



RESEARCH BOOKLET

Adapting 20th Century Heritage

Vacant Police Real Estate

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Delft University of Technology

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REFLECTION PAPER

Relationship Between Graduation Project with Studio Topic, Master Track, and Master Programme

The transformation of the National Police in the Netherlands in 2013 brought new possibilities for urban redevelopment in particular city areas. Around 700,000 m² of current real estate of National Police will be divested in the upcoming ten years (HA Lab, 2021, p.5). Around 30% of real estate objects owned by the police in the Netherlands need to be redeveloped considering renovations or functional adaptation.

The Vacant Heritage studio focuses on adaptation and reuse of existing proposals for different Police Stations in the Netherlands, considering the aspects: Heritage & Design, Heritage & Values, and Heritage & Technology.

The suggested police stations for transformation project were in 10 cities or towns of the Netherlands: Amsterdam, Rotterdam, Den Haag, Haarlem, Eindhoven, IJmuiden, Dordrecht, and Middelburg.

The Vacant Heritage studio conducted a research which started with a group work: eight different case studies of Police buildings in the Netherlands were selected for the SBT (Spatial Building Typology) analysis. Buildings were reviewed in four scales: city centre, urban

block, building object, facades and roofs.

One of the redevelopment cases is about the inner part of Groningen city, which I decided to analyze more extensively. I chose this situation due to the several factors that will be discussed below.

Scarcity of space and architectural challenges in Groningen

Nowadays, repurposing an existing building can have a drastically positive impact on the living environment. Due to sustainability and increasing scarcity of space and materials, reuse and adaptation can be considered as one of the most valuable redevelopment strategies.

The aforementioned scarcity of space is an emergent and alarming issue in the city center of Groningen. When analyzing Police stations in the Netherlands I came to realize that the one in Groningen is the most architecturally challenging and it motivated me to choose it as the main case for my graduation project. Groningen Police Station is a 13.000 m² building that needs to be adapted to the new function or be transformed according to the Dutch National Police reformation.

My personal interest in strategies for adaptive reuse and improving livability of space

I have been interested in adaptive reuse since the 2nd semester of my MSc studies. During the course on Heritage and Architecture Design Studio, I worked on a modernist Presikhaaf neighborhood, built in 1965 in Arnhem. Strategies for redevelopment were proposed after analyzing CIAM ideas, socio-economic setting and needs of the area.

During this course, I realized that I would like to gain more knowledge in this field because I believe that adaptive reuse will be one of the main challenges and possibilities to build more sustainably. Also, it has a significant influence on social and economic factors.

In addition, this choice of Groningen Police station adaptive reuse is related to personal fascination in analyzing human scale and livability in architecture through the lens of a camera. After years of working in the architecture photography field, I have realized that one of the best methods to capture the essence of a building is observing and picturing people interacting with architecture and the space around it. I realized that the context is as important as the building itself. I have learned to use a similar approach when working with architecture projects. I find it fascinating how the building's interconnectedness with the surroundings impacts the general feeling while in that space.

Interconnectedness, human scale and livability of the environment are crucial topics to the area where Politiebureau Rademarkt is located, and it closely reflects on my fascination with taking architecture pictures. The oldest inner part of the city is the most densified area surrounded by historical fortifications and canals. Even though Groningen's centre is the most vibrant and attractive place in the municipality, a massive modernist style Politiebureau urban block forms an isolated island in the most attractive historical part of the city.

I believe that the Groningen Police station project has a lot of valuable aspects considering the scale of the building and city context. Adaptive reuse of the building could perfectly transform the area into a livable environment where users are considered the essential part of the building.

Relation Between the Graduation Project to Wider Context

The Netherlands is facing a severe housing crisis. There is a necessity to create 845.000 new homes due to its growing population by 2030 (NL Times, 2020). According to prognosis (Capital Value, 2020), the housing shortage is greater than recently estimated and will continue to grow. Especially in Groningen, where the Police office building is located, the need for housing is one of

the greatest in the Netherlands (Dutch review, 2021).

One of the main housing crisis indicators in Groningen is a massive shortage of student housing. The city is known as one of the youngest cities in the European Union (Northern times, 2022), mainly due to the University of Groningen and the Hanze University of Applied Sciences, where students come to study from various places in the world. According to the reports (Northern times, 2022), 23% of residents living in Groningen were between the ages of 18 and 29.

In Groningen, the housing crisis influences rising property and rental prices. Consequently, it affects young people or families who cannot afford to buy property while students cannot find a place to live in general (Dutch review, 2021). In September 2021, student activists started protesting against the student housing crisis in Groningen. One of the activist groups refused to leave Groningen university while their requirements for more student housing were fulfilled (NL Times, 2021). At that time, many students were living in emergency shelters or campsites. One of them I interviewed for my research: Moritz lived in the van in the campsite for a couple of months because he could not find any affordable place to stay. As he said, it is way more challenging to find a space to live in when you are a male international

student.

Next to the student housing crisis, international students have to cope with other serious problems: the lack of social connection, cultural integration and finding a job to afford a high living cost. (Northern Times, 2022).

Building more houses is one of the ways to tackle the housing crisis, but it is crucial to understand that there is a possibility to transform an existing building into housing instead of solely building new ones. The design proposal for Vacant Police heritage in Groningen city aims to cope with previously mentioned social and economic problems. It is important and urgent to understand that adaptive reuse of the building can significantly influence life in Groningen.

By studying the importance of Groningen's challenges and researching the Police office for adaptive reuse, I want to answer the following research question:

- How can adaptive transformation and waste reduction strategies in architecture contribute to solving housing crisis in a sustainable way for the city of Groningen?

Relation Research and Design

As mentioned in the previous paragraph, adaptive reuse of the Groningen police station focuses mainly on topics of the housing crisis. Moreover, while doing research and working on the design proposal, I realized that Groningen police station has a lot of valuable aspects that could be reused by **changing as little as possible but at the same time achieving as much as possible.**

Function

According to the research, one of the major problems in Groningen is the housing crisis. It widely affects young people, students and families. Therefore, it was decided to transform Groningen Police Office into housing with mixed-use functions as an art gallery, office spaces, communal spaces, and student hostel. Due to the existing structure's possibilities and values, the office building can be transformed into a living function without any structural changes. One of the most significant functional changes is combining several social groups such as students, young people and families into one building block. Part of the research was to understand how those groups can benefit from one another and engage with each other while also proposing the idea of keeping the privacy of each household by offering specific design strategies. Also, due to the housing crisis,

there is a need to create flexible and as small m² housing units as possible that could be flexible for combining in the future.

Facades

Groningen Police Station is a fully isolated urban block. Connectivity between the building and its surroundings does not exist, while at the same time, it gradually decreases the livability of the area. Urbanist Jan Gehl analyzes that the livability of spaces is unambiguously related to active urban life. He compares the term "livability" with the living room. "In the living room, all members of the family can be occupied with various activities at the same time, but individual activities and people can also function together" (Gehl, 2011, p. 107). Therefore, one of the key factors in redesigning the facades of the building is to create "the living room" in Groningen's old town while saving as many valuable elements of the facade as possible.

Materiality and adaptive reuse

At first, the idea of *changing as little as possible and achieving as much as possible* started with adaptive reuse of the building and trying to demolish as little as possible. The design proposal is inspired by Lacaton and Vassal's architectural research and approach "Never demolish or removing but making

the most of existing resources" (Puente, 2021, p. 45). Next to this approach, the design proposal of Groningen Politiebureau focuses on material reuse. Due to the global material crisis, there is a need to reinvent how we should use materials in architectural design proposals.

- How material crisis could influence the Groningen Police station transformation proposal?

Since there are no major demolishing processes in the Groningen Police station building, there is an idea to get materials from other Police offices that are being transformed or partially demolished in Vacant Heritage studio. The material reuse proposal focuses on collecting materials from my fellow groupmates' projects and reusing them on the Groningen Police Station site. The collected materials would be mainly used for newly added parts of the Groningen building and facades.

Research Methodology

The graduation project is based on the idea that research should influence the design and the other way around.

In the beginning, historical research played a significant role in Police building research. It is located in Groningen old town's urban structure with a unique

historical context. Today this part of the old town is the centre of Groningen city. Built in 1971, the massive Police building represents the Post-War architectural period and contrasts with its old town urban fabric. The contrast became even more recognizable after the renovation of the Police building in 1996. The outcome of this research was to understand the area's historical development and how it can influence the design strategies. In addition, it helped to grasp valuable aspects of the building and keep them during the design process.

Dialogue based design

During the research, I mainly focused on the visitors' experience of the Groningen Politie station area. I am not local in Groningen city, so I was trying to experience the city through the eyes of the tourist. Also, while visiting a city, I met a lot of locals living around the block that gradually became my eyes and ears, helping me understand how the place functions 24/7. Interviews and discussions with locals became one of the most influential factors for my design proposal. Afterwards, I reviewed my proposal together with them. Understanding their wishes helped me propose needed functions for the area. For example, the proposed community centre that, according to the residents, would finally be a place to meet your neighbours and spend time doing

various activities.

The Dilemmas of the Graduation Project

One of the dilemmas that I got while proposing an adaptive reuse strategy for Groningen Politiebureau was the idea of entirely changing the function. Since 1971, when the building was built, it always had a Police function. So the question was if the new design proposal should reflect on the historical police identity or ignore it. Finally, it was decided that Police identity is one of the most valuable heritage aspects. Therefore, it could mainly reflect on the façade design proposal by using the distinctive blue colour that the building was painted in 1996 after the renovation.

Another dilemma was related to the closeness of the building that residents described as an area with a "dull" and "cold" perception of the building that the Police office broadcast. However, one of the residents' answers changed my mind about "dullness" and "coldness" being negative aspects. She said that the block works as a barrier from too noisy, full of people city centre. So it is nice to have such a privilege to stay in an area without hearing music from bars and being calm about your kids safely playing around. Even though, she said, it would be way nicer to see some liveliness of the block

instead of an isolated wall in front of your house every day together with high speeding cars. So this answer became one of the most influential answers for considering what function the building should contain.

At the same time, the whole project idea to combine student housing with family units is experimental and challenging. Aside from benefitting from each other, two different groups may struggle to even live together. It means communal spaces have a significant impact on the design proposal and social connections. Communal spaces should become a place to be and meet while at the same time having private space at your own apartment and terraces are also designed.

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RESEARCH PLAN



Photo from Nieuwsblad van het Noorden. (1995, April 26). *Schoolkinderen maken kunstwerk*. (p. 9)

Research introduction

In 1995, a Dutch newspaper *Nieuwsblad van het Noorden* published an article: "Schoolchildren created a work of art". It is a story about a community project, in which local kids were invited to draw on the construction site wall of the Politiebureau Rademarkt one year before finishing its renovation. The construction site fence became a long colourful painting, making the whole environment lively and vibrant. In addition, the project helped kids to interact with their living environment and made them feel involved in the creation of its identity. The project developers found a way to invite the community to be part of the redevelopment changes.

However, the article later explains that at the end of the renovation, the fence will be torn down ("Schoolkinderen maken kunstwerk", 1995). Upon the project completion, a fully isolated facade of Politiebureau Rademarkt appeared: the walls were solid and closed, the windows were above the human eye level, and the doors looked heavy and unwelcoming. Such an architectural solution did not connect the Politiebureau Rademarkt block with its surroundings. The monofunctional office building stood on its own in Groningen's old town urban fabric just as before the renovation.

This research was motivated by stories

like this one. It questions not only the role of singular buildings in the more general urban landscape but also in the neighbourhood's quality of life. Specifically, the hypothesis of the study is the following:

The level of compatibility and unity between a neighbourhood's buildings' scale, functions, and types of facades influences its residents' quality of life.

The quality of life of every square meter in a city is a crucial topic of architecture and urbanism nowadays. Rapid urban sprawl brings various problems such as higher pollution in the cities, increased traffic fatalities or increased car dependency. By 2050 close to 70% of the global population will live in cities (United Nations, 2018). In the midst of this, densification appears to be one of the main solutions. Every square meter and quality of the urban environment matters.

Especially in Groningen where the main case study building of Politiebureau Rademarkt is located. Groningen is growing very fast: according to the statistics, the municipality of Groningen has grown by more than 50.000 inhabitants in the period of 10 to 15 years (Data Commons, 2020).

The city grows faster than ever and it puts

the living environment under pressure. As the municipality of Groningen states the main challenge nowadays is to find a good balance between various functions, interests, wishes and quality of the living environment (Gemeente Groningen, 2018, p. 1). In other words, the livability of a city is a focus point. Even a comprehensive document, published in 2018 by the municipality, describing the priorities and visions of the city of Groningen has a bold statement on the cover "Groningen's quality of life - first". Though Groningen is ranked as one of the top ten cities in Europe to live according to the "Quality of life in European cities survey" published in 2020 (European Commission), the municipality of Groningen states that it is a challenge to stay in high positions when the city grows rapidly and still there are places that are not as developed, areas which could improve the livability and quality of the surroundings (Gemeente Groningen, 2018, p. 4).

The quality and livability of the living environment are crucial topics to the area where Politiebureau Rademarkt is located. The oldest inner part of the city is the most densified area surrounded by historical fortifications and canals. Even though Groningen's centre is the most vibrant and attractive place in the municipality, a massive modernist style Politiebureau urban block forms an isolated island in the most attractive

historical part of the city. Connectivity between the building and its surroundings does not exist.

Research aims

An important critique on the modern urban development process was raised by Roger Trancik (1986, p. 1):

“The usual process of urban development treats buildings as isolated objects sited in the landscape, not as part of the larger fabric of streets, squares, and viable open space. Decisions about growth patterns are made from two-dimensional land-use plans, without considering the three-dimensional relationship between buildings and spaces and without a real understanding of human behavior.”

By studying the importance of the connection between buildings, I want to answer the following research question:

- *How does the interaction between buildings and residents influence the livability in the inner part of Groningen?*

To answer this question, this study will employ the Politiebureau Rademarkt building as the main example case. Different methods will be used, including the analysis of the Post-war period architectural influence, interviews of the neighbourhood’s residents, and visiting the location. There will be separate

chapters that will overview different aspects of the interaction between buildings and residents and their influence on the livability of Groningen’s city. After primary research of the Politiebureau Rademarkt, the three focus points as scale, function and street life were chosen to analyze:

- *How does **the scale** of the Politiebureau Rademarkt influence the livability of its surroundings?*

- *How does **the function** of Politiebureau Rademarkt cause the isolation of buildings and their surroundings?*

- *How specific design tools can help to create active **streetlife** in Politiebureau Rademarkt surroundings?*

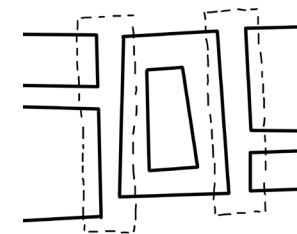
This research aims to understand why space can either isolate or connect its residents or community members. Moreover, one of the goals of this research paper is to prepare the theoretical and empirical argumentation for redesigning proposals of the Politiebureau Rademarkt building in Groningen.

Definitions

Two definitions will be widely used throughout the research: *livability* and *community* or *residents*.

Urbanist Jan Gehl analyzes that the livability of spaces is unambiguously related to active urban life. He compares the term “livability” with the living room. “In the living room, all members of the family can be occupied with various activities at the same time, but individual activities and people can also function together” (Gehl, 2011, p. 107).

Other terms widely used in the research will be *residents* or *community*. They describe a group of people living in the same area or having particular characteristics in common (Merriam-Webster, 2021).



SCALE



FUNCTION



STREETLIFE

Personal interest

Building as the background of daily life

Besides being a student, I am also an architecture photographer. My job is to express architectural ideas solely through imagery: I cannot use words or any other means. After years of working in this field, I have realized that one of the best methods to capture the essence of a building is observing and picturing people interacting with architecture and the space around it. I realised that the context, the environment are as important as the building itself. I have learned to use a similar approach when working with architecture projects. I find it interesting and fascinating how much the building's interconnectedness with the surroundings impacts the general feeling while being in that space.

Theoretical framework

"Cultures and climates differ all over the world but people are the same. They'll gather in public if you give them a good place to do it" urbanist Jan Gehl stated (Project for public spaces, 2008). In other words, the livability of spaces determines the quality of life. This is the main focus point in Politiebureau Rademarkt building research that will be analyzed by interviews of residents, people passing by the building and users of the building. Moreover, this research

will be based on existing studies about the quality of urban life done mainly by sociologists, urbanists and architects. Historical development analysis of the city of Groningen and Politiebureau Rademarkt will help to understand the values of the area and historical layers that could generate ideas for the building transformation proposals.

Methodology

The framework of this research plan divides the main research question into three sub-categories, listed as questions in the previous chapter. This research will focus on the aspects that define the interaction between buildings and their communities: urban context and its scale, the functional aspects, and the street-level quality. Each subtopic is connected to theoretical, historical and practical references:

*How does **the scale of Politiebureau Rademarkt influence the livability of its surroundings?***

Historical research. The Politiebureau Rademarkt building is located in Groningen old town's urban structure, formed and surrounded by a defensive wall from the XIII century. Today this part of the old town is the centre of Groningen city. Built in 1971, the massive Politiebureau Rademarkt represents the Post War

architectural period and contrasts with its old town urban fabric. In 2013, an extensive document "Cultuurhistorische verkenning. Binnenstad Groningen" was published by the municipality of Groningen that covers the historical development of the inner city of Groningen where the building is located. This document will be used as a base for historical research. **Outcome:** To understand the historical development of the area and how it can influence the design strategies.

Emotional mapping. Emotional mapping will be drawn during different site visits. Weather conditions, time of the day and day of the week will be considered. **Outcome:** This research method helps to understand the urban context of the building and its connection to it.

Literature research. For the literature research, I focus on the different keywords that are connected to the subquestion. Those keywords and literature are stated below:

Urban block

"Het hofje 1400 –2000. (On)zichtbare bouwstenen van de Hollandse stad" Doctoral thesis by Willemijn Wilms Floet Carola Hein on the Tatami mat: Floor Cover, Building Block and Lifestyle

Identity

"Collage City" by Colin Row

Scale

"Design of Cities" by Edmund Bacon

Morphology

"Urban space" by Rob Krier

Outcome: To understand how the scale of the building reflects on its surroundings and how it is analyzed from an academic point of view.

Group work: Spatial building typology (SBT). SBT research covers four different scales of eight different projects including Politiebureau Rademarkt. **Outcome:** comparing projects in the city centre, urban block, building object and details level. Historical development of an urban block and structural possibilities are the main focus points for the Politiebureau Rademarkt building.

Value assessment. Value assessment will be based on historical, aesthetical, scientific, political, age, economic, social, ecological and other values. **Outcome:** Value assessment will become one of the main tools for redesigning proposals.

*How does **the function** of Politiebureau Rademarkt cause the isolation of buildings and their surroundings?*

Reference projects. Historically, there are many examples of big functional buildings (or even complexes) in the

central areas of old towns: massive hospital blocks, prisons, castles, or courts. Usually, just like the Politiebureau Rademarkt, these buildings were partially or fully closed to the public due to their functions. De Noordsingel or the Fenix I transformations in Rotterdam are one of the reference projects. **Outcome:** By checking reference projects to understand what are the possibilities for transformation of the Politiebureau Rademarkt urban block.

Historical research. Politiebureau Rademarkt building was built in 1971 and renovated in 1996 by *De Zwarte Hond* architecture office. Groningen archive provides drawings of construction and renovation. **Outcome:** By checking documents and drawings the aim is to understand how the building architecturally evolved during different periods. Comparison of development and structure possibilities of transformation of the function will be made.

Interviews. The interview with Jurjen van der Meer, the founder of *De Zwarte Hond*, will be performed. This architecture office redesigned the Politiebureau Rademarkt in 1996. **Outcome:** the aim is to understand why specific decisions were made and what were the values of the building from the *De Zwarte Hond* office perspective.

Interviews with the neighbours.

Interviews of residents living next to the Politiebureau Rademarkt will be performed. The main questions will cover the functionality of the building, advantages and disadvantages of the neighbourhood, residents perceptions and suggestions. **Outcome:** This qualitative research will help to understand local problems, perception of the building, possibilities of the redesign and new functions.

Building visits and interviews with police officers. Politiebureau Rademarkt is a monofunctional building protected by security due to its function. It works as an isolated island in the historical urban context. **Outcome:** Visiting the building helps to understand how that island functions and what are the possibilities for its redevelopment. Interviews with the police officers will provide information about the advantages and disadvantages of the building.

*How specific design tools can help to create active **street life** in Politiebureau Rademarkt surroundings?*

Photo documentation. First of all, historical pictures from the archives will be analyzed. Then together with the interviews residents will be asked to share their personal pictures of Politiebureau surroundings. Thirdly, pictures will be taken from residents apartments towards one

of the Politiebureau facades. Afterwards, all of them will be combined in a structural way and analyzed. **Outcome:** By using photography as a tool I want to analyse what is the perception of Politiebureau from the residents perspective. Also, this research method helps to understand the visual connections to the surroundings.

Cognitive mapping. People passing by the Politiebureau Rademarkt or living in the neighbourhood will be asked to draw a quick sketch how do they remember Politiebureau Rademarkt without looking at it. **Outcome:** This exercise helps to understand what is the identity of the building and how it is being recognised.

Design toolbox research. In 2017, the municipality of Groningen published a comprehensive document "Nieuwe Stadsruimtes" covering the possible design proposals for the inner part of the city. **Outcome:** Analysis of the document that helps to understand the characteristics of Groningen's old town streets and possible redesign decisions.

Literature research. For the literature research, I focus on the different keywords that are connected to the subquestion. Those keywords and literature is stated below:

Edge
"Finding lost space" by Roger Trancik

Ground floor and active street life
"Life between buildings" by Jan Gehl
"Cities for people" by Jan Gehl
"How to study public life" by Jan Gehl and Birgitte Svarre
"Soft city" by David Sim

Outcome: Analysis of public life and importance of street level. Its reflection on the Politiebureau Rademarkt building.

Video material. The sociological analysis by Richard Sennett on the "Open city" topic will be used together with the research on Politiebureau Rademarkt streetlife. **Outcome:** The sociological aspects of the Politiebureau Rademarkt case study.

