



# HEESTERVELD GONE GREEN

Julie Megens  
5181445  
01-07-2021







## TABLE OF CONTENTS

Introduction	5
Collective / individual research	9
Design process	39
Design - urban scale	57
Design - building scale	87
Design - detail scale	125
Conclusion	147
Reflection	160







# INTRODUCTION

The liveability in Heesterveld is very insufficient according to the 'Leefbaarometer' (Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, 2018b). The neighbourhood scores very poorly on the indicators dwellings, residents, safety and physical environment. The only positive indicator is 'the amenities'. This score is based on the average of cities in the Netherlands. The deviation of Heesterveld, in comparison to the average, is -0,81. In order to improve the liveability in the neighbourhood, it was of importance to perform research with respect to the challenges and opportunities in Heesterveld. This was done in a collective research, where four stakeholders were approached and participated in the research. The stakeholders were the makers, the government, the owners and the users. Several methods were used, like doing interviews, literature research and social media research. The main method was however the collective photo elicitation, where photos were shown to all stakeholders and they could respond to it.

After the collective research, the strengths and weaknesses of Heesterveld were identified. The problems in the neighbourhood mainly arose on the social level, more specifically in the public space. From literature research, two other challenges in Heesterveld came up, which were also mentioned by the residents. According to the municipality, there were also many socio-economic issues, which needed to be resolved. Lastly, the global problem of climate change also has a big impact on a small scale, so this issue was also addressed in the design. Heesterveld had to improve on social, economic and environmental aspects, which is done in the design.

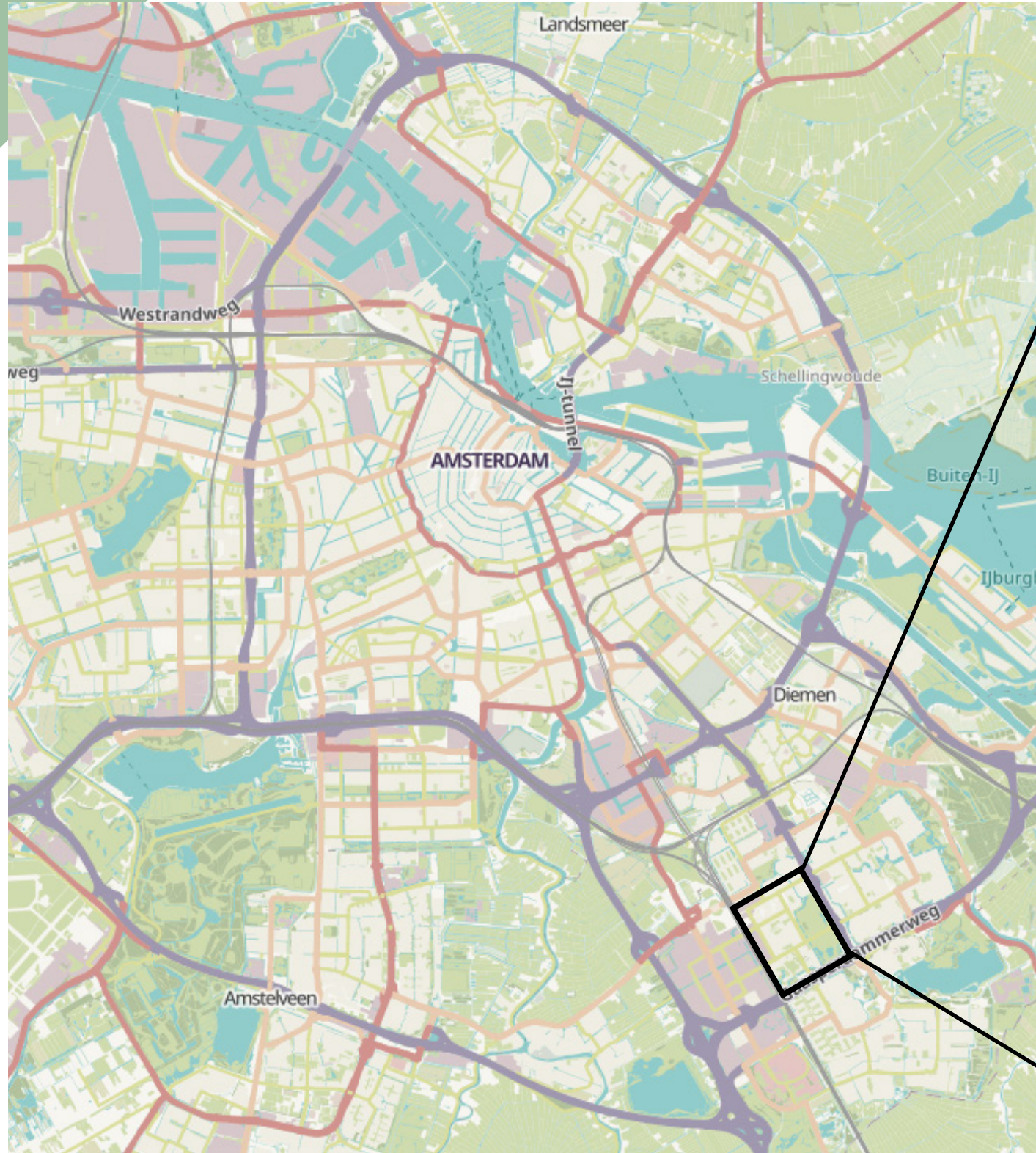
This was all done within the framework of the studio, which is new heritage. The buildings in Heesterveld were built in 1983 and thus part of the 80s architecture. So the research also focused on determining the values and qualities of 70s and 80s architecture, which was used as a base for the design. The buildings from the 70s and 80s are quite young and they are usually not considered as heritage, while it could be a very valuable and sustainable idea to also consider these buildings as heritage. To determine the values and qualities the central research question is: What are the values, attributes and challenges of the residential neighbourhood and buildings in Heesterveld, as perceived by its residents, the government, the makers and academics and the owners?

The central design question is: How can Heesterveld be made future-proof, by solving the social, economic and environmental issues present in the neighbourhood, while preserving the current values and identity? The goal of the design was to create a future-proof design for Heesterveld, where the lifespan of the building will be prolonged. In order to reach this goal, it was essential to create a sustainable design on the social, economic and environmental level.





## PROJECT LOCATION



Amsterdam



Heesterveld



## PROJECT LOCATION

The location of the project is in Amsterdam South East. The neighbourhood is called Heesterveld. In 1972, this area was still a polder, called the bijlmermeer (Bijlmermeer, 2020). In 1974, the honeycomb structure buildings were built, called Hakfort and Huigenbos. The Bijlmer was built according to the CIAM (Congrès Internationaux d'Architecture Moderne) principle, creating a functional city. The two starting points were creating a car free neighbourhood and building high rise. The goal was to attract middle class families, but instead one-person households moved into the high rise buildings. A lot of unemployment was present among the residents, which resulted in a problematic neighbourhood. In 1983, Heesterveld was built. The design of this neighbourhood was a counter movement against the high rise Bijlmer buildings. In the 90s a lot of high rise buildings were demolished and replaced by middle or low rise buildings. Around 2008, they were also planning to demolish Heesterveld, this was avoided by the economic crisis. After the crisis, Heesterveld has been improved and gone through a transformation in 2013, when the façade was painted in bright colours. The new colour accentuate the creation of a new identity of Heesterveld. However, these new colours of renovation are considered to hide the values of the innovative prefabrication concrete panels and not align with grid rhythm of the facades. The Heesterveld Creative community was also established at that time and artists settled in this building. Nowadays, there are also some restaurants and retail functions located. The building is owned nowadays by Ymere and there are 317 dwellings in total.

The architects that worked on this project were Frans van Gool and Pi de Bruijn. The idea of having 4 to 6 storeys was to create a human scale environment. The enclosed arrangement was to create intimate courtyards. These attempts are based on more traditional typology of medium-rise housing, contrary to the idea of Bijlmer. The facades of the buildings have a clear rhythm using prefabricated concrete panels. The design was also influenced by the CIAM principle. This kind of separation resulted in splitting all functions: this goes for cars, pedestrians, bicycles and public transport. Even people are separated this way in some kind of groups.

The main concept of the entire urban plan of Bijlmer came from Siegfried Nassuth who was inspired by Congrès Internationaux d'Architecture Moderne (CIAM) and 1928 Le Corbusier ideas who were talking about separation of functions. The architects decided that for the remaining parts of Bijlmer that were not yet built or in preparation, they want to change the philosophy and start filling those areas with medium height building, not high rise anymore. The midrise buildings should be related much more to traditional city concepts. They tried to make intimate spaces rather than only cosmic big parks that people just wouldn't use.



Pictures of the original design of Heesterveld (beeldbank Amsterdam)



# HISTORY



1972



1974



1983



1983



1984



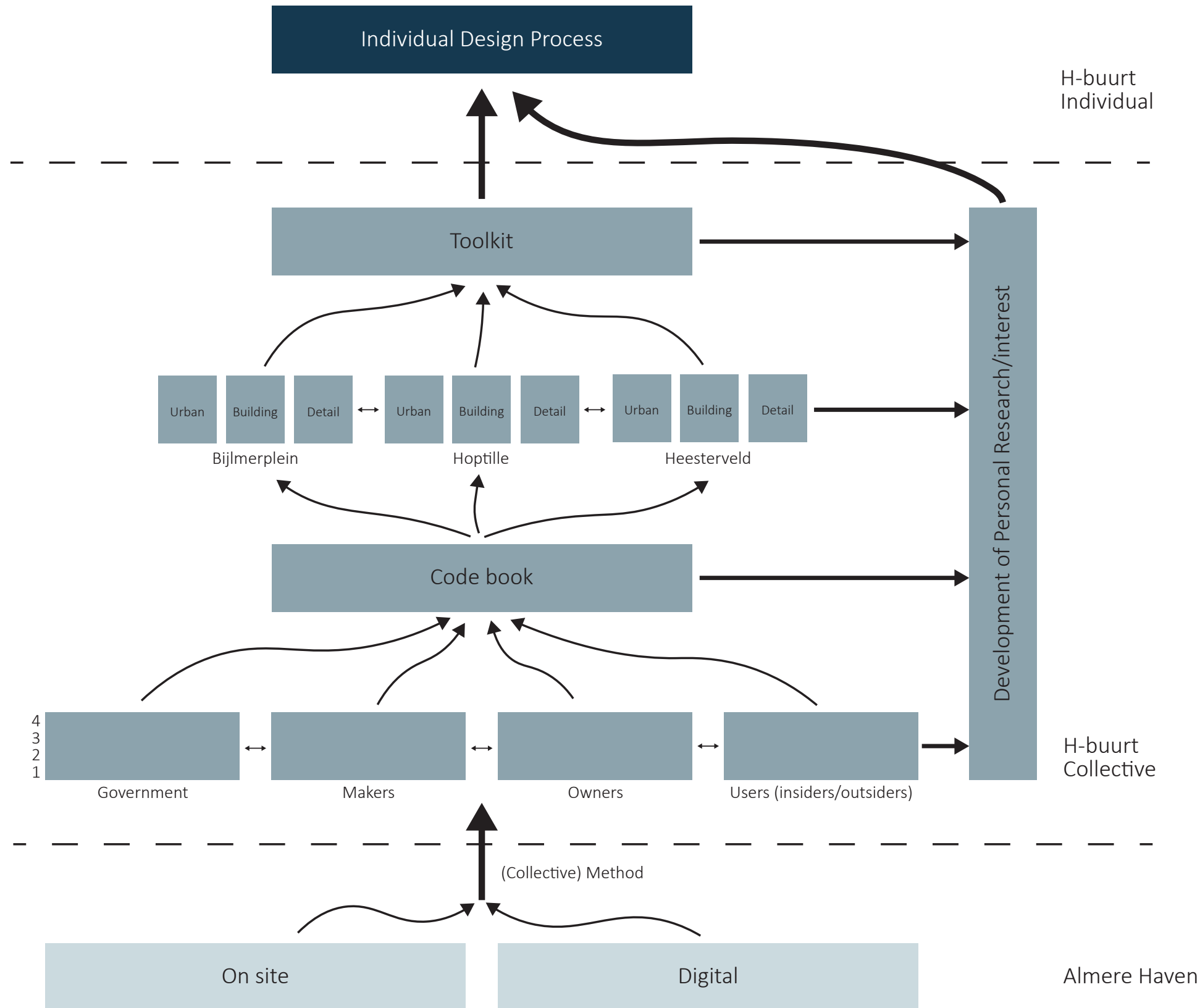
2013



2020



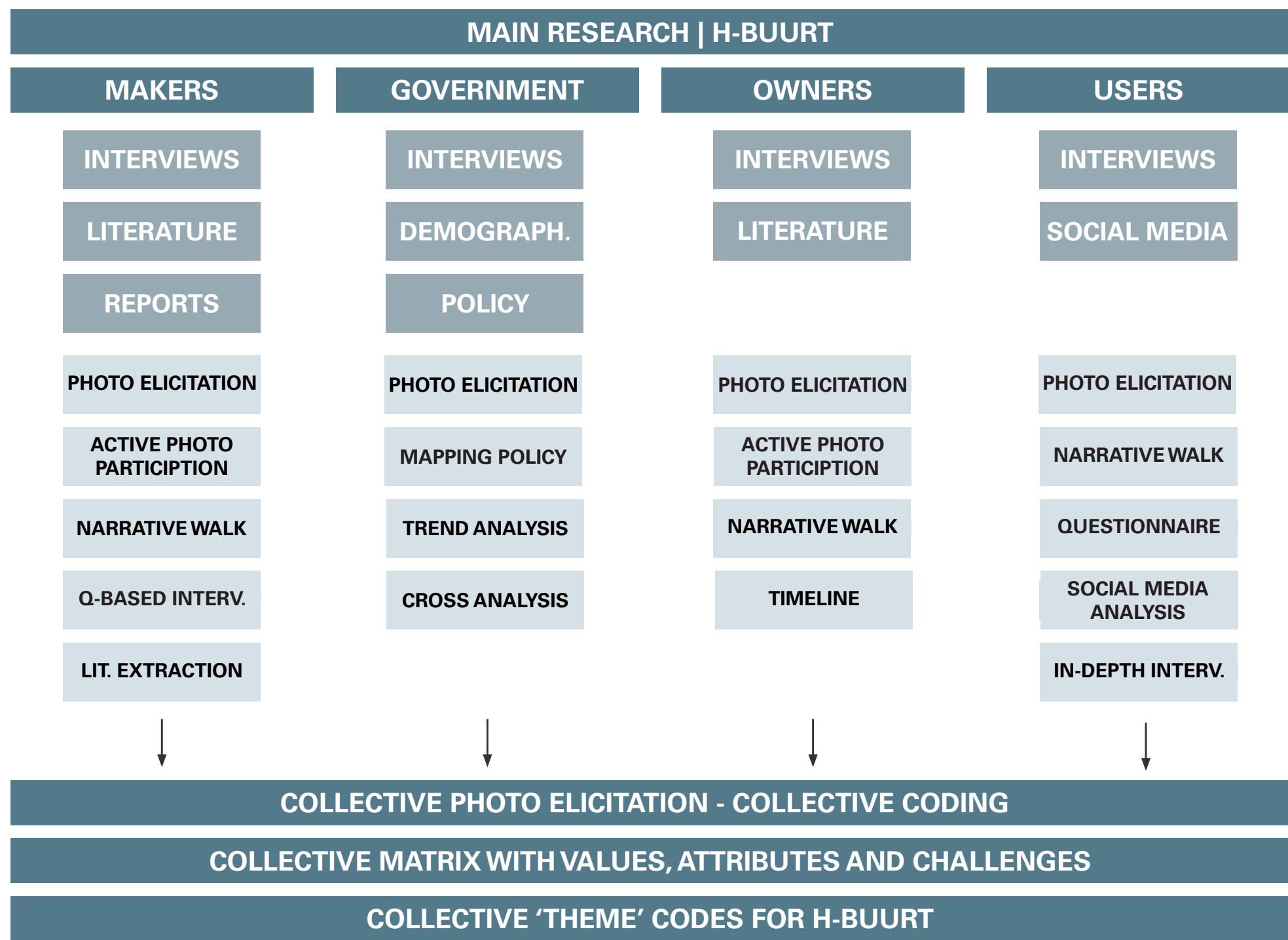
# COLLECTIVE RESEARCH



The research starts with a collective part, which was done in the first phase of the project. This collective research consists of a pilot research in Almere Haven and the research in the H-buurt. The pilot research in Almere Haven is used as an experiment, before diving into the research in the H-buurt. During this experiment, the goal is to test and adapt the research methods and to extract the attributes and values from the opinions of residents. After this collective analysis of the two neighbourhoods, research by design is conducted. Different scenarios are tested and finally a design strategy is chosen and elaborated. This scenario is then transformed into a design, after conducting literature research and analysis.



# COLLECTIVE RESEARCH



## H-buurt

To start the H-buurt research, the group divided into four smaller groups. Each was appointed a Stakeholder according Howard (2003) in order to cover different perspectives in the area. The division was as followed: Insiders/Outsiders, Owners, Academics/Makers, and Government.

A collective strategy and method were developed to create comparable results across all groups. The strategy follows a weekly schedule with the same focus for each group per week. Within this, different methods can be used by the groups to achieve this focus. The first week was for exploration of the research field and get a grip on the opinions of stakeholders. This information was then used to create a photo set, which was used in week 2 by all groups, the photo elicitation (Harper, 2002). Seven photos were selected and shown to all interviewees along with a collective question. These answers were then compared in week three. The fourth week was used to gather more in-depth information and/or the processing of the data.

The method for processing of the data was equal for all groups. The program Atlas.it was used to code the data to be analysed later on. For coding, an inductive strategy is chosen. This approach requires reading the data and identifying codes throughout the process. It is not clear which codes will be included in the final code book beforehand. This ensures that the codes reflect the issues of importance from the interviewees, not the preconceived notions of the researchers (Hennink, 2020). The specific method per stakeholder is described on the next page.



# COLLECTIVE RESEARCH

## Government

The government group focused on the perspective of the government on the H-Buurt. This includes the municipality, the national service for cultural heritage, but also organizers on the neighbourhood scale.

The first part of this research is desk research. This provides an overview of the area, in the form of demographics and plans & policies. The demographics include topics such as income, population or migration background. Through analysis of these statistics we can identify events and societal change (passive influences) and policy change (active influences). Added to that, an overview of government plans tells where challenges are in the area. A challenge represents a value that could or should be present, but is not yet.

Second, interviewing representatives from different government agencies contextualizes the desk research. The interviews are structured around a fixed set of photos. The interviews are transcribed and coded, so that can be further analysed and compared.

The lack of qualitative greenery is seen as a maintenance problem by the municipality. The budget for maintaining greenery was cut. The government now realised that this led to large, open spaces, where people do not feel at ease.

## Makers

The maker/academic group did research upon the makers and academics according to the table of Howard (2003). Makers are original architects, urban planners and re-designers. Academics involve specialists from architectural heritage, urban and housing fields.

The first part consisted of site visiting, studying literature and other secondary resources to get familiar with the architecture and context of the Bijlmer initial idea till now. As a result, summarized literature and a timeline provide a comprehensive overview. The following step was preparing and having interviews with the architects and academics themselves to find out attributes and values of each of them. Therefore a set of pictures was shown to each of the interviewees to react on, followed by more in-depth questions about their project/specialty.

The outcome of these interviews have been turned into transcripts. These transcripts form the base to find out the values and attributes, hinders and mismatches with the help of qualitative and quantitative coding. According to the makers greenery is important for housing, but cosmic greenery became anonymous green without articulation of design and scale. Social elements, like benches, should be places in the green to enhance communal sense.

## Owners

The owner group focused on the real estate property within the five neighbourhoods of H-Buurt. The first steps were taken through background research to get an understanding of the topic, the scope and its importance. Overview maps and a timeline of the history of Housing Associations have been created through online research, literature and mapping.

The gained knowledge of week one enabled the group to set interviews with the stakeholders themselves. Interviewees have been asked to bring photos of the neighbourhood and explain their personal relation to them. This was followed by 6 collectively picked photos of different areas within the H-Buurt. It was important to gather information from diverse sources, in the interviewees case with different professional- and even personal- backgrounds to get a wide range of reactions, opinions and therefore values. A physical narrative walk with some of the interviewees should back those values up.

During the walk, photos will be taken of important elements to the interviewee and give more insight into their perspective (Gabrielle, 2005). Finally, those values- in the form of transcripts- were coded to be of further use in research.

Owners highly valued the presence of greenery in general, but they have been very critical when it comes to the responsibility of the maintenance of the greenery. They have seen this as a lack of action and vision. For them, this lack of vision resulted in green areas without any usage, due to safety issues and a general lack of quality. They mentioned that it seems that the green spaces are not tailored for current users and their needs.

## Users (Insiders/Outsiders)

The users group focused on the perspective of the people who live or work in the H-buurt or visit the H-buurt. The aim is to understand the attributes current users value.

For the first source, interviews, four types of interviews were conducted. In the first week a basic set of questions was used to get a general idea of the opinions about the area. This information was used to create a more detailed set of questions and a collective set of photos, which were used for the online questionnaire in week two as well as the in-depth interviews. This photoset was simultaneously used for the street interviews.

For the second source, social media, information was gathered on Flickr, Instagram, and Facebook. The information consisted of pictures with hashtags and comments.

For the third source, research done by others, information was gathered from scientific sources on the users' perspectives specified to Bijlmerplein, Hoptille and Heesterveld. All information was coded in separated files which were translated into a heat map, word map and an overview of attributes and values.

In Heesterveld, users appreciated the water and planters. However, there has been also a group of users that did think there is a lack of qualitative greenery. In Heesterveld, people thought there is too much stone and brick and they miss greenery.

## Matrixes

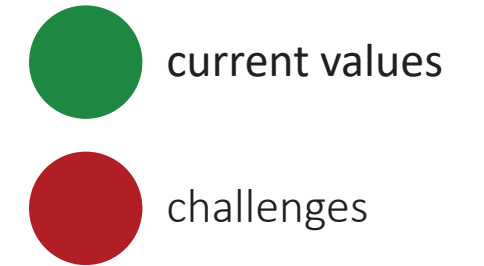
After gathering all information of the different stakeholders, conclusions can be drawn from the comparison between the photos. All stakeholders use the same photo set, so the results can be easily compared, this is done by making value matrixes of each photo. A set of values and attributes is used for this matrix. The values are: Ecological, social, economic, aesthetical, historical and political (Tarrafa, 2012). The attributes are subdivided in tangible and intangible attributes: site, surroundings, stuff, surface, amenities, scale, typology, space, story, social, services, vision, atmosphere and past/present/future (Veldpaus, 2016).

## Themes

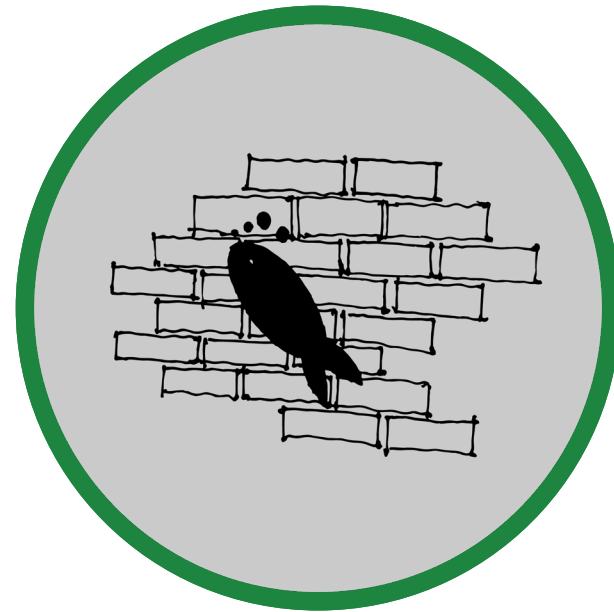
From the matrices, the nineteen themes are extracted. These themes are based on the significance of attributes of the various stakeholders. The themes are typical for the H-buurt and are location specific. The themes are: 80s architecture; diversity in public space / dwelling scale / function / cultural; elevated level; feeling of safety; (in)formal economy; greenery; low – mid – high- rise; maintenance – building / urban; mistrust; nuisance of garbage; sense of ownership; (street)art; three distinctive identities; and unintended use of public space. After identifying the nineteen different 'theme' codes for the H-buurt, every stakeholder group analysed their main results to translate them into the main conclusions per theme. The most problems in Heesterveld occur within the following themes: diversity in public space; monofunctionally; unsafe feeling; lack of qualitative greenery; nuisance of garbage; and unintended use of public space. These themes simultaneously offer the most opportunity to improve. Heesterveld has a low value on all these aspects, as perceived by the makers, government, owners and the users. The theme diversity in public space has a low value, the makers mentioned that the enclosed block in Heesterveld offered intimate space, however it required a better connection to the public realm on the ground floor level. The lack of qualitative greenery has a mid-value, there is a lot of cosmic greenery which does not add a lot of value. There is also a lot of stonelike material in Heesterveld which is not appreciated. Unintended use of public space has a low value according to all stakeholders, the dark spaces are used for shade activities and the border between private and public space is not present.



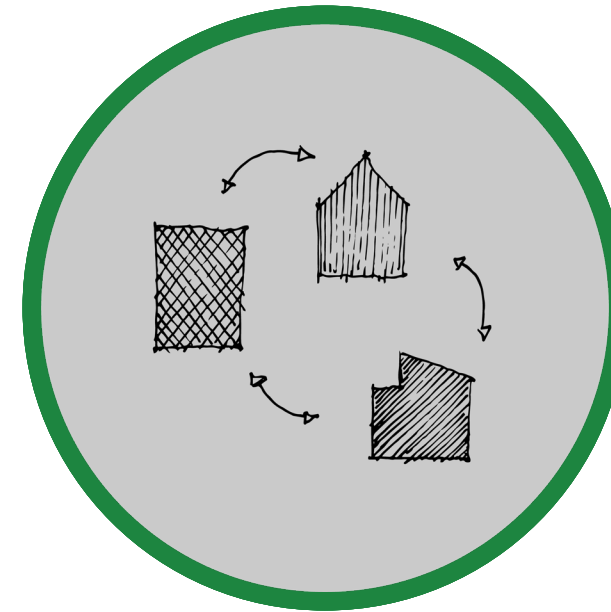
# COLLECTIVE RESEARCH



cultural diversity



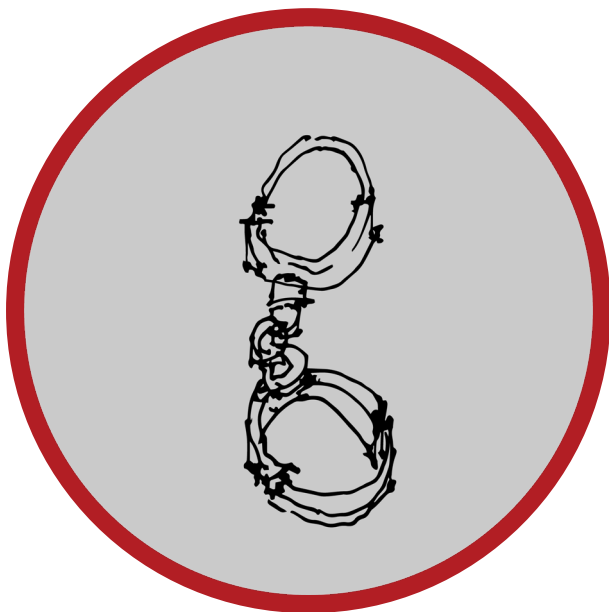
(street) art



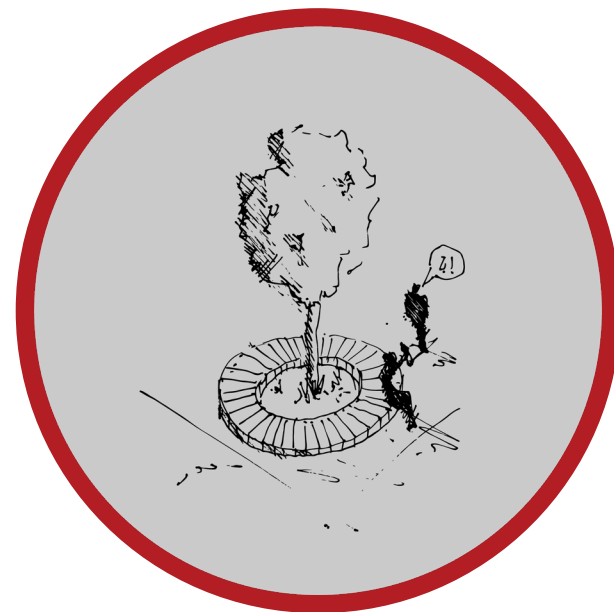
own identity



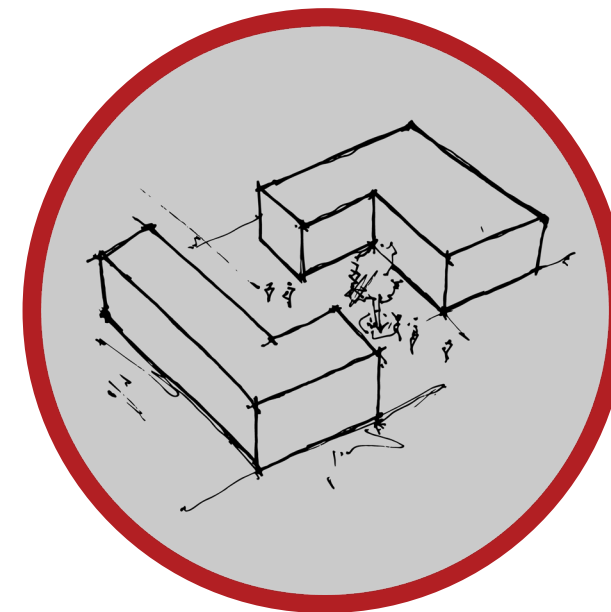
presence of greenery



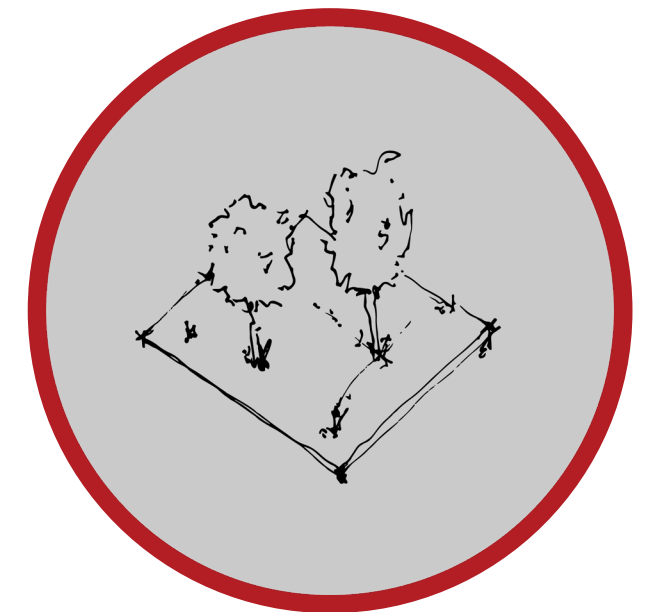
unsafe feeling



unintended use of public space



no diversity in  
public space/function

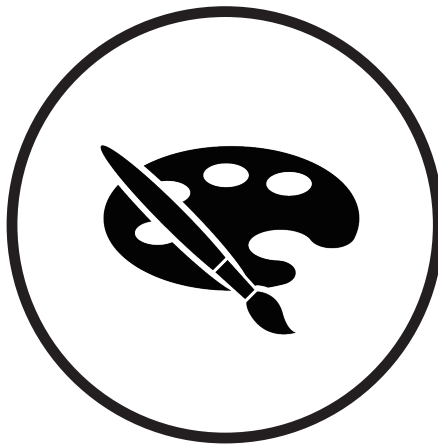


lack of qualitative greenery



COLLECTIVE RESEARCH

AESTHETIC



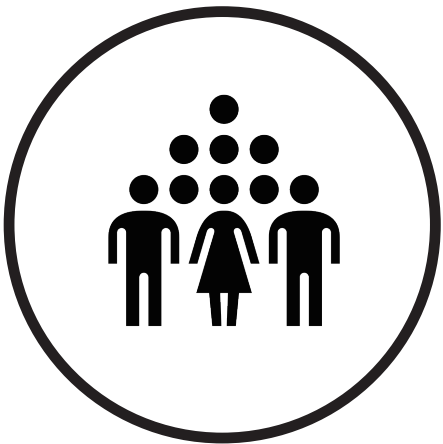
ECOLOGICAL



ECONOMICAL



SOCIAL



Users

colour

lack of greenery

bicycles

colour

presence of greenery

garbage

metro station

communal space

cafe: Oma letje

Makers

identity

mid-rise

colour

plinth

presence of greenery

cosmic greenery

monofunctional

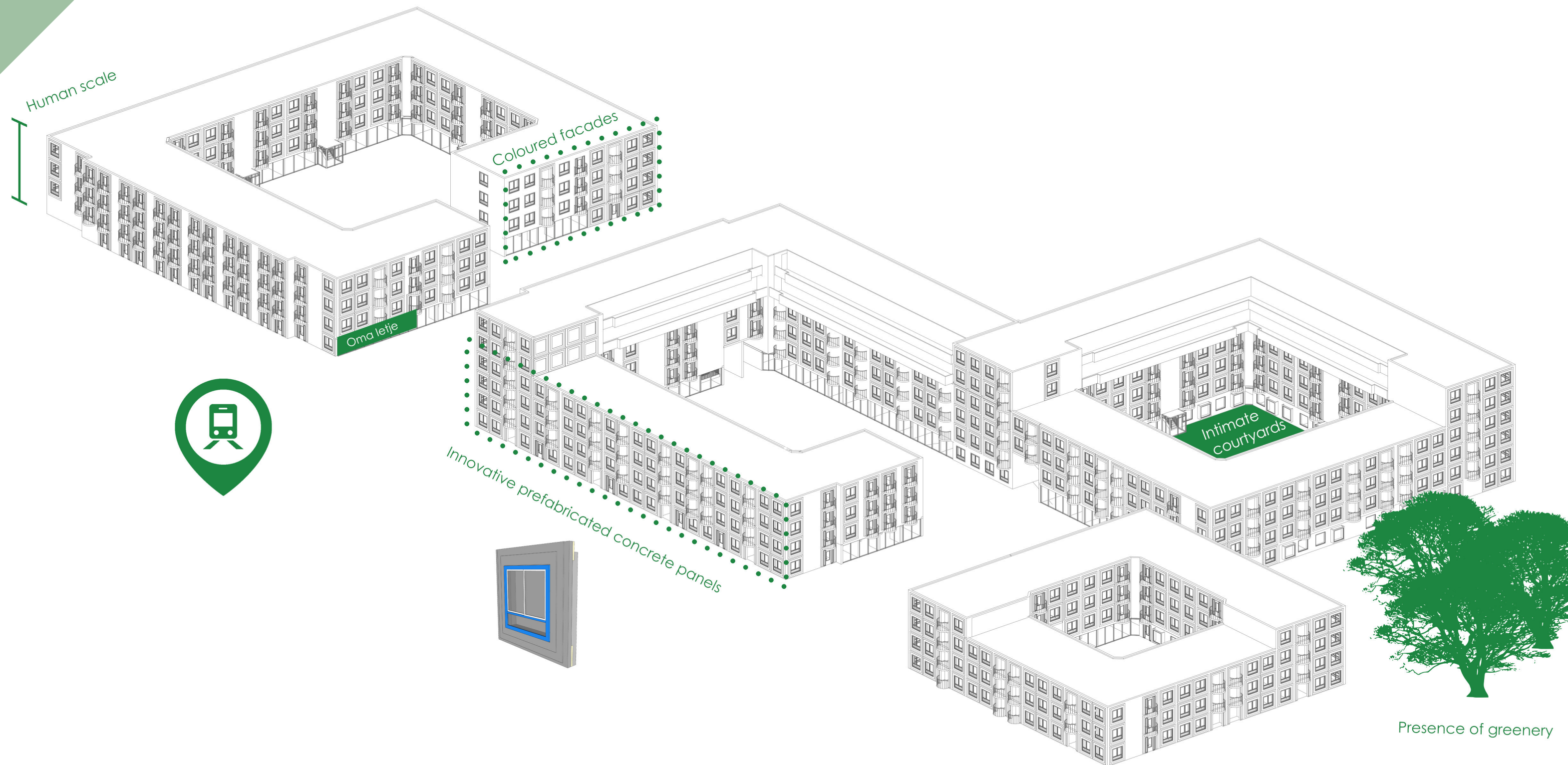
cafe: Oma letje

public space

separation

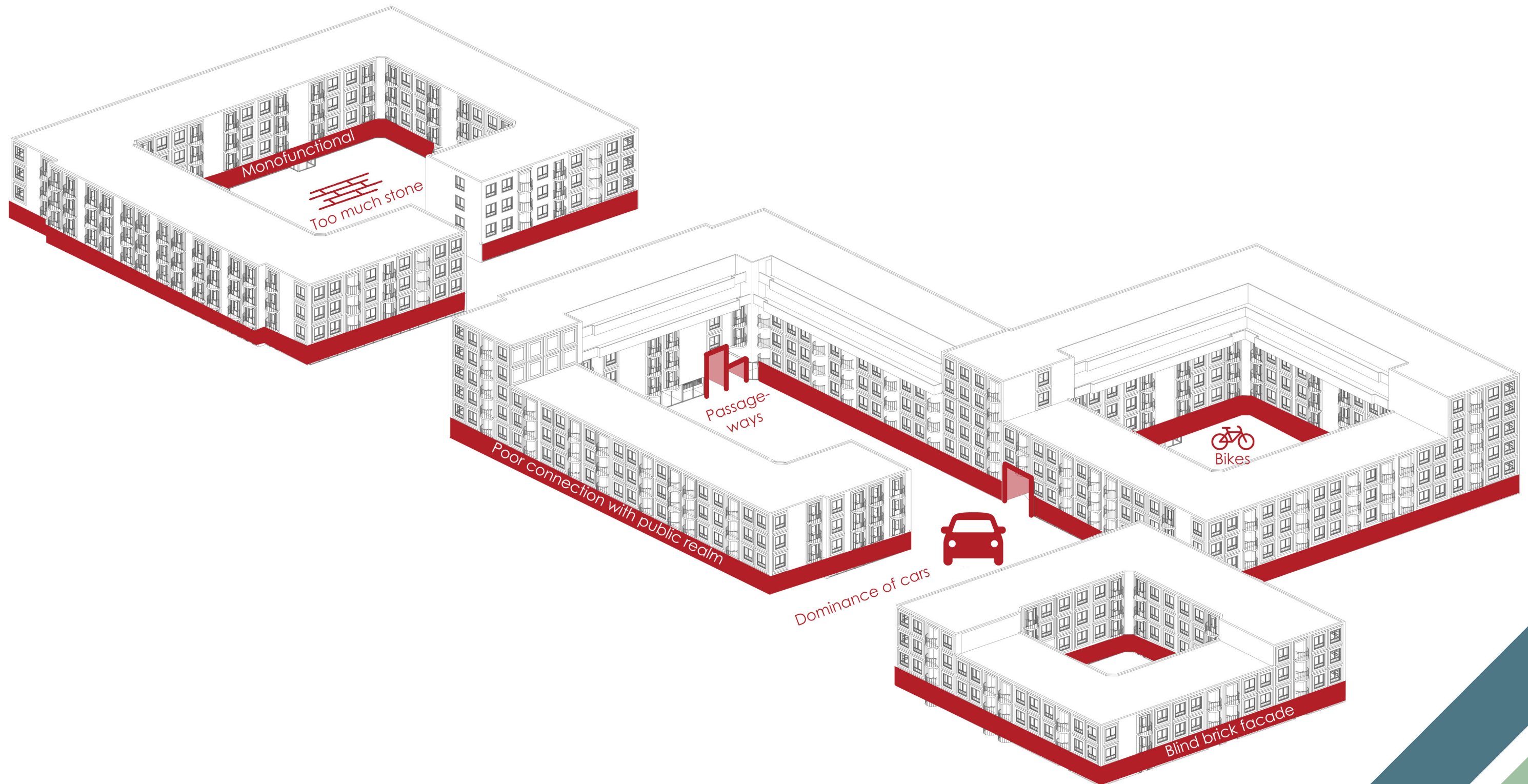


# STRENGTHS





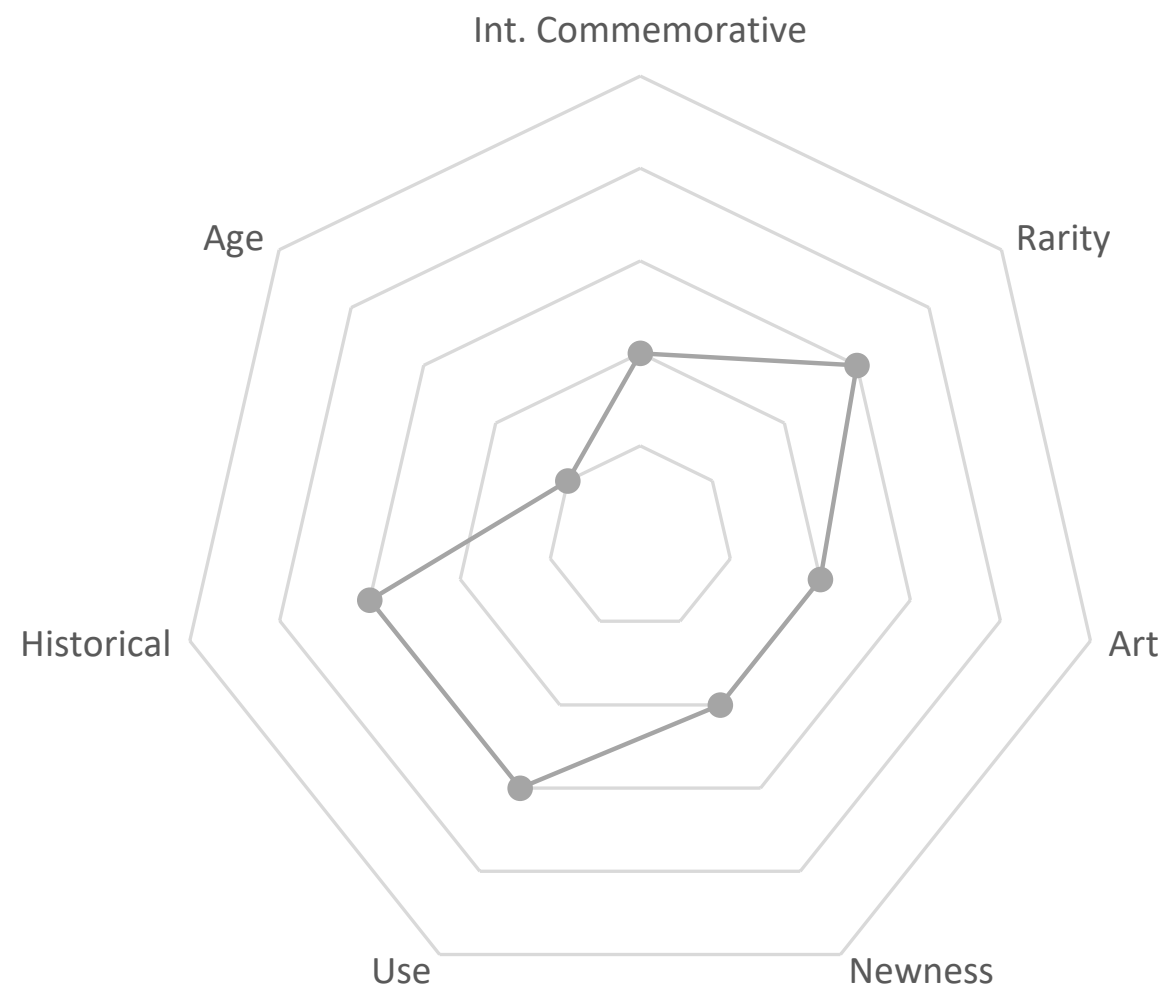
# WEAKNESSES





# VALUE ASSESSMENT

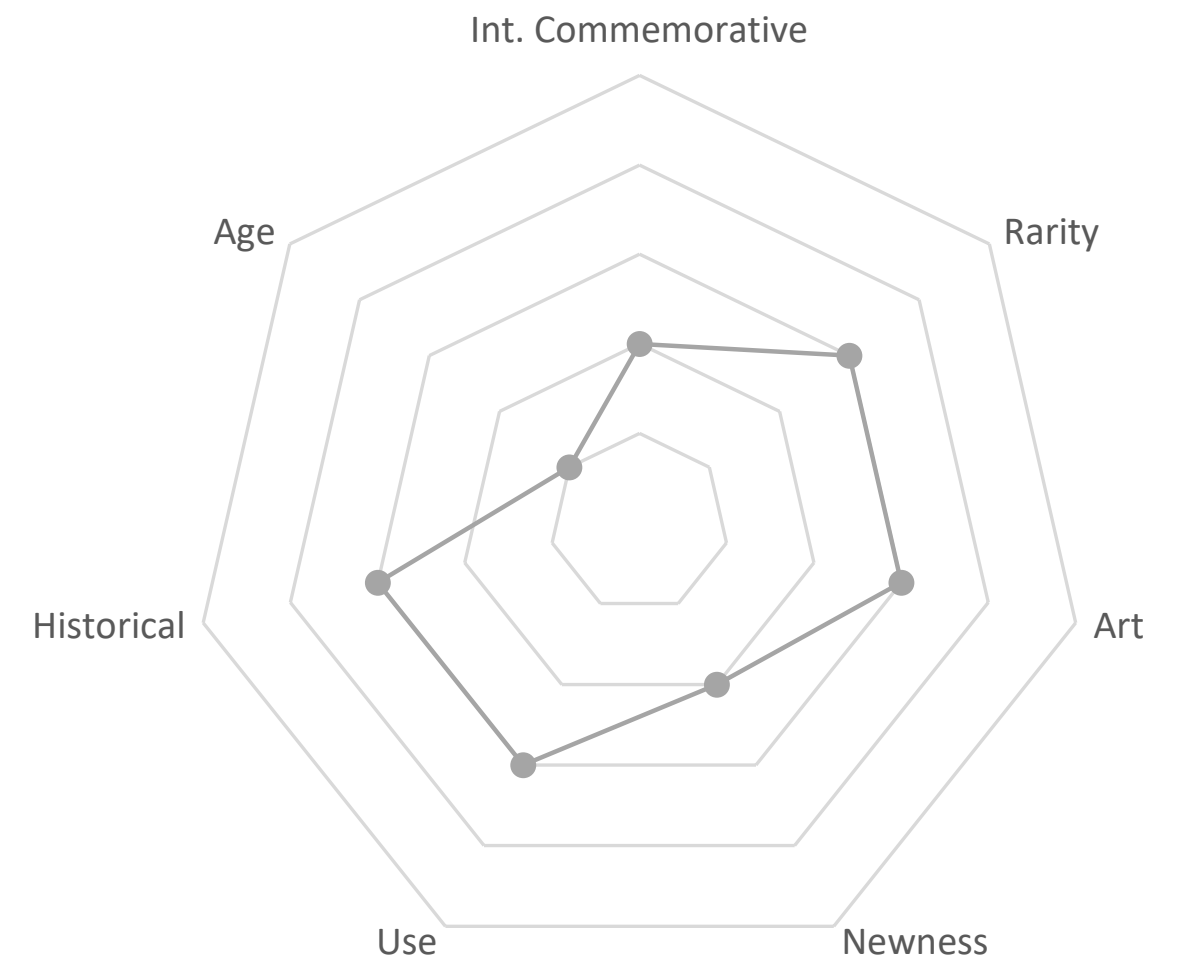
## URBAN



Urban:  
 - surroundings / setting  
 - site  
 - spirit of place

(Brand & Riegl)

## BUILDING


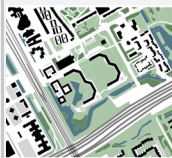










Building:  
 - skin  
 - structure  
 - space plan  
 - surfaces  
 - services  
 - stuff

(Brand & Riegl)



# VALUE ASSESSMENT

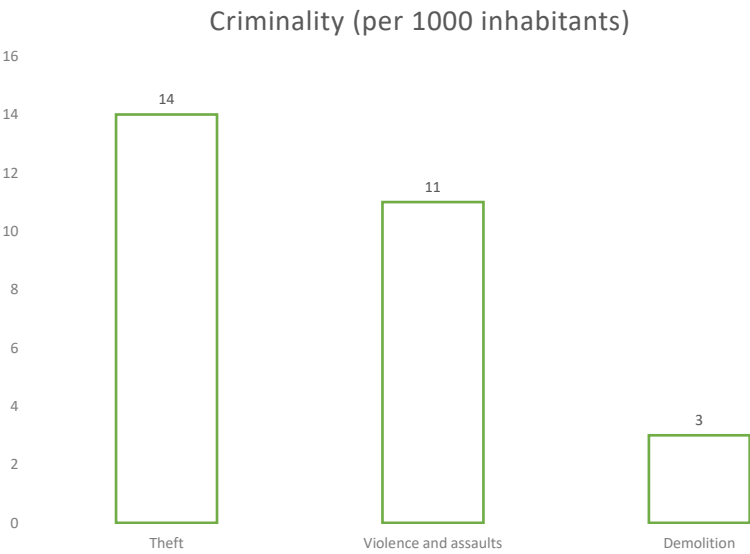
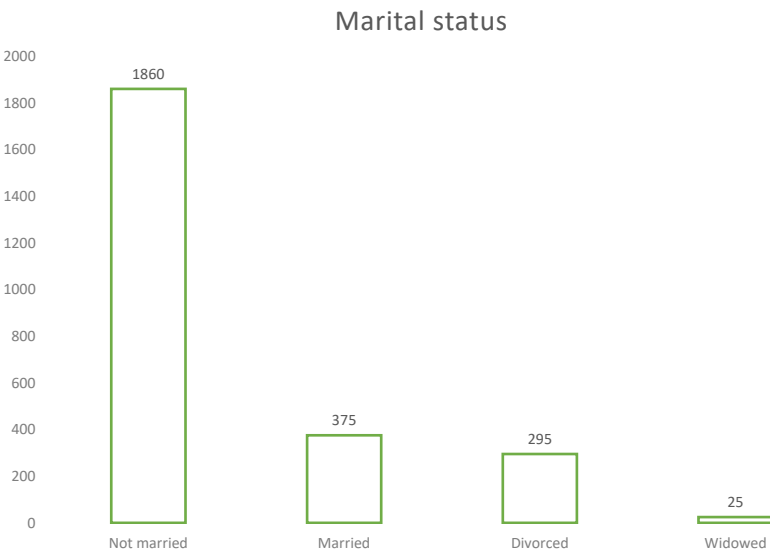
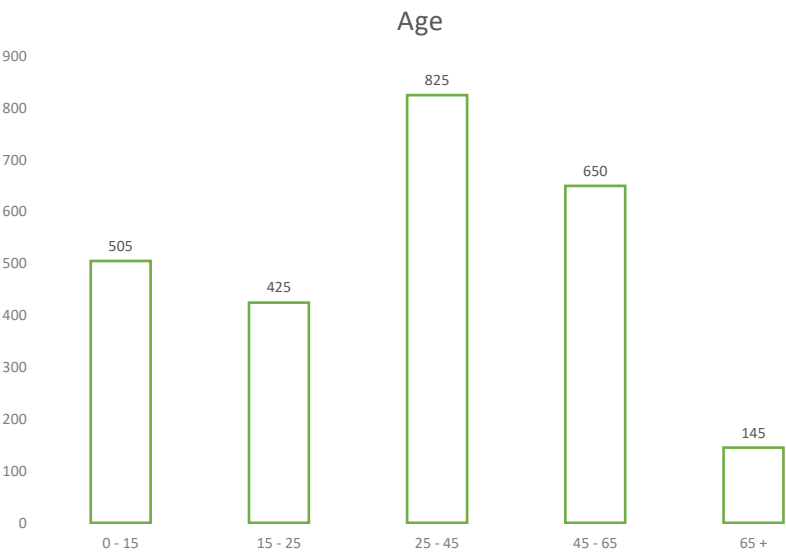
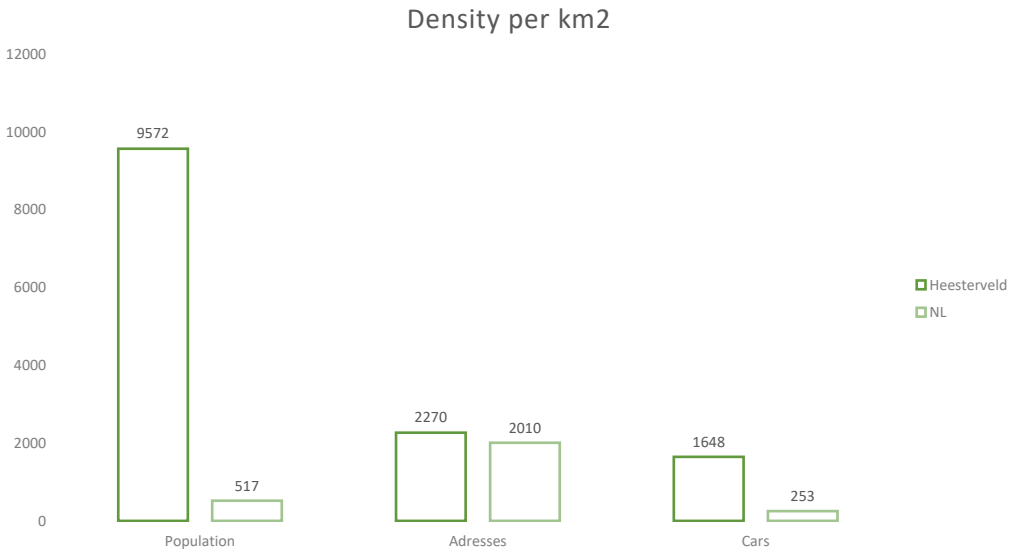
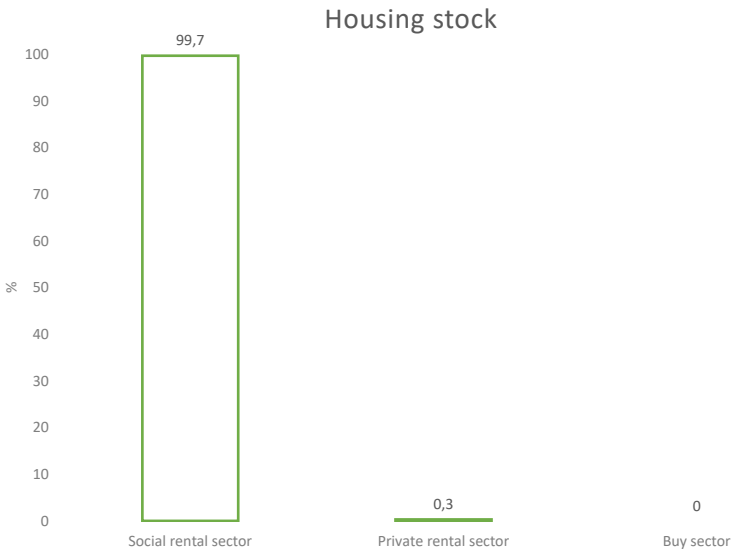
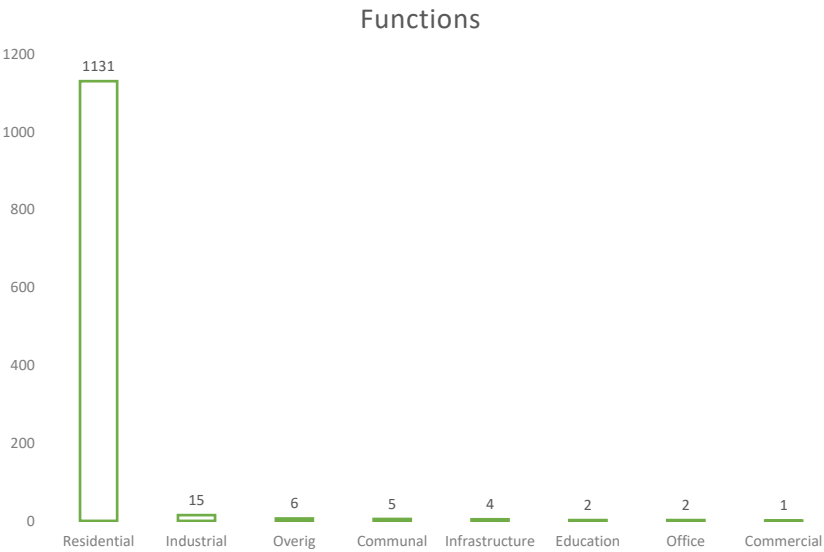
	AGE	HISTORICAL	INTENTINAL COMME- MORATIVE	NON INTENDED COMME- MORATIVE	USE	NEWNESS	ART	RARITY
<b>SURROUNDINGS / SETTING</b>		anti bijlmer 			parks 			
<b>SITE</b>					courtyards 	contrast circular and rectangular shapes		
<b>SKIN (EXTERIOR)</b>		80s architecture: - rhythm facade - open / closed - prefab concrete	human scale because of the 4/5 storeys			tectonics windows 	street-art 	coloured facades 
<b>STRUCTURE</b>		80s architecture: - prefab concrete						
<b>SPACE PLAN</b>					diversity floorplans			
<b>SERVICES</b>								
<b>STUFF</b>		windows + doors 						balconies 
<b>SPIRIT OF PLACE</b>			signs HCC 				HCC 	creative and cultural identity

During the collective research, attributes of Heesterveld were mentioned by the different stakeholders. The strengths and weakness of the buildings were mainly mentioned by the visitors and residents of Heesterveld. The strengths of the buildings that were mentioned in the research were the coloured facades, the street art, the human scale, the restaurant Oma letje, the metro station, the intimate courtyards, presence of greenery around the building blocks and the innovative prefabricated concrete panels. The weaknesses of the buildings are the closed off plinths, which result in a poor connection with the public realm. Next to that, the dominance of cars and bikes, the monofunctional character, the use of too much stone and the dark passageways are mentioned. Next to the attributes of the buildings, the current values of Heesterveld are the cultural diversity, street art, its own identity and the presence of greenery. These values should be preserved and strengthened in the design. The challenges that were mentioned were the unsafe feeling, unintended use of public space, no diversity in public space or function and the lack of qualitative greenery.

