

Even while the low rise buildings are also designed by Sjoerd Soeters and Kees Rijnbout. These will be replaced by new mid rise buildings. The historic values where balanced against its efficiency and future needs. The new design must imply space for private greenery, one of the qualities it offered.

Position - Urban

Value assessment



Parking garage

Historical: ★★ ★ Early Sjoerd Soeters
 ★★ ★ Reaction on CIAM
 ★★ ★ 80' s architecture

Use: ★★ ★ Parking, car free zone

Env.: ★★ ★ Embodied energy
 ★★ ★ Building physics

Economical: ★★ ★ Embodied energy
 ★★ ★ Density

The parking garage will be reused, not for its historic value but because it is well positioned and functions well. The utopian idea of a car-free world is an illusion short term. It is one of the primary sources of transport. Hoptille, being well connected to the A9 highway should for this reason in its new design offer enough parking places. Its approach however should be reconsidered.



Public space

Historical: ★★ ★ Elevated roads
 ★★ ★ Triangulair courtyards

Use: ★★ ★ Bicycle highway
 ★★ ★ Car free zone
 ★★ ★ Greenery

Environmental: ★★ ★ Greenery

Economical: ★★ ★ Density

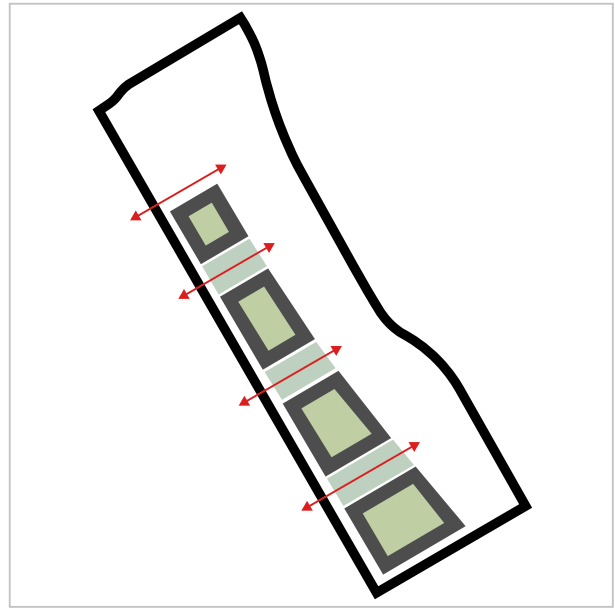
Where buildings have historic value, also the public space carries historic value. The orientation of the building has been changed after the renovation. Currently the northeast side is dominant, resulting in a neglected south-west side. The new proposal should respond to this making it more balanced. More activity throughout Hoptille would benefit the feeling of safety.

1. Urban concept

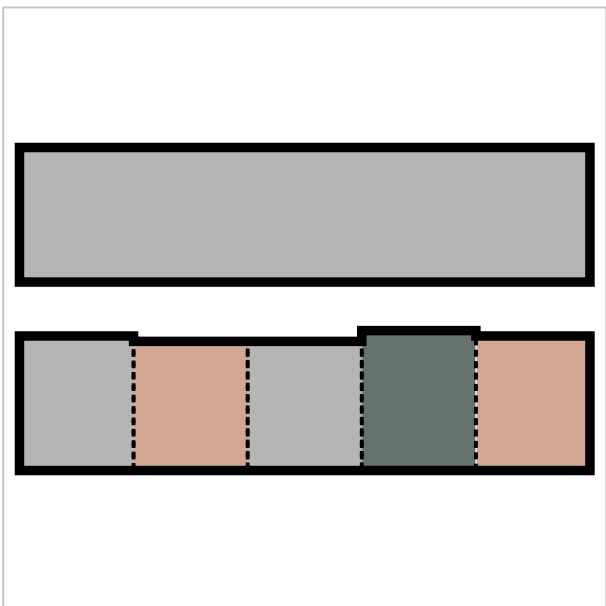
Replacement low-rise



Low-rise



Private courtyards



Small scale architecture



Small scale initiatives + social rent

The new building types which will be positioned on the demolished lowrise buildings will be perimeter blocks. According to Jan Gehl this type offers different scales of community. Secondly it provides private greenery which results in safe courtyards for residents in an area which is perceived as unsafe. This would fit well to families with children.

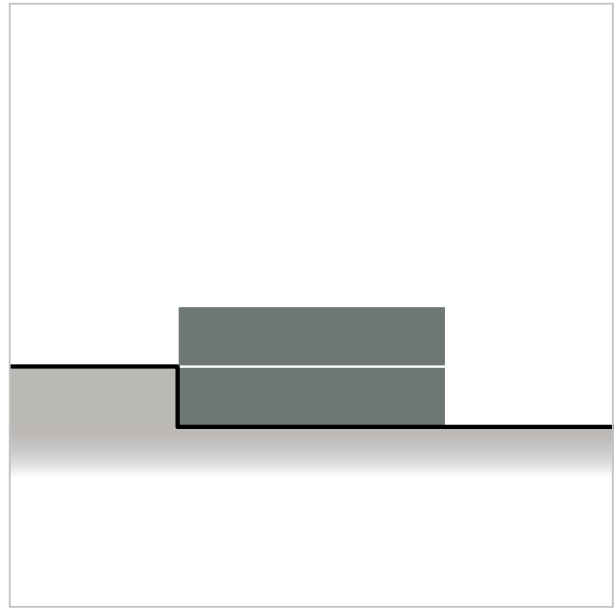
One of the qualities of the existing location is its small scale architecture. Perimeter blocks by themselves are not small. For this reason these will articulate differently per fragment. Lastly both social rent as well as small scale initiatives are incorporated. Matching both stakeholders. Prevent segregation but also attract outsiders. Small initiatives is one of the 5 solutions for the Bijlmer.

1. Urban concept

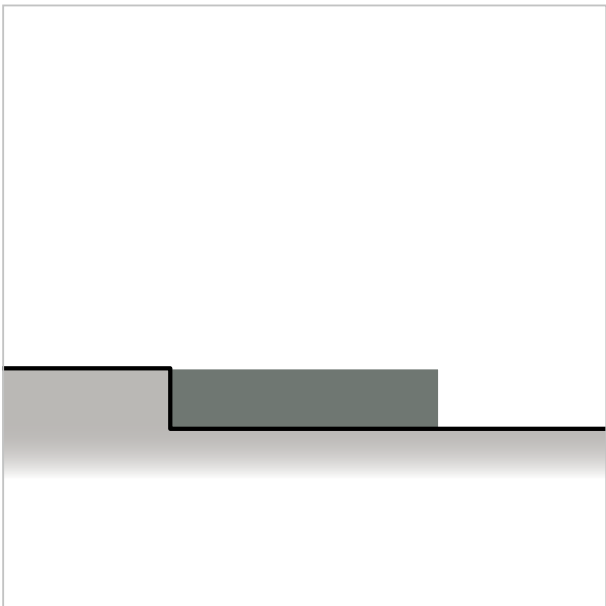
Parking garage



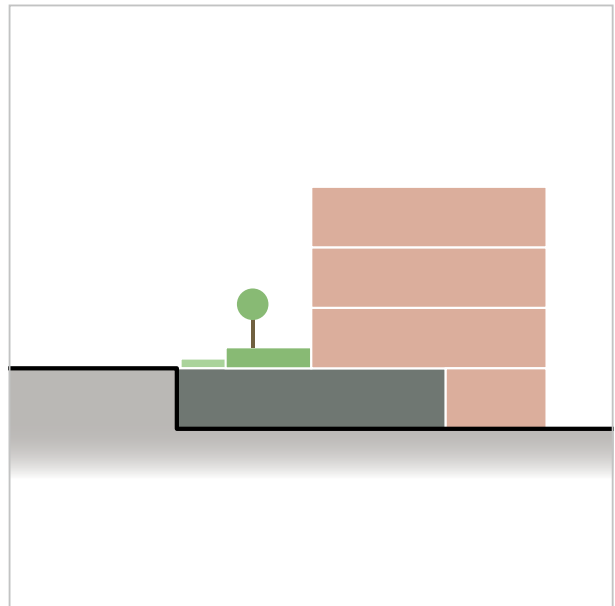
Parking garage



Existing



Removal first floor



Add housing and greenery

The current parking garage forms 'the back'. The 2 levels create an insufficient connection between Hoptille and the Foppingadreef. For this reason the first floor will be removed so it would not act like a barrier. To make this unattractive space more usefull and efficient it will be enclosed by greenery and housing. to provide daylight acces there will be skylights troughout the park.

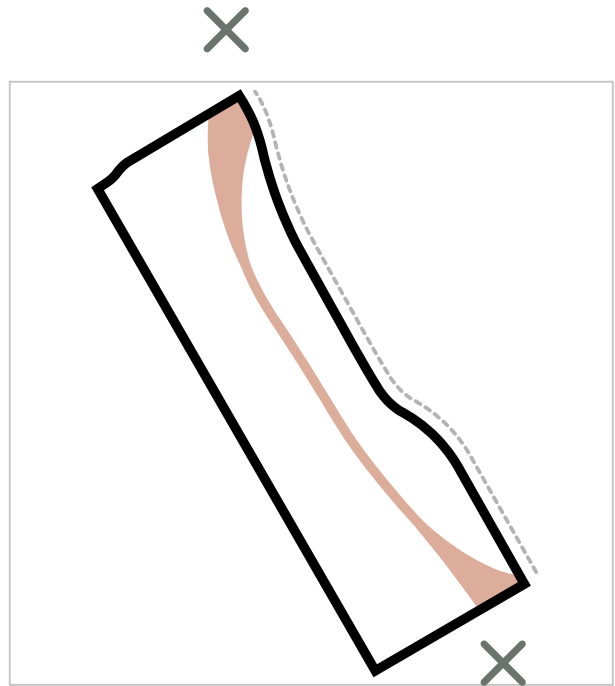
The parking spaces will become partly private and partly shared parking. One shared car reduces an average of 3 to 5 other cars (www.crow.nl/) If a similair parking pressure is taken into account 855 cars are needed (exsiting 450 x 1,9 densification factor). Dividing its reductionfactor, 213 cars are needed. The design offers a total of 264 parking spaces.

2. Orientation

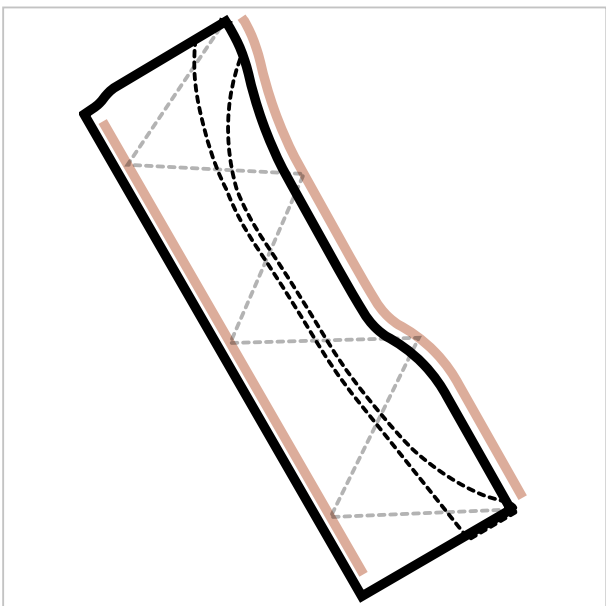
Public space, routes



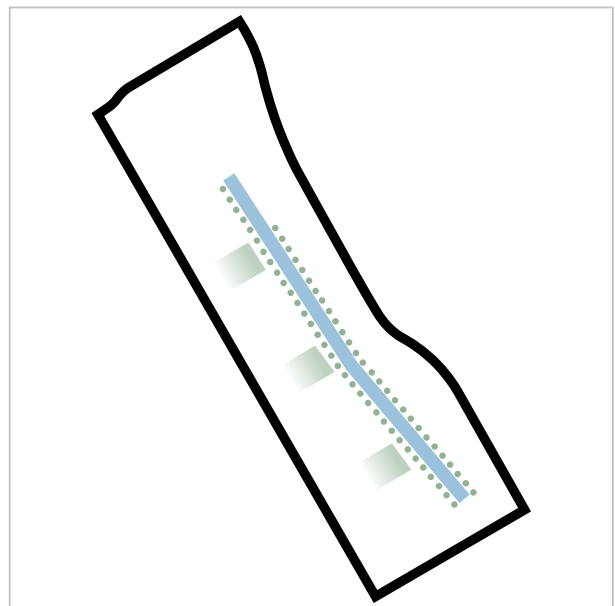
Parking garage



Central passageway routing



Two complimentary routes



Blue green infrastructure

The route on the northeast side of Hoptille creates an connection between two Hotspots. Bijlmerplein and potentially Heesterveld. The design proposal offers a primary route throughout Hoptille making it more lively. Supported by two complimentary routes along the borders of Hoptille. A centre route could only act if it is surrounded.

All 3 routes are supported by a blue green infrastructure, each in their own way making all routes distinguishable from each other giving the user the choice of their preferred route. The blue green infrastructure is first of all pleasing for the eye. Secondly it provides cooling during the summer, and as water buffer.

2. Orientation

Public space, route SW



Existing dike route
from Google maps



Design proposal dike route

The dikebound route is the most remote which feels most like a park with its green substrate. It is perfect for walking with your dog for example and results in an much better connection with the foppingadreef

2. Orientation

Public space, route SW



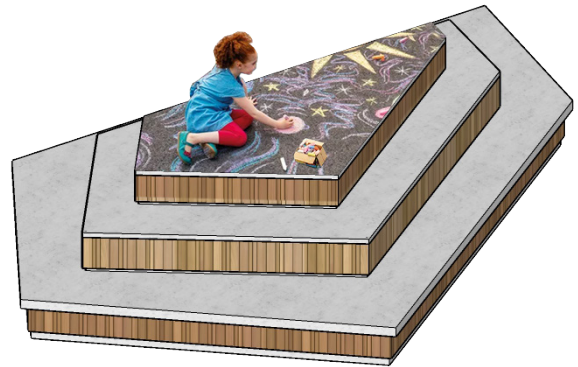
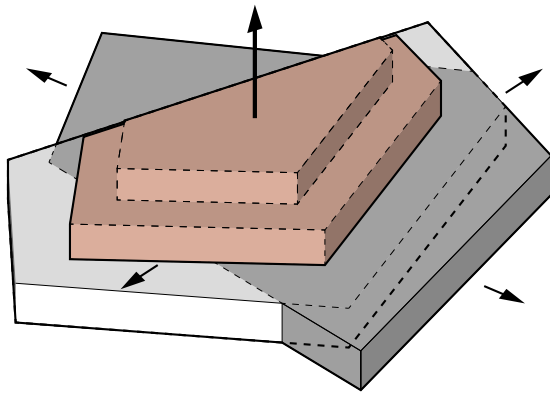
Existing northeast route



Design proposal northeast route

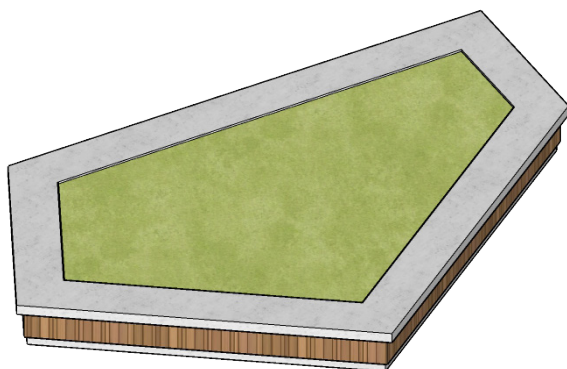
1. Urban concept

Public space, route SW



Differ in shape and height

Playground



Extensive greenery



Intensive greenery

The northeast route is currently the most efficient route resulting in a lot of fast traffic, both bike and pedestrians. The ideal scenario would be to offer a place which provides also slow traffic. The route should become less efficient and more of a meeting space.

The answer was found in 'blocks' which can differ in size and height offering diversity. There are in total 3 types of blocks. two offering greenery - extensive and intensive - allowing biodiversity but at the same time also overview. Third, playgrounds which can even be used during events like de 'rommelmarkt' .

2. Orientation

Public space, route middle - Hoptillekade



Design proposal middle route



Design proposal middle route

2. Orientation

Public space, route middle - Hoptillekade



Efficiency



Daylight access

Where the northeast route should be less efficient. The middle route should be more efficient in use, or at least act like it is more efficient and is the primary route. The hierarchy is shown at the entrance of Hoptille where the user is directed into the area by its pavement.