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P1

**CONNECTIVITY CREATES
LIVABILITY**

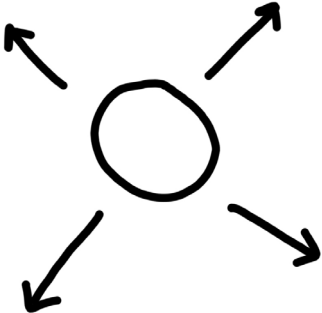
URBAN CONTEXT

LOCATION

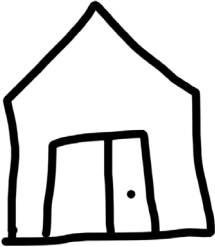


CENTRAL STATION

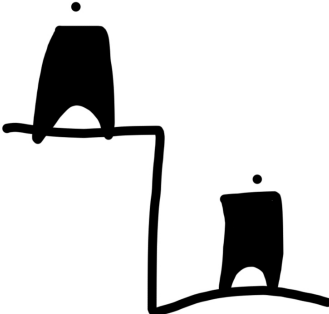
"Groningen's quality of life - first"



Urban sprawl

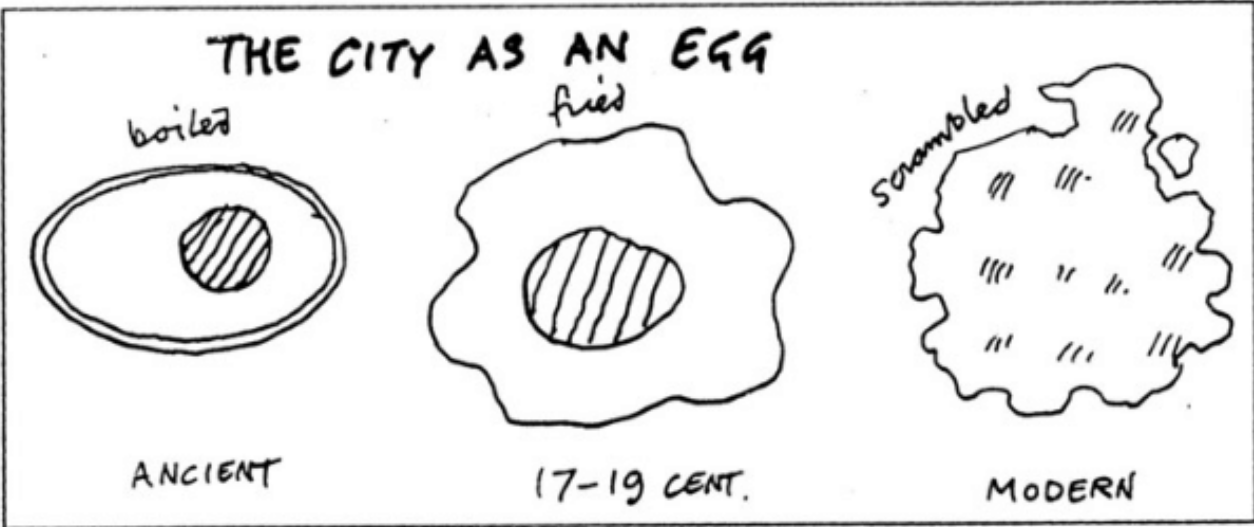


Housing shortage



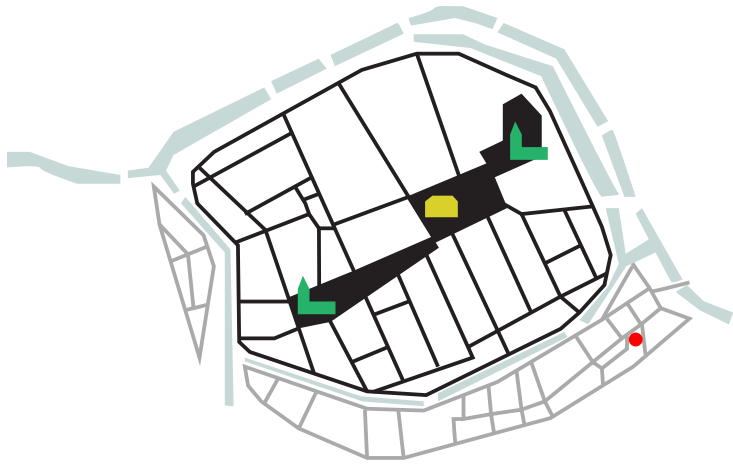
Inequality

HISTORICAL DEVELOPMENT



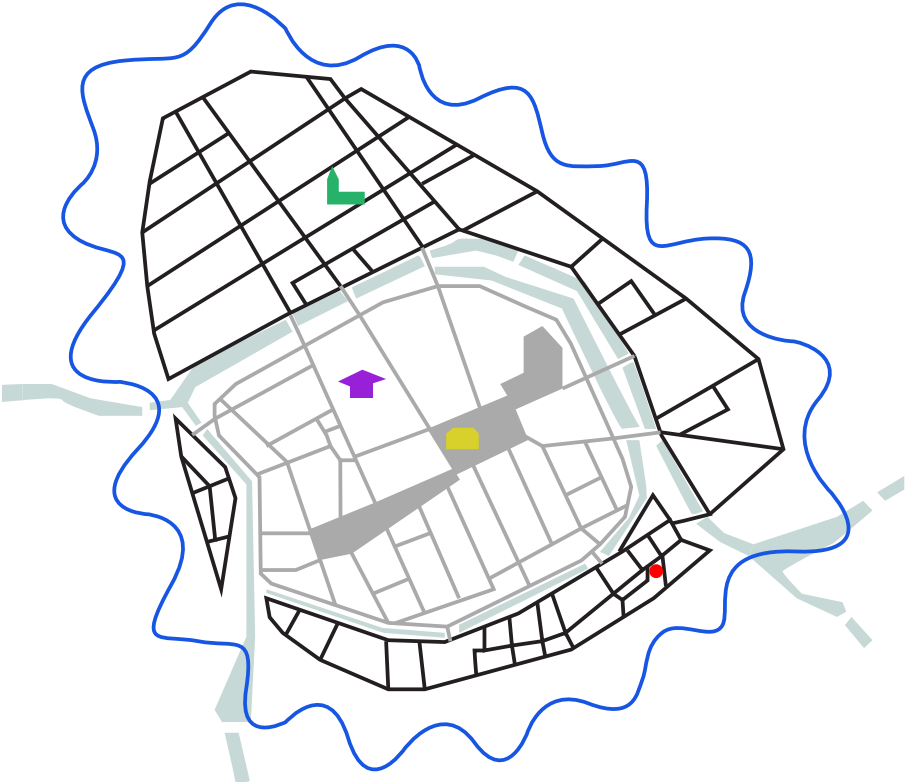
"The city like a egg" by Cedric Price. Source: (<http://holeintheclouds.net/category/photograpy-credits/image-credit-cedric-price2012>>).

HISTORICAL DEVELOPMENT

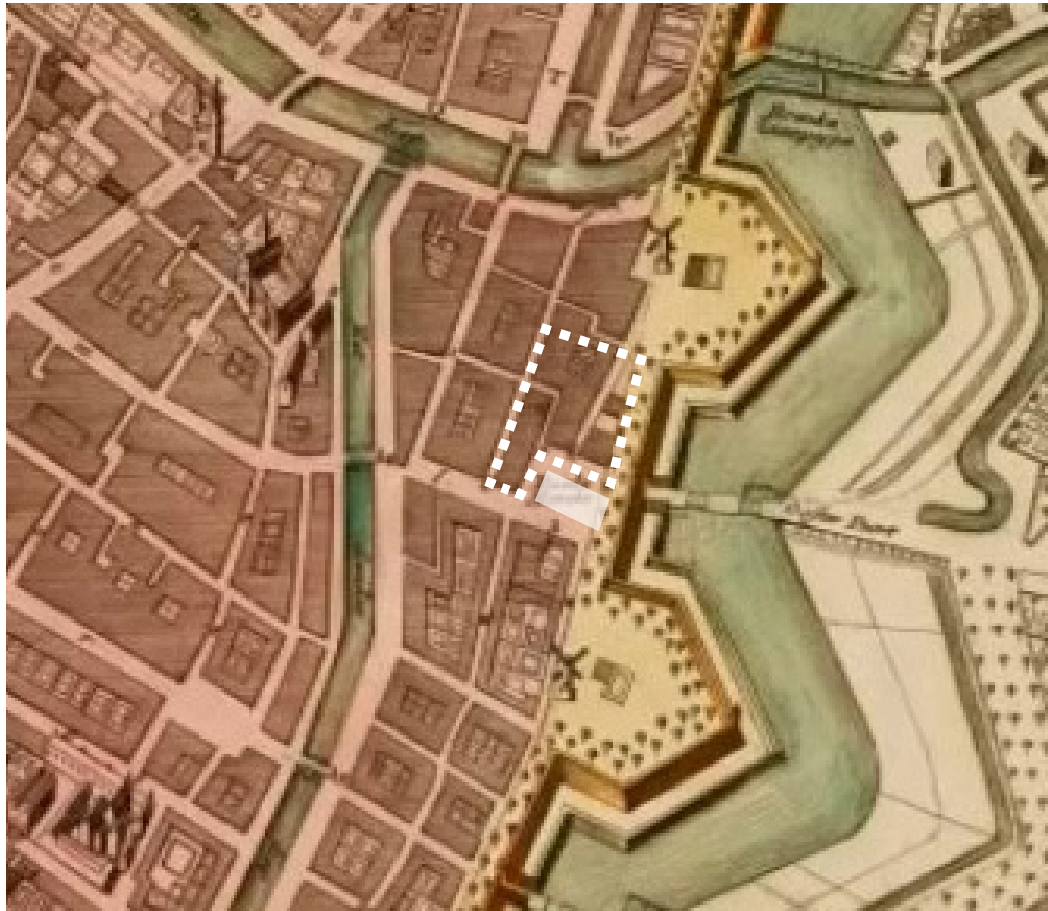


1000 - 1560
Medieval city

HISTORICAL DEVELOPMENT

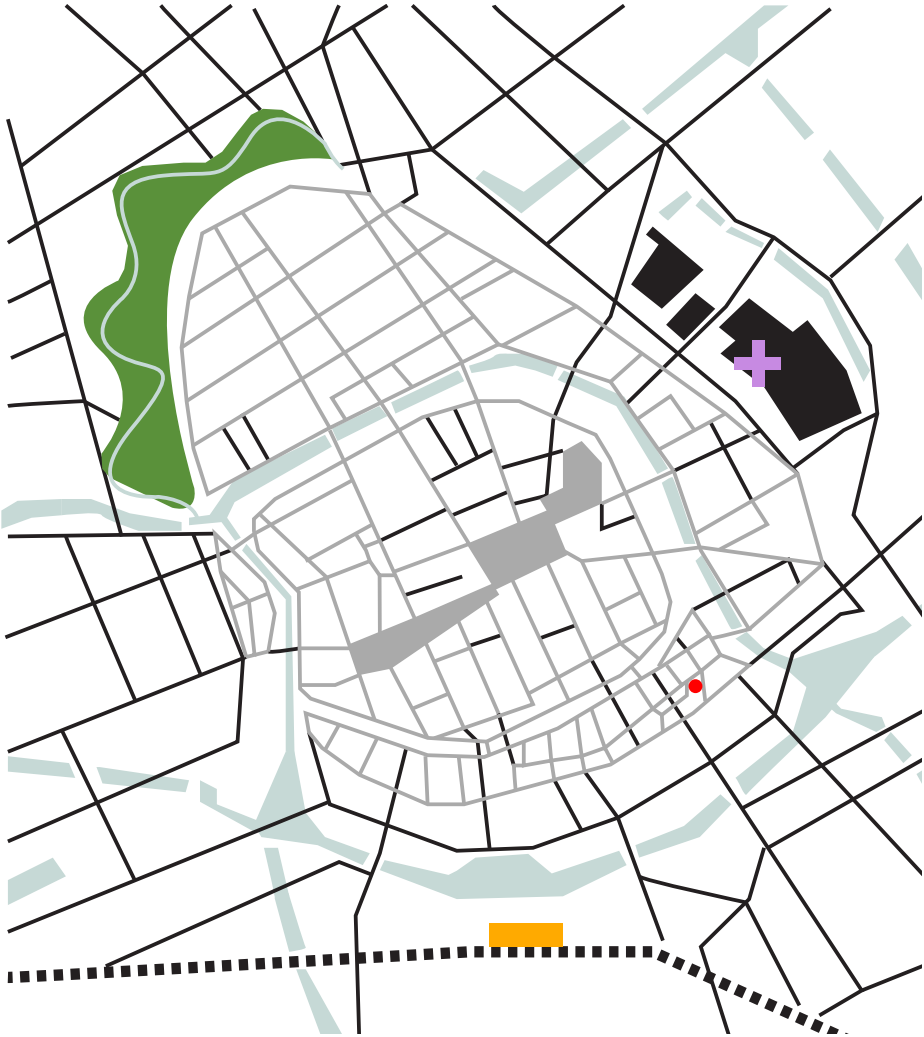


1560 - 1800
Sized city



1760

HISTORICAL DEVELOPMENT



1800 - 1990



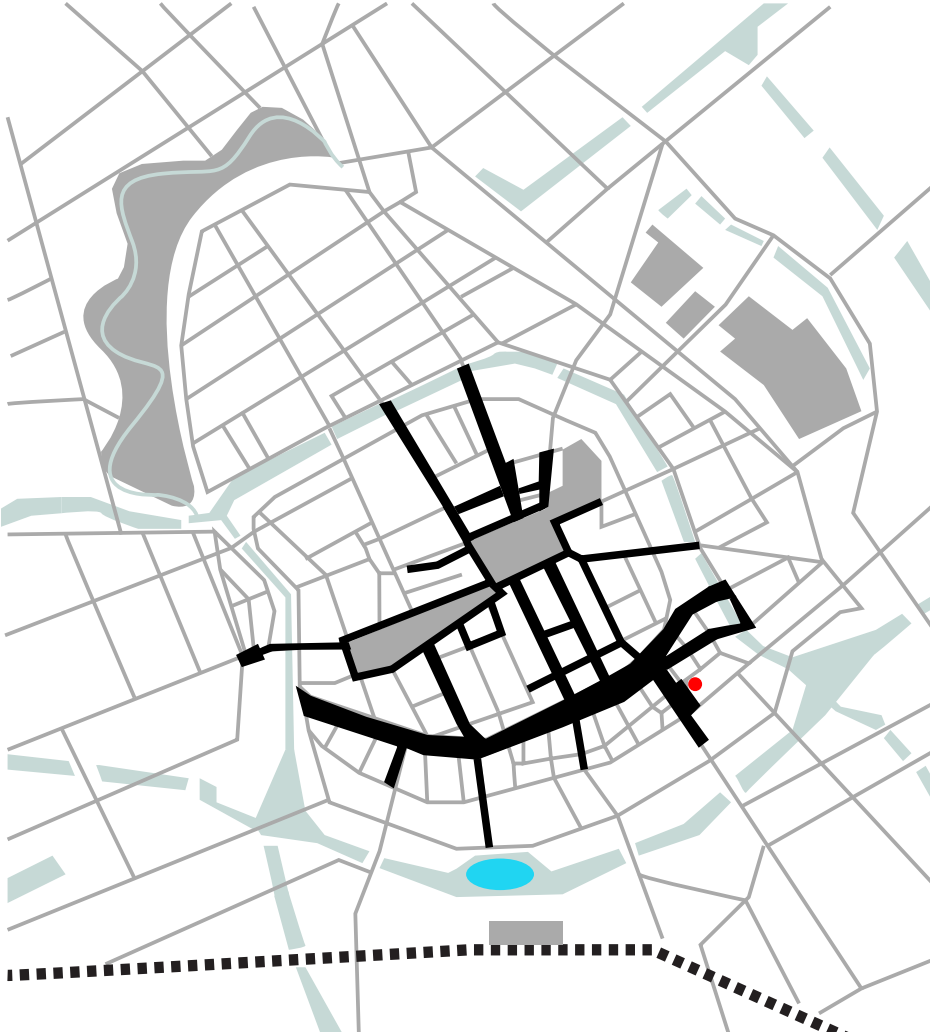
1935 - 1945
(St. Joseph Cathedral built in 1887)

HISTORICAL DEVELOPMENT



1971 - 1972

HISTORICAL DEVELOPMENT



1990 - Vision



Renovation in 1996

BUILDING BLOCK

POLITIEBUREAU RADEMARKT

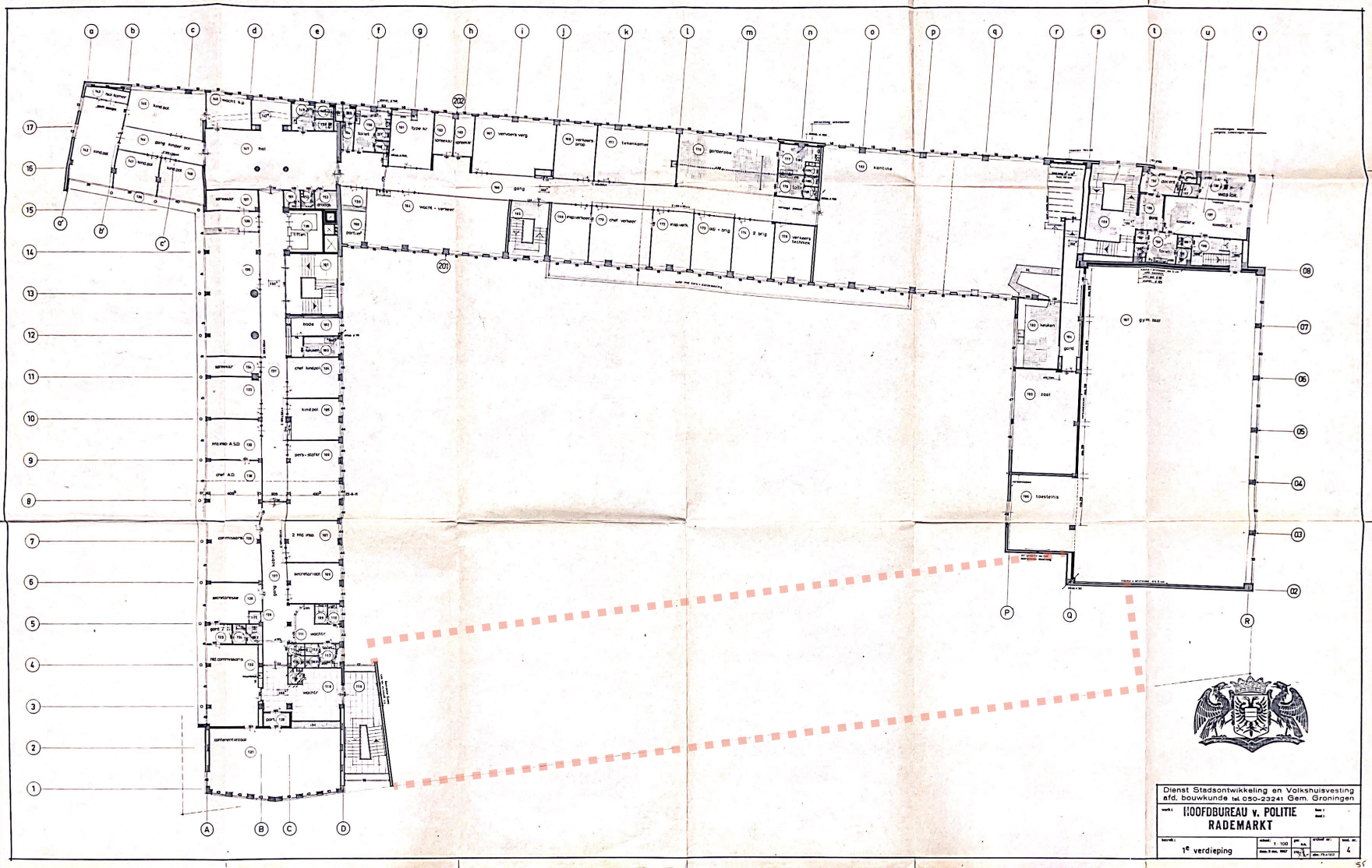


RADEMARKT



KOSTERSGANG

POLITIEBUREAU RADEMARKT



Dienst Stadsontwikkeling en Volkshuisvesting
 afd. bouwkunde 14.050-23241 Gem. Groningen

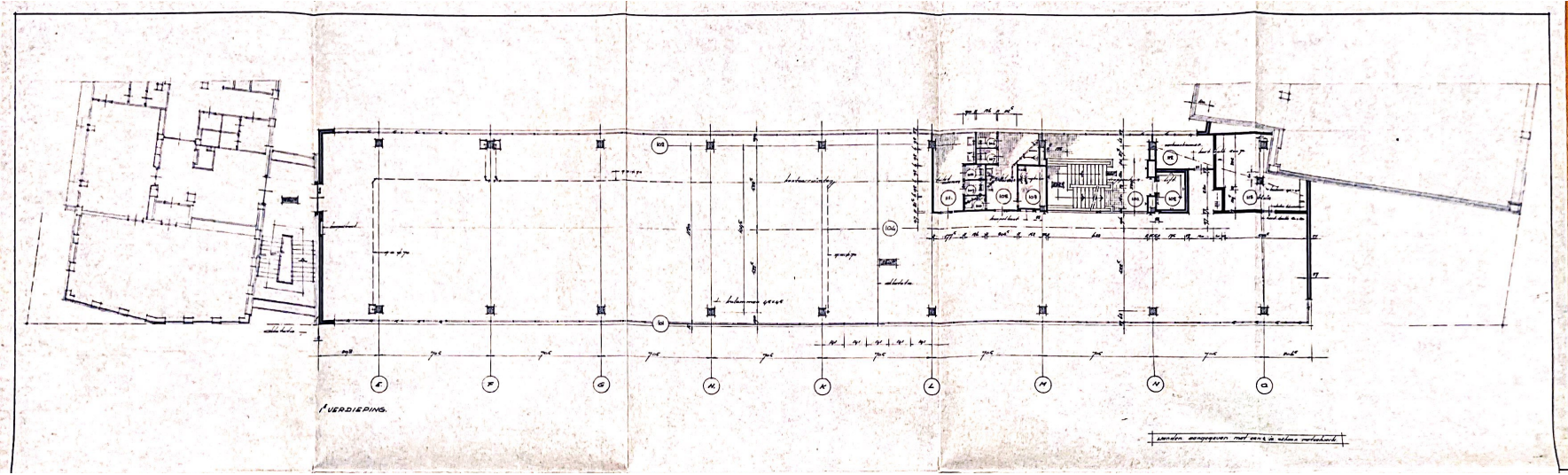
**HOOFDBUREAU v. POLITIE
 RADEMARKT**

1^o verdieping

Maas 1: 100	Maas 2: 100	Maas 3: 100	Maas 4: 100	Maas 5: 100	Maas 6: 100	Maas 7: 100	Maas 8: 100	Maas 9: 100	Maas 10: 100
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THE FIRST FLOOR. 1967

POLITIEBUREAU RADEMARKT



THE FIRST FLOOR. 1967

RENOVATION IN 1996



“The idea was to have an **open and inviting building**, which people would find easy to enter”

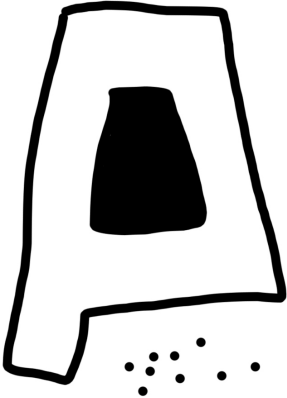
VALUES OF THE BUILDING



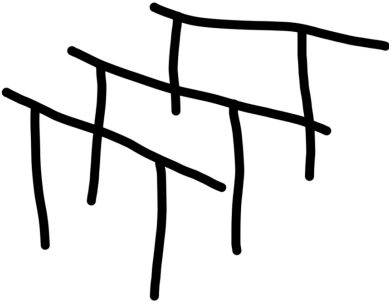
Urban context



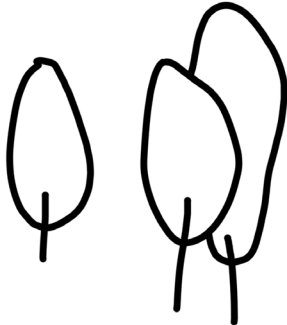
Reflection on surroundings



Courtyard and front square



Structure



Greenery

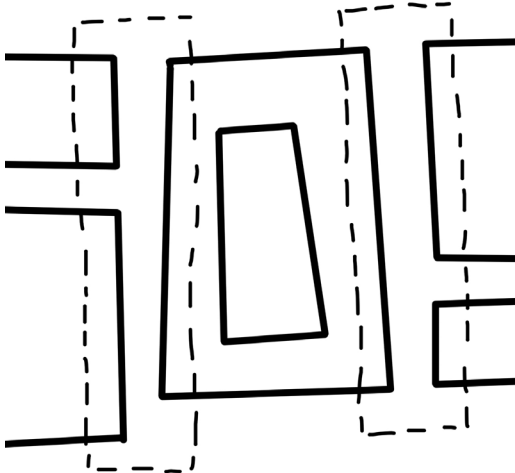


Police identity

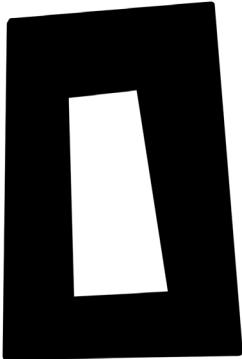
RESEARCH QUESTION

How does the **interaction** between buildings and residents influence the **livability** in the inner part of Groningen?