The value assessment was made according to those attributes. Heesterveld mainly has the historical, art, use and rarity value on urban and building level. On an urban scale, highly valued attributes are for example the Heesterveld creative community, the anti Bijlmer movement and the unique identity. On a building scale, the 80s architecture has a high value, but also the street art and coloured facades



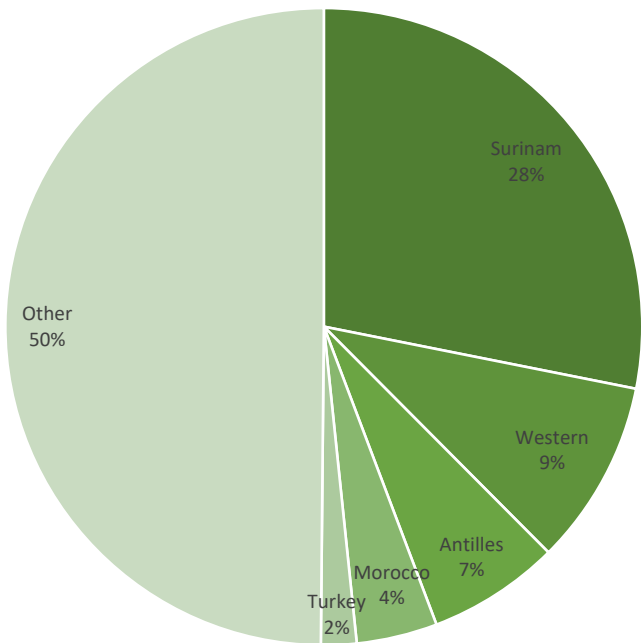
# SOCIO-ECONOMIC RESEARCH





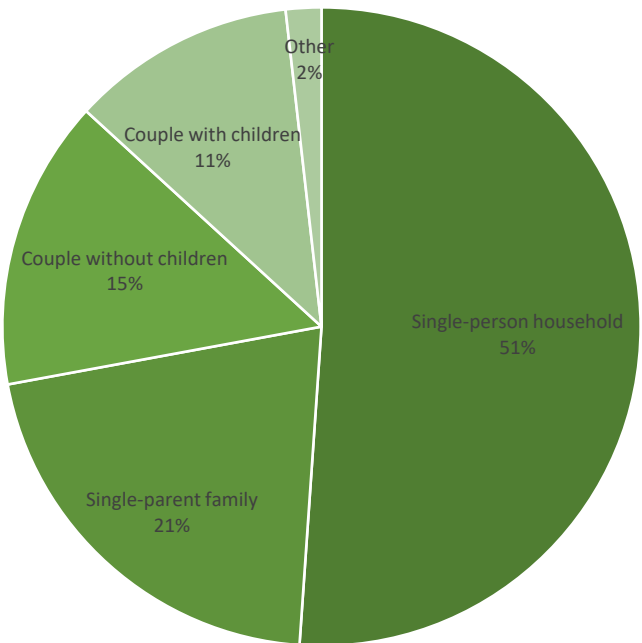
# SOCIO-ECONOMIC RESEARCH

Migration background



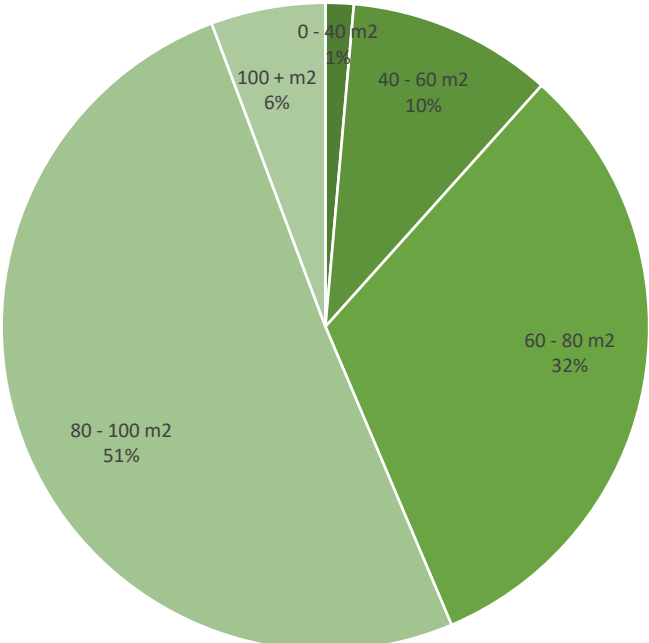
■ Surinam ■ Western ■ Antilles ■ Morocco ■ Turkey ■ Other

Composition of households



■ Single-person household ■ Single-parent family ■ Couple without children ■ Couple with children ■ Other

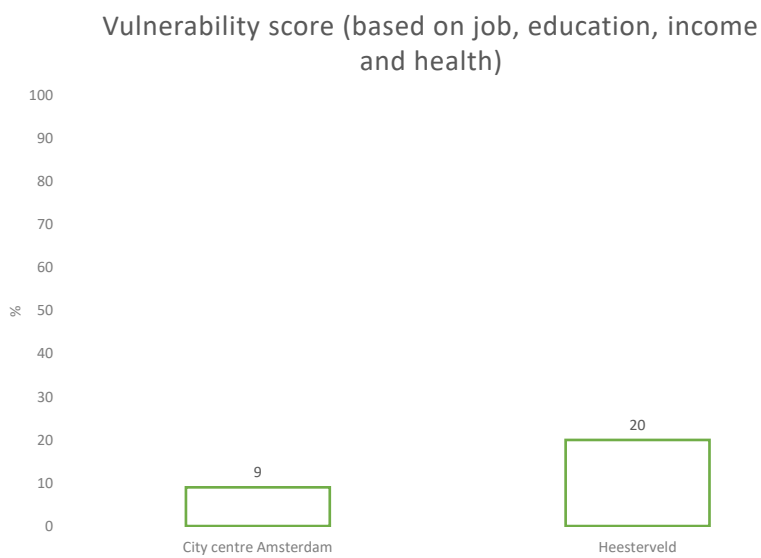
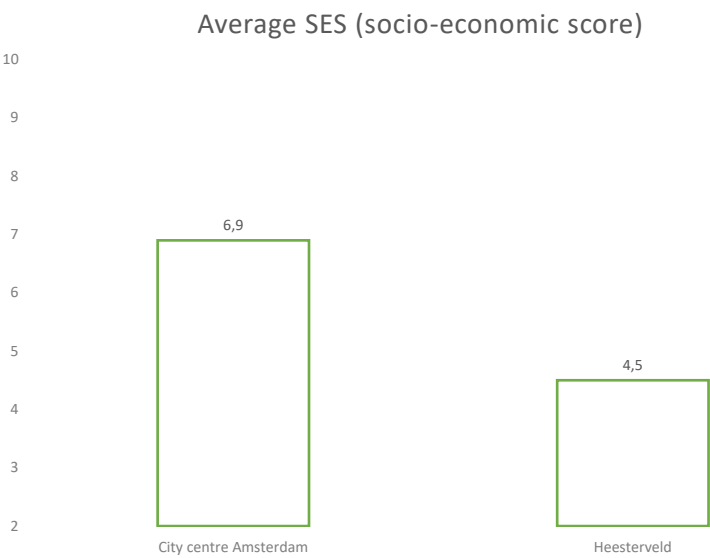
Surface area dwelling



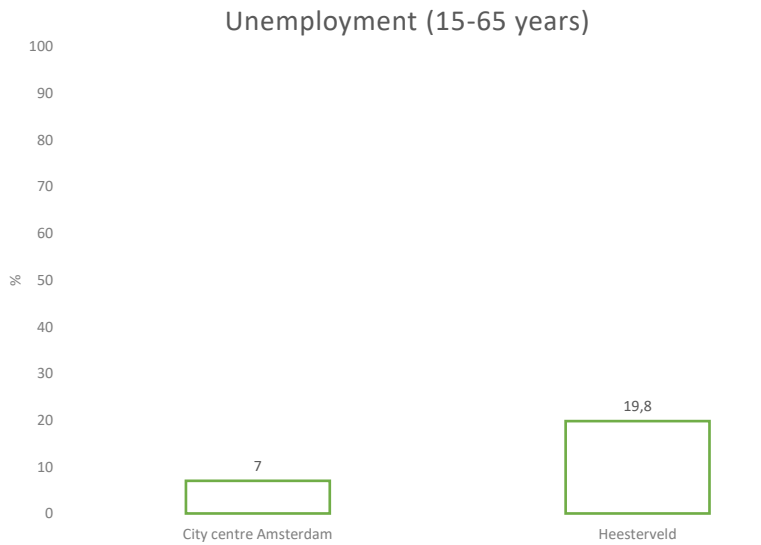
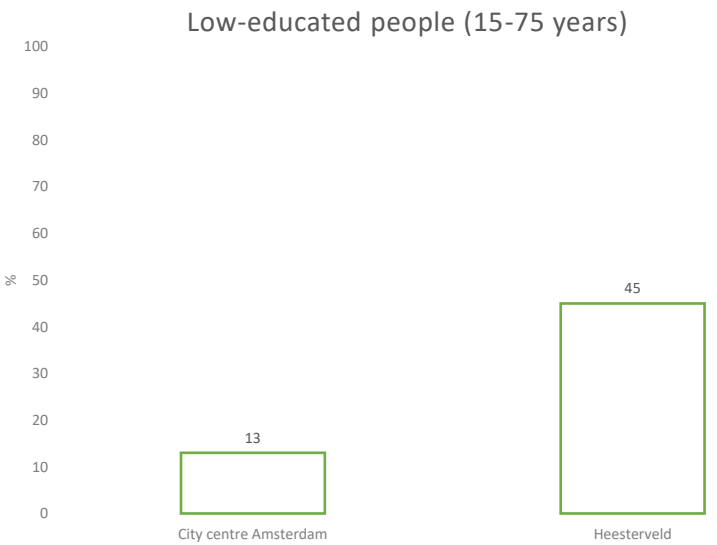
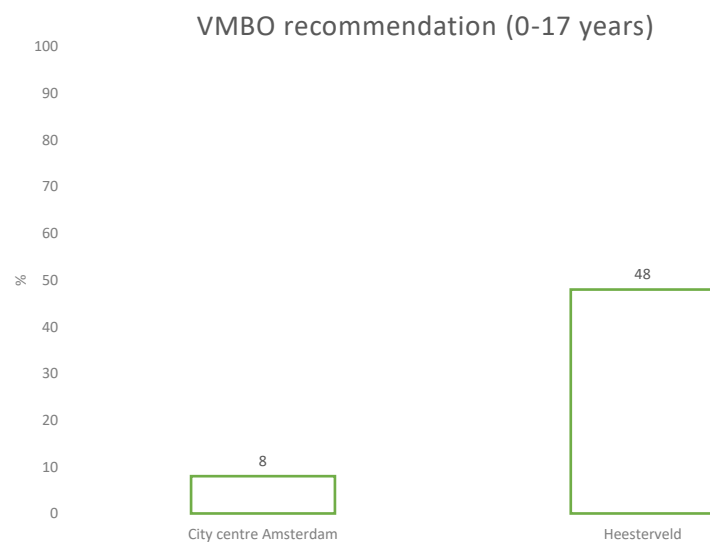
■ 0 - 40 m2 ■ 40 - 60 m2 ■ 60 - 80 m2 ■ 80 - 100 m2 ■ 100 + m2



# SOCIO-ECONOMIC RESEARCH



A person’s position on the social ladder based on the level of income and education



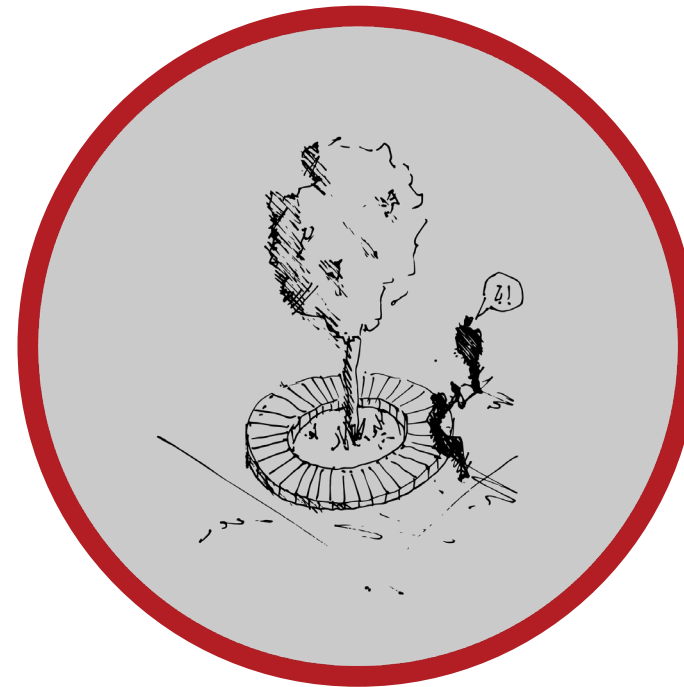
## PROBLEM STATEMENT

According to all stakeholders, there were some more themes that were of importance for Heesterveld. The following themes could be improved according to the makers, government, owners and users: diversity in public space; monofunctionally; unsafe feeling; lack of qualitative greenery; nuisance of garbage unintended use of public space; and creating a hotspot in the area. Where the overarching theme was the problematic public space. This could be improved by creating a diversity in both public space and function on the ground floor.

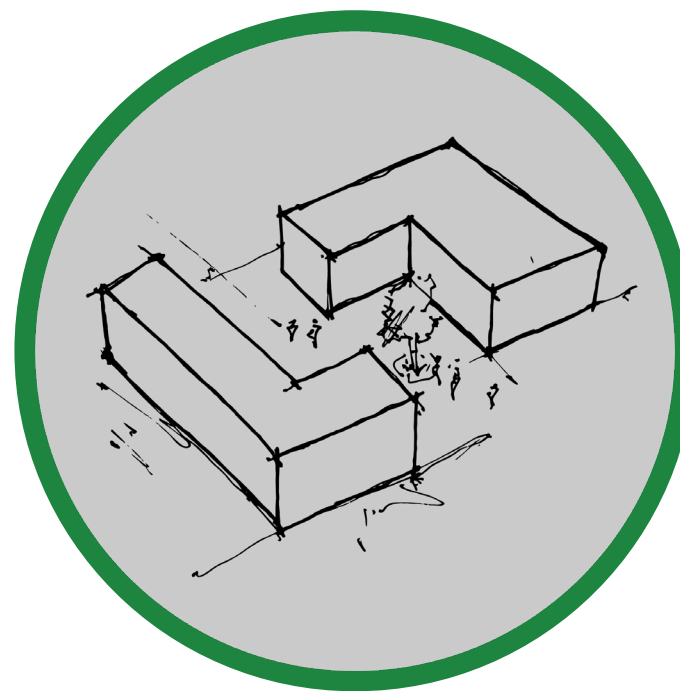
Architect Pi de Bruijn mentioned the poor plinth, the ground floor of the development is being completely locked and closed off. He thinks the public space could potentially be really nice in this configuration, because it has the intimacy and the scale of that space is certainly not bad. But because of the blind, lower bricked blocks of facade in the ground floor, it does not work. Other stakeholders also mentioned the public space. They think there is no connection between the buildings and the public, which is in fact, the most problematic of Bijlmer. It lacks the connection with the ground floor.

Next to the problematic public space, the liveability in Heesterveld is also very insufficient according to the 'Leefbaarometer' (Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, 2018b). One of the indicators is the safety aspect, which includes burglaries, robberies and harassment. The insufficient score on the safety indicator can also be related to the opinions of the residents. During the interviews with residents and visitors of Heesterveld, some people mentioned the unsafe feeling in Heesterveld. A 18 year old female mentioned the following:

*"I visit Heesterveld the least, because I feel less safe due to the closed building blocks."*



problematic public space



create diversity in public space and ground floor

SOCIAL



# PROBLEM STATEMENT

A more global issue is the climate change, which also has a big effect on a small scale. This problem is only growing and should also be implemented in the design. The climate change has an impact on environmental, health and economic level, as can be seen in the image. Some impacts are extreme weather, bad air quality, more heavy rain and more hot days. These aspects should of course also be taken into account in the design. In order to create a future-proof design, it is important people can live here for a long time. The environmental aspect is crucial in order to achieve this. The urban heat island effect, bad air quality, extreme weather and more heavy rain should all be taken into account in order to improve the environmental aspects on a local level.



## CLIMATE CHANGE



## PROBLEM STATEMENT

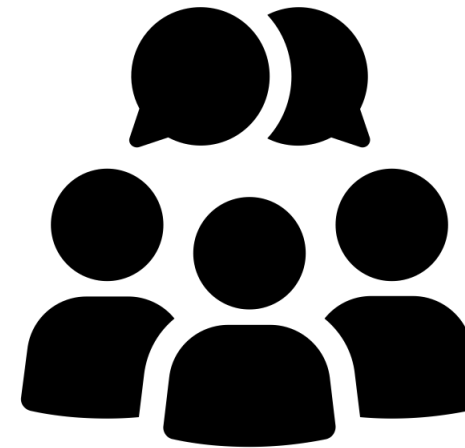
The third aspect of the problem statement of this area is about the economic problems. From the socio-economic research, it can be concluded that the social economic score of the residents of Heesterveld is quite low. People in Heesterveld are low educated and there is quite some unemployment in comparison to the city centre of Amsterdam.

Next to the socio-economic research, the vision of the municipality for this area is also consulted. The vision of the municipality for this area is mainly focuses on socio-economic problems. They have 5 main goals they want to achieve. First of all, they want to give young people equal opportunities. In the H-buurt, children have a higher chance to get involved in violence and criminality. This is also why they want to reduce the juvenile crime which is quite high in this area. They want to improve the social accessibility by creating more informal activities. The residents of Bijlmer Centrum are hindered in taking place in basic social activities. That is mainly due to the low income and bad health. They also want to strengthen the entrepreneurship in the area and lastly also art and culture. The residents from Amsterdam South East have a lower income, more poverty and higher unemployment.

According to the collective research, the H-Buurt is a problematic neighbourhood on the economic level. On a social level, there are a lot of socio-economic and safety problems. Some people do not feel safe in the neighbourhood and people indicate that shady businesses take place in the area.



equal opportunities  
(age 0-32)



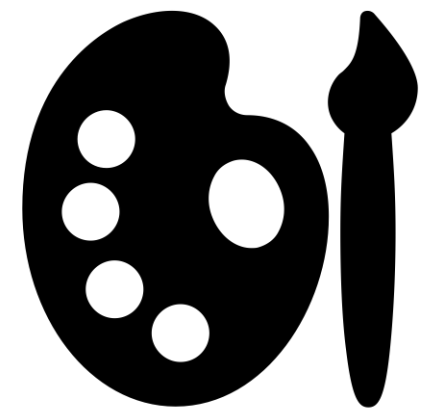
improve social  
accessibility



reduce  
juvenile crime



strengthen  
entrepreneurship

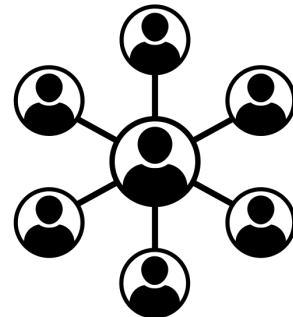


strengthen  
art and culture

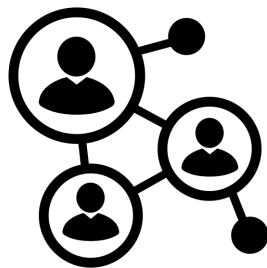


## RESEARCH QUESTIONS

What are the **values, attributes and challenges** of the residential neighbourhood and buildings in Heesterveld, as perceived by its **residents, the government, the makers and academics and the owners**?



How can Heesterveld be made **future-proof**, by solving the **social, economic and environmental issues** present in the neighbourhood, while preserving the **current values and identity**?



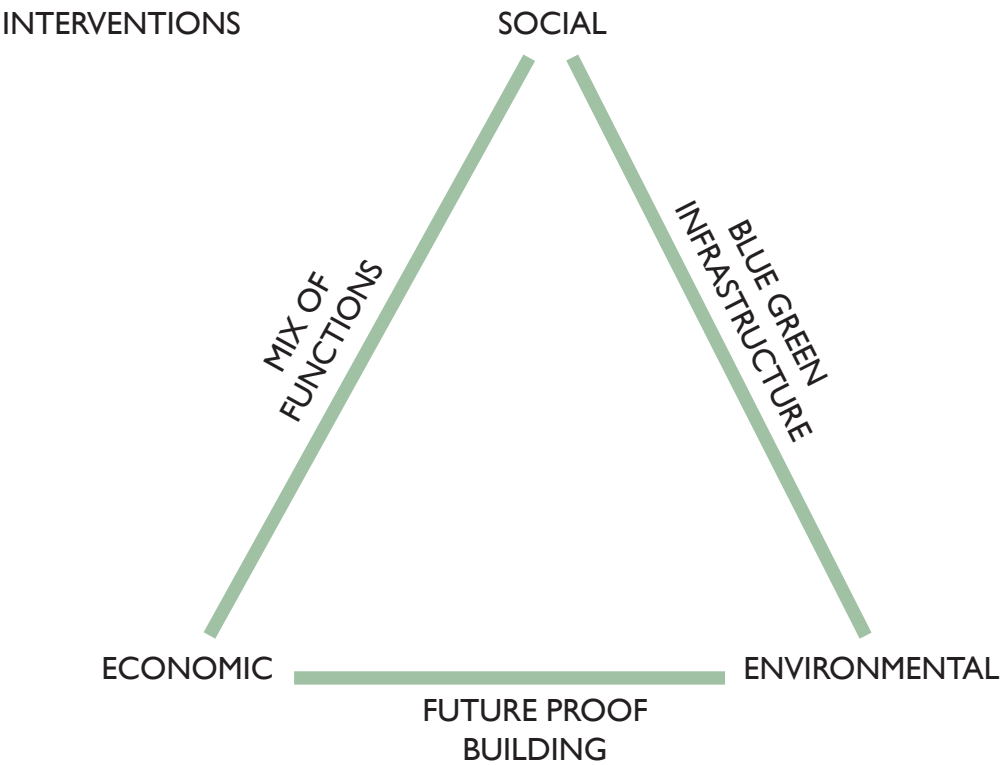
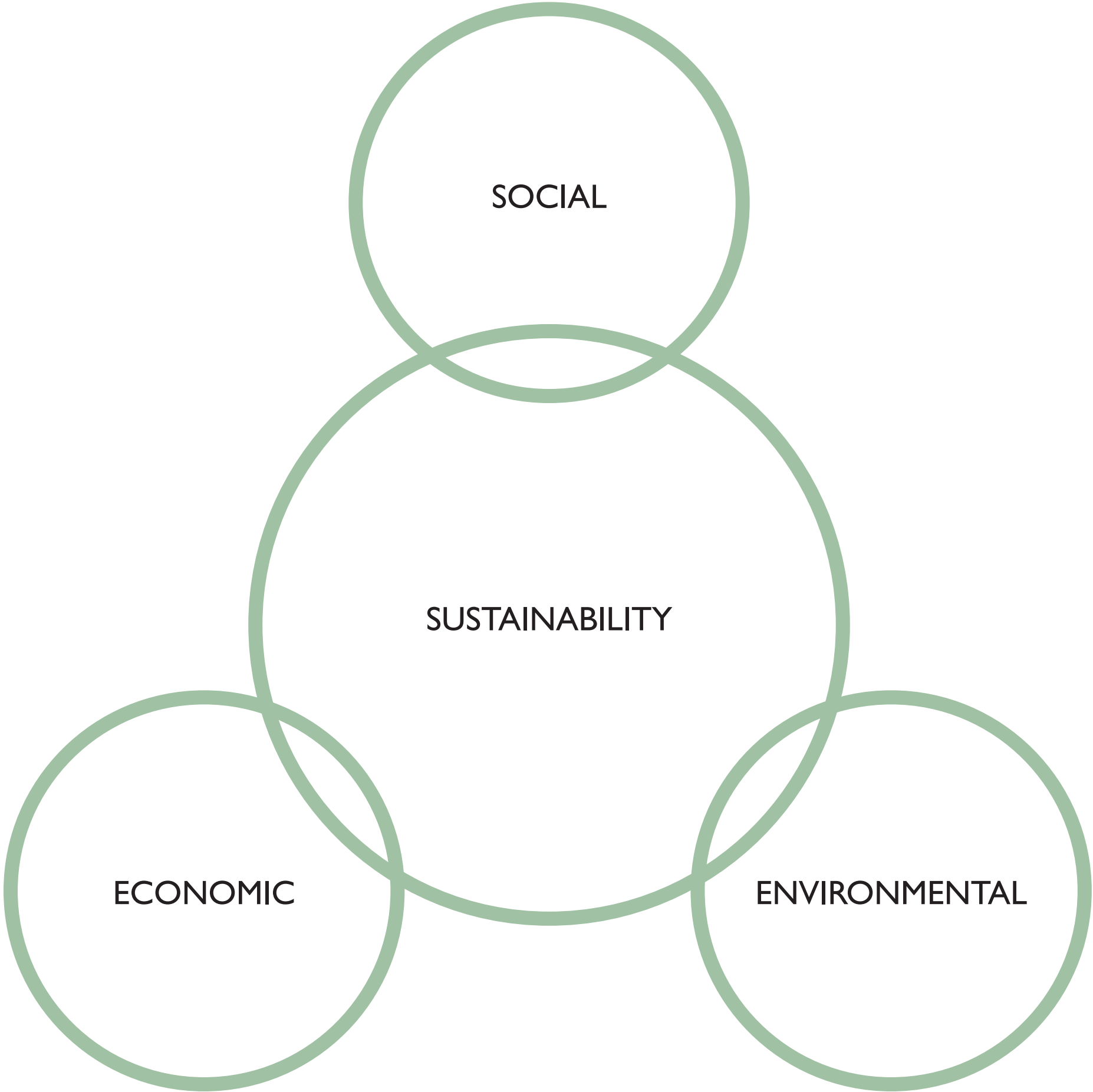
The central design question of the studio is: how could renovation, replacement and/or densification strengthen the qualities and help solving current problems without compromising heritage values and identities, where these exist?

There are two parts within the research: the collective research and the individual research and design. The research question for the collective research is: "What are the values, attributes and challenges of the residential neighbourhood and buildings in Heesterveld, as perceived by its residents, the government, the makers and academics and the owners?" To answer this question, a set of sub questions is needed. The first set of sub questions is: What do the users (insiders/outside) value in the H-buurt?, What does the government value in the H-buurt?, What do the owners value in the H-buurt? and What do the makers and academics value in the H-buurt? It is important to determine if the project location is heritage or whether it has value. This information determines which parts are valuable.

For the individual research and design, other research questions are posed. These are related to the problem statement of this research. Social, economic and environmental issues are present in Heesterveld, which should be improved, in order for Heesterveld to become future-proof. The main research question is therefore: "How can Heesterveld be made future-proof, by solving the social, economic and environmental issues present in the neighbourhood, while preserving the current values and identity?"

To be able to answer the main question, a set of sub questions is established. The sub questions are: What method has positive effects on the public space?; What are successful examples of a good public space?; What is the effect of a blue green infrastructure on social, economic and environmental aspects?; How to implement a sustainable solution while preserving the current values?; How to prevent gentrification, while improving the current situation?; and What is the effect on social and safety level of transforming mono functionality into multi functionality?

METHOD



As explained before, problems in Heesterveld arise on the social, economic and environmental levels. In order to ensure a sustainable design and to make Heesterveld future-proof. These issues should be addressed in the design and improved. The design should become more sustainable on these levels. Most aspects of Heesterveld are really appreciated by its residents and visitors, mainly the colours, human scale, creative community and street art are highly valued. Heesterveld therefore has a great potential to be appreciated for a much longer time, if the problems in the area are solved. In terms of sustainability, it is also way more sustainable to preserve the buildings and make a few changes and improve the building.

After doing literature research about this topic, a first method to solve these problems came up. A way to tackle the environmental and social issues is to implement a blue green infrastructure. It is proven that this approach improves several environmental and social aspects, like reducing the urban heat island effect, improving air quality and increasing social interaction.

In order to improve the economic and social problems, a second method is being implemented in the design. This has to do with the lack of diversity in functions and ground floor. New functions will be added on the ground floor, in order to stimulate entrepreneurship and social interaction.

The third intervention is future proofing the building itself. This is done by adding insulation on the inside, solar panels and a thermal energy storage.



# LITERATURE RESEARCH

There is already quite some literature about the topic blue-green infrastructure. One of the most important conclusions is that blue and green spaces have a positive effect of the quality of cities on different levels (Vaeztavakoli et al., 2018). Blue and green spaces improve for example the emotional state of people and it reduces their stress levels (Lee et al., 2015). It also contributes to the social interactions between people and blue and green spaces create pleasant collective memories about this presence of nature (Rostami et al., 2015). Green spaces can also have a positive influence on increasing the mood of people to fight poverty and life problems, this is mostly the case in populated urban areas (Kuo, 2001). This could have a positive influence on the safety problems in the H-buurt. There is a lot of evidence in literature of the positive effect of greenery on physical, mental and social health (Vaeztavakoli et al., 2018). There is however not that much information on the effects of blue spaces. There are three mental health advantages of blue spaces mentioned in literature. The first one is that blue spaces are the best option to rest and relax for people. Blue spaces, like rivers and fountains, were proven to be the best to cover traffic noises. The last advantage of blue spaces is that they can moderate the weather, especially during hot summer days.

Vaeztavakoli et al (2018) did a case study about the Niasarm Canal in Isfahan, Iran. They focused on the effects of canals on human health. There were a few important conclusions, the first one was that the participants of the survey mentioned that the canal helped to get more physical activity in the blue and green spaces, this was due to the fresh air and the relaxed atmosphere. The second conclusion was that canal added to the feeling of calmness, rehabilitation and concentration. People also saw the canal as a central point for their social life, they meet their friends and family alongside the canal. There were also some negative aspects, the canal goes for example fully dry in the summer. The mosquitos are also a problem in the area, this can be solved by municipal spraying. All these aspects can be used in the blue/green design.

Andreucci et al (2019) also describe the importance of an urban green blue infrastructure for the mental health and wellbeing. They say that the urban built environment has an influence on social health and wellbeing. This is particularly applicable for the elderly (Finlay et al., 2015). Next to this, they stress the fact that human exposure to blue green infrastructure increases the physical activity, mental health and it decreases crime, violence and aggression. They also mention examples of blue green infrastructure: urban forests; parks; domestic gardens; green roofs and walls; community orchards; parklets and sidewalk gardens; wetlands; rivers; rivers; ponds; and creeks. These elements can all be used in my design project. The elements

make sure the water quantity and quality is regulated, it also controls the surface runoffs, protect the biodiversity, filter pollutants, improves the quality of the air and it is vital to the food chain (Ren et al., 2017).

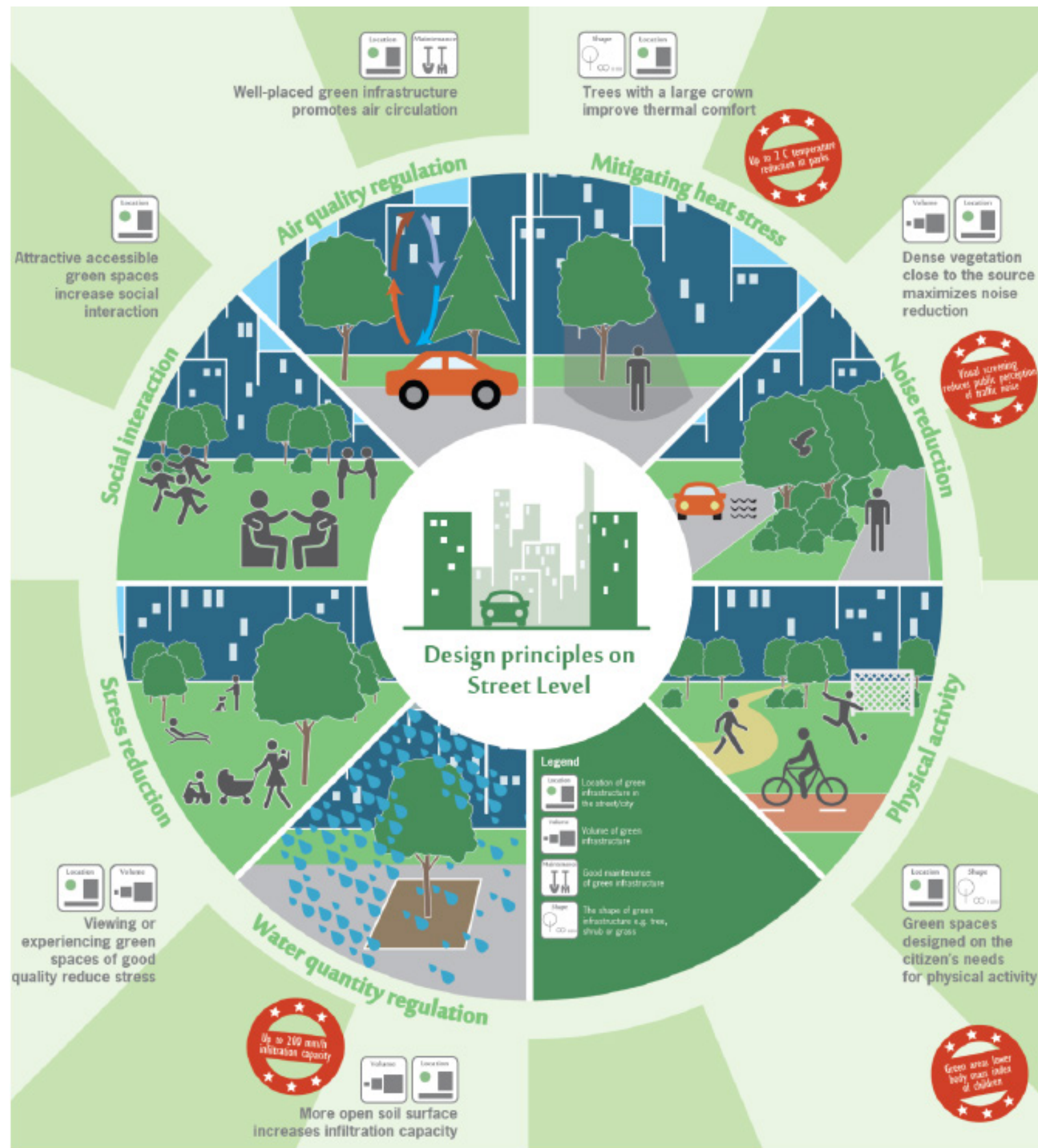
Well & Ludwig (2019) discuss four case studies in their paper. They describe the urban heat island effect as a serious problem in cities, this effect results in increasing energy demand, air conditioning costs, air pollution, heat related illness and mortality. The urban heat island effect is increased by climate change. Climate change also leads to periods of extreme heat and drought. This has a negative effect on energy consumption and health. The solution for this problem is integrating natural elements in the cities, to reduce the urban heat island effect and the impact of the extreme weather.

After stating this problem statement, they look into the four case studies. The high line in New York is the first one, where an old railway is transformed into a green infrastructure. They replanted the plants that had grown themselves over the years. The surrounding buildings are not included in the concept, so this could be improved. The second project is located in Berlin, Potsdamer Platz, and focused on blue infrastructure. The rainwater is reused for flushing toilets and irrigating the green areas. The green roofs collect and evaporate precipitation. The third case study is Bosco Verticale in Milan, which focuses on sustainable housing. The ground water is reused for irrigating the plants and heat pumps, the rainwater is not integrated in this project. The building does generate a large amount of waste water instead of reducing the load on the central system. The last project is again located in Berlin, this case study has an innovative water concept. The rainwater is collected in a pond, this is used for irrigation of the plants, flushing of the toilets and using it for food production. All these components and lessons learned from the case studies can be taken into account in the design project.

Bogar & Beyer (2015) did a systematic review on green space, violence and crime. There is already some literature about the link between green spaces and reductions in crime, violence and aggression (Branas et al., 2011; Garvin et al., 2013). They describe there is a positive as well as a negative relationship between green spaces, violence and crime. Urban green spaces are for example occupied by gangs and are used to sell drug and illegal dumping. Green spaces can also strengthen discrimination and hostility between ethnically homogenous neighbourhoods. Residents can also fear the urban green spaces, because the vegetation can hide criminals. This can lead to a whole community avoiding the urban green spaces. There are also studies who prove the positive effect of green spaces. Branas et al (2011), Garvin et al (2013) and Kuo & Sullivan (2001) all did research and found that green spaces have a direct effect on decreasing crime and violence. The conclusion of Bogar & Beyer (2015) is that there are too few studies done about the relation between green spaces, violence and crime. There is also a lot of conflicting evidence on this relation. This could be an interesting concept to further investigate.

These articles and case studies are used to define what is still missing in the current literature. There is already a lot of prove and information on the positive effect of green areas. The benefits of implementing blue infrastructure is less investigated. The case studies also showed that blue and green infrastructures are not yet fully integrated yet, in every project there is a clear blue or green approach. In this design project, the focus will be on implementing a blue green infrastructure in 80s architecture. A design with both an integrated blue and green infrastructure will be investigated. It will be tested how the design can be integrated in the public space and how it can be combined with the existing urban green structures. The relation between crime, violence and greenery is also not yet investigated thoroughly. This will also be integrated in the design, crime is a problem in the H-buurt according to our research.

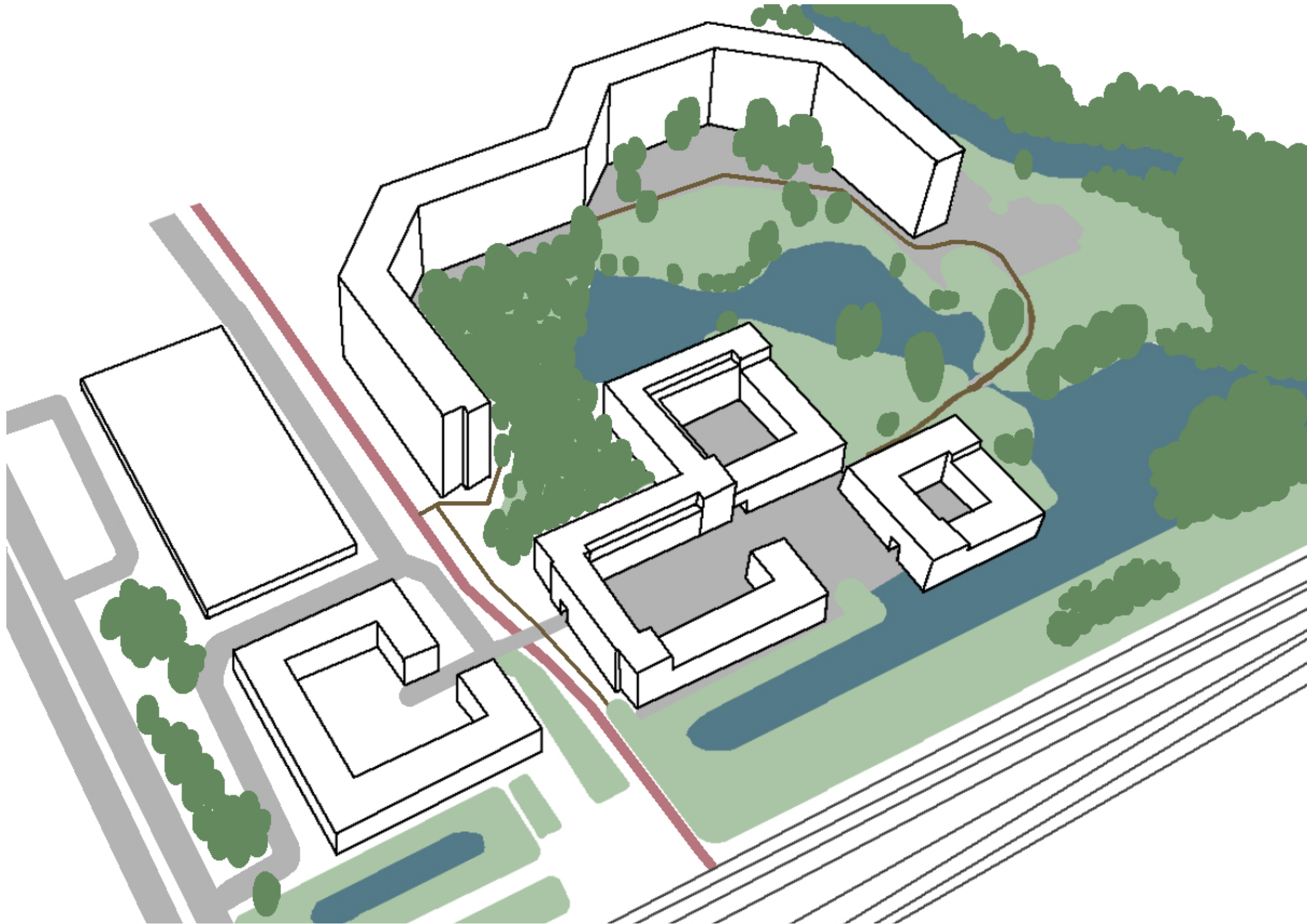
# ENVIRONMENTAL POSITION



The environmental position of my project is also based on the blue green infrastructure. The blue and green principles have a positive effect on the environment. This can also be seen in this diagram by van Dinther. In this diagram, an overview of green principles on street level are illustrated, which can improve social and environmental aspects. The design should be future proofed on different aspects, and the environmental aspect is a very important one. It not only has an influence of the environment itself, but also on health and economics (Global, 2018). It is proven that a green city has a positive influence on physical and mental health. Sustainable and green buildings are also beneficial for the people inside. A green city increases the air quality, increases physical activity and create a greater connection to nature, which improves mental health. Next to the health benefits, green architecture also saves a lot of money on water and heating costs. This is very beneficial for the owner of the building. Lastly, the blue green infrastructure of course has a positive effect on the environment, which includes increasing air quality, biodiversity, safer natural wildlife habitats and restoring natural resources. With a green design, not only the human population is taken into account, but all living things.



## CURRENT SITUATION



# INFRASTRUCTURE



In this map, the infrastructure of Heesterveld is visible. The courtyards are now mainly used for parking cars and Heesterveld is the end of a road. The neighbourhood is easily accessible by public transport, as there is a metro station next to the area. The infrastructure is thus an enabler to create an easily accessible hotspot.





# FUNCTIONS

The functions of the buildings in Heesterveld are illustrated here. The function of most buildings is mainly residential, with only some commercial functions of the ground floor.

-  Parking
-  Parking garage
-  Ground floor commercial, upper floors residential
-  Residential
-  Offices



1:2000

LAND USE

The land use in the area consists of greenery around Heesterveld, but not in the courtyards itself.

-  Parking
-  Buildings
-  Water
-  Grass
-  Forest



1:2000



# APARTMENT TYPES

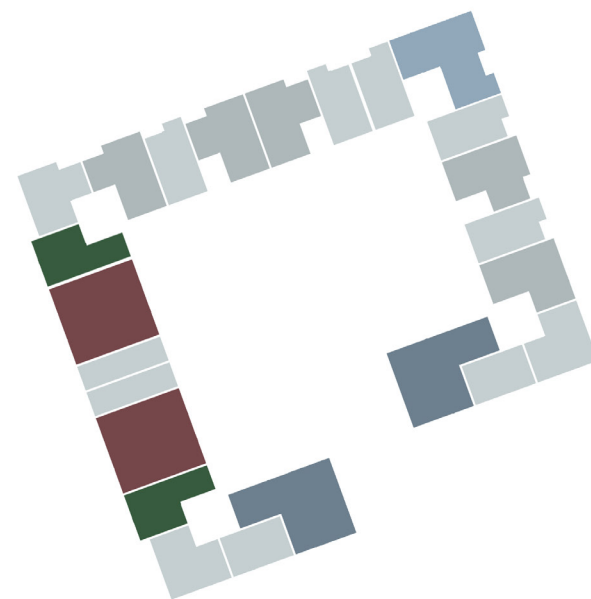


# APARTMENT TYPES

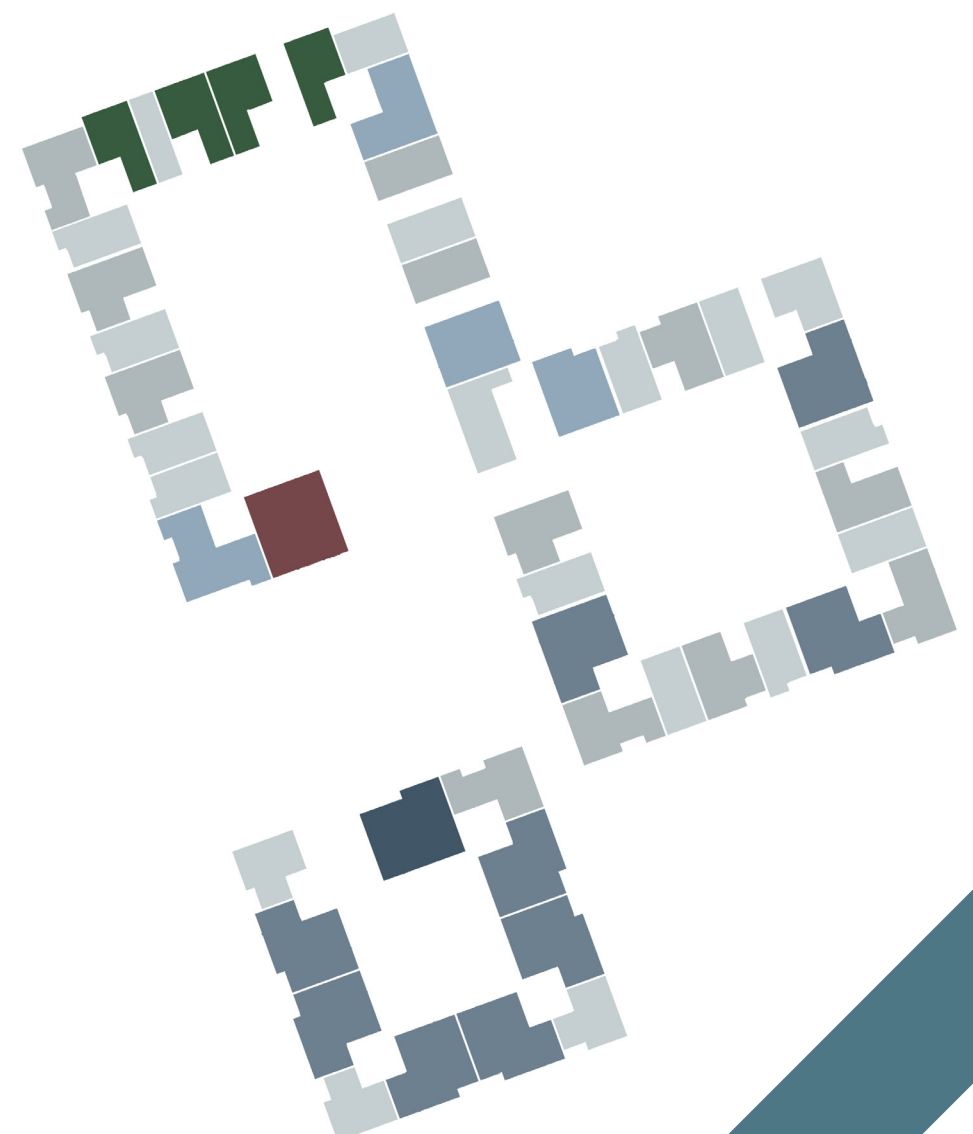
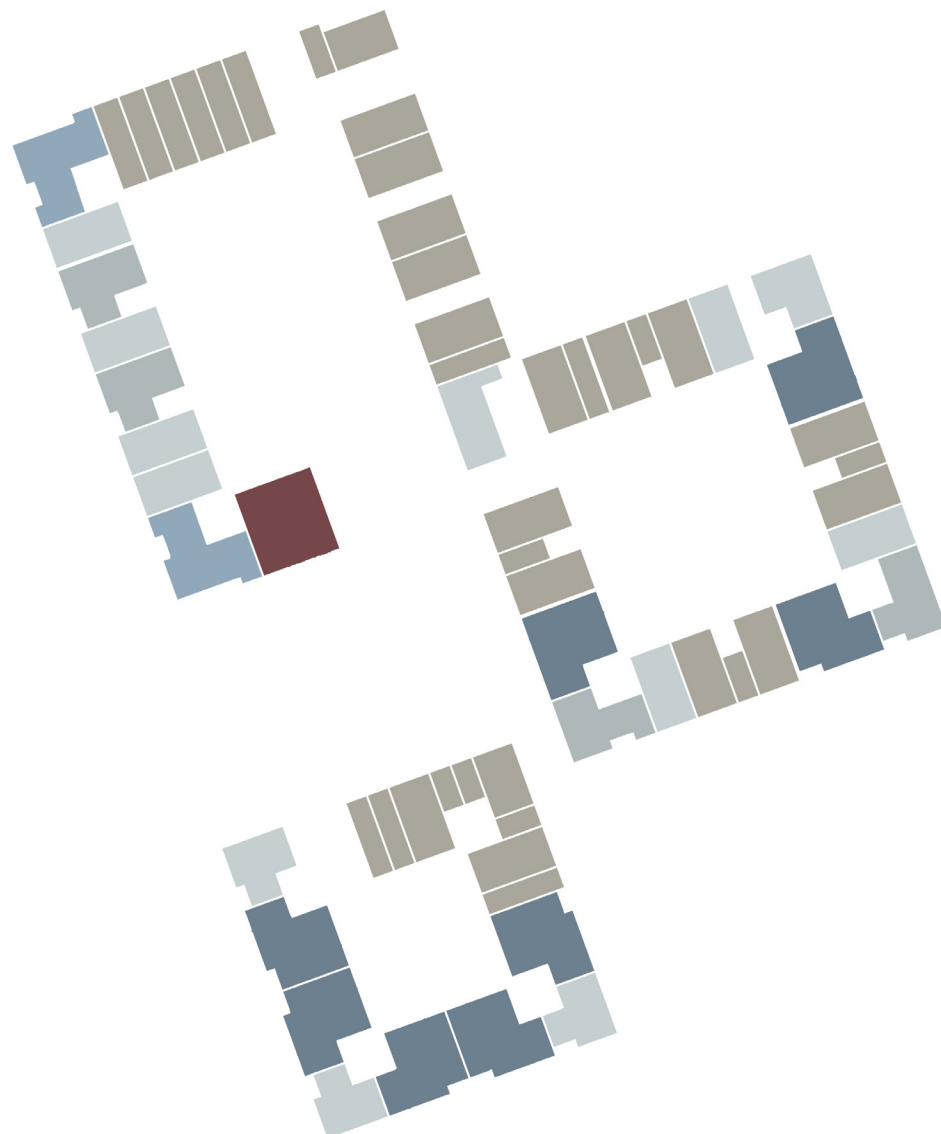
GROUND FLOOR



FIRST FLOOR



-  Storage space
-  Studio (1 bedroom)
-  Studio (2 bedrooms)
-  1 bedroom apartment
-  2 bedroom apartment
-  3 bedroom apartment
-  4 bedroom apartment
-  5 bedroom apartment
-  Shared apartment (4 bedrooms)



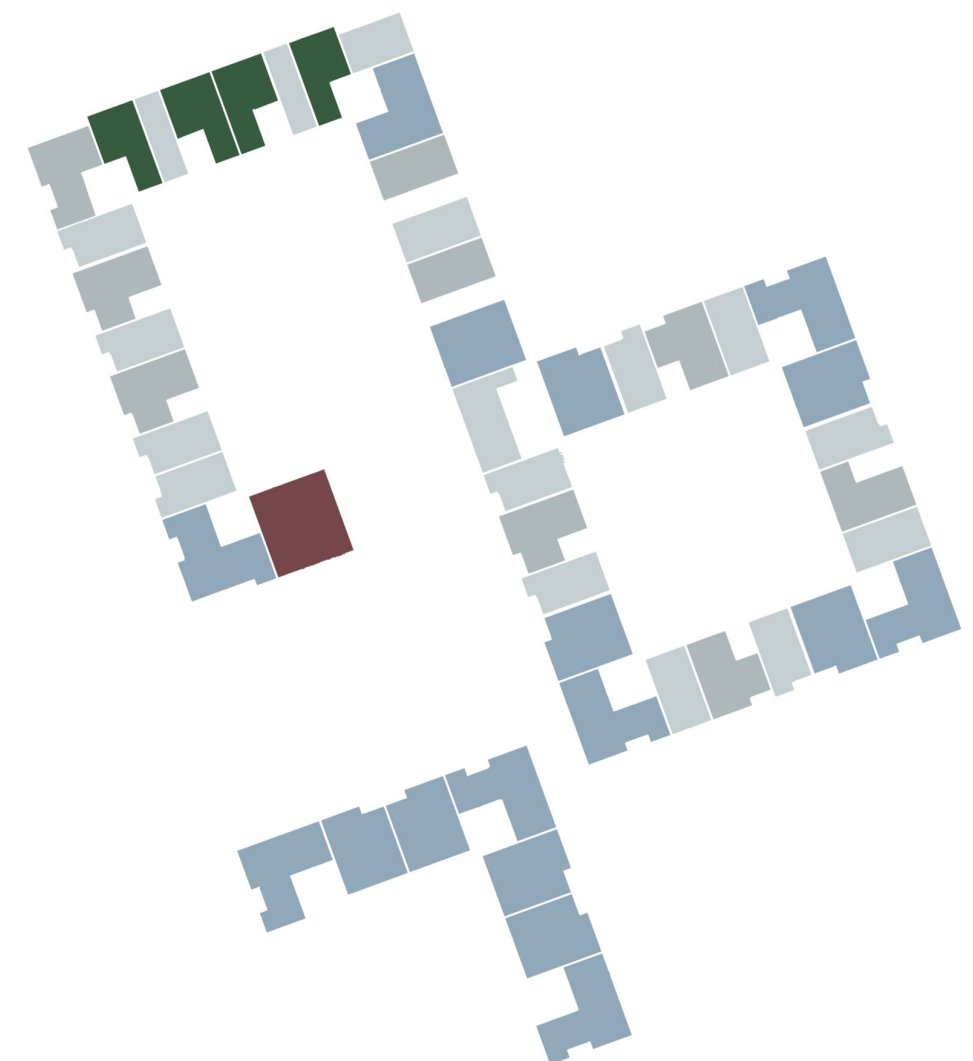
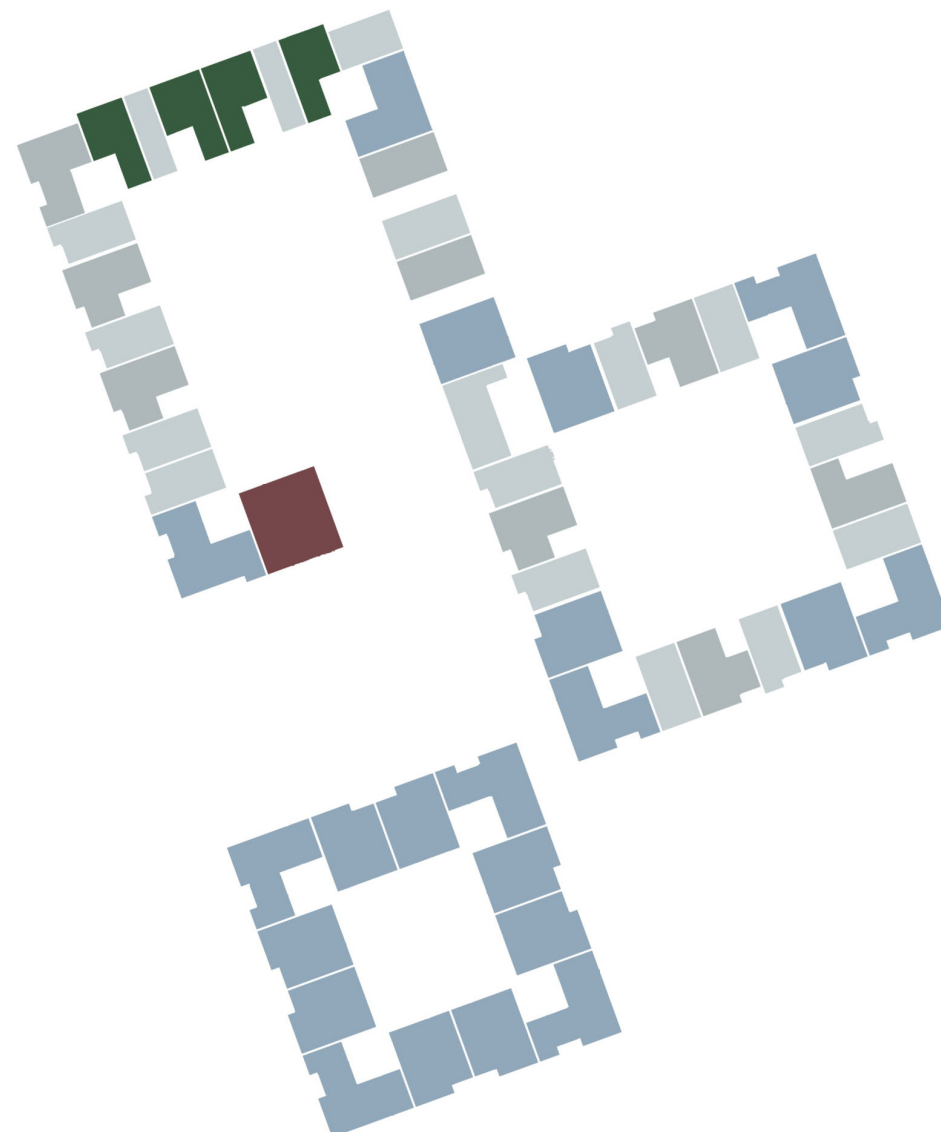
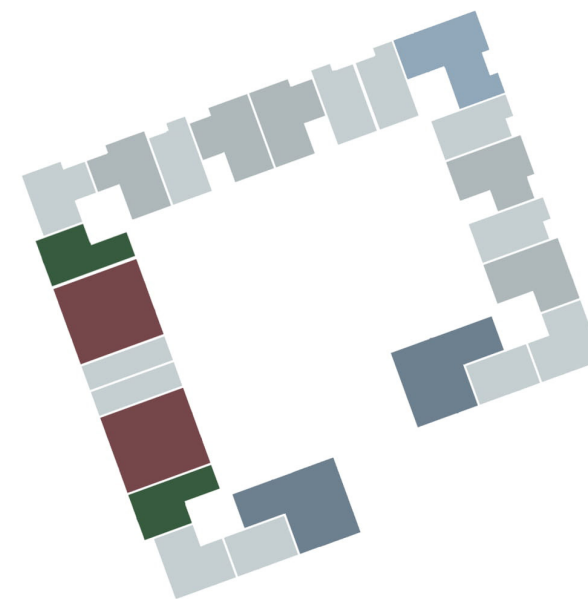


## APARTMENT TYPES

SECOND FLOOR

THIRD FLOOR

- Storage space
- Studio (1 bedroom)
- Studio (2 bedrooms)
- 1 bedroom apartment
- 2 bedroom apartment
- 3 bedroom apartment
- 4 bedroom apartment
- 5 bedroom apartment
- Shared apartment (4 bedrooms)

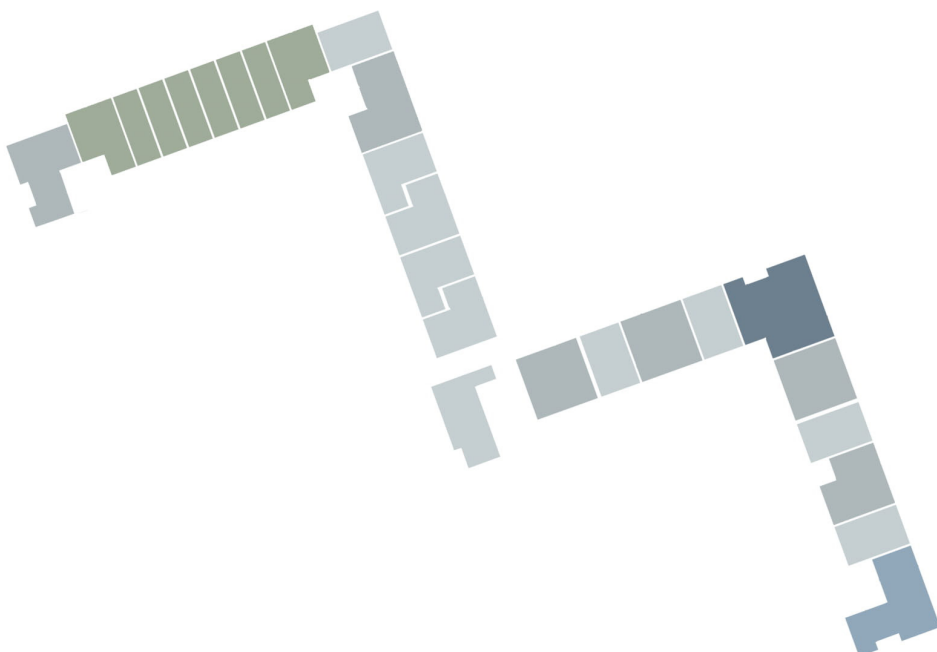
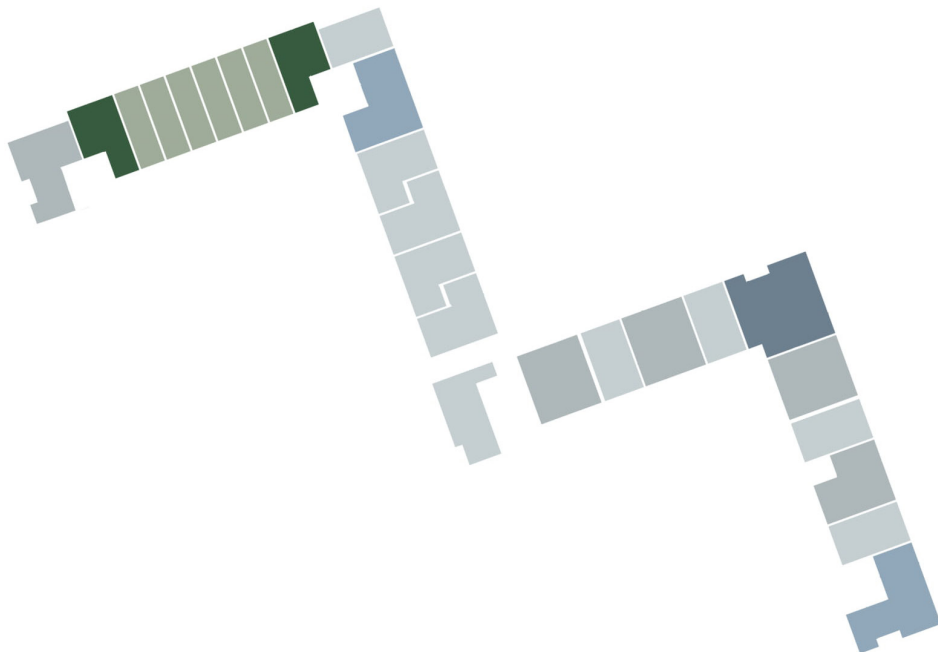