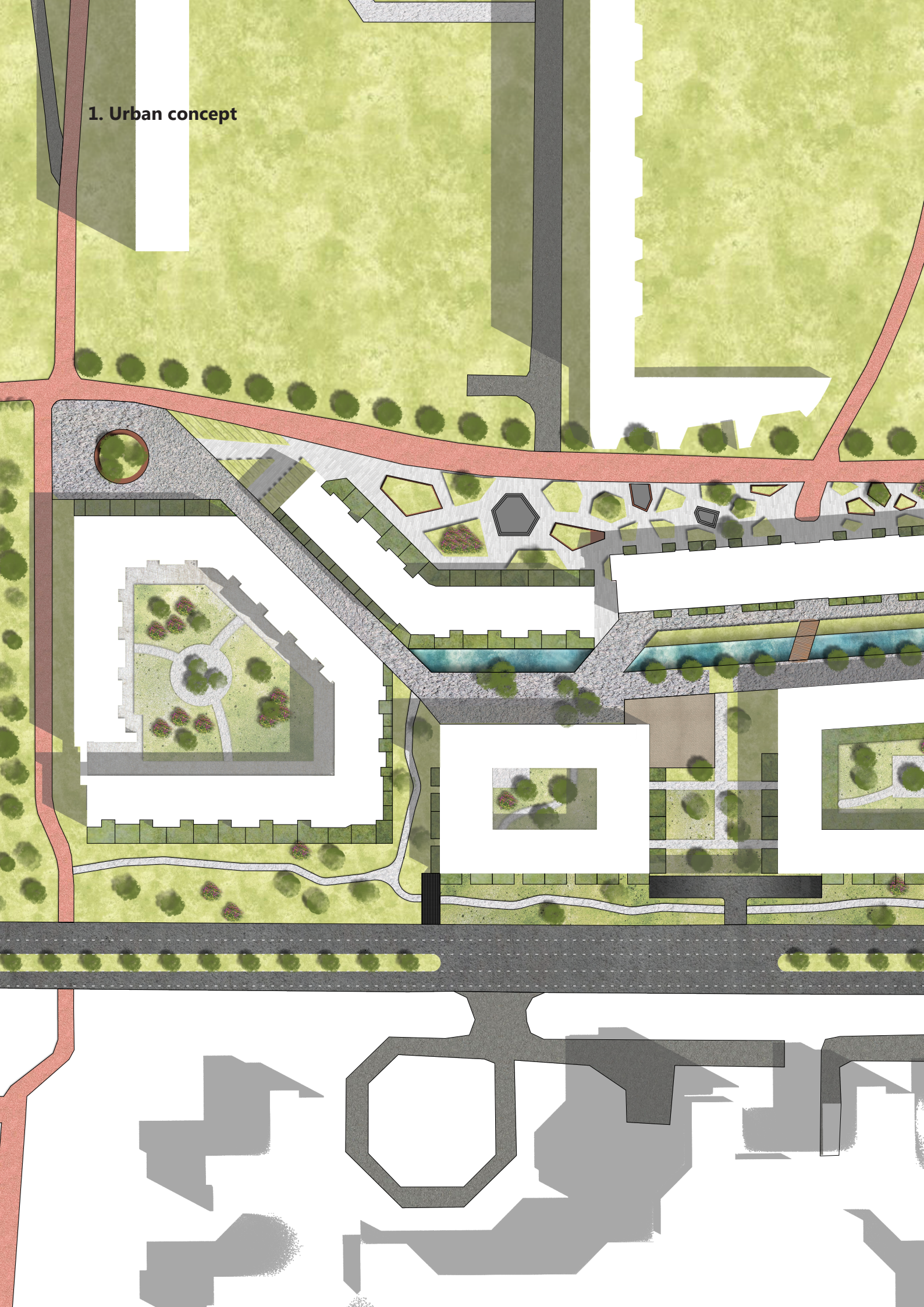
Blue-green infrastructure

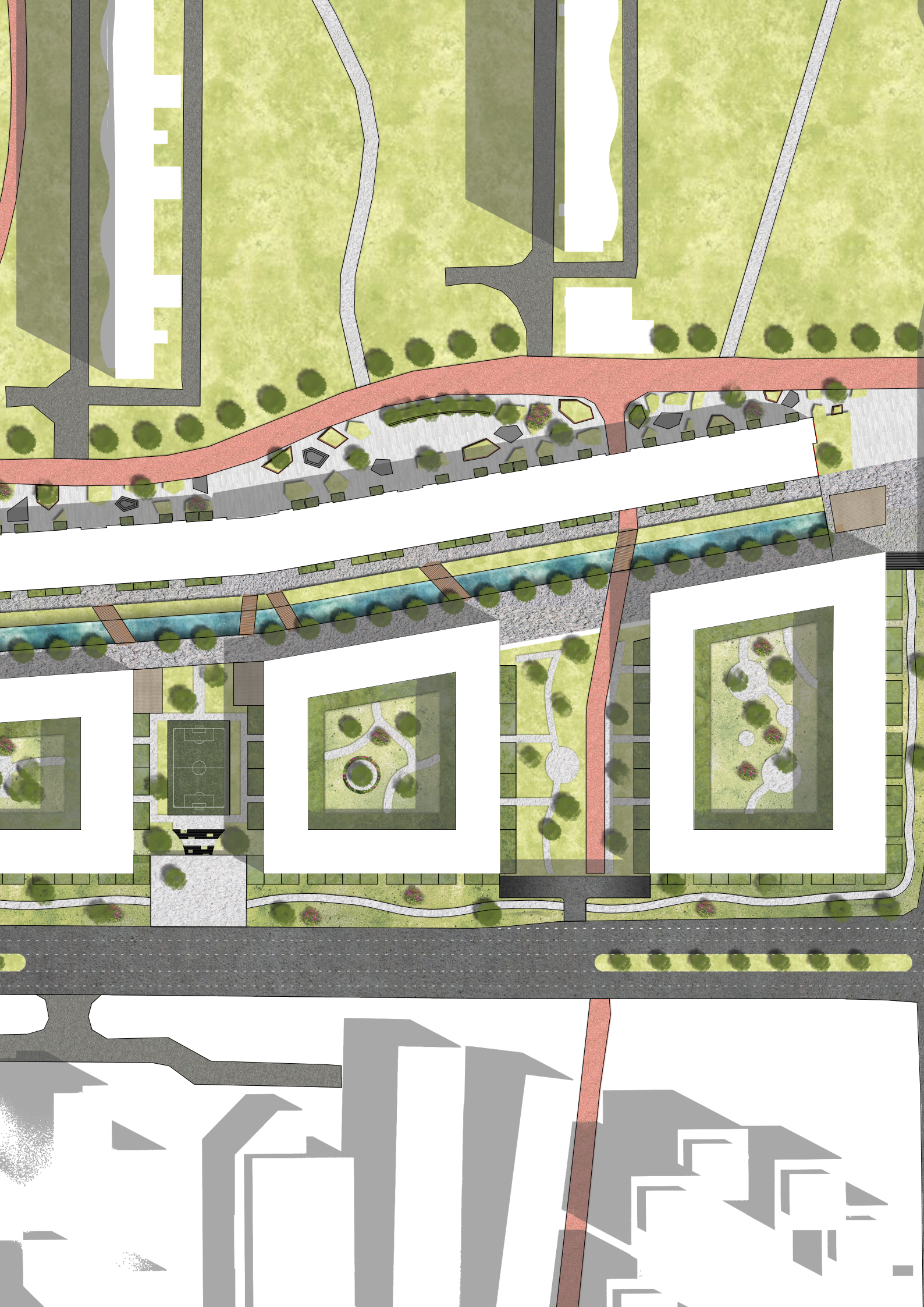


Communal - & social services

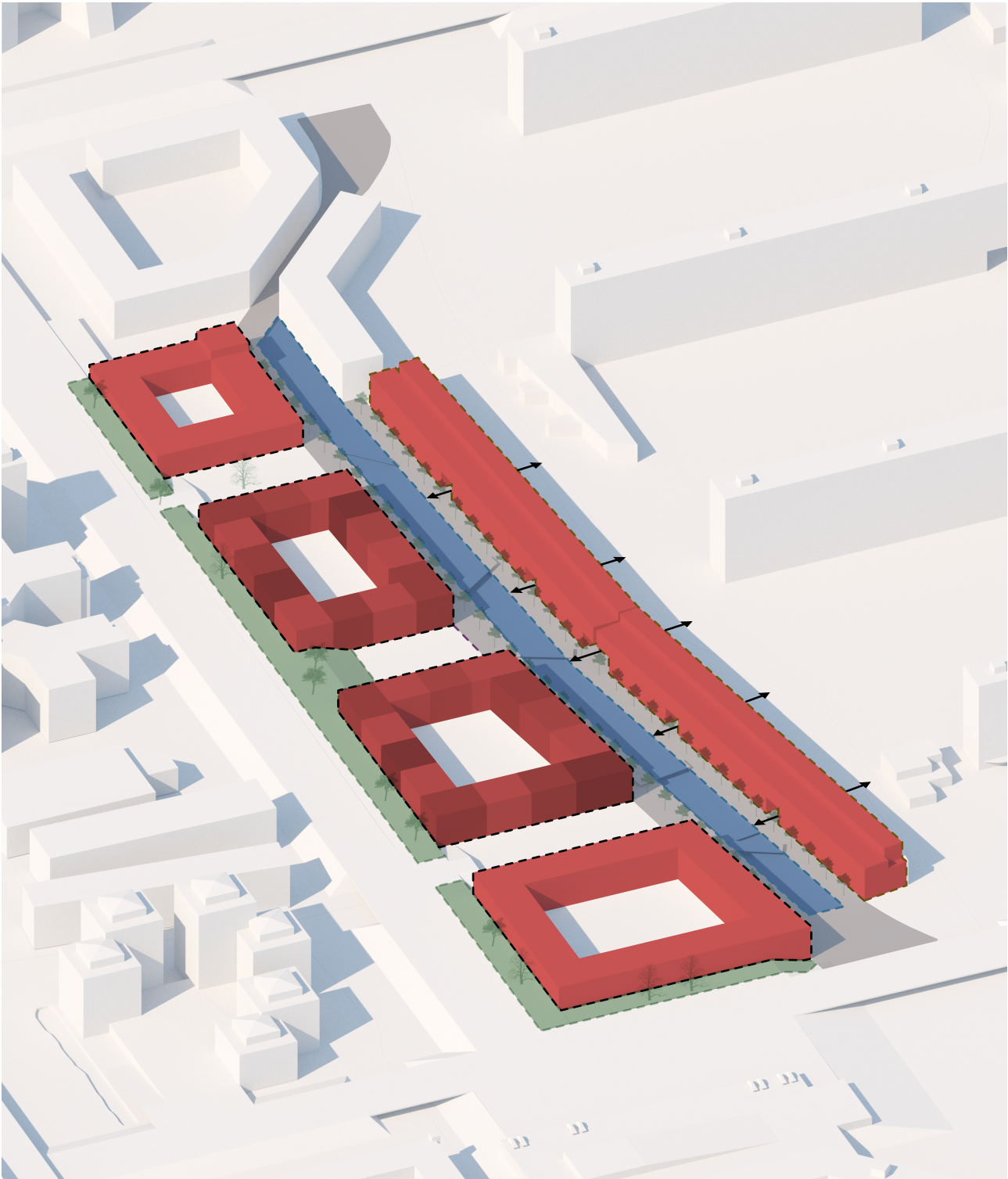
This route is also beneficial since it is positioned more favourable regarding to the orientation towards the sun. The route is supported by blue green infrastructure making it more appealing and communal & social services like the 'Handreiking', a 'soos' and daycare. Lastly this efficient route is directly connected to the open courtyards resulting in both slow and fast transport.

1. Urban concept





Urban concept
Statistics & Testing



Urban concept
Statistics & Testing

	design	existing
mid-rise building (excl.)	18.300 m2	15.000 m2
low-rise building (incl.)	9.000 m2	0
perimeter blocks (incl.)	0 m2	38.700 m2
Total	28.300 m2	53.700 m2
		1,90 x
Parking places	450 p	264 p

The aim of the municipality is to densify Amsterdam southeast by 1,67 x by 2040. My design proposal offers a total densification factor of 1,90. This is the result of the perimeter blocks. There is a small reduction in the mid-rise building caused by its new circulation type. This reduction in size is well considered. It is needed to make the mid-rise which i listed as potential heritage more liveable

Position - Building

Value assessment



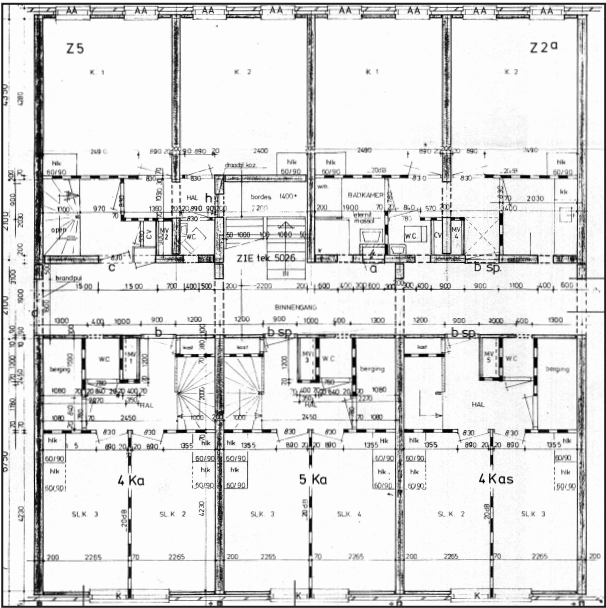
from Beeldbank Amsterdam



Story		Skin	
Historical:	★★★★ Elongated wall ★★★★ Midrise ★★★ Corridor	Historical:	★★★★ 80s architecture ★★★ Front: grid static structure ★★★ Front: porches ★★★ Front: staircasses ★★★ Back: fade open - closed ★★★ Back: concrete slabs ★★★ Back: Balconnies
Use:	★★★ Corridor	Use:	★★★ Front: porches ★★★ Front: staircasses
Envir.:		Envir.:	★★★★ Embodied energy ★★★ Windows
Economical:	★★★ 80s crisis, technical perf.	Economical:	★★★★ Embodied energy ★★★ Technical performance

Position - Building

Value assessment



from dataset Ymere



from citymapia

Structure	Service
Historical: ★★★ Staggered structure ★★★ Corridor ★★★ Orientation/hyrgie	Historical:
Use: ★★★ Conn. inside & outside ★★★ Connection front - back ★★★ Daylight entry ★★★ Social; maintanance ★★★ Corridor	Use: ★★★ Insulation ★★★ Acoustics ★★★ Ventilation ★★★ City heating
Envir.: ★★★ Embodied energy	Envir.: ★★★ Insulation ★★★ City heating
Economical: ★★★ Embodied energy	Economical: ★★★ Insulation ★★★ City heating

Position - Building

The Hoptille mid-rise building has 3 main aspects which made me come to the decision it should be interpreted as heritage. By its shape, being a 300 meter block which tells the story of dividing the low rise from the high-rise. Secondly the approach of the 300 meter long corridor. And 3th the architectural elements in the facade.

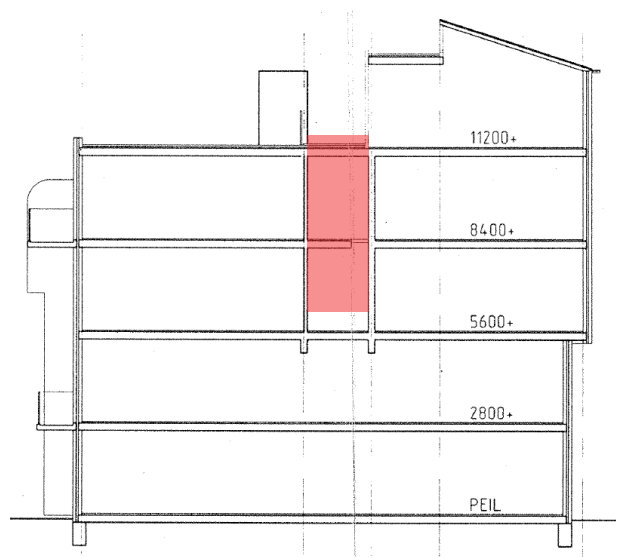
Where all 3 elements contains historic value, the aim is to preserve 2 of the 3 aspects. I came to this conclusion by waying the historic value and its current performance.

The corridor which has historic value has proven not to work during the past. After only 2 years the building was renovated due to its social issues. This was the result by its size, open access and no visibility.

The renovation primary solved the issues since the circulation was fragmented, and no open access. The current situation is still not ideal; there is a lack of logic, poor daylight access not appealing and no visibility. For this reason the corridor has to be reconsidered.



Story: dividing wall
from Beeldbank Amsterdam



Corridor
from dataset Ymere



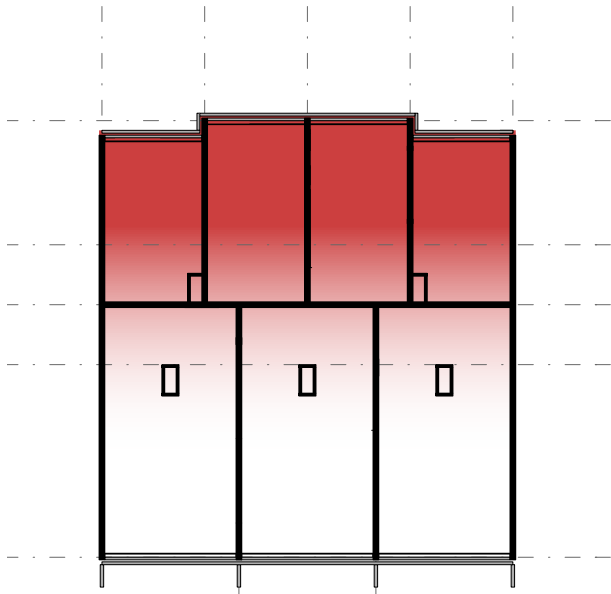
80' s facade



uitgezonderd

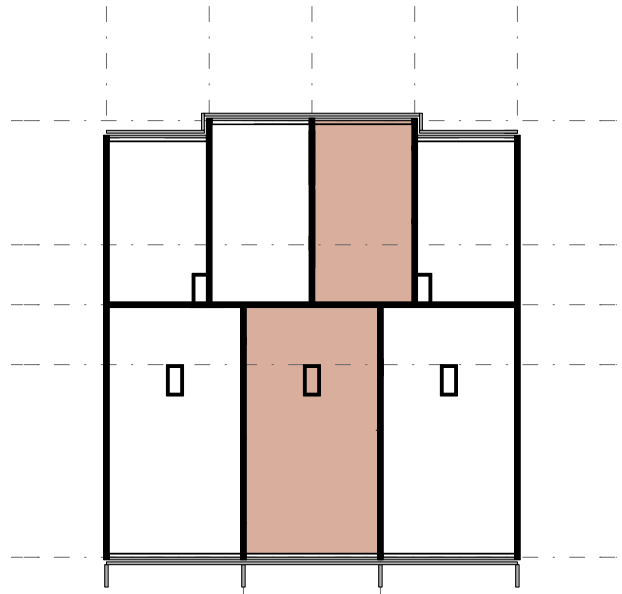


2. Directionless



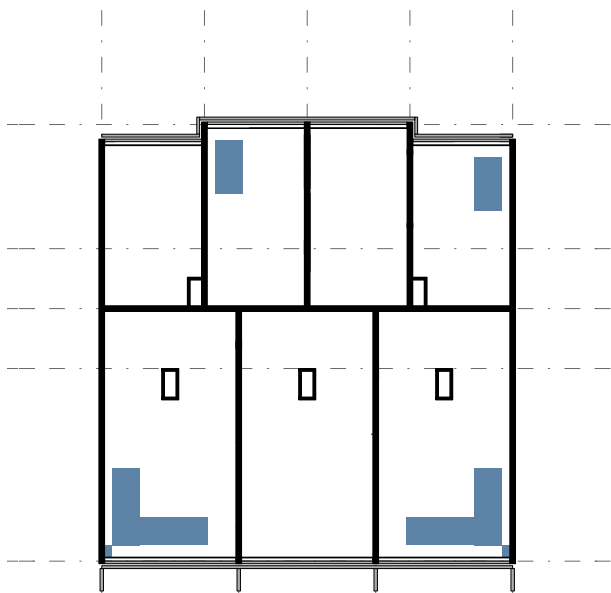
Dominancy north-east side

The northeast side of the mid rise building is dominant over the southwest side. This is the result of the entrances and public route positioned on the northeast route.



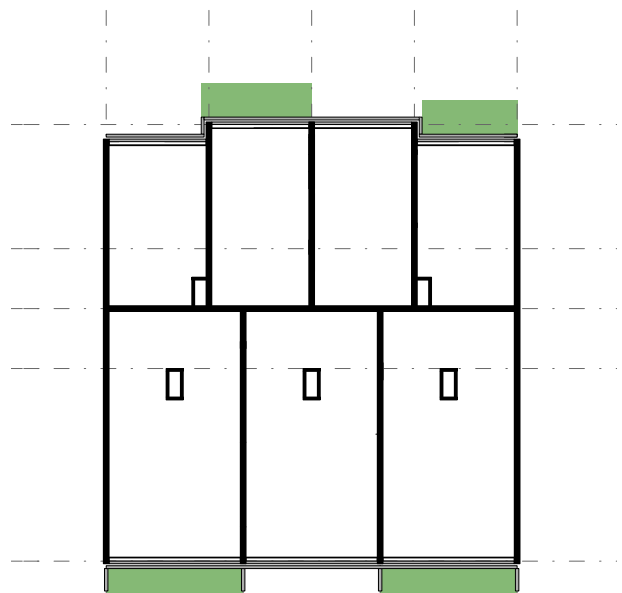
Entrances both sides

At the same time however there is a lack of eyes on the street on the northeast side since the plinth only contains bedrooms orientated towards the route.