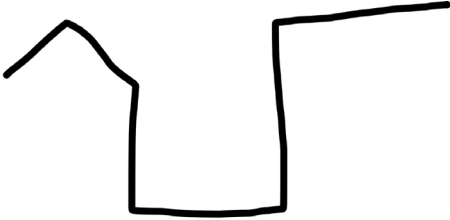
SUBTOPICS



Urban block

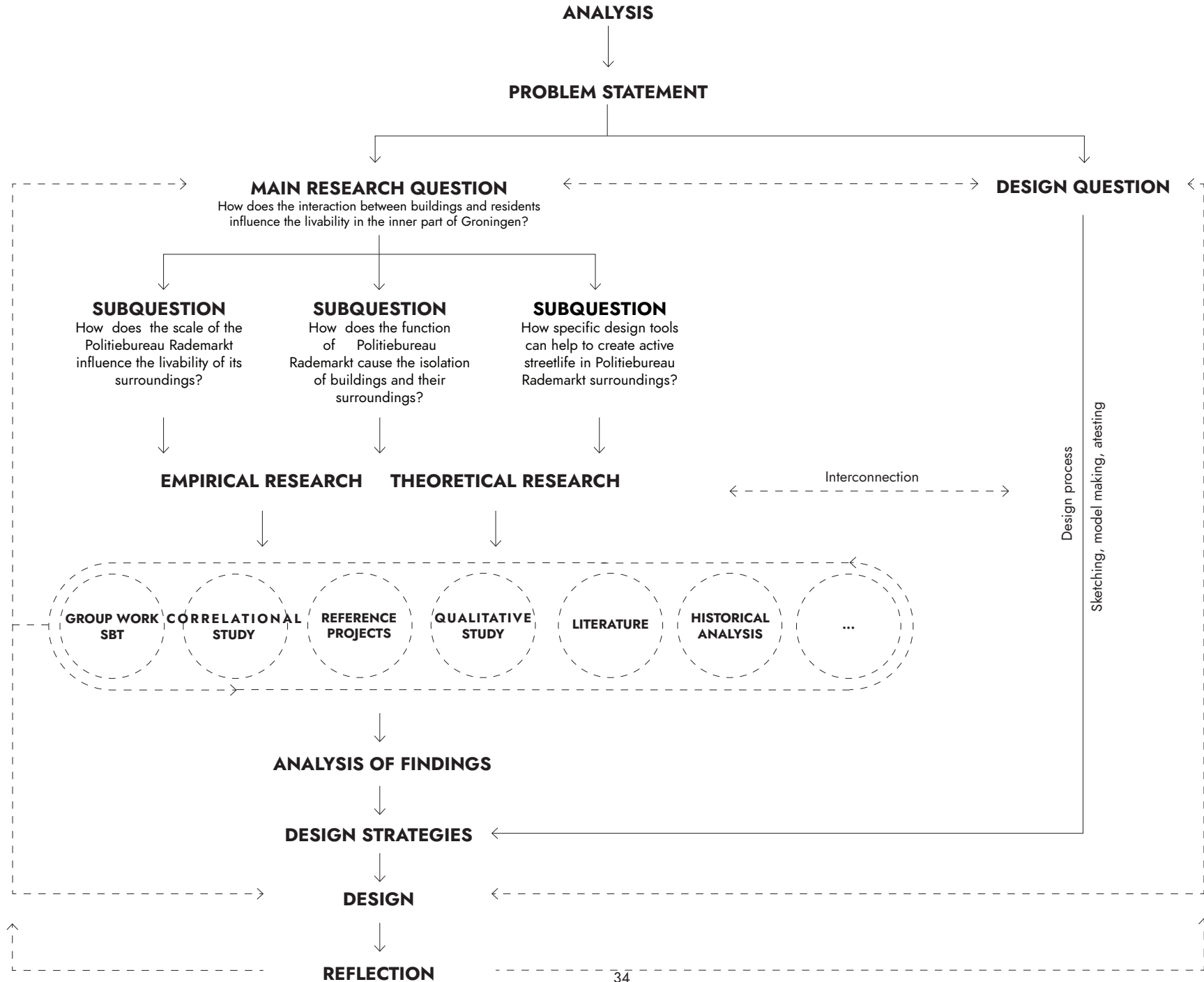


Function



Streetlife

RESEARCH DIAGRAM



NEIGHBOURHOOD

INTERVIEWS



POLITIEBUREAU RADEMARKT AS AN AQUARIUM



PERSONAL FASCINATION

Connectivity creates livability



Architects: Do Architects



Artist: Cindy Bakker



Architects: Juli Ontwerp

WHAT'S NEXT?

- How does the interaction between buildings and residents influence the livability in the inner part of Groningen?
- How specific design tools can help to create active streetlife in Politiebureau Rademarkt surroundings?
- How does the function of Politiebureau Rademarkt cause the isolation of buildings and their surroundings?
- How does the scale of the Politiebureau Rademarkt influence the livability of its surroundings?
- Should the primary focus be on the block itself, or should the block be analysed together with the surrounding environment?
- Do massiveness and isolation influence the connectivity and quality of the living environment?
- How can this scale be perceived in densified old town structures?
- Does the ground floor is the most significant part of understanding the scale of the building?
- Is Politiebureau Rademarkt a unique post-war architectural style building?
- Does the Politiebureau Rademarkt fit the identity of the contemporary Police institution?
- How was the Police identity expressed architecturally on Politiebureau Rademarkt?
- But how to describe the identity of Politiebureau Rademarkt if we deduct the Police function from it?
- Does Politiebureau Rademarkt building ignore the vivid Groningen's old town identity of mixed-used functions?
- ...

P2

USER FIRST

WHAT GRONINGEN HAS?



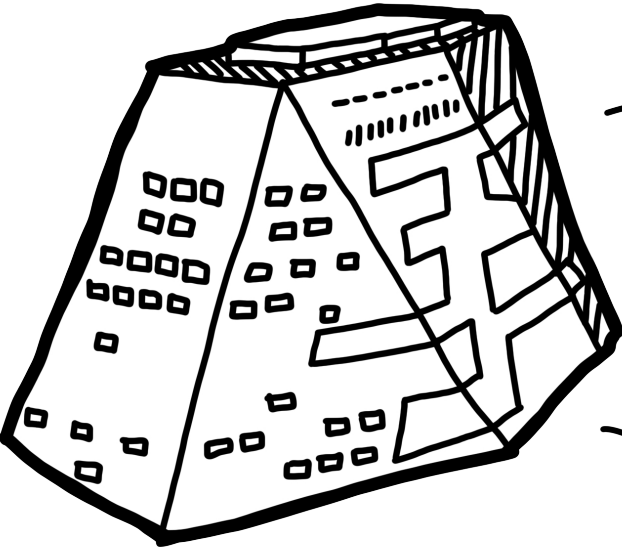
WHAT GRONINGEN HAS?



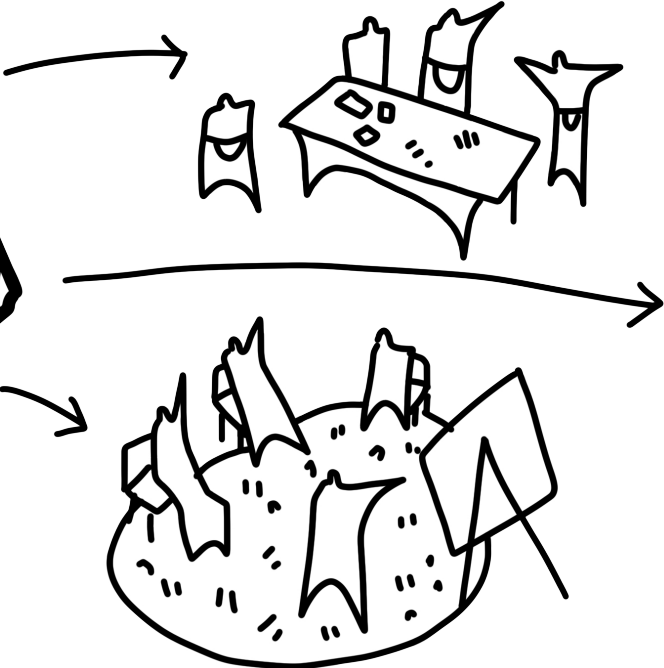
“STADSWERKPLAATS”



VIBRANT STREETS



FORUM GRONINGEN



🏠 🔍 What's on? Explore the Forum

All activities

Films

Exhibitions

Talks

Events

Courses

Youth activities

WHAT DO RESIDENTS OF GRONINGEN NEED?

WHAT DO RESIDENTS OF GRONINGEN NEED?



Housing shortage in Groningen worse than even Amsterdam

 by **The Northern Times** — January 7, 2020 in Economics

 0

WHAT DO RESIDENTS OF GRONINGEN NEED?

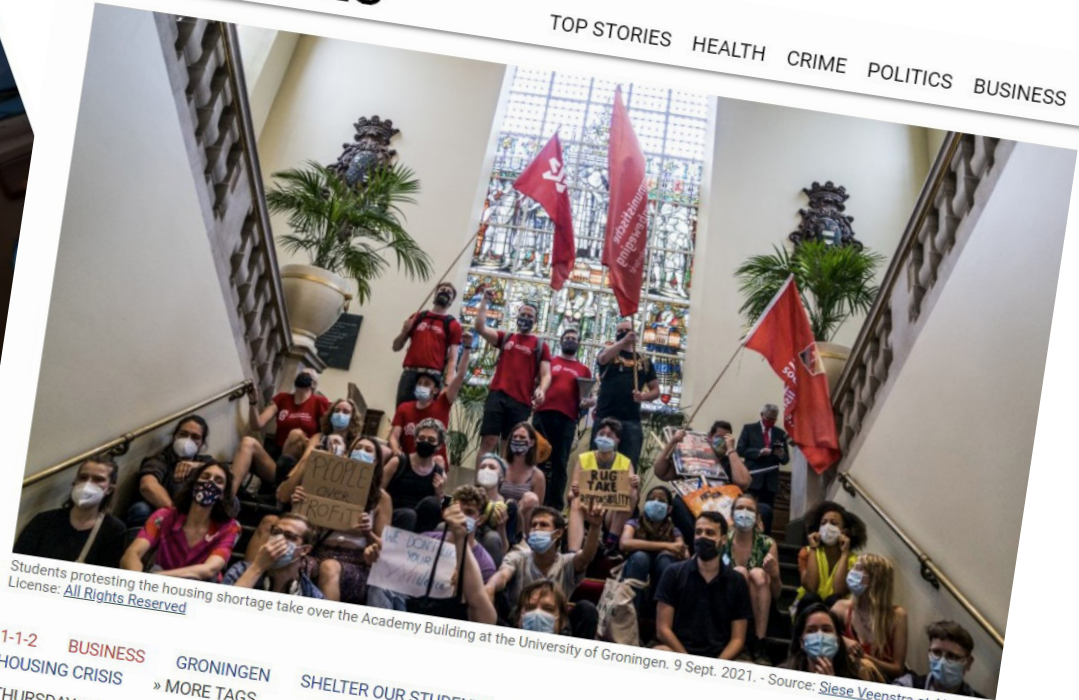
Studeren vanuit een camper



De Duitse student Moritz Brameier bivakkeert bij gebrek aan een kamer in zijn vader. 'Ik had niet verwacht dat het zo moeilijk zou zijn om in Nederland te vinden.' Beeld reyer boxem

NL#TIMES

TOP STORIES HEALTH CRIME POLITICS BUSINESS



Students protesting the housing shortage take over the Academy Building at the University of Groningen. 9 Sept. 2021. - Source: [Sjese Veenstra at ANP](#) - License: [All Rights Reserved](#)

1-1-2 BUSINESS GRONINGEN HOUSING CRISIS » MORE TAGS SHELTER OUR STUDENTS UNIVERSITY OF GRONINGEN THURSDAY, SEPTEMBER 9, 2021 - 17:20

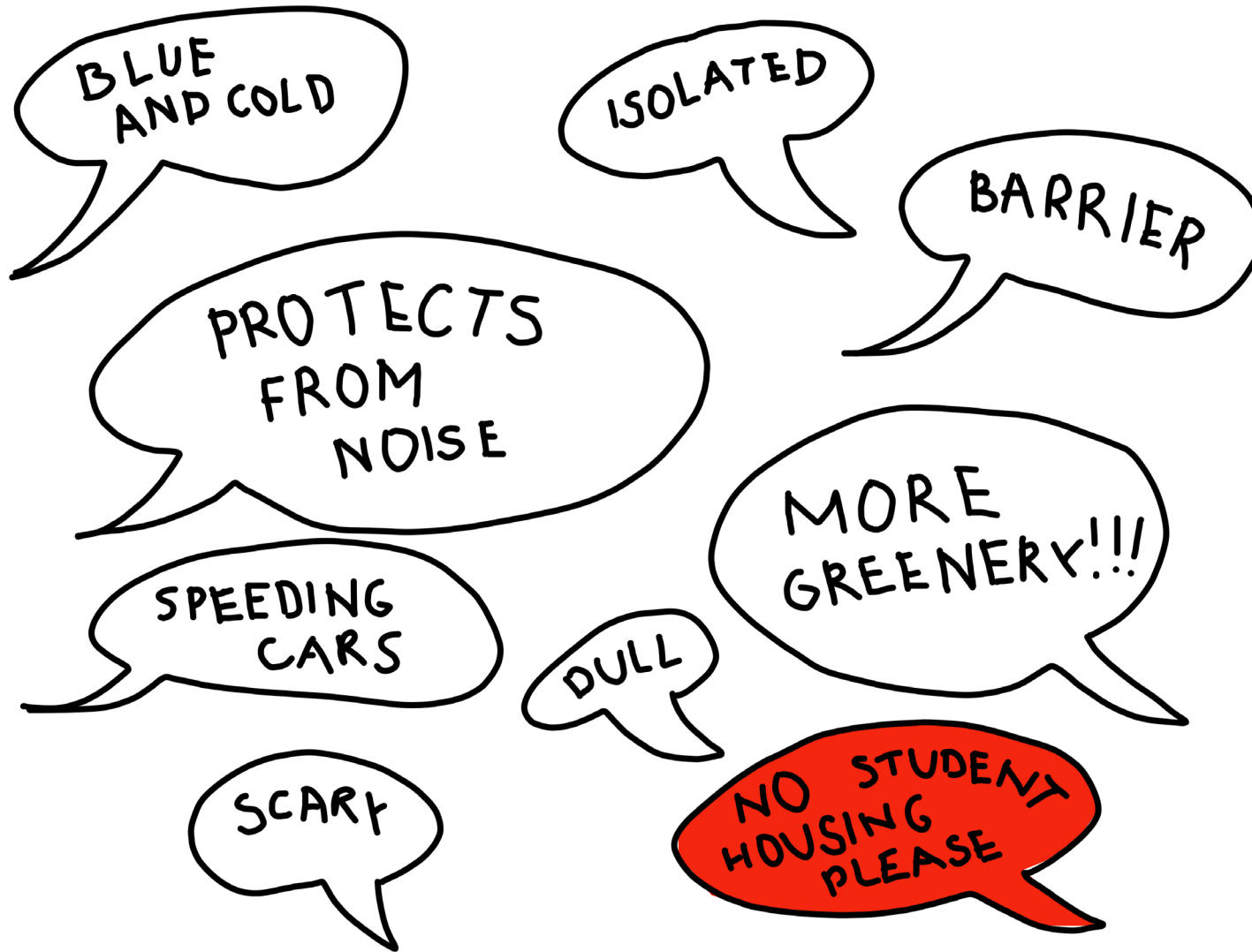
Student protestors refuse to leave Groningen university building due to housing crisis

SHARE THIS:

WHAT DO RESIDENTS OF GRONINGEN NEED?

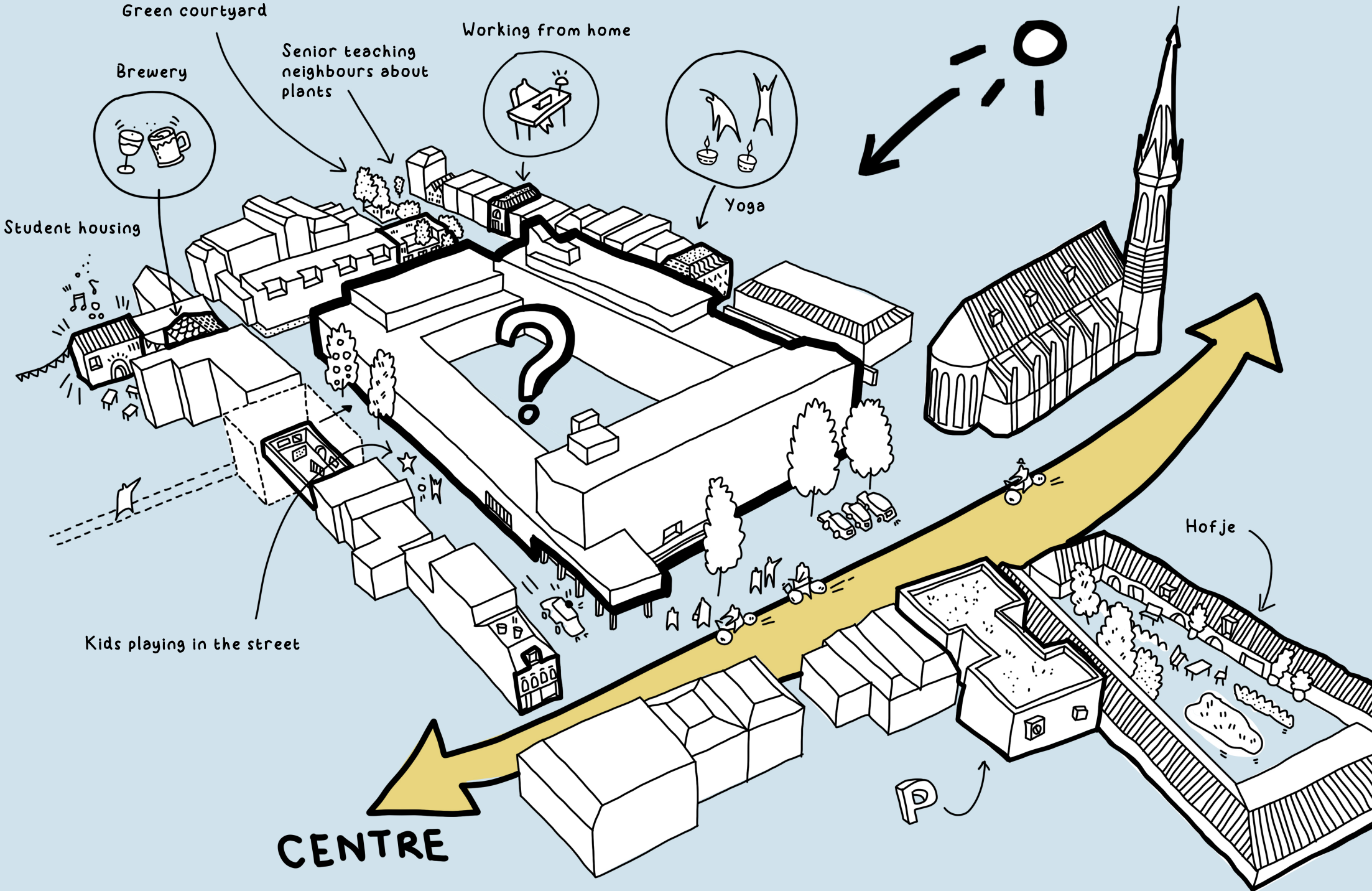


WHAT DO RESIDENTS OF GRONINGEN NEED?