APARTMENT TYPES

FOURTH FLOOR

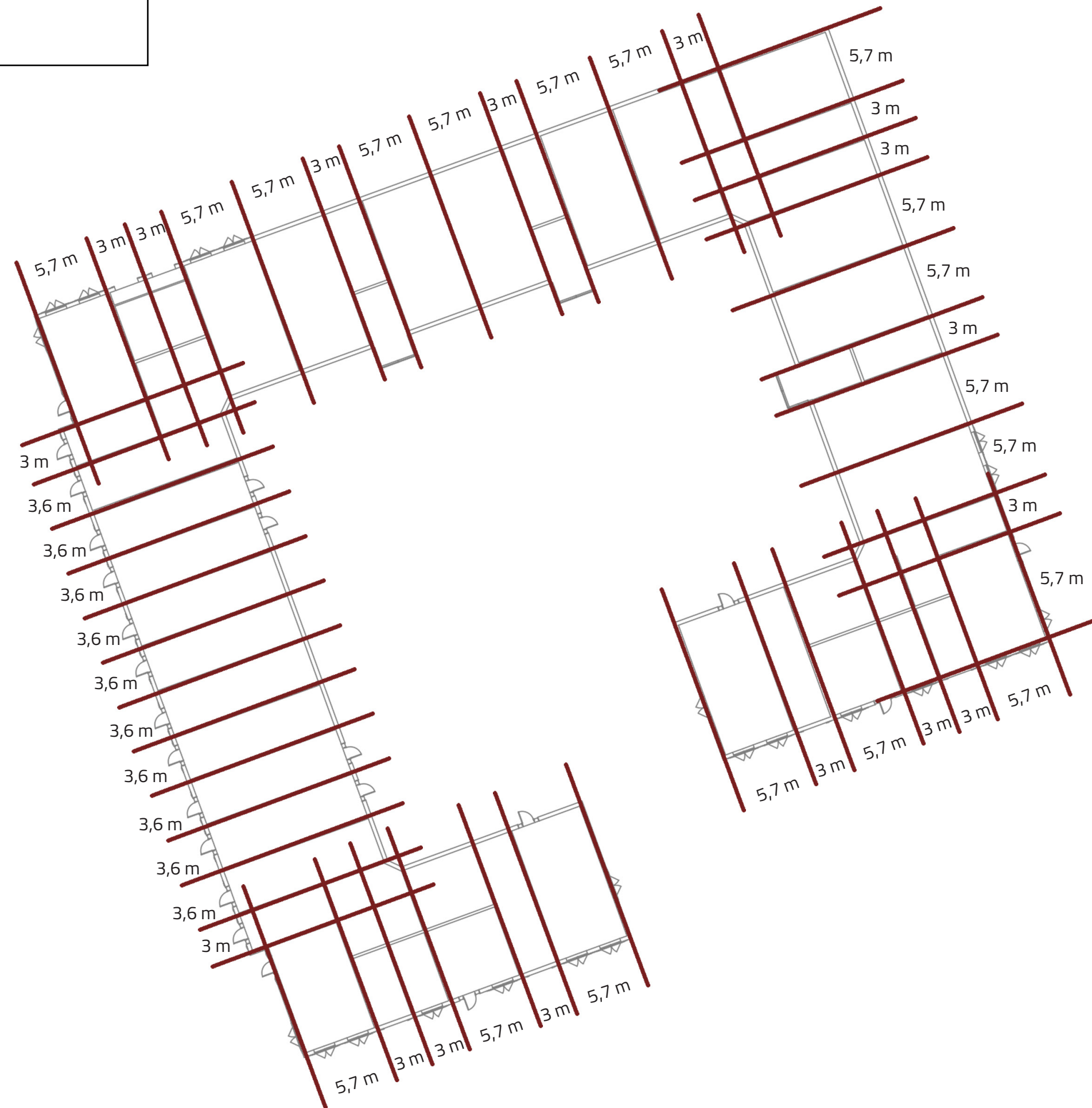
FIFTH FLOOR

- Storage space
- Studio (1 bedroom)
- Studio (2 bedrooms)
- 1 bedroom apartment
- 2 bedroom apartment
- 3 bedroom apartment
- 4 bedroom apartment
- 5 bedroom apartment
- Shared apartment (4 bedrooms)

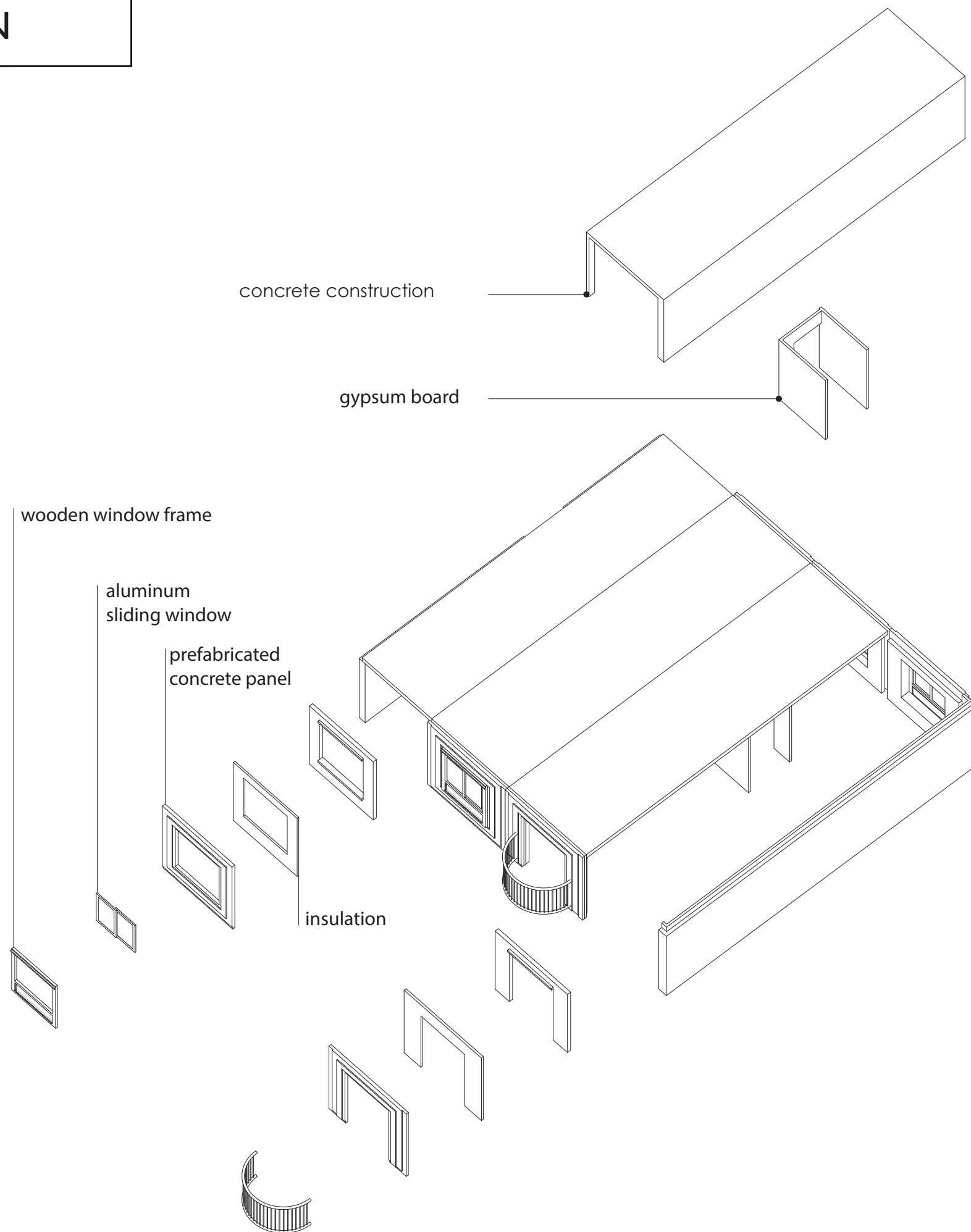




# GRID



# CONSTRUCTION







# DESIGN PROCESS



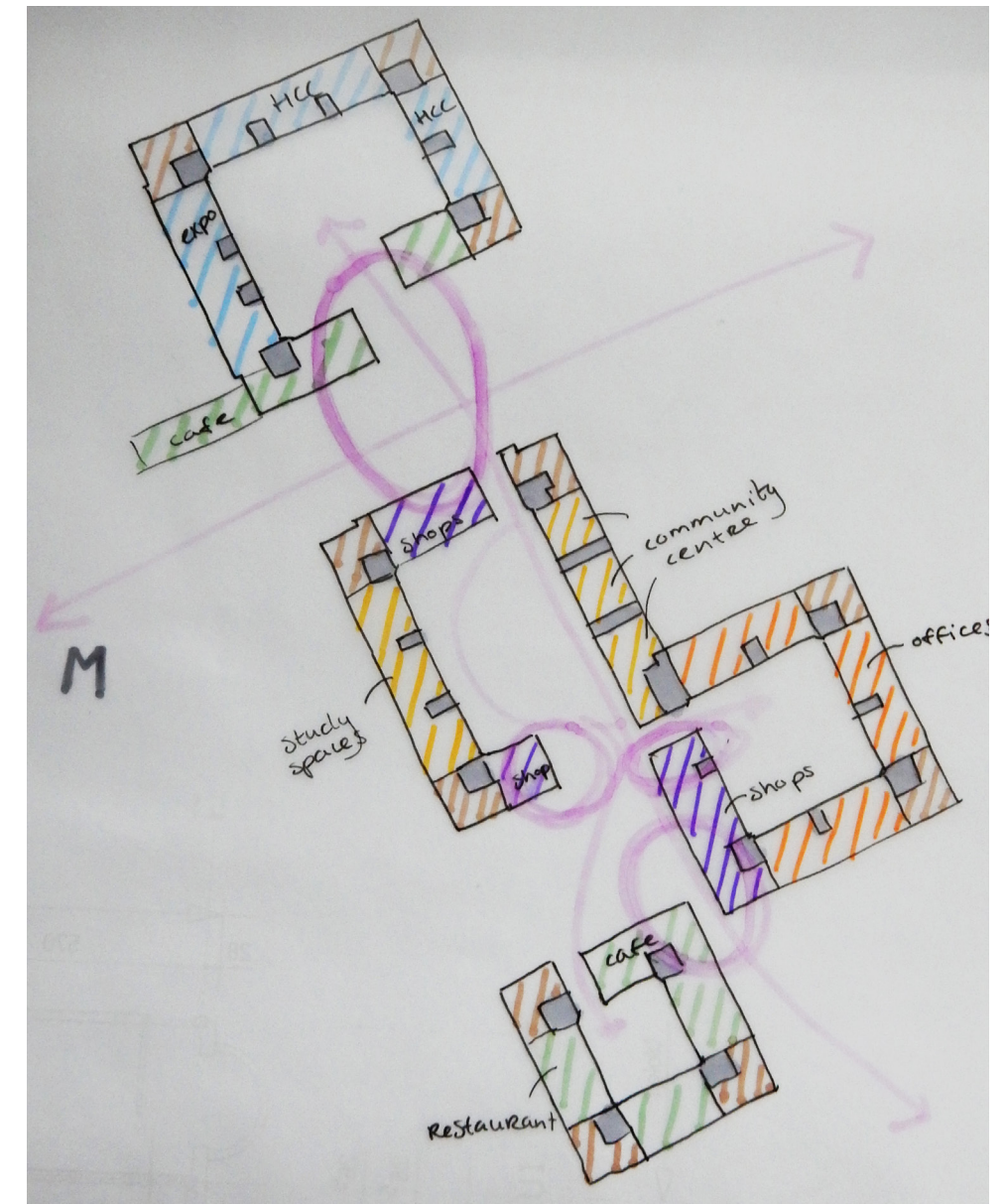
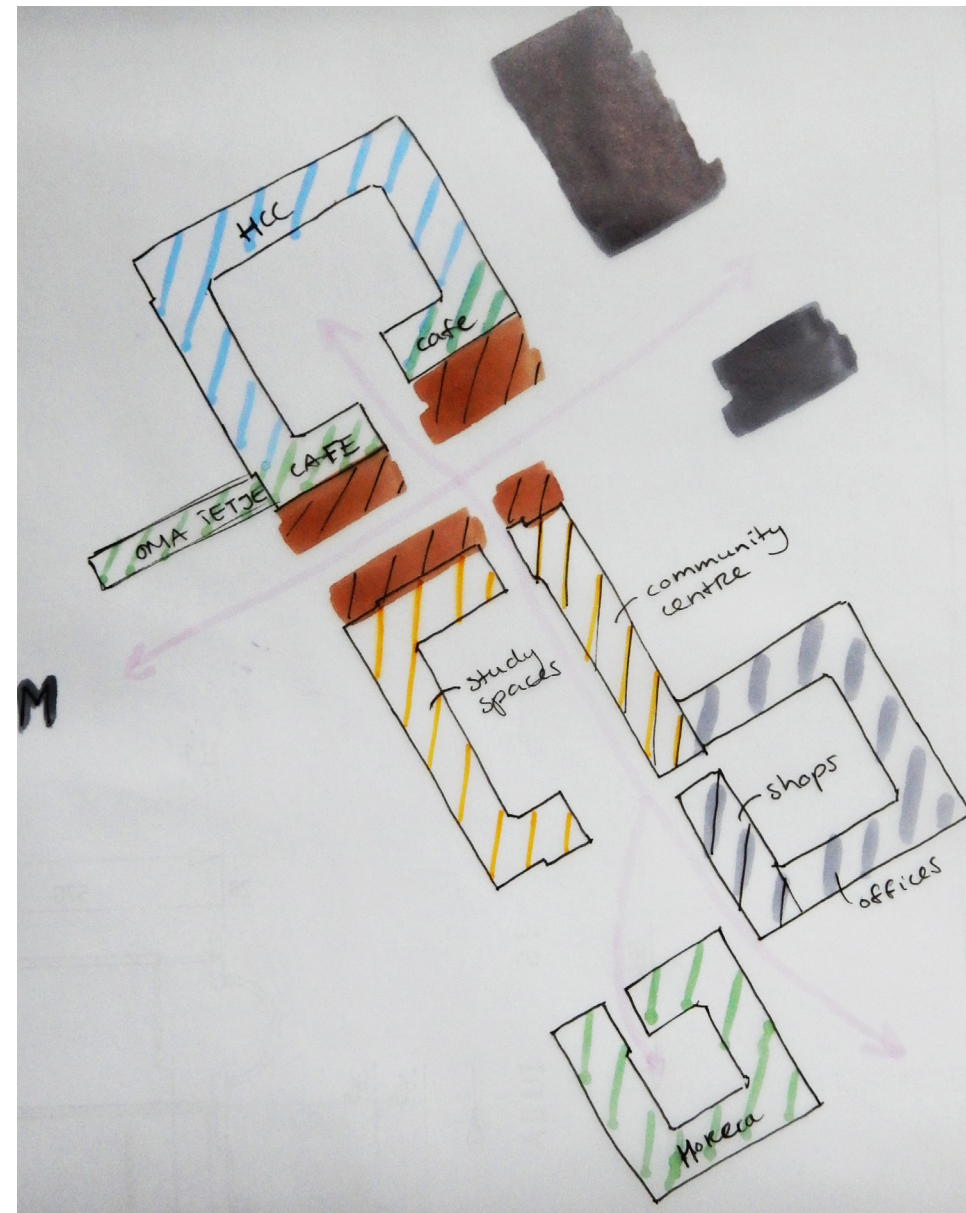
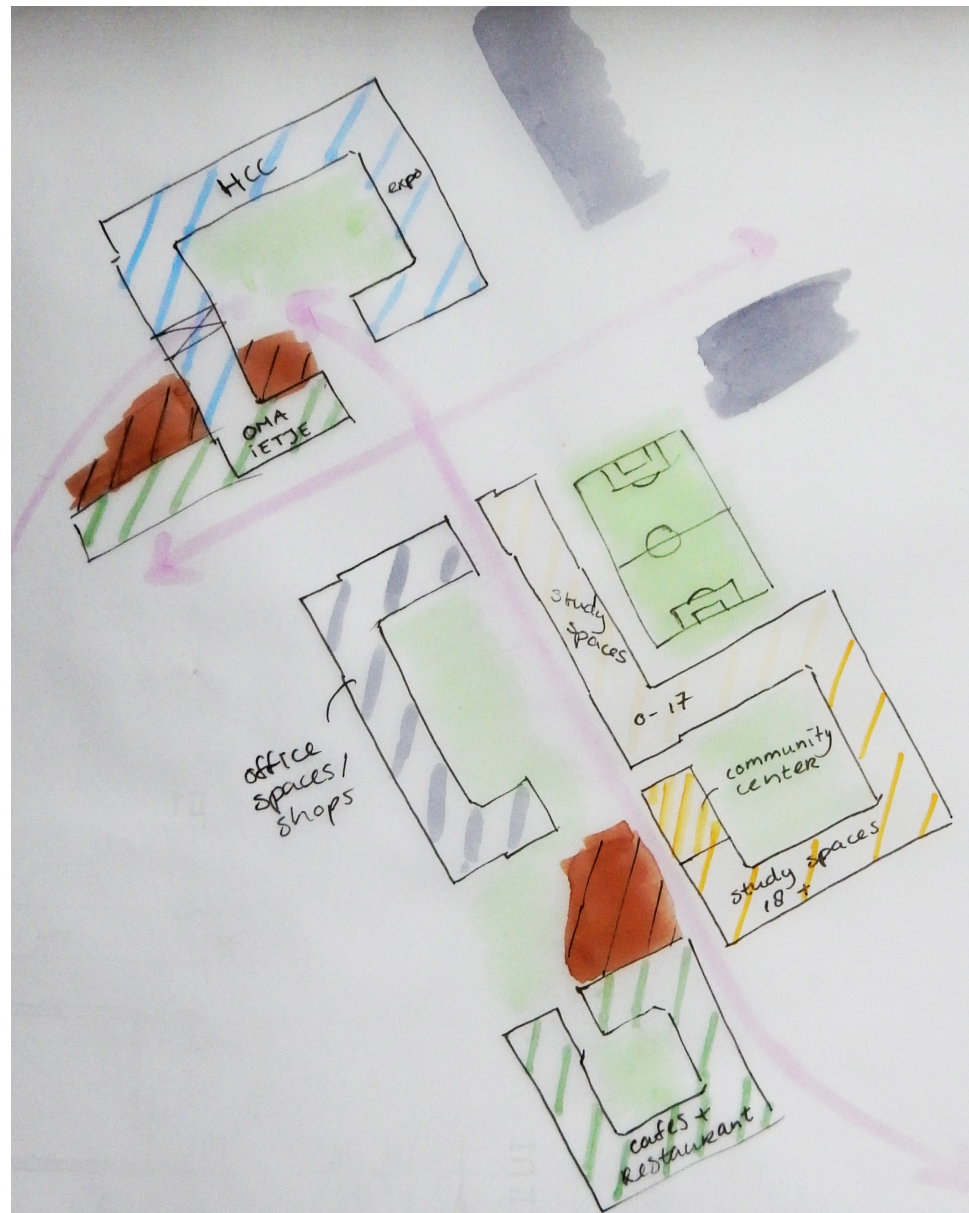
# FUNCTIONS

The collective research and the literature research are the base of the design concept. In order to improve the public space, the functions on the ground floor should be adapted to create more activity. The creative community is located in the top building block. This community should be preserved and expanded with an exposition space and art gallery, to attract more visitors. This is in line with the vision of the municipality to strengthen and expand the art and culture in this area. In the middle building block, local shops and businesses will be located, to create a flow through the area and attract more people. According to the municipality entrepreneurship should be enhanced in this area. The ground floor of the right building block will be used for study places, to give the young residents of Heesterveld the opportunity to study and to reduce the juvenile crime present in this neighbourhood. In the bottom building, a study place for the students of Heesterveld will be located.



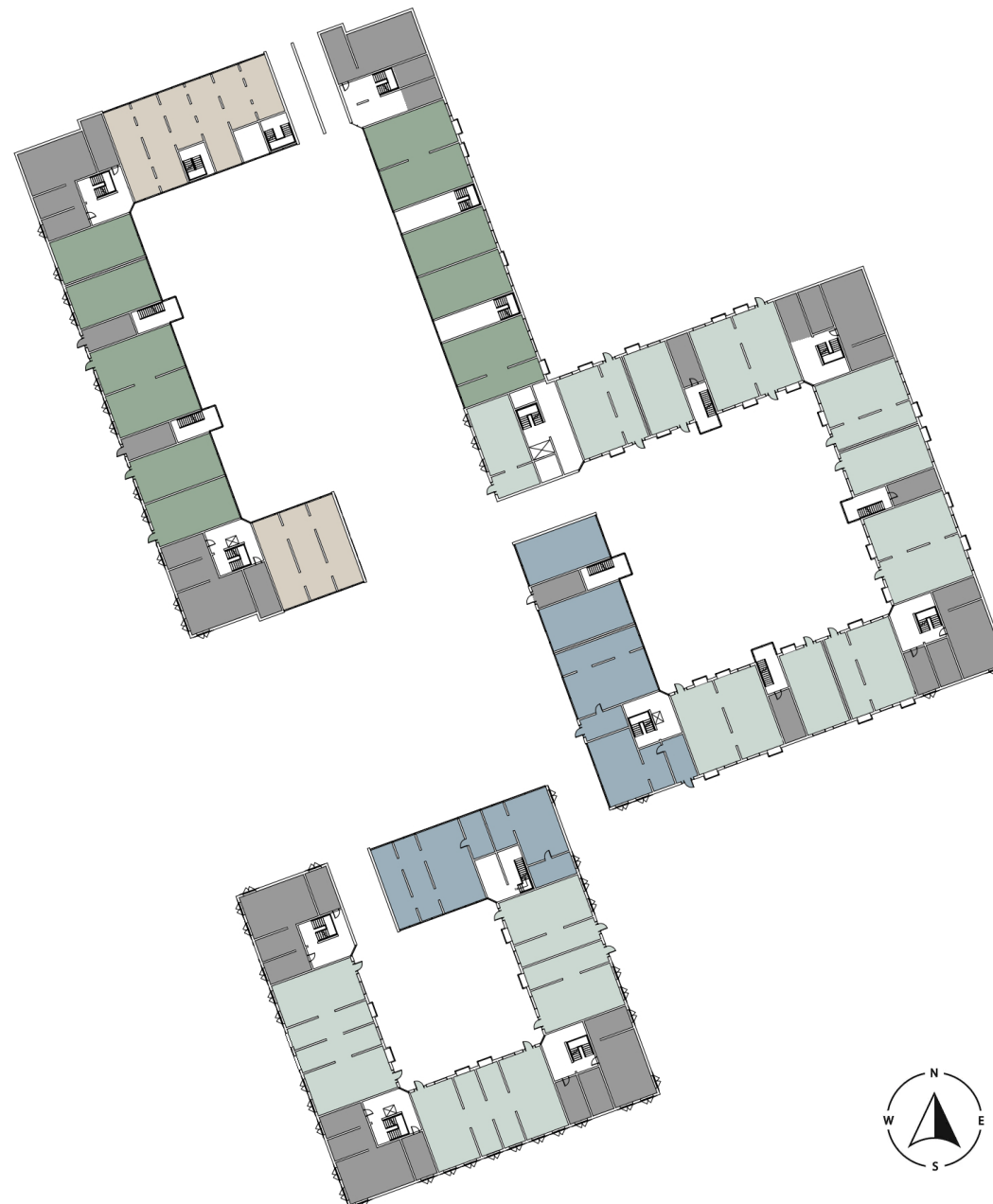
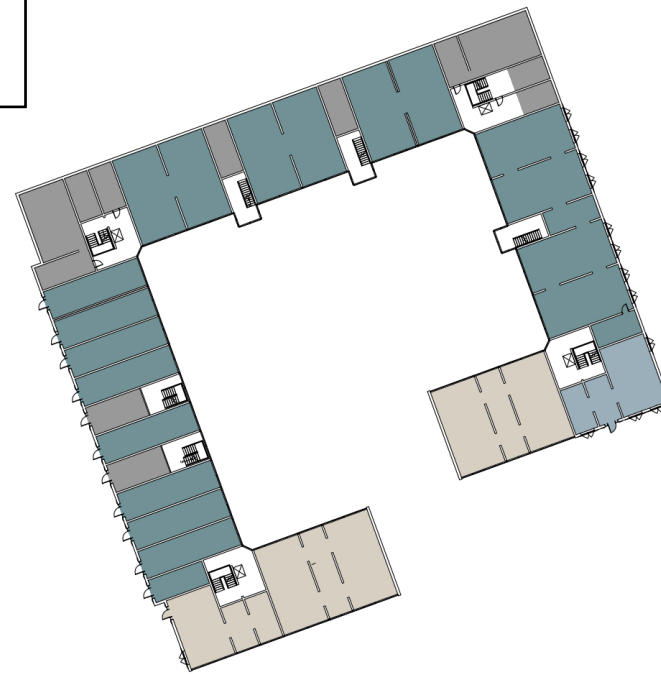


# FUNCTIONS





# FUNCTIONS



- Creative hub
- Offices
- Study centre
- Restaurant
- Shops
- Storage spaces

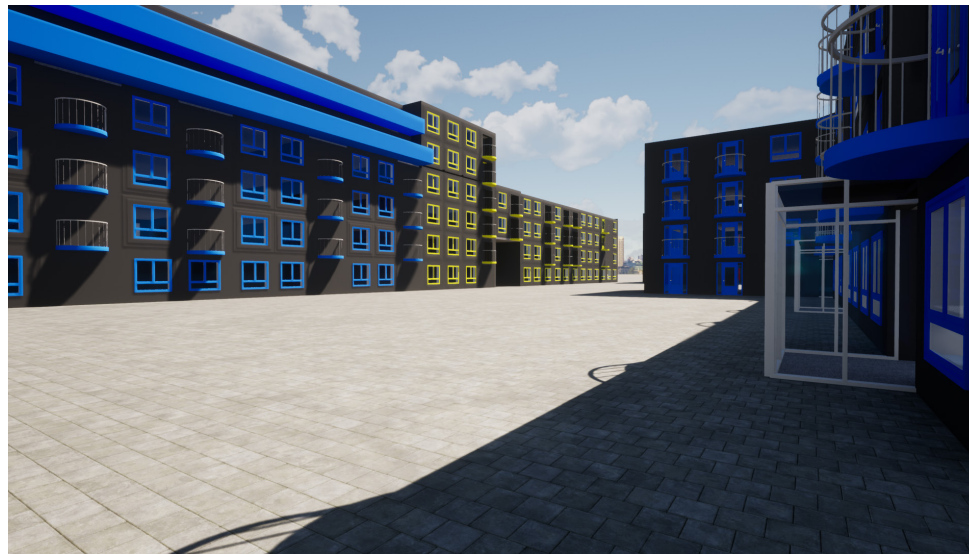


After exploring different versions and design variations, this is the final version of the function division on the ground floor. Along the public spaces and routes, public functions will be located, in order to attract people and create social interaction on the ground floor. The creative community in the top building block should be preserved and expanded. Along the new route, local shops and businesses will be located, to create a flow through the area and enhance entrepreneurship. At the intersections of the routes, cafes and restaurants are located. To create gathering spots at the corners of the buildings. The two bottom buildings are more private and their courtyard is more closed off and will be used for study places.

The public space and facades on the ground floor should be adapted according to the new functions. The plinth is very closed right now and exists mainly out of a blind brick wall. This needs to be opened up. Some existing parts already contain windows, so this can be kept if the façade is orientated towards a semi-public space. For the public functions next to the green route and urban meeting spots, the façade will be completely opened up, implementing a curtain wall. The study spaces are semi-public and do not need to be completely opened up, so a green wall with new windows will be placed on the ground floor where no windows are present yet. On the next pages, the different variations of the new plinth are visible.



# PLINTH



Ground floor (public functions) with windows, very closed off and no visual connection with public functions.



Ground floor (public functions) with curtain wall, plinth is opened up, good connection with public functions.



Ground floor (public functions) with curtain wall and grass, better for the environment and health and wellbeing of people.

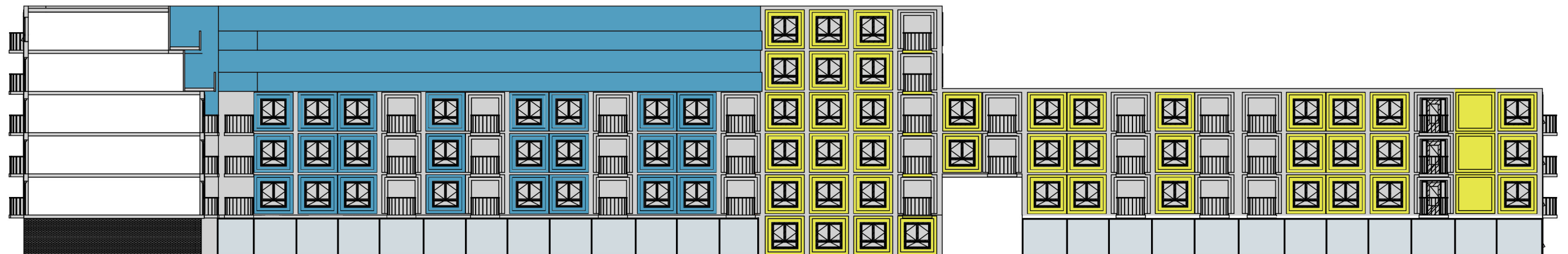
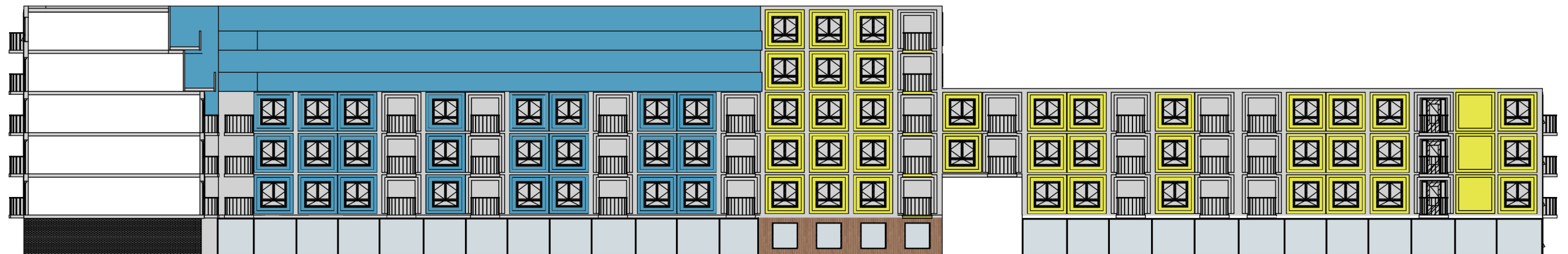
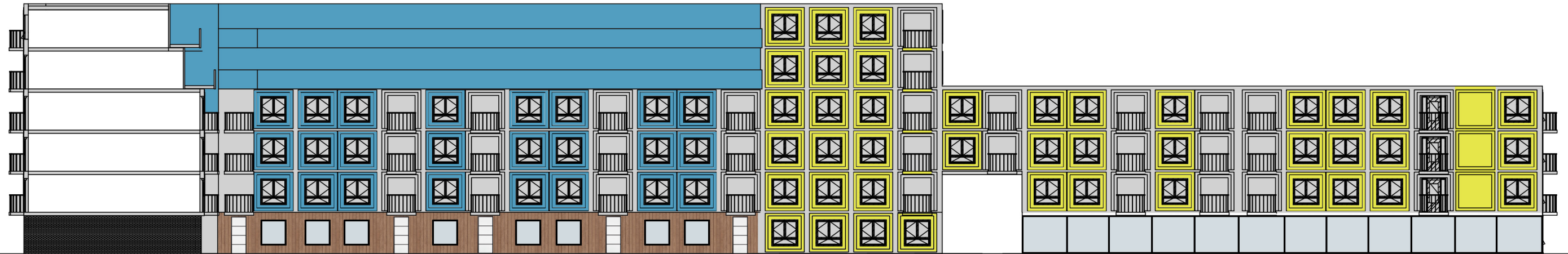


First impressions of ground floor with curtain wall and grass, better for the environment and health and wellbeing of people. Plinth is opened up, good connection with public functions.



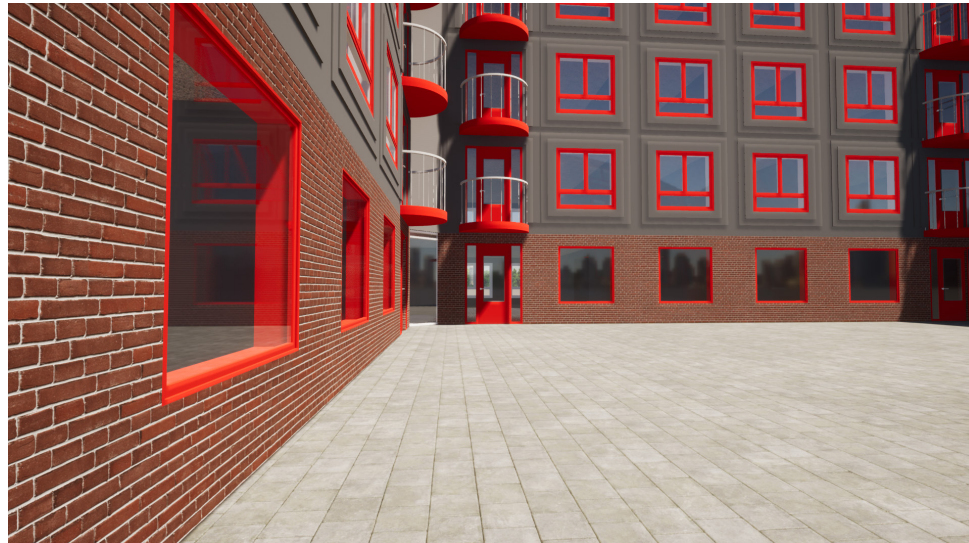


# PLINTH

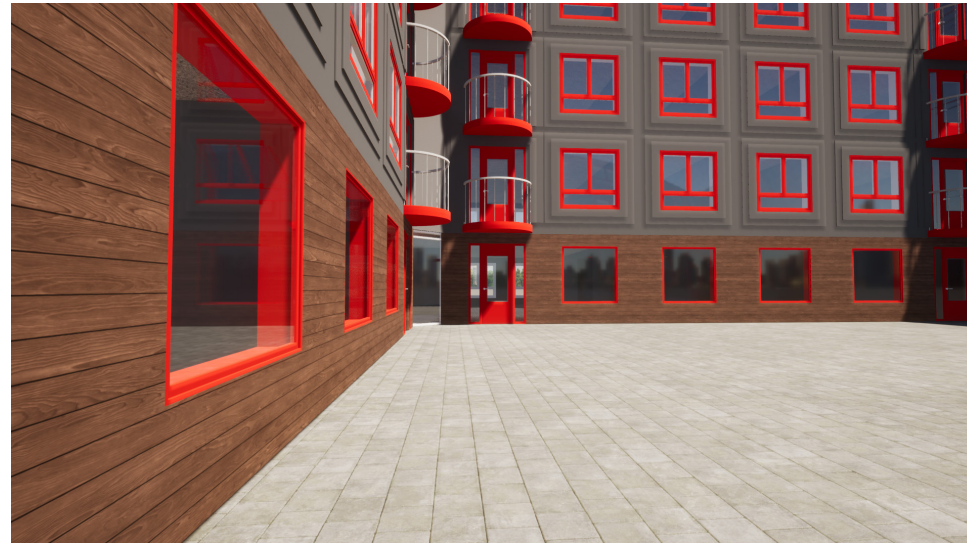




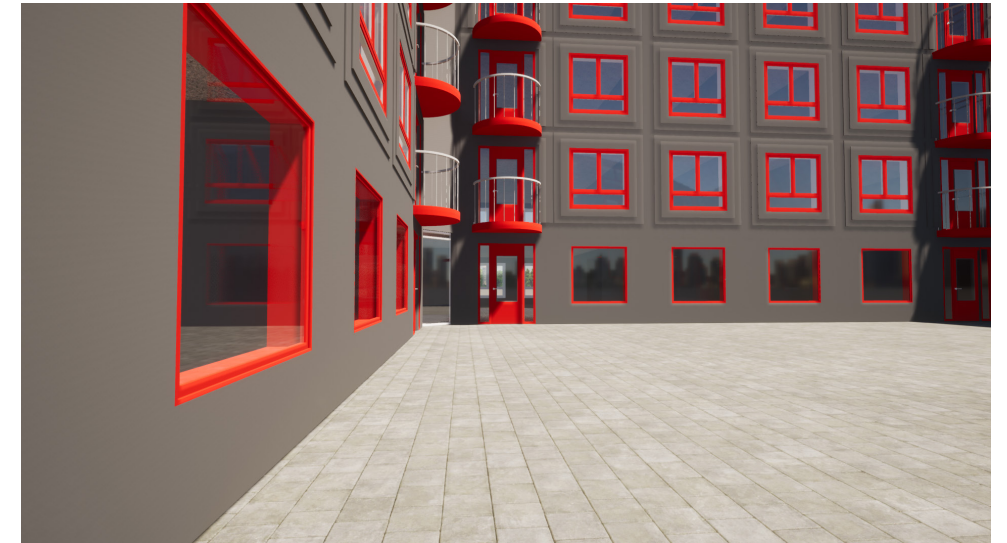
## PLINTH



Ground floor (semi-public functions) with existing brick facade and new windows.



Ground floor (semi-public functions) with new timber facade and new windows.



Ground floor (semi-public functions) with new concrete facade and new windows. Not sustainable.



Ground floor (semi-public functions) with new timber facade and greenery and new windows.



Ground floor (semi-public functions) with new green facade and new windows. This option has the most benefits. The green facade has a positive effect on increasing the biodiversity, air quality and health and well being of people. It also increases the investment value.



## INTERIOR WALLS

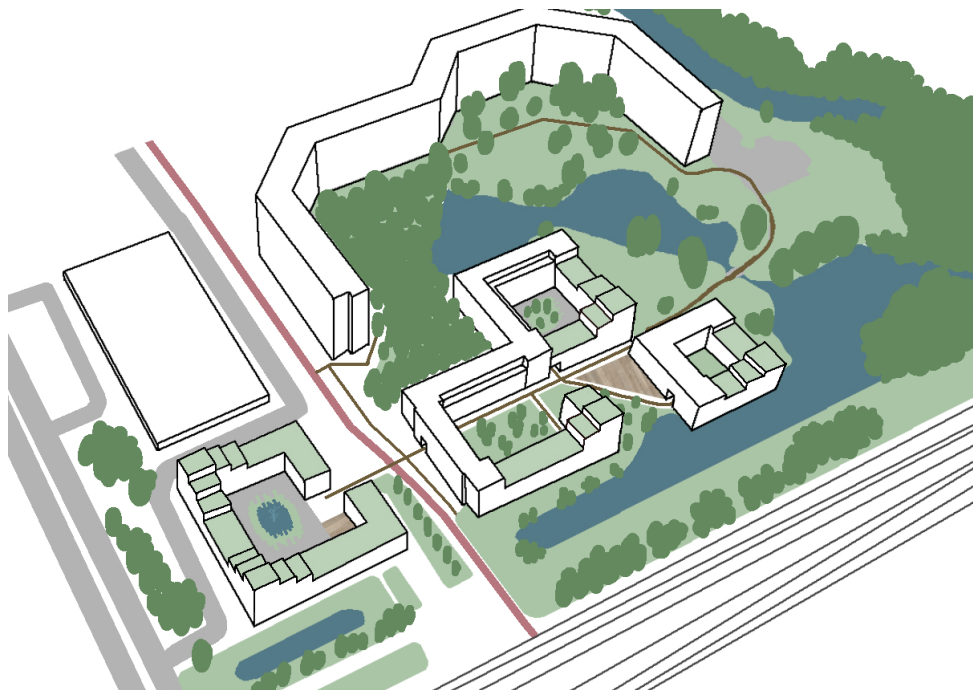


Existing interior, very dark and closed off, small spaces.

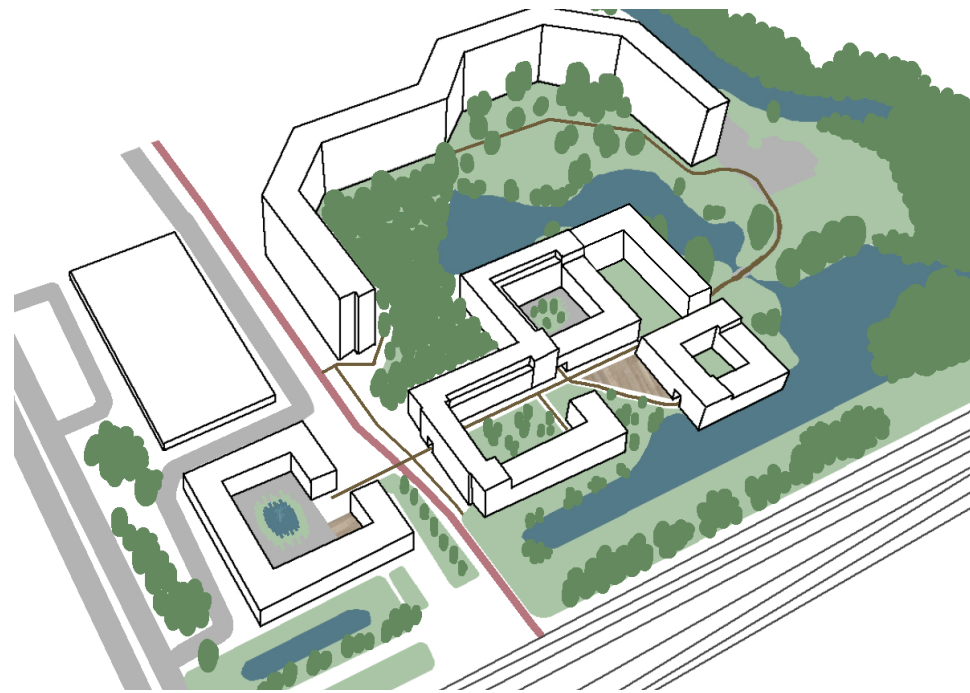


New interior, larger space, opened up, lighter

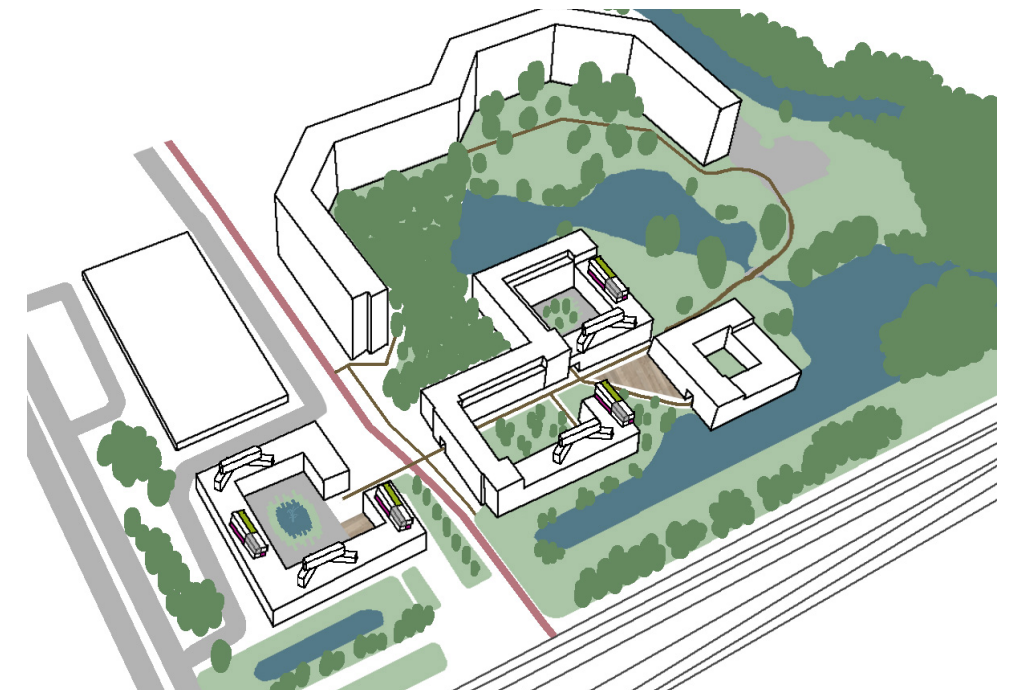
## NEW DWELLINGS



Option of new dwellings on top of the existing buildings, in order to maintain current layout, which is appreciated by the residents. Not more than 6 storeys, in order to maintain the human scale.



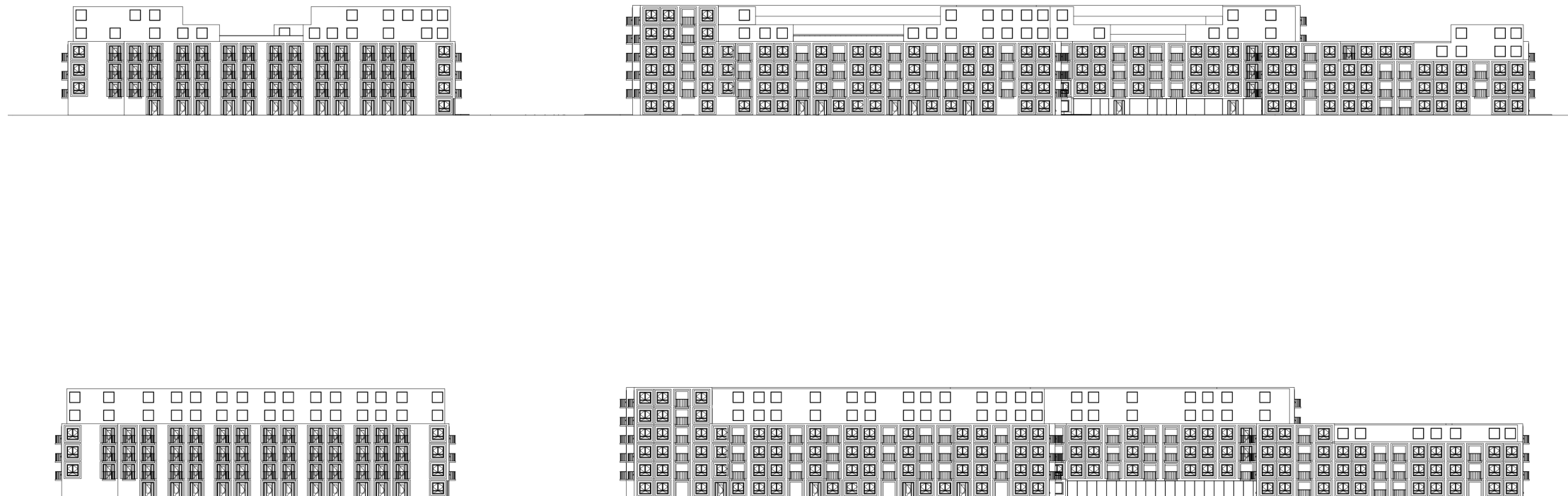
Option of building an extension next to the original buildings, with the possibility of creating more dwellings. There will however be less greenery and another closed off courtyard will be created.



Option of placing containers on top of the buildings, which offer a flexible and temporary solution. They can be easily removed and do not have a big impact on the current structure. The containers are however not sustainable and do not blend in well with the existing appearance.



# NEW DWELLINGS

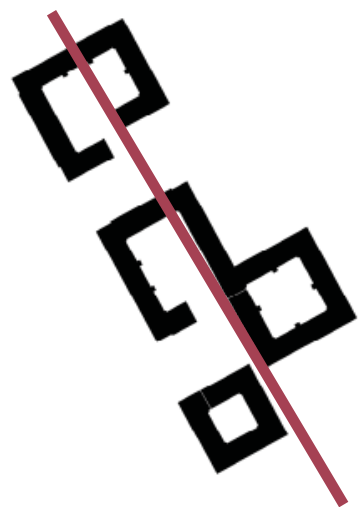


In order to replace the demolished apartments on the ground floor, new apartments have to be added. This is done on top of the existing buildings to maintain the current layout of Heesterveld. I explored two options, a static and more dynamic addition. The bottom option has the same form as the existing building and would blend in better with the surrounding. The top one is more dynamic and has a different form as the original. This option does create more social interaction because of the setbacks and the ability to create private roof gardens. From the collective research was also concluded that people don't like the high enclosed blocks. This also relates back to the original plan to create a human scale plan with maximum 6 storeys. In the impressions, it is also clear that the top option is less enclosed and more activity will take place here.

## NEW DWELLINGS

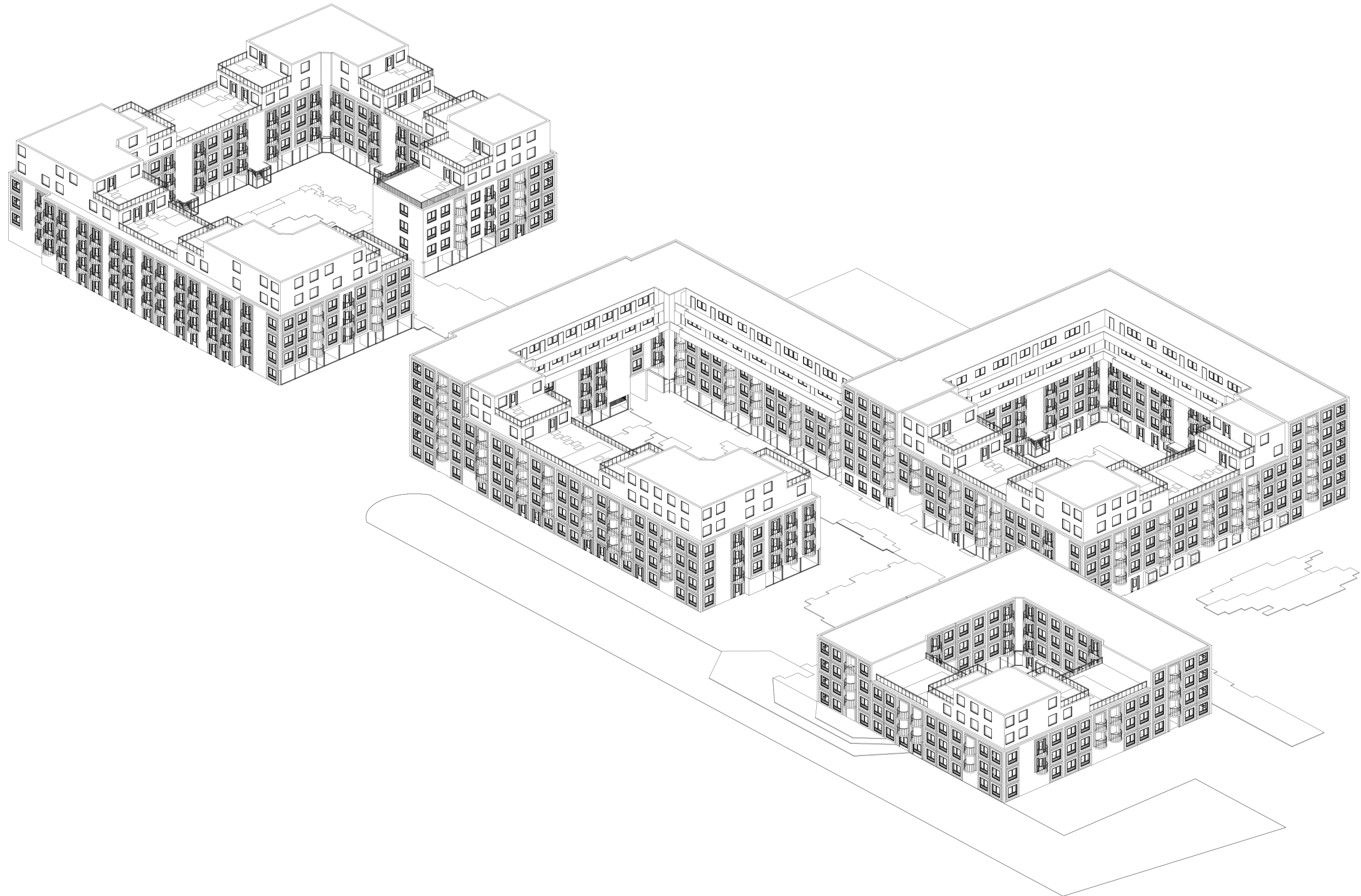


The façade along the green route can then look like this. As I explained the ground floor consists completely of glass here to create the connection and activate the ground floor. The first option for the new facades is a green façade, just like the ground floor. The green façade on the added floors does look a bit chaotic, so another option for the new material could be a wooden façade. This blends in better with the existing façade and is still sustainable, as it is a biobased material.



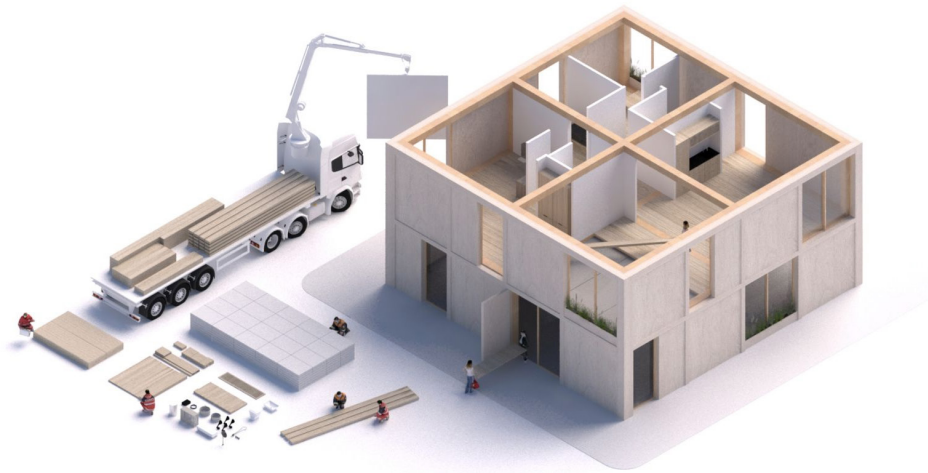
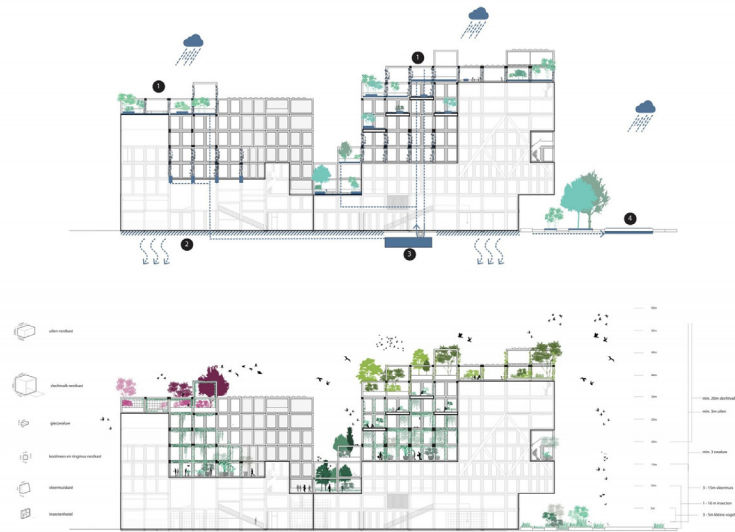


# NEW DWELLINGS





## REFERENCES



studioninedots - Rebel



SPACE10 and EFFEKT architects -  
The Urban Village Project



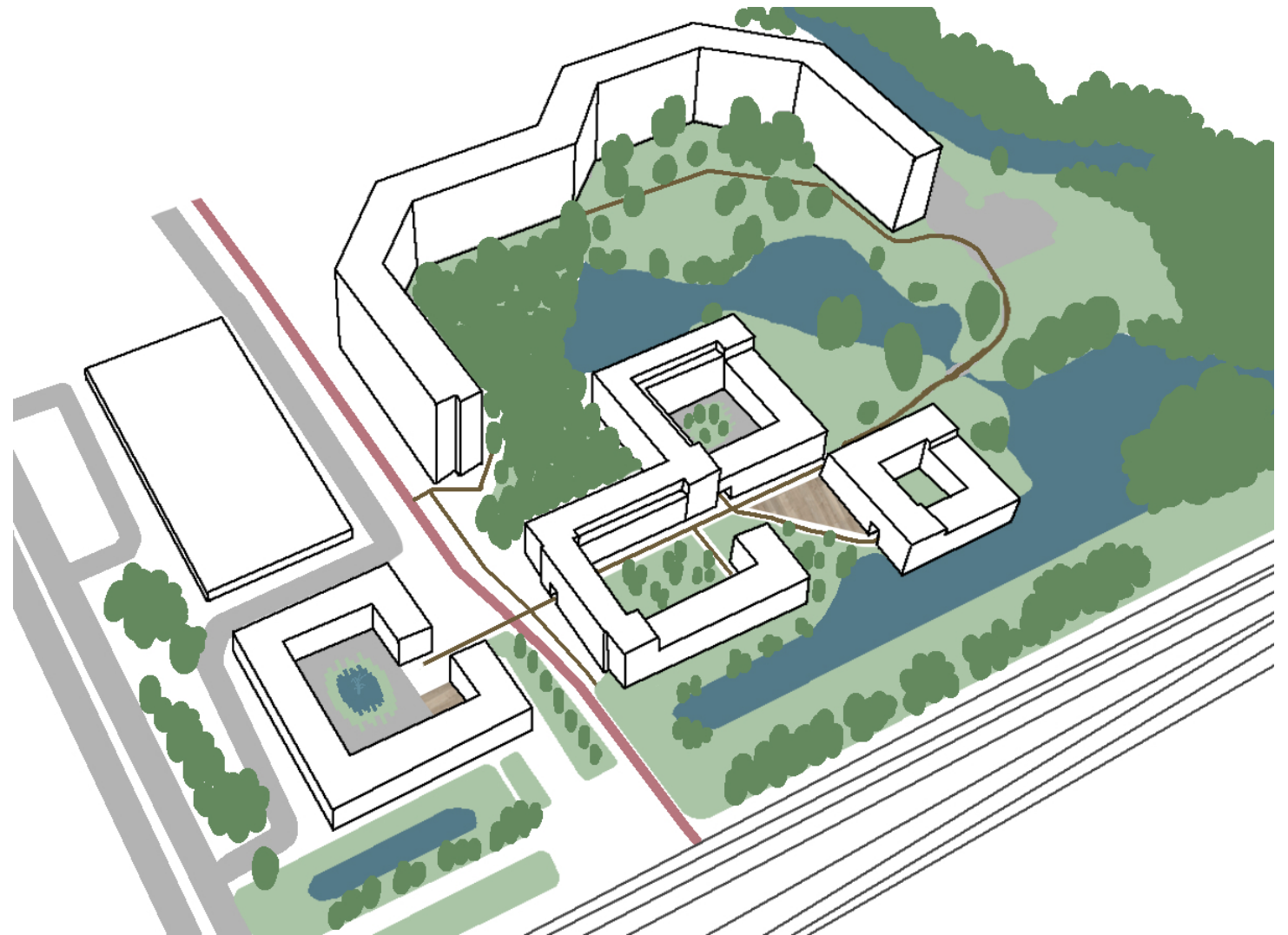
AEMSEN - Barbizon



## BLUE GREEN

As mentioned before, blue and green elements have a positive impact on several levels, like the social and environmental. That is why the blue green infrastructure is very important and plays a central role in this project. The public space will be improved by adding blue green elements. The road inside the buildings blocks is therefore removed to create a car free zone. The road does continue to the main road at the top. In the creative courtyard, at the top, a blue green meeting spot is added to increase social interaction. The middle part is for stormwater management, to manage the water drainage with heavy rainfall. The green inner courtyard at the right is used to reduce the stress of the students, just like the bottom courtyard.

The public space in between the buildings is used as a blue green park, to increase social interaction, the mood and mental health of people. The rainwater collected in the water surrounding the buildings is used for the irrigation of the greenery. –Trees and greenery are also added to improve other aspects. The trees along the bike path improve the air quality. The trees along the railway are for noise reduction of the metro. Overall the trees and greenery enrich the biodiversity and reduce the urban heat island effect. On the next pages, different concepts and ideas of blue green infrastructure are illustrated.