Living room both sides

The goal is to create more activity on the southwest side of the building. For this reason the building should not act like a 'front' and 'back'. Secondly there should be eyes on the streets on both sides resulting in a more secure place.



Gardens both sides

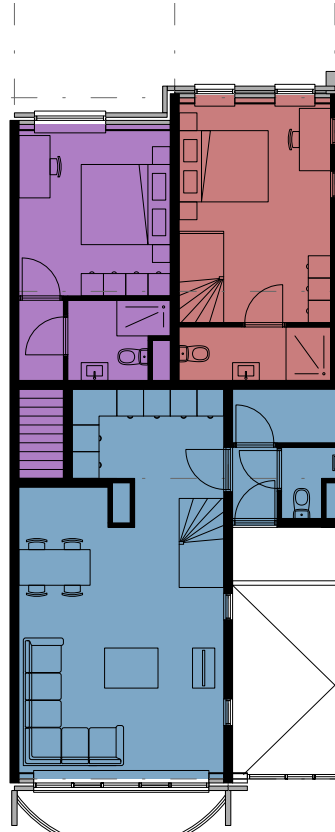
This will be realised having entrances, living rooms and gardens on both sides of the building, which are elements dividing the orientation of the mid-rise building



2. Directionless



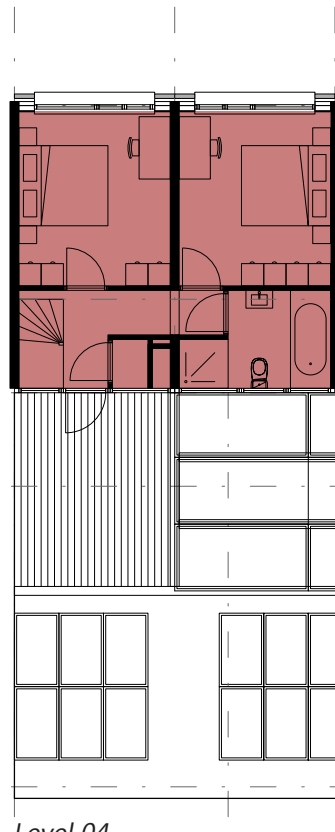
Level 00



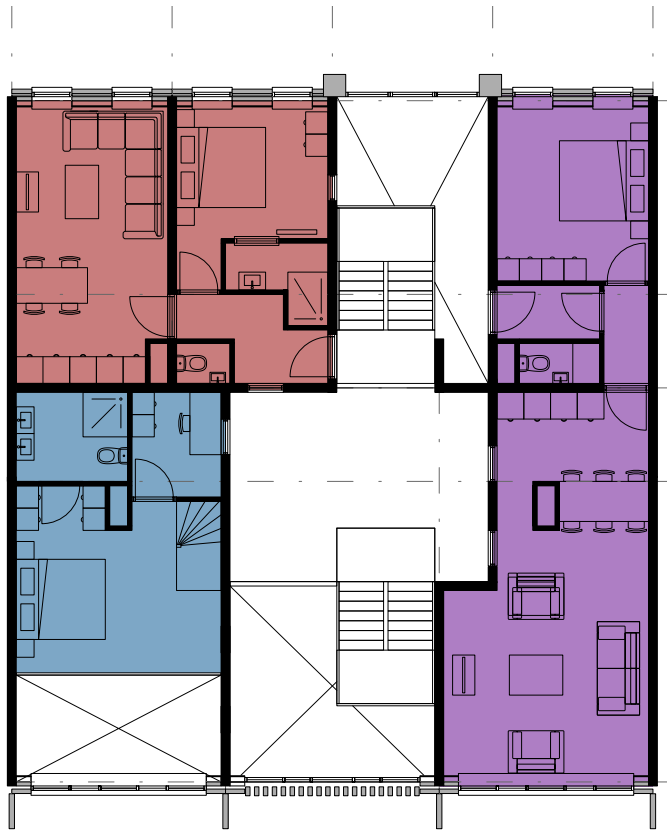
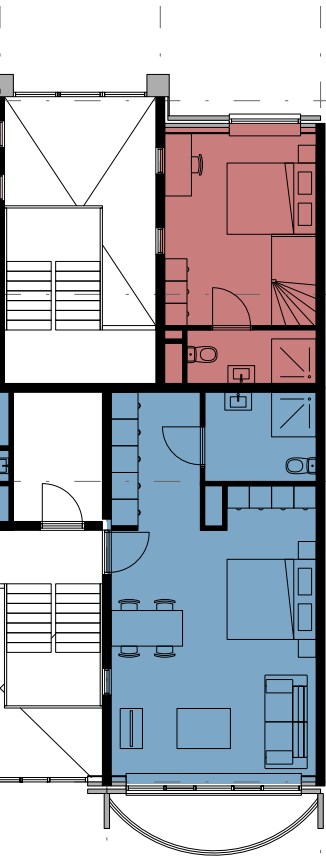
Level 01



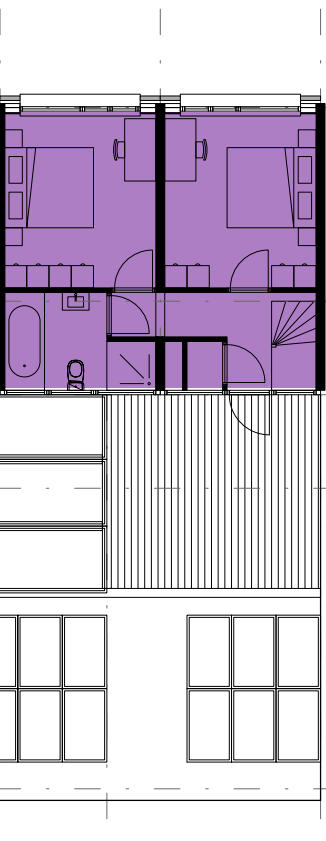
Level 03



Level 04



Level 02

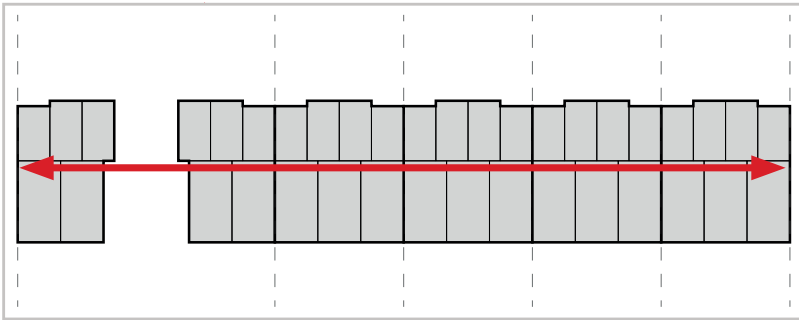


Each cluster contains 11 apartments varying from 40 to 100 m², smaller than the existing apartments. This matches by one of the challenges addressed by the residents having to large apartments for the small households. The apartments differ from studios to 3 bedroom apartments.

There is an difference in orientation between the apartments. Resulting in eyes on the street towards both sides of the building; 4 apartments northeast, southwest, and 3 apartments both directions.

3. Small scale atriums

Former & current circulation

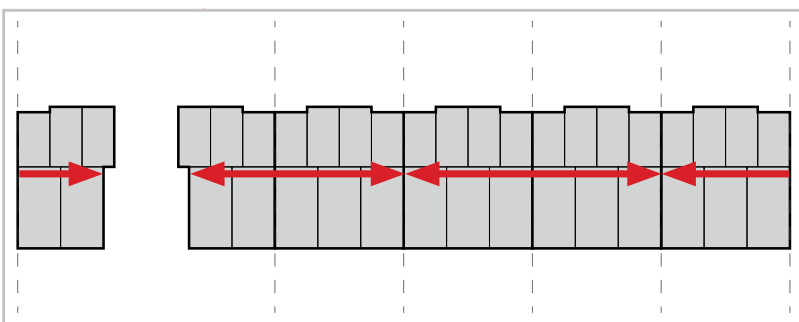


300 meter long corridor, 1982



Corridor

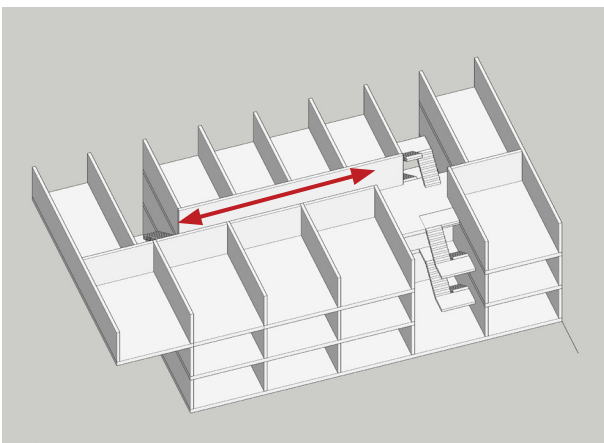
from woningnetregioamsterdam.nl



Fragmentated corridor, 1984

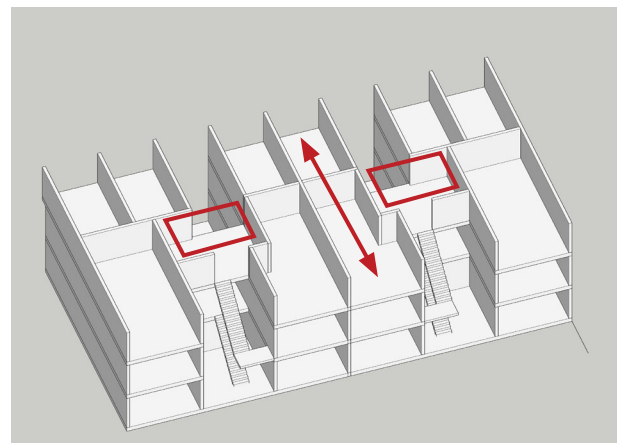


Added entrances 1984



Circulation type 1: corridor void

The main reason Hoptille has been renovated after only 2 years is because of its circulation. It was a corridor of 300 meters accessible by everyone. Resulting in an uncontrolled space where drugs dealing and crimes happened. The renovation resulted in a fragmented private circulation. But still suffers from several aspects: daylight access, logic and appearance.



Circulation type 2: small scale atrium's

I have considered two types of circulation. First the corridor circulation by an atrium from the second to fourth floor. Secondly an 90 degree rotation by small scale atrium's.

The second option provides a much better connection with the street and will eliminate any dark spots. It also results in an usable space by its shape, instead of only functioning as a transport zone.

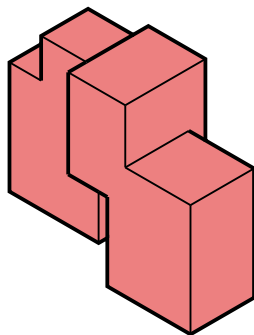
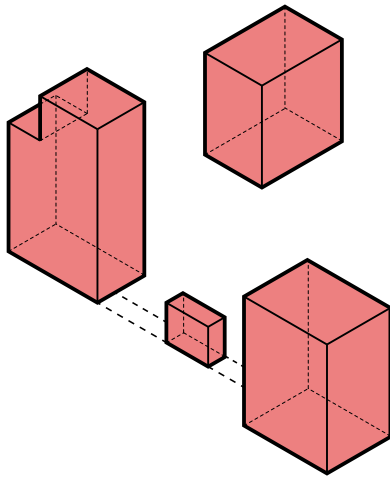
3. Small scale atriums

Design proposal

The concept of small scale atrium' s matches the concept of having entrances on both sides of the building. These atrium' s are supported by greenery which helps cooling the atrium' s, but also for its aesthetics. There are three different types of greenery which should result in a surprising entrance per cluster by passers-by. And identifying for residents



Entrance: small scale greenery



3 small scale atriums



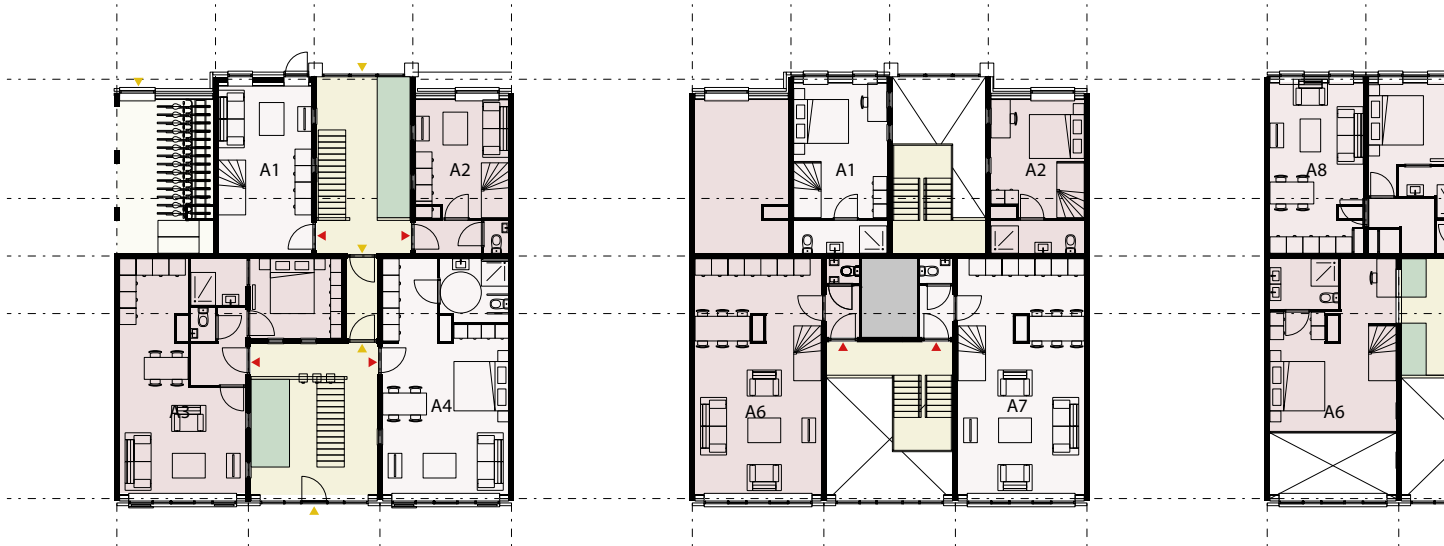
Entrance: green wall



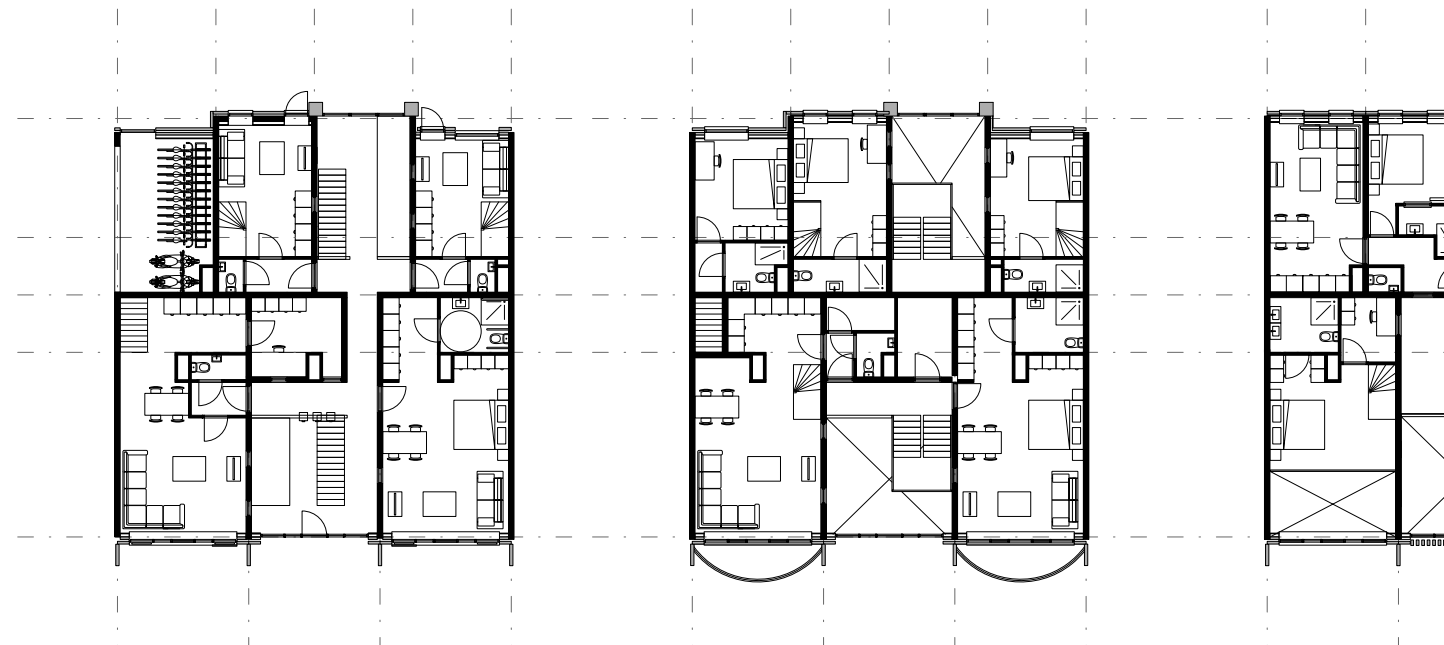
Entrance: large scale greenery

Floorplans

Process over time

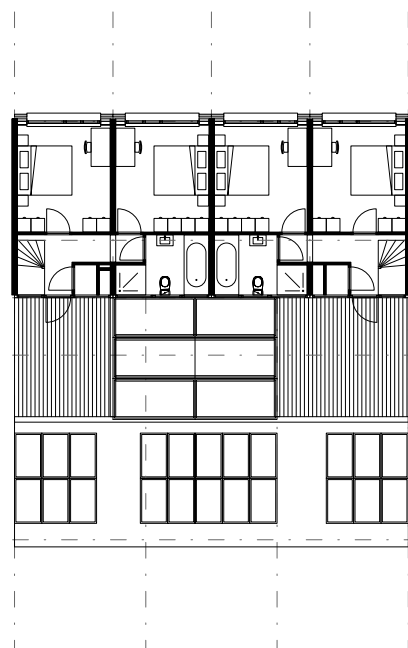
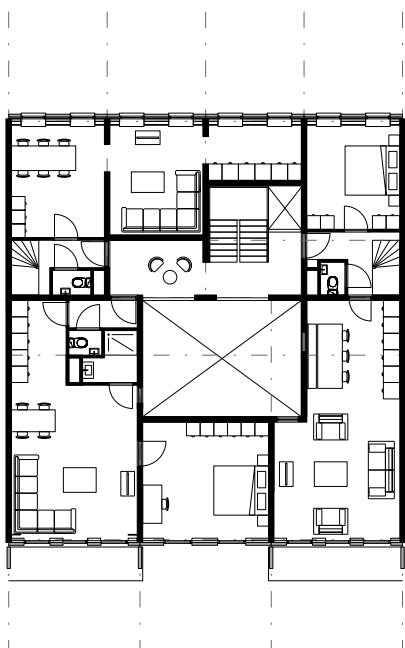
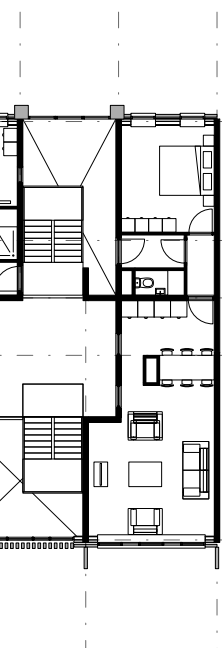
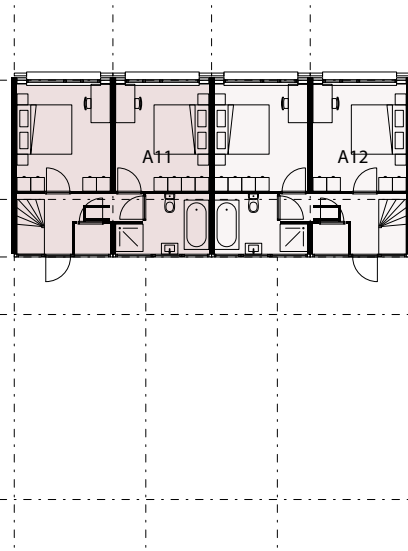
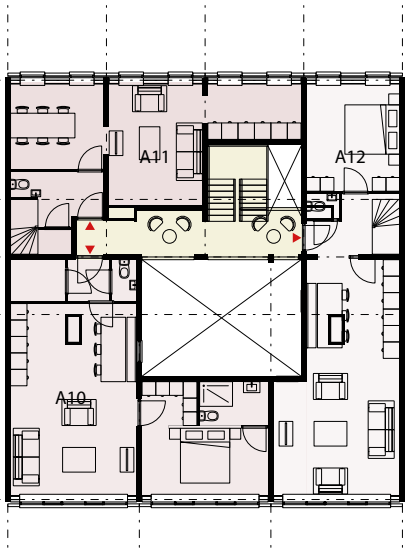
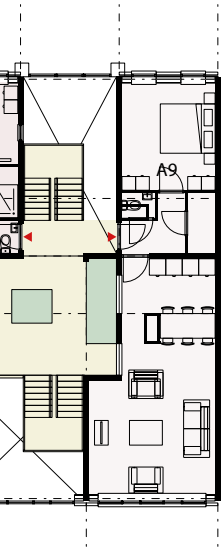