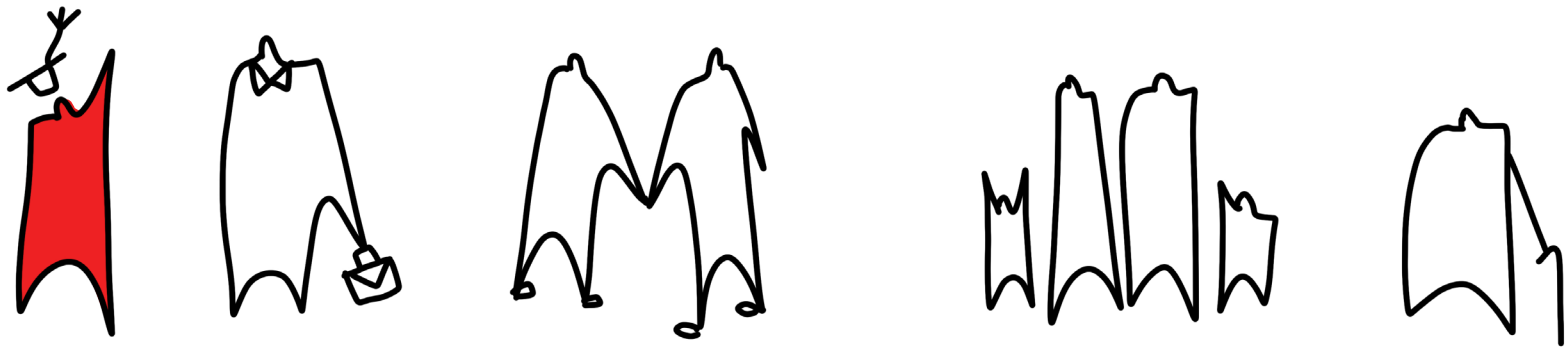


WHY?

NEIGHBOURHOOD



CONFLICT



HOW TO FIND A BALANCE?



Tonnis Post, Kruizinga Family, 1914,
Nederlands Openluchtmuseum

Jacoba van Beierenlaan student housing

AND HOW TO BENEFIT FROM IT?

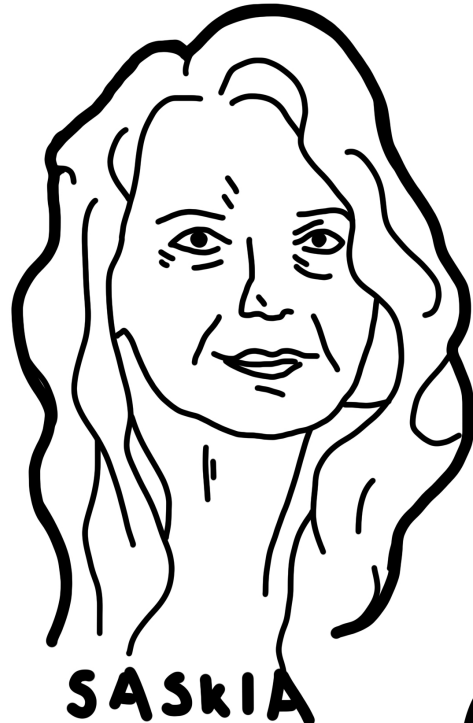


Look after my kids

Talking about gardening



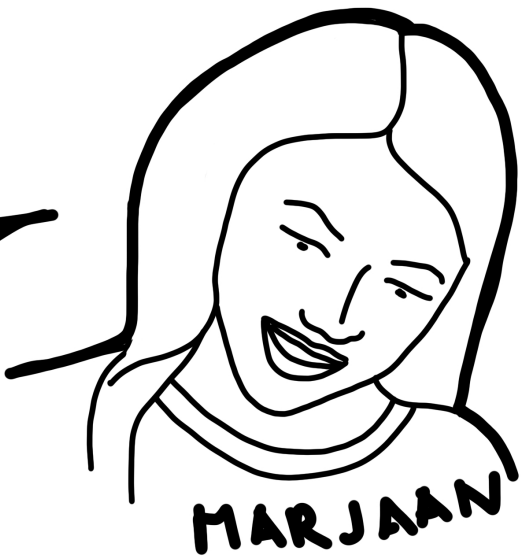
Earning money by renting a room



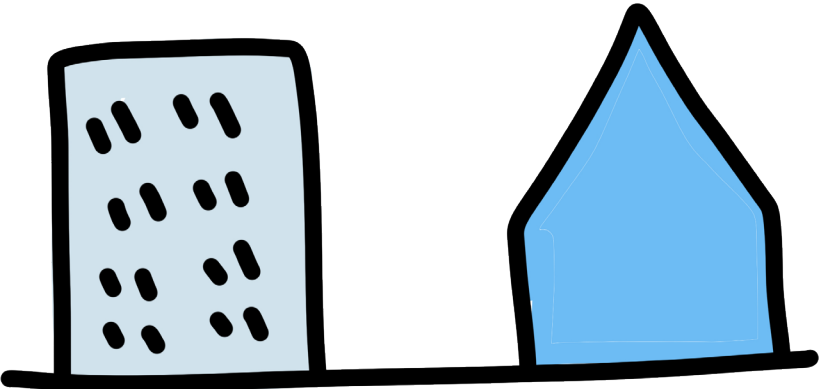
Cultural exchange



Drinking beer together

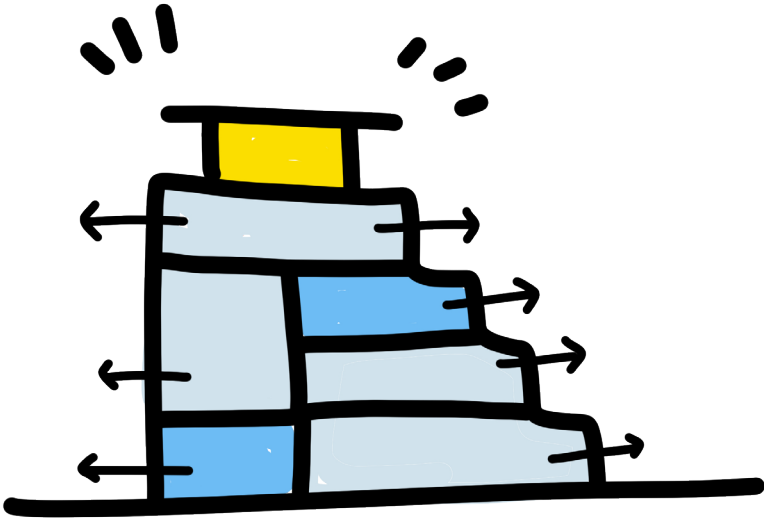


PROPOSAL



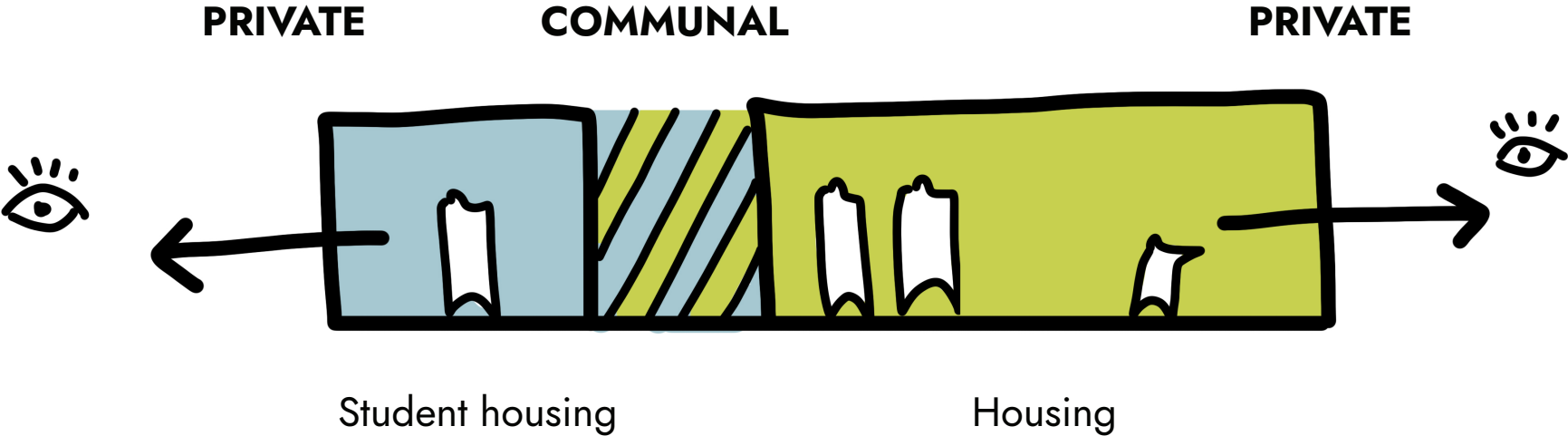
Housing

Student housing/
Young entrepreneurs

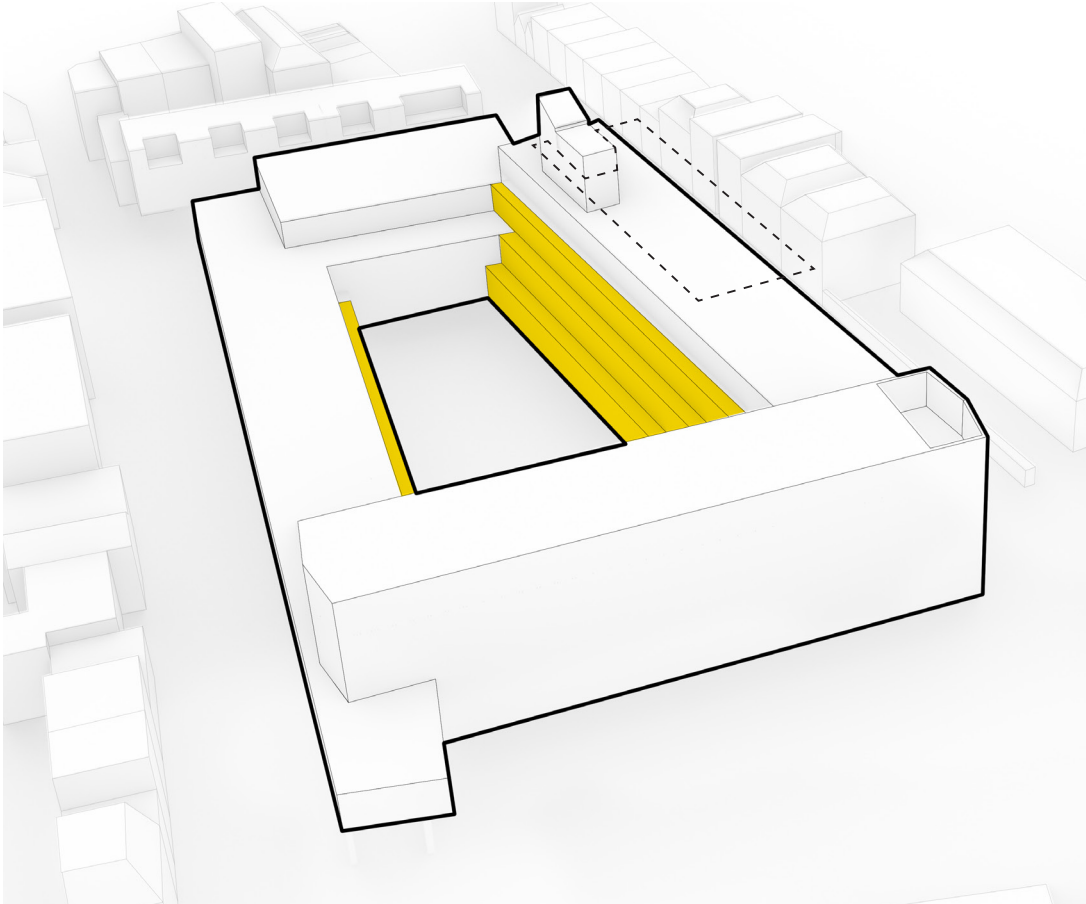


Renting and owning
Various target groups

PROPOSAL



PROPOSAL

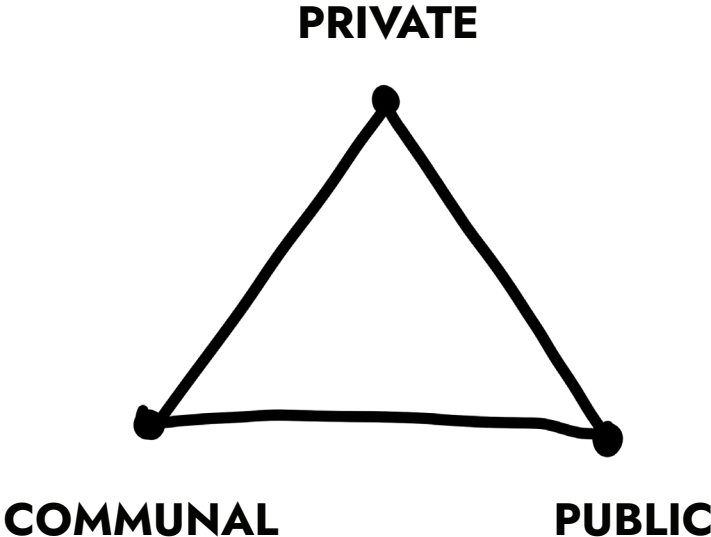


Design is about a **social relation** instead of shapes and forms

PROPOSAL



The Little Street by Johannes Vermeer, 1658



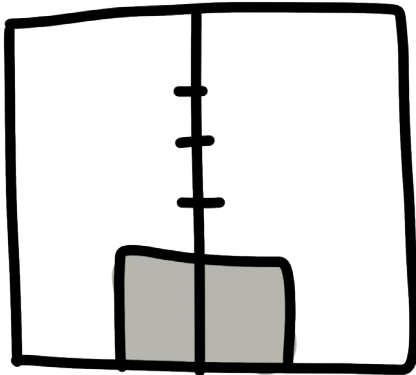
< 43 m²



**no car parking
affordable
flexible**

HOW TO MAKE APARTMENTS BIGGER WITHOUT INCREASING M2?

Flexibility



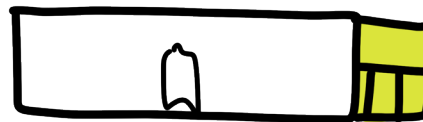
Adding without adding



43 m² + spacious terrace

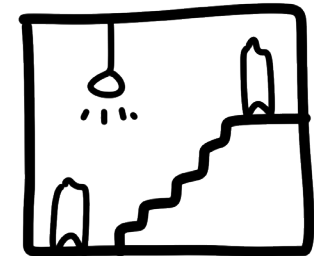


43 m² + spacious balcony

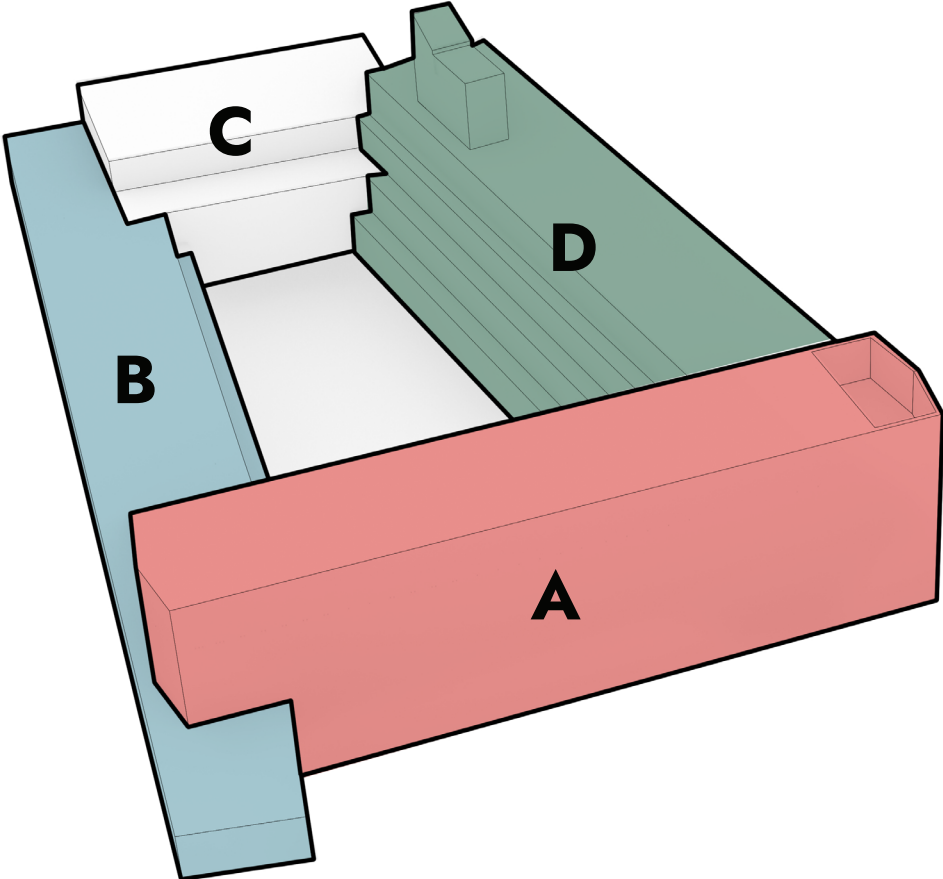


43 m² + spacious winter garden

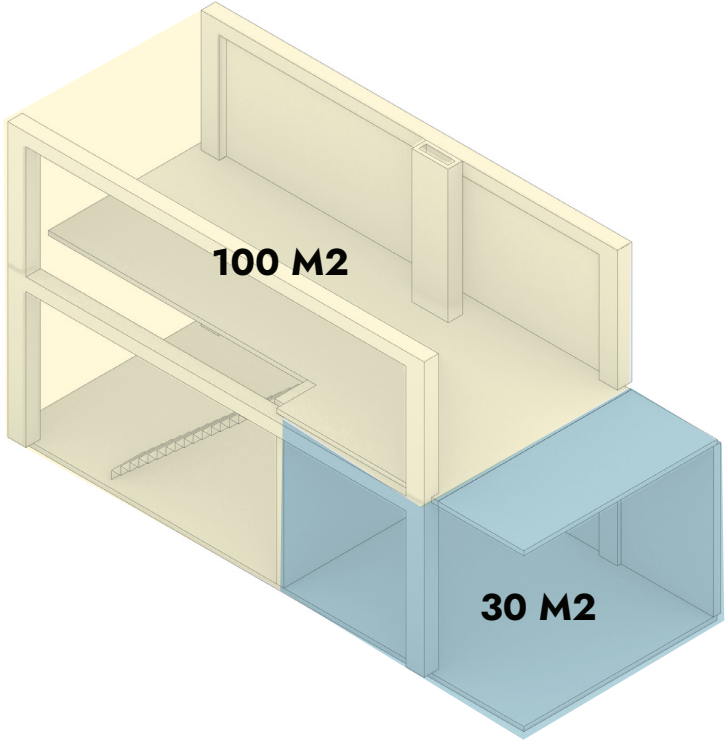
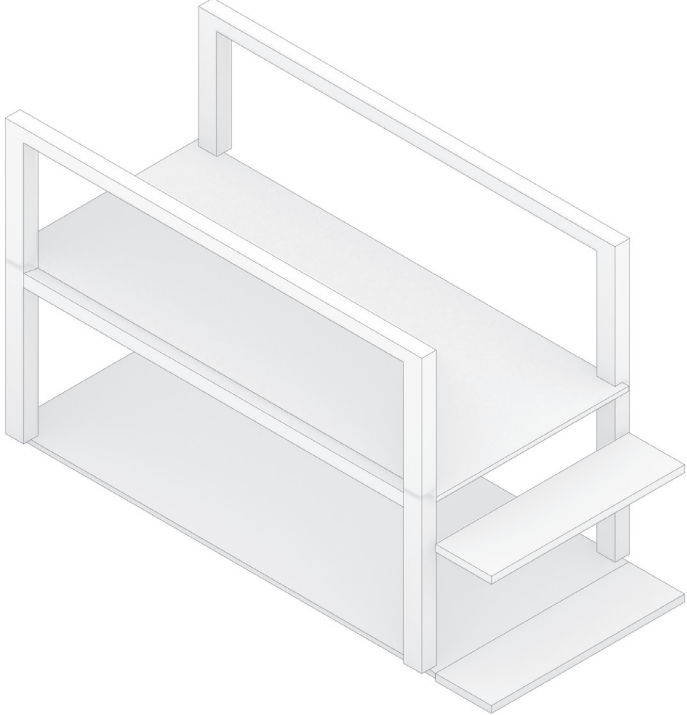
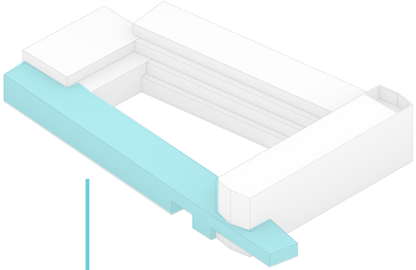
Verticality



HOUSING



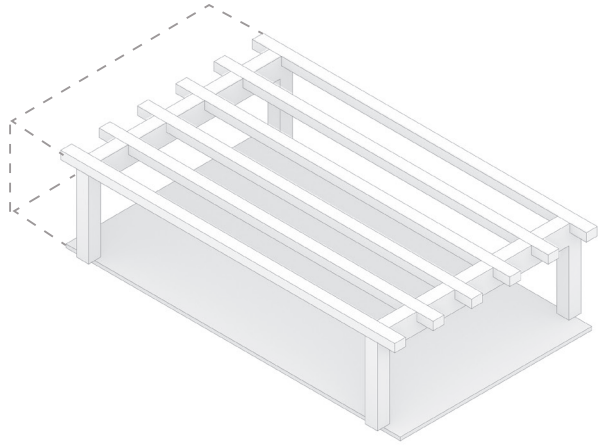
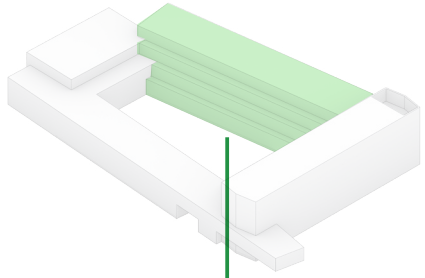
HOUSING