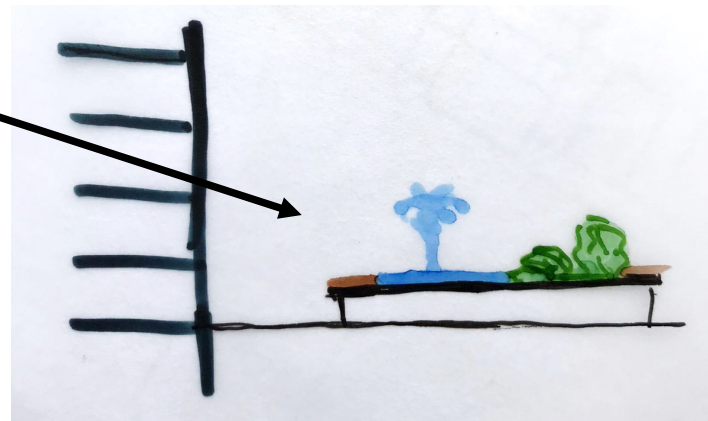
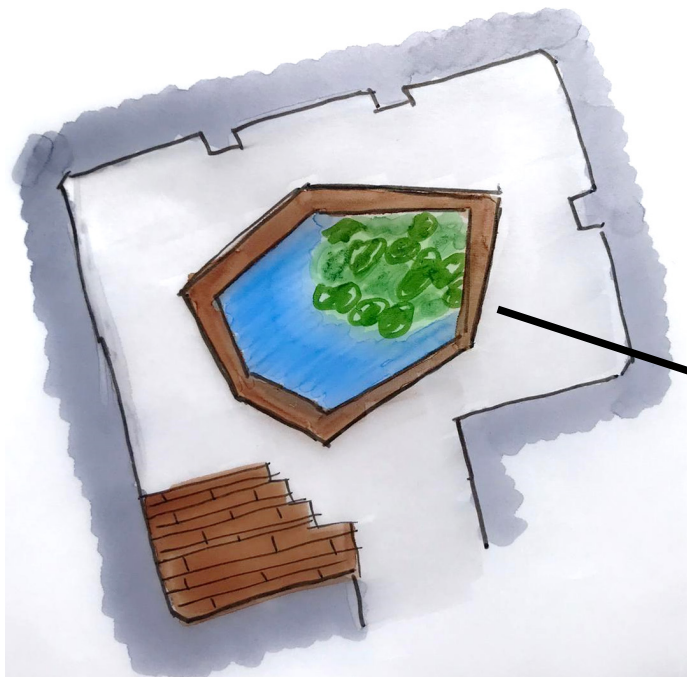
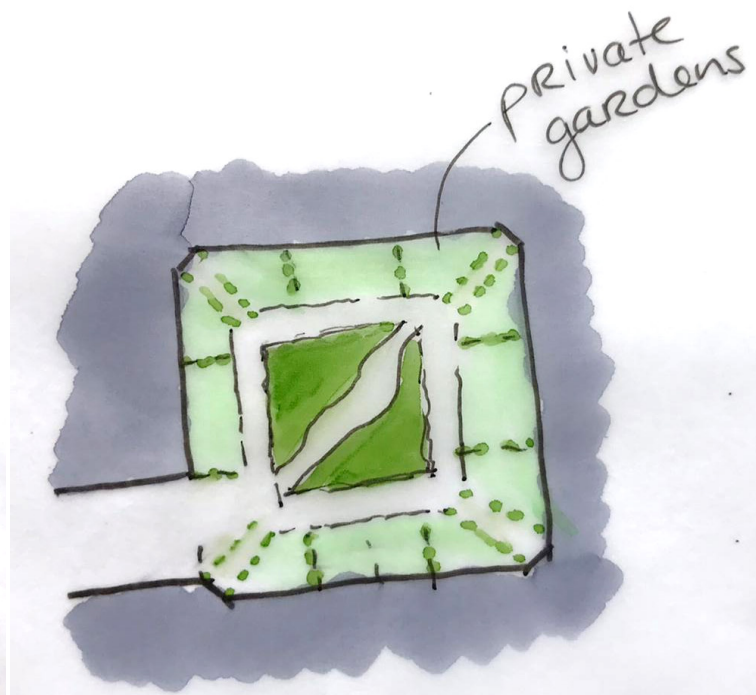
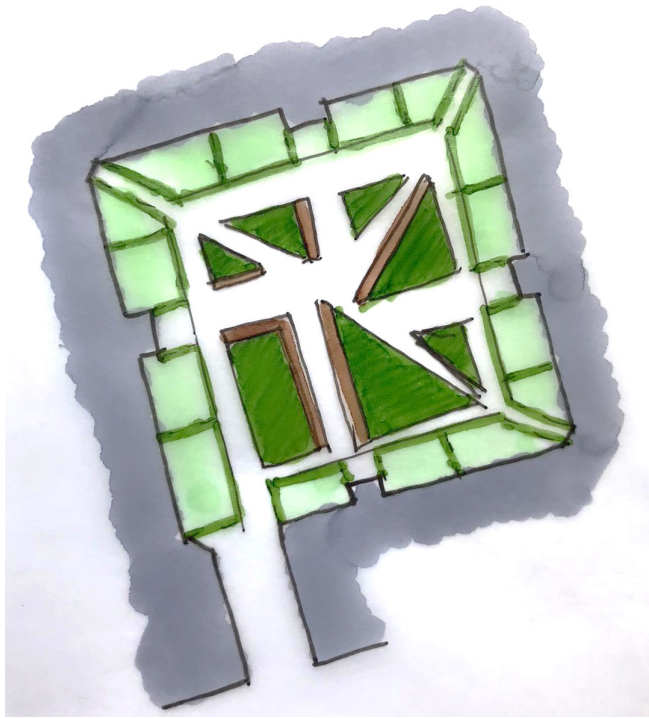
## BLUE GREEN



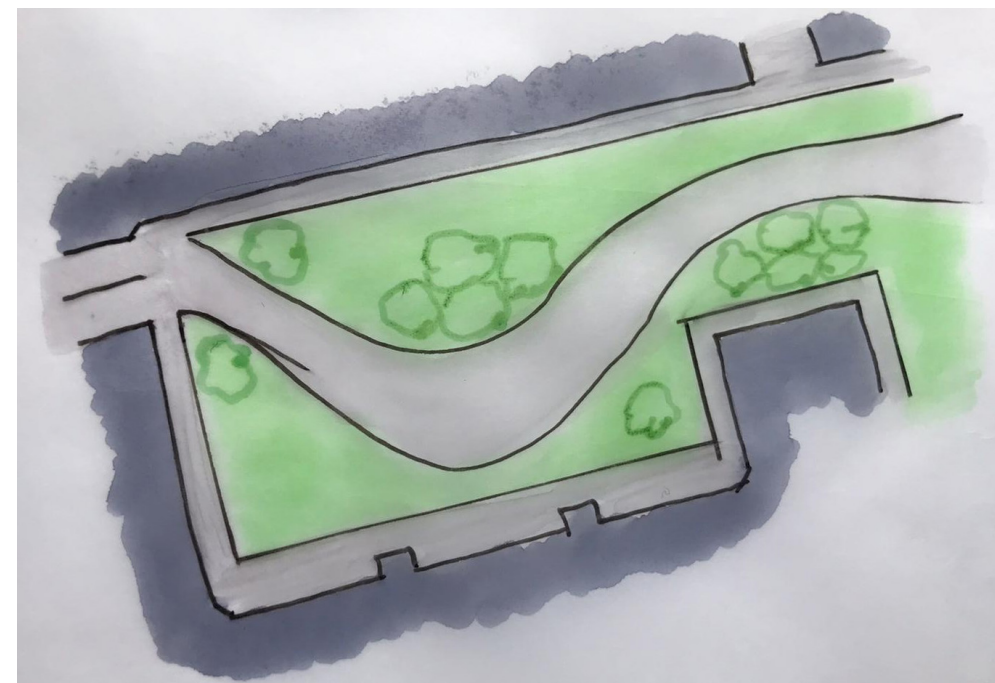
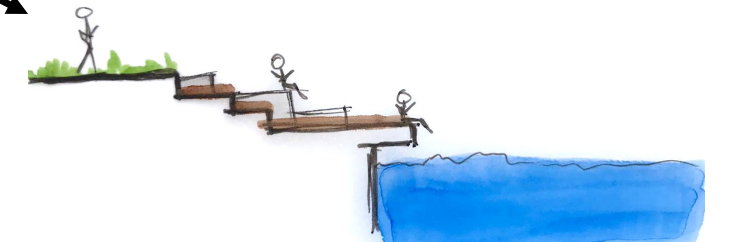
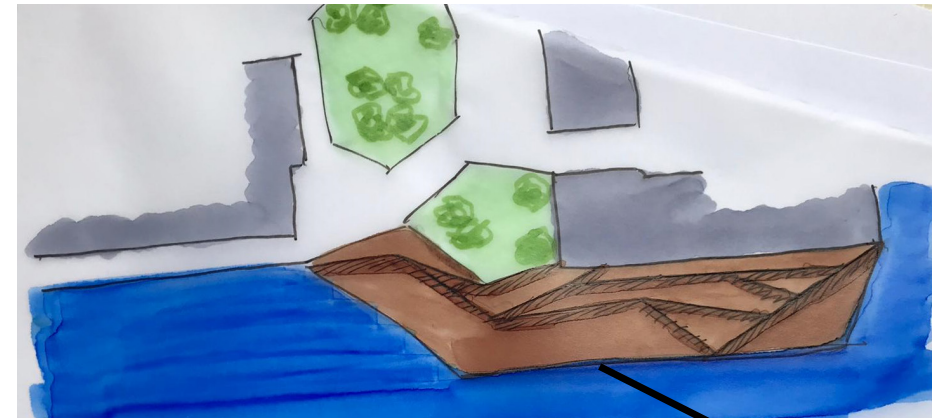
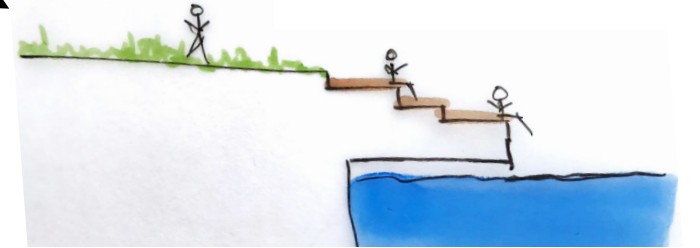
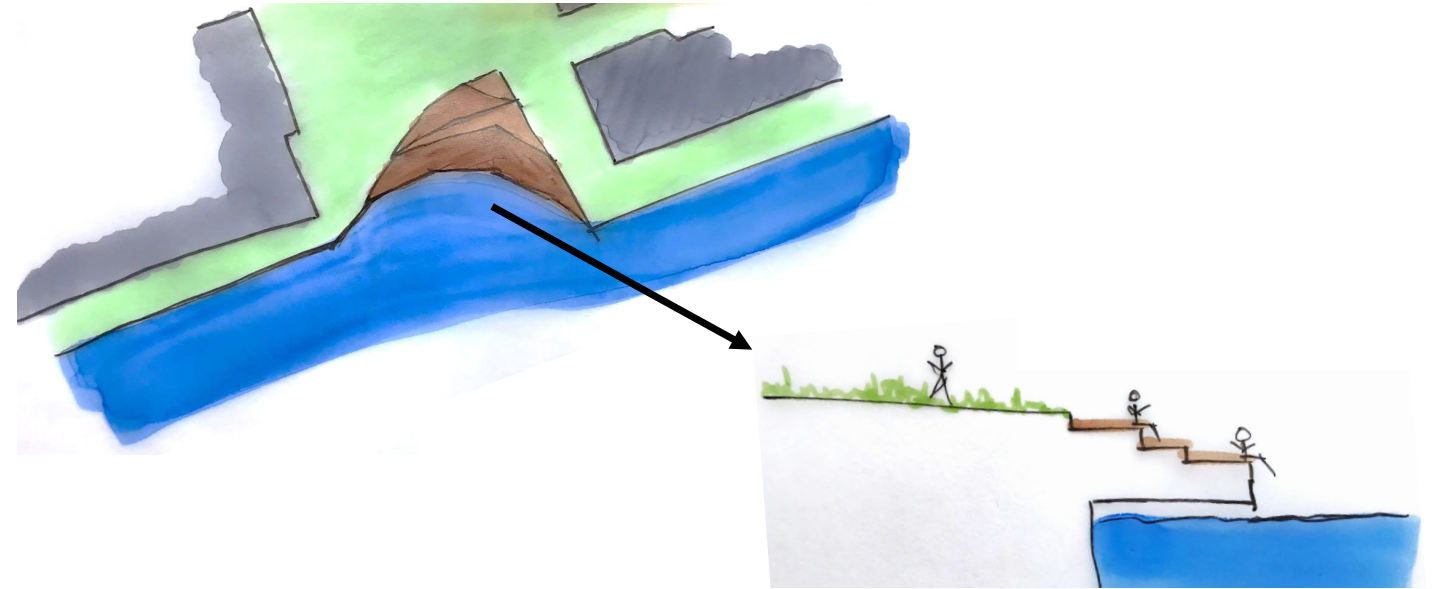


## BLUE GREEN

### PRIVATE COURTYARDS

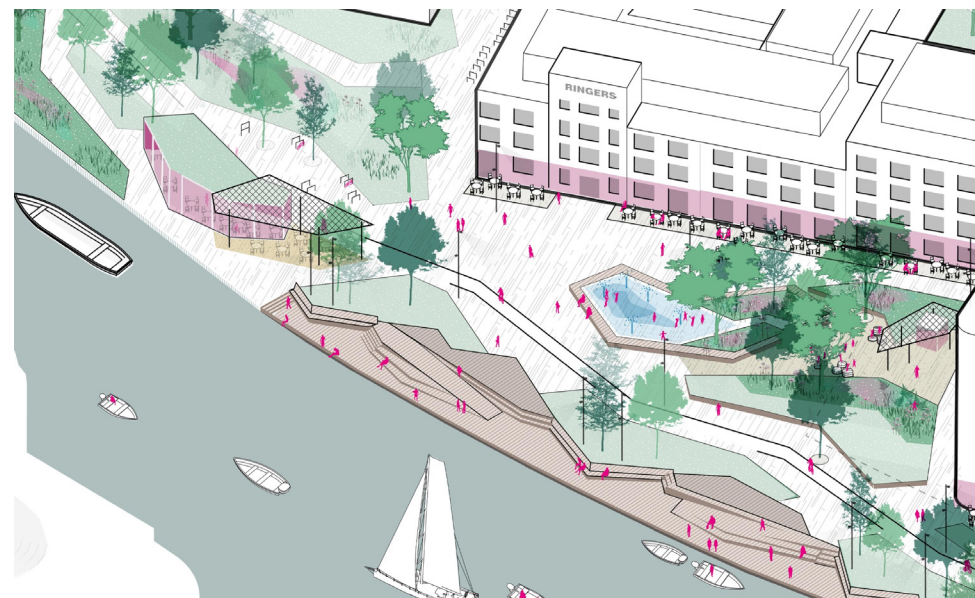


### PUBLIC AREAS

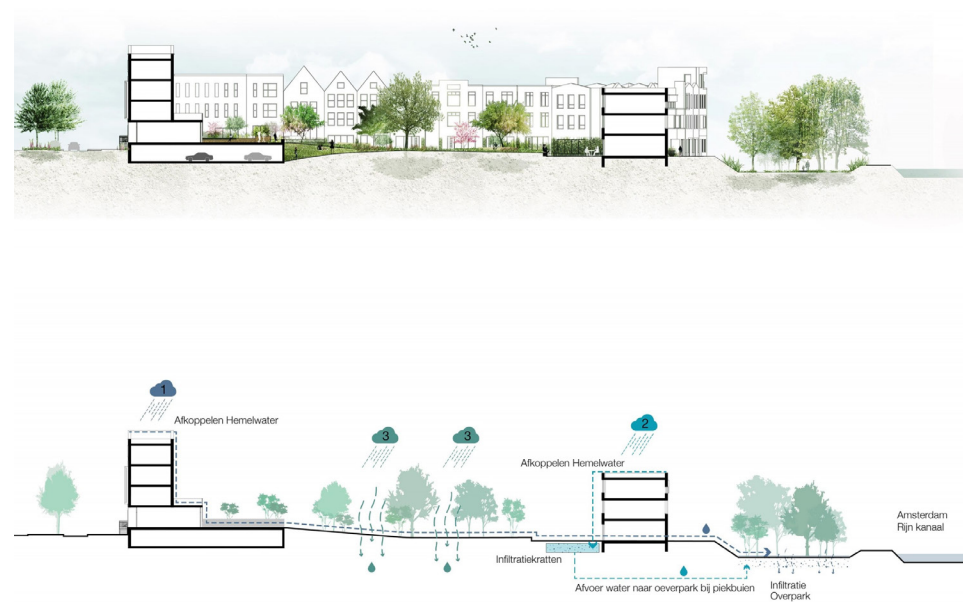




# BLUE GREEN REFERENCES



DELVA - Ringersplein



DELVA - Leeuwesteyn



DELVA - Smakkelaarsveld

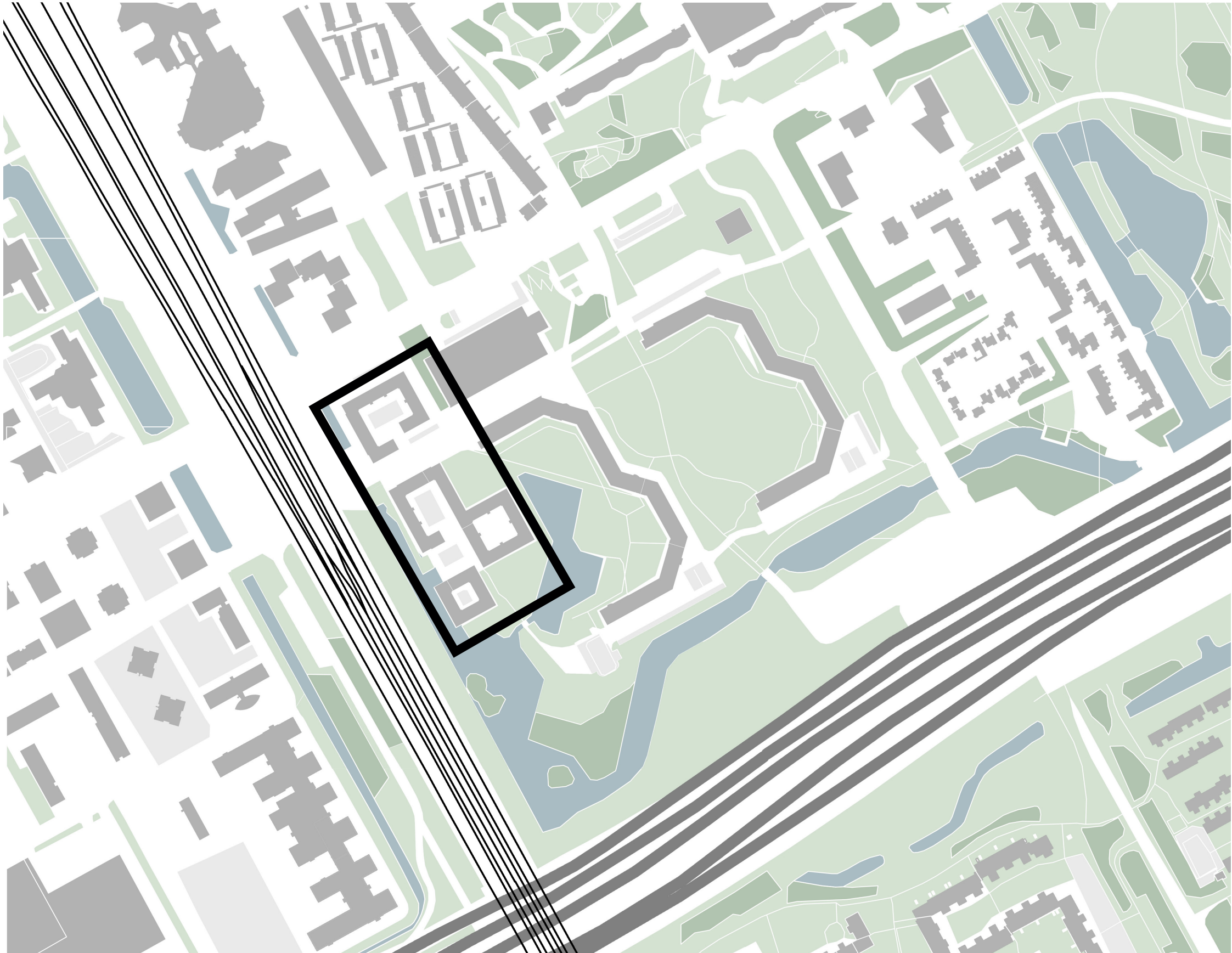




DESIGN  
-  
URBAN SCALE

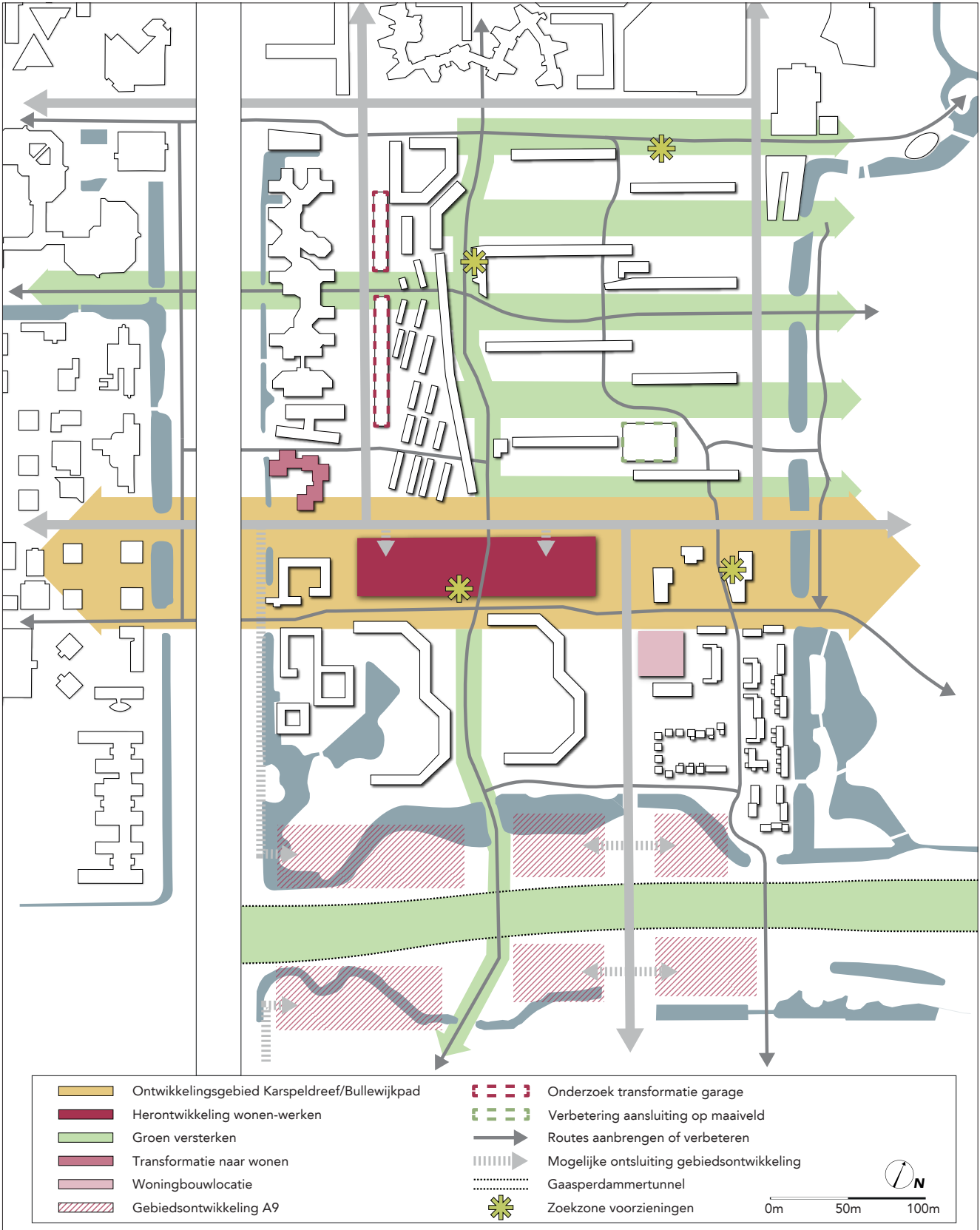


# BORDERS



# VISION MUNICIPALITY

Ruimtelijke ambitiekaart



Afbeelding 26: Ruimtelijke ambitiekaart

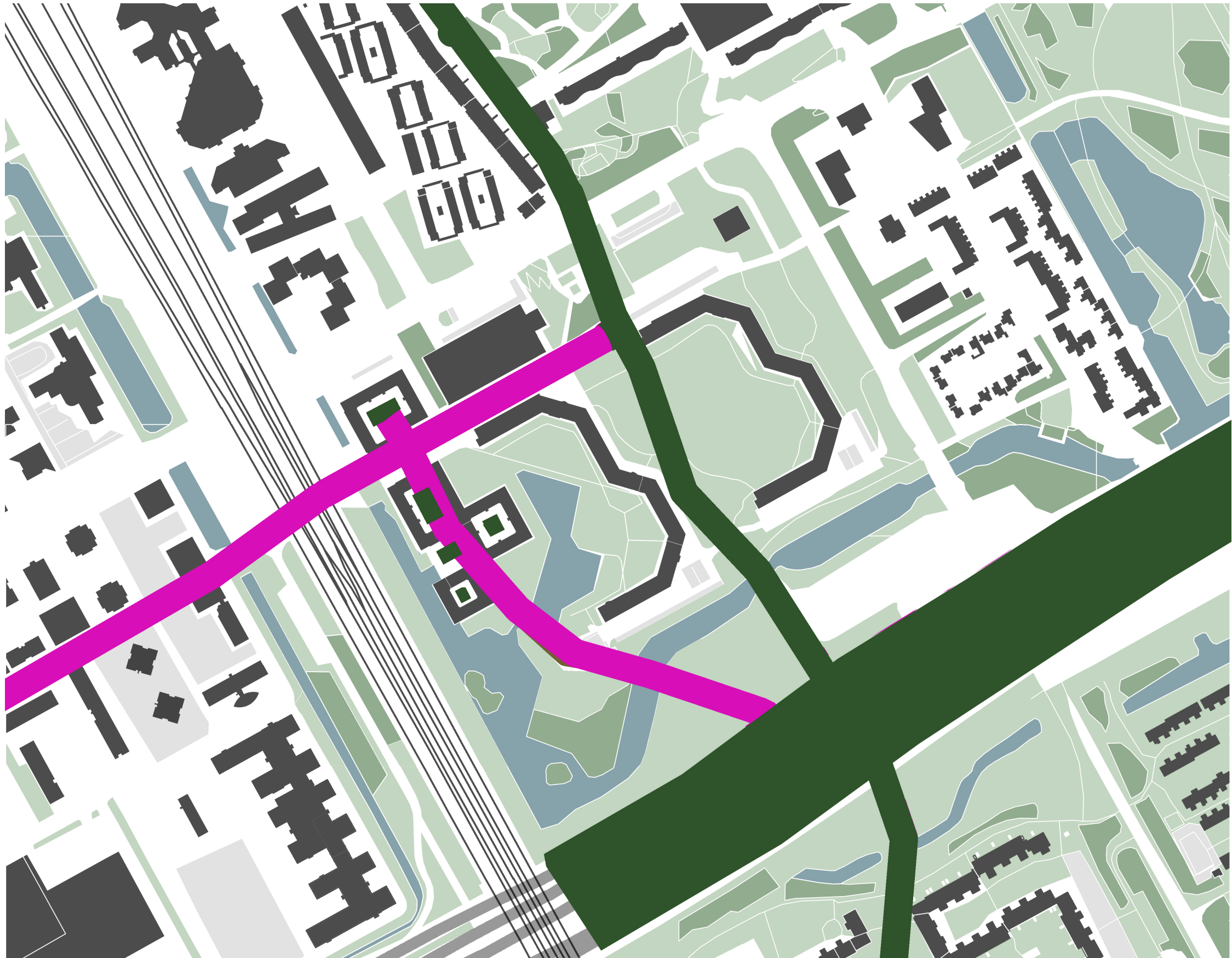
(Gemeente Amsterdam, 2019)



(Presentation Rijkswaterstaat, 2020)



# URBAN PLAN

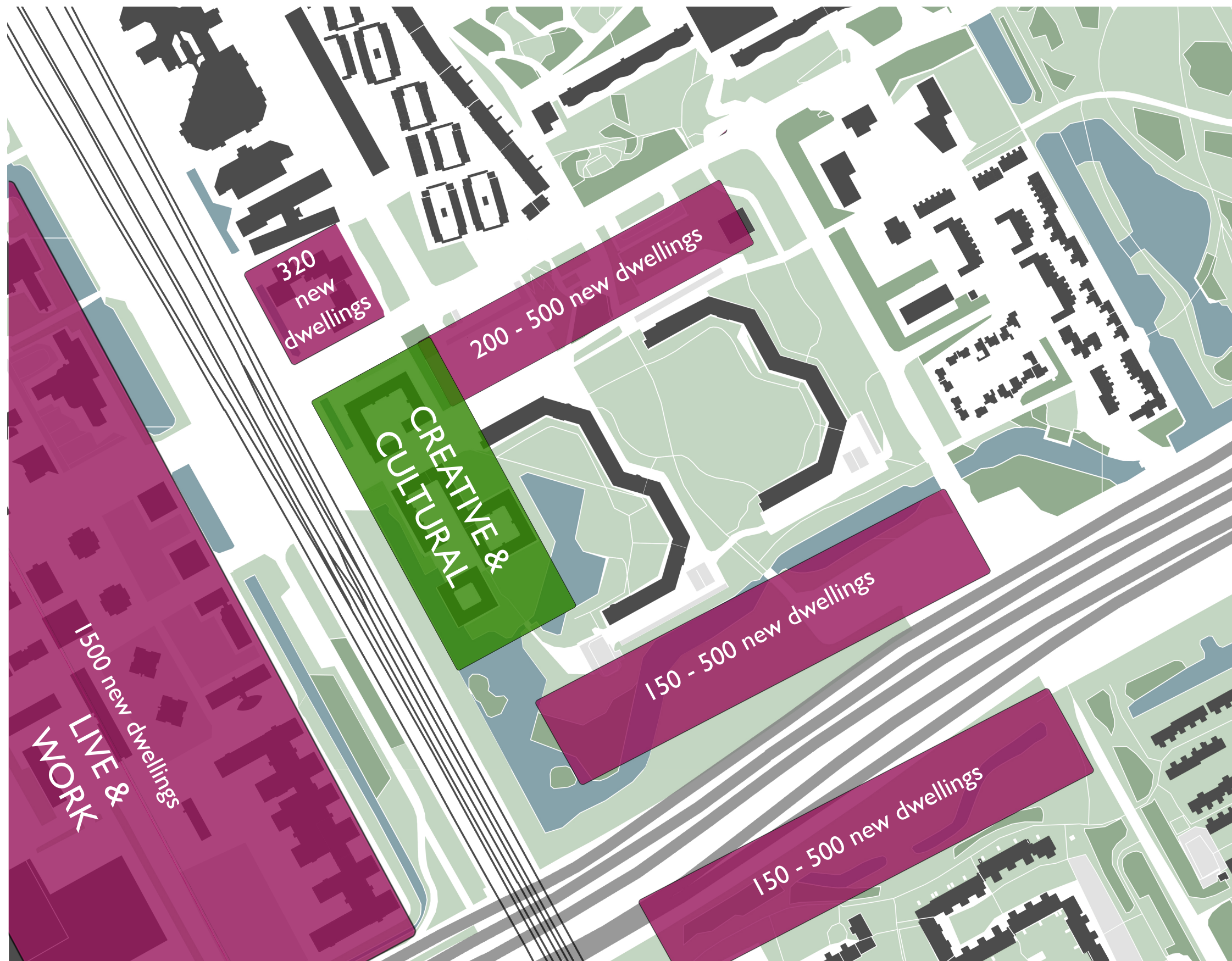


# PARKING

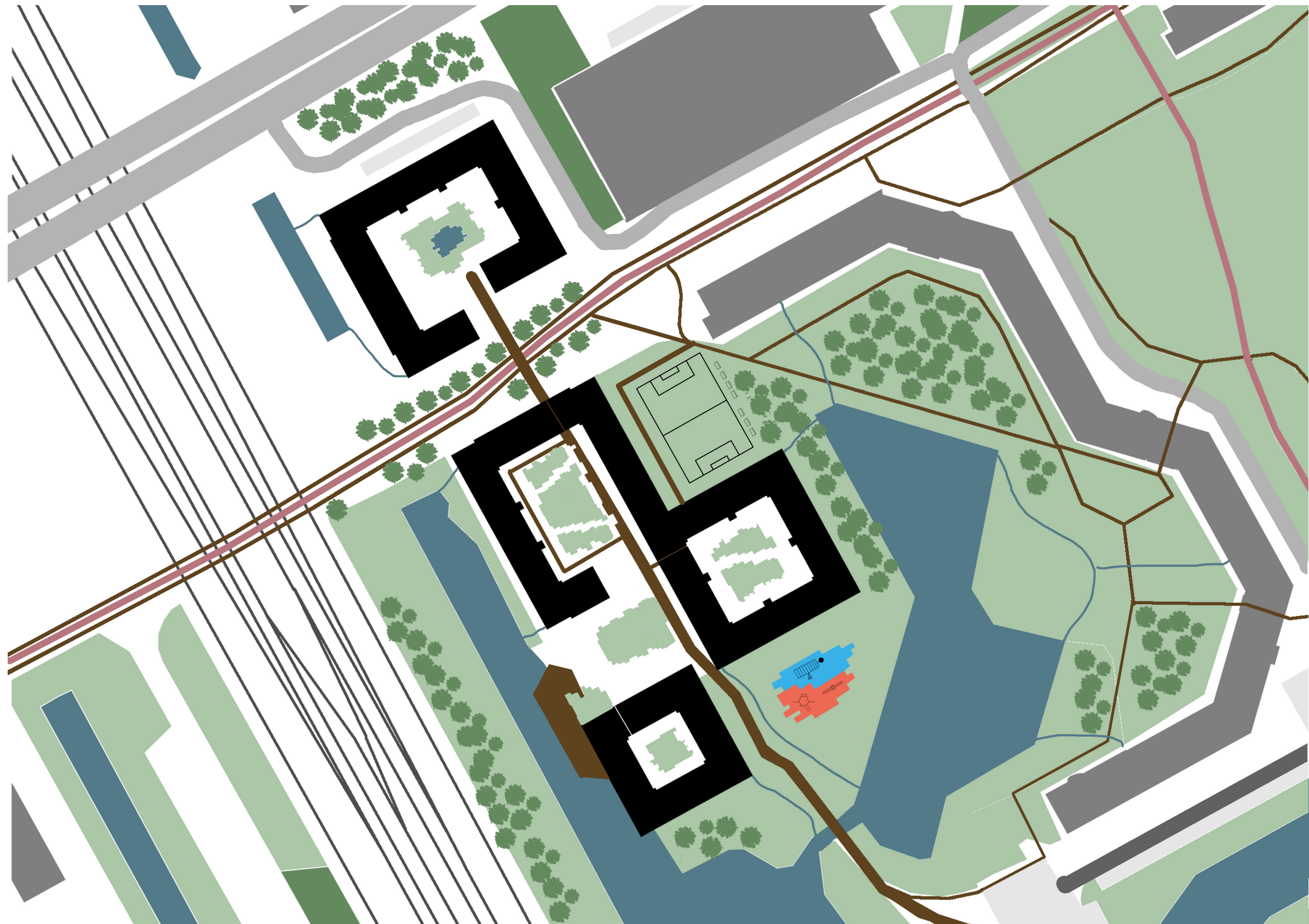




## NEW DWELLINGS

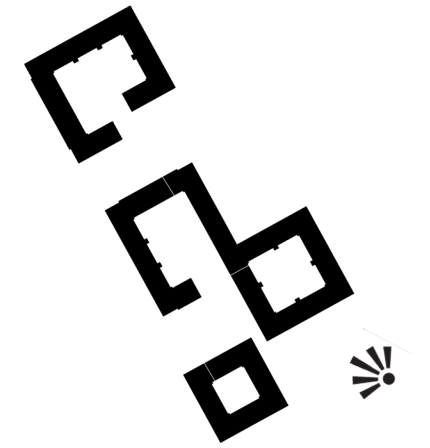


URBAN PLAN





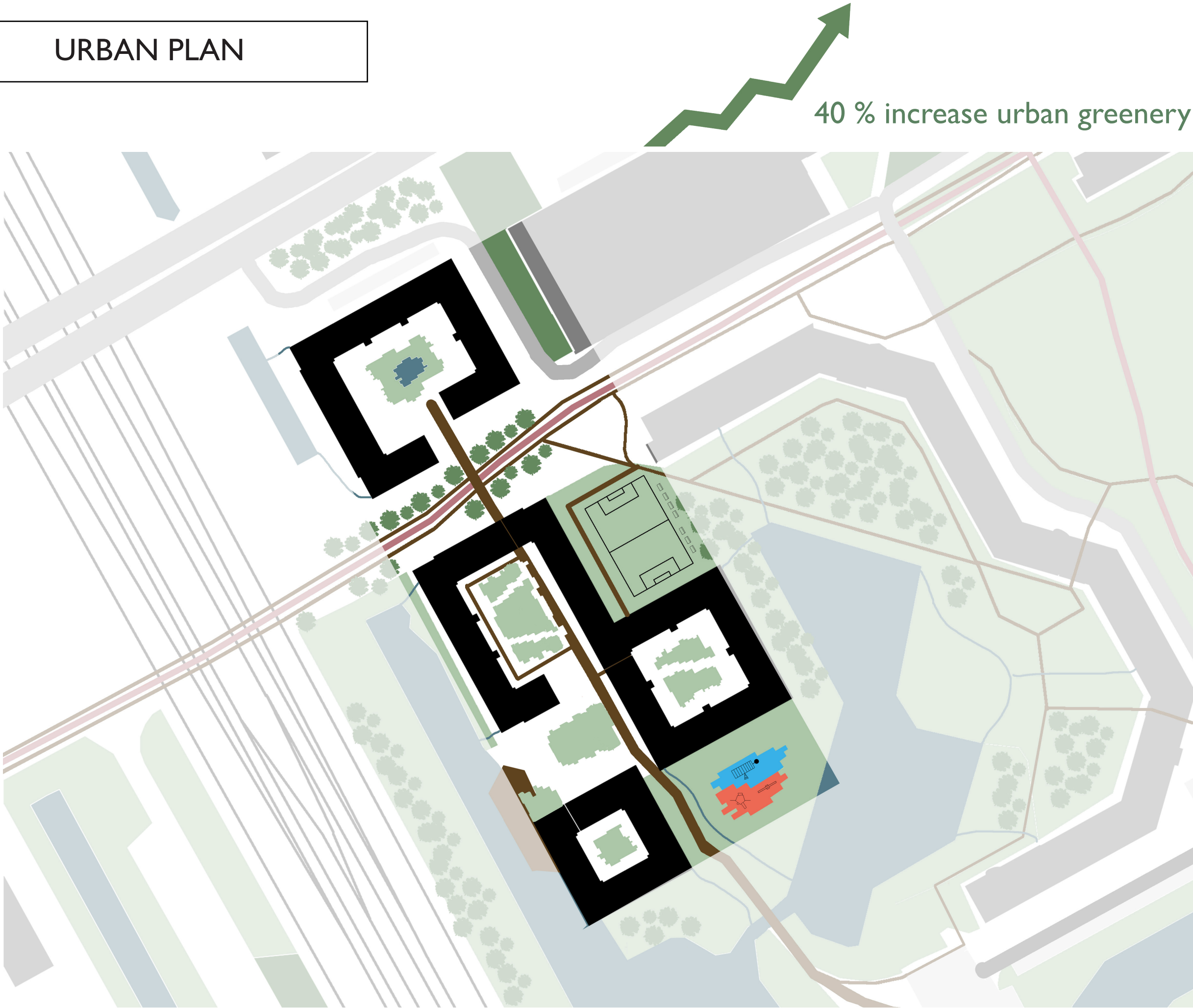
# PLAYGROUND





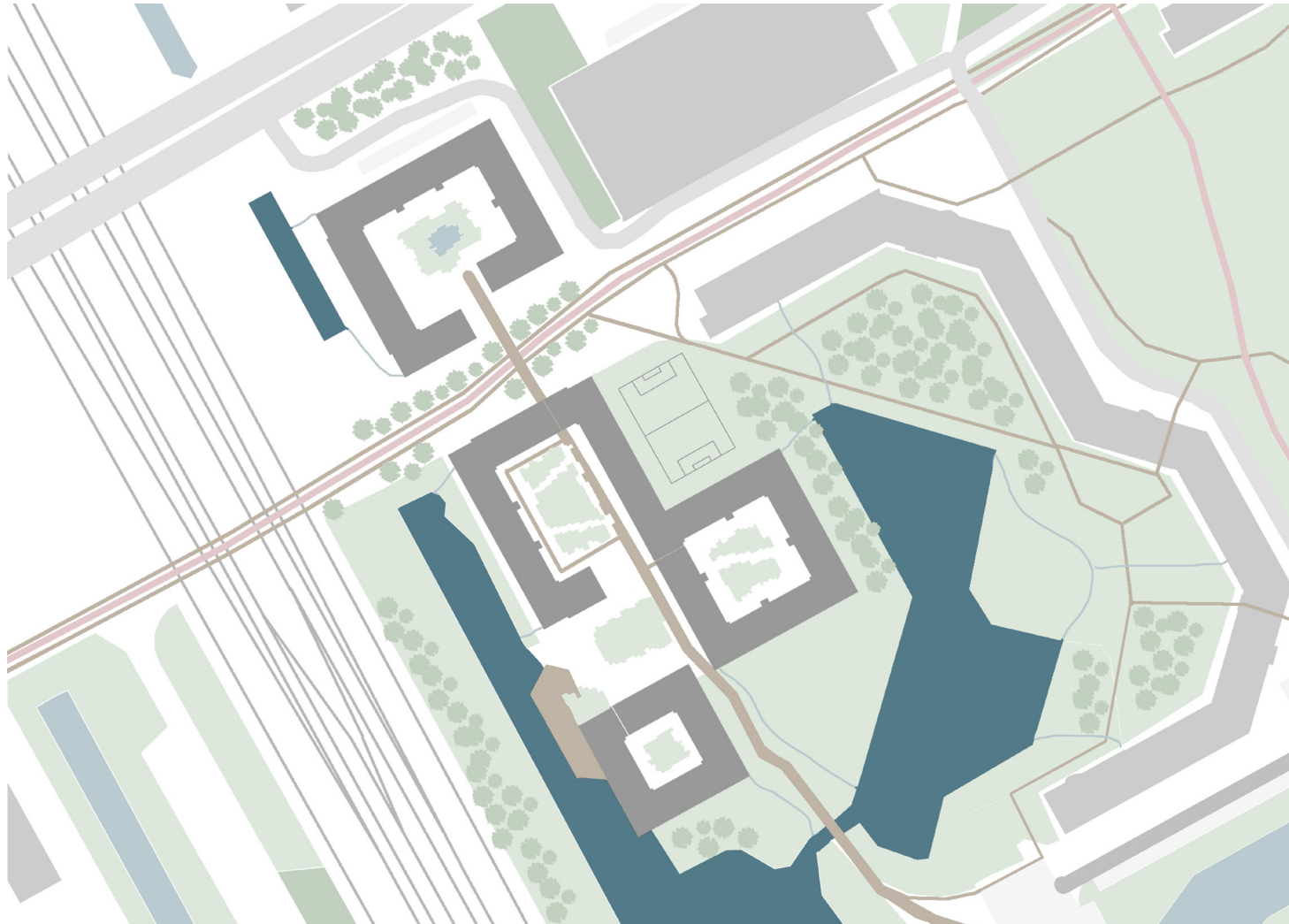
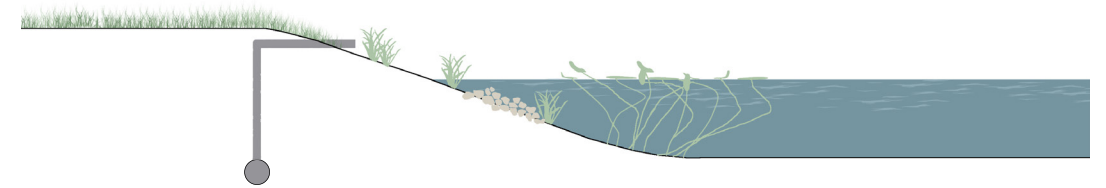
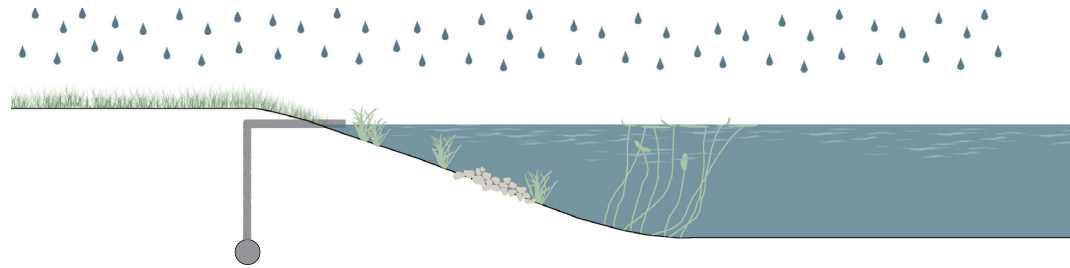
URBAN PLAN

40 % increase urban greenery



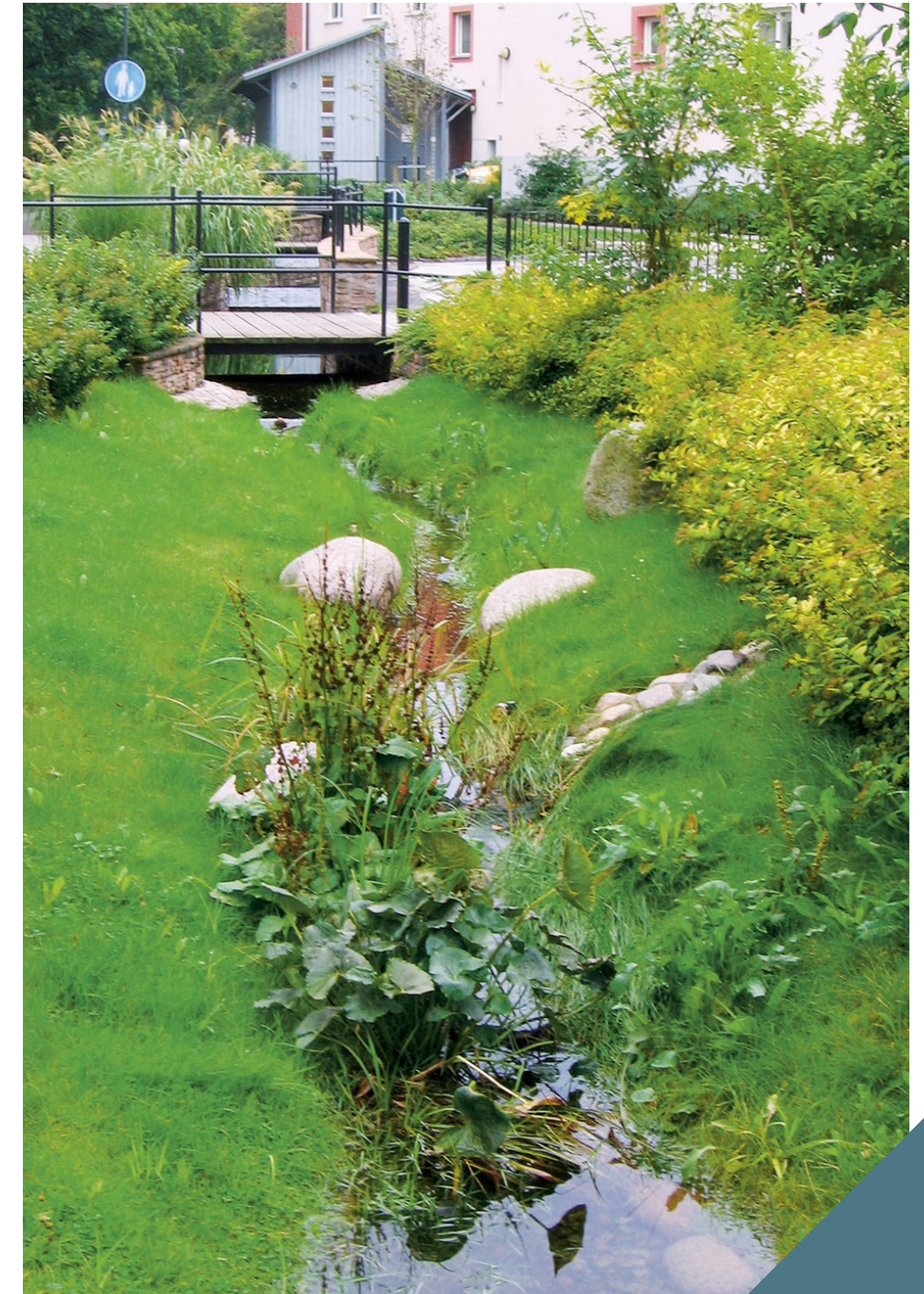
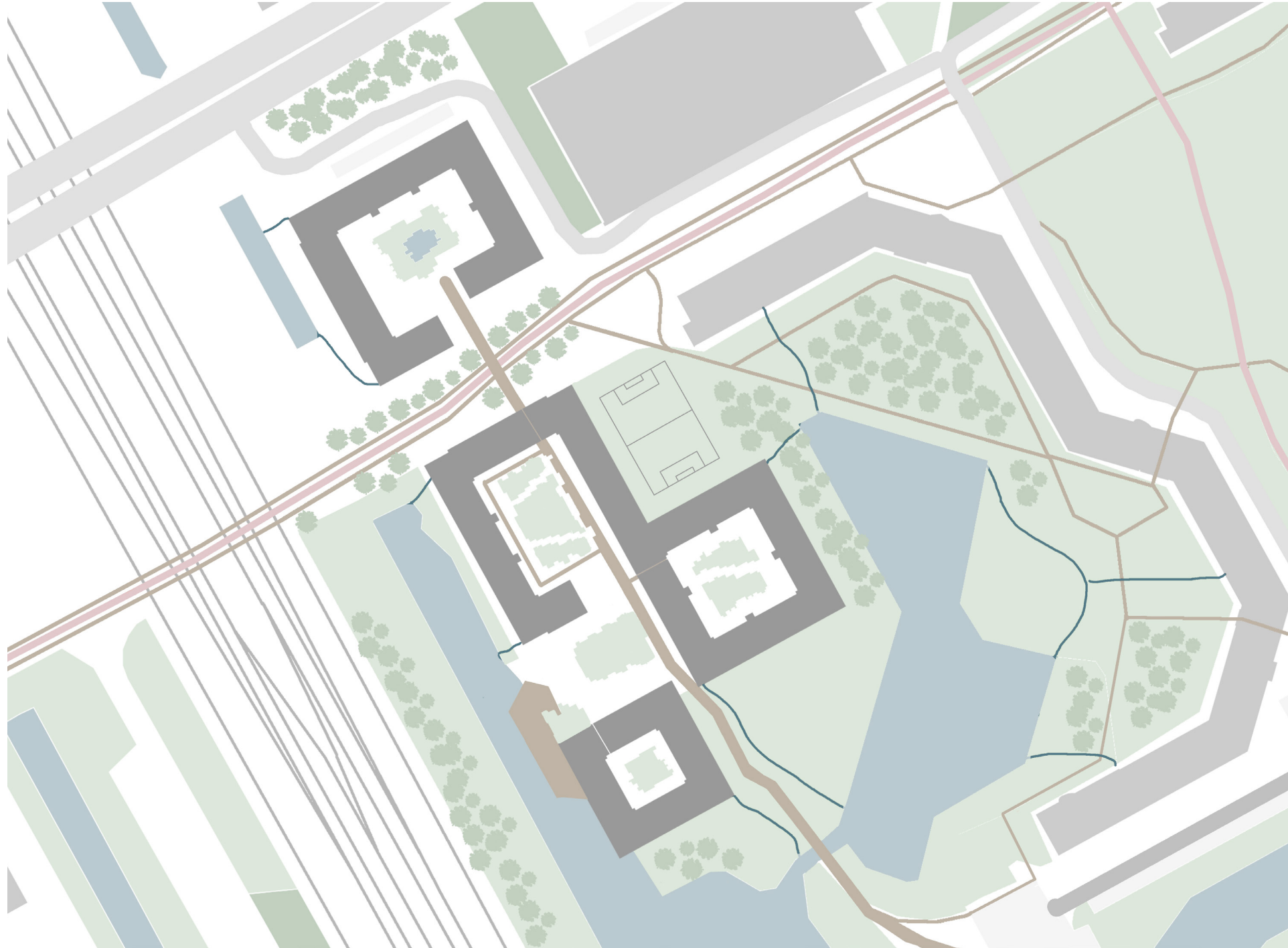


## RAINWATER PONDS



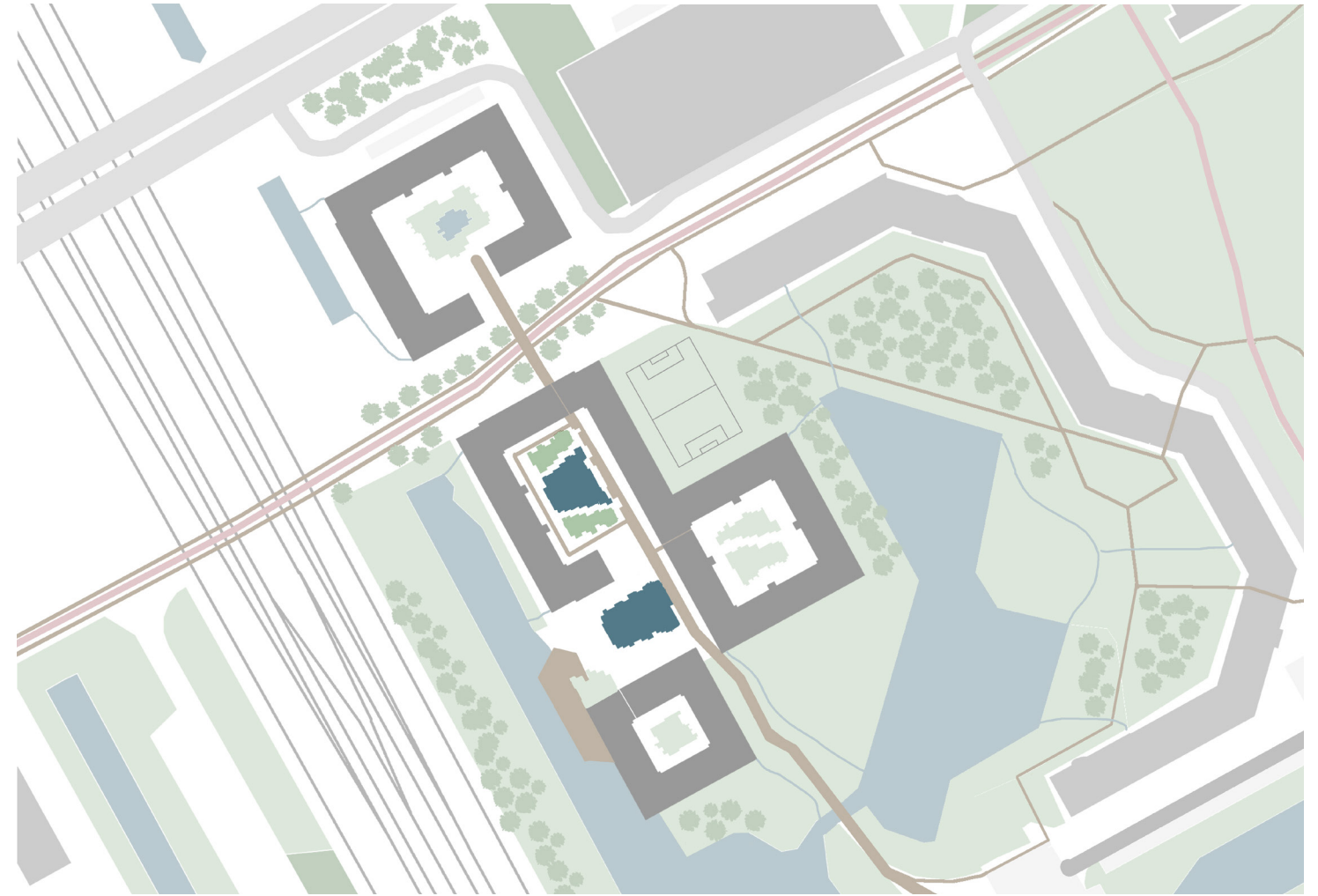
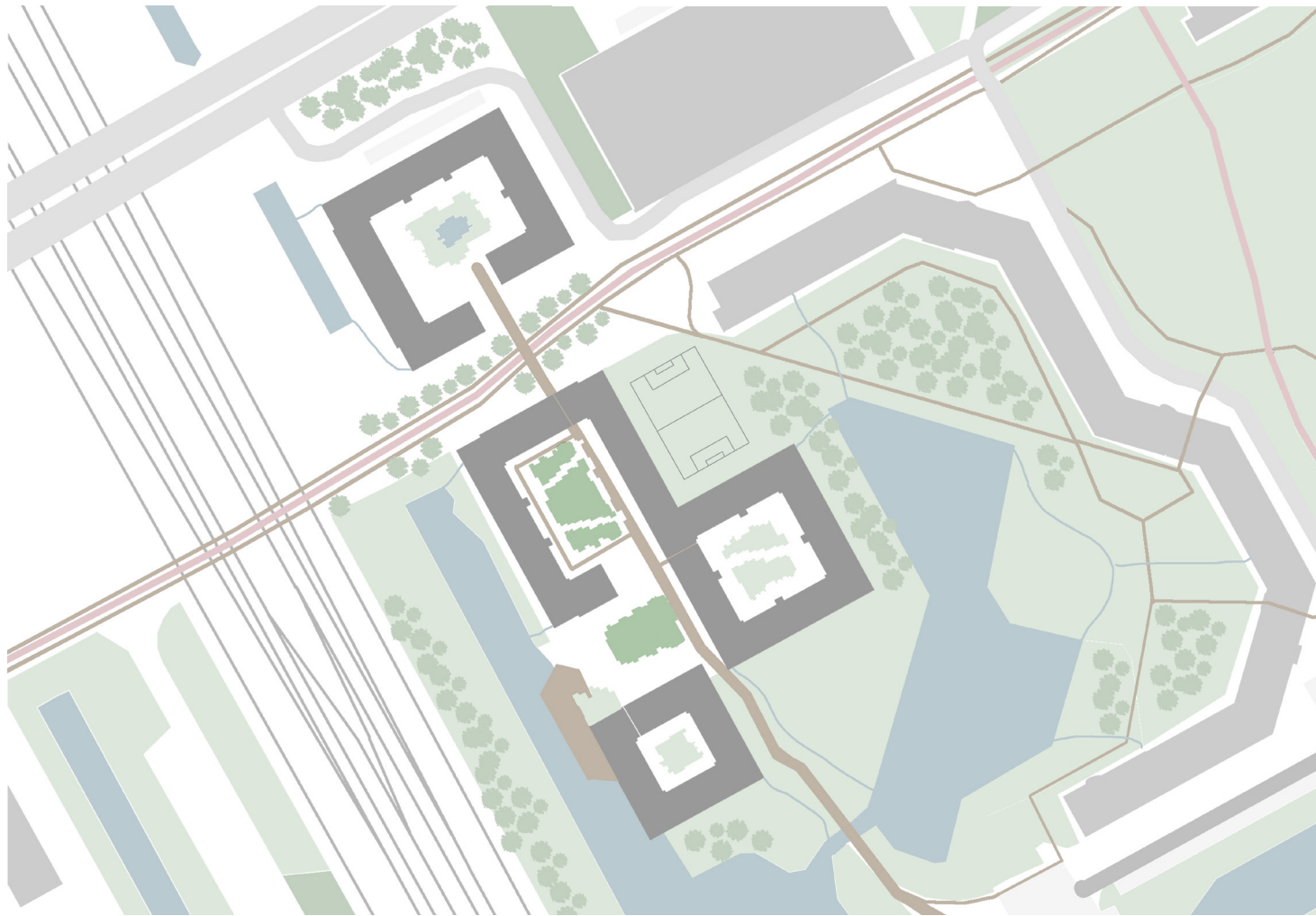
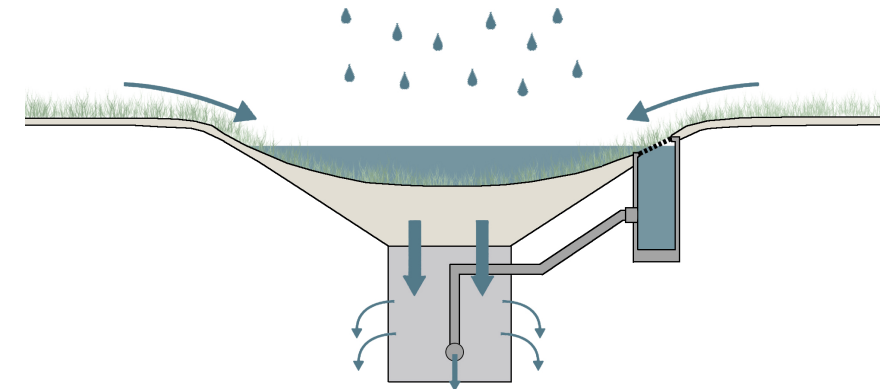
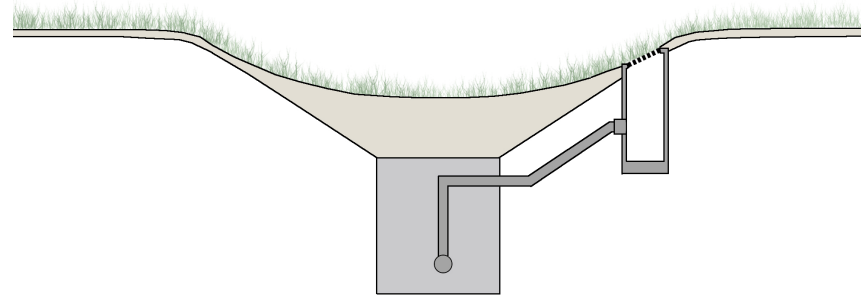