Floorplans P3



Floorplans P4

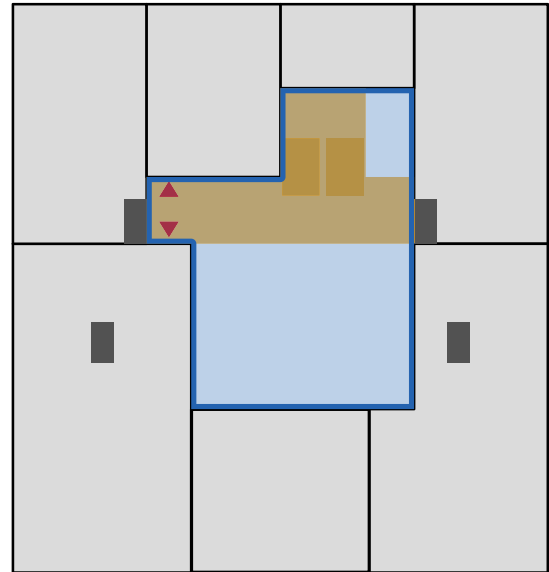
While designing the floor plans, too less attention was paid towards the position of the shafts. Secondly I thought fire safety was covered well but at the climate consult the conclusion was that it did not meet the requirements. For this reason both of these aspects have been further developed.



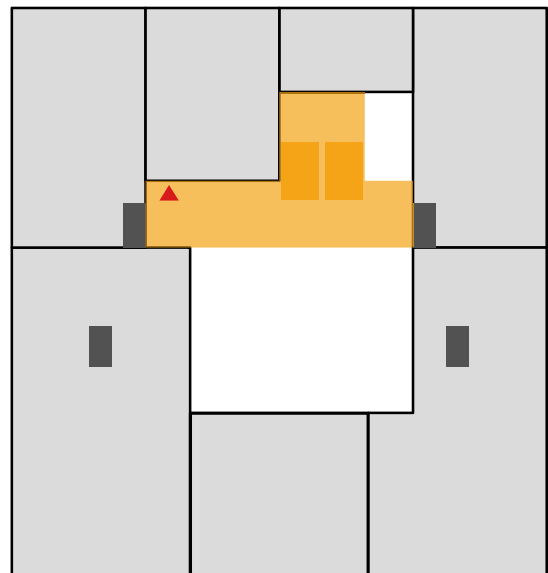
Floorplans

Additional studies - fire safety

Different options were made solving the issue of fire safety. All options have been valued from which I concluded it would be most beneficial to use only fireproof materials.



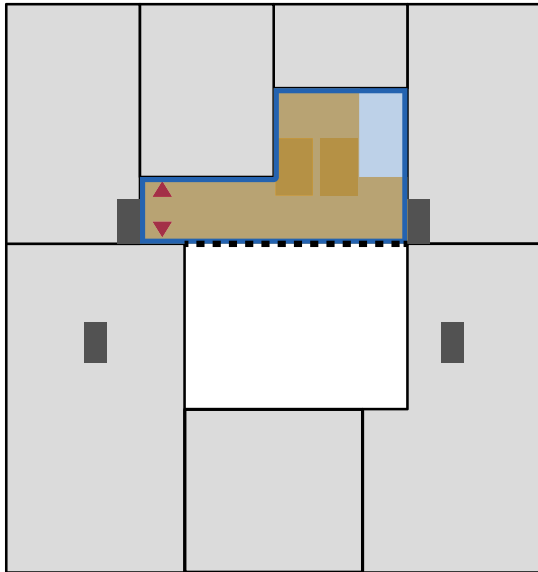
BB: Completely fireproof materialization
Optie: materialization
Analyse: Open connection
Restricted choice of material



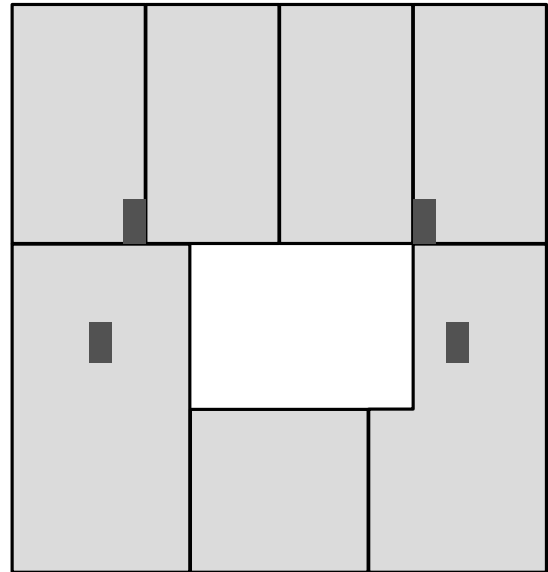
BB: Not lighting in front of other apartment
Optie: Only 1 house, instead of 2
Analyse: Too big apartments

Floorplans

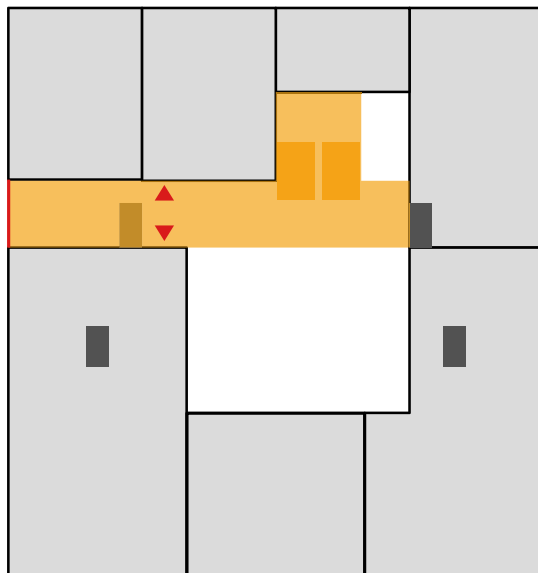
Bicycle parking



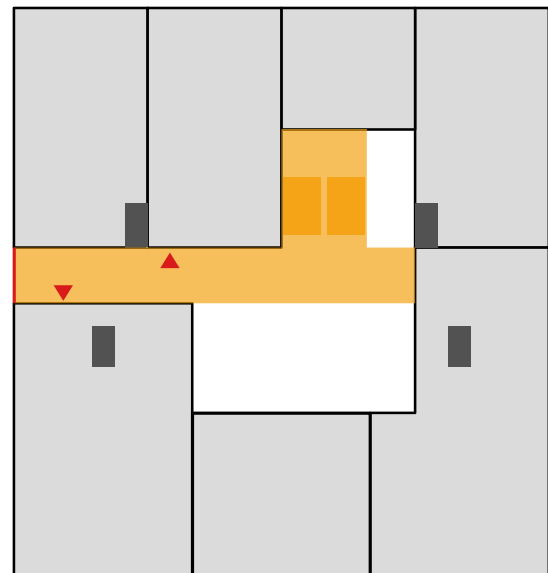
BB: ???
Optie: closed connection
Analyse: Restricted choice of material



BB: Offer 2 flight routes,
Optie: No access to floor 4
Analyse: No go, 3-storey apartments, oversized apartments



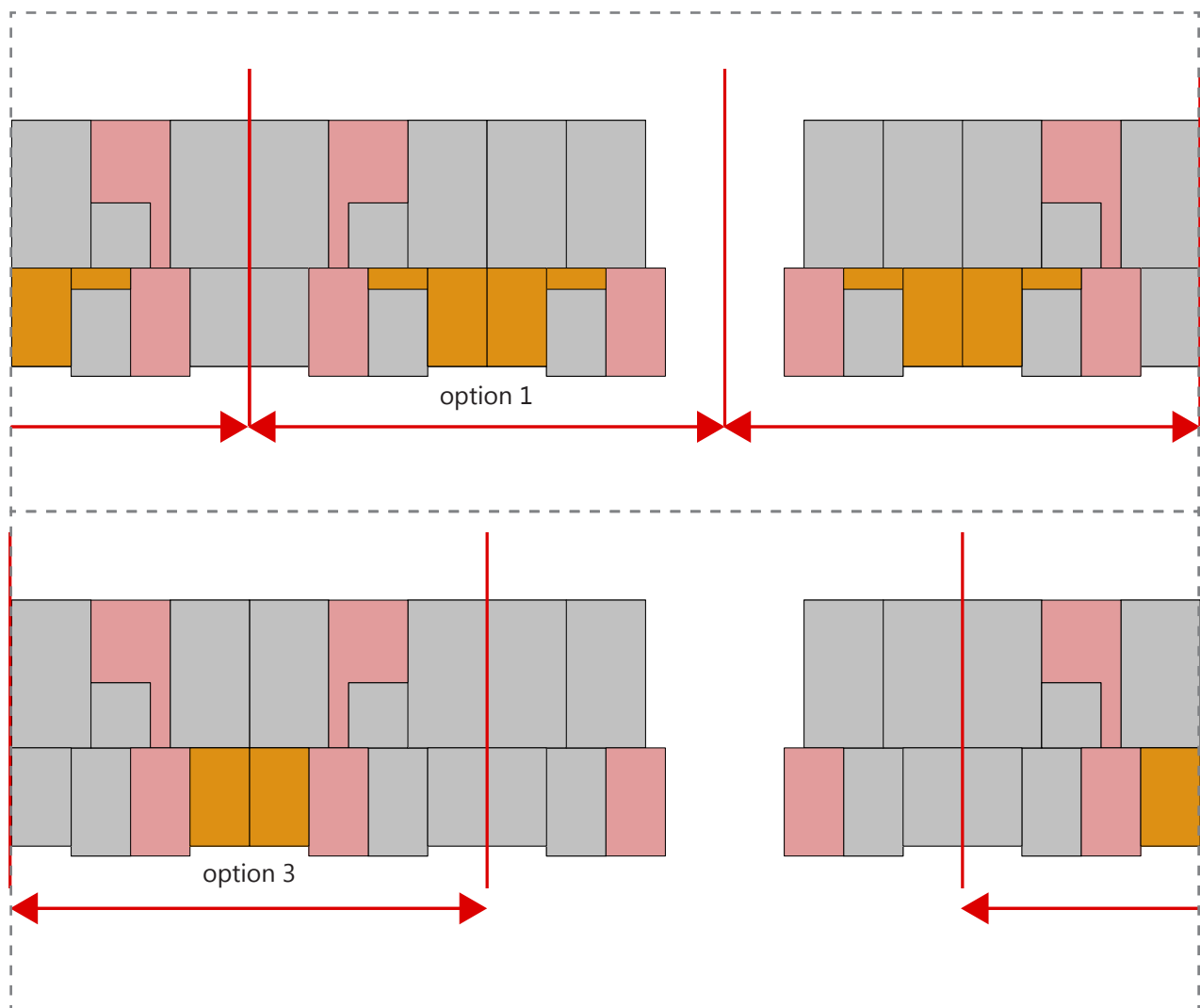
BB: Offer 2 flight routes,
 2 Connecting clusters with
Optie: corridor
Analyse: Good possibility, only point is flexibility



BB: Offer 2 flight routes,
 Continue the 2nd staircase:
Optie: no go, due to space. is very
Analyse: nonsensical

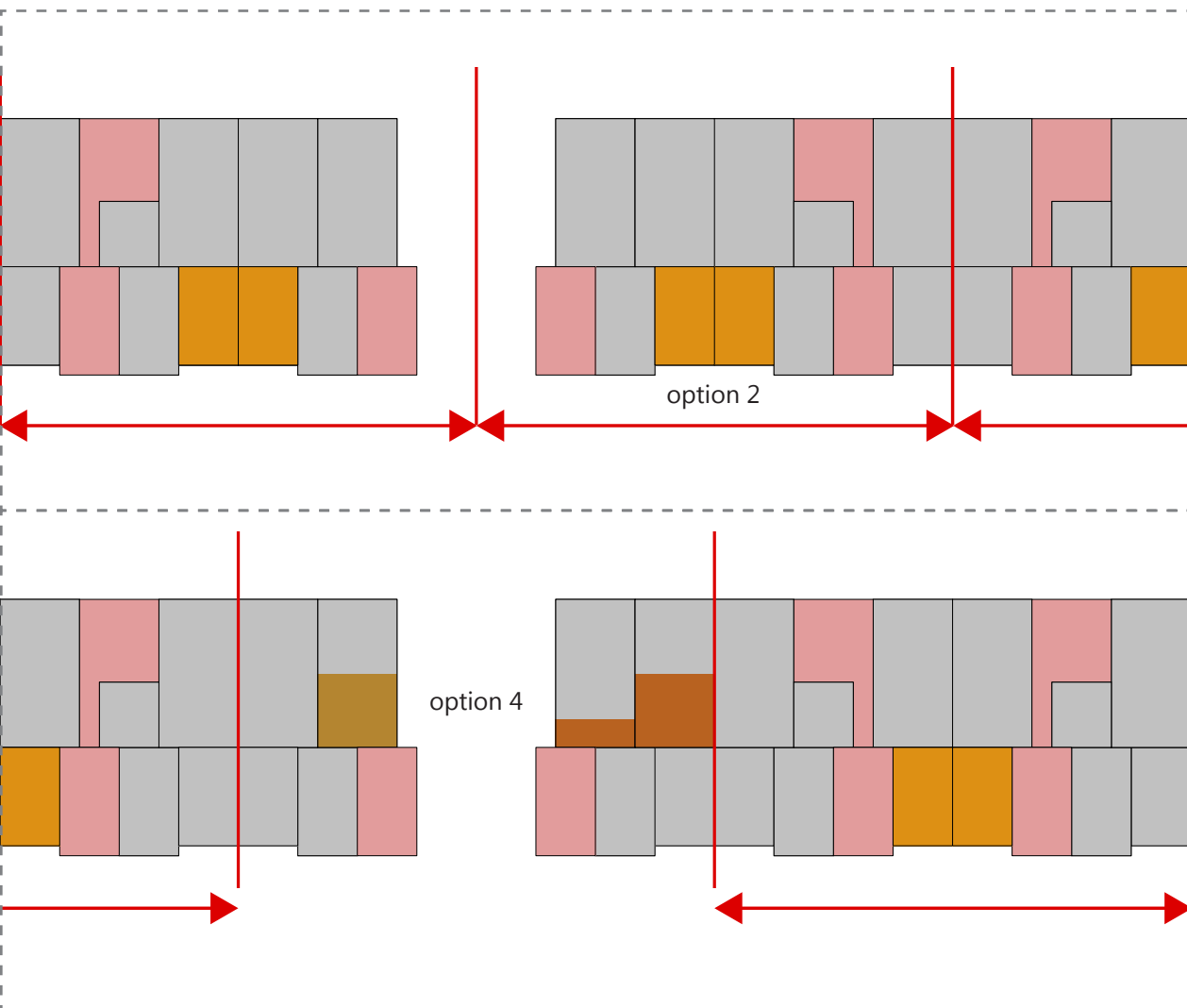
Floorplans

Bicycle storage



Another challenge was the position of the bicycle parking. This should be positioned on the northeast side of the building since the bicycle lane is positioned on this side. However the structure isn't very flexible and the grid of only 3,6 meters doesn't allow bikes. For this reason 2 grid sizes had to be used.

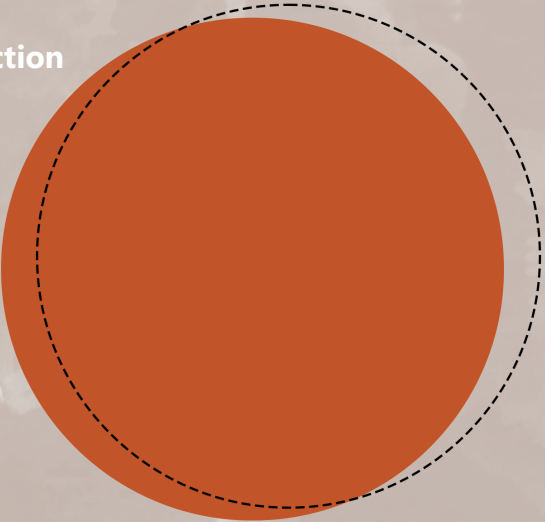
Several options were made from which four are shown above. The first option is not persevered because it creates a dark internal corridor, something which should be prevented. On the other hand the design makes it also results in the loss of square meters.