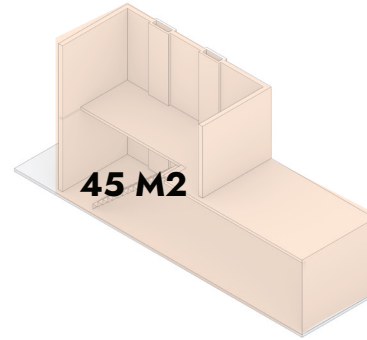
EXISTING STRUCTURE



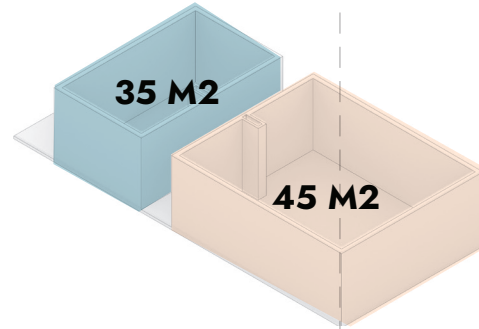
HOUSING



EXISTING STRUCTURE

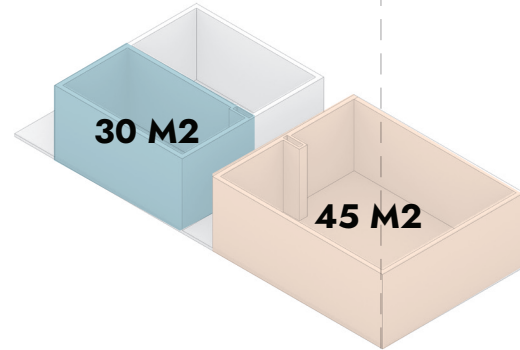


Young professional



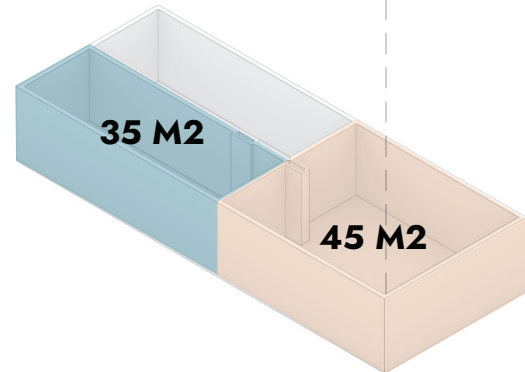
Young family

Student



Young family

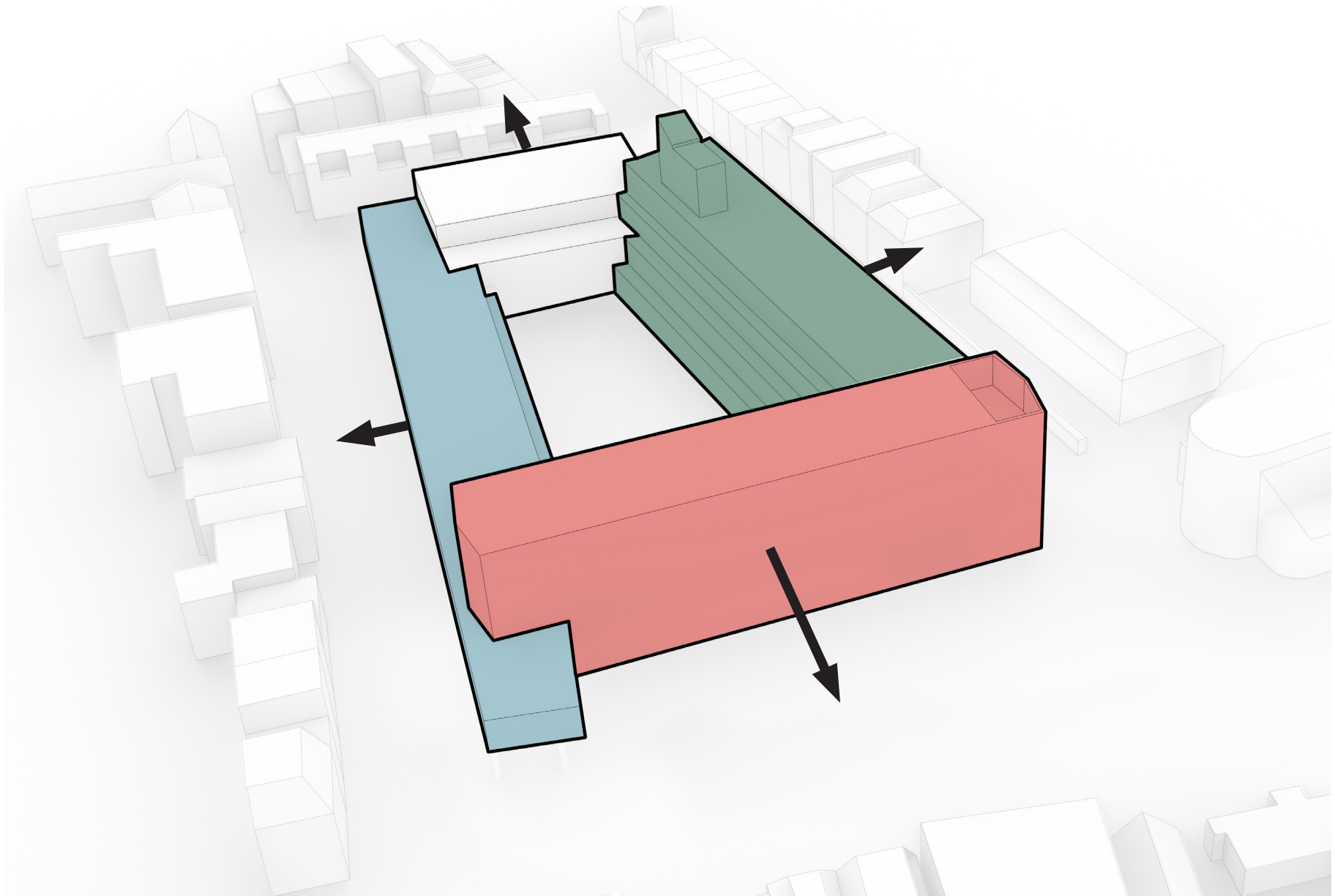
Student



Young family

Student

REFLECTING ON SURROUNDINGS



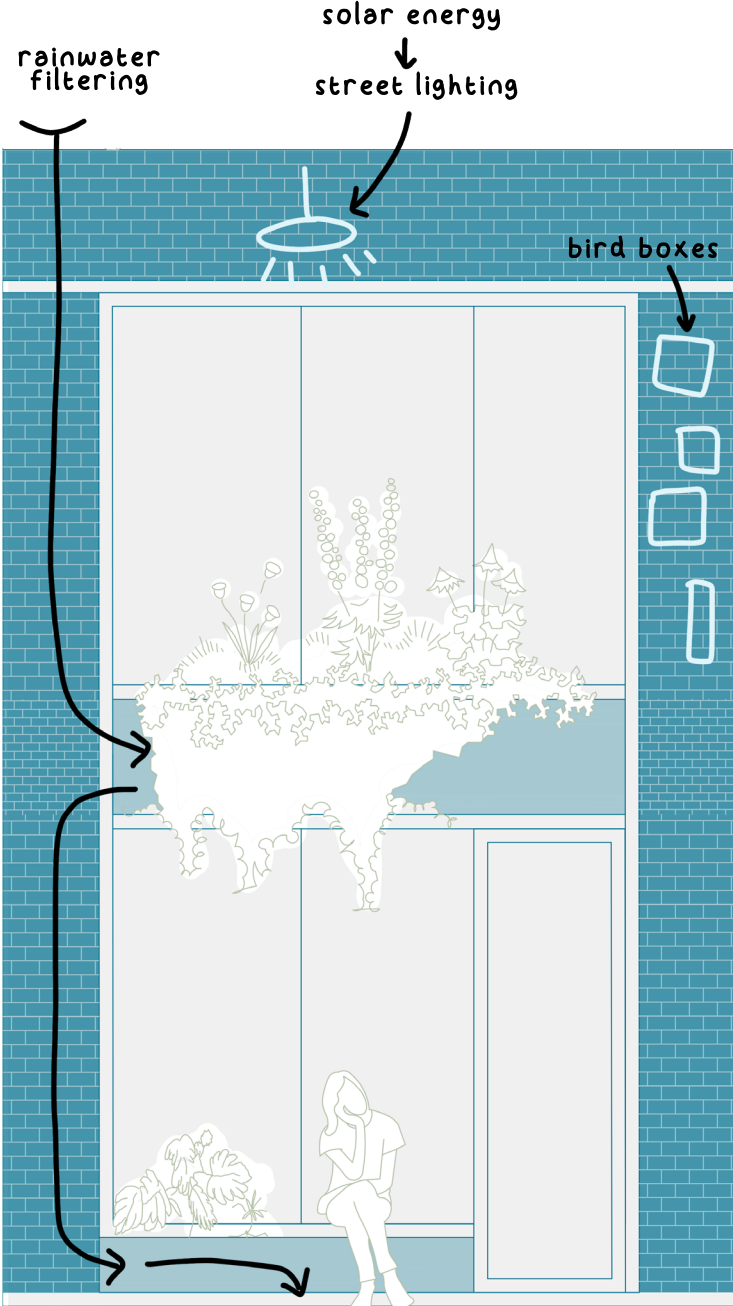
WHAT IS THE IDENTITY OF GRONINGEN'S OLD TOWN?

IDENTITY



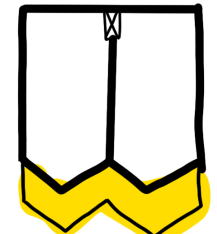
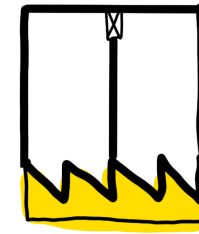
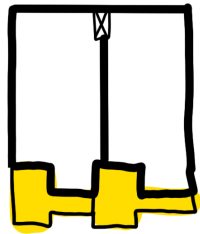
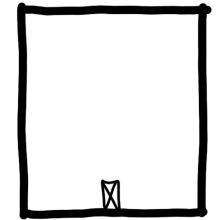
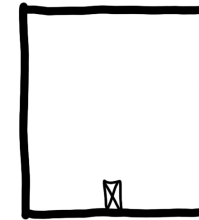
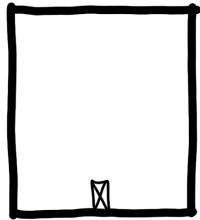
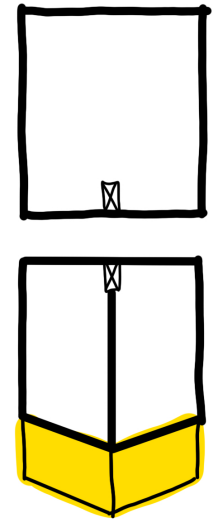
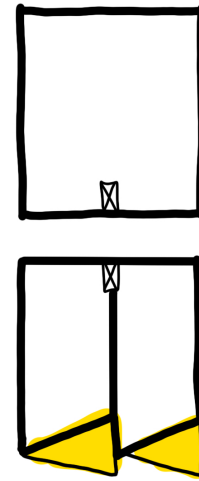
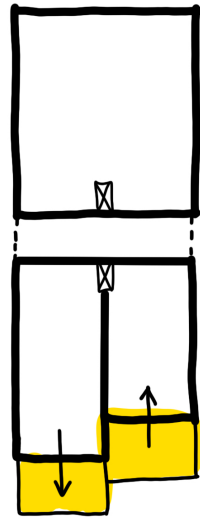
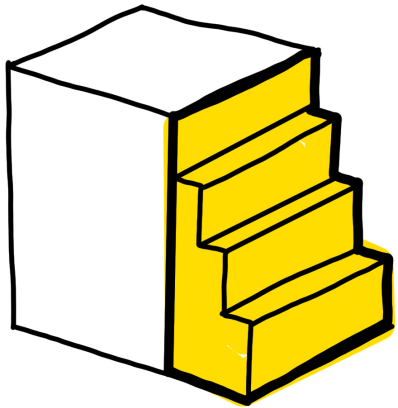
Every window has a story

IDENTITY



Underline that space is inhabited

SOCIAL RELATION



SOCIAL RELATION



Private VS Communal

IDENTITY

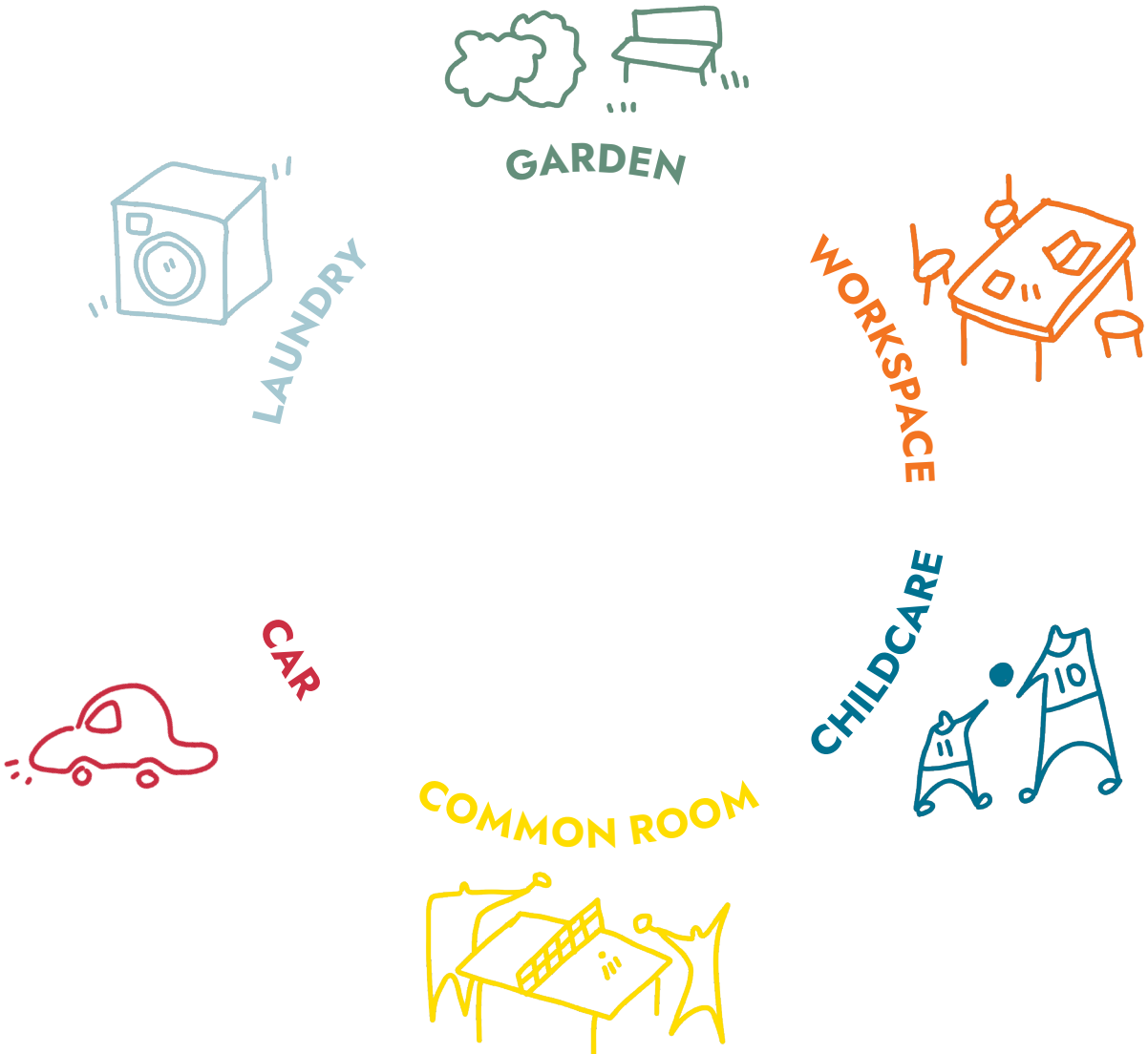


What do you see from your window?

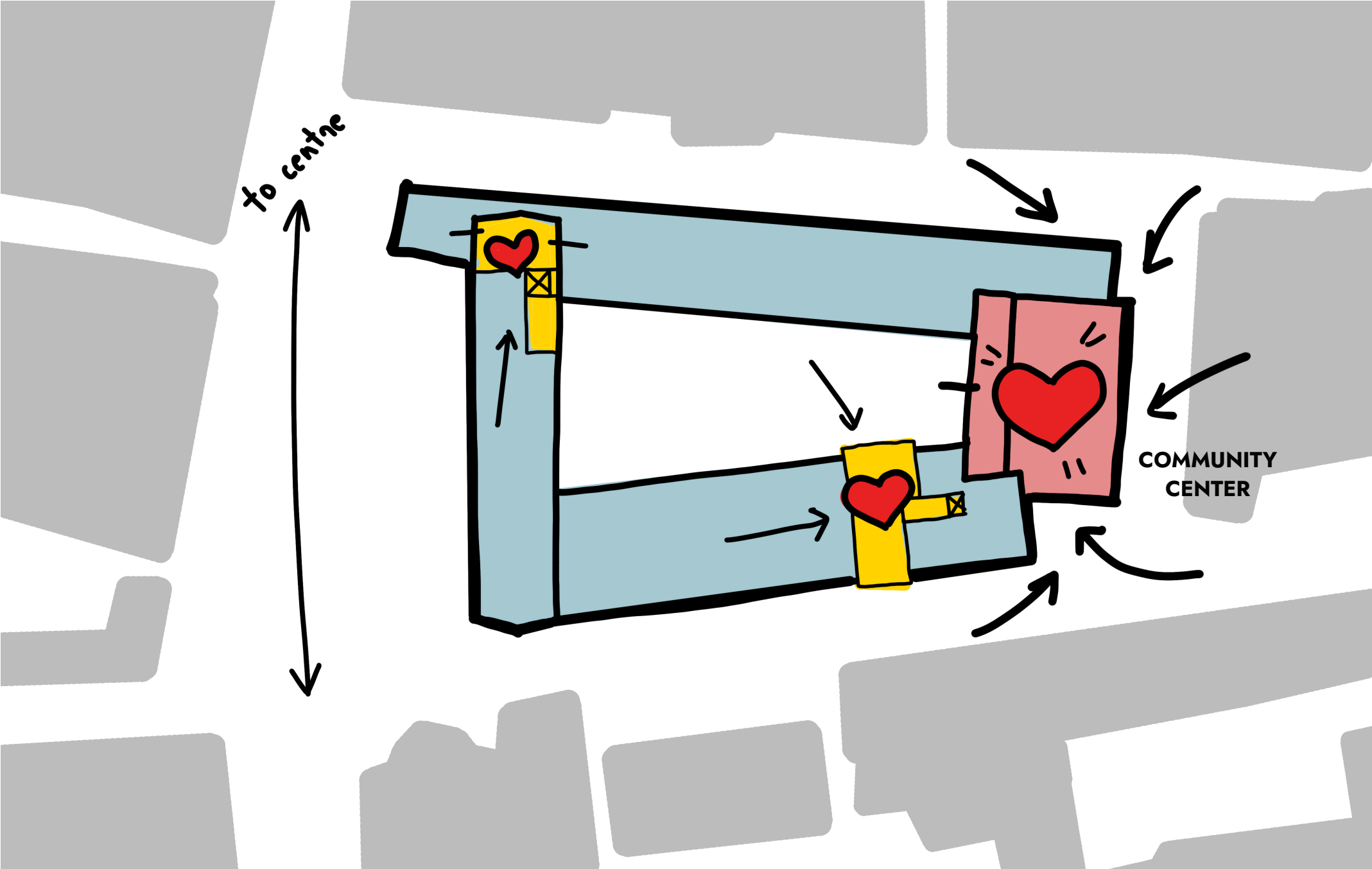
WHAT WOULD PEOPLE BE WILLING TO SHARE?

Around 190.000 respondants.

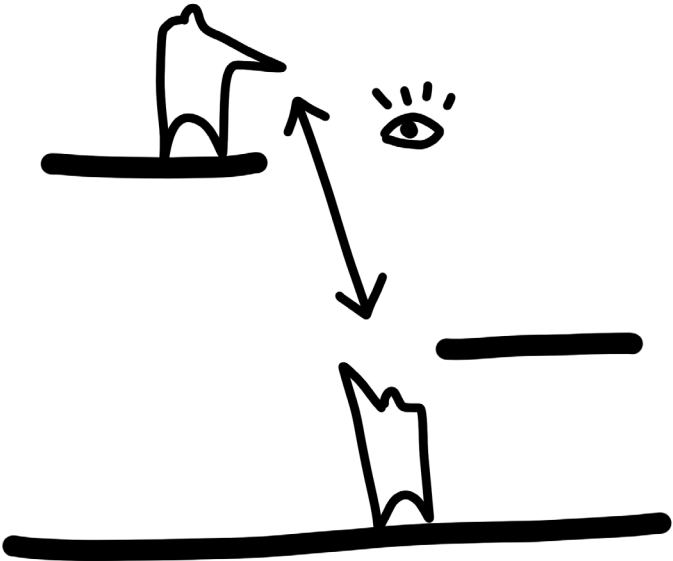
More than 50 % of them answered they are willing to share:



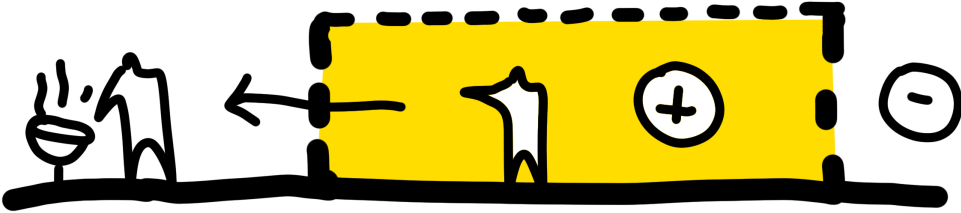
COMMUNAL SPACES



COMMUNAL SPACES

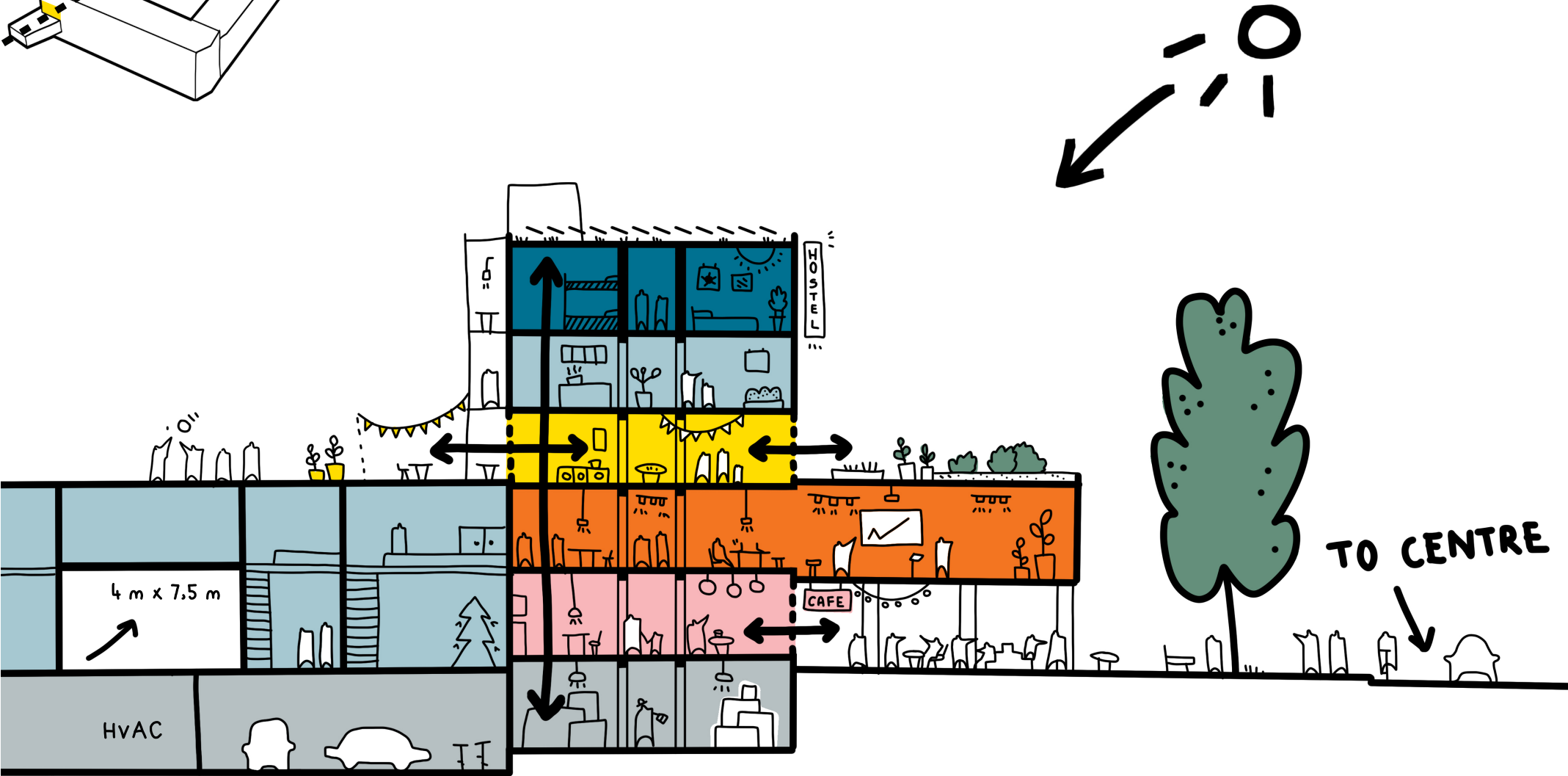
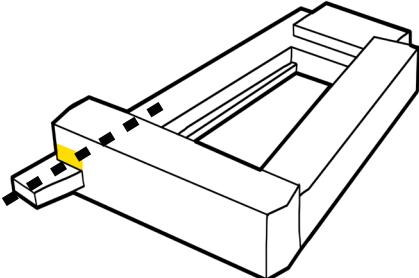


VERTICAL CONNECTION

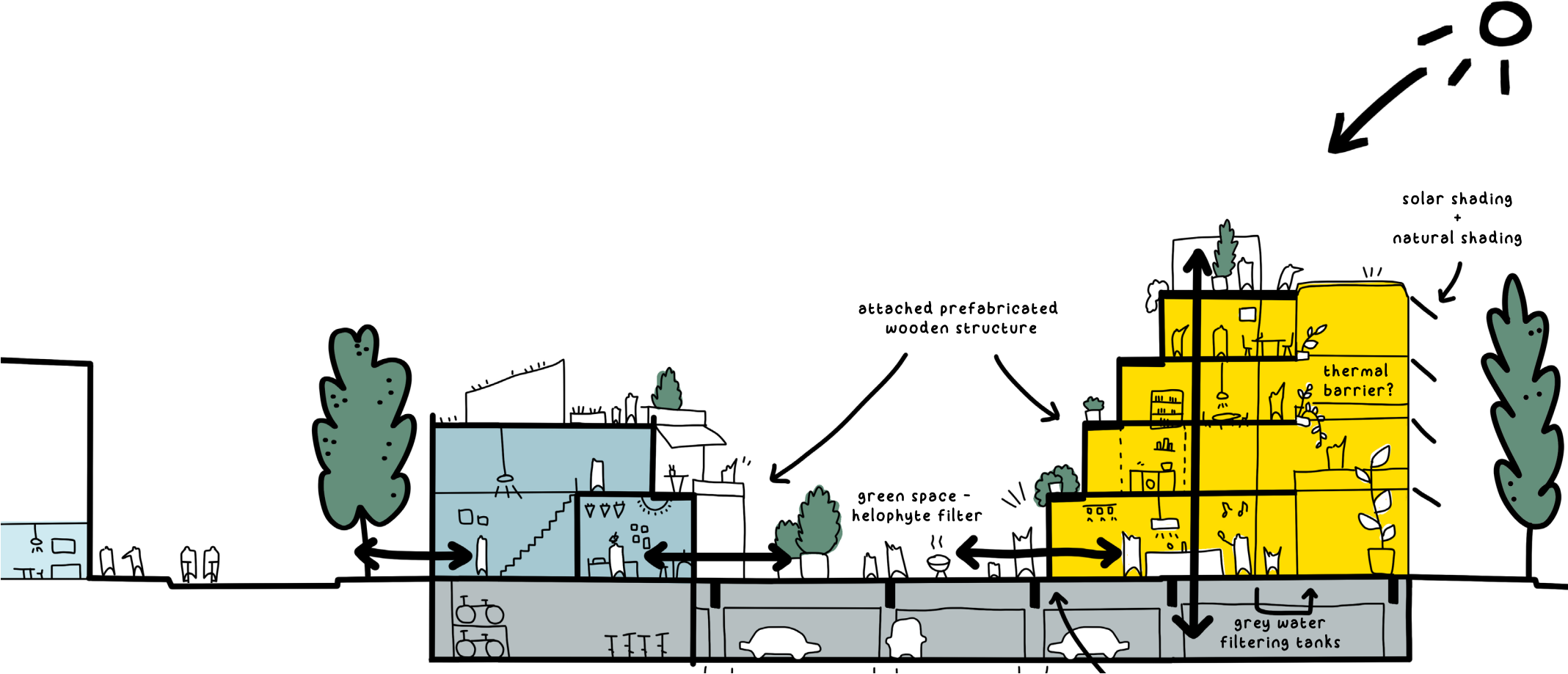
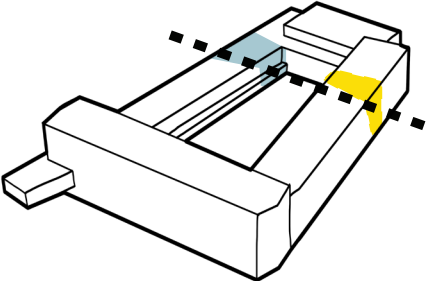