## DRAINAGE DITCH

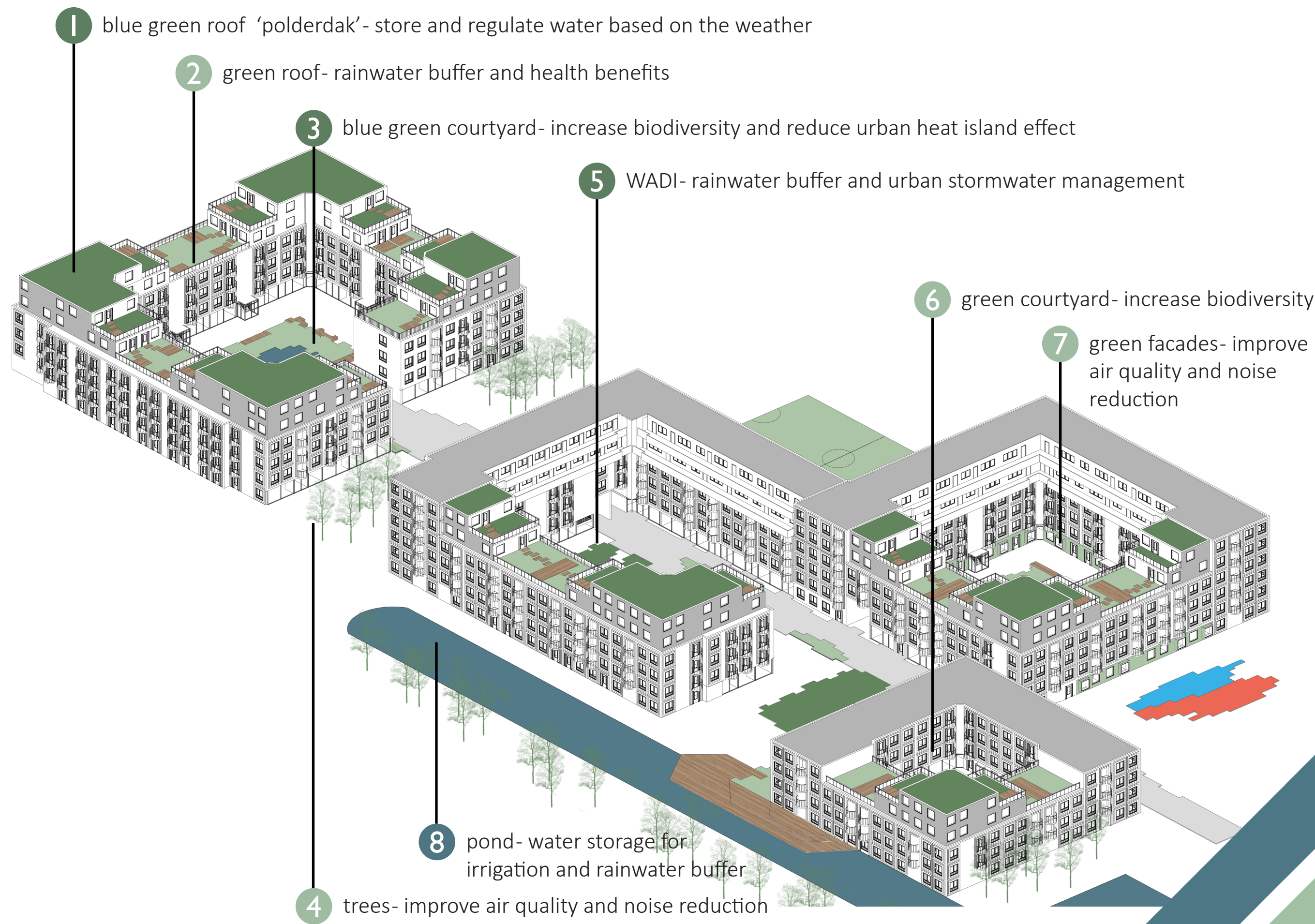




# WADI

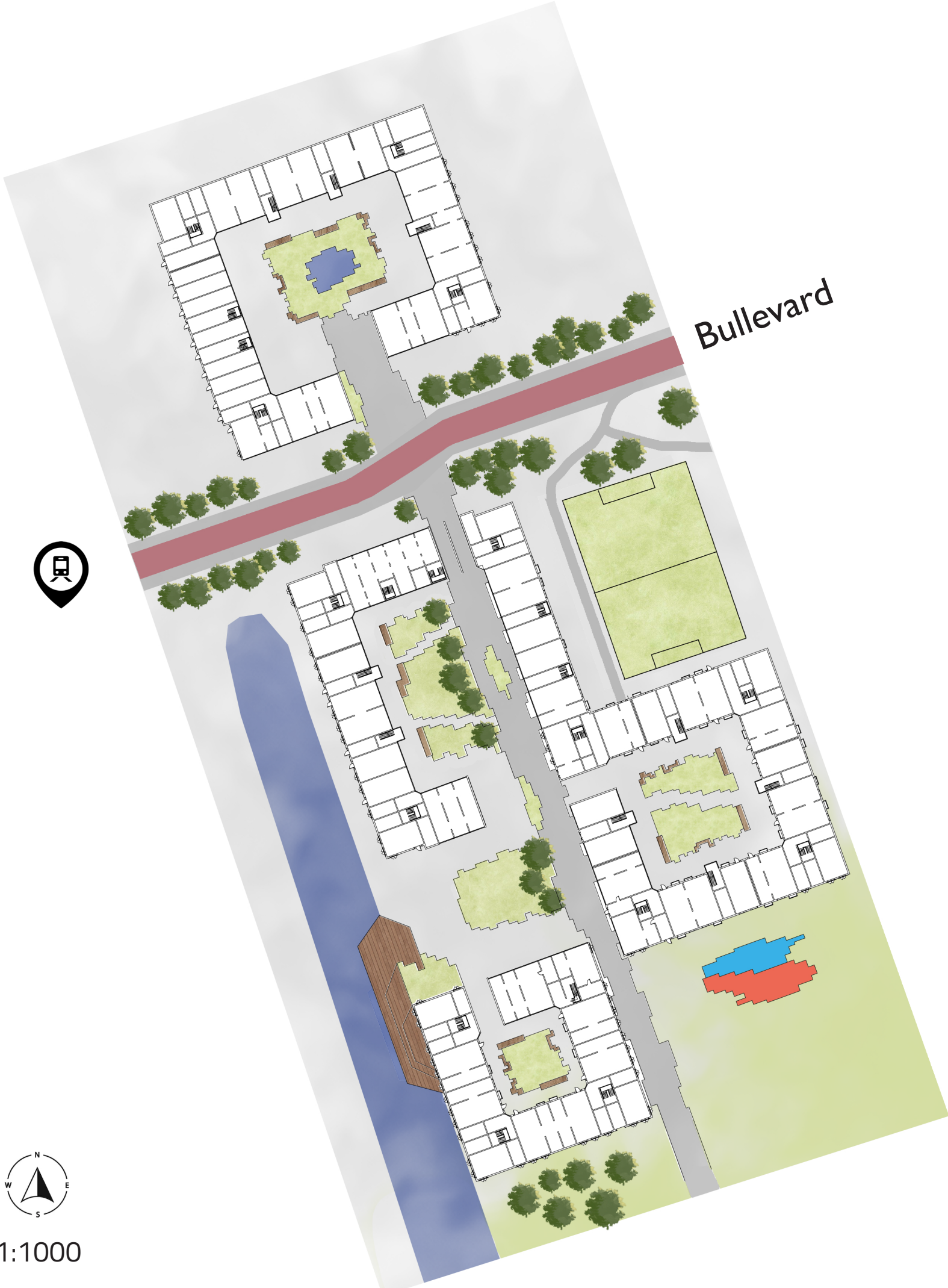


# BLUE GREEN TOOLBOX





GREEN ROUTE





## BLUE GREEN REFERENCES



High line - New York  
James Corner Field Operations, Diller  
Scofidio + Renfro, and Piet Oudolf



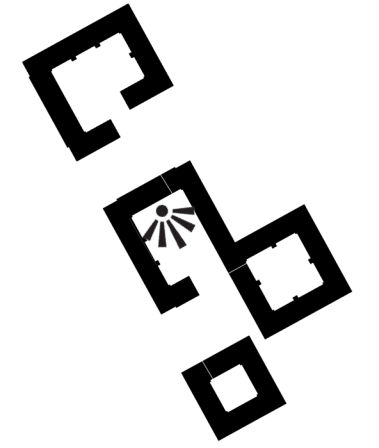
Rivermark - California  
Fletcher Studio



Housing complex - Bat Yam  
TeMA

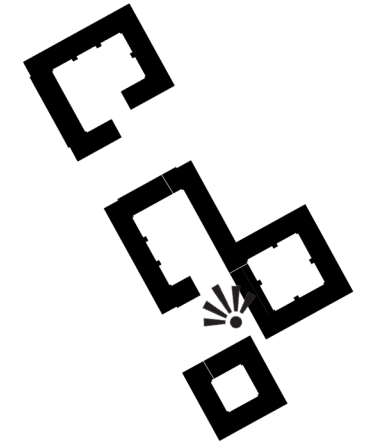


## GREEN ROUTE



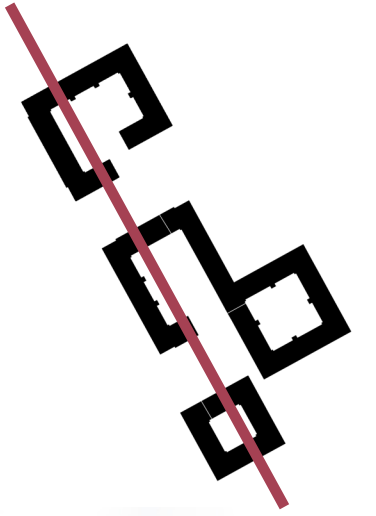


## GREEN ROUTE

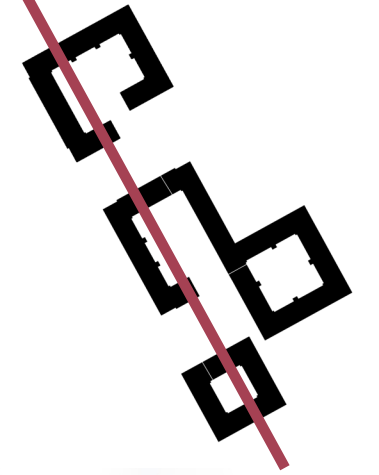




# BIODIVERSITY

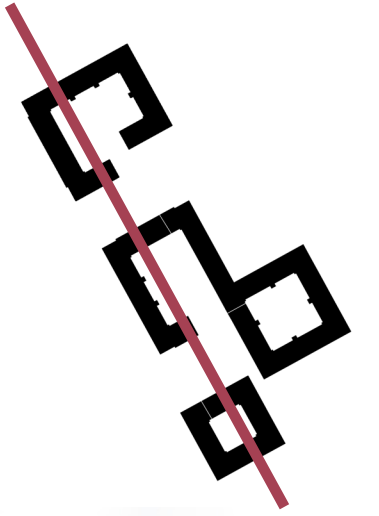


# WELL BEING

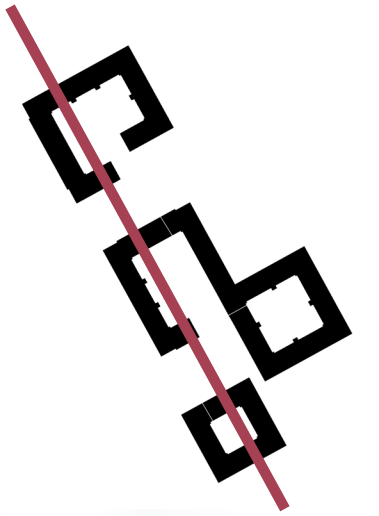




# SOCIO-SPATIAL RELATION

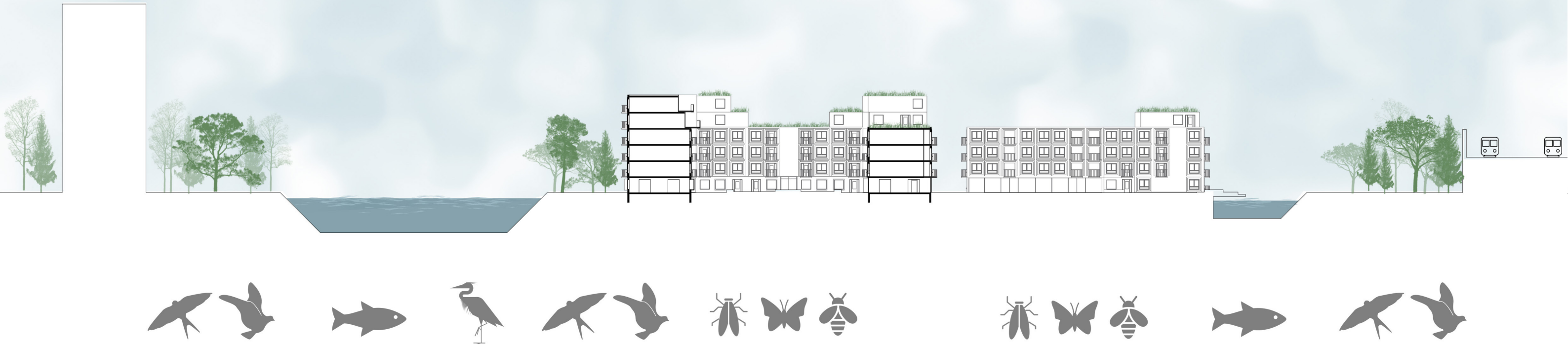
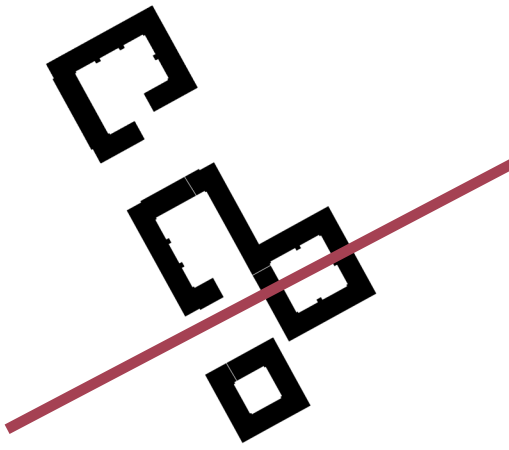


# SOCIO-ECONOMIC

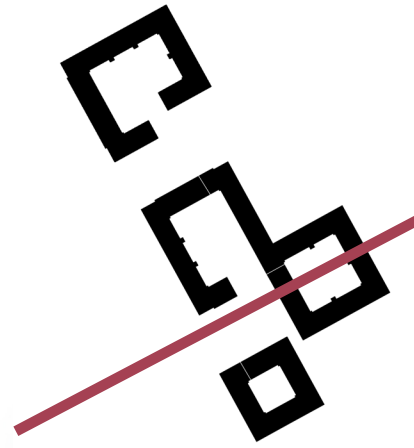




# BIODIVERSITY

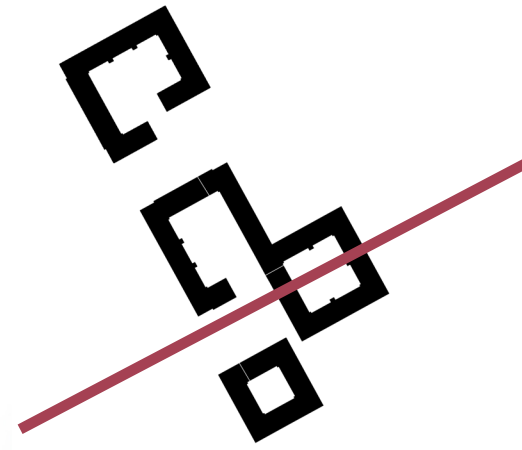


# WELL BEING

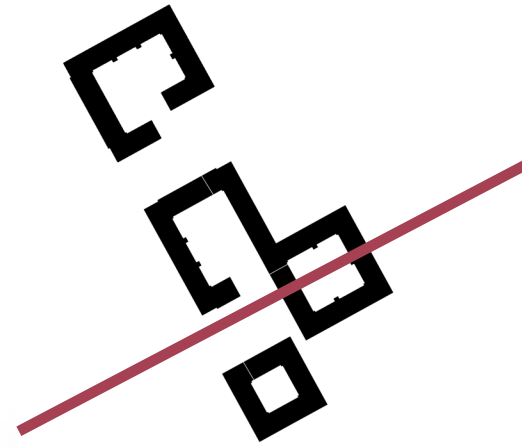




# SOCIO-SPATIAL RELATION

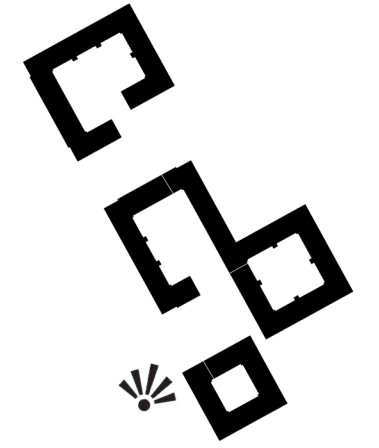


# SOCIO-ECONOMIC





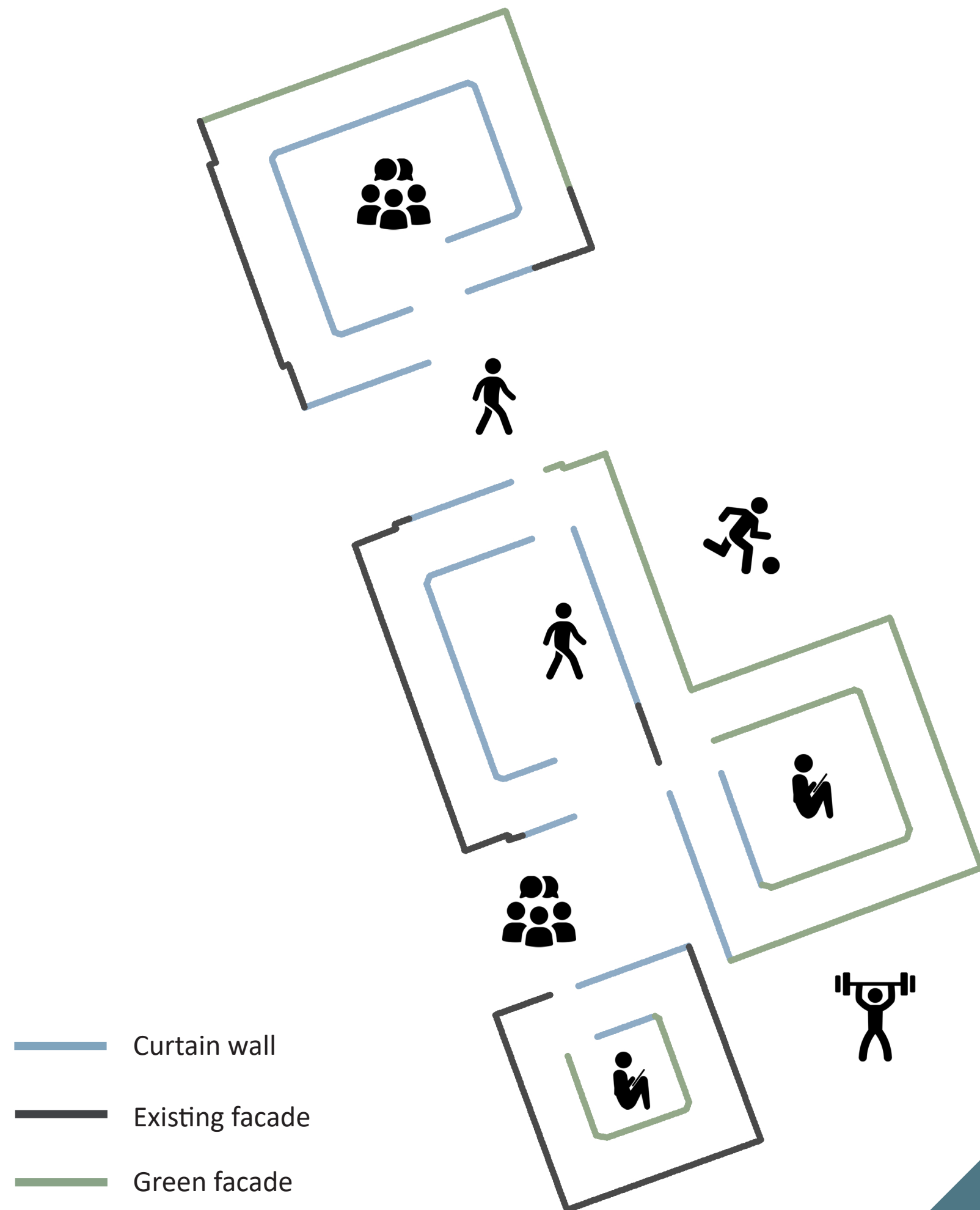
## URBAN MEETING SPOT





## FACADES GROUND FLOOR

The public space and facades on the ground floor should be adapted according to the new functions. The plinth is very closed right now and exists mainly out of a blind brick wall. This needs to be opened up. Some existing parts already contain windows, so this can be kept if the façade is orientated towards a semi-public space. For the public functions next to the green route and urban meeting spots, the façade will be completely opened up, implementing a curtain wall. This is also done in order to open up the closed blocks, as people do not always feel safe in the courtyards. Because the plinth is opened up at the corners of the buildings, there are more eyes on the street and especially on the courtyards. In the plan, these new transparent parts are visible, where the courtyards are completely exposed to the more public areas of the neighbourhood. The study spaces are semi-public and do not need to be completely opened up, so a green wall with new windows will be placed on the ground floor where no windows are present yet.





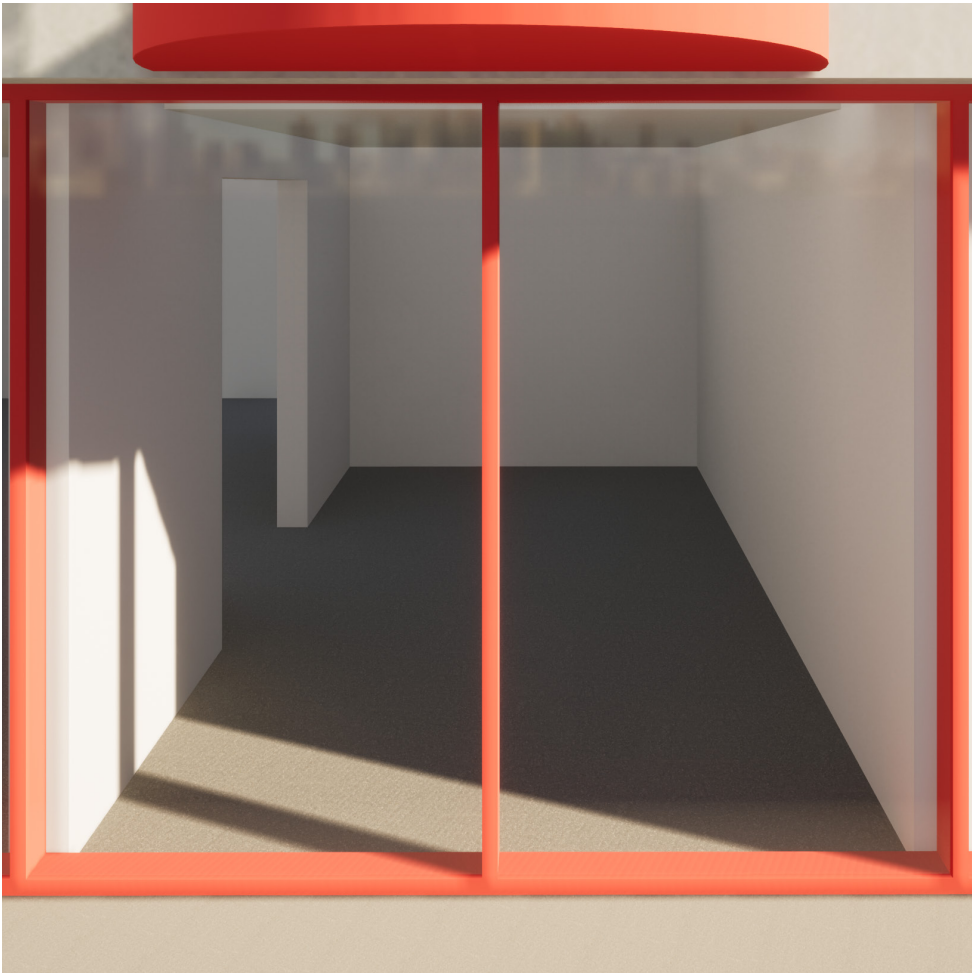
# FACADES GROUND FLOOR



Existing facade

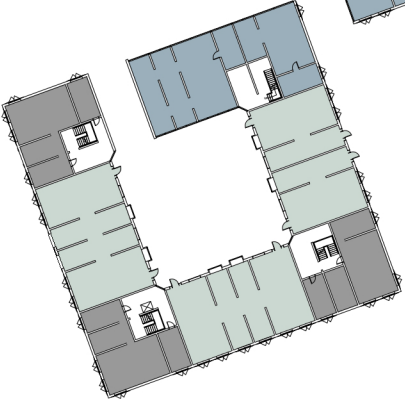
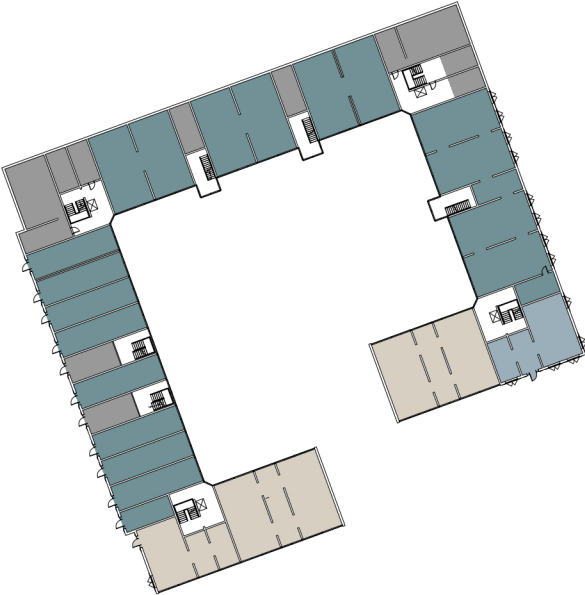








Green facade



Curtain wall

# FUNCTIONS GROUND FLOOR



-  Creative hub
-  Offices
-  Study centre
-  Restaurant
-  Shops
-  Storage spaces



1:1000

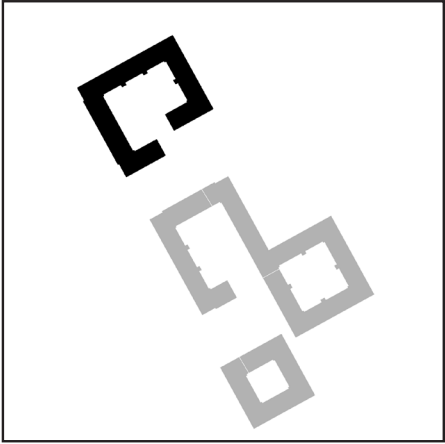




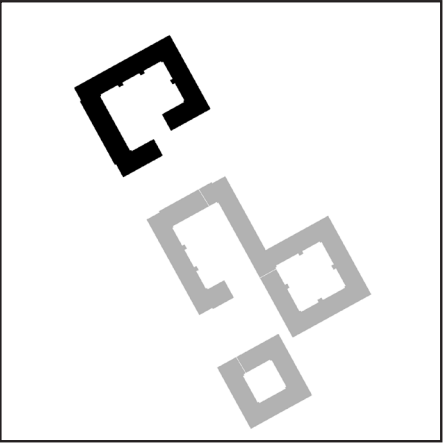
DESIGN  
-  
BUILDING SCALE



PLAN GROUND FLOOR

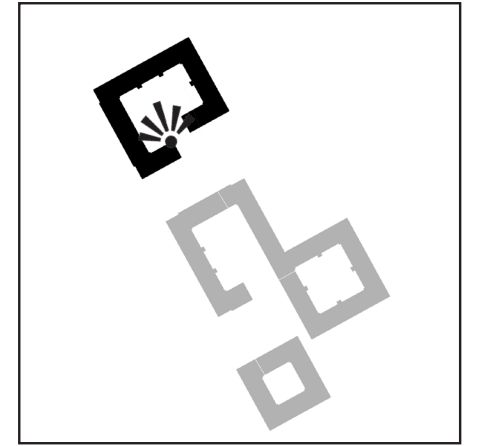


SECTION





# PERSPECTIVE





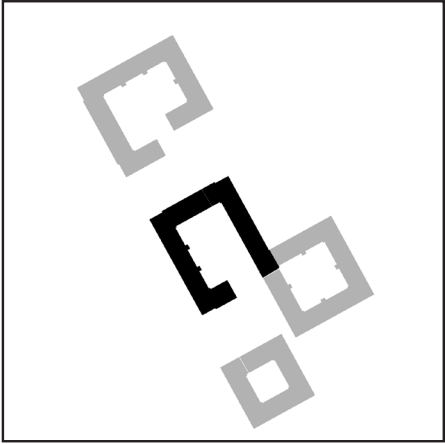
# CREATIVE HUB

The aim for this building is to create a plinth with creative functions, to attract visitors and to enhance the artists that already live in the creative community. Ateliers, workshops, cafes, a shop and a gallery will be located on the ground floor of this block. Artists can work together in the workshops, where they can also teach other people and give workshops. The artists can also work individually and rent a atelier in the west part of the building. Lastly, they can show and sell their art in the gallery, where visitors from outside Heesterveld can check out their art work and buy it. This will create an interactive space between the visitors and artists and it will become more lively. Along the green route and ‘bullevard’, more cafes will be located. Oma letje is really appreciated by the residents of Heesterveld and by visitors, so this café will be preserved. Some interior walls will be opened up to create a bigger surface area. The whole plinth is opened up to create a visual connection between in and outside and create activity and social interaction.





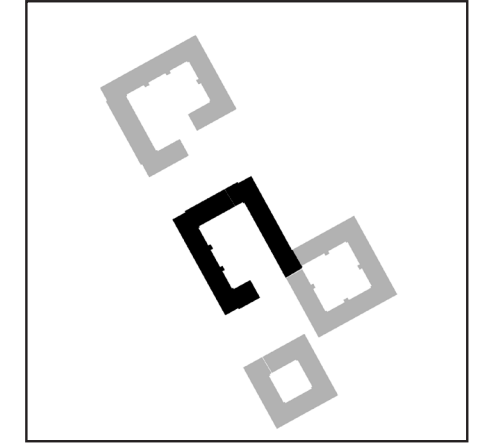
PLAN GROUND FLOOR



-  Offices
-  Restaurant / cafe
-  Community centre
-  Relaxing area
-  Pedestrian area

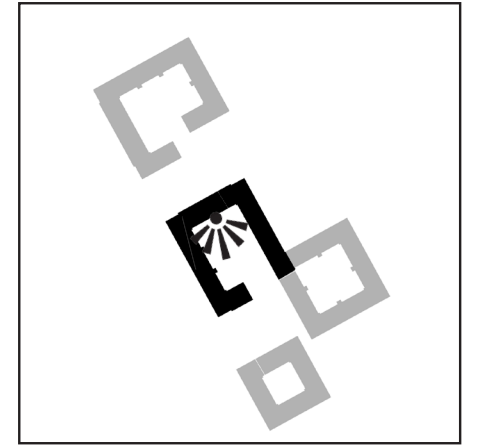


# SECTION





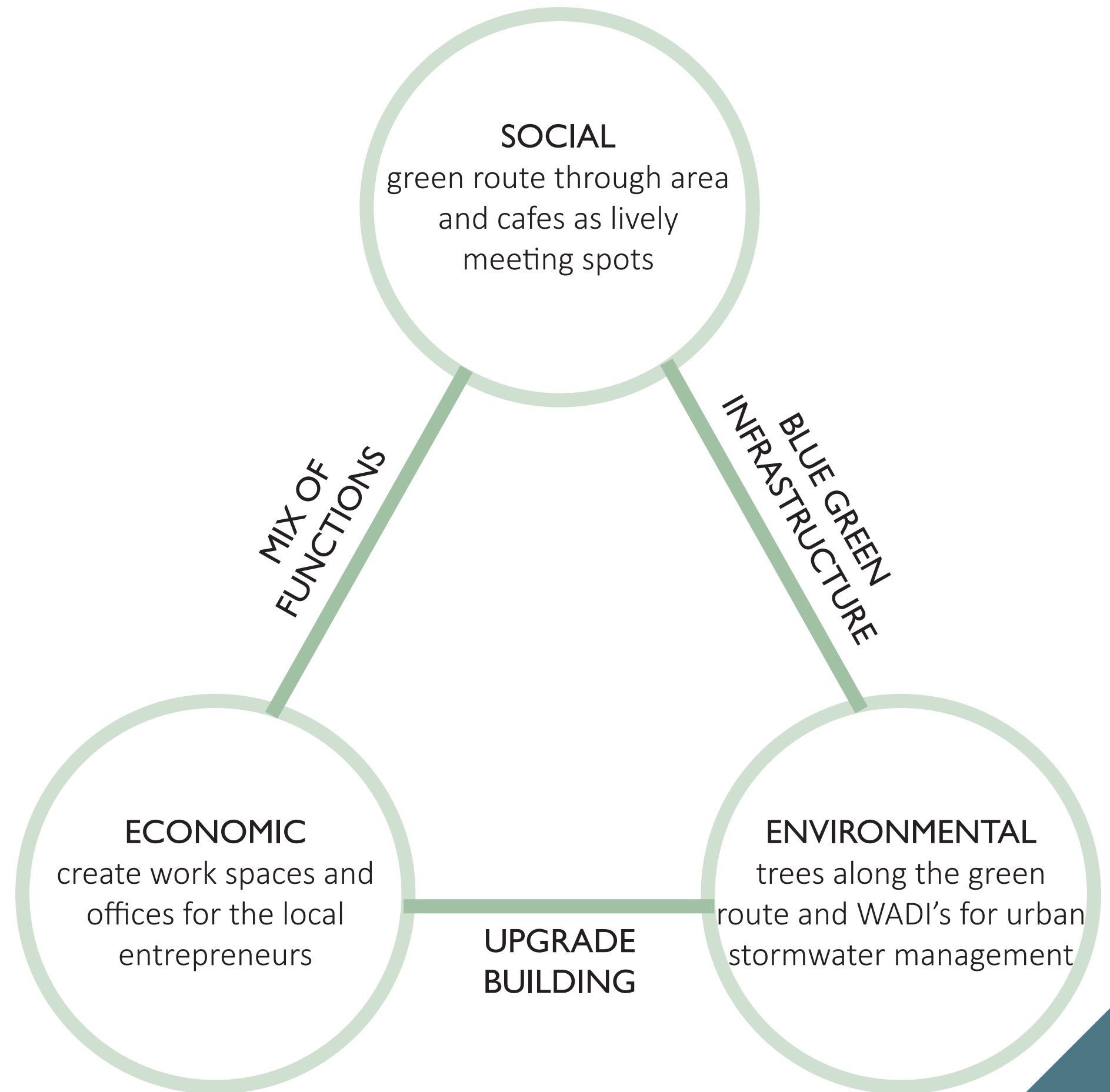
# PERSPECTIVE





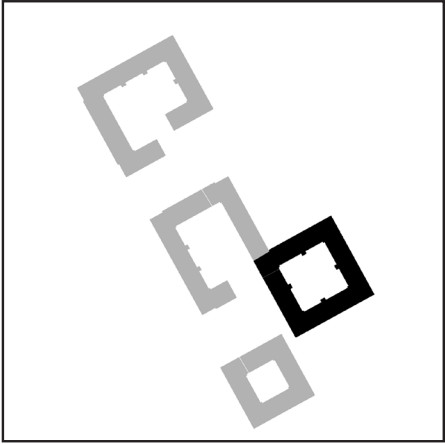
## OFFICES

The aim for this part is to give a chance to local entrepreneurs to work or start an office here. There is a variety of larger and smaller office areas, where people can rent an office temporarily or settle there for a longer period. Again, along the public routes and spaces, cafés are located. This is done to create lively meeting areas along the public space. The complete transparency of the cafes is again very beneficial for feeling of safety within the courtyards. The terraces of these cafes are visible in the section. There is also a separation between the relaxing area on the left and public route on the right, this is done by placing trees along the green route, in order to create a more intimate space next to the offices.





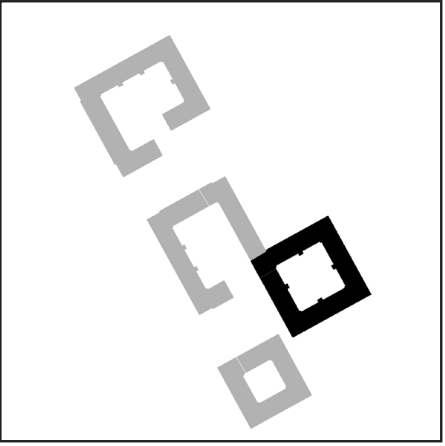
# PLAN GROUND FLOOR



-  Study spaces
-  Shops
-  Ouder/kind teams
-  Relaxing area

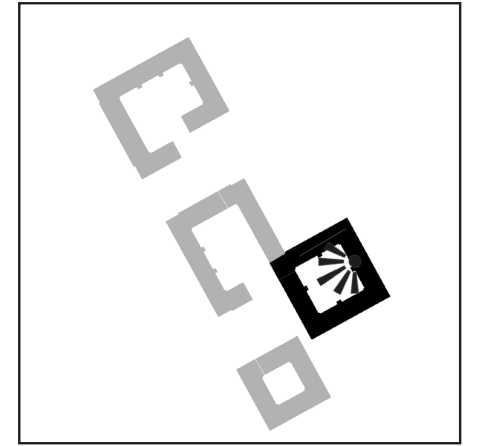


SECTION





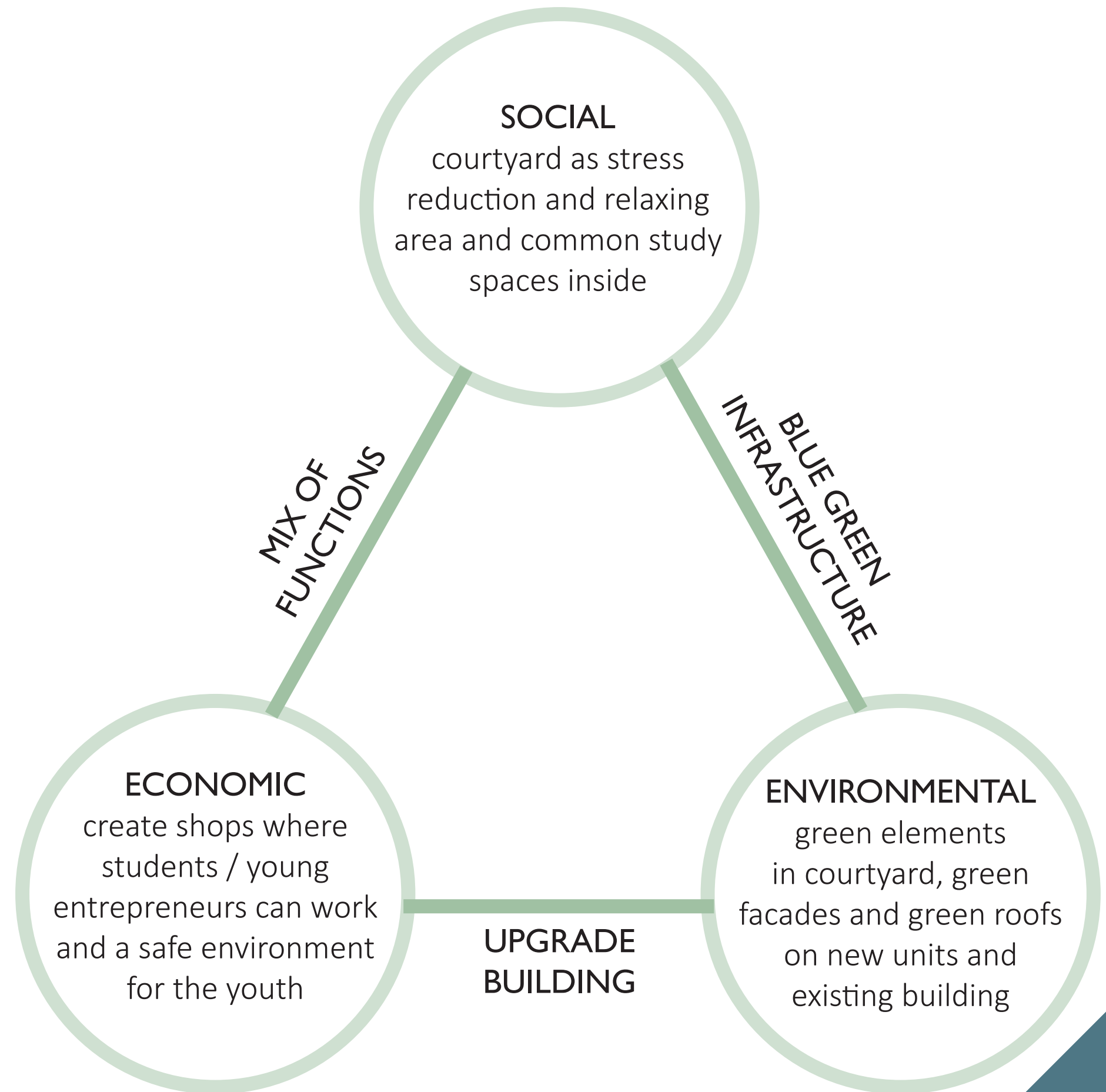
# PERSPECTIVE





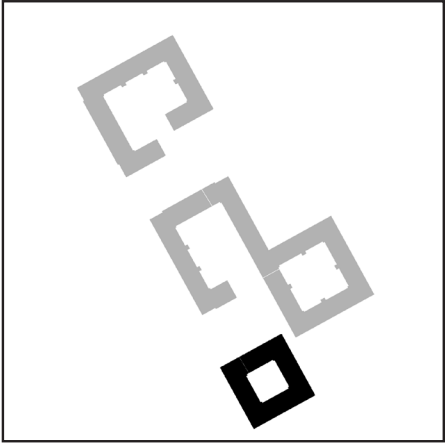
## STUDY HUB

This building block will be used to create a safe study environment for young children and teenagers. To improve the social and economic problems, help should be offered to the parents and children of Heesterveld. Therefore a community centre and ouder kind team will be situated in this block, these functions will be used to give guidance to the parents and support the parents and children. The plinth of this part of the building block will be more closed off, as it is a more private function. A green façade will be used for this function, due to the environmental benefits. Bay windows are also integrated in the façade, to create relaxing areas in the façade itself. The shopping part of this building block will be opened up, a curtain wall will be placed on both sides of the shop. In this way, a visual connection between the green route and the courtyard is created, which ensures a safe feeling.





PLAN GROUND FLOOR



Study spaces



Shops



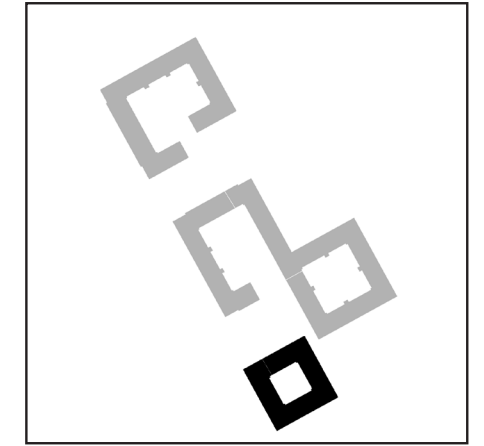
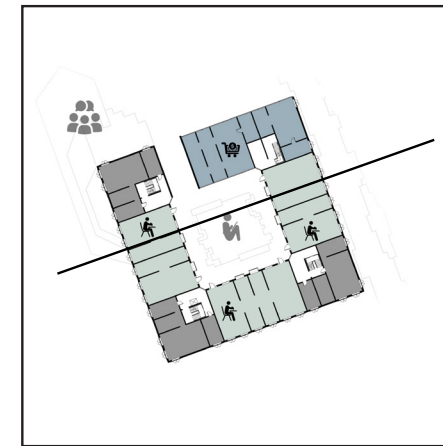
Urban meeting spot



Relaxing area

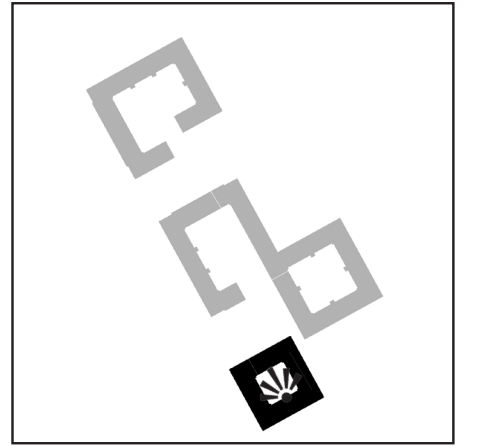


# SECTION





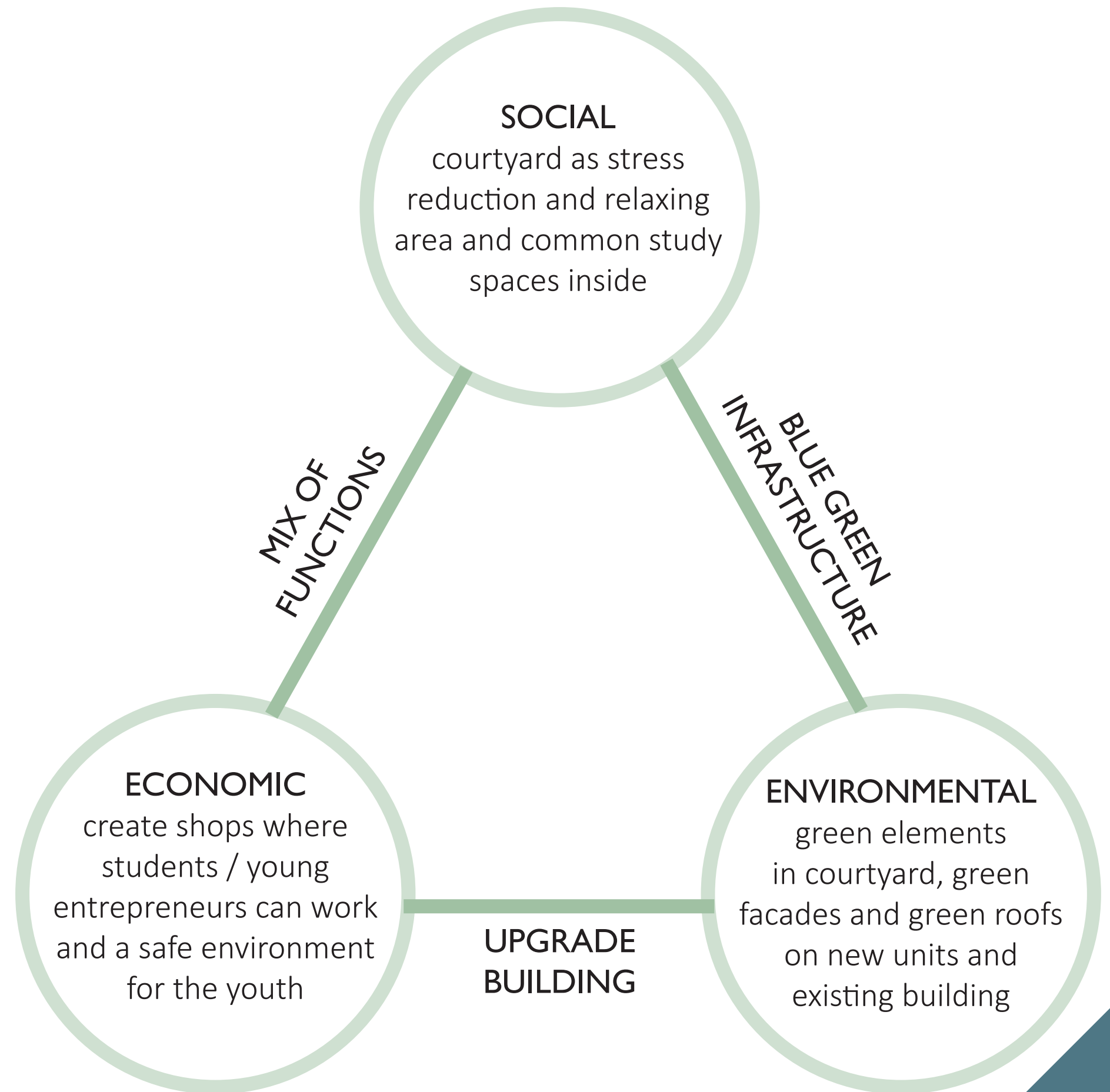
# PERSPECTIVE





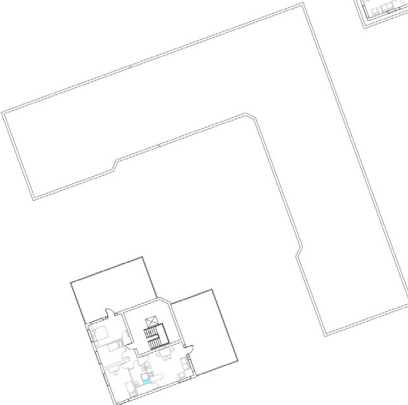
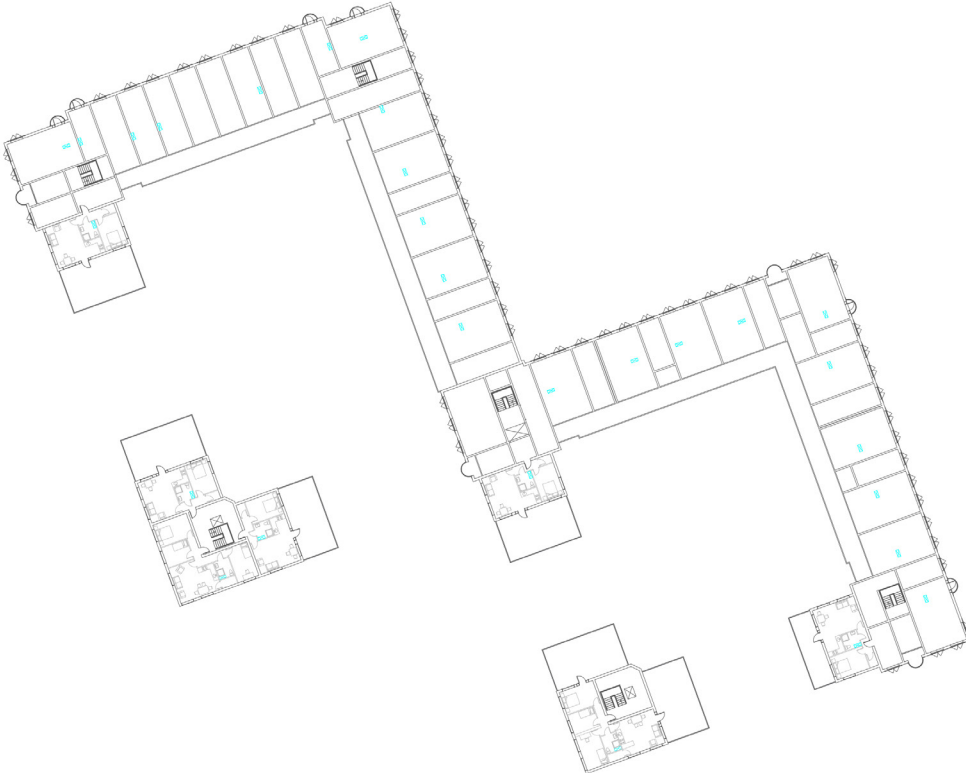
## STUDY HUB

This building block is meant for the older students to study individually or together. It is built up in the same way as the other study block. It is also meant to reduce the juvenile crime in this neighbourhood. The municipality stated that there is a lot of crime among young people in Heesterveld, this should be reduced by providing a safe place where the youth can go. The green wall is also used in this case. Bay windows are also implemented in the façade, to create integrated relaxing areas and to refer to the existing deep windows of the original Heesterveld.

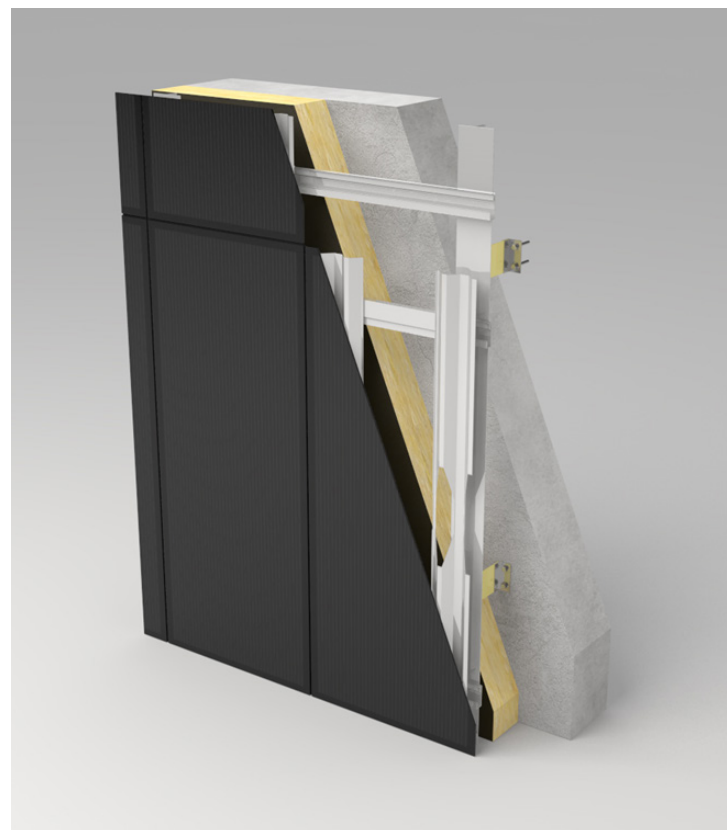




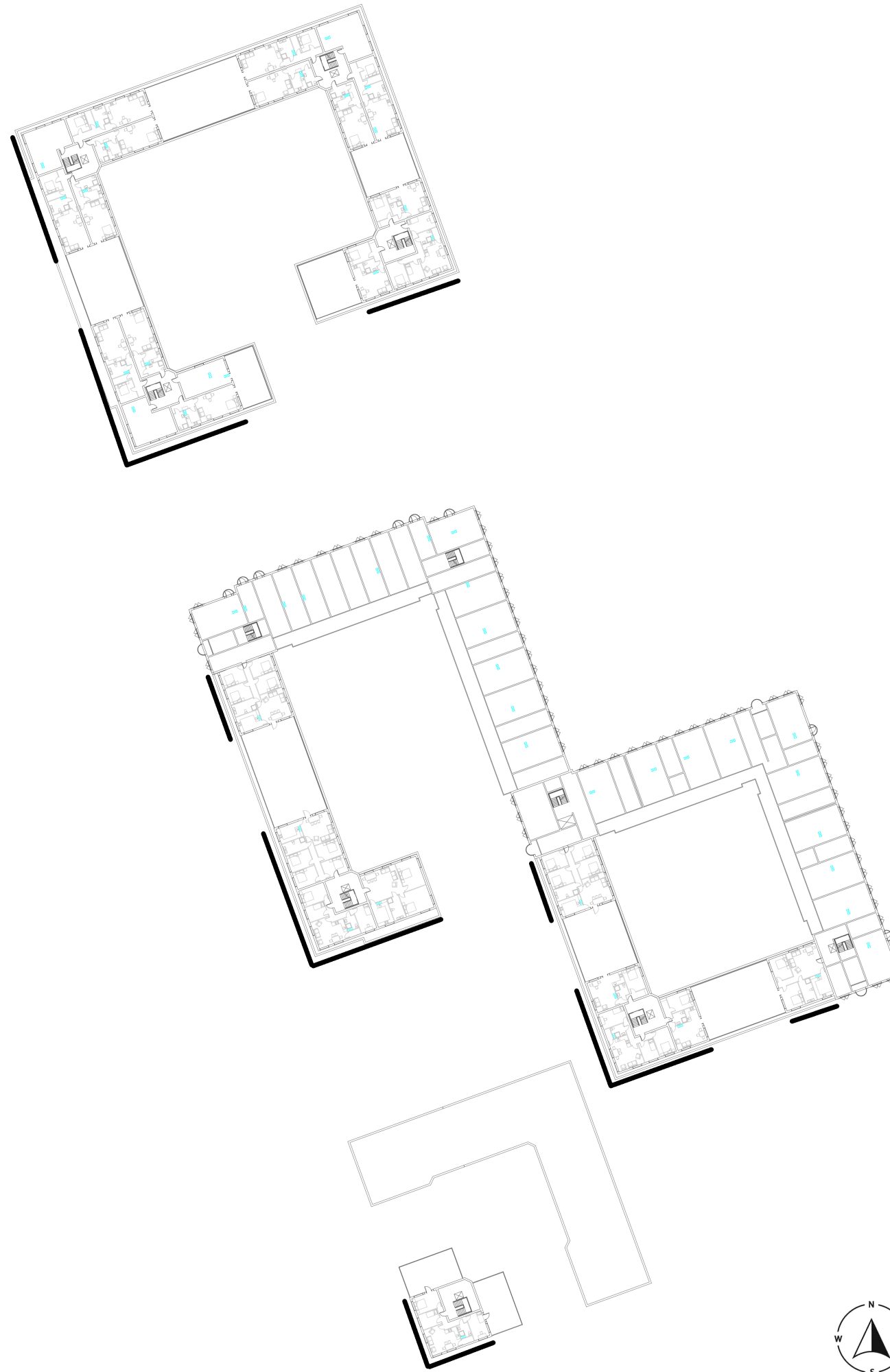
LEVEL 4 AND 5



# FACADES

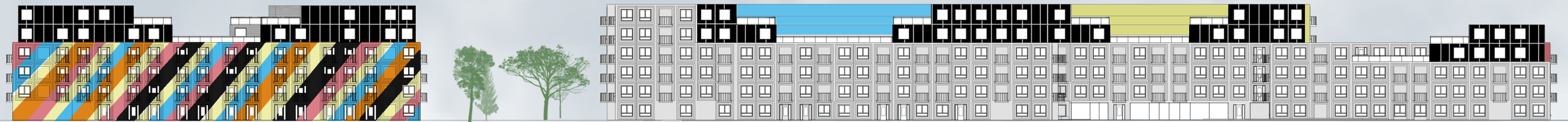
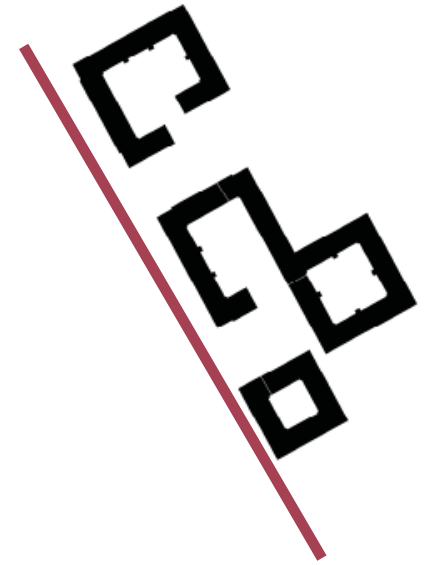