The third option does not create any dark spots, however several things goes wrong, some houses are not connected to the atrium while the bicycle parking is, secondly not all apartments have the access to the bicycle parking. This has been tried to solve in option 4 but also suffers in logic.

The second option is the best option. It allows all al apartments to have access to a bicycle storage, and all apartments are connected to an atrium. No dark corridors are created. The entrance is from the outside. Because the front of apartments are also positioned towards the northeast side it should not result in any problems.

Section



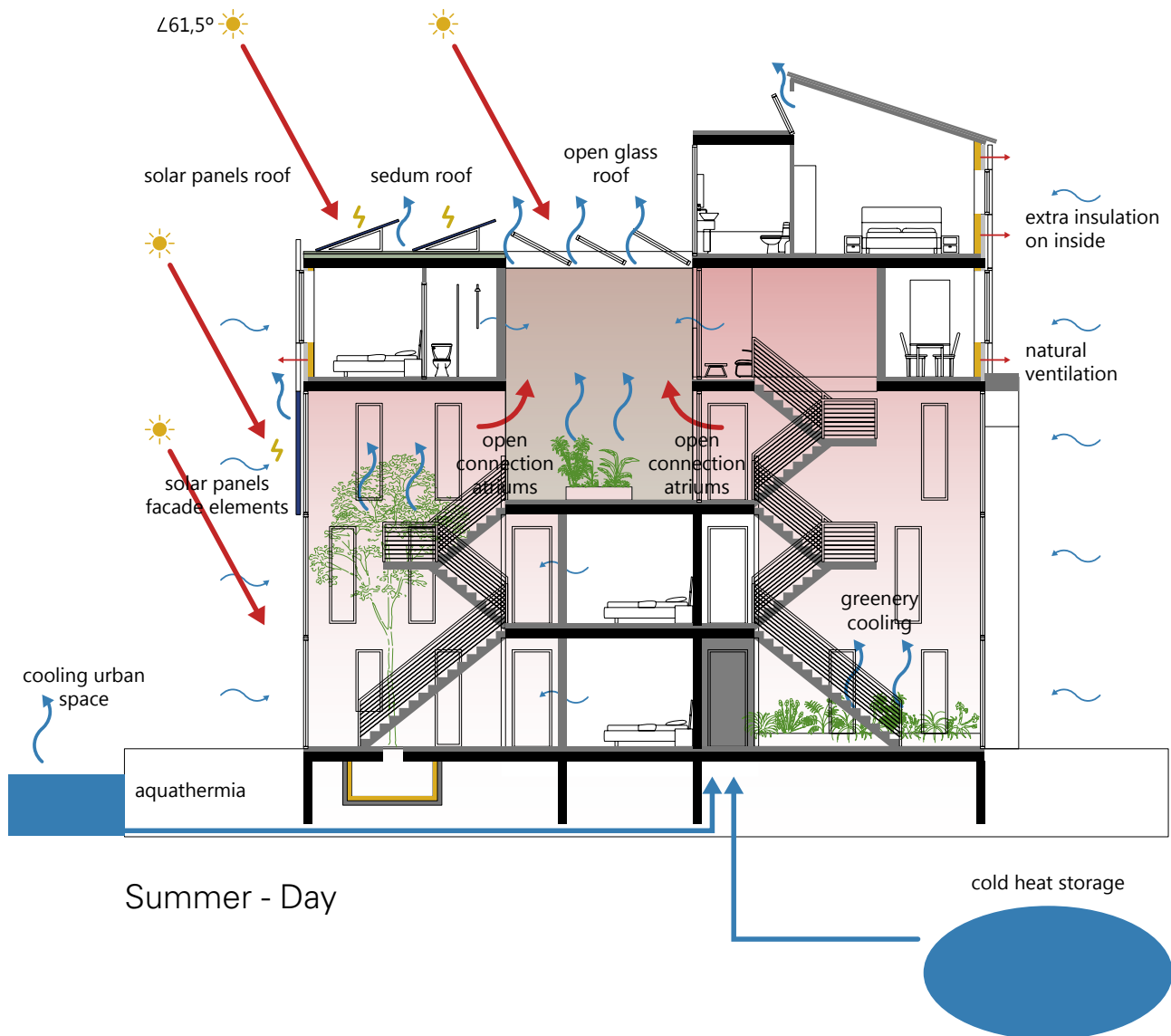
Each cluster has 3 atrium' s; two are positioned at the entrances and one enclosed atrium on the second floor connecting the top apartments also to an communal space.

Secondly the section shows the transition of public to private. The public street and private apartments have a garden in between resulting in a soft transition. On the position of the entrances, the public street is connected to the communal atrium' s. These are by themselves attached to intermediate spaces in which the entrances of the apartments are positioned, leading to the private apartments.



Section

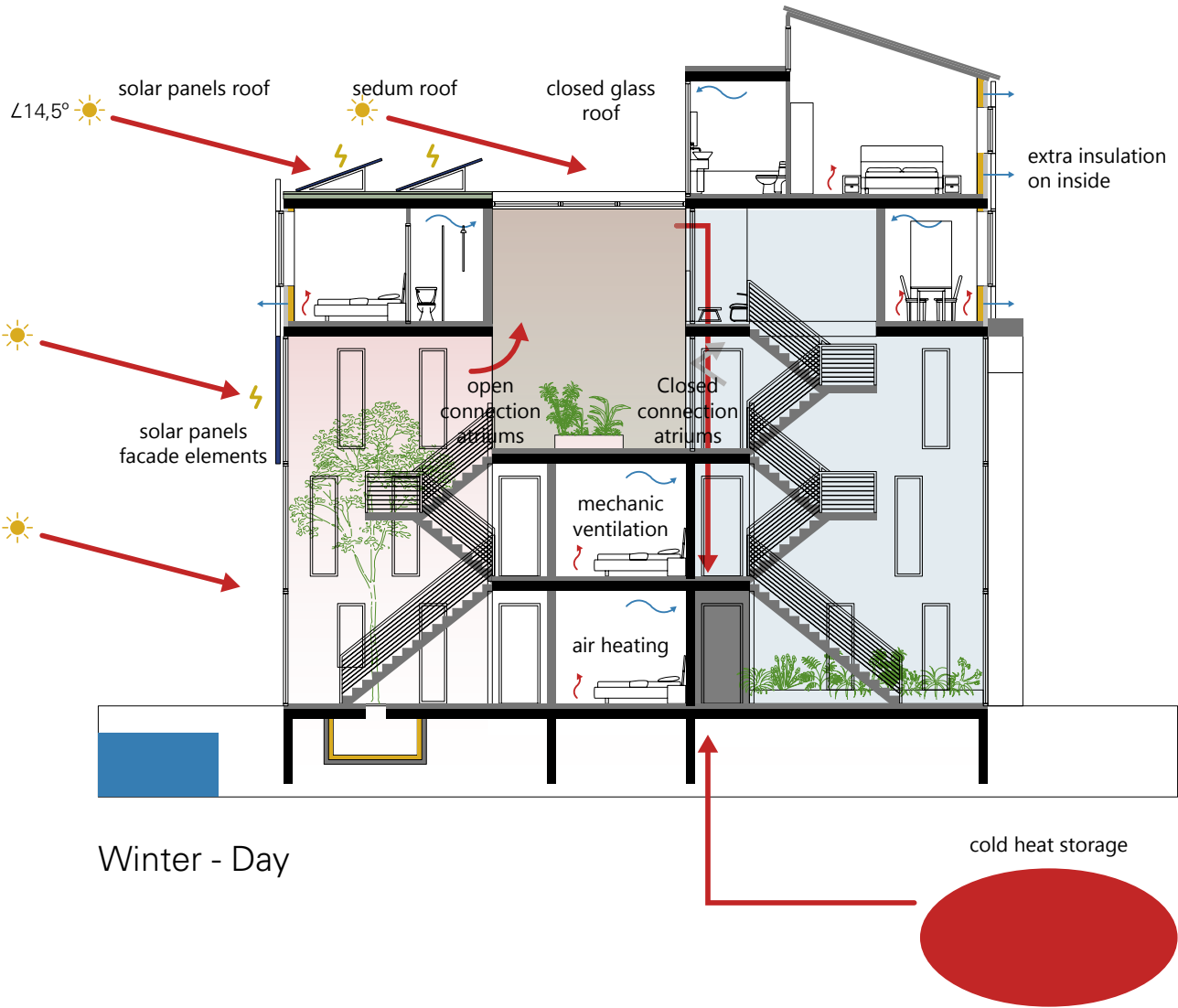
Climate concept - summer



The atrium does not only solve use and aesthetic values. But also contributes to the environmental value. The atrium's will warm up during the summer and this heat will be stored in the cold heat storage by use of an heat recovery system. During the winter 2 of the 3 atrium's will full fill the similar task, but then the heat will be directly used throughout the building.

Additionally there are solar panels on the roof, and facade with an total energy supply of 60% of the energy demand. There is extra insulation on the inside resulting in the preservation of the facade and the greenery within the atrium will result in cooling.

Section
Climate concept - summer





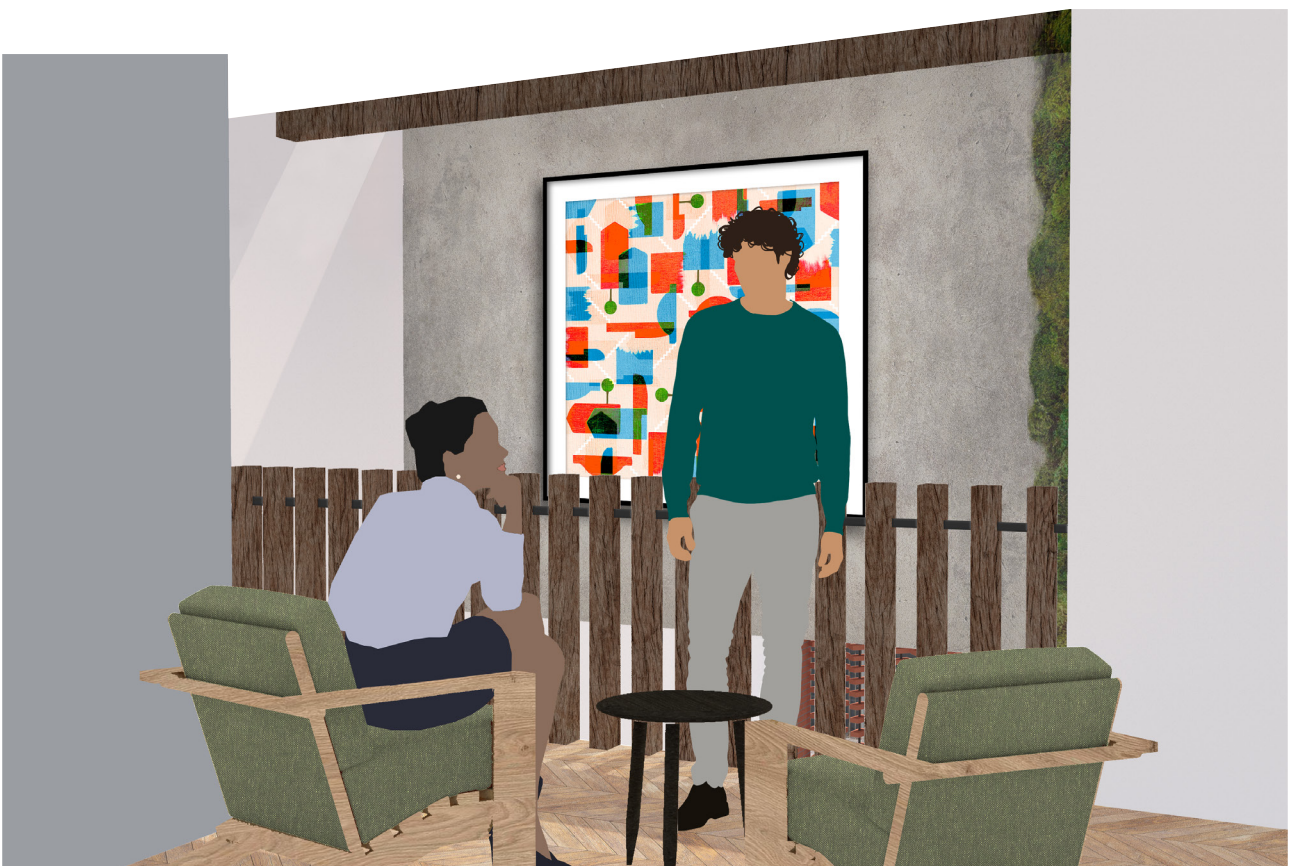
Level 00: Entrance atrium



Level 01: Intermediate zone

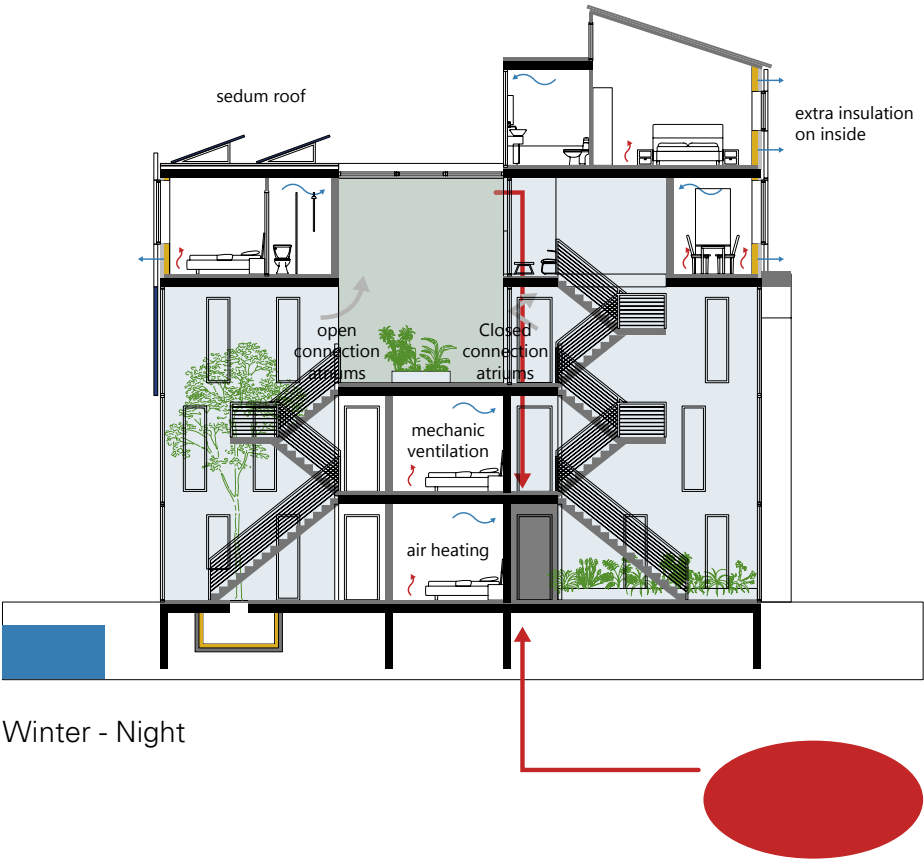
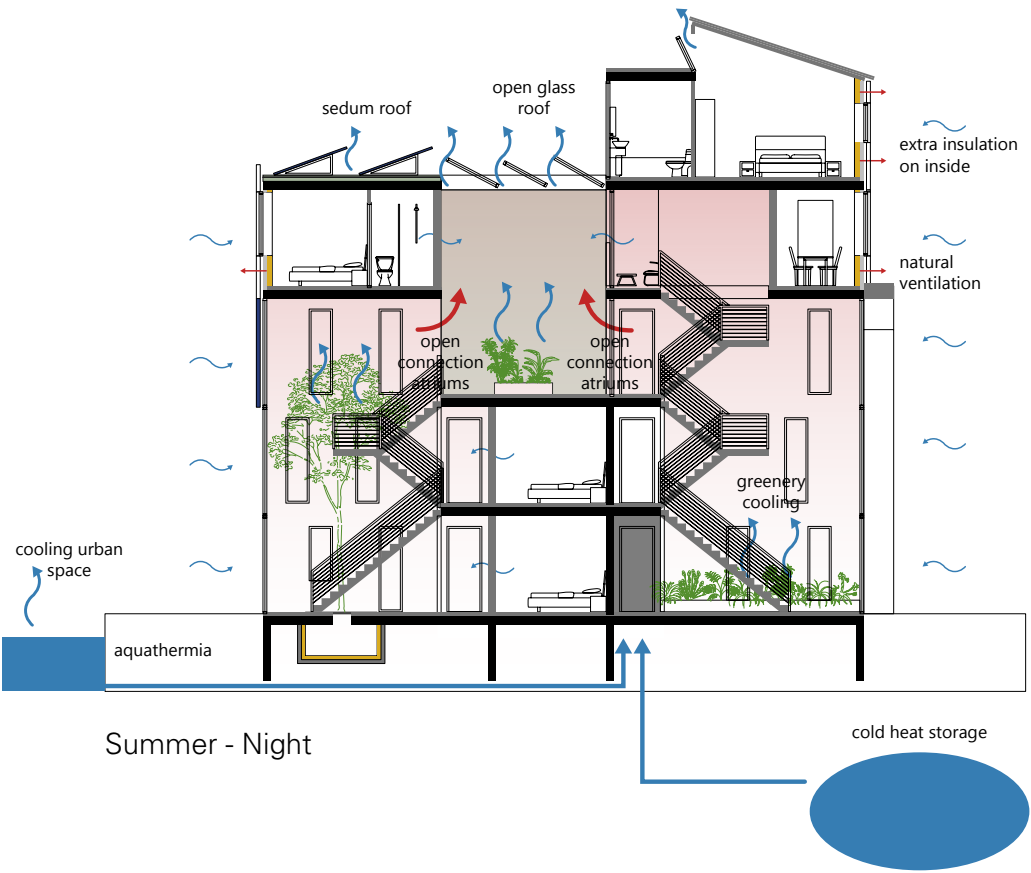