HORIZONTAL CONNECTION

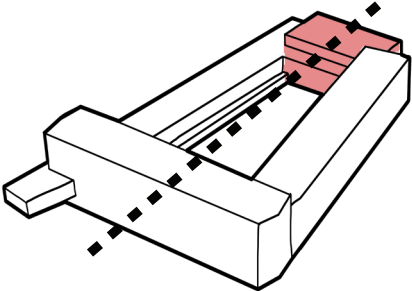
COMMUNAL SPACES



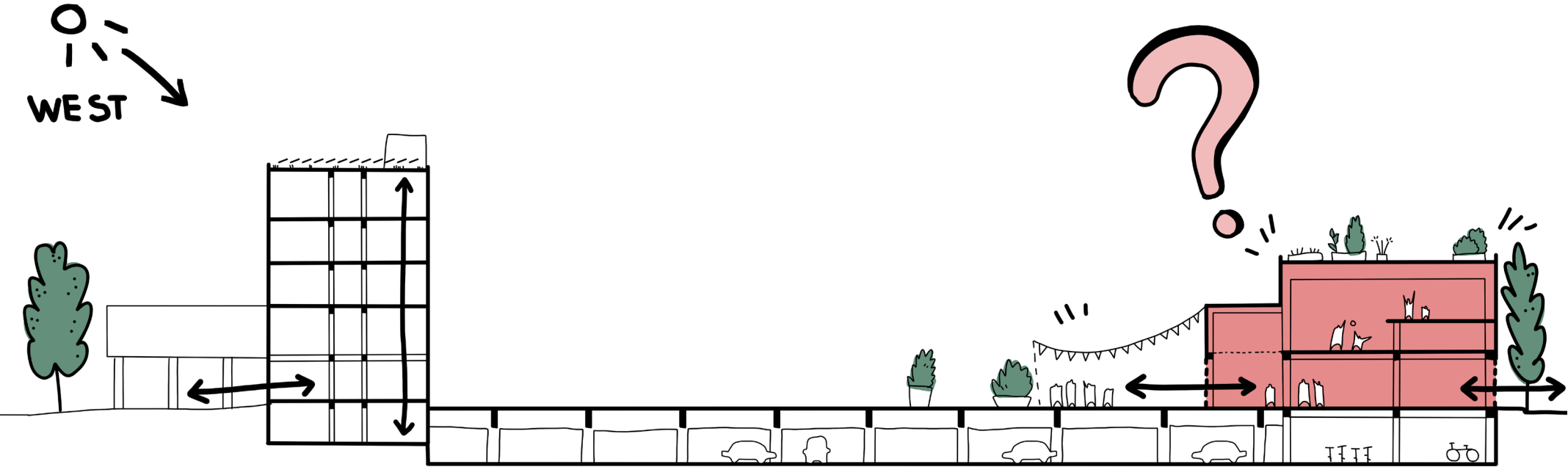
COMMUNAL SPACES



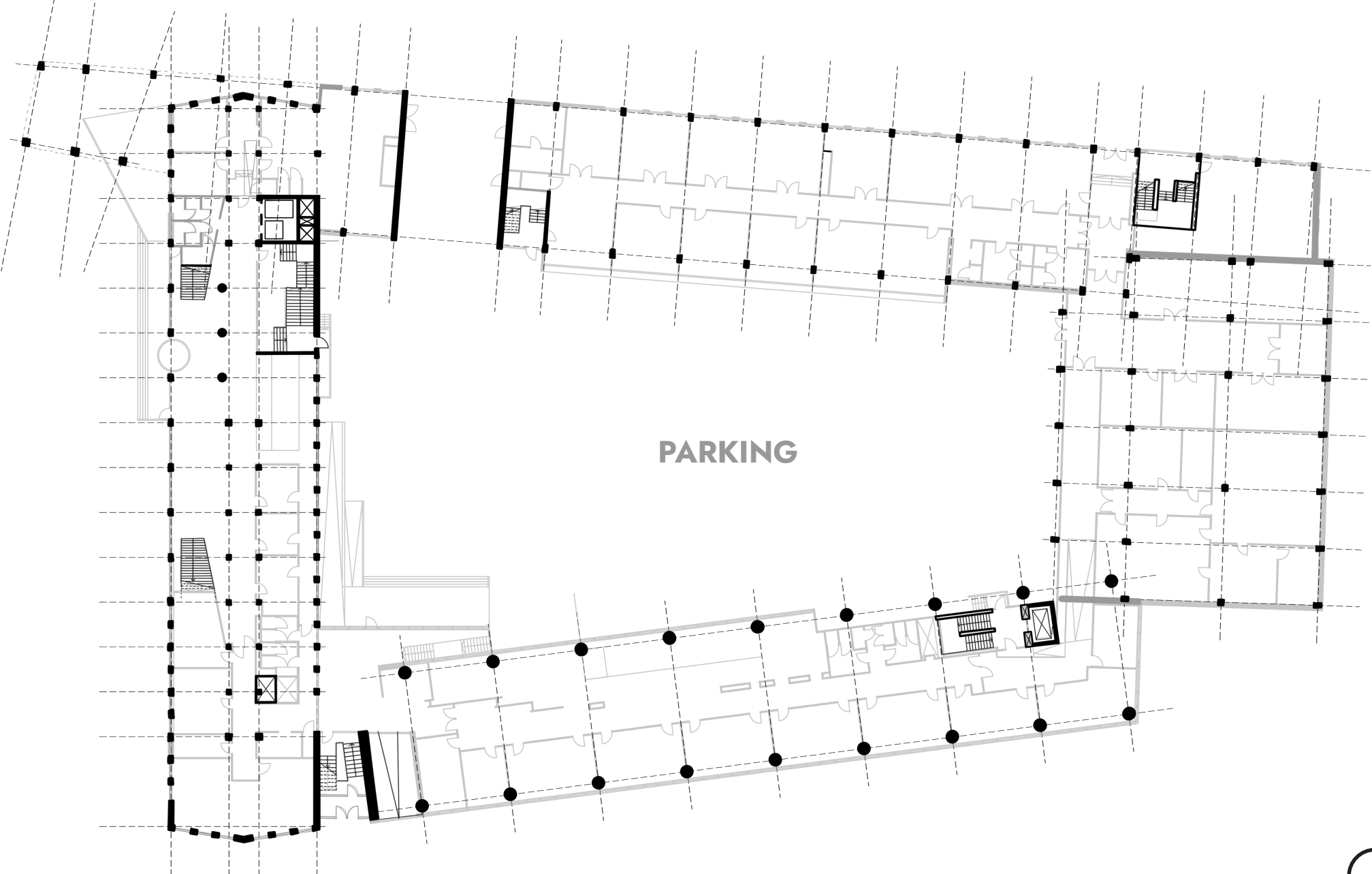
COMMUNITY CENTRE



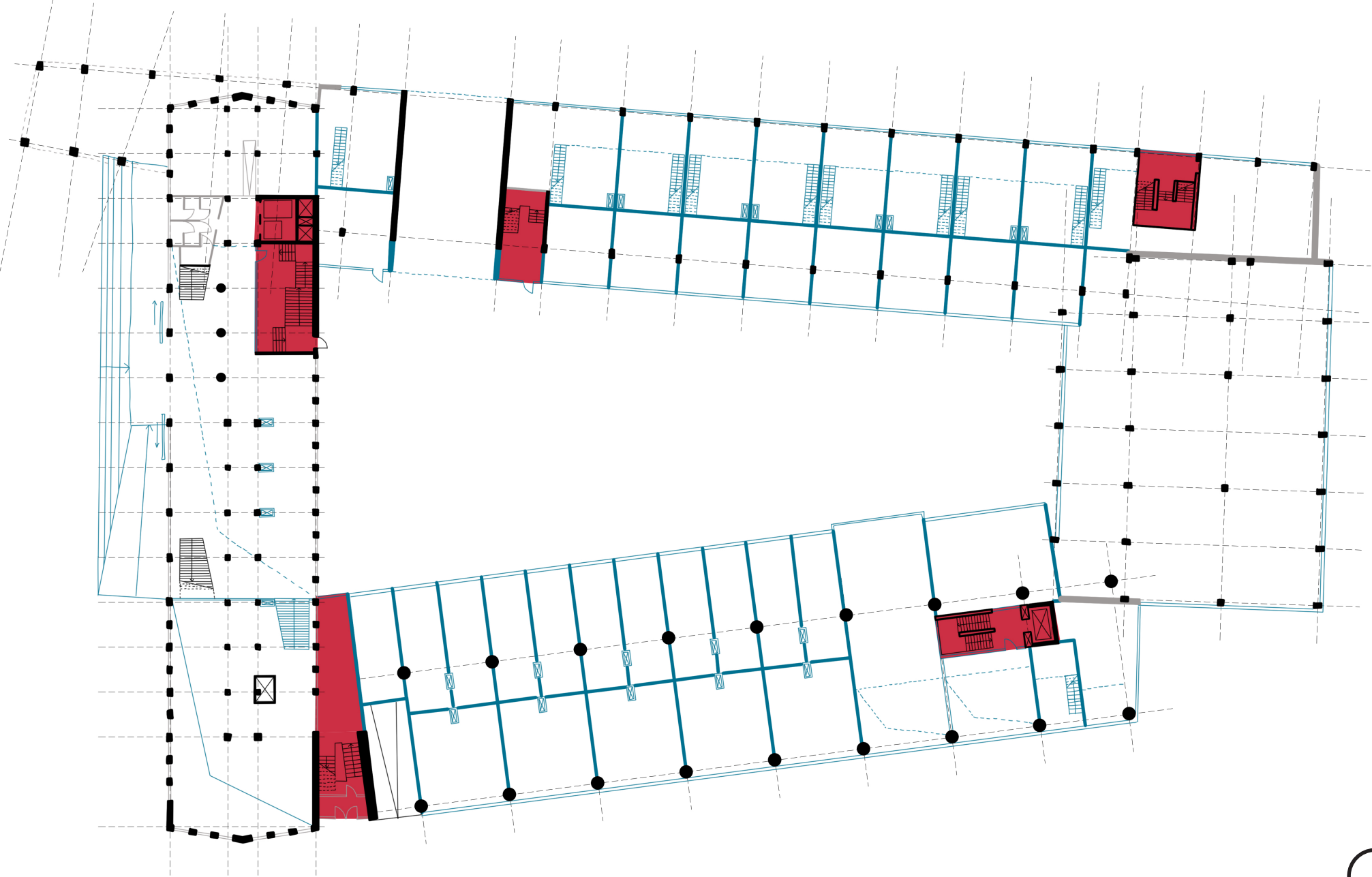
Existing situation



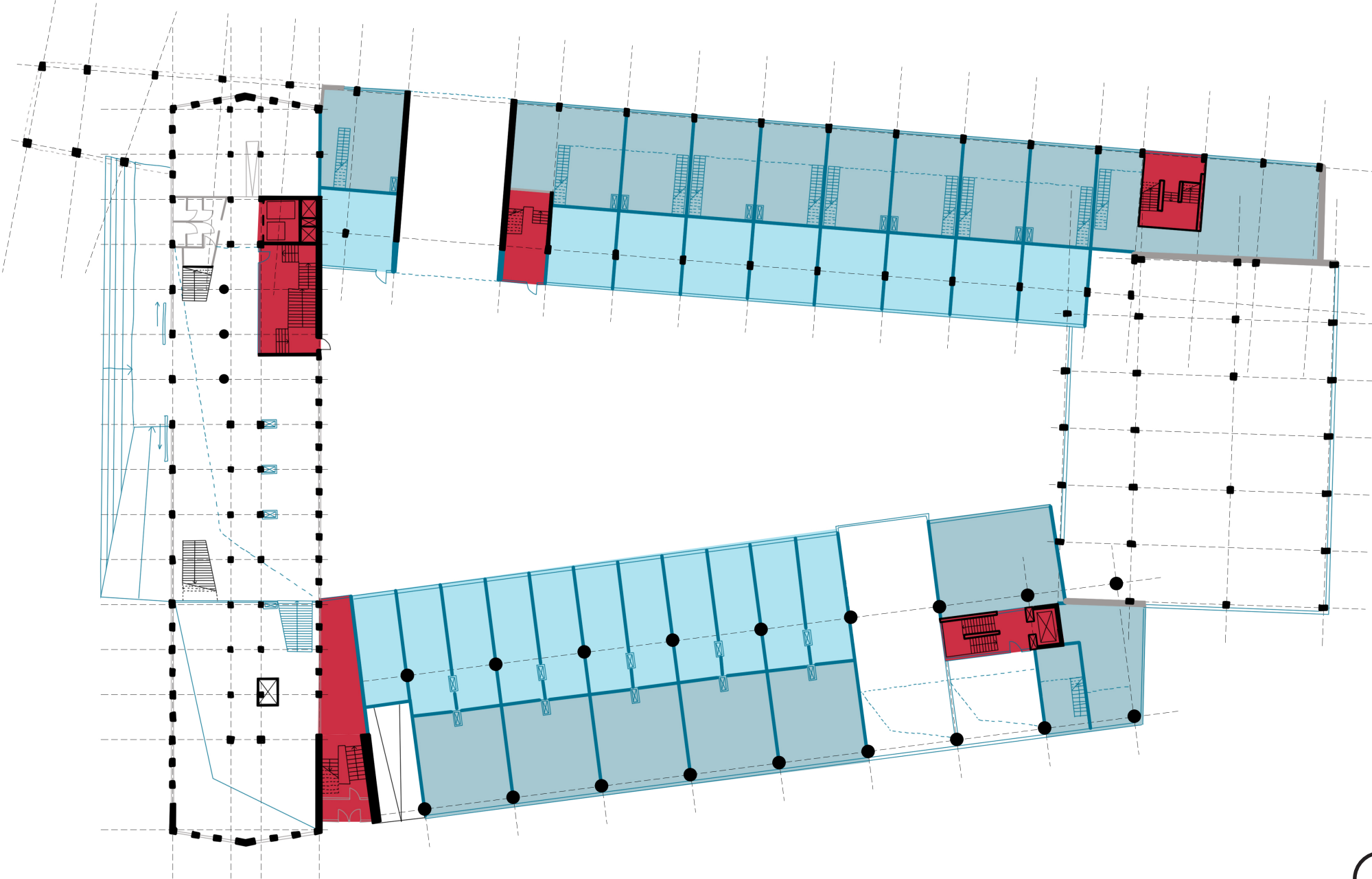
GROUND FLOOR. EXISTING



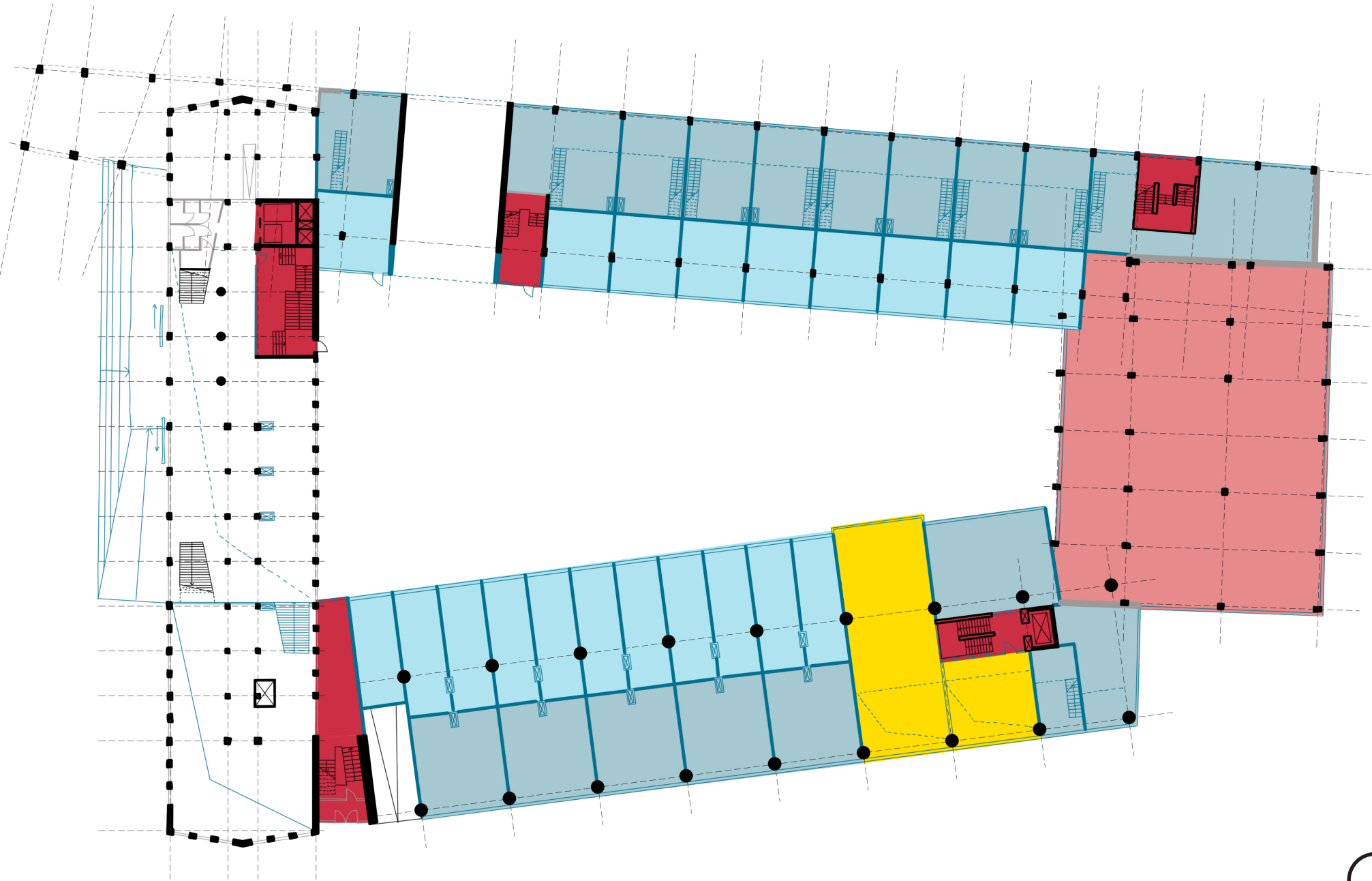
GROUND FLOOR. CORES



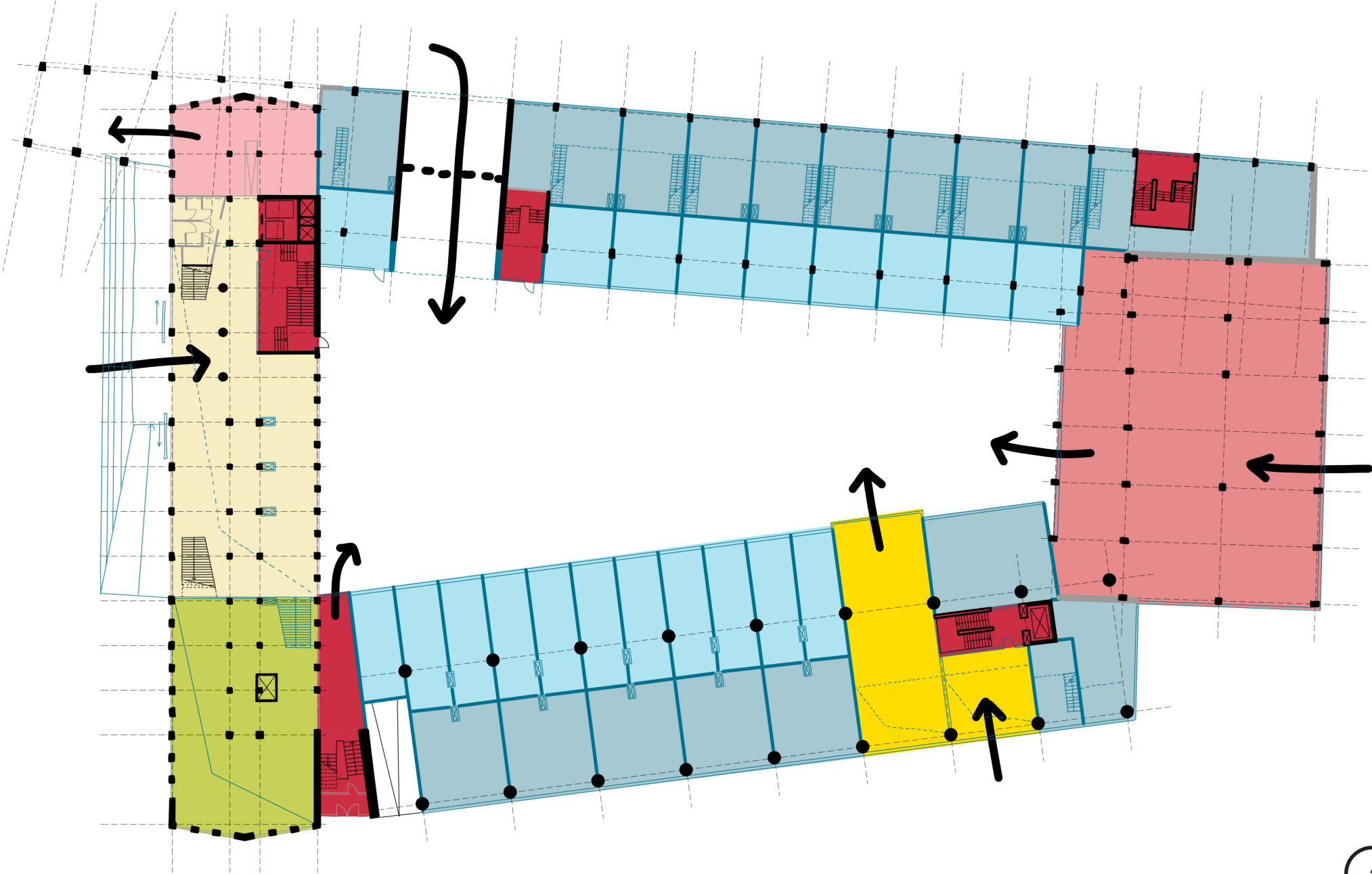
GROUND FLOOR. HOUSING



GROUND FLOOR. COMMUNAL



GROUND FLOOR. PUBLIC

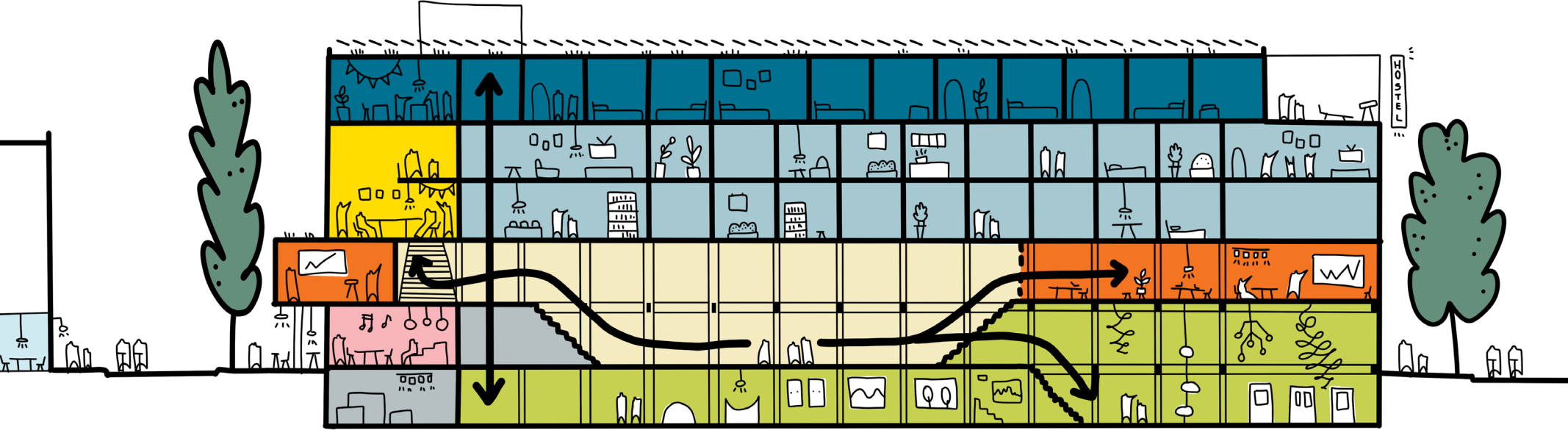
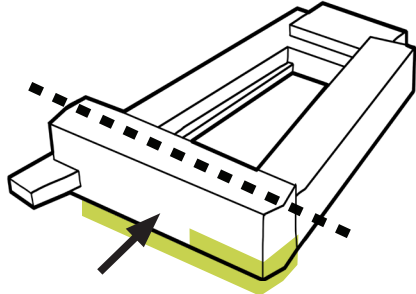


"THE WALL"

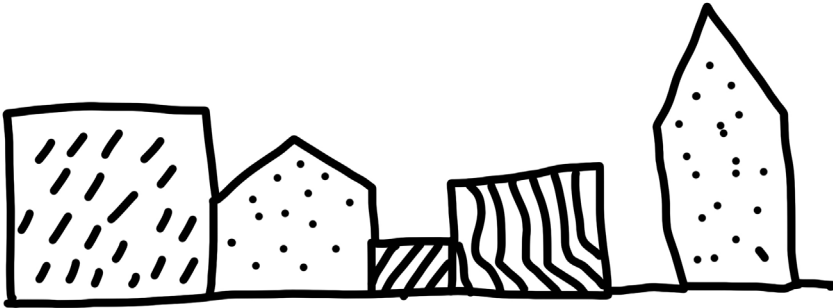


Photo from Nieuwsblad van het Noorden. (1995, April 26). *Schoolkinderen maken kunstwerk*. (p. 9)

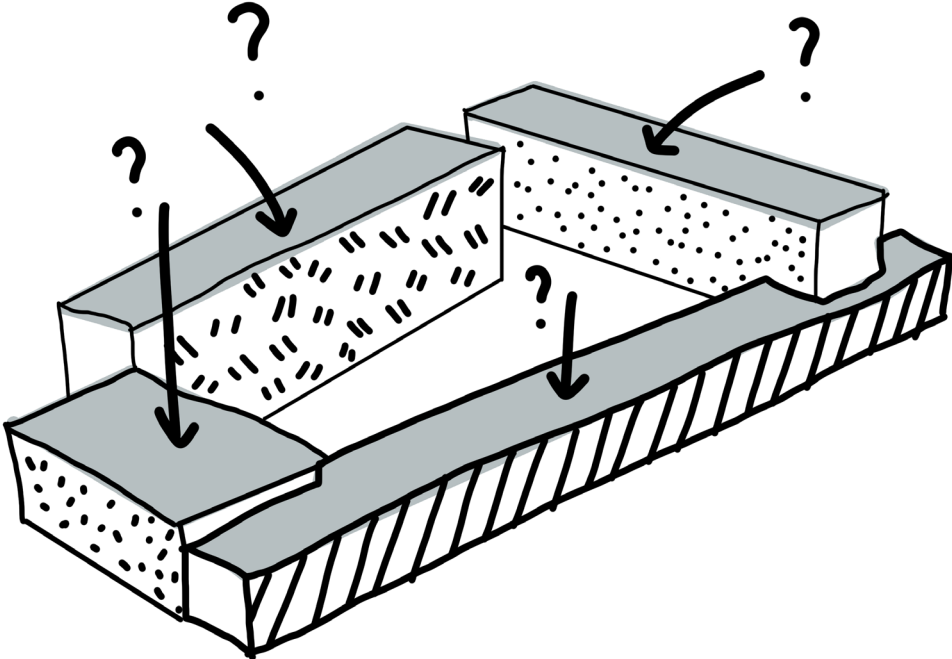
"THE WALL"



IDENTITY



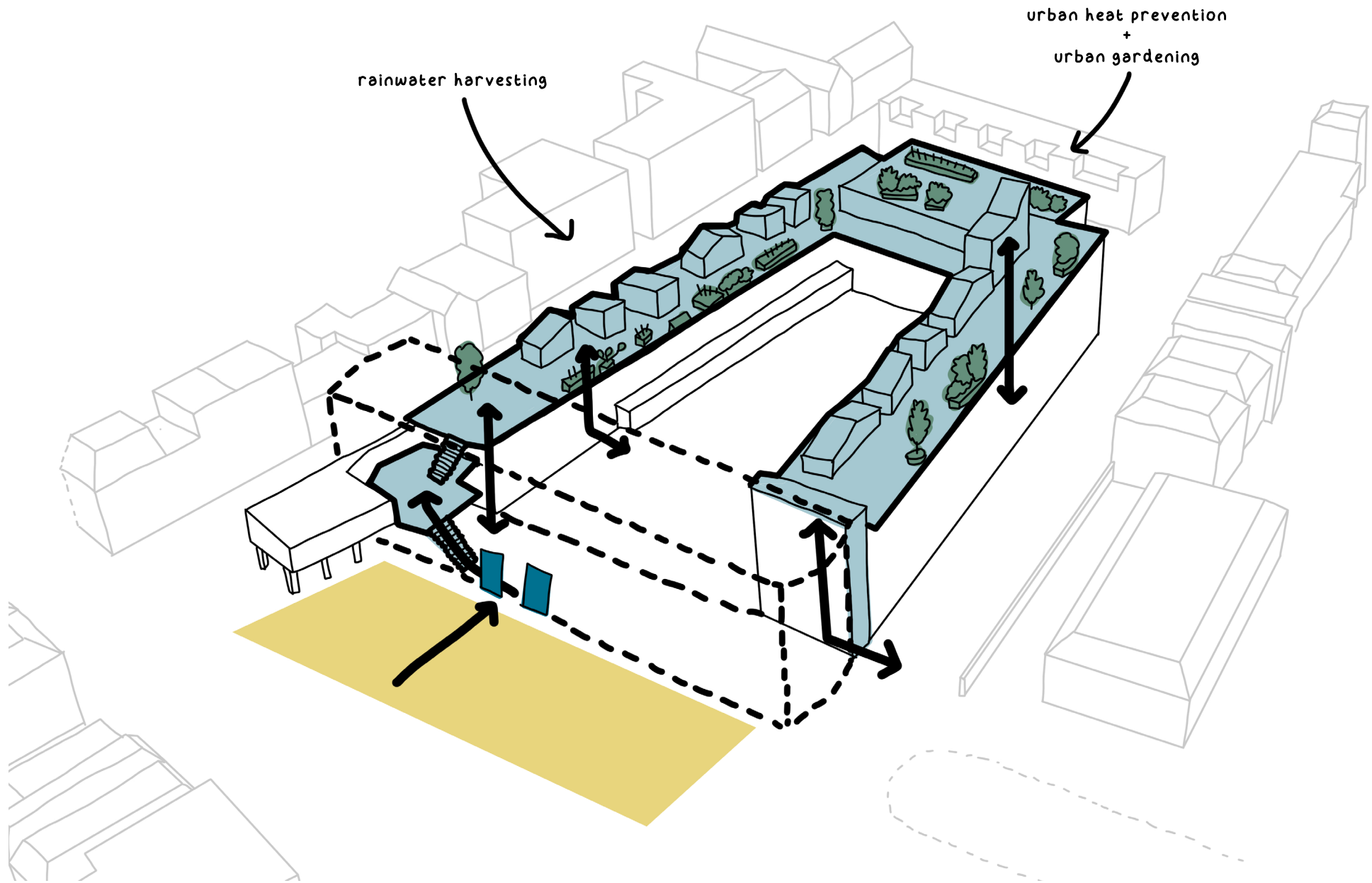
Old town



The fifth facade

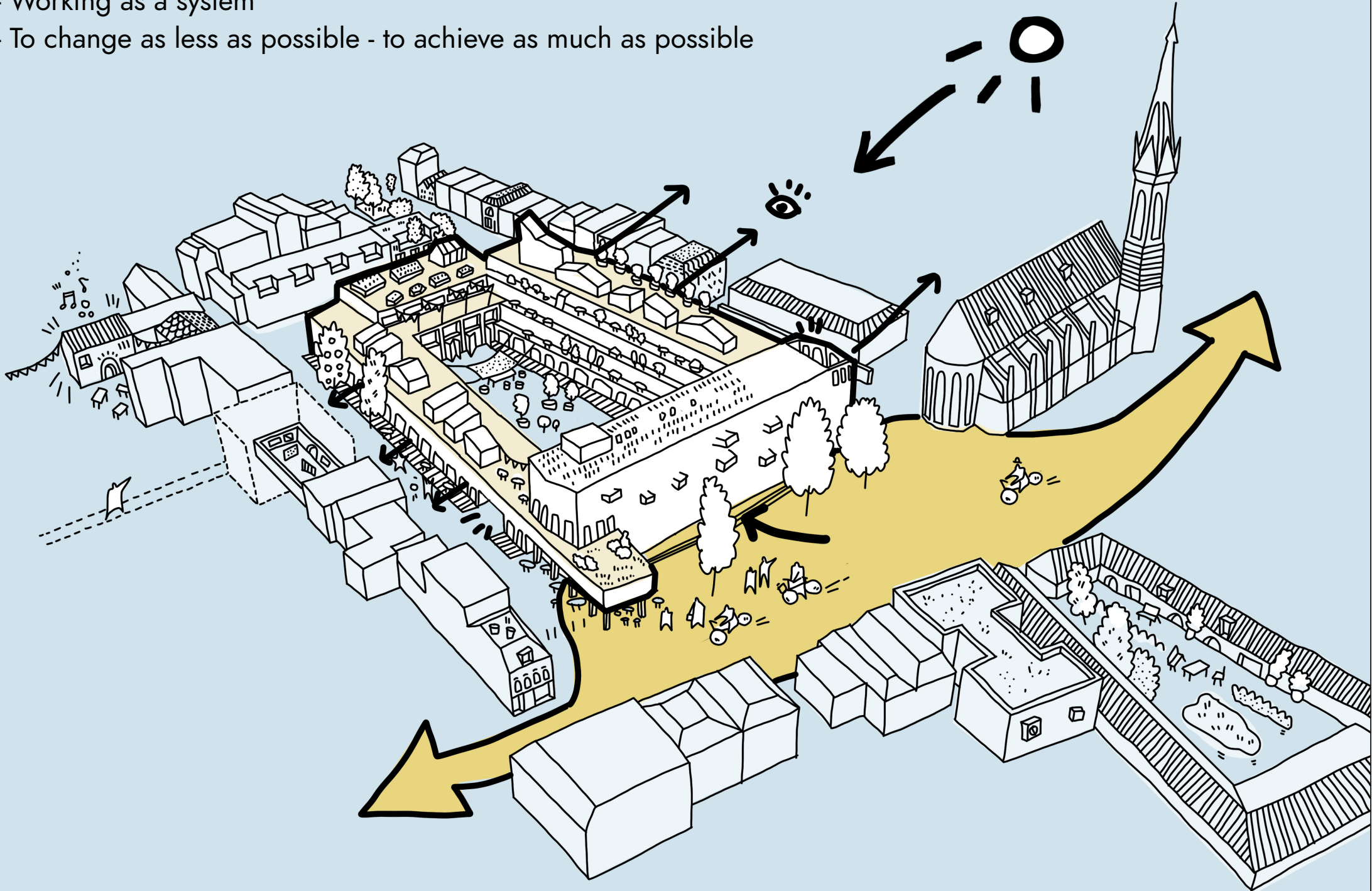
THE FIFTH FACADE

+ 3100 m²



USER FIRST

- Working as a system
- To change as less as possible - to achieve as much as possible