ENERGYFAÇADE by saint-gobain-solutions





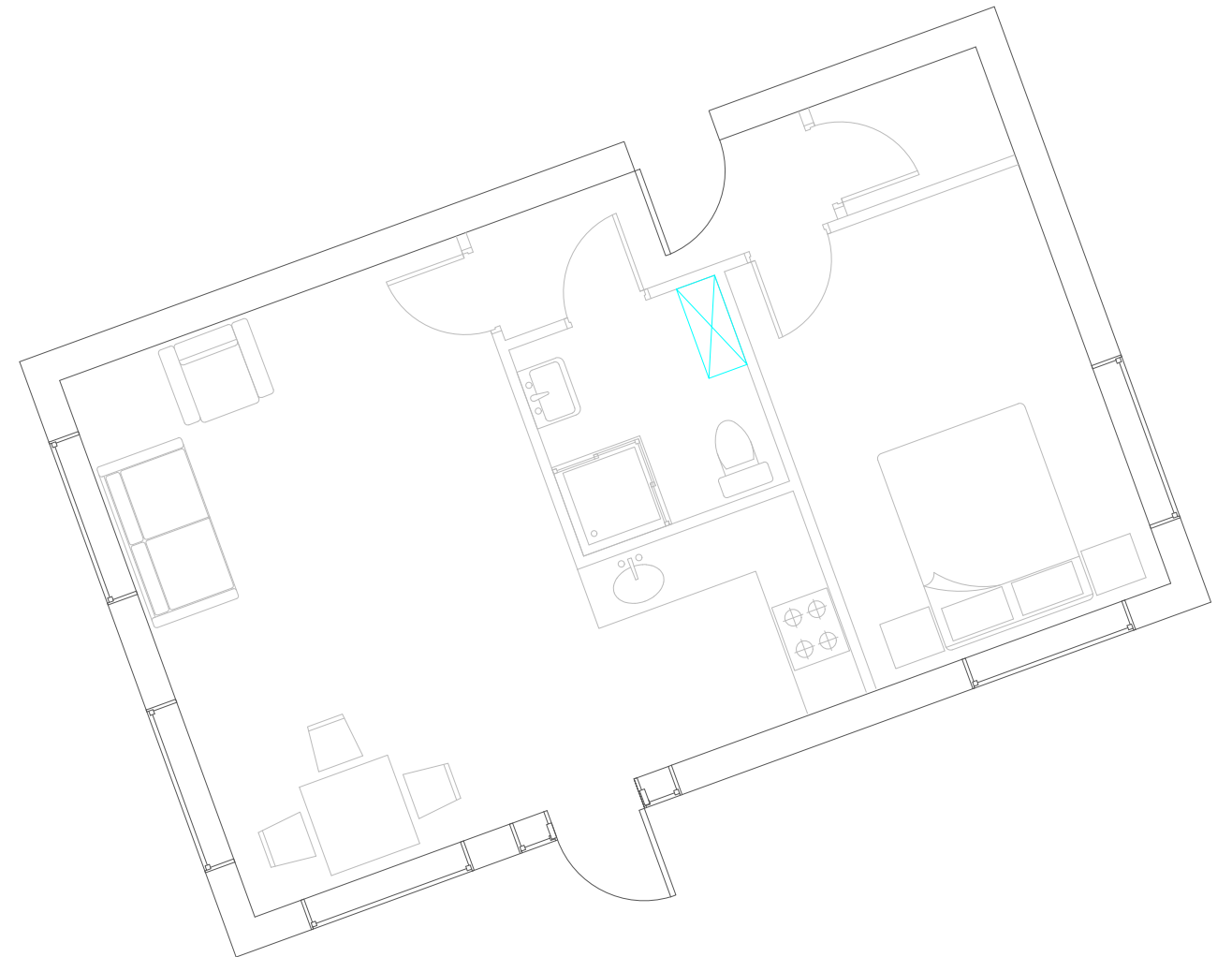
# FACADES



## APARTMENTS



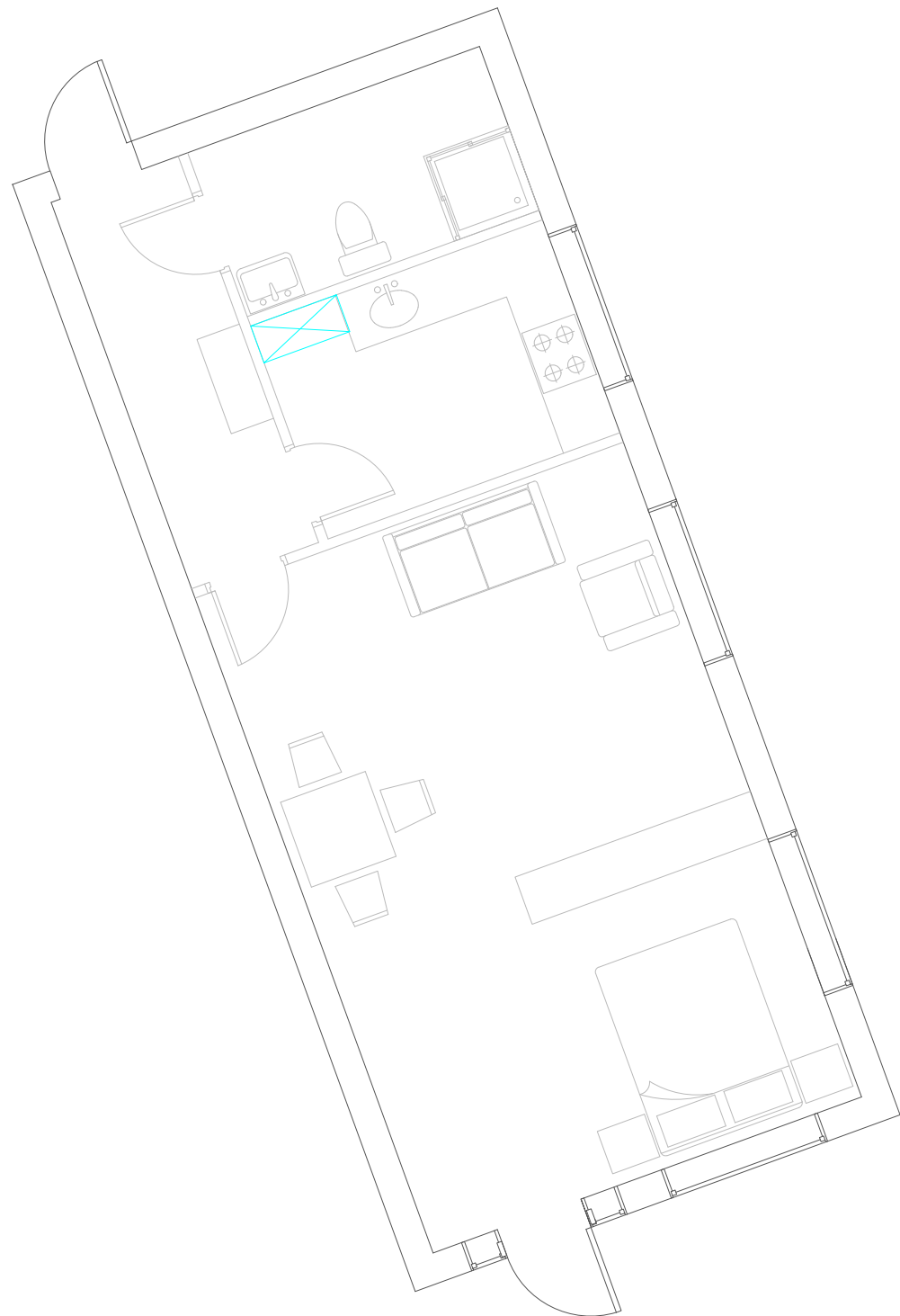
75 m<sup>2</sup>



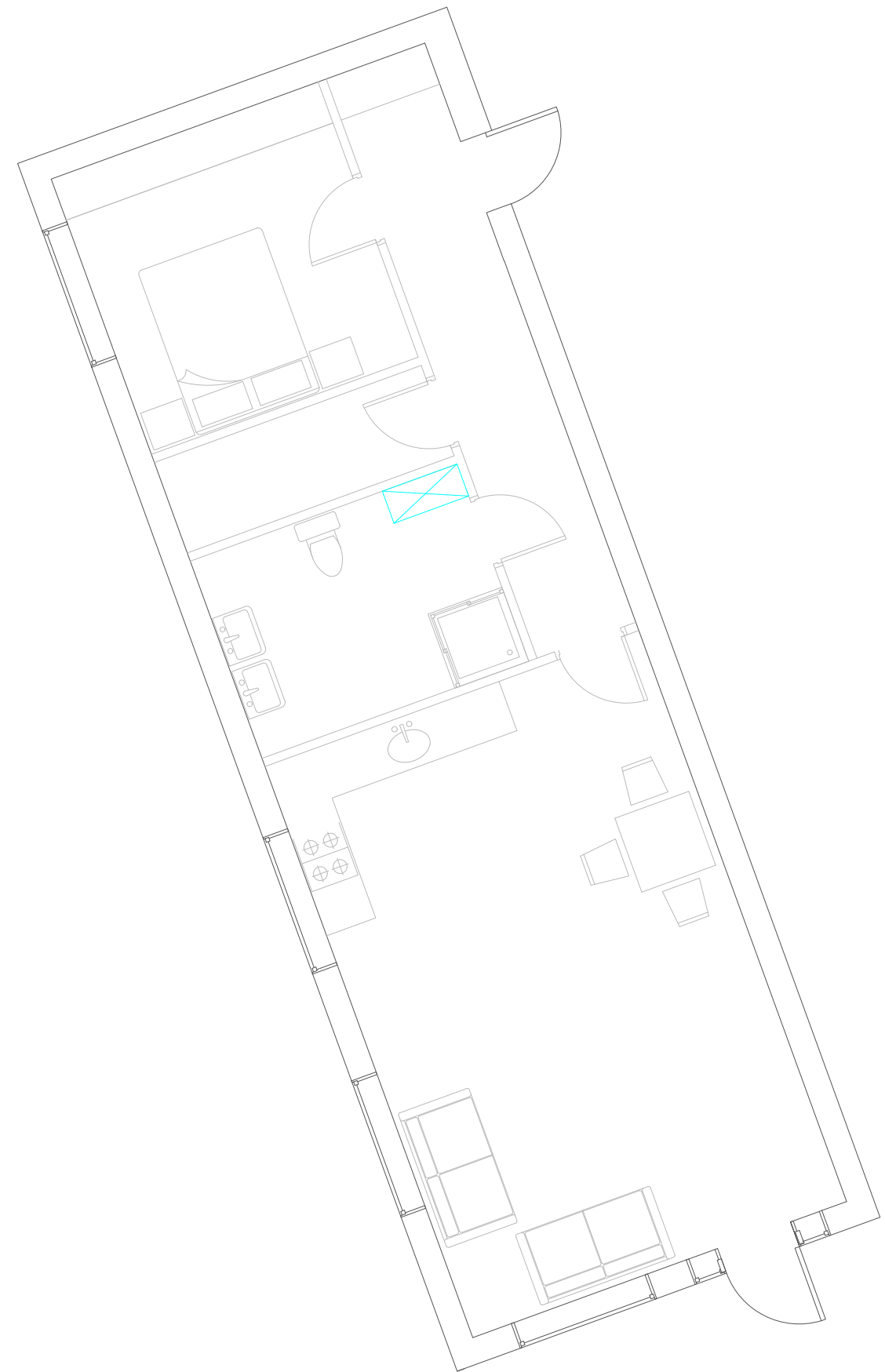
50 m<sup>2</sup>



## APARTMENTS

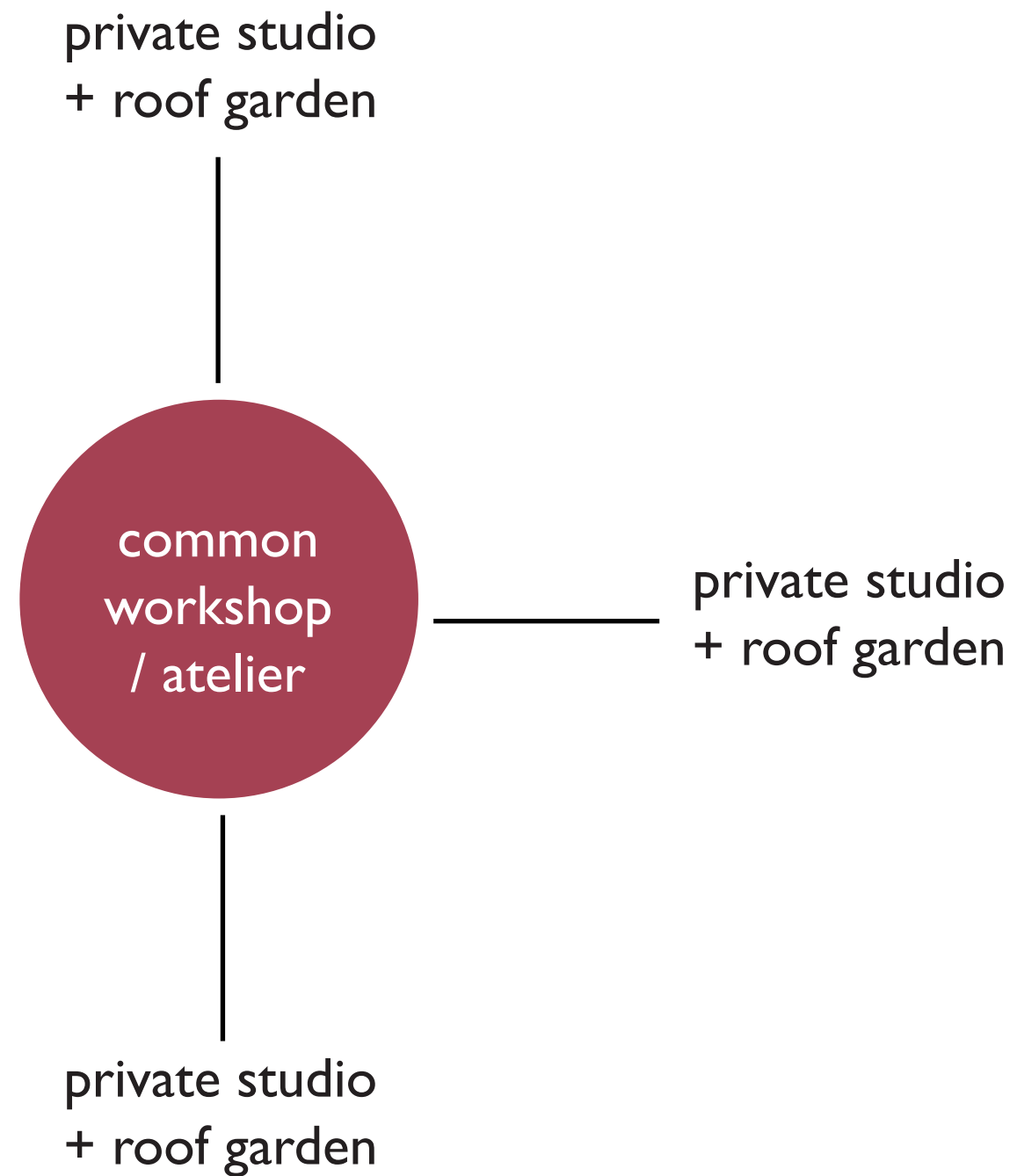


50 m<sup>2</sup>

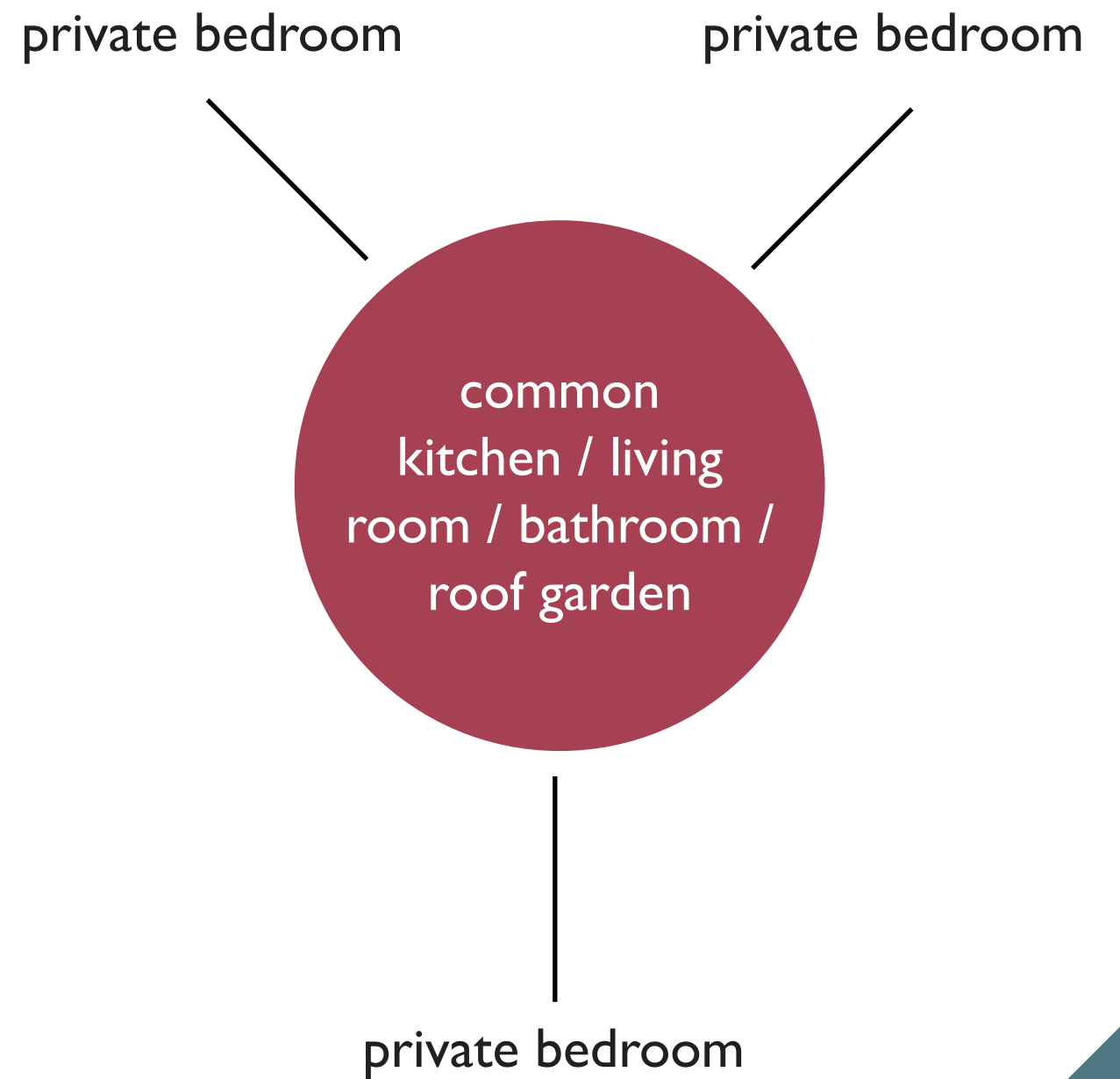


65 m<sup>2</sup>

## APARTMENTS



artists HCC

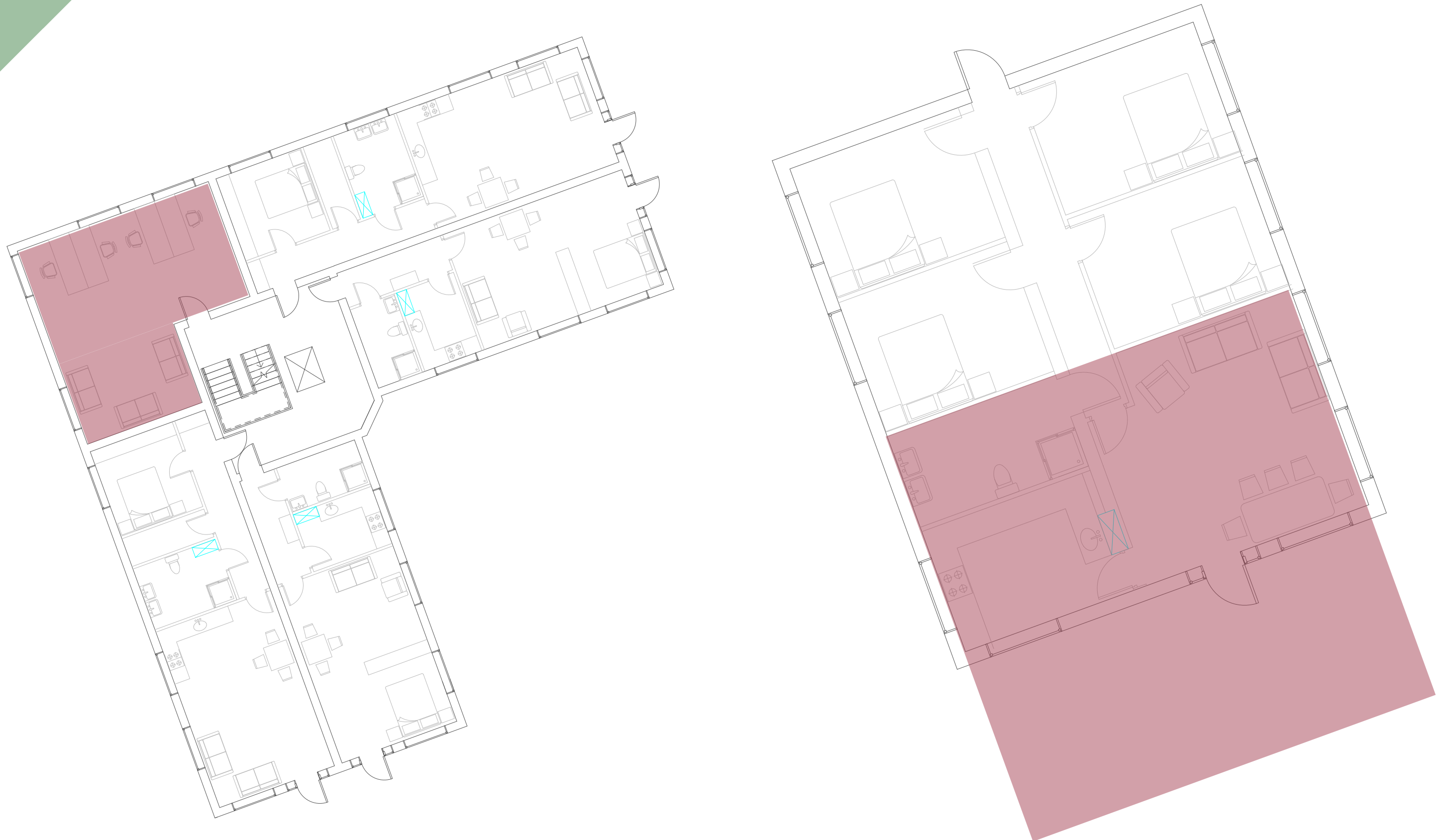


students

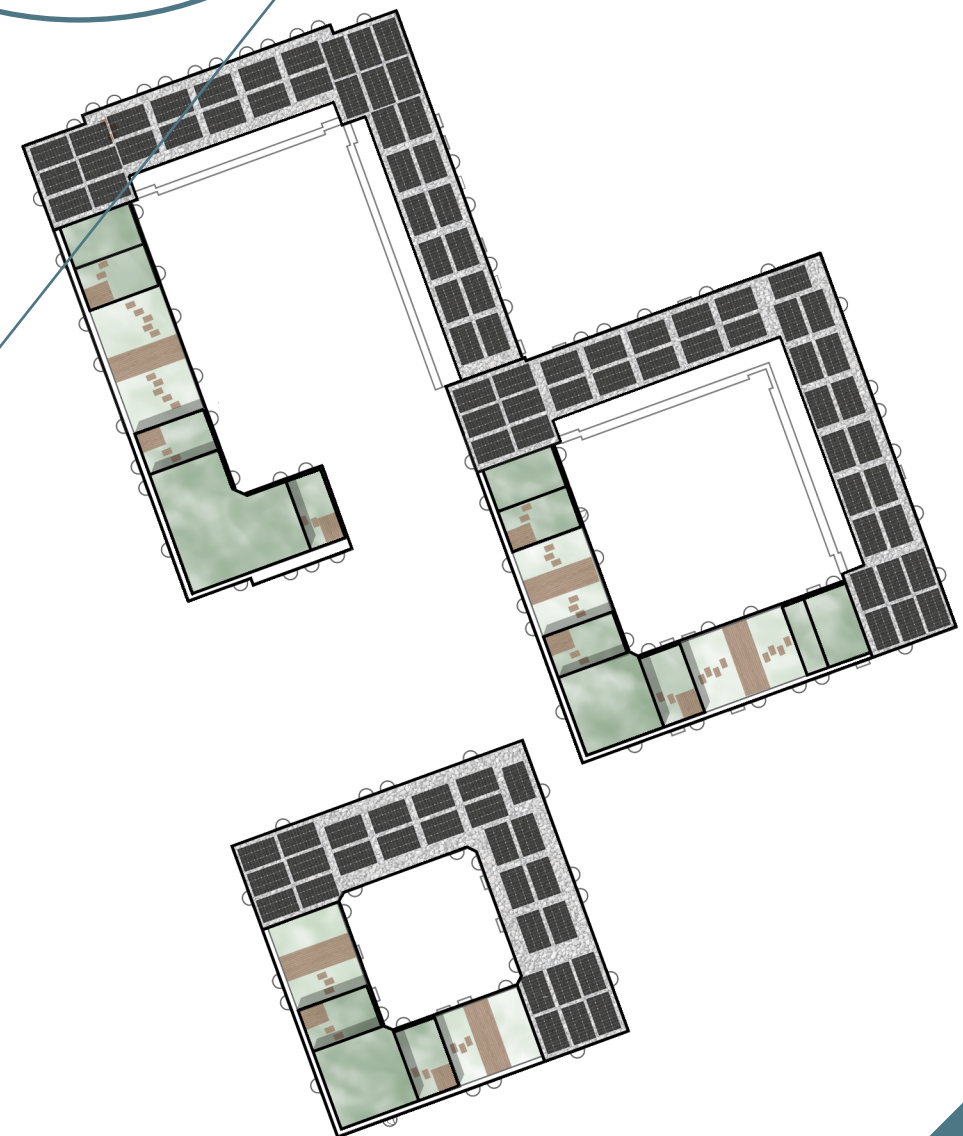
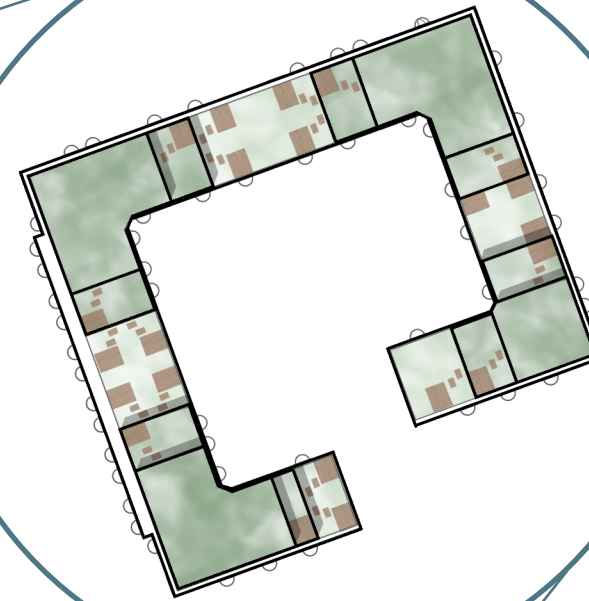
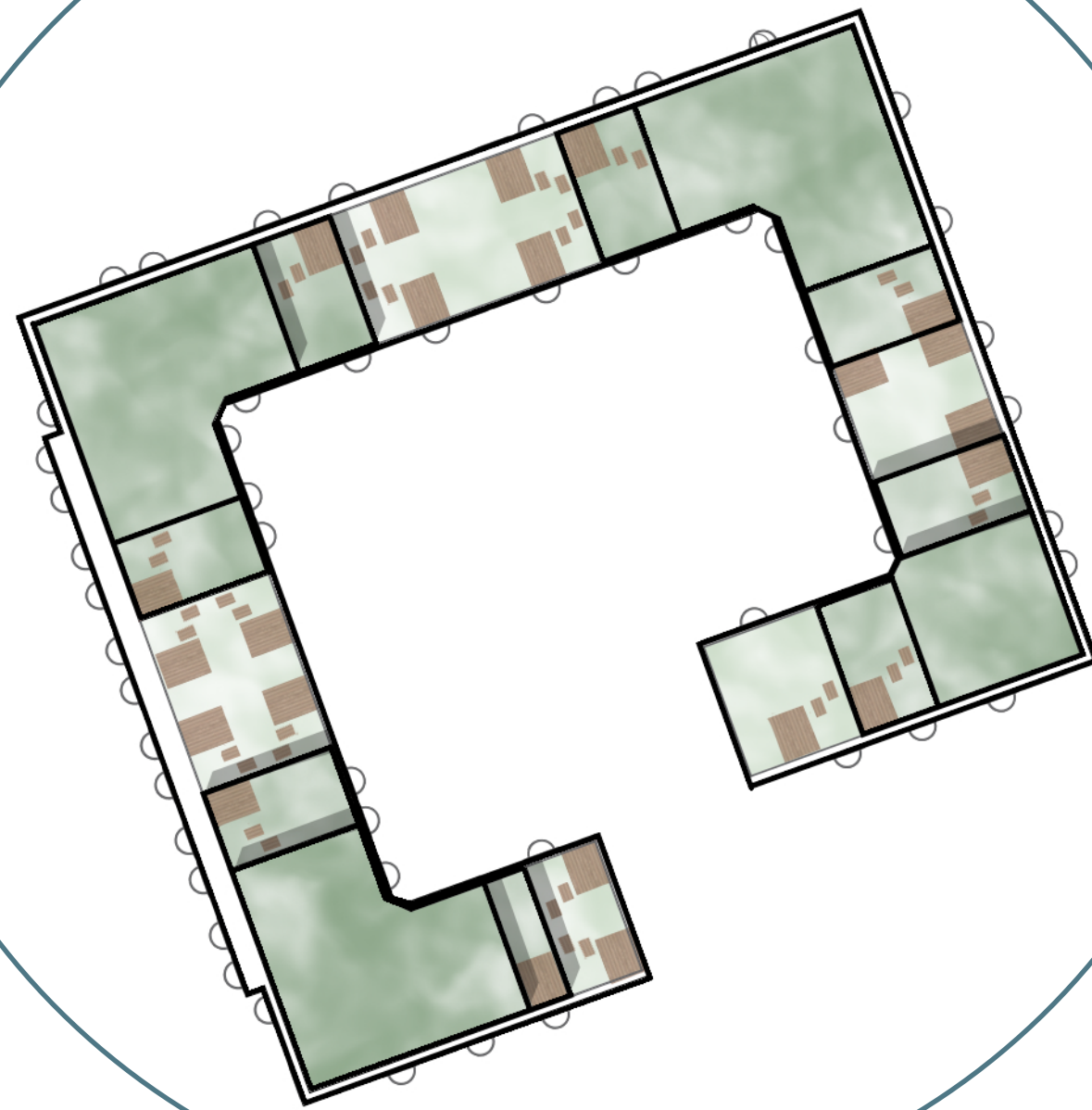


# APARTMENTS

Common area



# ROOF TERRACES



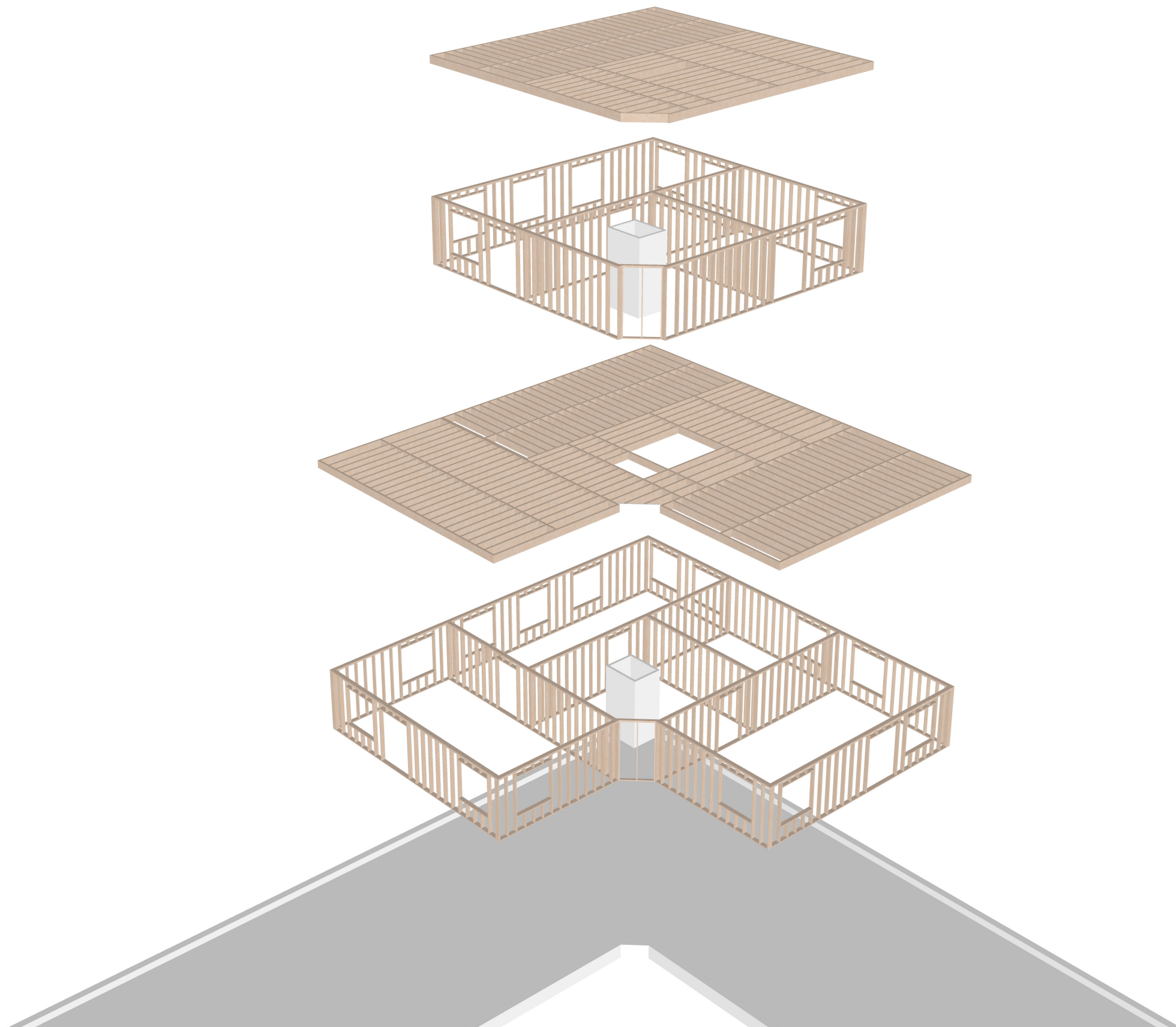


## TERRACES





## 3D CONSTRUCTION





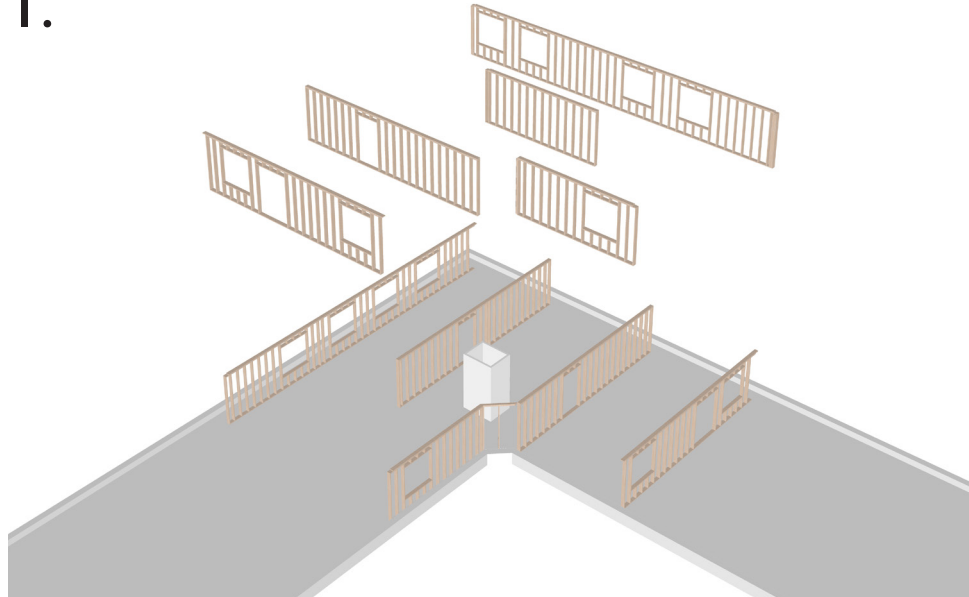
## CONSTRUCTION PROCESS



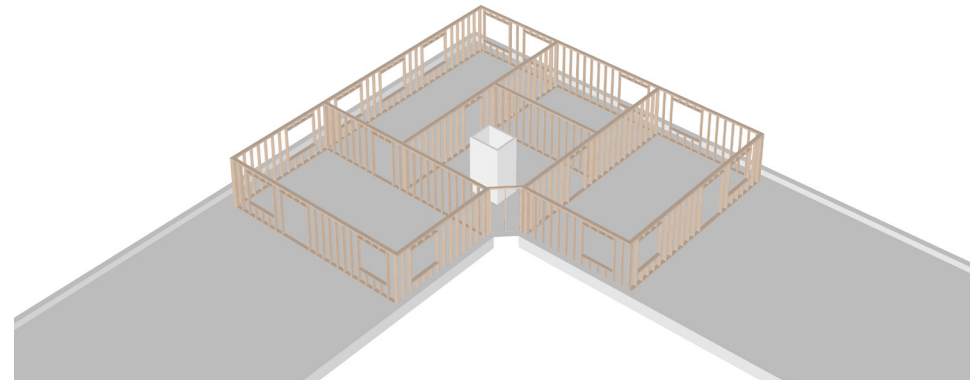
De Kroon prefab

# CONSTRUCTION PROCESS

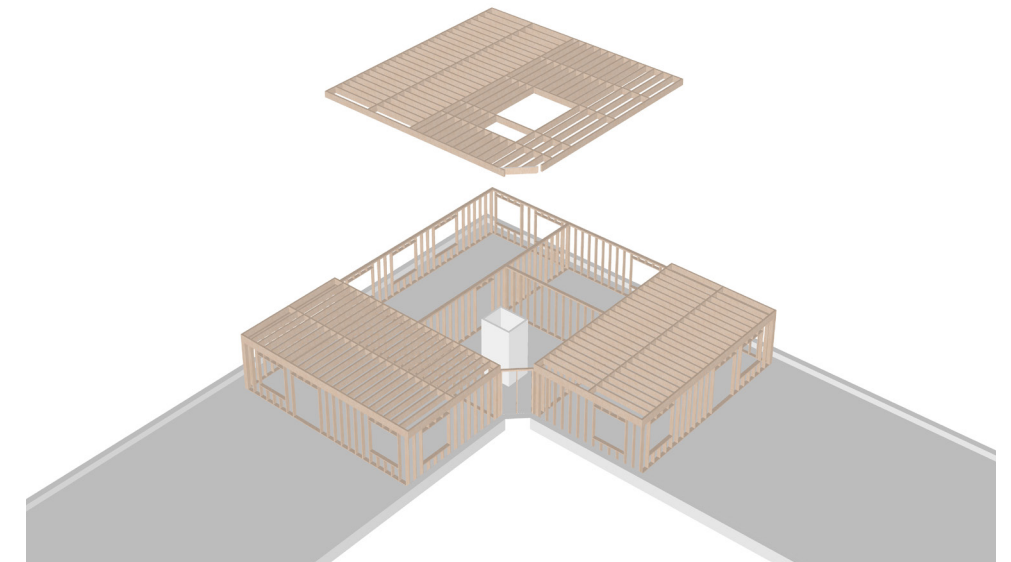
1.



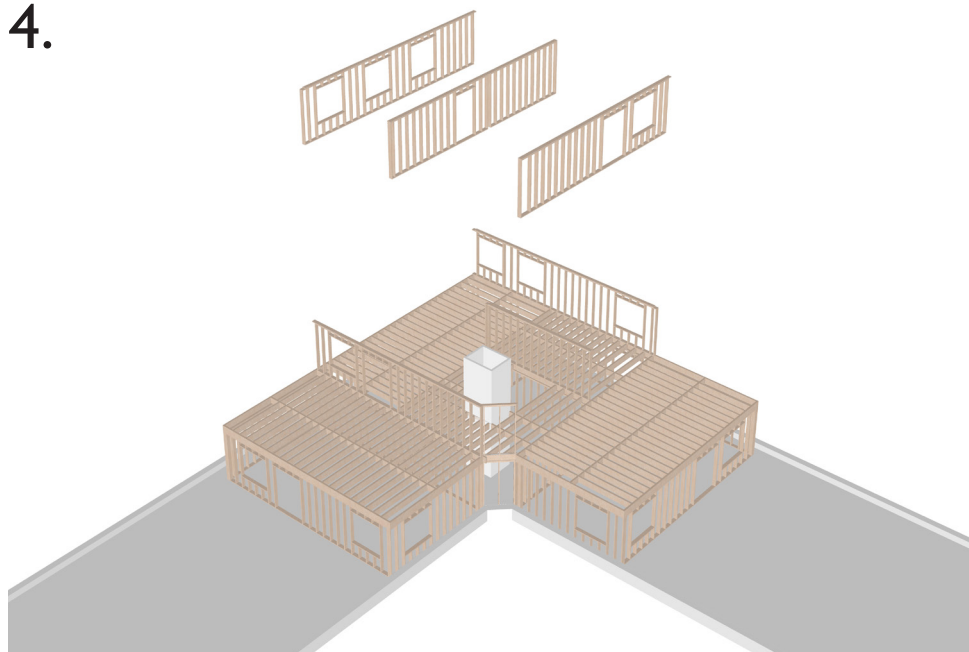
2.



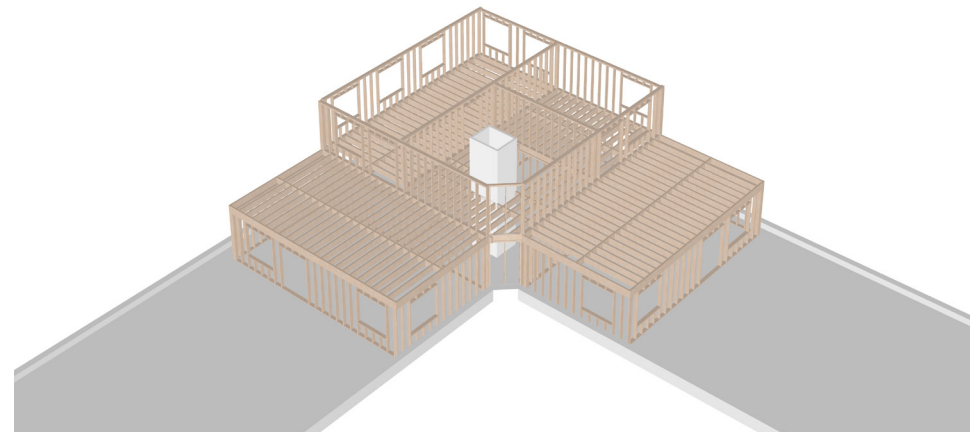
3.



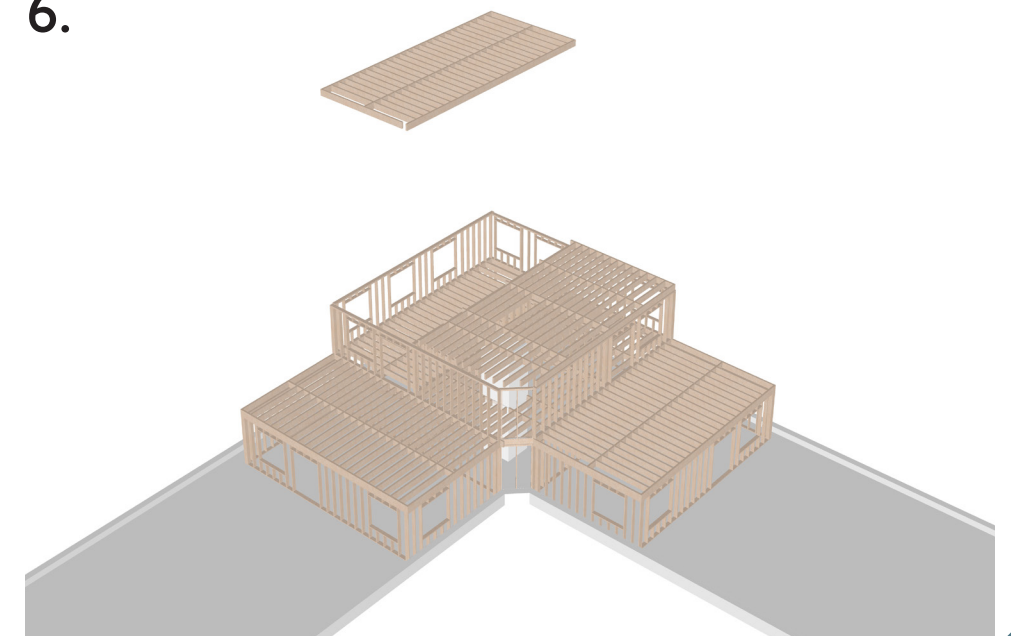
4.



5.

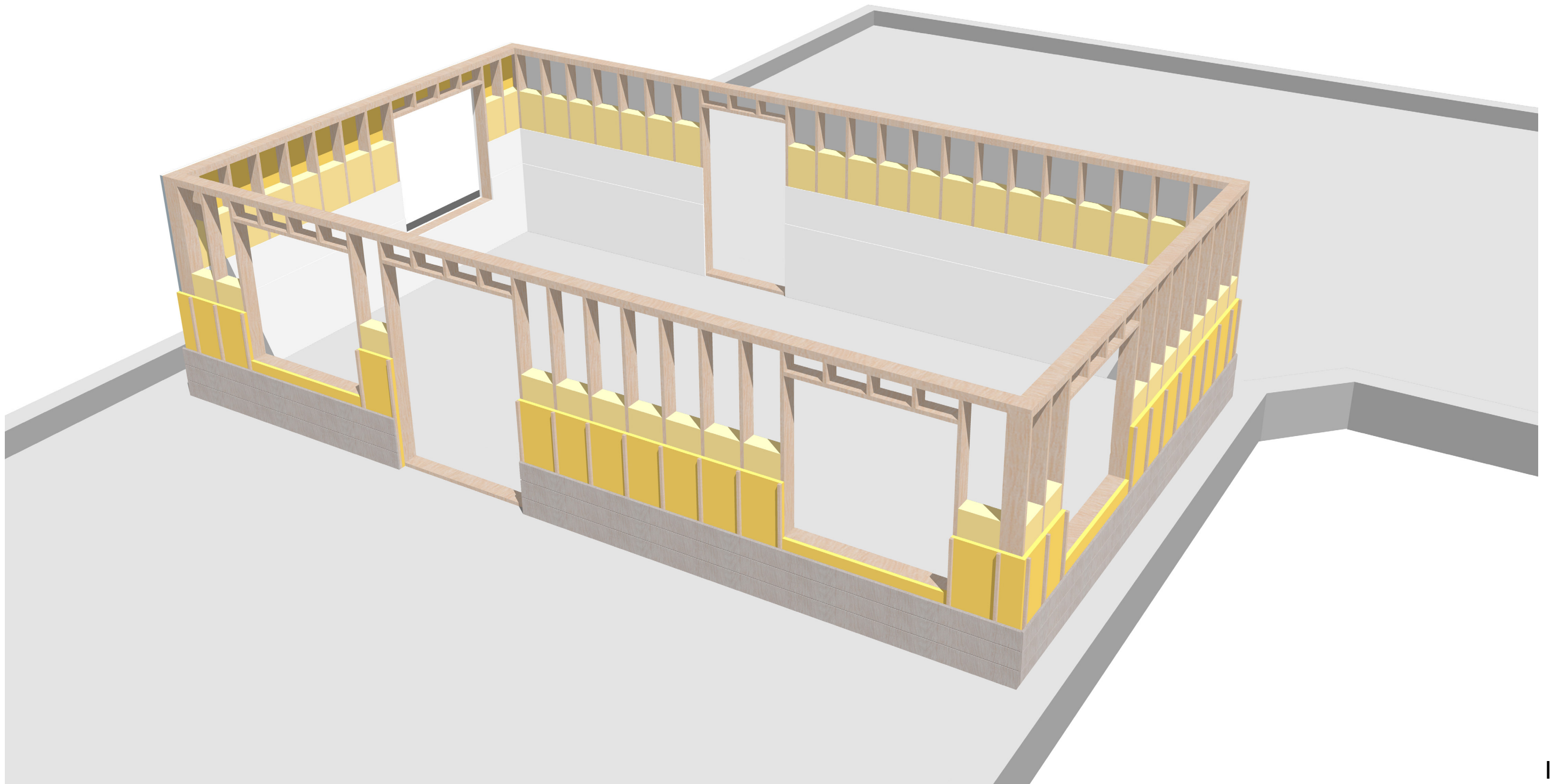


6.

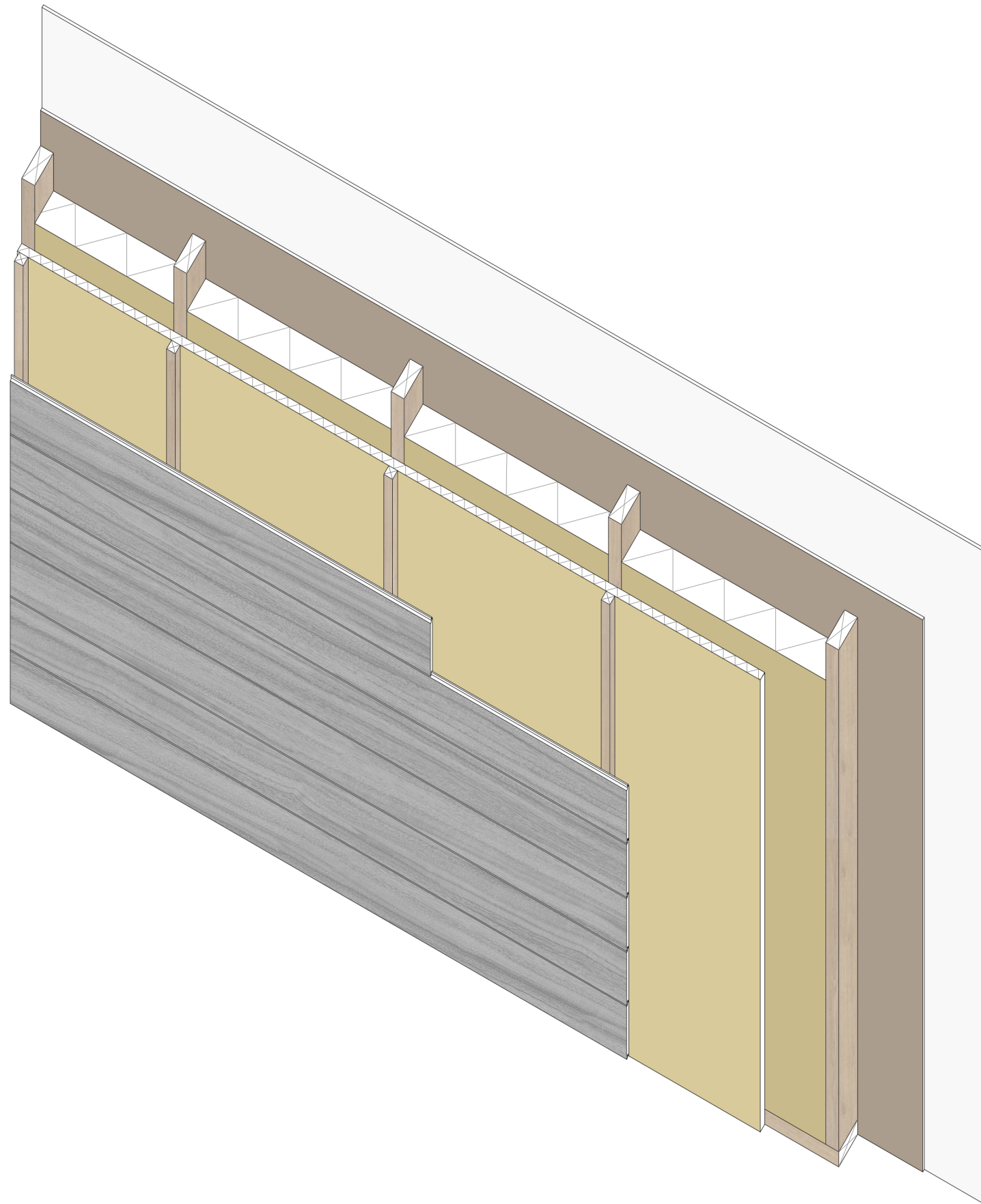




## 3D CONSTRUCTION

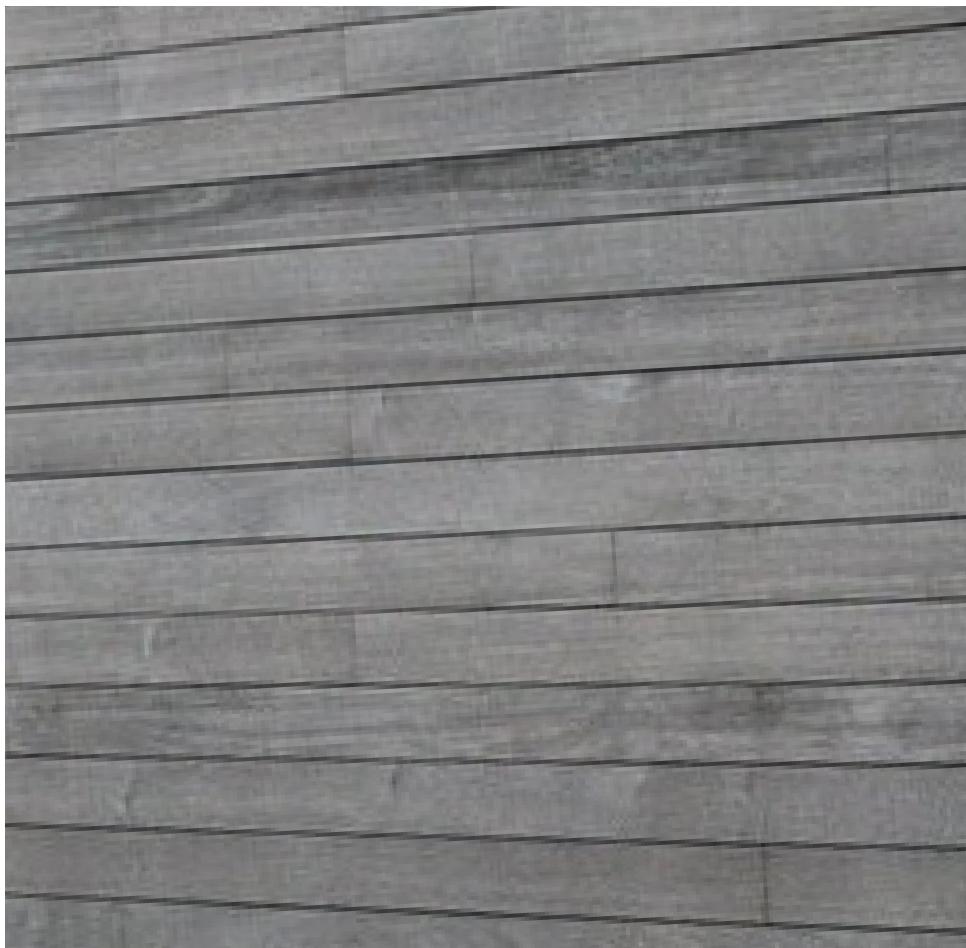


# FACADES





## MATERIALS



Platowood Fraké

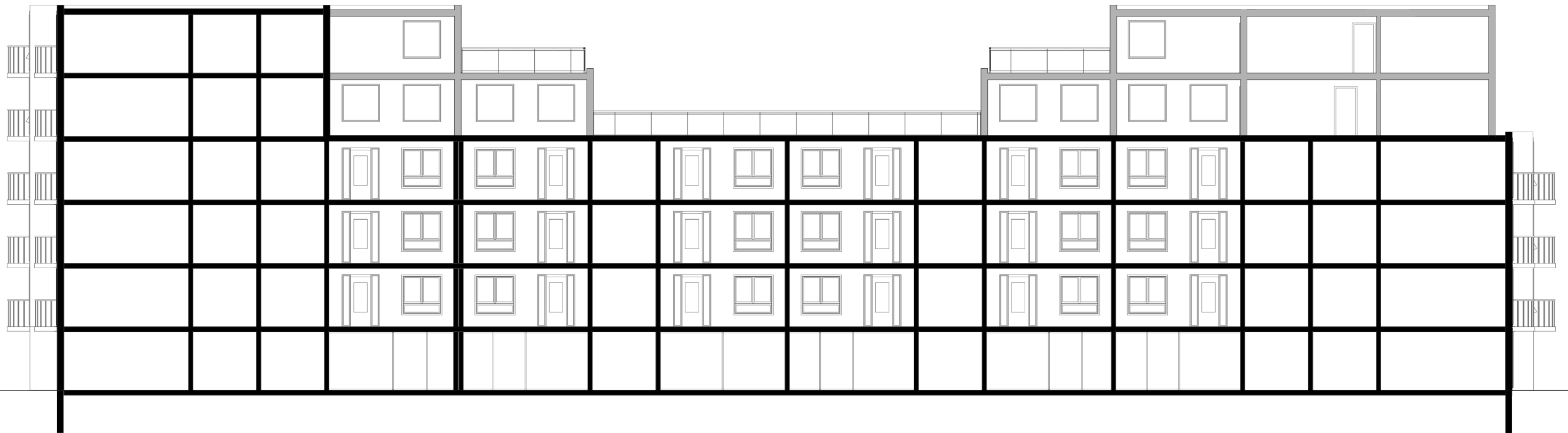
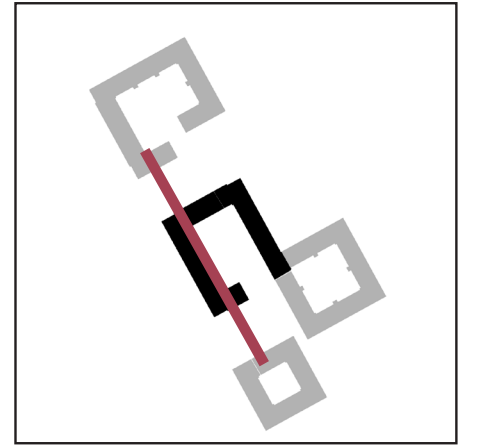


Gutex Thermoflex



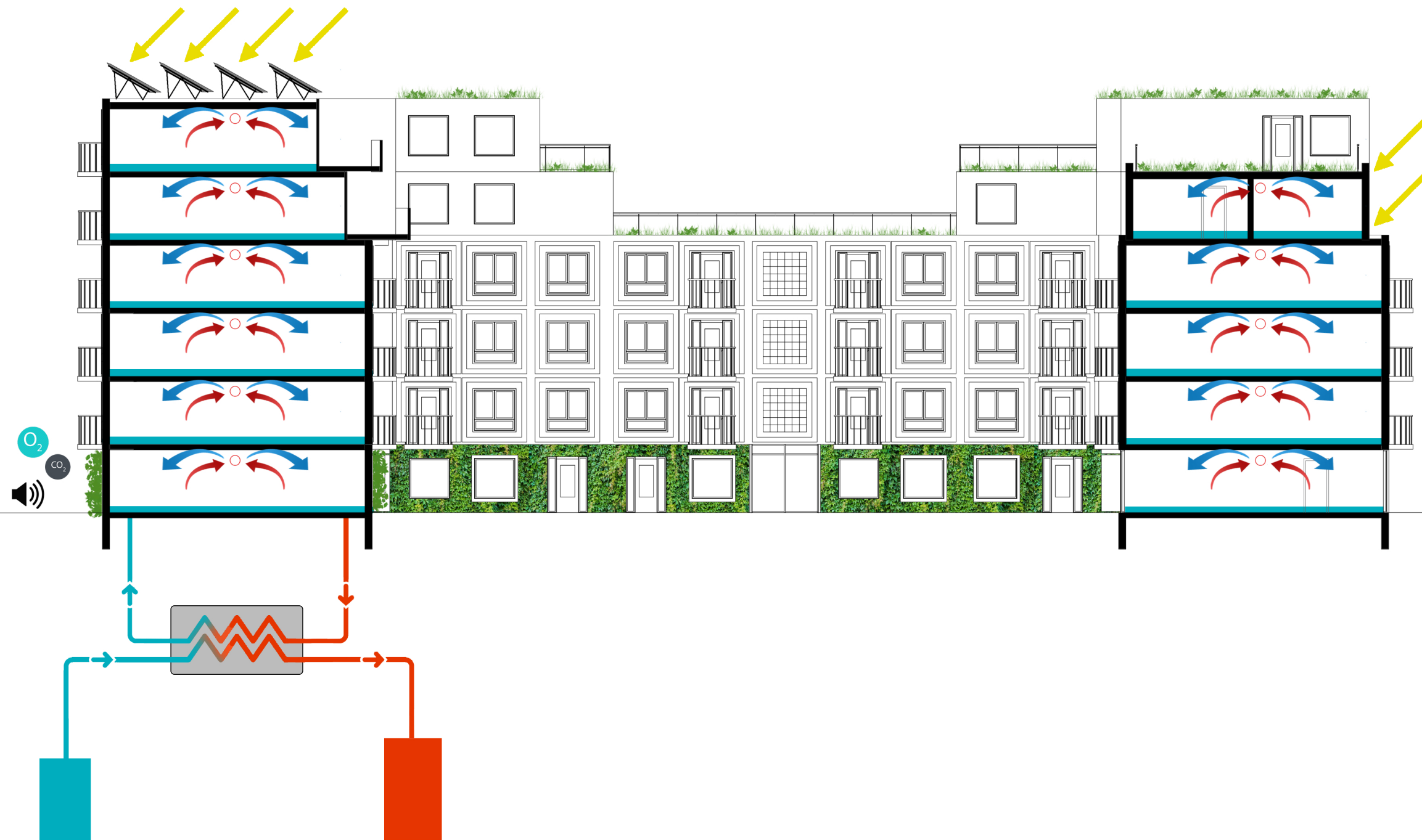
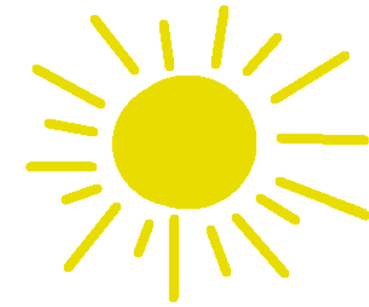
De Kroon prefab HSB elements