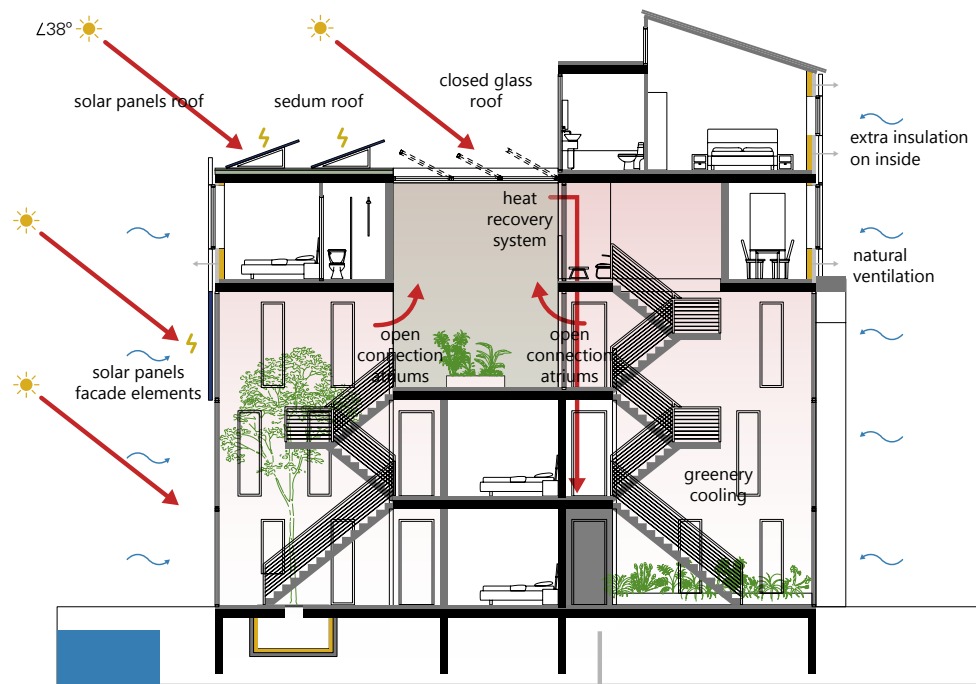
Level 02: enclosed atrium



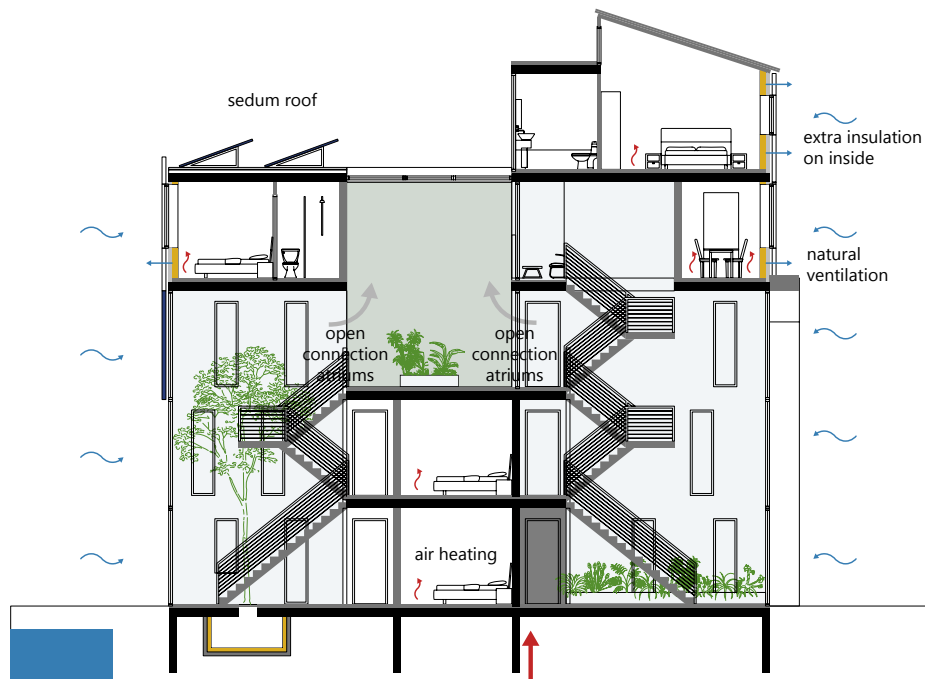
Level 03: Indoor balcony

Section
Climate concept - other





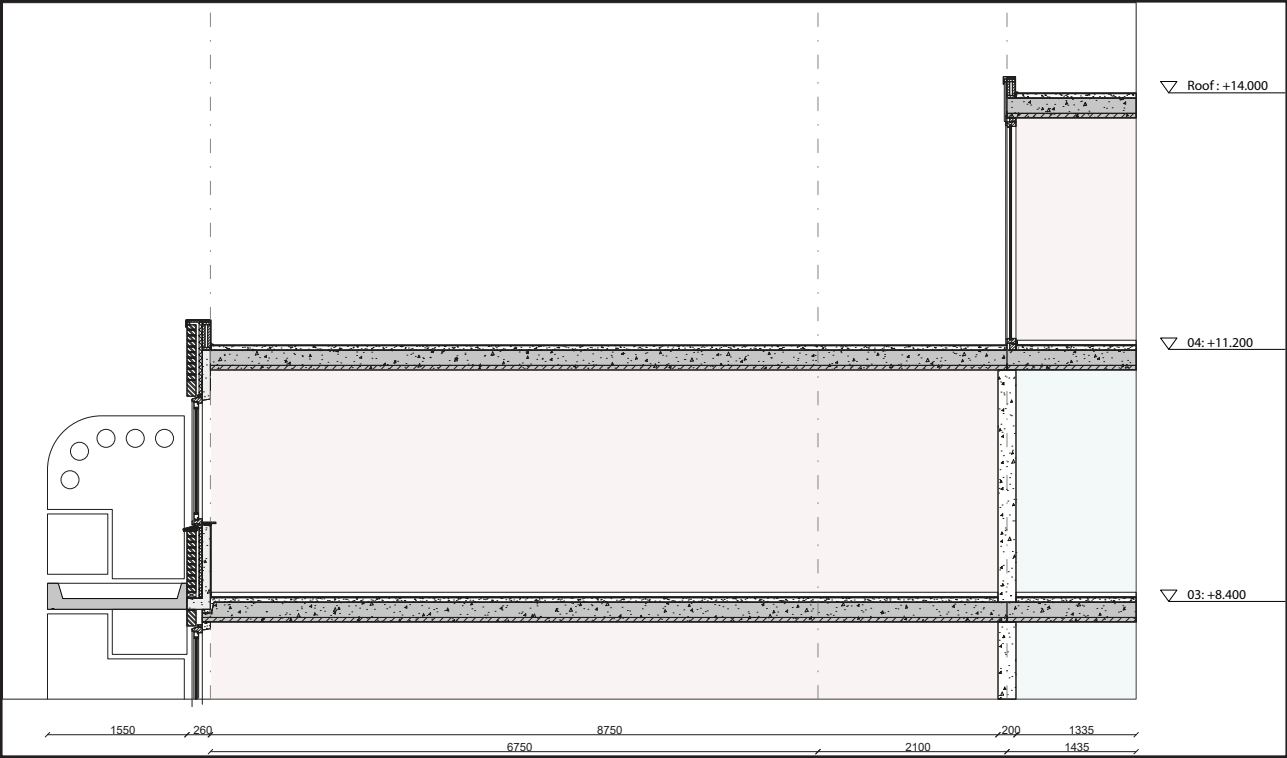
Fall/Spring - Day



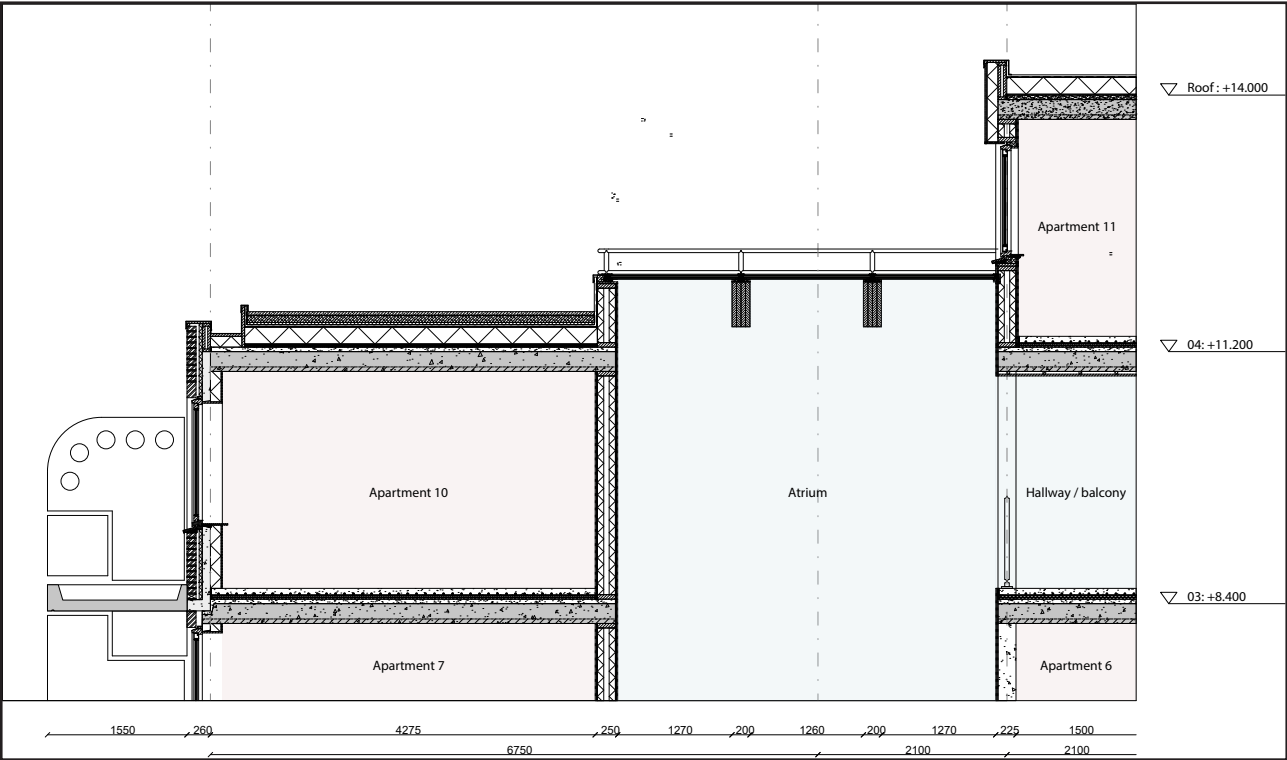
Fall/Spring - Night

cold heat storage

Fragment - roof
Climate concept - summer



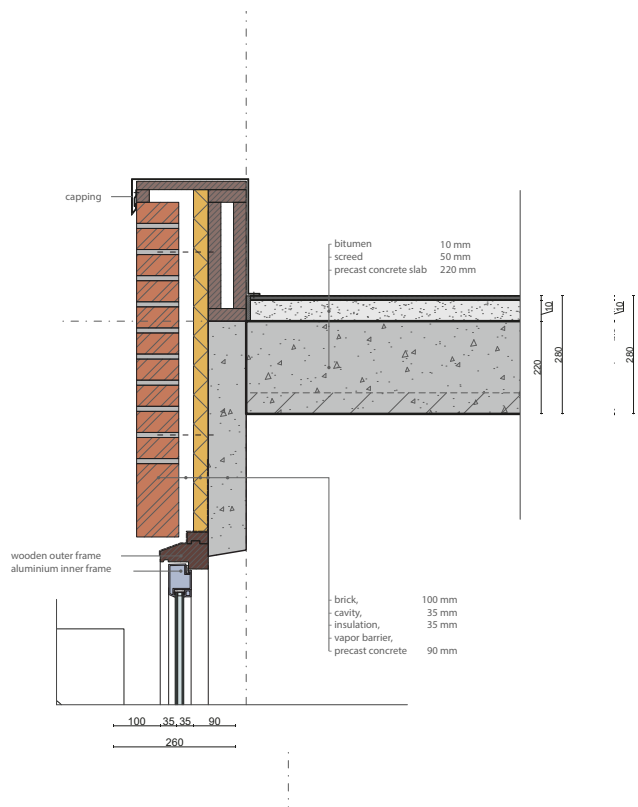
Fragment existing



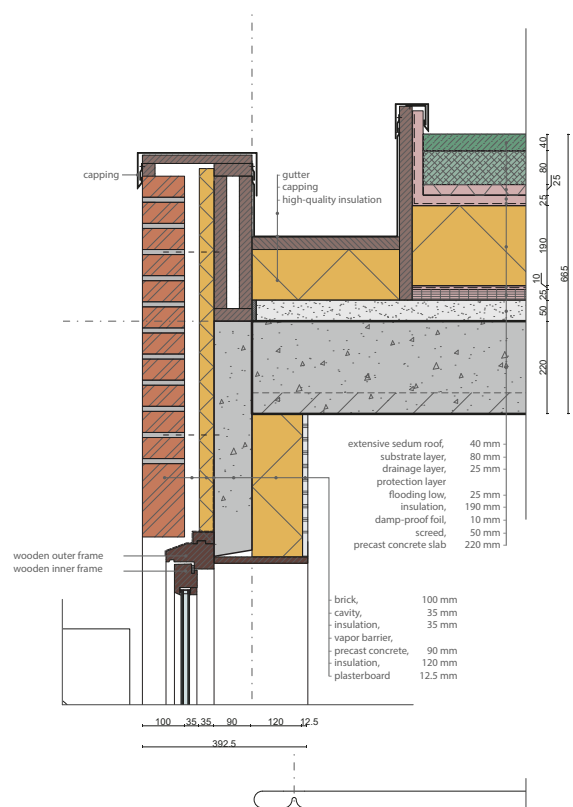
Fragment design proposal

Detail 1

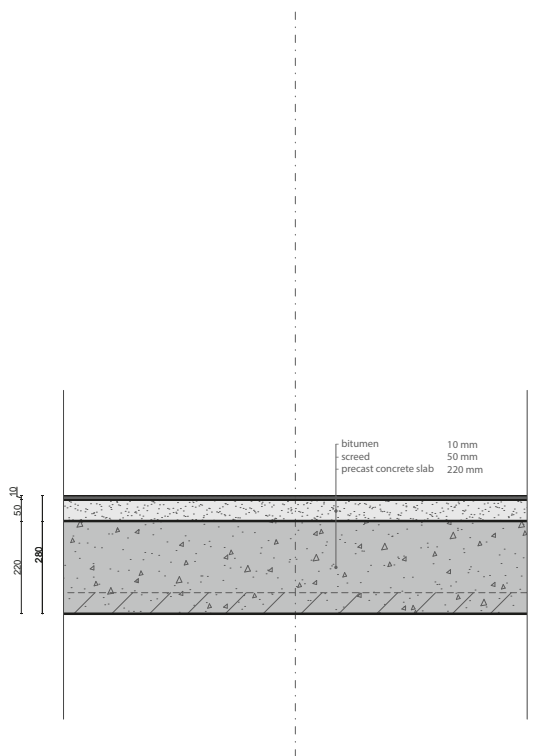
Vertical: facade - green roof



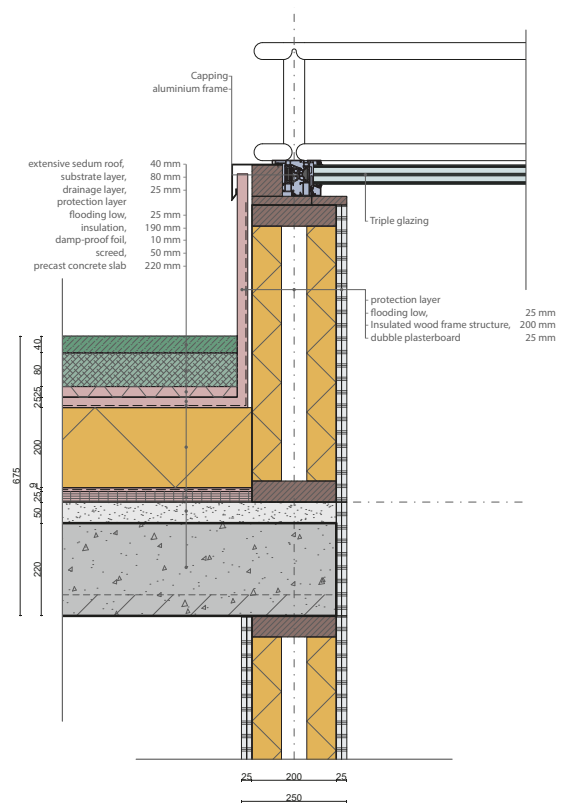
Vertical detail, existing: facade - roof



Vertical detail, new: facade - roof



Vertical detail, existing: roof - atrium



Vertical detail, new: roof - atrium

4. Demountable characteristics

Concept

The facade is one of the 3 primary aspects which makes the mid-rise building valued. It implies 80s architecture of which the authenticity must be preserved.

At the same time the facade does not meet the contemporary requirements according to building physics and appreciation.

The building physics of the facade itself is covered on the previous pages in which insulation is added on the inside which makes it possible to preserve the authenticity of the facade itself.

The appreciation however is still insufficient. The goal is to design small scale interventions with a large impact.

This answer is found in the characteristics of the building, by an own developed method.

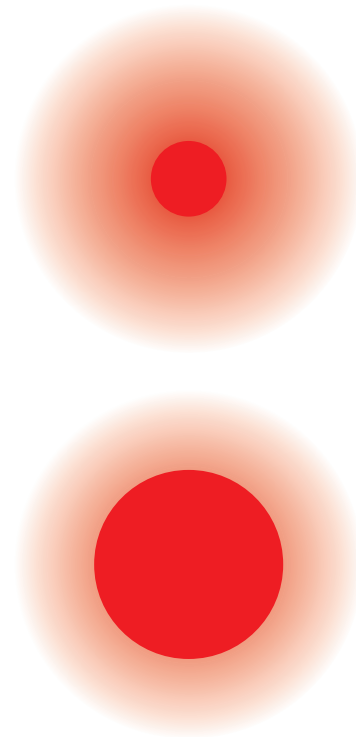
The method implies 3 stages: evaluation, fidelity and innovation. Since we do not know what will be appreciated in the coming years the concept is to make demountable characteristics. Which can change over time to adapt to the contemporary appreciation and performance.