# LOAD BEARING WALLS

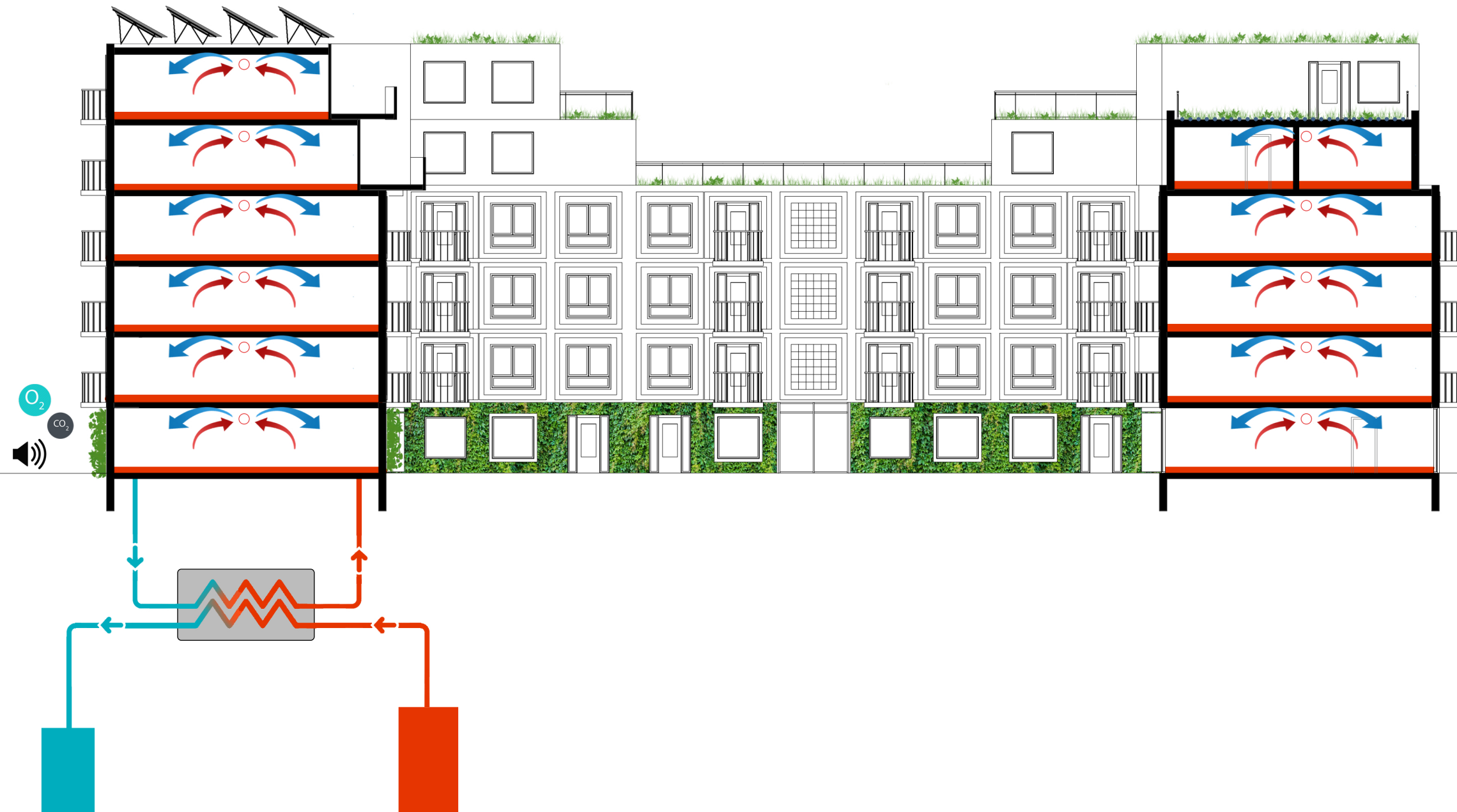




# CLIMATE CONCEPT



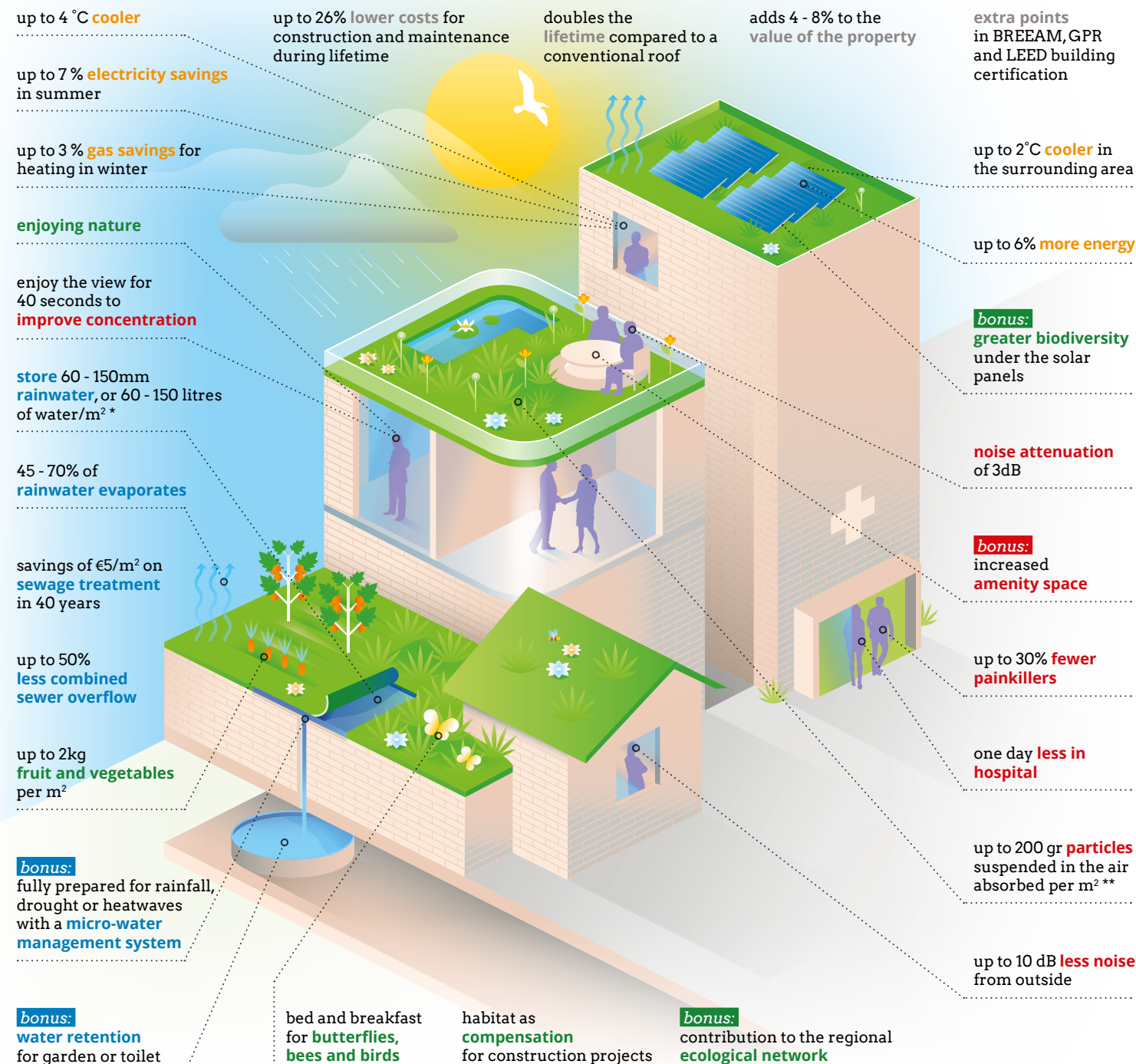
# CLIMATE CONCEPT





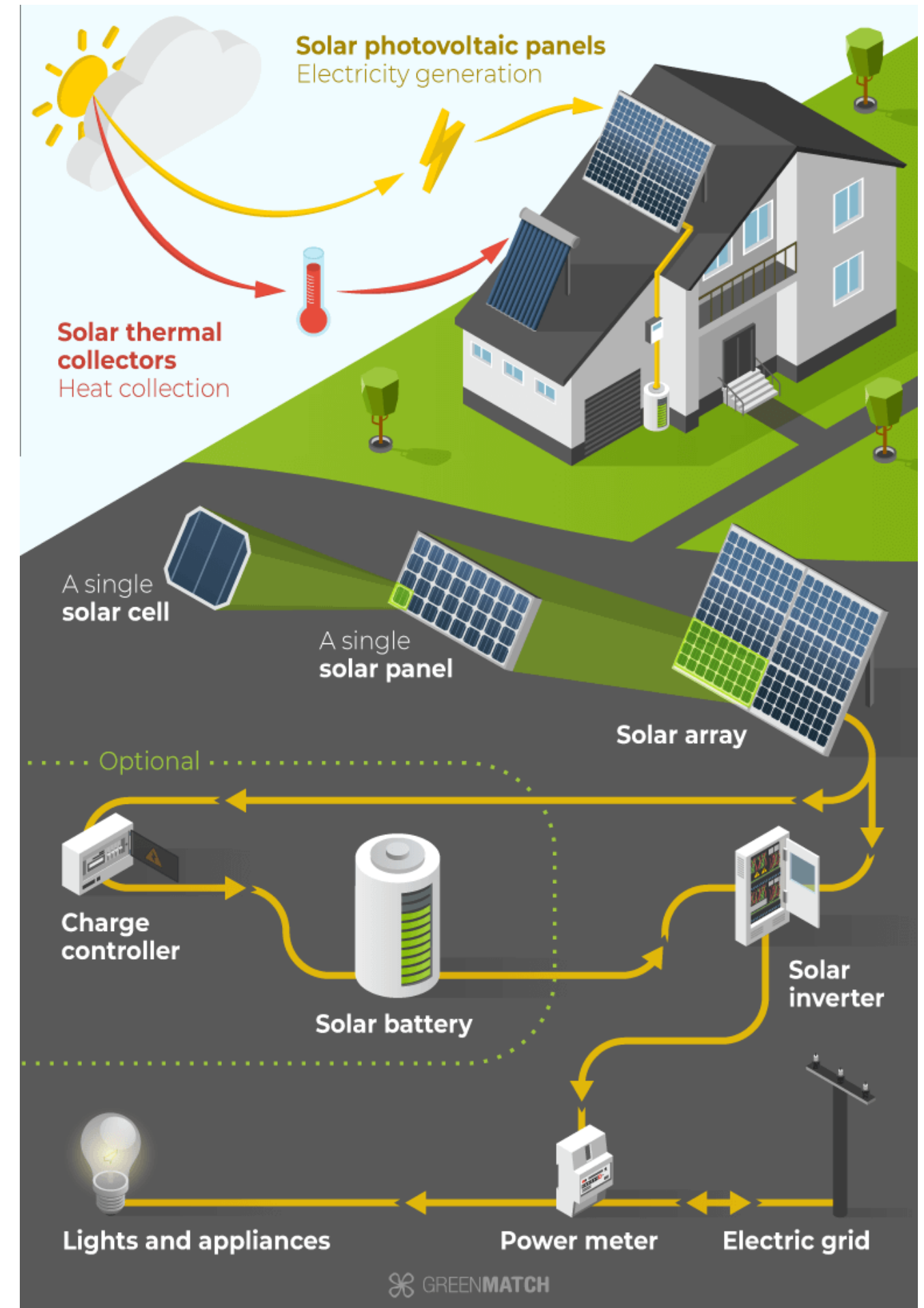
# CLIMATE CONCEPT

Technical and financial Water Biodiversity Health Energy

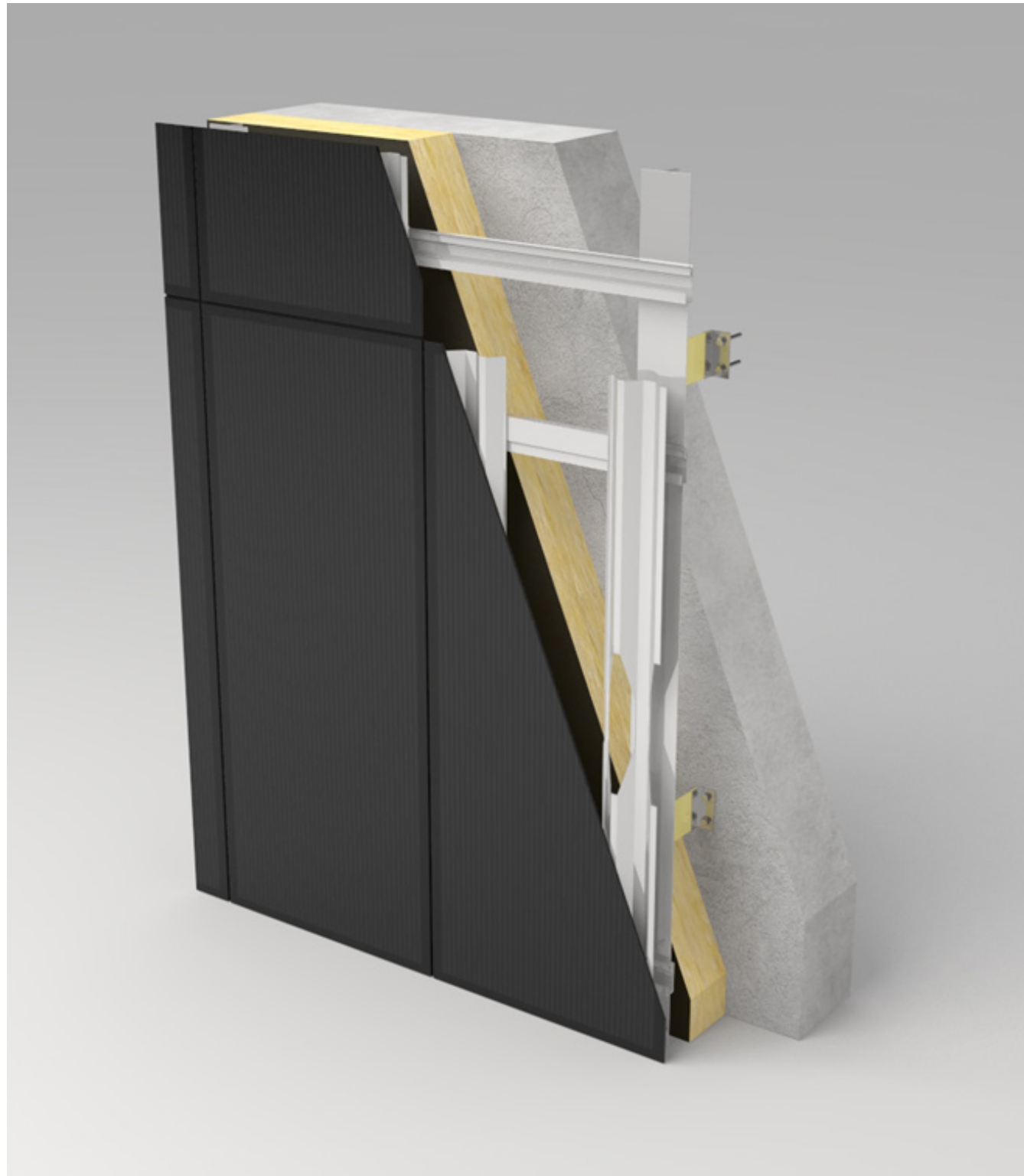


\* for existing buildings, a maximum of 100mm or 100 litres/m<sup>2</sup>  
 \*\* with a natural roof or grass roof

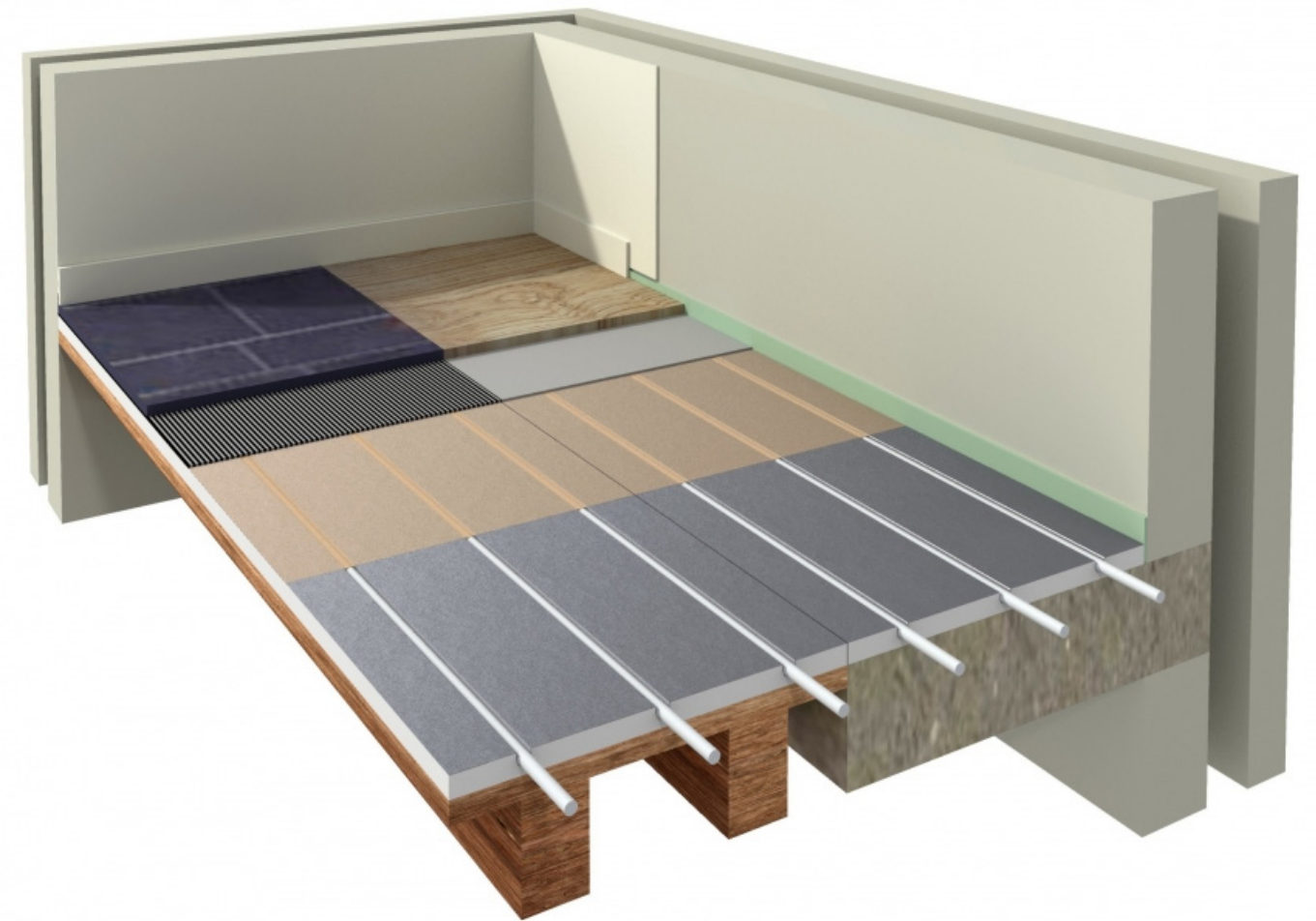
[www.greendealgroenedaken.nl/en-facts-values](http://www.greendealgroenedaken.nl/en-facts-values)



## CLIMATE CONCEPT



ENERGYFAÇADE by saint-gobain-solutions



VASCO floor heating system





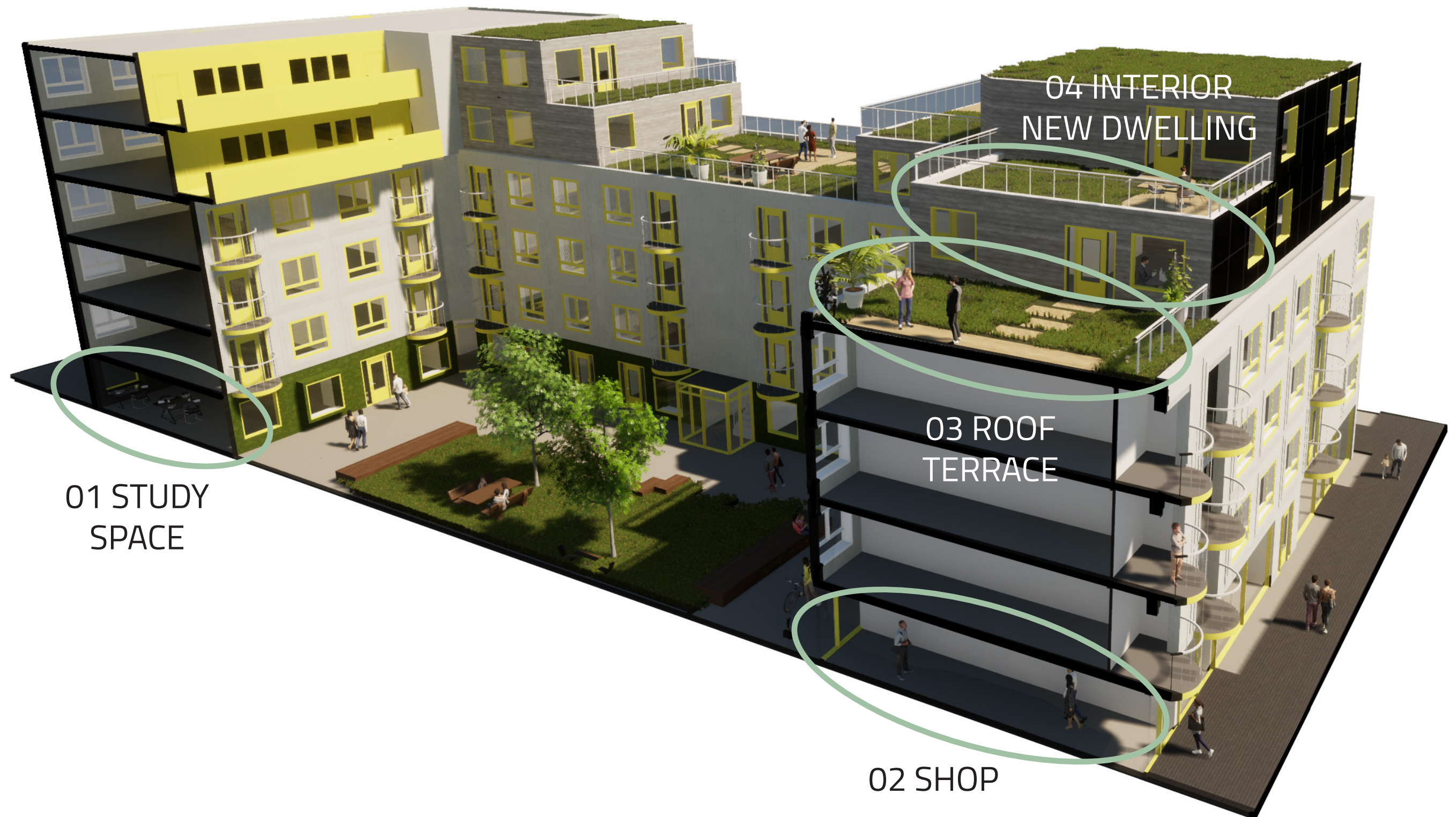
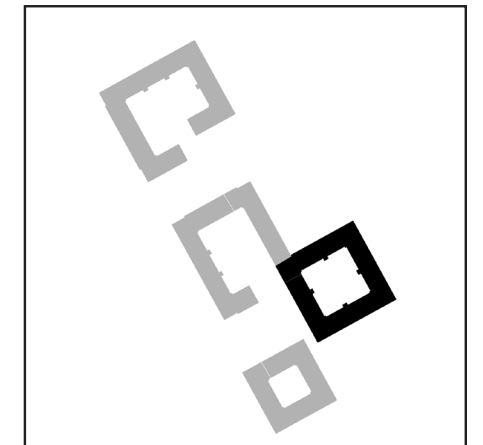
DESIGN

-

DETAIL SCALE



# STUDY BLOCK





01 STUDY SPACE









## 02 SHOP









03 ROOF TERRACE





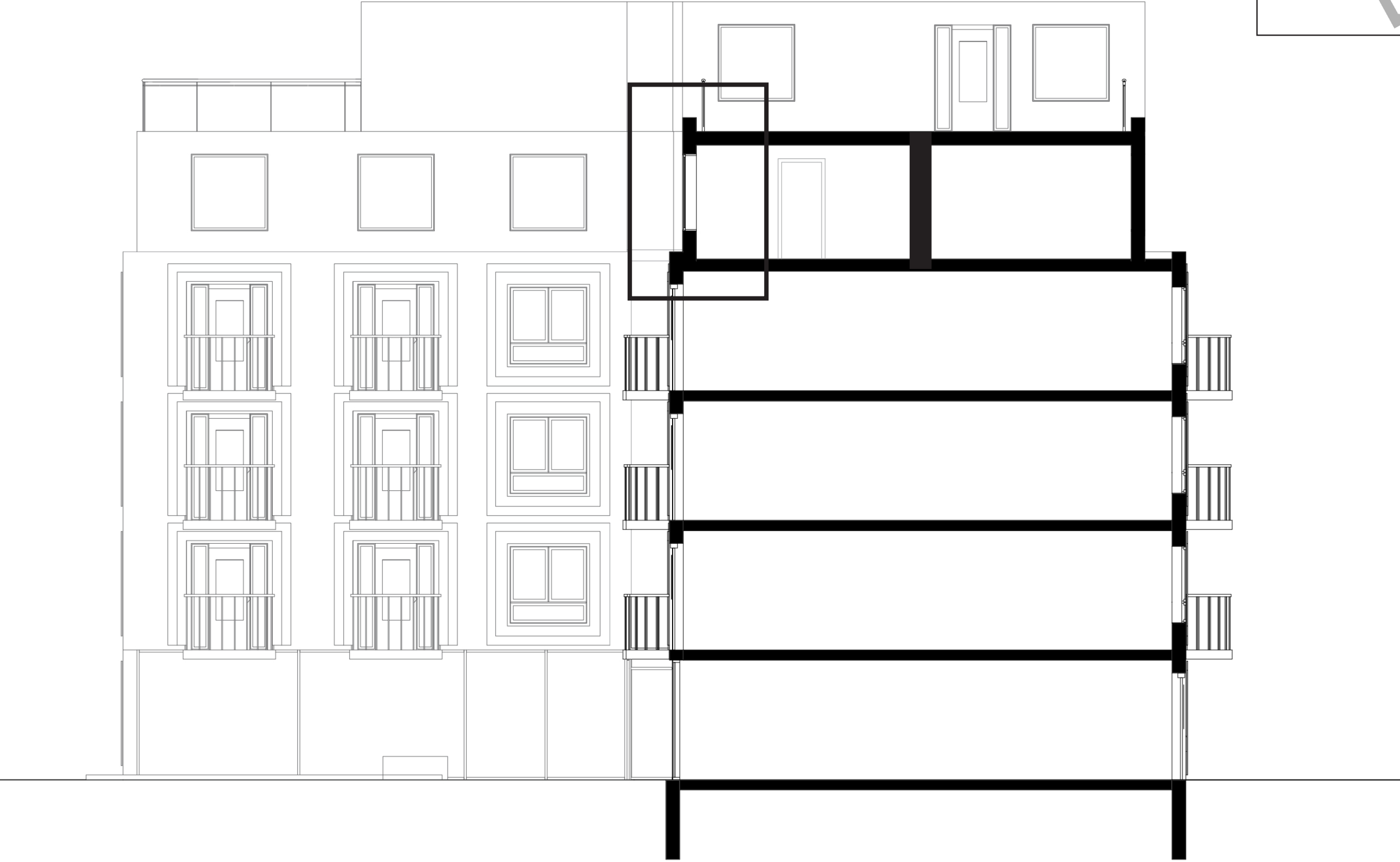
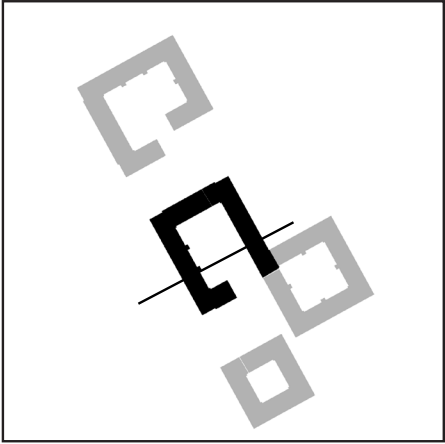


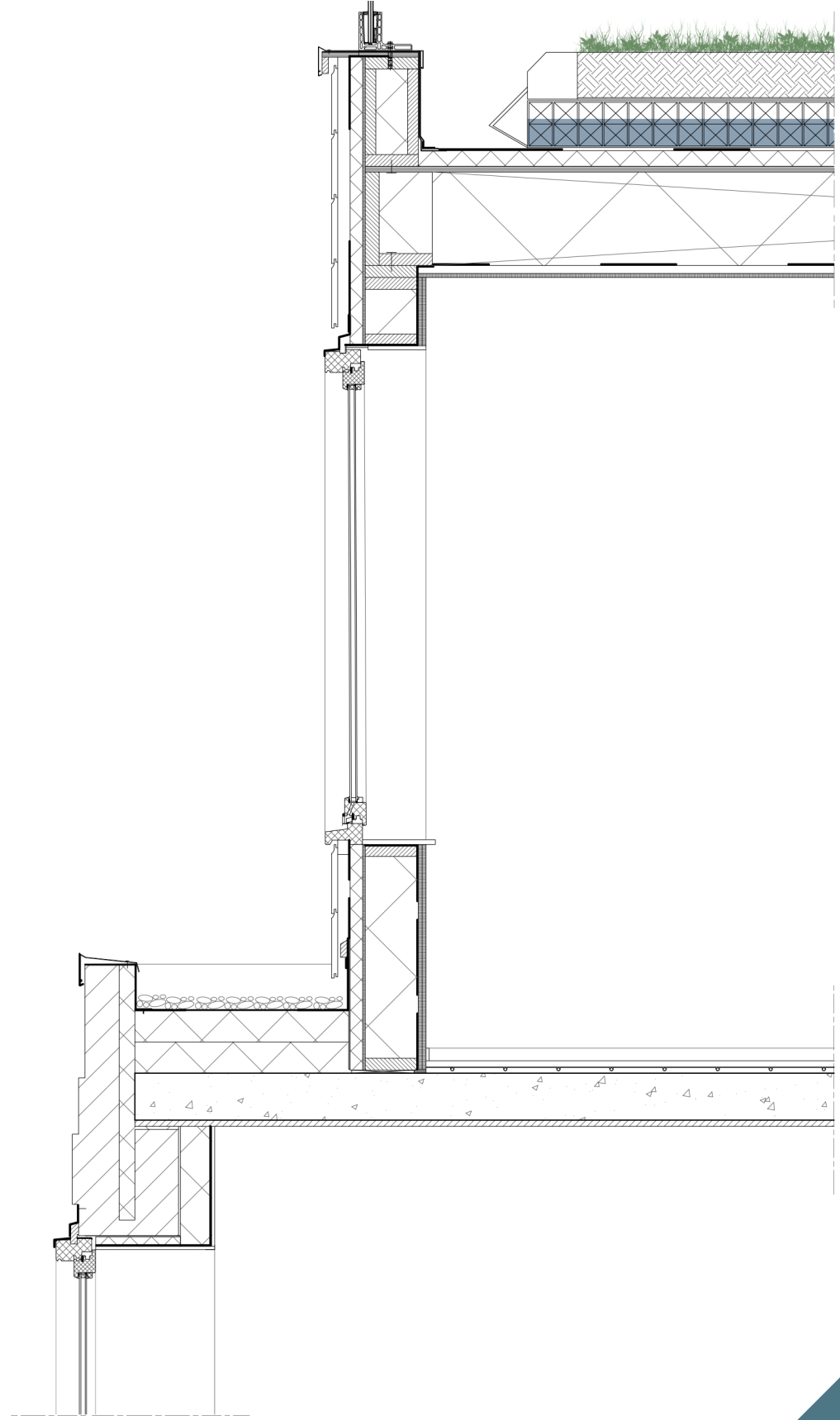
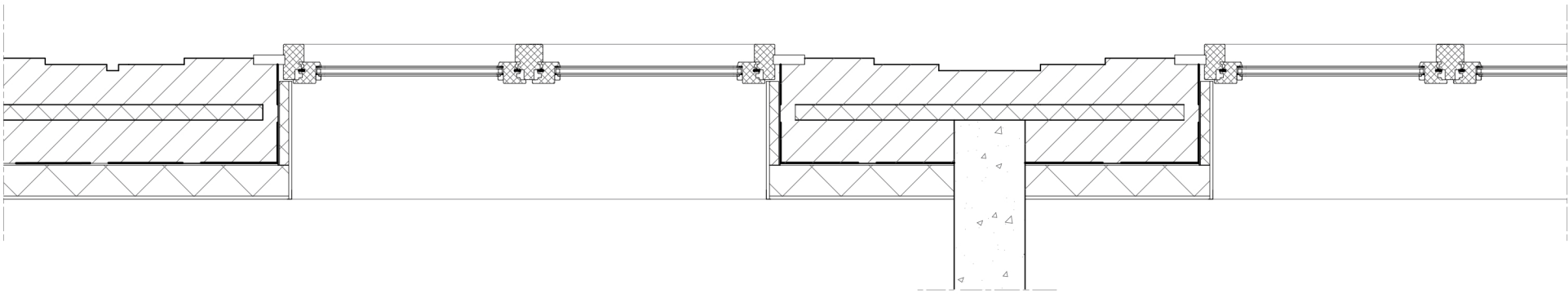
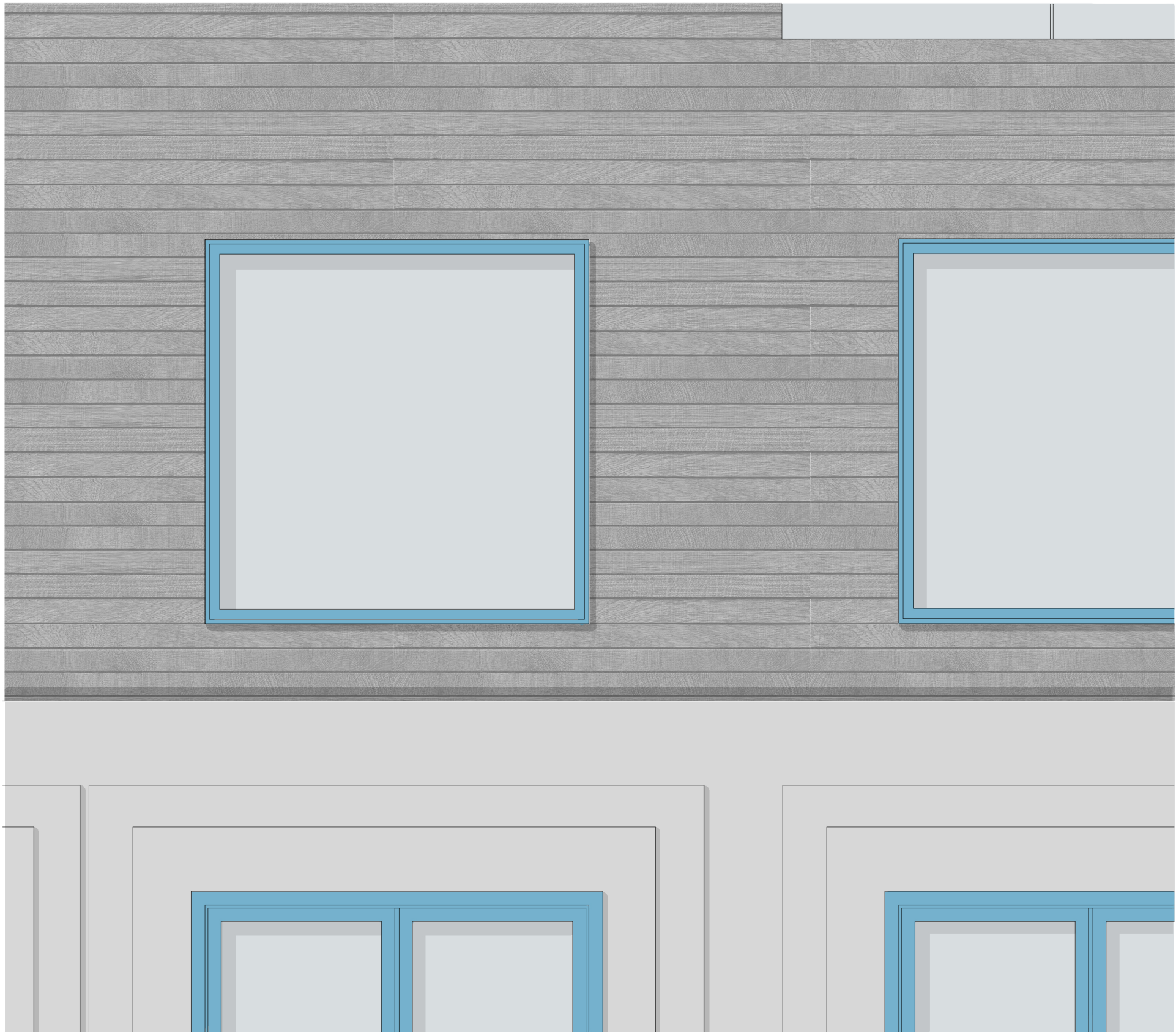
## 04 INTERIOR NEW DWELLING





SECTION

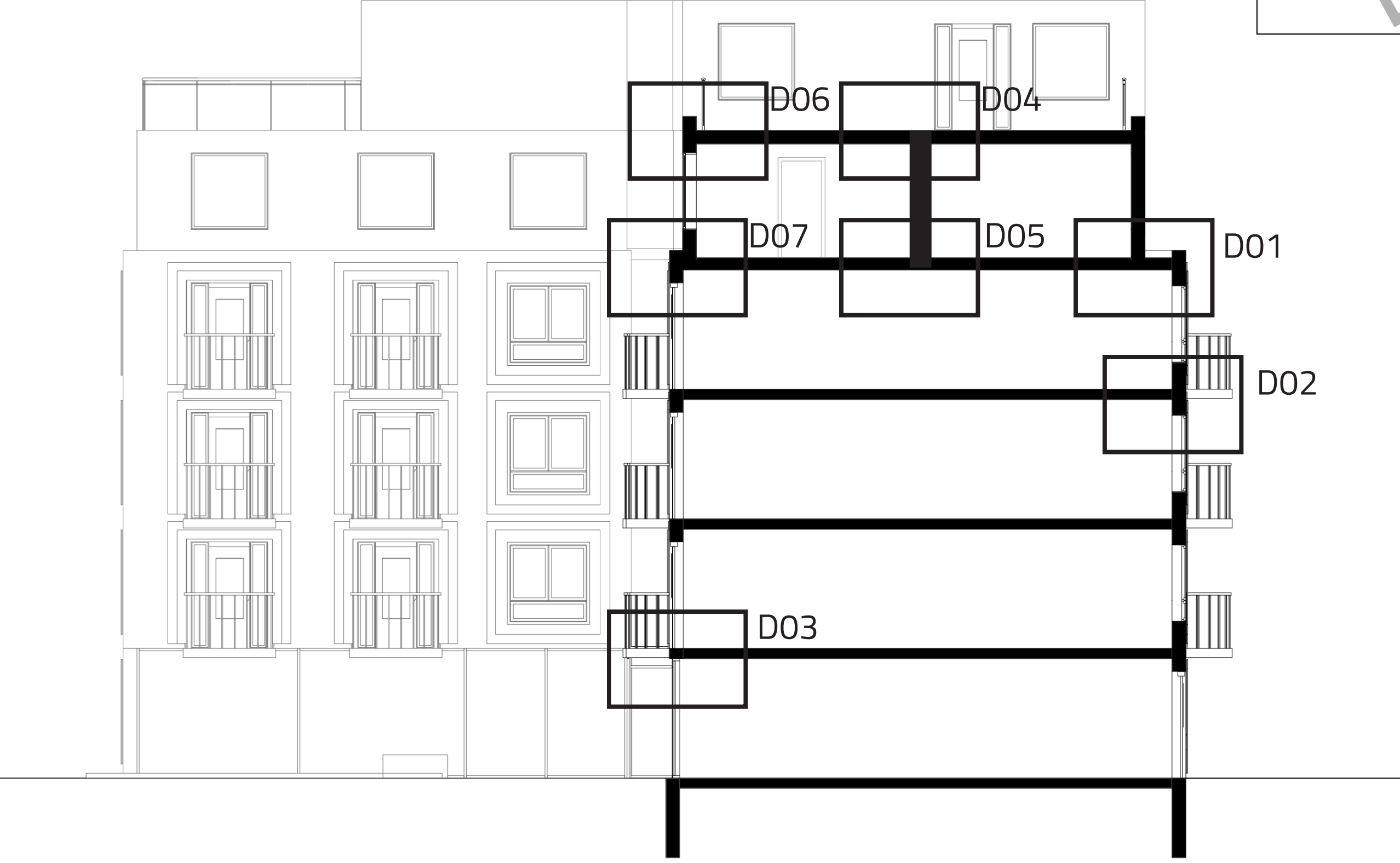
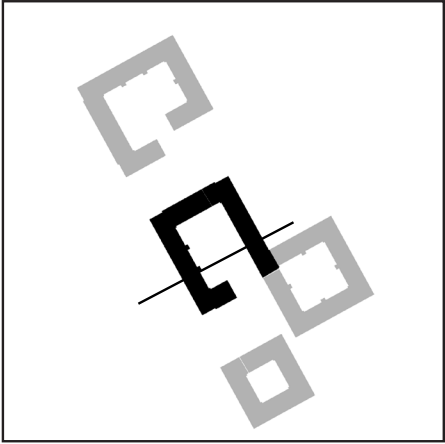




facade fragment 1:20



SECTION



D0I

Rc value: 5,6 m² K / W

From left to right:  
Gypsum board 12,5 mm  
Multiplex 12,5 mm  
Vapor barrier  
Wooden beams with GUTEX Thermoflex 170 mm  
Multiplex 8 mm  
Wood fibre insulation board 40 mm  
Waterproofing membrane  
ENERGY FACADE (solar panels)

From top to bottom:  
Gravel ballast layer  
Bitumen waterproofing membrane  
GUTEX Thermoroom 100 mm with slope  
GUTEX Thermoroom 100 mm  
Wide slab concrete floor 170 mm

Rc value: 6,1 m² K / W

From top to bottom:  
Covering floor 20 mm  
VASCO floor heating system 25 mm  
Wide slab concrete floor 170 mm

From left to right:  
Stucco  
Vapor barrier  
GUTEX Thermoroom 100 mm  
GUTEX mortar  
Prefab concrete panel 130 mm  
Insulation 40 mm  
Prefab concrete panel 130 mm

Rc value: 4,7 m² K / W



D02

From top to bottom:  
Covering floor 20 mm  
VASCO floor heating system 25 mm  
Covering floor 50 mm  
Wide slab concrete floor 170 mm

20  
25  
50  
150  
20

Rc value: 4,7 m² K / W

From left to right:  
Stucco  
Vapor barrier  
GUTEX Thermoroom 100 mm  
GUTEX mortar  
Prefab concrete panel 130 mm  
Insulation 40 mm  
Prefab concrete panel 130 mm

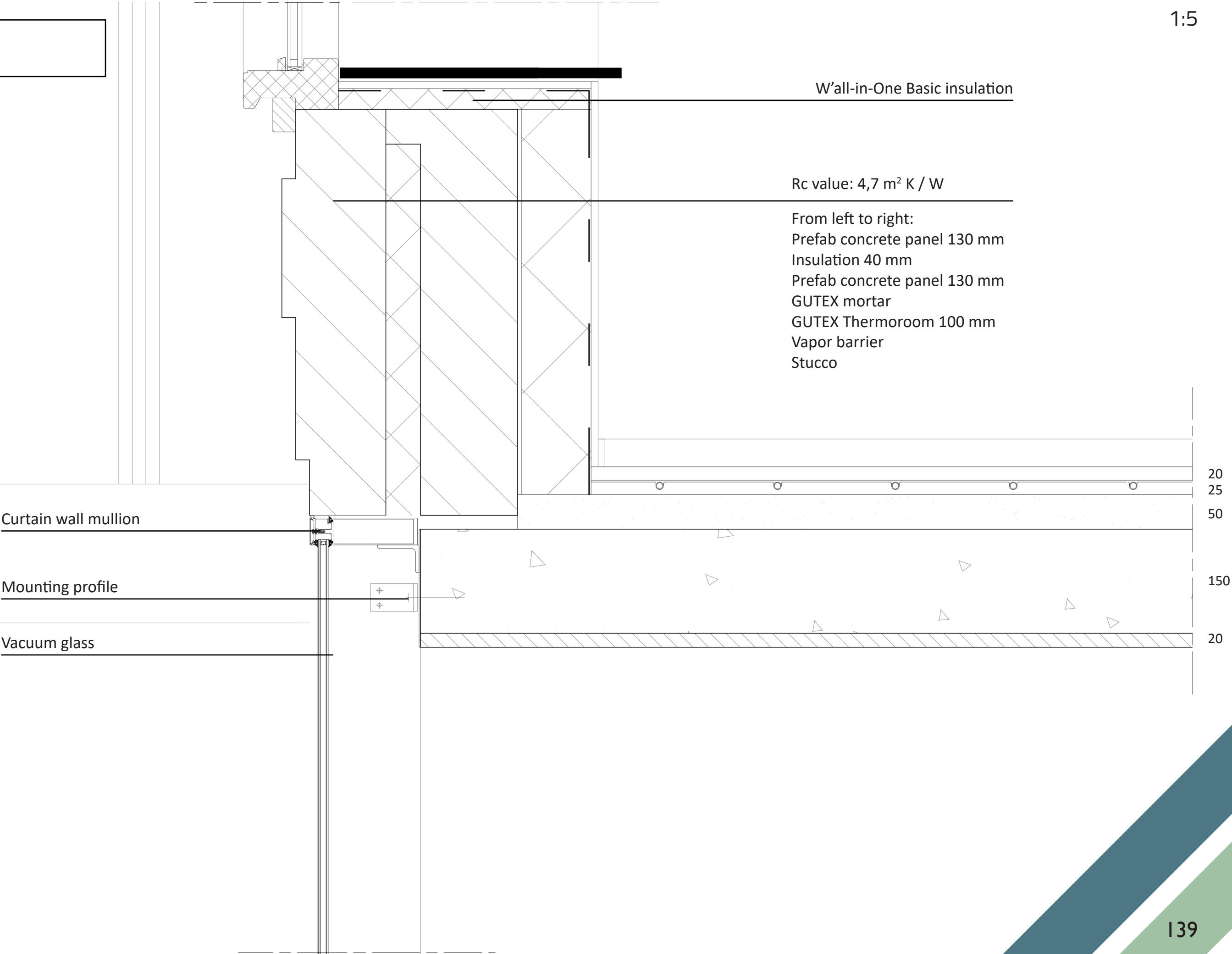
W'all-in-One Basic insulation

Existing wooden window frame

New wooden window frame

1:5

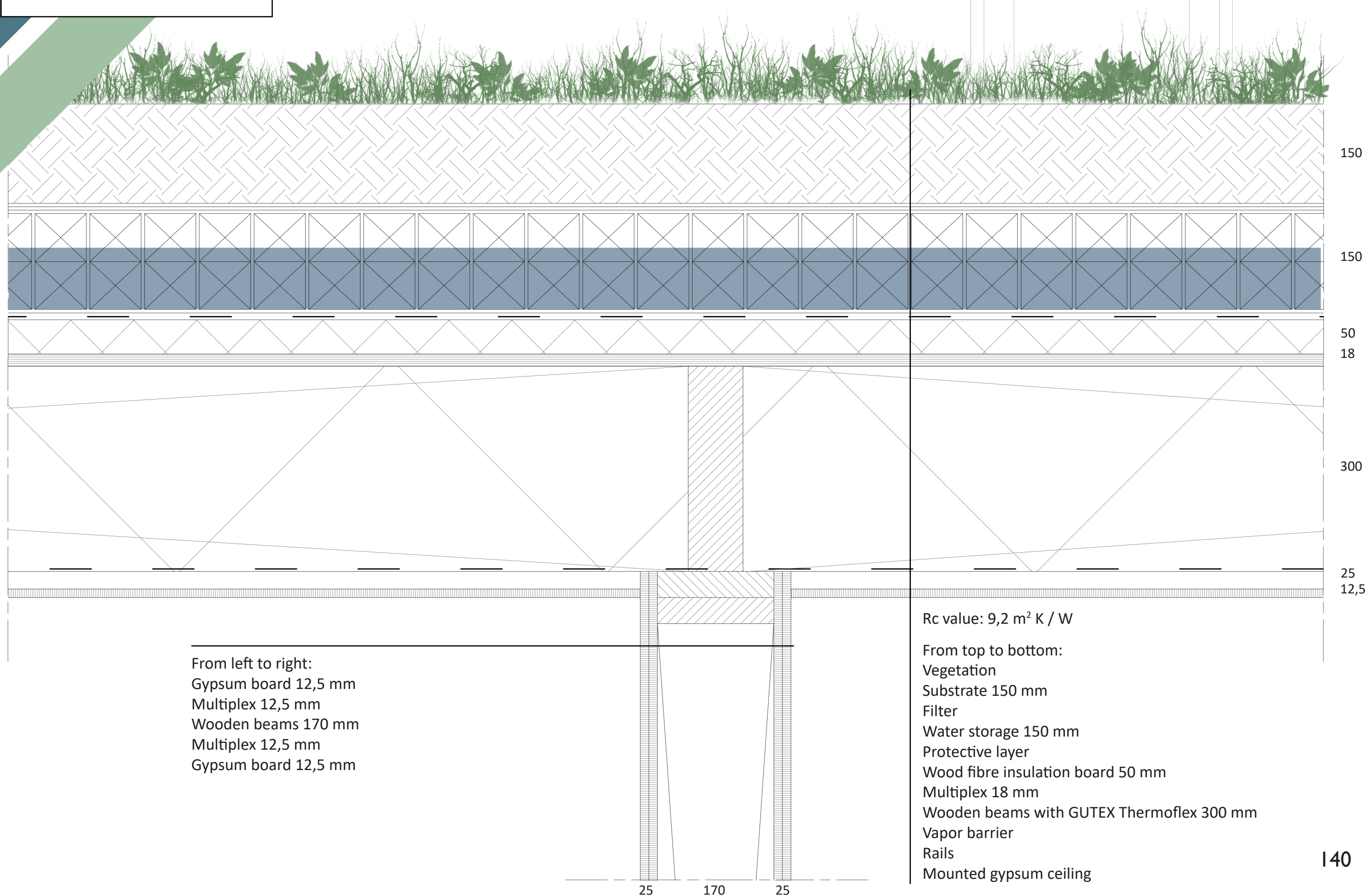
D03





D04

1:5



From left to right:  
Gypsum board 12,5 mm  
Multiplex 12,5 mm  
Wooden beams 170 mm  
Multiplex 12,5 mm  
Gypsum board 12,5 mm

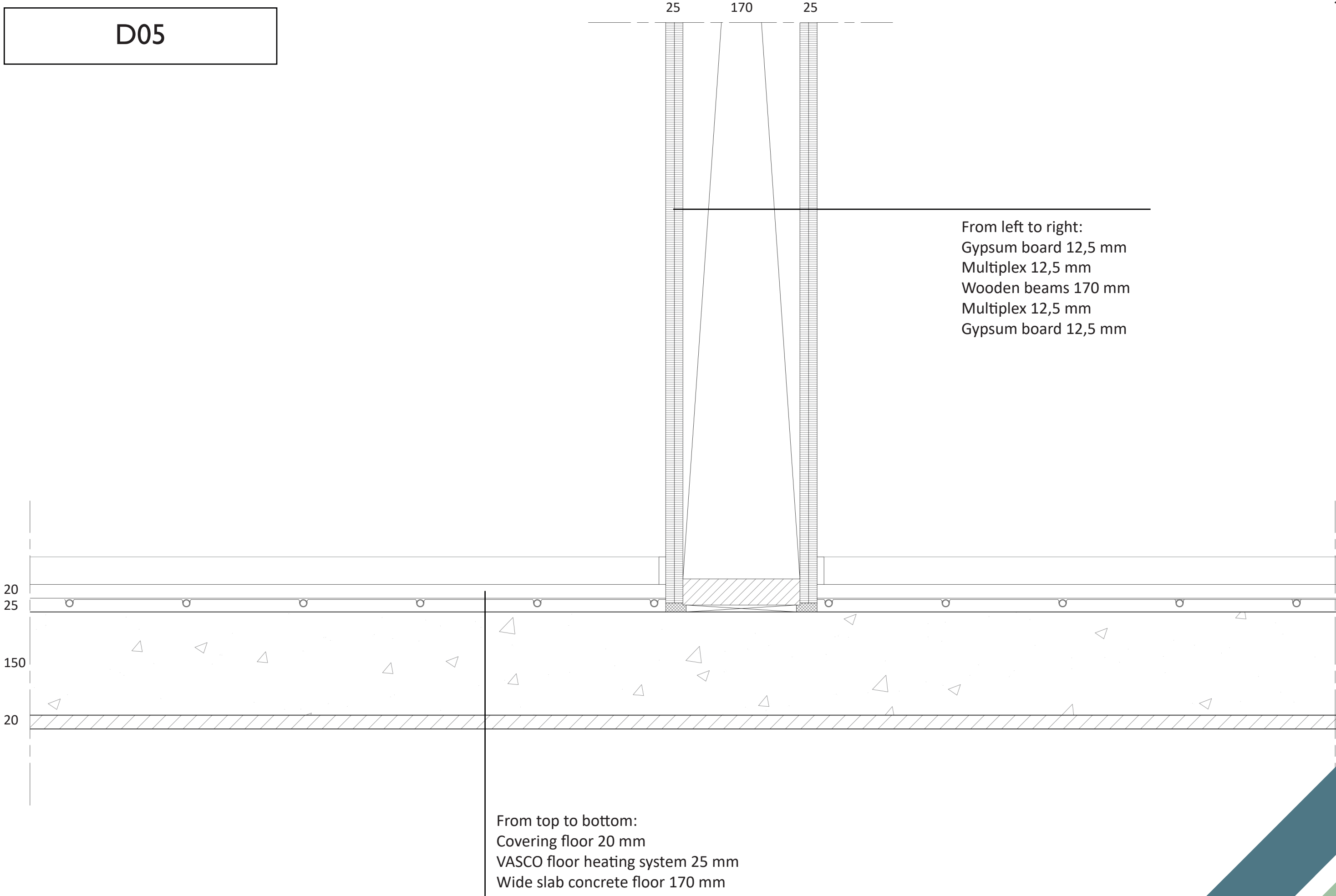
Rc value: 9,2 m² K / W

From top to bottom:  
Vegetation  
Substrate 150 mm  
Filter  
Water storage 150 mm  
Protective layer  
Wood fibre insulation board 50 mm  
Multiplex 18 mm  
Wooden beams with GUTEX Thermoflex 300 mm  
Vapor barrier  
Rails  
Mounted gypsum ceiling

140

D05

1:5





D06

1:5

Wooden frame parapet

Smart Flow Control

150

150

50

18

300

25

12,5

Rc value: 5,6 m<sup>2</sup> K / W

From left to right:  
Wooden facade (platowood)  
Air cavity with battens 38 mm  
Waterproofing membrane  
Wood fibre insulation board 40 mm  
Multiplex 8 mm  
Wooden beams with GUTEX Thermoflex 170 mm  
Vapor barrier  
Multiplex 12,5 mm  
Gypsum board 12,5 mm

Rc value: 9,2 m<sup>2</sup> K / W

From top to bottom:  
Vegetation  
Substrate 150 mm  
Filter  
Water storage 150 mm  
Protective layer  
Wood fibre insulation board 50 mm  
Multiplex 18 mm  
Wooden beams with GUTEX  
Thermoflex 300 mm  
Vapor barrier  
Rails  
Mounted gypsum ceiling

D07

1:5

Rc value: 5,6 m<sup>2</sup> K / W

From left to right:

Wooden facade (platowood)

Air cavity with battens 38 mm

Waterproofing membrane

Wood fibre insulation board 40 mm

Multiplex 8 mm

Wooden beams with GUTEX Thermoflex 170 mm

Vapor barrier

Multiplex 12,5 mm

Gypsum board 12,5 mm

From top to bottom:

Covering floor 20 mm

VASCO floor heating system 25 mm

Wide slab concrete floor 170 mm

20

25

150

20

I43



D08

1:5



## DETAILS

The existing roof is extra insulated to reach a high  $rc$  value. The goal for the existing facades and roofs was to reach the  $rc$  value that is required for new constructions. For the solar panel façade, the energy façade is used.

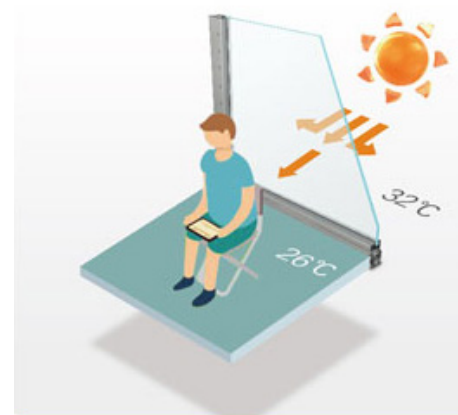
Gutex wood fibre insulation is used, because it is a biobased and sustainable material. The Dry Floor Heating System is placed on top of the existing floor. This system is very suitable for timber construction and renovation. In this way the radiators aren't needed anymore, which is way more sustainable.

Vacuum glass is used, as it is very thin and it absorbs sounds very well and has a high thermal insulation.

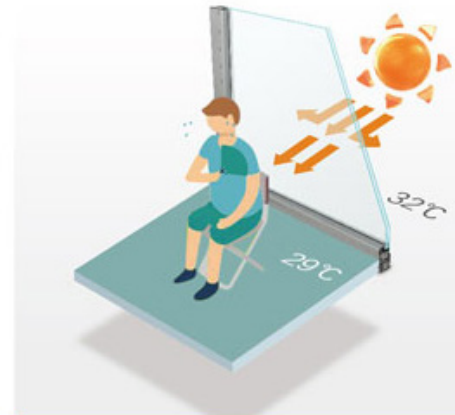
It is a blue green roof, where rainwater is stored and regulated. Because this roof is quite heavy, the timber construction should be 300 mm thick.

The smart flow control of the blue green roof controls the water. When heavy rain is expected, the water will be drained, so the water storage is ready for the rainfall. In other cases the water will be used to irrigate the green roof.

For the new green plinth, an irrigation system integrated in the façade. The frame is attached to the existing sand lime inner wall.