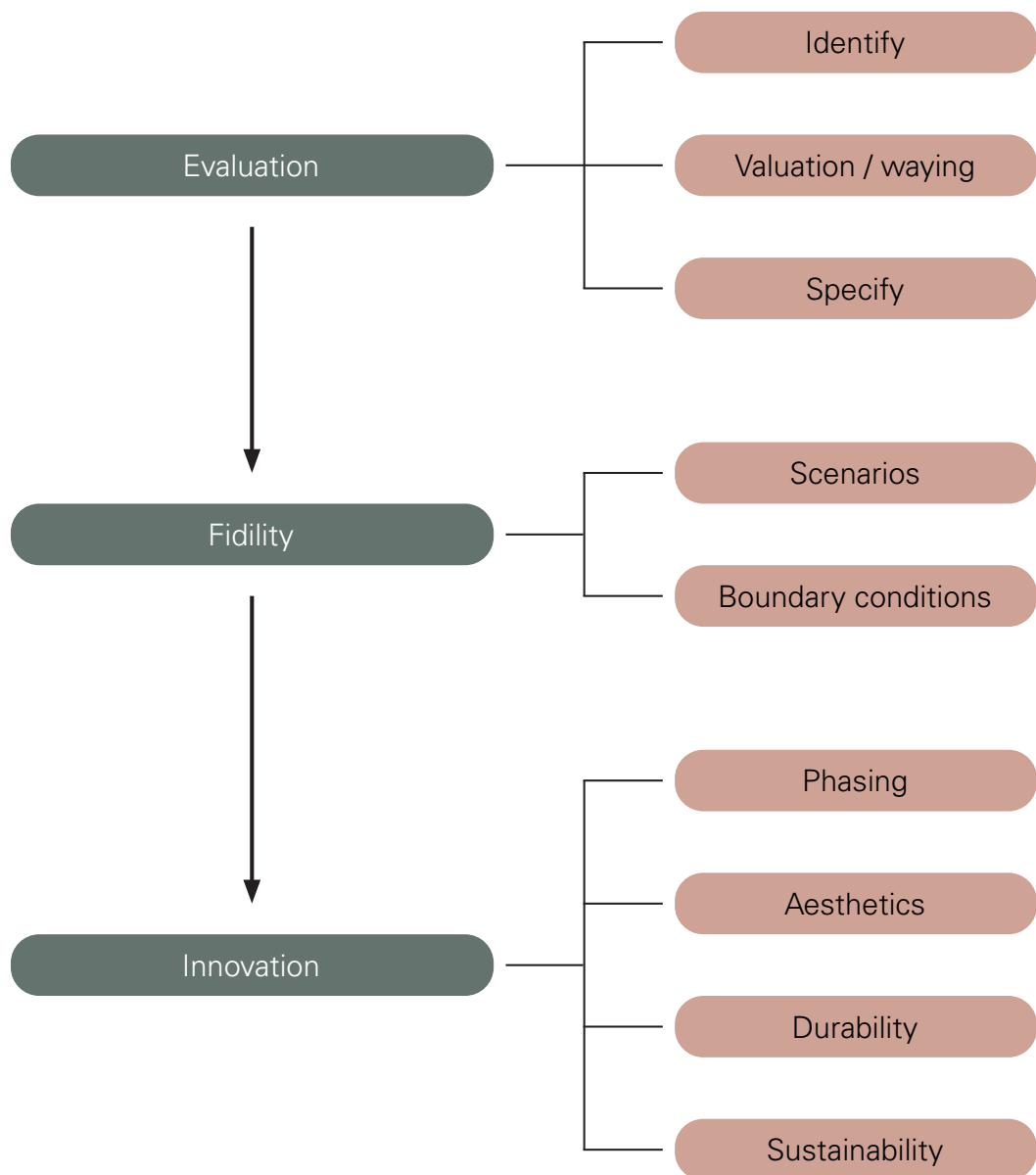
Stairwell characteristic



Balcony characteristic



Small intervention, large impact



Method demountable characteristics by M.C. Louwerens

4. Demountable characteristics

Preservation

preservation			Removal
continuous adjustment	one-time adjustment	no adjustment	
			
			
			

Identified characteristics northeast facade

The method identifies the existing characteristics which will be assessed by its aesthetics and performance. This makes it possible to specify the method which will be applied whether it will be preserved in its existing shape, interpreted and redesigned or removed.

For example the concrete slabs only full fill an aesthetic feature, these won't need any modifications related to its performance and is a typical 80s architecture. For this reason these will be preserved

The stairwells entrance do not match the current appreciation and performance, but do contribute a lot to the existing identity of the building. These have the potential to perform well in the new design and will be interpreted.

The exterior stairs however do not perform well by its function and will be removed for this reason.

4. Demountable characteristics

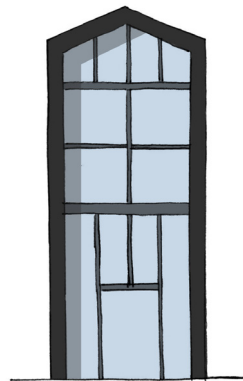
Fidelity - concept

To identify the boundary conditions of the characteristic several scenarios where made.

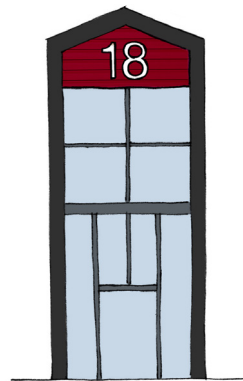
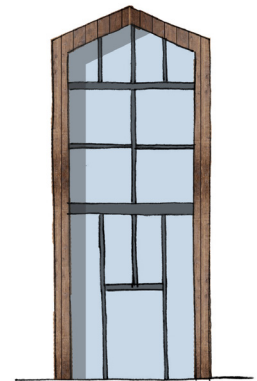
One characteristic has been further elaborated; the stairwell entrance. The scenarios resulted into an understanding how to deal with an interpretation in the existing stairwell.

The boundary conditions are:

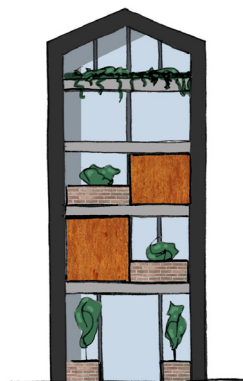
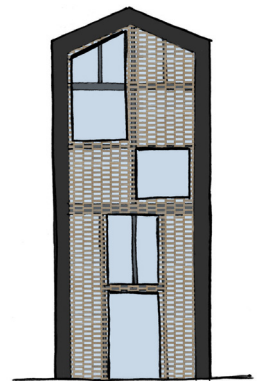
- Transparency: to have a sufficient connection between the building block and its context. Secondly for daylight access within the atrium.
- Shape: clear and recognizable shape referring to the existing entrance. The z-axis should however be eliminated to improve its performance not creating niches.
- Flexibility in frame, infill and structure, making it possible to change the characteristic over time.



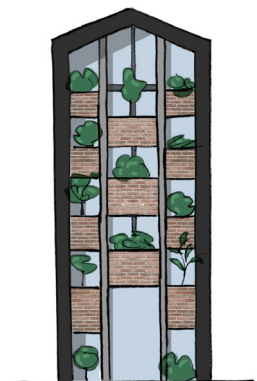
Frame



Infill

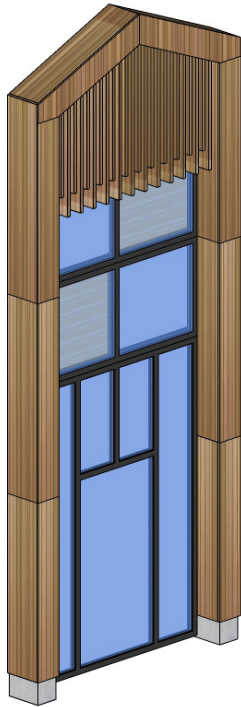


*Structure
Scenarios*

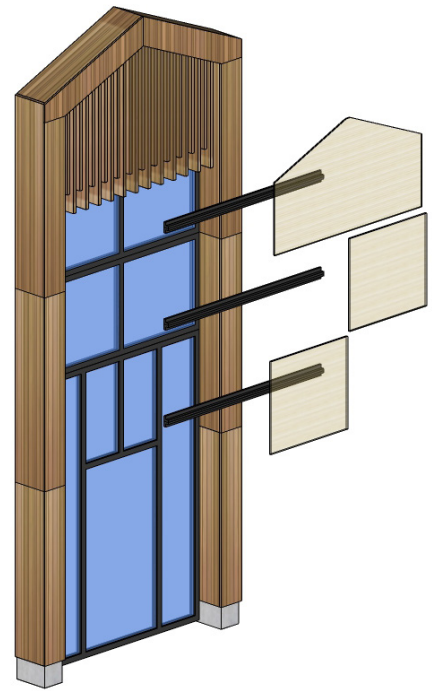


4. Demountable characteristics

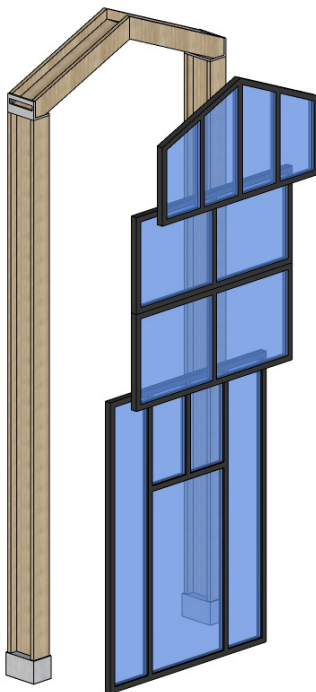
Innovation



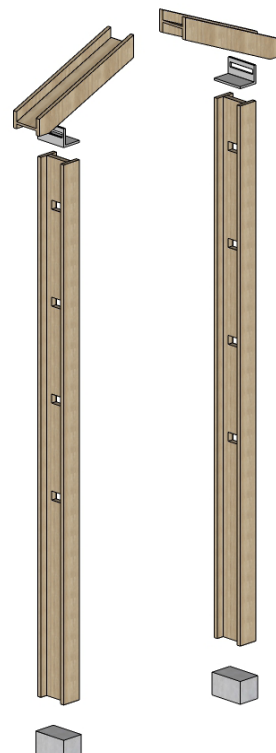
Design proposal stairwell entrance



Interior infill: 1 week



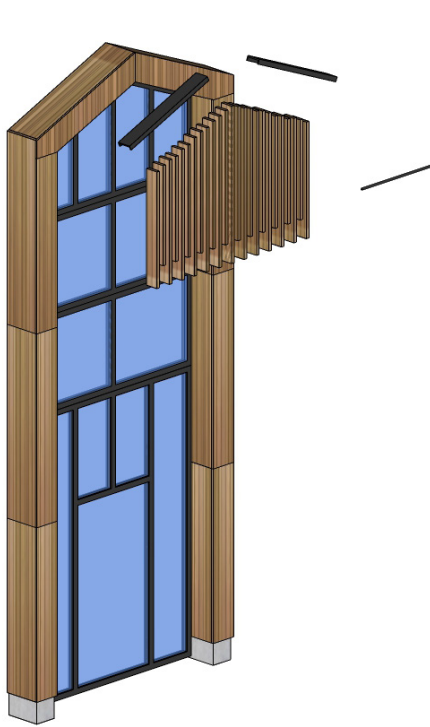
Window frames: 50 years



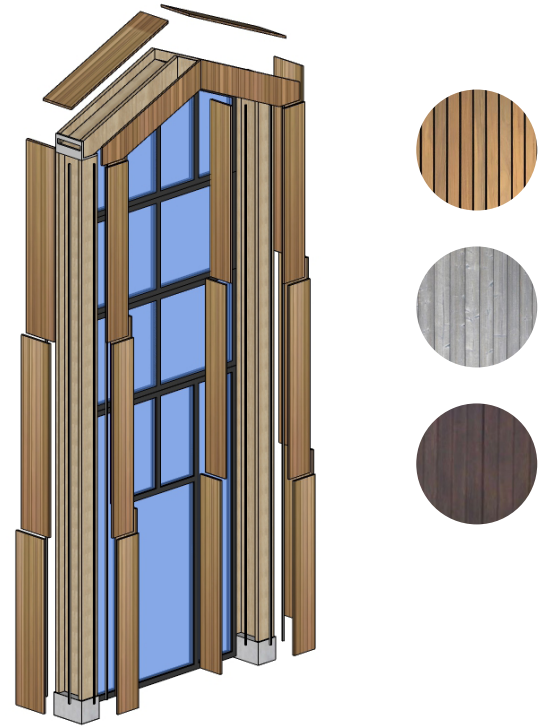
Structure: 100 years

4. Demountable characteristics

Innovation



Exterior infill: 10 years



Frame: 20 years

The flexible characteristic has the possibility to change over time. From only one week - for example during an event - by changing the interior infill. In 10 years changing the exterior infill. Its frame each 20 years. The glass frame every 50 years matching its lifespan. Towards its structure after 100 years.

I have chosen for wood as the main material for both cladding as structure since it is low carbon and easily adaptable.

Facade

South-west

Like the northeast facade, the characteristics elements of the southwest facade has been assessed. These are: the balconies, concrete slabs and the concept of window frames. The concept of window frames have been further elaborated.

The concept of the architect was to create an fade in the facade. From transparent at the bottom to less transparent towards the top. It has been articulated by the design as we know it nowadays.

I applied the same concept for its new facade, but more towards the current appreciation.

The apartments are provided by panels where the entrance has an gradient made by the reuse of bricks.



Identify



Concept: fade transparency



Articulation by architect



Facade southwest design proposal



Rhythm facade

The design proposal offers more rhythm making the building less boring. Still, the design proposal is in line with all principles of the architects



Facade

Materials

The solar panels on the roof produce 40% of the total energy demand. The phase changing materials and solar panels in the facade produce 20% of the total energy demand (if the phase changing materials have an equal efficiency of the solar panels).

It has not been possible to calculate how beneficial the climate concept is, but it certainly helps becoming energy neutral by 2050.

It is unsure if the building reaches its goal of becoming energy neutral. To make sure it will be by 2050 the answer can be found in the lifespan of solar panels. This is approximately 25 years. Around 2050 these have to be replaced which can be done by more efficient panels. Solar panels increase by 1% per year. Making the building surely energy neutral by 2050.



Solar panels

From itbuildingscience.wordpress.com



Phase changing materials

from yuliyasinke.com

surface (m2)

1 panel: 2400 x 850 mm =
2,04 m2

Facade fragment type 1:
12 panels

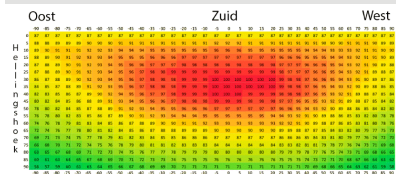
Facade fragment type 2:
15 panels

Full building:
300 panels

* Level 4 not included

Total m2 solar panels facade
612 m2

efficiency (%)



De Tabel van Hespul

<https://www.tentensolar.nl/>

Average efficiency
66 %

capacity (kWh)

- Most residential solar panels on today's market are rated to produce between 250 and 400 watts each per hour.
- Domestic solar panel systems typically have a capacity of between 1 kW and 4 kW.

<https://www.yesenergysolutions.co.uk/>

Een zonnepaneel meet 1.6m op 1m,

Als men dit per vierkante meter gaat berekenen, kan men stellen dat een vierkante meter in ideale omstandigheden afhankelijk van het vermogen per paneel tussen de 170kWh tot 220kWh genereert.

<https://zonnepanelenenergie.be/hoeveel-vierkante-meter-zonnepaneel-heb-ik-nodig>

Source 1: $((250 + 400) / 2) / 1,6 = 203$ kWh

Source 2: $(170 + 220) / 2 = 195$ kWh

Conservative capacity
200 W

Energy production:

Surface (m2): 612 m2

Efficiency (%): 66 %

Capacity (kWh) 200 kWh

surface x efficiency x capacity

$612 \times 0,66 \times 200 = 80.784$ kWh

Total energy production:
80.784 kWh

Energy consumption:

Aantal personen in huishouden	Gemiddeld gebruik per jaar	Kosten per maand in €*
1	1.810 kWh	13,-
2	2.800 kWh	31,-
3	3.310 kWh	40,-
4	3.840 kWh	50,-
5 of meer	4.110 kWh	56,-
Gemiddeld per huishouden	2.730 kWh	30,-

*Bij een gemiddeld elektriciteitsstarief (tarief na 1 januari 2021) van 22,05 eurocent per kWh en vastrecht van € 25,94 per maand (inclusief 21 procent btw). Inclusief de jaarlijkse belastingteruggave van € 558,56 (2021). Afgeronde bedragen.

Bron: Milieu Centraal en CBS (berekening Nibud, 2021)

<https://www.nibud.nl/consumenten/energie-en-water/>

2.730 kWh per household

Number of apartments:

Fragment type 1: 10 x 12 ap. = 120

Fragment type 2: 6 x 9 ap.

= 54

Total number of apartments: = 174

Total energy consumption:
475.020 kWh

% Total energy supply:

Total energy consumption: 475.020 kWh

Total energy production: 80.784 kWh

percentage total energy supply:

$1 / 475.020 \times 80.784 = 17 \%$

$174 \times 17\% = 30$ apartments

Efficiency solar panels, facade :
17%

Energy production:

Surface (m2):
1.488 m2

1 roof fragment: 93
16 roof fragments: full building

Efficiency (%): 100%

70% *

Capacity (kWh)
kWh 200

surface x efficiency x capacity

$1.488 \times 1,00 \times 0,70^* \times 200 = 208.320$ kWh

*assumed efficiency value of usable surface, to guarantee ideal orientation

Total energy production:
208.320 kWh

Energy consumption:

Total energy consumption:
475.020 kWh

% Total energy supply:

Total energy consumption: 475.020 kWh

Total energy production: 208.320 kWh

percentage total energy supply:

$1 / 475.020 \times 208.320 = 44 \%$

$174 \times 17\% = 30$ apartments

Efficiency solar panels, roof :
44%

Reflection - Urban

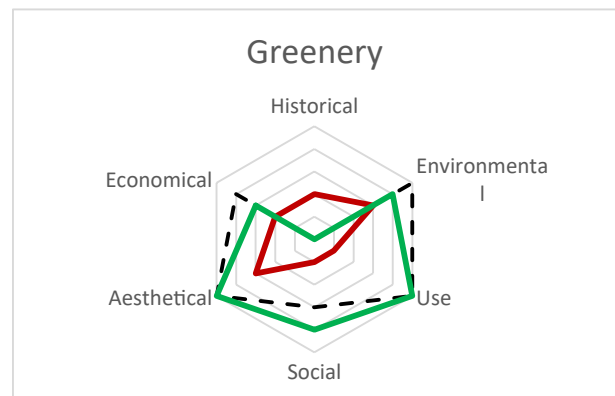
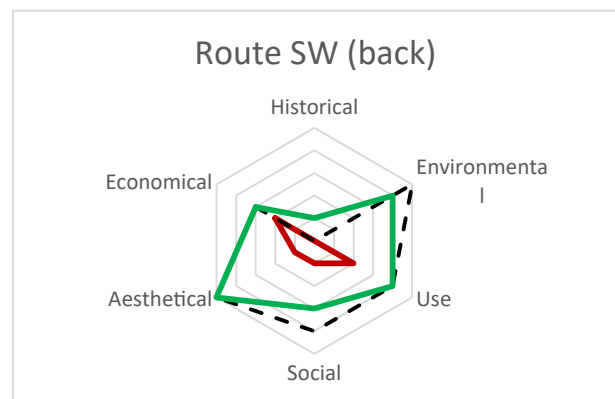
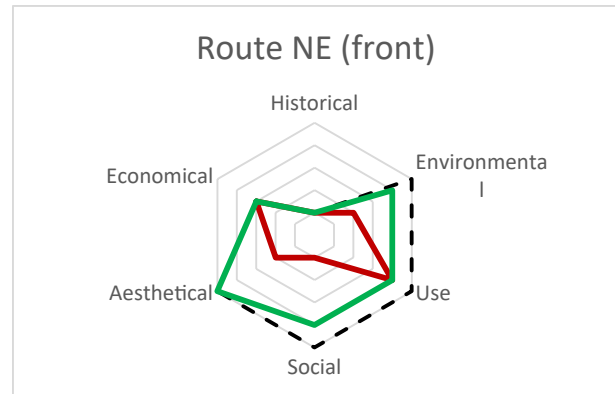
Spider diagram

I have reflected on the design in two different ways. First of all the ambitions in numbers:

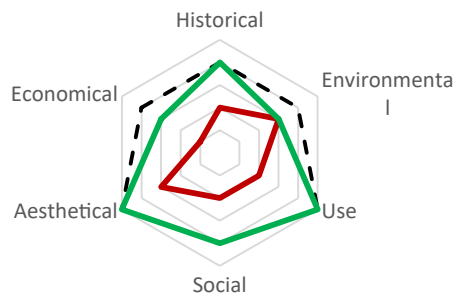
- Density by 1,67:
Has been achieved by 1,90.
- Contemporary R-value:
Has been achieved.
- 100% energy neutral by 2050:
Most likely this will be achieved.

Secondly the method of spider diagrams have been applied. 6 values - historical, environmental, use, social, aesthetic and economical - have been taken into account. As an collective of 3 the existing situation has been assessed. The personal ambitions has been documented and the design proposal also has been assessed. This was filled in by myself which is substantiated by literature and my authority as an future architect. It has been peer reviewed by my colleague students to check if it has been filled in not to positive nor negative.

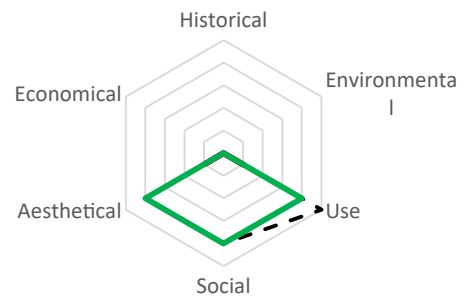
In total 21 perimeters where set. Both the urban design and the design on a the building level are incorporated. Resulting into an overall diagram



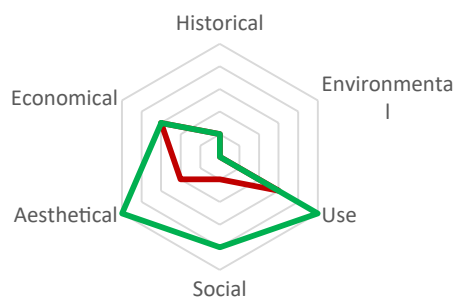
Route middle (middle)



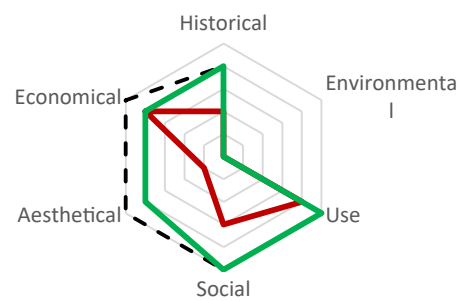
Public-Private



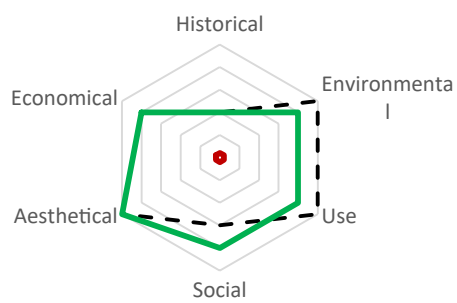
Infrastructure



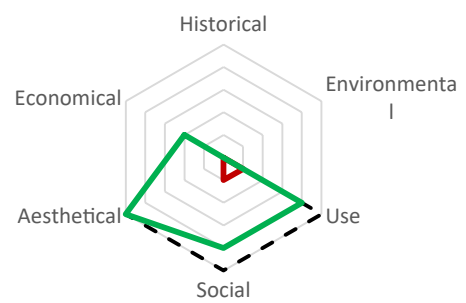
Amenities



Water

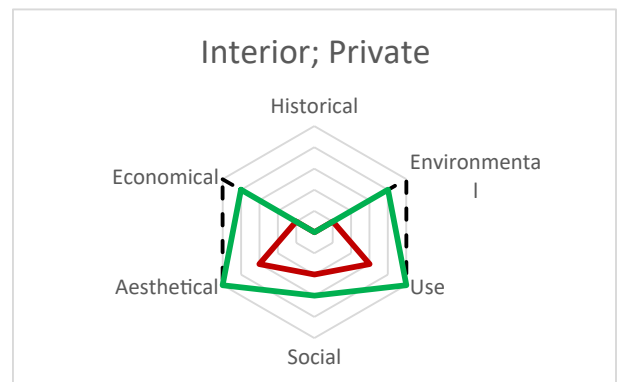
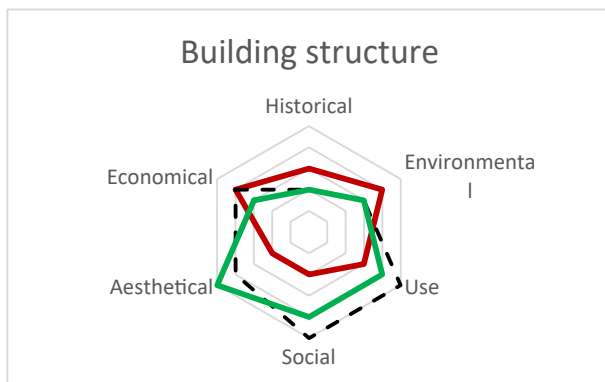
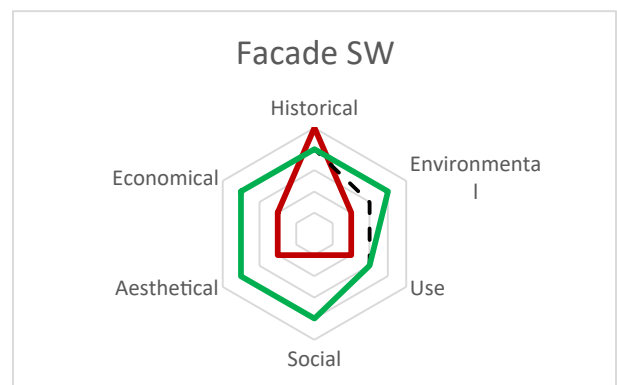
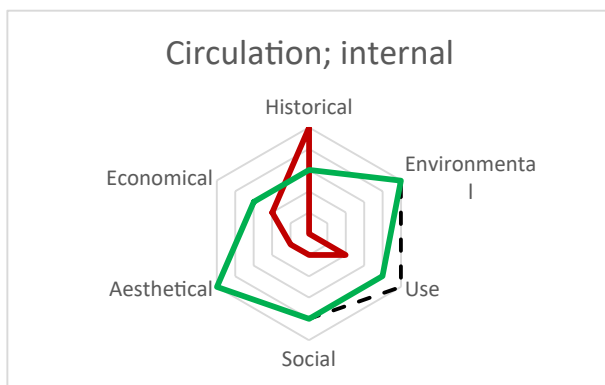
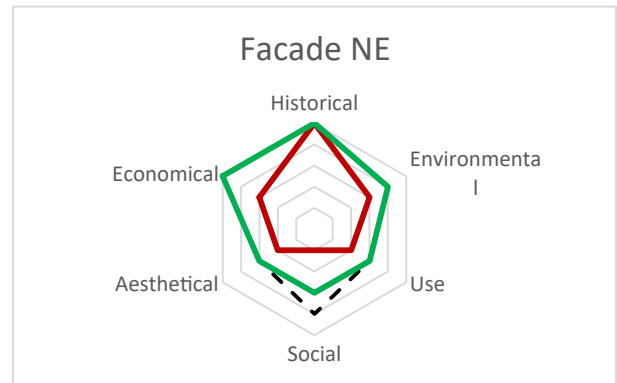
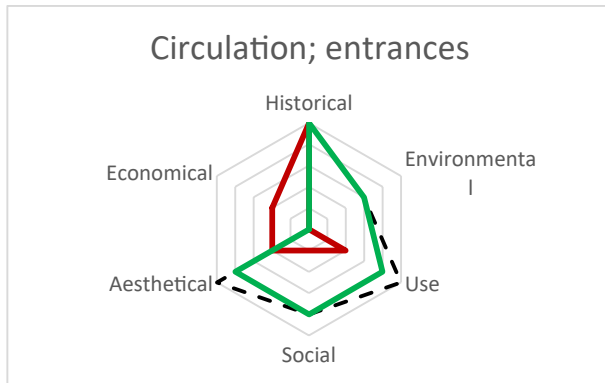


Meeting spaces



Reflection - Building

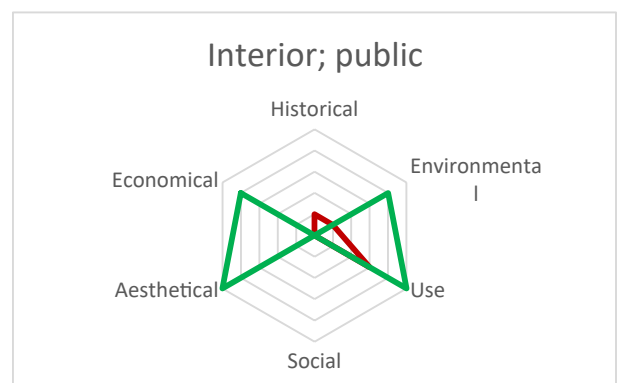
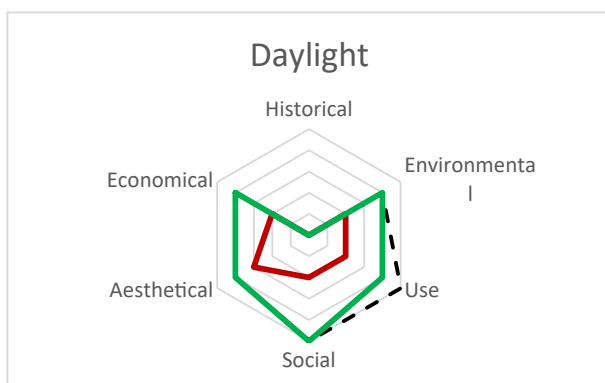
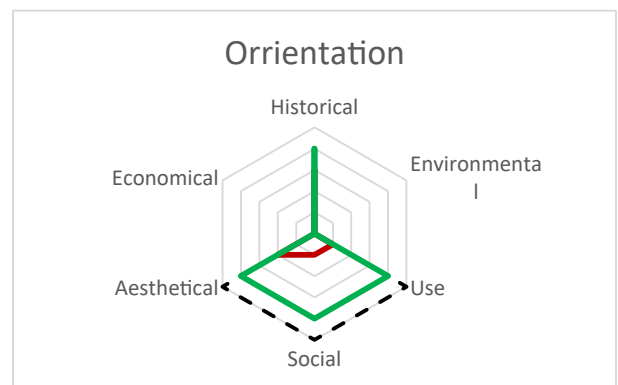
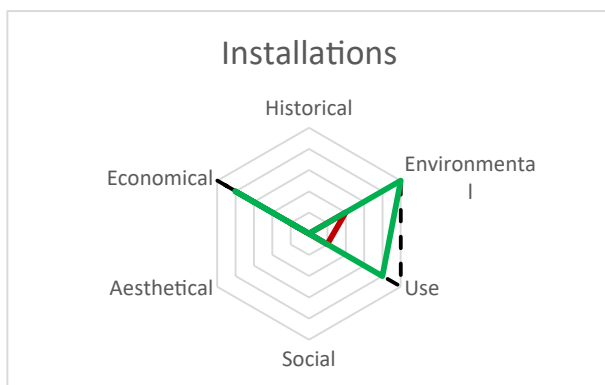
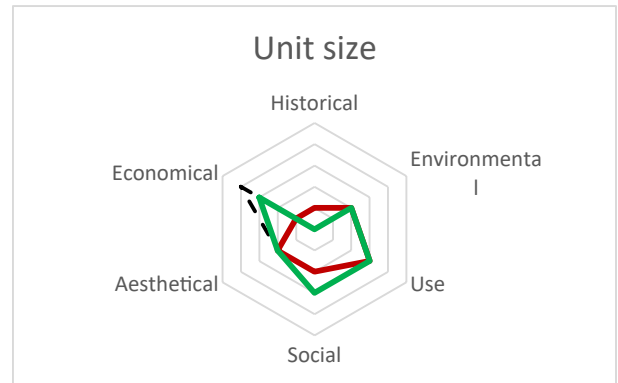
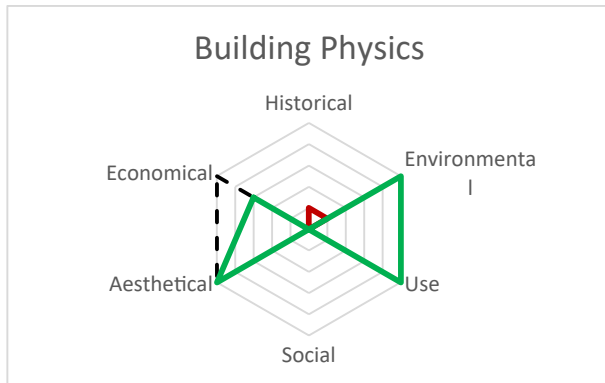
Spider diagram



As an example the exterior facade the southwest facade will be assessed.

The facade used to have high historic value as identified. The other values, do not score to high. For example the poor insulation results in a low environmental performance.

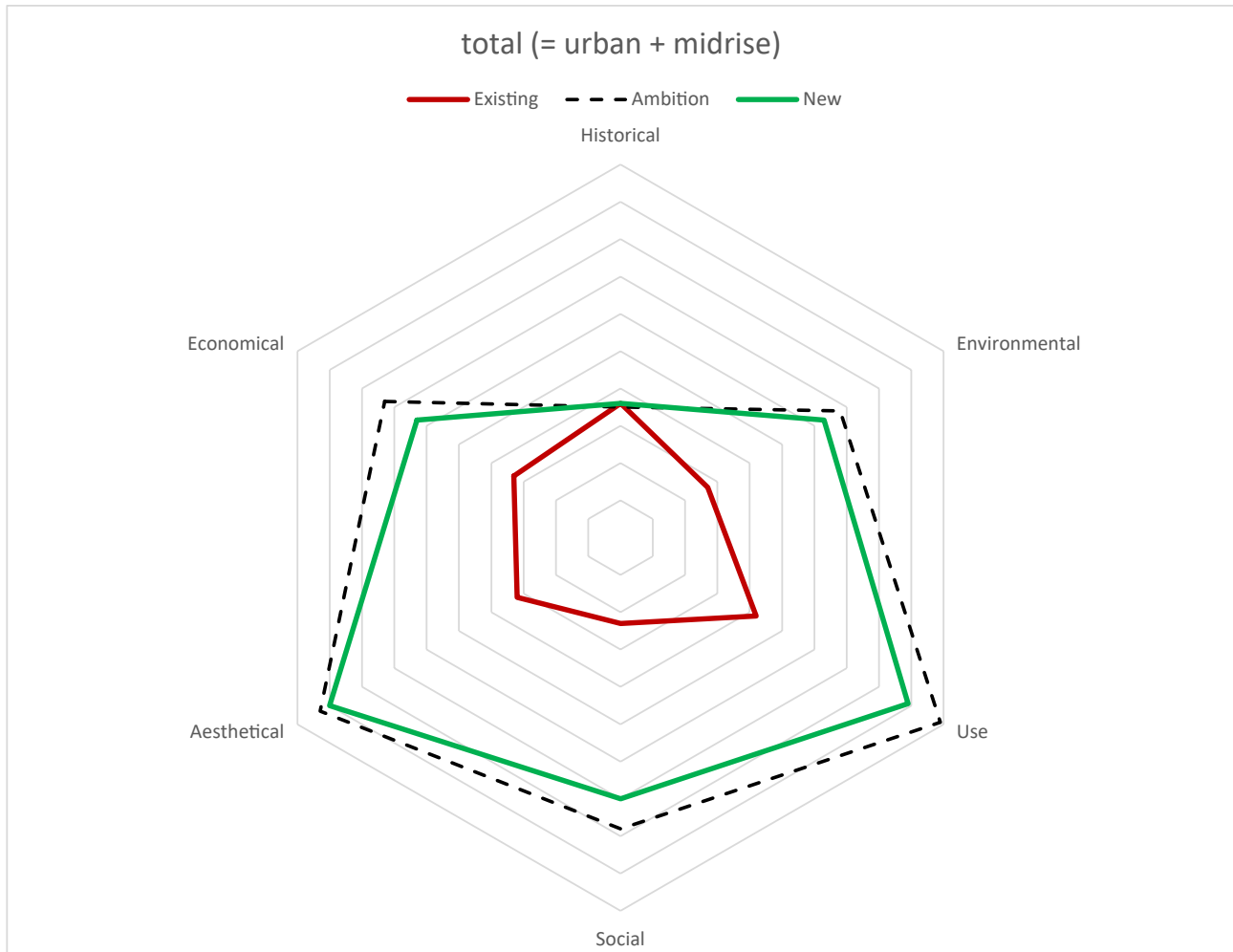
The new design losses some historic value in the facade by the change of the window frames. Not to much since it is an interpretation on the principle of the architects and the facade and several other characteristics are maintained as well. On the other hand its performance on most other aspects has been improved. For example the higher R-value and the solar panels integrated in the facade result in and higher environmental value which is beneficial for the economic value



Also the social value has increased because the entrances create a more sufficient connection between inside and outside.

Reflection - Total

Spider diagram



In total 21 perimeters were set. Both the urban design and the design on a building level are incorporated. Resulting into an overall diagram.

This shows that there is no loss of historic value. The corridor will be removed but at the same time the historic value increases by the change in orientation of the building and the use of demountable characteristics.

All other values are improved as well. Especially aesthetic and use value, which are the two pillars of this graduation project. From this I can conclude that it is possible to change the stigma of a neighbourhood into a charming full charismatic environment.

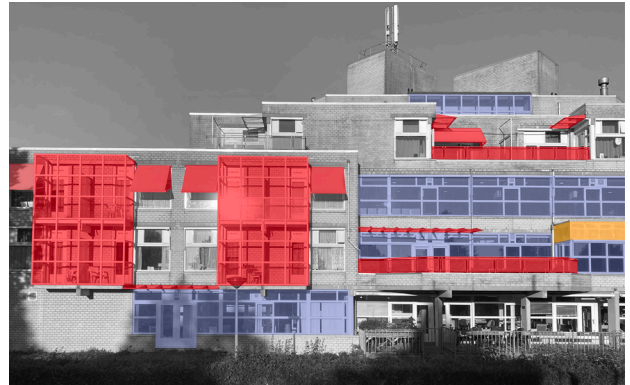
This has been achieved by solving the current challenges of Hoptille, making use of the existing qualities and not only thinking about the present but also incorporating the future.

Relevance

Demountable characteristics



Police office,
OMA -1989



Residential care center De Overloop,
Herman Herzberger - 1984



Gooizicht,
Maarten Voorwijk - 1990



De Meerstraat,
architect unknown - 1985

The reflection paper shows the relevance of this design project. However one topic has not been highlighted yet.

I have developed a method myself related to the aesthetics of the building. Does the method only work for the Hoptille mid-rise building or is possible to apply it on other buildings as well?

This has been tested by 4 projects in Almere Haven, all build between 1984 and 1990. The result is that the method can be applied on 3 of the 4 buildings meaning 75%.

The method can not be applied on the police office of Almere Haven designed by OMA because it has an too minimalistic approach. However the other 3 designs have an expressive approach with multiple characteristics typical for post modern architecture.

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