Vacuum Glass  $0.44W/(m^2 K)$



Isolatieglas  $1.2W/(m^2 K)$

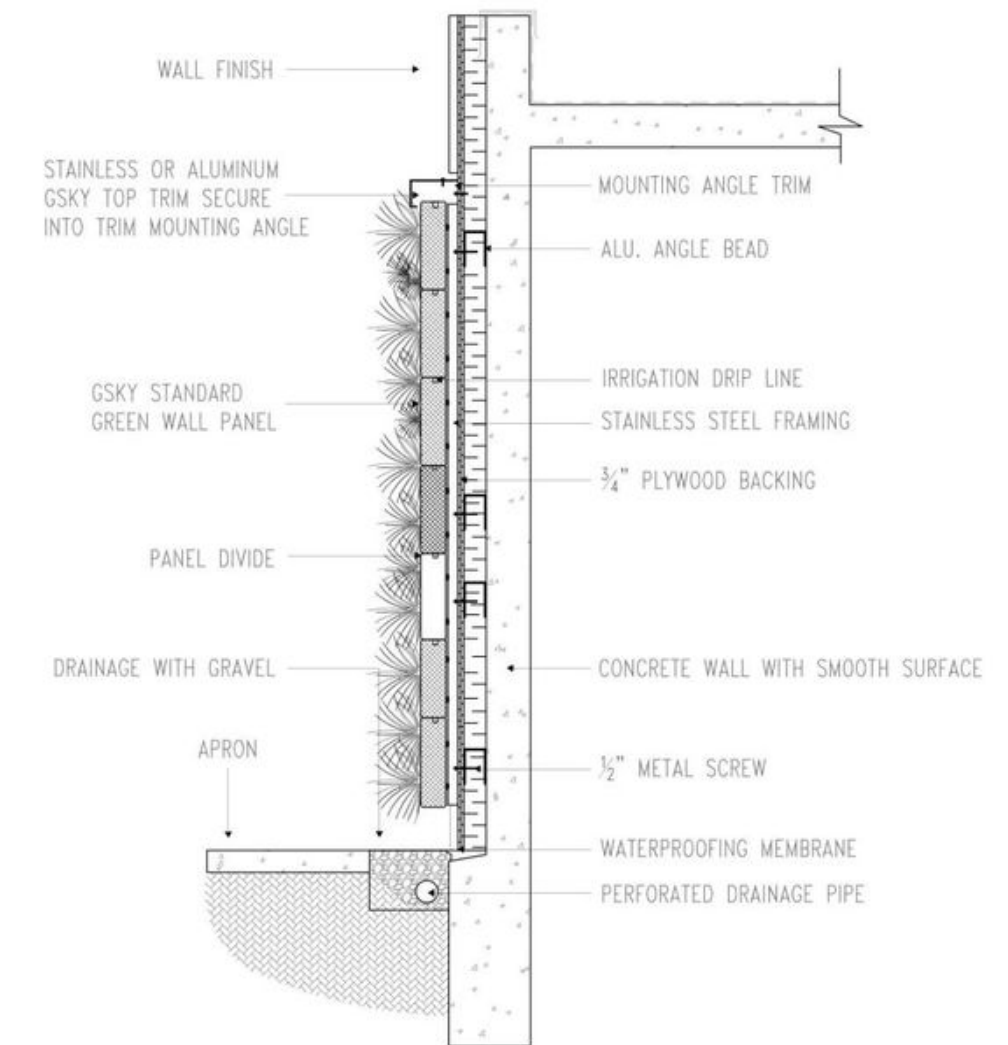


Vacuum Glass  $RW > 36dB$



Isolatieglas  $Rw > 29dB$

BENGglass (vacuum glass)



green wall



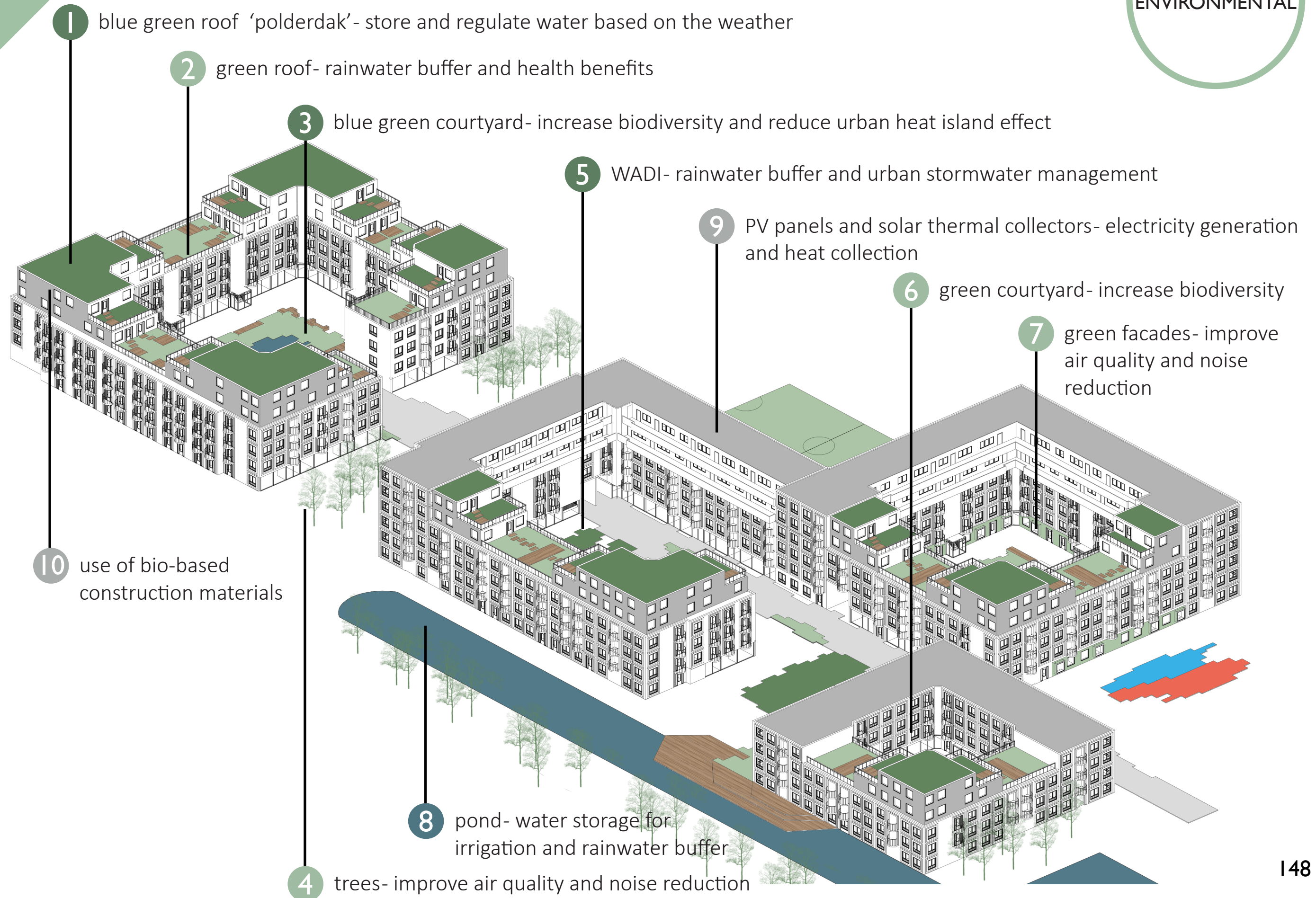


# CONCLUSION



## BENEFITS - QUALITATIVE

### ENVIRONMENTAL



BENEFITS - QUANTITATIVE



blue green roof



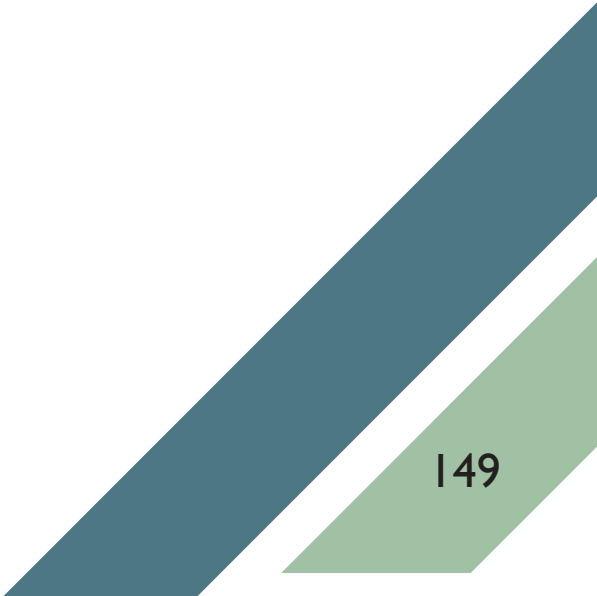
urban greenery



green facade



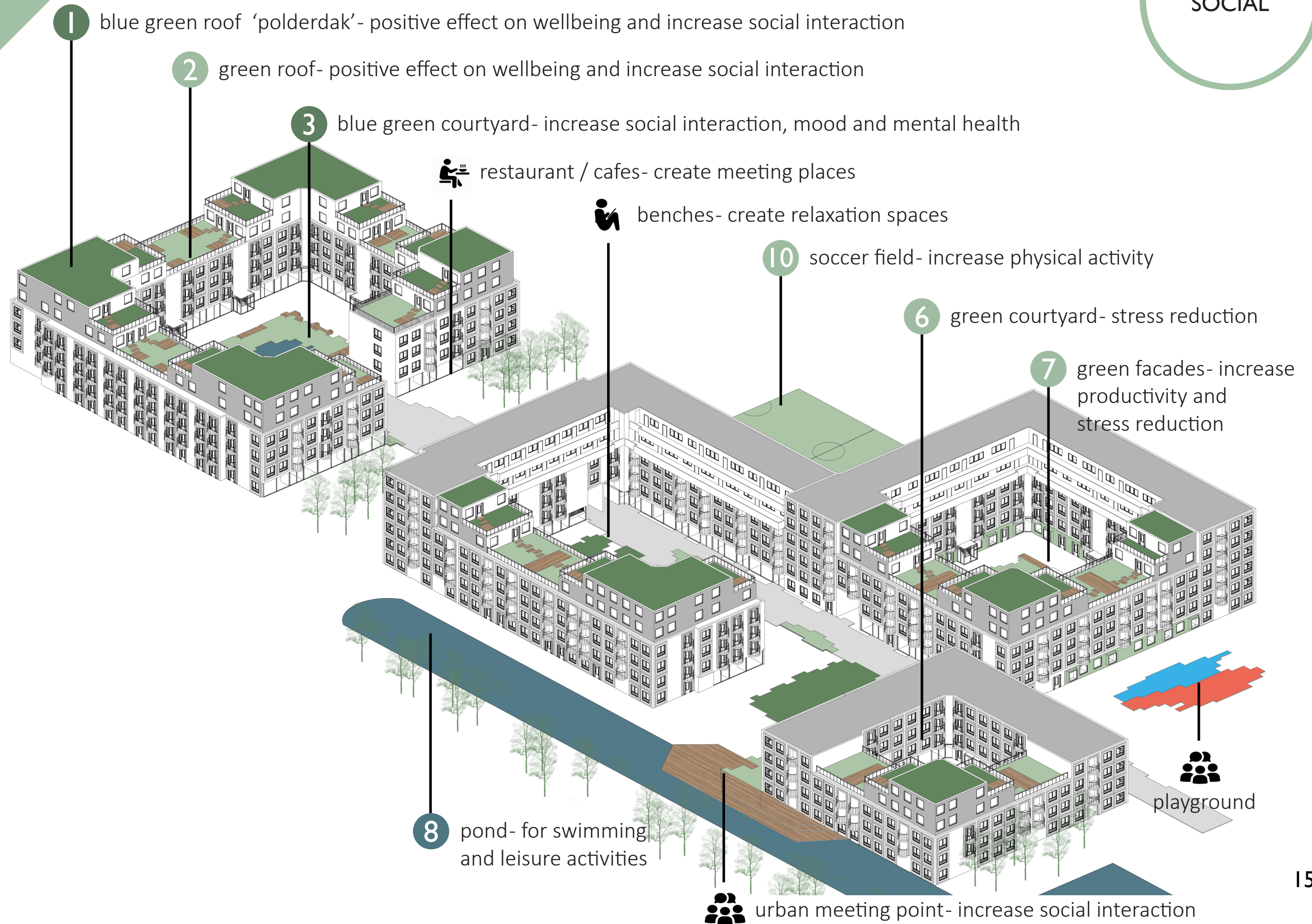
green roof





## BENEFITS - QUALITATIVE

SOCIAL



## BENEFITS - QUANTITATIVE

SOCIAL



entrepreneurs



artists HCC



students

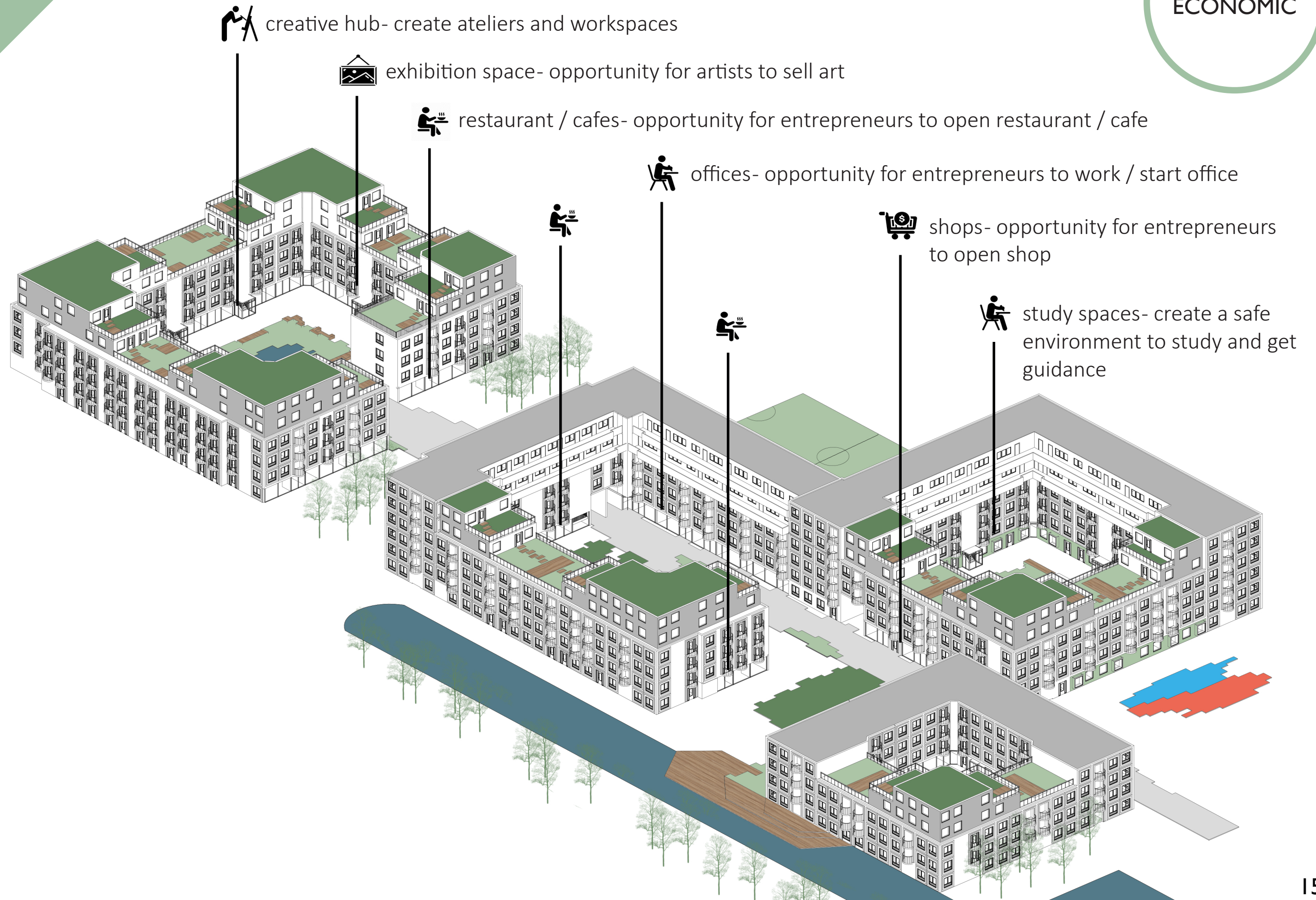


visitors




## BENEFITS - QUALITATIVE

ECONOMIC



## BENEFITS - QUANTITATIVE

ECONOMIC

  
study spaces

1480 m<sup>2</sup>

  
creative hub

1190 m<sup>2</sup>

  
shops

680 m<sup>2</sup>

  
restaurants  
/ cafes

670 m<sup>2</sup>

  
offices

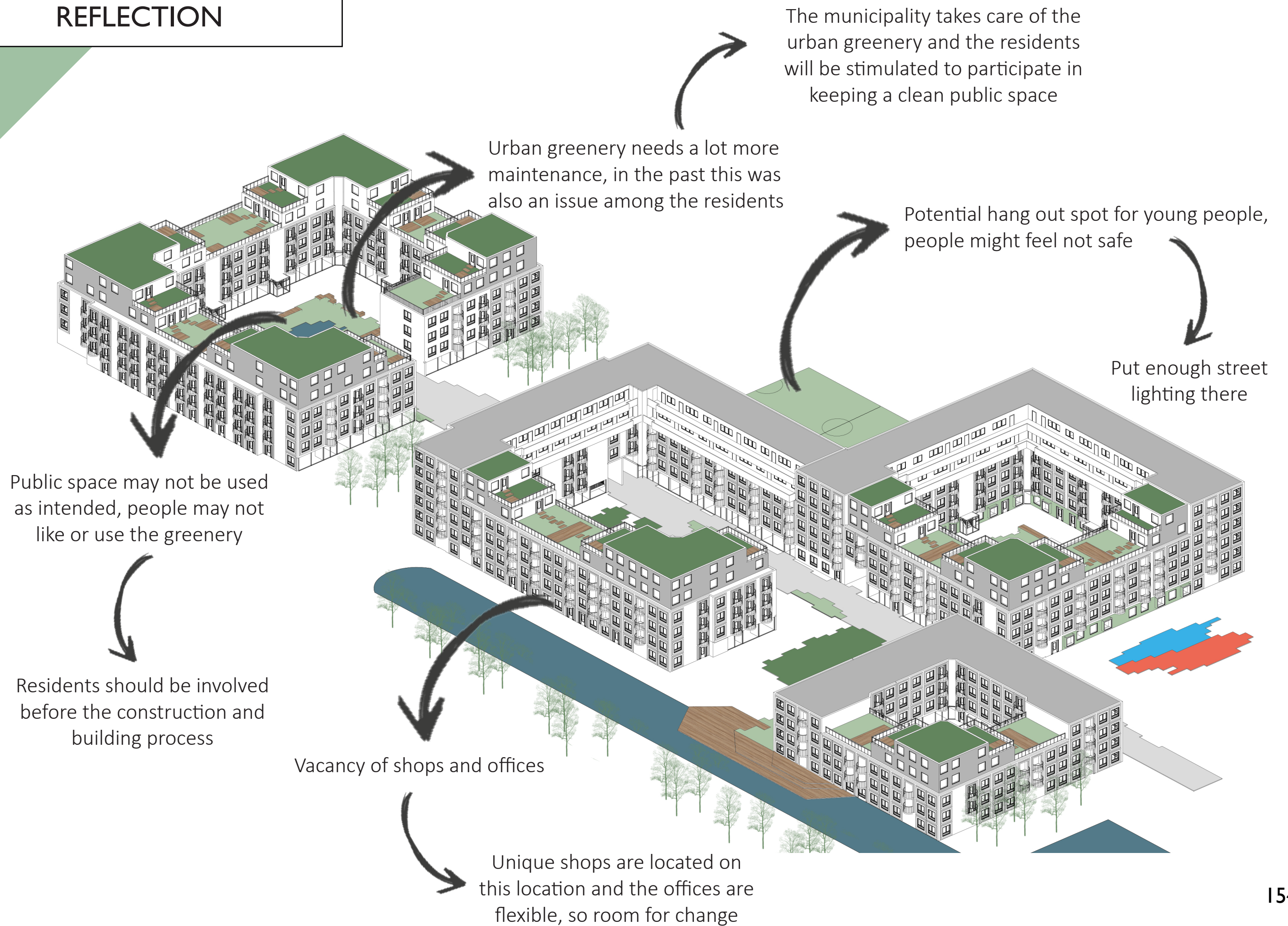
540 m<sup>2</sup>

Too little offices and a lot of study spaces

Create flexible coworking spaces



## REFLECTION



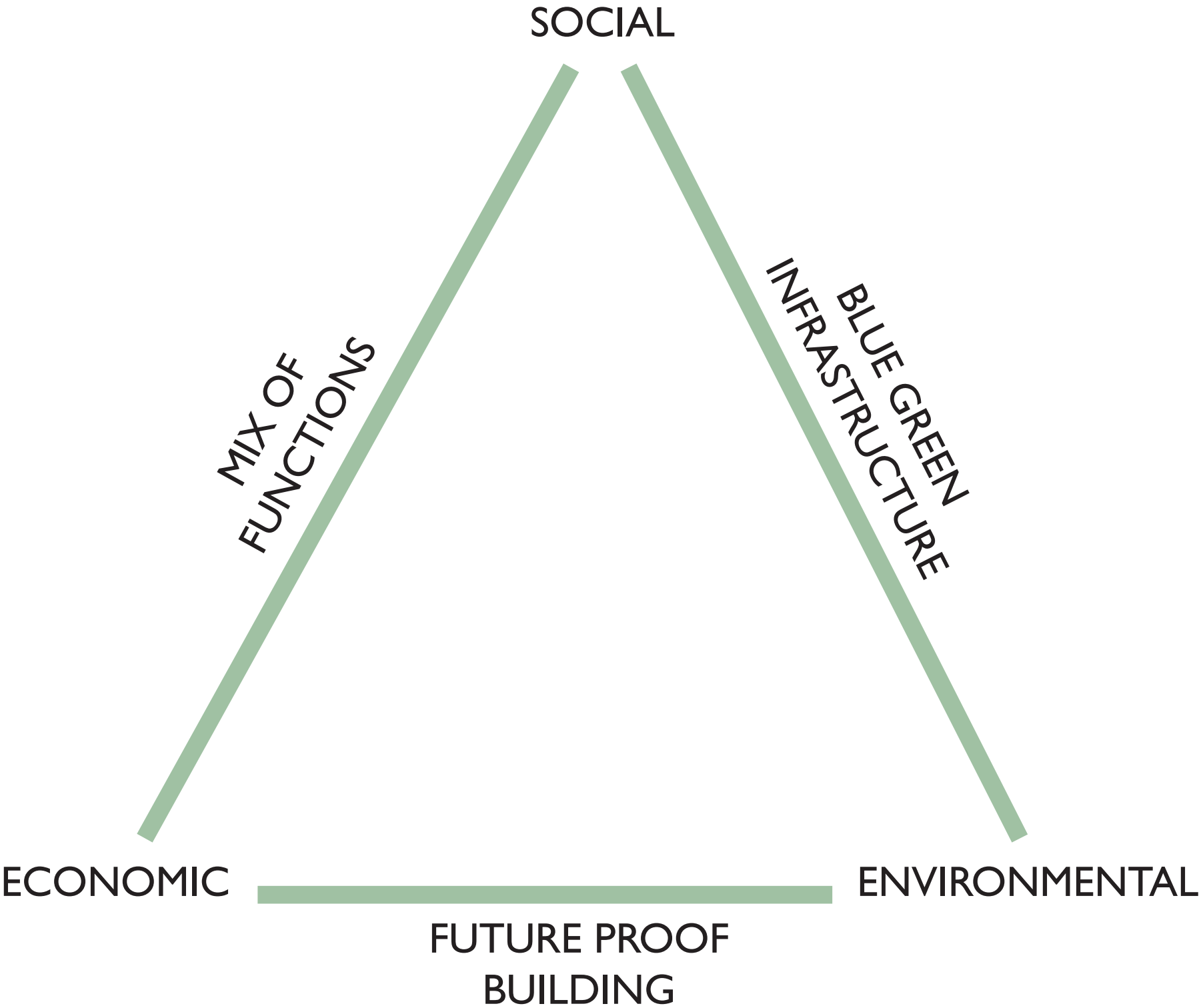
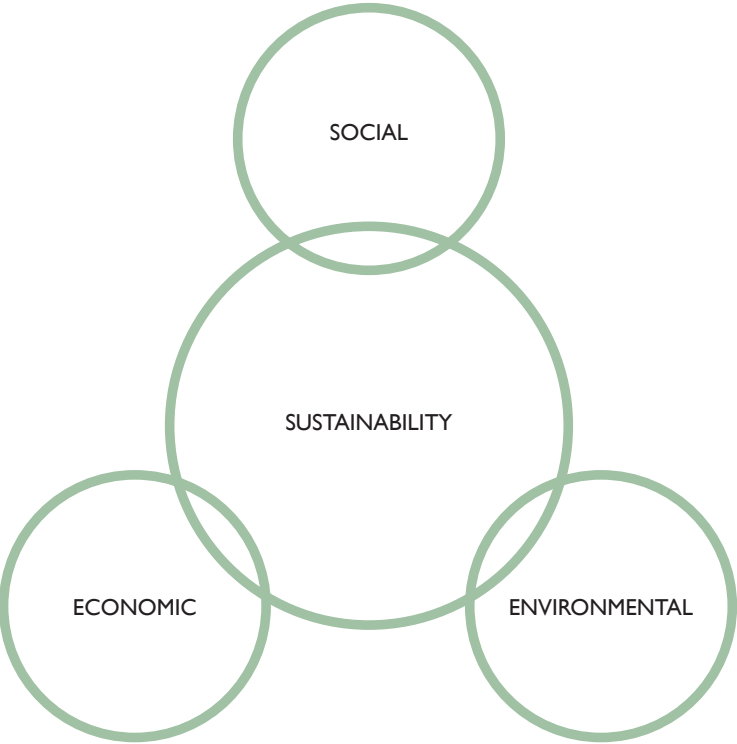
# CONCLUSION

After discussing all aspects of my design, I will go back to the beginning. The goal was to future proof Heesterveld on social, economic and environmental levels.

For the future proofing on the environmental level mainly blue green elements are used. The green roofs are used as rainwater buffer, just as the wadis and ponds. The green courtyards are there to increase biodiversity and reduce the urban heat island effect. The trees improve the air quality and reduce the noise. The pv panels on the roof and facades are used to generate electricity and the new materials are all biobased. This is part of the rehabilitation of the building. The existing buildings are insulated on the inside to make them more sustainable. The existing windows are also replaced, in order to have a better Rc value.

On a social level, blue green elements are used, in combination with new functions in the public space. The green roofs and courtyards have a positive effect on wellbeing and increase the social interaction. Green courtyards are also used for stress reduction. Water is used for swimming and leisure activities. Cafes and urban meeting points are created to increase social interaction.

To improve the economic situation, new functions are placed on the ground floor. In order to create opportunities for the residents of Heesterveld to open restaurants, shops or offices or sell their art. The study spaces will also reduce the juvenile crime in this neighbourhood. The upgrading of the existing buildings also has economic benefits, in this way will be future proof and can last much longer. This is very beneficial, as demolition the existing building and constructing a new building is very expensive.

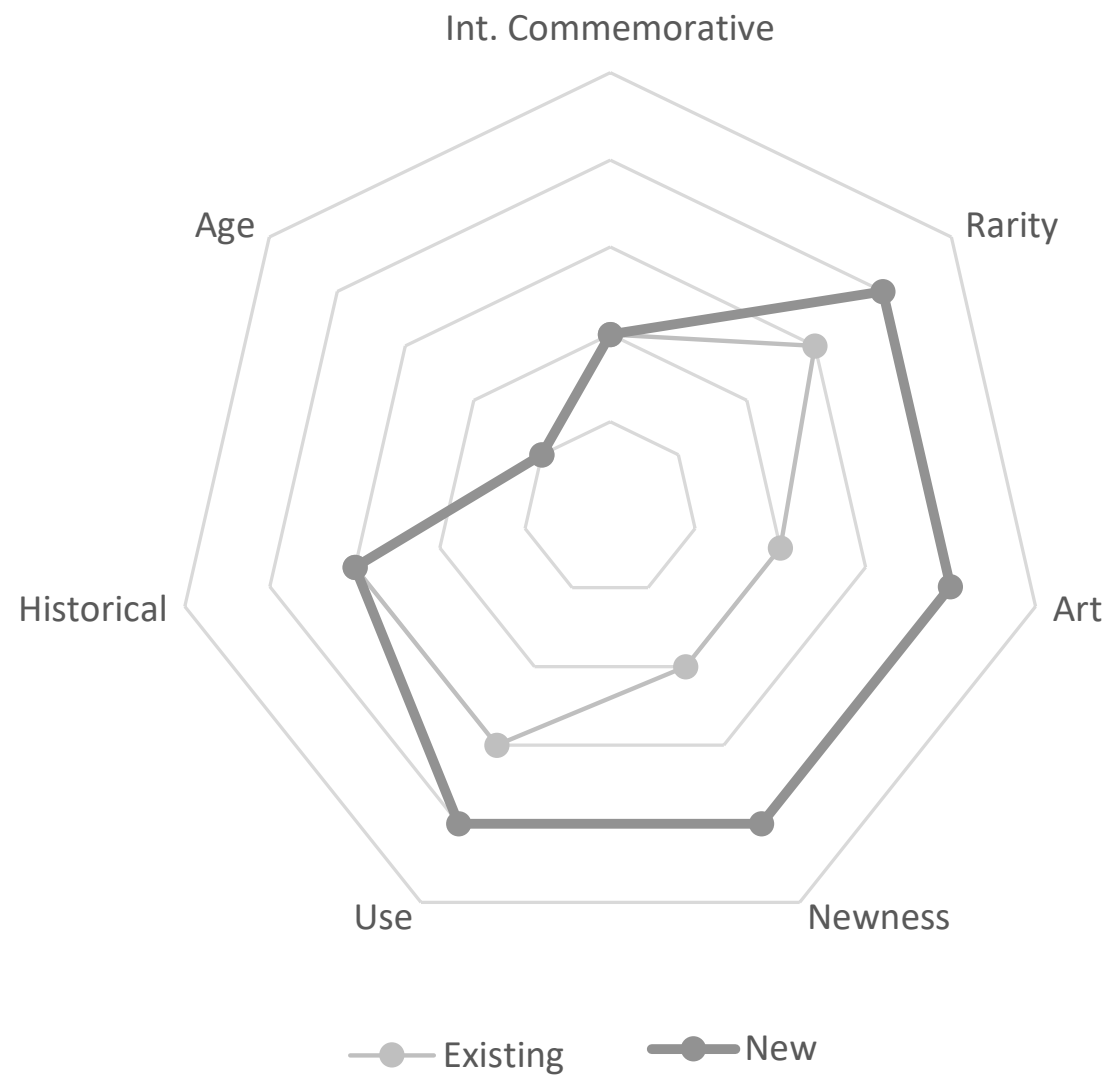




# VALUE ASSESSMENT

The values that will be improved or emphasized are visible here.  
The rarity and art value will be increased by preserving and expanding the creative community. The newness value will improve due to the sustainable measurements being taken. The use value will increase due to the addition of public functions. The historical value also increase gradually, due to the fact that Heesterveld will be future .

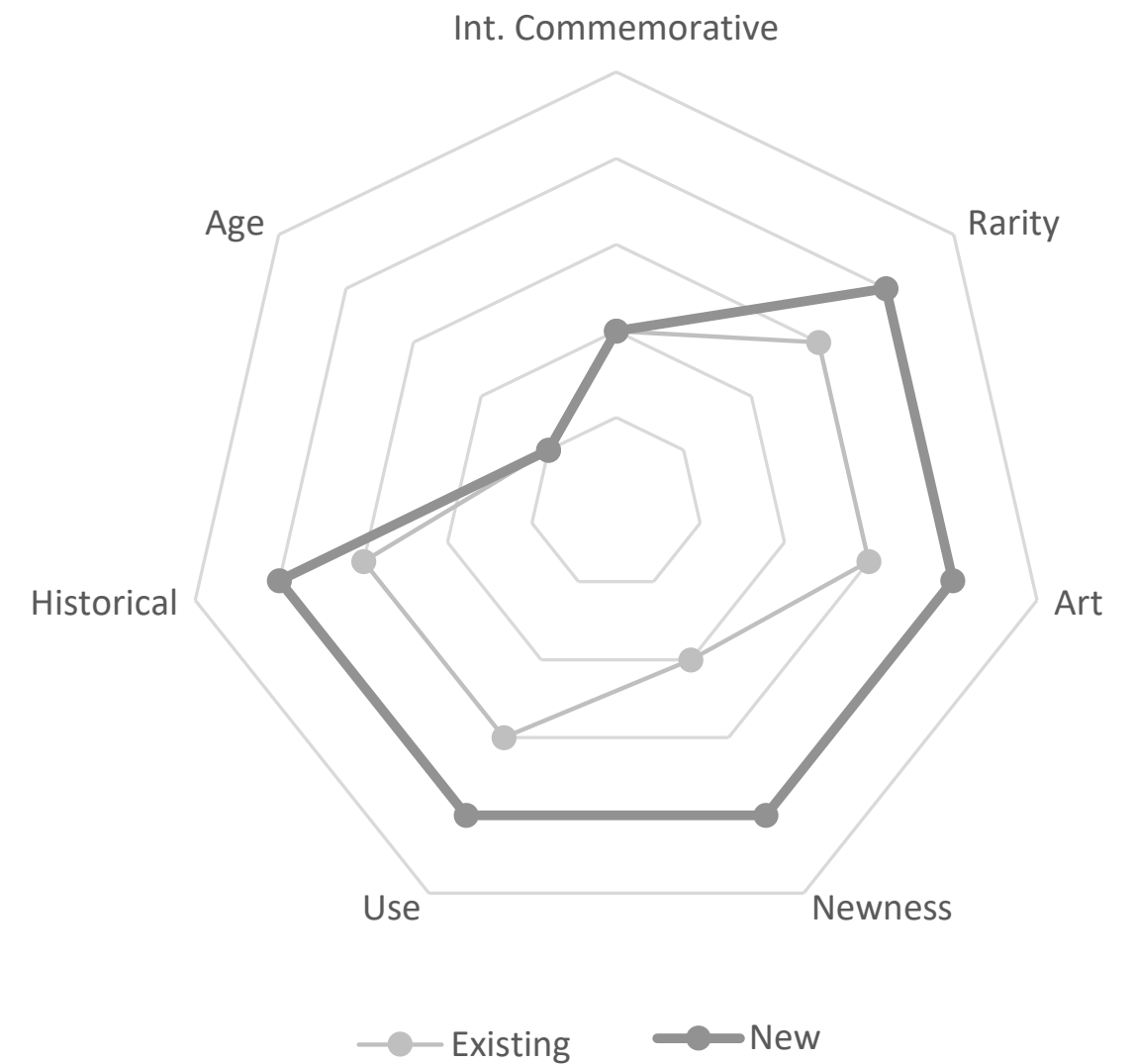
## URBAN



Urban:  
- surroundings / setting  
- site  
- spirit of place

(Brand & Riegl)

## BUILDING



Building:  
- skin  
- structure  
- space plan  
- surfaces  
- services  
- stuff

(Brand & Riegl)





# BIBLIOGRAPHY

Andreucci, M. B., Russo, A., & Olszewska-Guizzo, A. (2019). Designing Urban Green Blue Infrastructure for Mental Health and Elderly Wellbeing. *Sustainability*, 11(22). doi:10.3390/su11226425

Blom, T., Cha, M. J., Ruijter, M. d., Hu, Y., Kopp, M., Li, K., Lichtenveldt, S., Louwerens, C., Megens, J. F., Messinger, K., Nugraha, N., Obeid, R., Oosterhuis, R., Sacevicius, M., Tilman, A., Verhoef, J., Vrisekoop, S. (2020). H-Buurt collective research.

Bogar, S., & Beyer, K. (2015). Green Space, Violence, and Crime: A Systematic Review. *Trauma, violence & abuse*, 17. doi:10.1177/1524838015576412

Branas, C. C., Cheney, R. A., MacDonald, J. M., Tam, V. W., Jackson, T. D., & Ten Have, T. R. (2011). A Difference-in-Differences Analysis of Health, Safety, and Greening Vacant Urban Space. *American Journal of Epidemiology*, 174(11), 1296-1306. doi:10.1093/aje/kwr273

Council of Europe. (2011). Convention on the Value of Cultural Heritage for Society (Faro Convention, 2005). Retrieved from <https://www.coe.int/en/web/culture-and-heritage/faro-convention>

Dinther, D. v., et al. (2016). "Designing green and blue infrastructure to support healthy urban living."

Finlay, J., Franke, T., McKay, H., & Sims-Gould, J. (2015). Therapeutic landscapes and wellbeing in later life: Impacts of blue and green spaces for older adults. *Health Place*, 34, 97-106. doi:10.1016/j.healthplace.2015.05.001

Gabrielle, B. V. (2005). Walking, emotion, and dwelling: Guided tours in Prospect Heights, Brooklyn. *Space and Culture*, 8(4), 459-471.

Garvin, E. C., Cannuscio, C. C., & Branas, C. C. (2013). Greening vacant lots to reduce violent crime: a randomised controlled trial. *Injury Prevention*, 19(3), 198-203. doi:10.1136/injuryprev-2012-040439

Gemeente Amsterdam. (2020). Kernopgaven. Retrieved from <https://www.amsterdam.nl/bestuur-organisatie/volg-beleid/coalitieakkoord-uitvoeringsagenda/fijne-buurt/omgevingsvisie-0/overzicht/kernopgaven/#h9d2cd2c3-beba-4c37-976f-ea5b64501af8>

Gemeente Amsterdam. (2019). Verkenning kansen H-buurt.

Gemeente Amsterdam Zuidoost. (2019). Gebiedsplan 2020 Bijlmer-Centrum.

Ginzarly, M., Rodgers, A. P., & Teller, J. (2019). Mapping historic urban landscape values through social media. *Journal of Cultural Heritage* 36, 1-11.

Harper, D. (2002). Talking about pictures: A case for photo elicitation. *Visual studies*, 17(1), 13-26.

Hennink, M., Hutter, I., & Bailey, A. (2020). In-depth interview. In *Qualitative research methods* (p. 108-131). SAGE Publications Limited.

Hennink, M., Hutter, I., & Bailey, A. (2020). Data Preparation and Developing Codes. In *Qualitative research methods* (p. 207-234). SAGE Publications Limited.

Howard, P. (2003). Selling Heritage. In *Heritage: management, interpretation, identity* (p. 102-146). Continuum.

Karssenberg, H., Laven, J., Glaser, M., & Hoff, M. v. t. (2016). The city at eye level. Second and extended version. . Utrecht: Eburon Academic Publishers. Delft, the Netherlands.

Kuo, F. E. (2001). Coping with Poverty: Impacts of Environment and Attention in the Inner City. *Environment and Behavior*, 33(1), 5-34. doi:10.1177/00139160121972846

Kuo, F. E., & Sullivan, W. C. (2001). Aggression and Violence in the Inner City: Effects of Environment via Mental Fatigue. *Environment and Behavior*, 33(4), 543-571. doi:10.1177/00139160121973124

Kuo, F. E., & Sullivan, W. C. (2001). Environment and Crime in the Inner City: Does Vegetation Reduce Crime? *Environment and Behavior*, 33(3), 343-367. doi:10.1177/0013916501333002

Lee, A. C. K.; Jordan, H. C.; Horsley, J. (2015) Value of urban green spaces in promoting healthy living and wellbeing: prospects for planning. *Risk Manag Healthc Policy*. (p. 131-137) <https://doi.org/10.2147/RMHP.S61654>

Ministerie van Binnenlandse Zaken en Koninkrijksrelaties. (2018). Dimensies en indicatoren. Retrieved from <https://www.leefbaarometer.nl/page.php?page=indicatoren>

Ministerie van Binnenlandse Zaken en Koninkrijksrelaties. (2018). Leefbaarheidssituatie. Retrieved from <https://www.leefbaarometer.nl/kaart/?indicator=0&schaalniveau=0&periode=2&referentiekaart=1&locatie=bijlmer&latitude=&longitude=#kaart>

Ren, Y., Qu, Z., Du, Y., Xu, R., Ma, D., Yang, G., Shi, Y., Fan, X., Tani, A., Guo, P., Ge, Y., Chang, J. (2017). Air quality and health effects of biogenic volatile organic compounds emissions from urban green spaces and the mitigation strategies. *Environmental Pollution*, 230, 849-861. doi:<https://doi.org/10.1016/j.envpol.2017.06.049>

Rostami, R., Lamit, H., Khoshnava, S. M., Rostami, R., & Rosley, M. S. F. (2015). Sustainable Cities and the Contribution of Historical Urban Green Spaces: A Case Study of Historical Persian Gardens. *Sustainability*, 7(10), 13290-13316. Retrieved from <https://www.mdpi.com/2071-1050/7/10/13290>

Sobhani Sanjbod, H., Hermans, L. M. C., Reijnders, D. A. H., & Veldpaus, L. (2016). Captain, where can we find the attributes? The Historic Environment: Policy & Practice, 7(2), 177-188. <https://doi.org/10.1080/17567505.2016.1172786>

Tarrafa Silva, Ana & Pereira Roders, Ana. (2012). Cultural Heritage Management and Heritage (Impact) Assessments.

Vaeztavakoli, A., Lak, A., & Yigitcanlar, T. (2018). Blue and Green Spaces as Therapeutic Landscapes: Health Effects of Urban Water Canal Areas of Isfahan. *Sustainability*, 10(11). doi:10.3390/su10114010

Well, F., & Ludwig, F. (2020). Blue-green architecture: A case study analysis considering the synergetic effects of water and vegetation. *Frontiers of Architectural Research*, 9(1), 191-202. doi:<https://doi.org/10.1016/j.foar.2019.11.001>

<https://archief.amsterdam/beeldbank/?mode=gallery&view=horizontal&q=heesterveld&rows=1&page=1>

<https://www.greenmatch.co.uk/solar-energy/solar-panels>

<https://www.rainproof.nl/toolbox/maatregelen/regenwatervijvers>

<https://www.rainproof.nl/toolbox/maatregelen/wadis>

<https://www.rainproof.nl/toolbox/maatregelen/greppels>

[https://www.platowood.nl/producten/toepassingen/gevelbekleding/?gclid=CjwKCAjwhYOFBhBkEiwASF3KGXUNqle02-4FyqUIxIlnIr-CshTXrGWp3cusvCSHmKT7X-7ux3ZN6BoCHjAQAvD\\_BwE](https://www.platowood.nl/producten/toepassingen/gevelbekleding/?gclid=CjwKCAjwhYOFBhBkEiwASF3KGXUNqle02-4FyqUIxIlnIr-CshTXrGWp3cusvCSHmKT7X-7ux3ZN6BoCHjAQAvD_BwE)

<https://www.dekroonprefab.nl/prefab-bouwelementen/hsb-vloeren/>

<https://www.kingspan.com/nl/nl-nl/producten/isolatie/vacuum-re-sol-pir-isolatie/isolatieplaten/w-all-in-one/w-all-in-one-basic-binnenisolatie-element>

<https://www.saint-gobain-solutions.nl/solutions/facade-solutions/energyfacade>

<https://www.groenebouwmaterialen.nl/houtvezelisolatie-gutex-thermoroom.html>

<https://vacuum.glass/>

<https://allecijfers.nl/buurt/hakfort-huigenbos-amsterdam/>

<https://gebiedinbeeld.amsterdam.nl/#/dashboard?gebied=DX20&wijk=T93&buurt=T93h&thema=Gebied%20in%20het%20kort>

<https://studioninedots.nl/project/antoni/>

<https://studioninedots.nl/project/rebel/>

<https://www.urbanvillageproject.com/>

<https://www.aemsen.com/barbizon>

<https://delva.la/projecten/tuin-johan-de-witthuis/>

<https://delva.la/projecten/smakkelaarsveld/>

<https://delva.la/projecten/ringersplein/>

<https://delva.la/projecten/leeuwesteyn/>

<https://nl.urbangreenbluegrids.com/projects/the-high-line-new-york/>

<https://www.temaland.com/housing-complex>

<https://johnozil.com/2018/08/21/green-building-design-technology/green-wall-detail/>

[http://landezine.com/index.php/2017/11/rivermark-by-fletcher-studio/?\\_\\_cf\\_chl\\_jschl\\_tk\\_\\_=6ae382bd509ee-4d5913531608a2d63fd7aaf8e02-1624785837-0-Aez3i0Fz33CS2YEYGGjCZnl2wDFoklFobkgBvTHSDHNQFjLgbwyaCk2ZsdDptEXh6uGrJxkaVN0VM-jEkIXLcu7Yr7L6-NzhfuF1sUbY3zO032JfO2Kq7N2awvxh4r3QkYK8U87FZeR-2RNQoXMv48WJiMUPYJ7AYmdRQyF-hyIBVyG3IVnWNR\\_HtWwweTlOp-zo8GpLL\\_O3BpO7iBJa0txvjISxbqRK8boiLFFA2SorjsUkvgtP9Oim\\_Rm30SRcrs-DLop7oUtqgrhw0g1L2YbB3CjdBhrn9Vhyrvq8EFOjP4VZrFBTKu1l\\_3tDMBrY-8neD768S7LDmy6-iXx6wWg3fFZwi-LAS5ibxQvasPZDzm9Vn-i0Kk5R-zjBj9MA1FtMRtSfcuhfTKWsRRQ1MD7P9YP7UuLaNAVkfo6ip7P2-O2\\_jz-maMHZWN3dZ\\_35qoTqnpOYfaGVXA6a9ipxxQp0QGCg](http://landezine.com/index.php/2017/11/rivermark-by-fletcher-studio/?__cf_chl_jschl_tk__=6ae382bd509ee-4d5913531608a2d63fd7aaf8e02-1624785837-0-Aez3i0Fz33CS2YEYGGjCZnl2wDFoklFobkgBvTHSDHNQFjLgbwyaCk2ZsdDptEXh6uGrJxkaVN0VM-jEkIXLcu7Yr7L6-NzhfuF1sUbY3zO032JfO2Kq7N2awvxh4r3QkYK8U87FZeR-2RNQoXMv48WJiMUPYJ7AYmdRQyF-hyIBVyG3IVnWNR_HtWwweTlOp-zo8GpLL_O3BpO7iBJa0txvjISxbqRK8boiLFFA2SorjsUkvgtP9Oim_Rm30SRcrs-DLop7oUtqgrhw0g1L2YbB3CjdBhrn9Vhyrvq8EFOjP4VZrFBTKu1l_3tDMBrY-8neD768S7LDmy6-iXx6wWg3fFZwi-LAS5ibxQvasPZDzm9Vn-i0Kk5R-zjBj9MA1FtMRtSfcuhfTKWsRRQ1MD7P9YP7UuLaNAVkfo6ip7P2-O2_jz-maMHZWN3dZ_35qoTqnpOYfaGVXA6a9ipxxQp0QGCg)





# REFLECTION

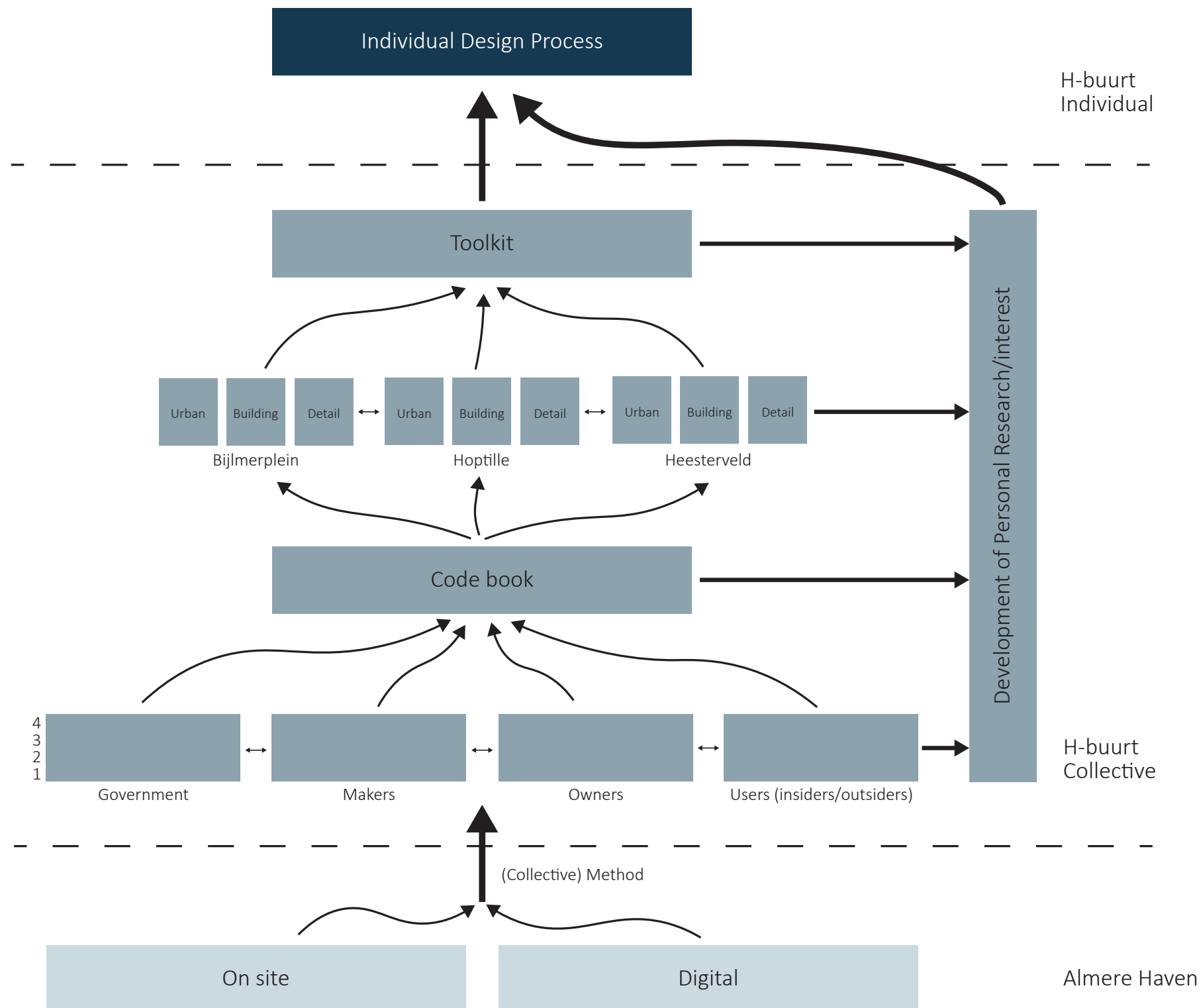


Figure 1: research proces

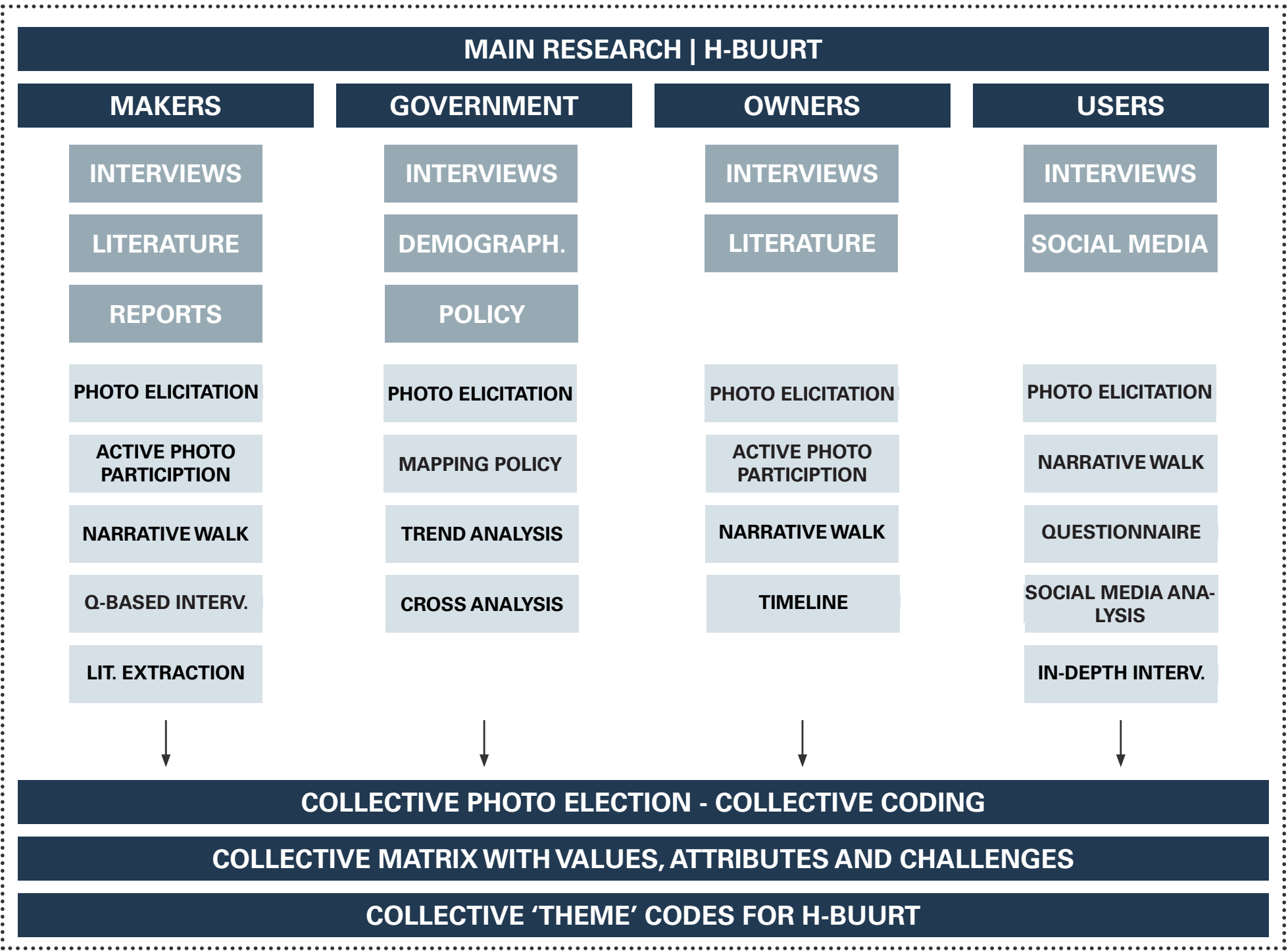
## Aspect 1 the relationship between research and design

In figure 1, an overview of the first part of the project is visible. The project start with a collective research part. After this collective analysis, research by design is conducted, where different scenarios are tested and finally a design strategy is chosen and elaborated. This scenario is then transformed into a design, after conducting literature research and analysis.

For the studio New Heritage, the research of the H-buurt started with a collective part. In this part, the values and attributes of the neighbourhood were investigated. This was done in four stakeholder groups: government, makers, owners and users. In this way, different viewpoints could be investigated in depth. We thought it was very important to look at different perspectives for this location. We didn't want to include only the user's perspective, but also the opinions of Ymere or the government for example, in order to gather as much relevant information as possible. This method worked really well. My group worked on the users perspective, we gathered information from social media, interviews and questionnaires. The interviews were sometimes a bit difficult, because people did not have a clear opinion or they did not want to cooperate. For the interviews, we decided with the whole group to ask open questions, so people would not be biased and participants would tell about aspects that were important in their opinion. In this way, people were free to talk about everything in the neighbourhood. This also resulted in quite some irrelevant information and information about aspects that could not be changed by us. The online questionnaires also contained some information which was not usable, because it was not filled in seriously. Next to this, a lot of information came out of the research, because we did around 60 interviews. This was very useful to get a good image of the different opinions.

A lot of information about the opinions of the different stakeholders was gathered and compared. This was done by using a collective photo set, which was shown to all stakeholders. The question: What positive and what negative aspects are visible on this picture? was asked and could thus be compared among the different groups. We selected this method in order to obtain comparable results. Because all stakeholders have a different view and perspective on the H-buurt, it was important for us to be able to compare all data and get useful conclusions out of it. By showing everyone the same picture, this was achieved. From this photo set, matrixes and specific themes for the H-buurt were established. It worked very well for me, because it was a clear overview of the problems and values in the area on different levels. The booklet with all the information was however very extensive and it was sometimes hard to find the key elements of the other stakeholder groups. The overview of the main research in the H-buurt is visible in figure 2.

# REFLECTION



After finishing the collective research, scenarios were elaborated in groups and an impact assessment of these scenarios was done. Eight themes for the scenarios were established: social; economy; ecology; aesthetics & identity; landscape & spatial diversity; access, type & functional mix; densification; and crime & safety. This was done in order to explore different themes and create very specific solutions for the area. This worked really well to explore freely what could be done on the site and it also contributed to finding out our interests.

The theme I worked on with my group was ecology and aesthetics & identity. The process started with a free brainstorm session and around 40 scenarios were developed in this session. This was really interesting to do, because everyone had a lot of ideas and suggestions, so it was very inspirational. After this, the 10 most interesting scenarios were chosen. We made an impact assessment on different scale levels, so the effect of the different scenarios is visible. And from this selection, 4 scenarios are chosen. This was done according to the personal interest of the group members. The scenarios were further elaborated and the risks and benefits were defined per scenario. The scenario I choose for the previous step was the implementing of a blue/green infrastructure in the H-buurt. I was really impressed by the many advantages of blue and green elements and I wanted to know more about that.

Figure 2: structure H-buurt research



# REFLECTION

I did a lot of literature research about blue green infrastructure and I looked at the benefits of integrating these elements into the design. Blue green elements have positive effects on health, social aspects, sustainable aspects, biodiversity, stormwater management, mood of people, stress levels and urban heat island effect. These aspects are all very relevant nowadays with the sustainability in mind, so I really wanted to include the blue green elements in my design, because there are so many positive aspects. Next to the environmental benefits, there are also a lot of social and well being aspects to the blue green infrastructure. This was very interesting in combination with the findings of the collective research. In the research, the stakeholders mentioned a lot of negative associations towards the public space and the safety of the H-buurt. I really wanted to combine those two aspects in my project, that is why I choose Heesterveld. The surroundings of Heesterveld were already quite green, but they are not used properly according to the users and the public space is also not appreciated by most visitors and residents. It is however located next to the metro station, which offers a great opportunity to create an urban and lively hotspot, which is not there at the moment. I think this approach of doing a lot of literature research about a specific topic is something I have not done much in my bachelor. The time I got for the projects in my bachelor was of course way shorter than the time for the graduation project. That is one of the reasons why this extensive research could take place, I really liked that aspect of the project. During the whole project, I could spend a lot more time doing research and exploring different design options. That is different than the projects in the bachelor, where a lot of drawings had to be produced in a short period of time, which made it impossible to do a lot of research. I think in this graduation project, the design choices are more thought-out and based on the research.

In order to make a preliminary design for P2, I looked at the values and the challenges of Heesterveld. The current values of Heesterveld are the cultural diversity, street art, its own identity and the presence of greenery. The challenges that were mentioned were the unsafe feeling, unintended use of public space, no diversity in public space or function and the lack of qualitative greenery. The main overarching challenge in Heesterveld is the public space. So the aim of the design was to improve the public space in order to solve the social, safety and ecological issues present in the neighbourhood, while maintaining the current values and identity.

I did this by implementing a blue and green infrastructure in whole design and creating new functions on the ground floor. The main functions were already determined in the beginning of the project. The combination of the P1 research and the vision of the municipality resulted in a plan for the ground floor. The four main functions are the expansion of ateliers and exposition space, new cafes and restaurants, study spaces, offices and shops. The elaboration of this concept and finding the right location for the functions was sometimes quite difficult. I sketched a lot and looked at the goals for the different buildings of Heesterveld. Together with the placing of the functions, I looked at the public space. This was also quite difficult, because there are a lot of possibilities and options. I tried to combine the new functions with the public space. This was quite challenging and it took the whole year to explore what the best option for the public space is. I tried to look at a lot of references and read literature about the effects of blue green infrastructure, to make a good decision. The process of designing the ground floor and public space was quite hard, I tried a lot of options and I did a lot of research. I tried to work on different levels, like the floorplans, sections and 3D views, to get a good understanding of the different options. Because the graduation project takes a year, I had the time to look deeper into these subjects and really investigate what the best solution is. This also resulted in losing quite some time researching the same topic and going back to the same issue. In other projects, I would come to a conclusion or decision sooner in order to finish the project in time.

Aspect 2 the relationship between your graduation (project) topic, the studio topic (if applicable), your master track (A,U,BT,LA,MBE), and your master programme (MSc AUBS)

The studio new Heritage focuses on the qualities and values of 20th century heritage. The central design question of the studio is: how could renovation, replacement and/or densification strengthen the qualities and help solving current problems without compromising heritage values and identities, where these exist? In my graduation project, first the qualities and problems of Heesterveld are investigated. Heesterveld has a very strong identity, which needs to be preserved and strengthened, this is done in my project. The theme of sustainability is of course very relevant in the whole master track and architecture master programme. The dwellings itself will become more sustainable, just as the public space, with the help of a blue green infrastructure. This implementation has a positive effect of the urban heat island effect and the air purifying for example.

Aspect 3 Elaboration on research method and approach in relation to the graduation studio methodical line of inquiry, reflecting thereby upon the scientific relevance of the work.

The analysis of the buildings in Heesterveld and the design project itself could also be relevant in the discussion about 100% heritage. The buildings from the 70s and 80s are relatively young and not necessarily seen as heritage. This discussion is started by the TU delft professors Ana Pereira Roders and Uta Pottgiesser in their lectures in 2019. The approach of 100% heritage is also a very sustainable and circular approach, as it assumes that every building is heritage and can be reused. In this way, buildings will not be demolished that easily and will be carefully considered. Nowadays, it is of course very important to think about sustainability and circularity, and this approach is a good starting point for transformation projects. The analysis can also be used to give a new definition of heritage, new values can be discovered in the analysis. The Faro Convention also emphasises the importance of considering a wide range of objects and places as heritage, and not only the very old buildings (Council of Europe, 2011). The relation between communities and society is also very important for them. This project could contribute to a wider understand of heritage and show that 70s and 80s architecture can also be considered as heritage.

Aspect 4 the relationship between the graduation project and the wider social, professional and scientific framework

This research is relevant for the housing cooperation Ymere. The effect on a blue green infrastructure on the social and safety aspects could be really interesting and they could take some aspects from the research and design to implement in the neighbourhood. Ymere is also interested in improving the social structure and the safety in the H-buurt, so they could use the design as a guideline to improve these aspects. The transformation of monofunctionally to multifunctionality could also be of relevance for Ymere.

The Cultural Heritage Agency of the Netherlands is also involved in this project. This research is a preparations for their planned research about value-based energy efficient renovation models.

The results can also be very useful for the municipality of Amsterdam. If they know what the problems of the residents are, they can anticipate on these problems and change these things. The problems and challenges of the public space and the safety are mainly important to the municipality. The residents could also benefit from this research, because the problems can be tackled and the H-buurt could be improved. The municipality can also benefit from the design itself, as it focuses on sustainability, greenery and a mix of functions. The green aspect also influences the social and safety in the neighbourhood. So the blue green infrastructure could be an interesting solution for the safety and social problems in Heesterveld and maybe also in the rest of the Bijlmer.

## REFLECTION

The vision of the municipality of Amsterdam is to make Amsterdam climate proof and carbon neutral, inclusive and affordable, liveable and affordable, economically vital and circular and safe and healthy (Gemeente Amsterdam, 2020). This design could therefore contribute to ideas how to improve these aspects. The design covers most of these themes of the vision of the municipality.

This project can also contribute to other research on new heritage. The research methods of the collective research can be used for other project locations with 70s and 80s architecture. The same method and approach could be used in several areas. Other new heritage research can learn from the mistakes of this research and continue with the positive outcomes.

Another important problem nowadays is the lack of affordable housing. Before 2030, 1 million homes need to be built. In my project, there will be a few additional dwellings on top of the existing buildings. This is however not enough to contribute largely to the housing crisis. Around Heesterveld, a lot of new projects are going to be built. In the Amstel III district, a lot of dwellings are added. But also closer to Heesterveld, on the location of the parking garage and along the A9. Heesterveld is a very exclusive neighbourhood and the residents really appreciate the colourful and multi-cultural identity of Heesterveld. That is why the neighbourhood will be clearly distinguished from the other areas around it and maintain its human scale environment without too many additions. So the social and cultural aspects of the neighbourhood are more important in my opinion than the lack of affordable housing. Tackling the social issues, like the problems in the public space, is more relevant in Heesterveld. That is also the conclusion from the collective research, people mention the lack of eyes on the street and the unsafe feeling for example. This is also in line with the vision of the municipality. They have 5 main goals they want to achieve. First of all, they want to give young people equal opportunities. Secondly, they want to reduce the juvenile crime which is quite high in this area. They want to improve the social accessibility by creating more informal activities. They also want to strengthen the entrepreneurship in the area and lastly also art and culture. These aspects are all taken into account in the design and are very relevant in the social framework.

### Aspect 5 the ethical issues and dilemmas

In the research, some small ethical issues and dilemmas arose. The interviewees of the collective research wanted to stay anonymous in the research and did not want the information to be shared with other parties than the TU Delft. All the transcripts and interviews were in the appendix and this appendix was also going to be shared with Ymere. To make sure everyone was still anonymous, all names were left out of the transcripts. The information from the makers and academics was quite personal, so this was all changed and anonymized.

If the project will be realised, there could also arise a few ethical problems. The first ethical issue is that the public space will be changed and therefore also change the social structure of the H-buurt will change. Gentrification could be a real problem by upgrading the public space by adding a blue green infrastructure and more commercial functions. Dwellings and storage spaces on the ground floor will also be places somewhere else, this could result in people losing their house or storage space. There will of course be a replacement for these people in the design, but it can of course occur that people are not satisfied with that solution. It could also be a problem that green spaces will not have the desired effect and create and even more criminality takes place in the neighbourhood. This cannot be foreseen beforehand, so this could be an ethical risk of the design.