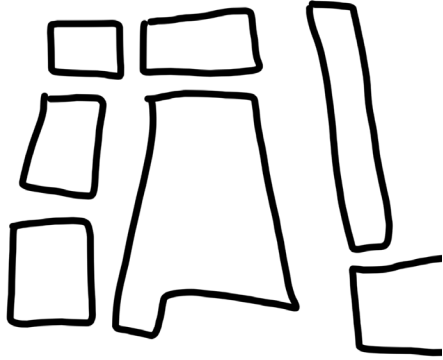
USERS FIRST



P3

USER FIRST

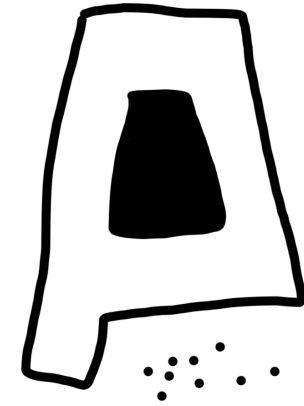
VALUES OF THE BUILDING



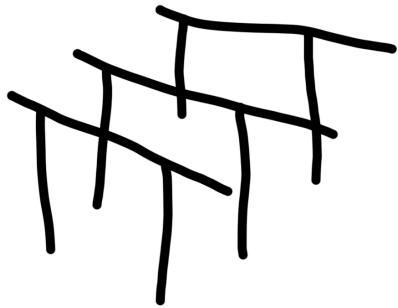
Urban context



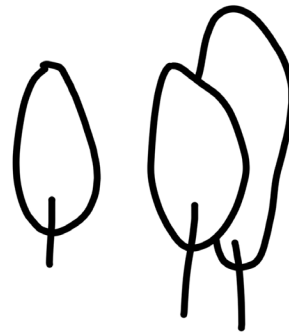
Reflection on surroundings



Courtyard and front square



Structure

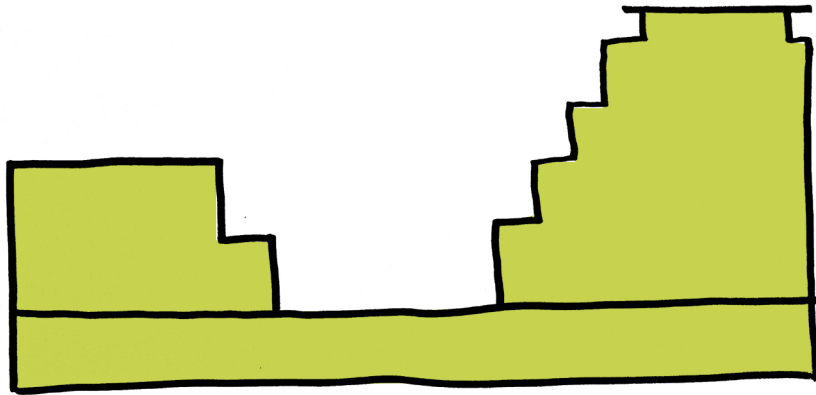


Greenery



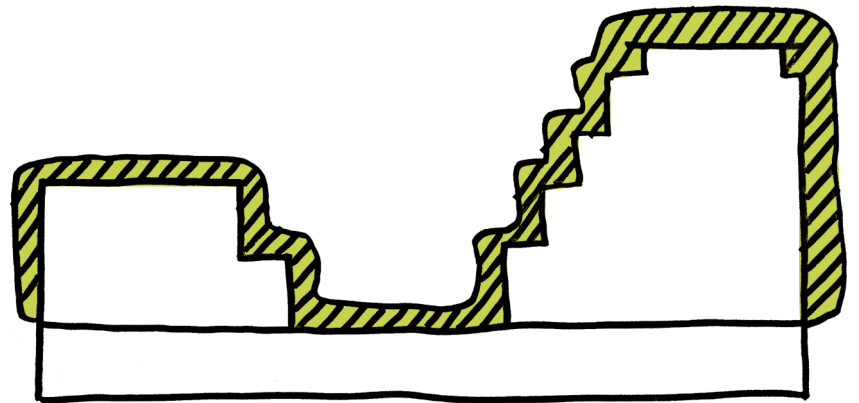
Police identity

VALUES OF THE BUILDING



KEEP AS MUCH AS POSSIBLE

+



REUSE AS MUCH AS POSSIBLE

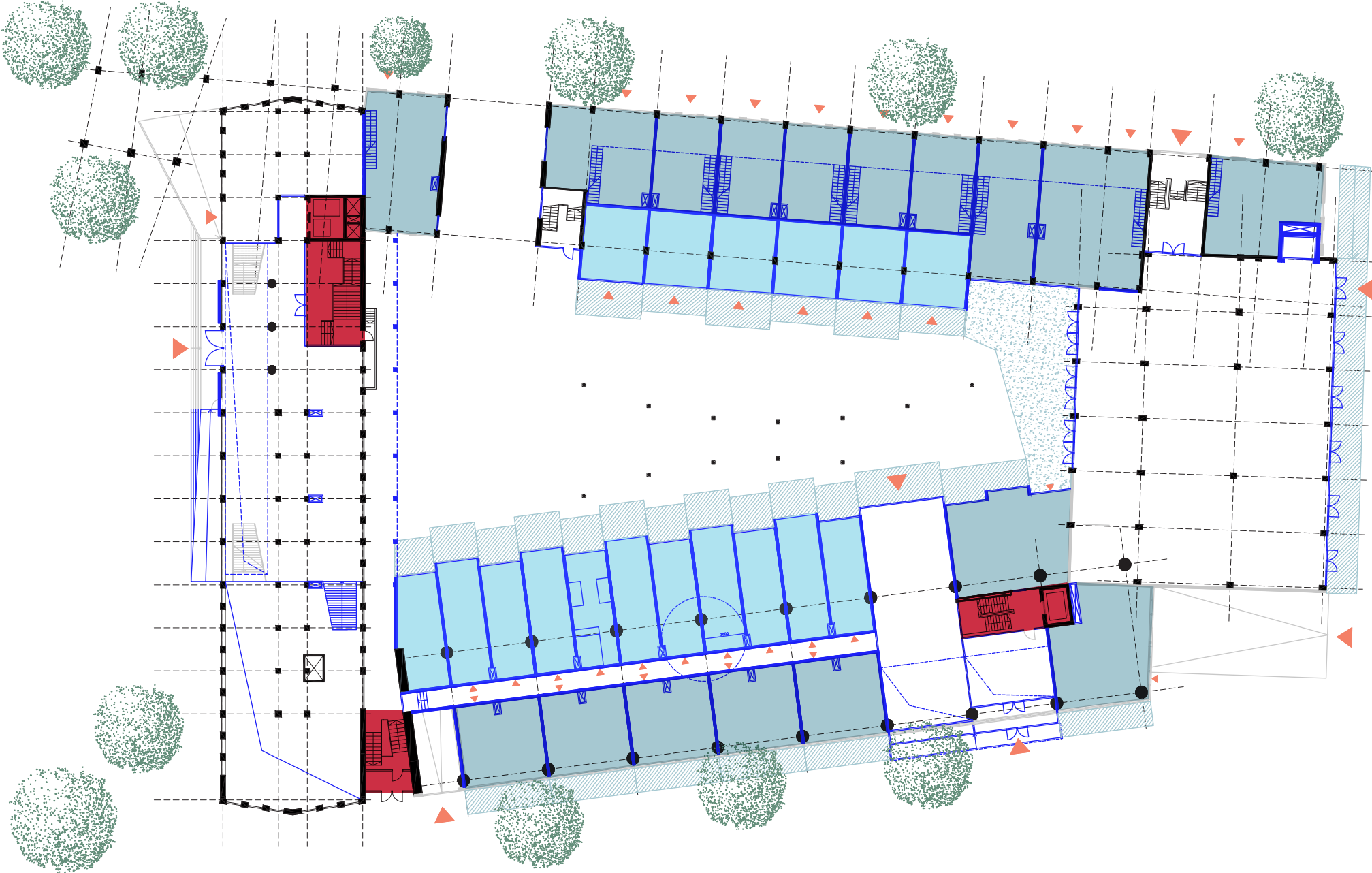
< 43 m²



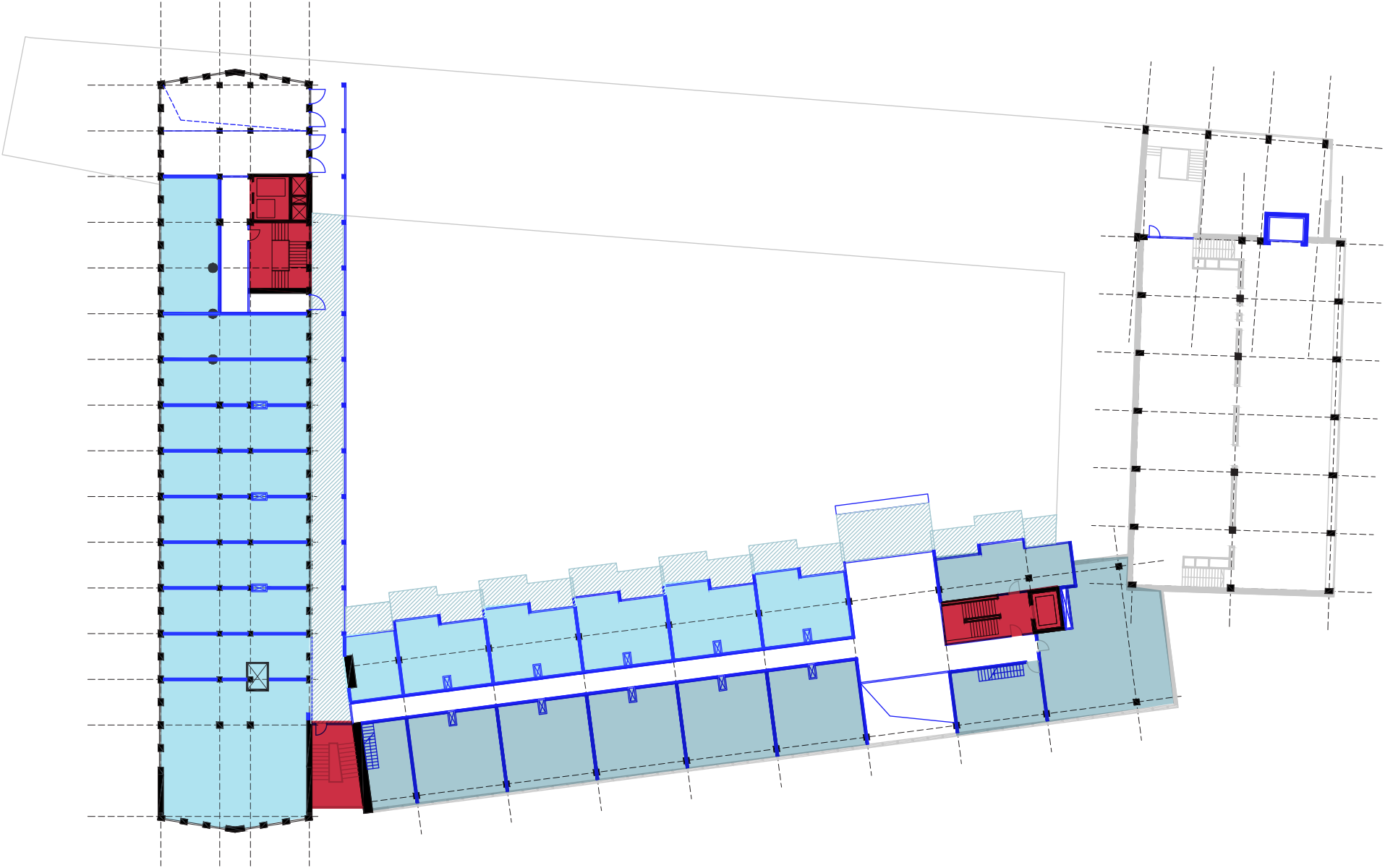
**no parking
affordable
student housing subsidy
flexible**

**HOW TO MAKE
APARTMENTS BIGGER
WITHOUT INCREASING M2?**

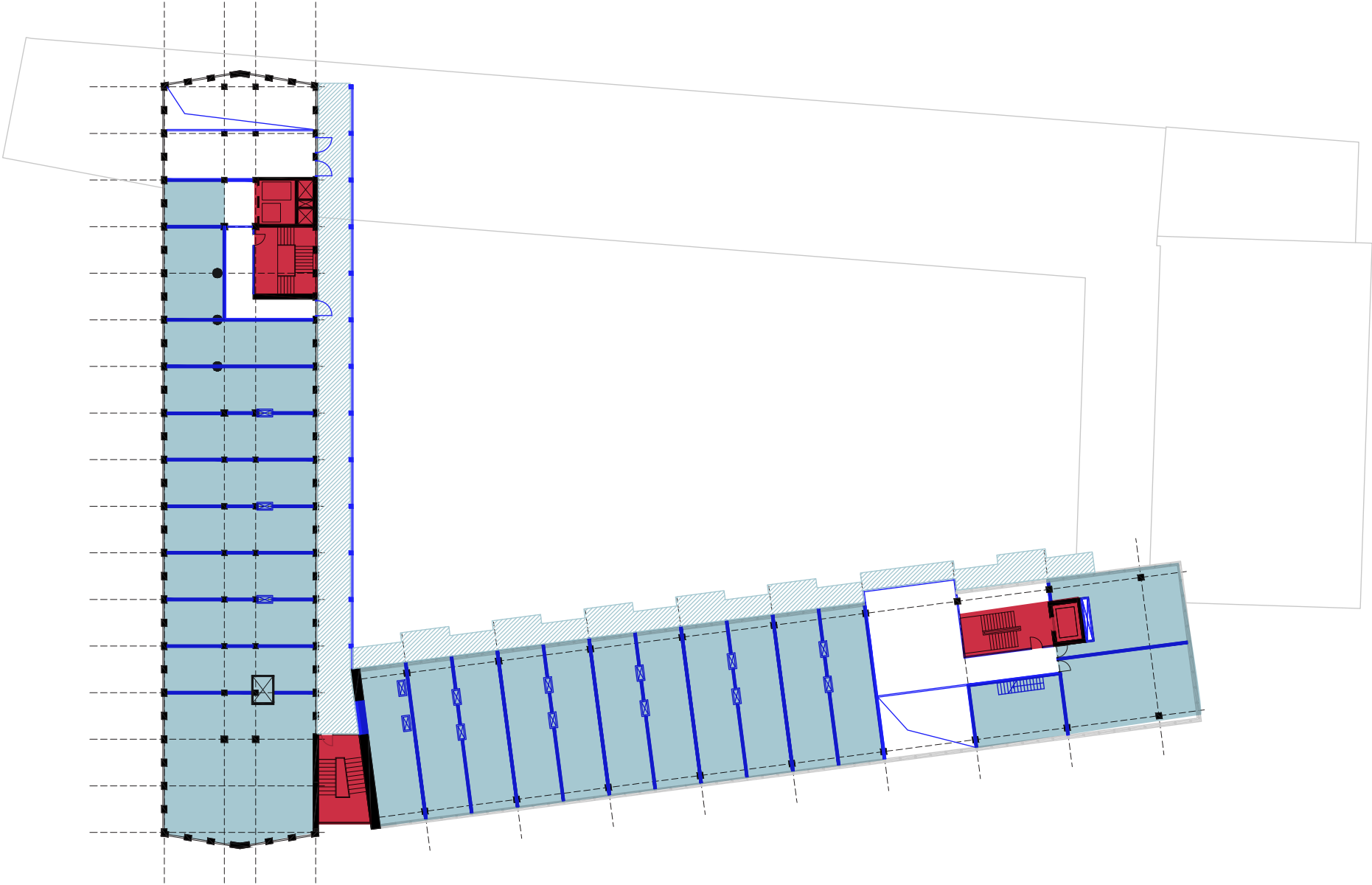
00 FLOOR



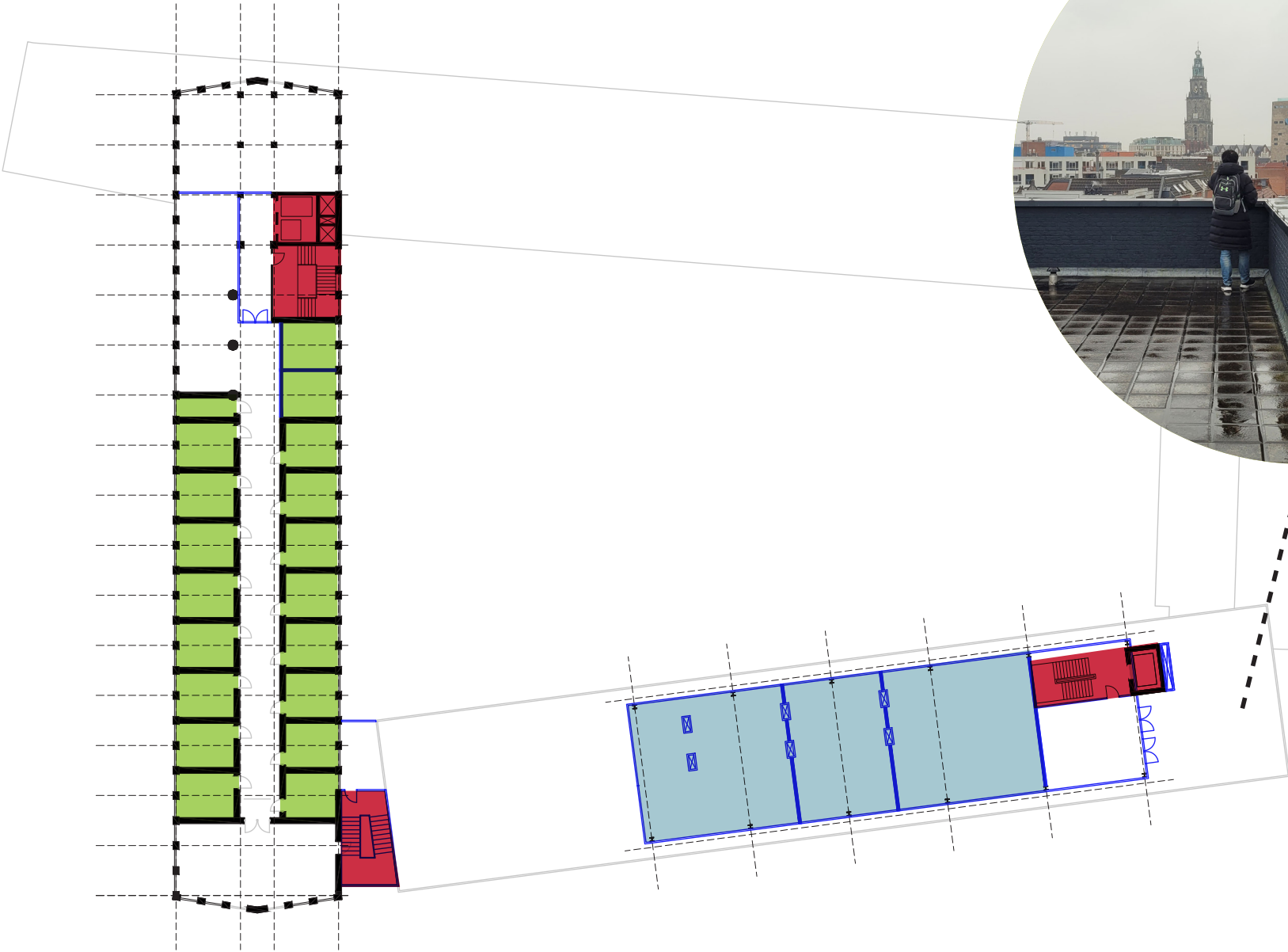
02 FLOOR



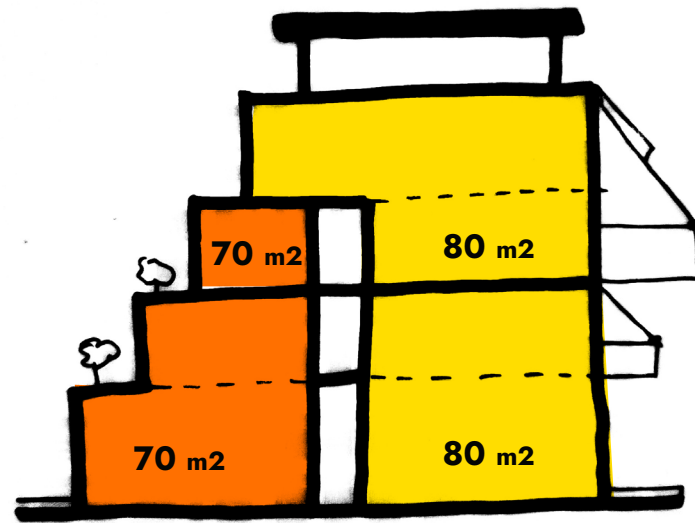
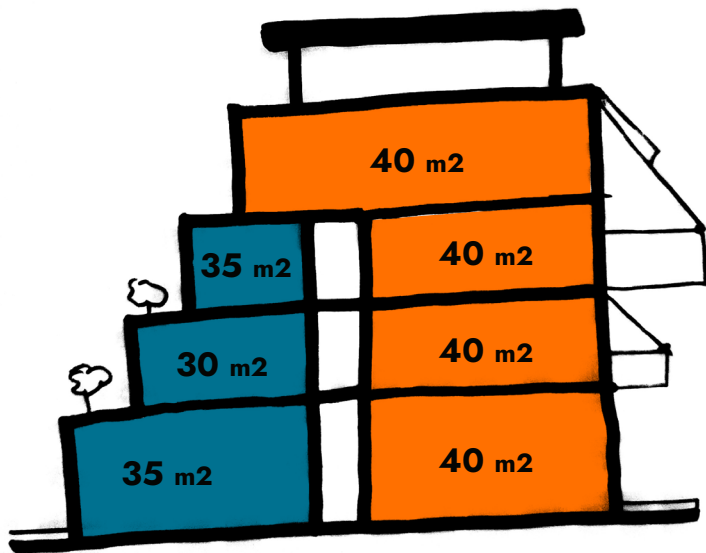
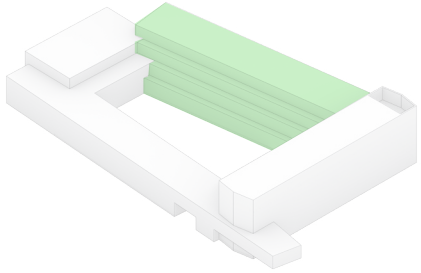
03 FLOOR



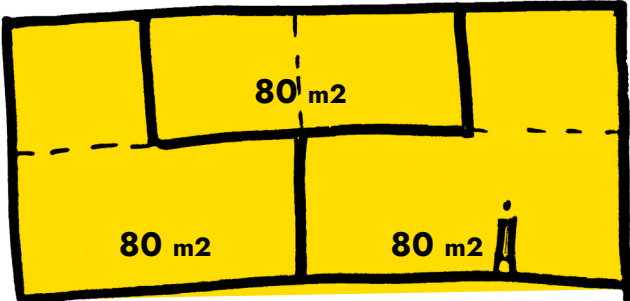
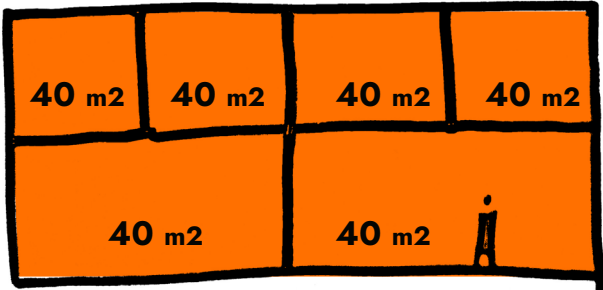
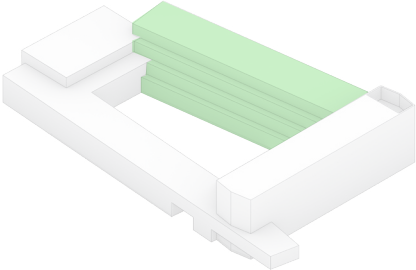
04 FLOOR



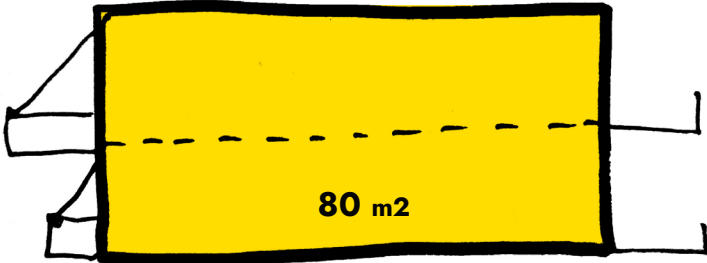
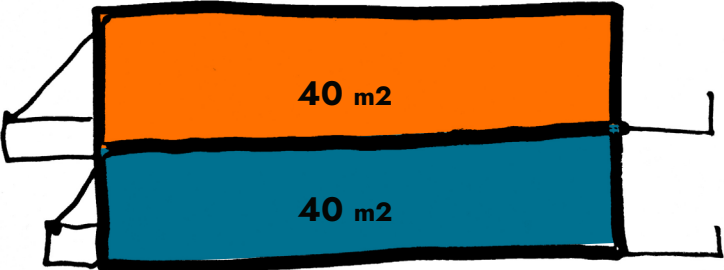
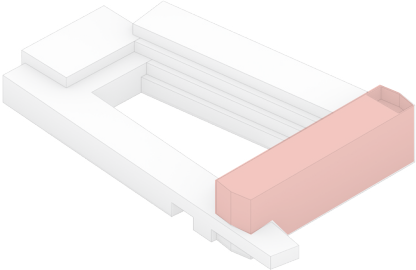
FLEXIBILITY



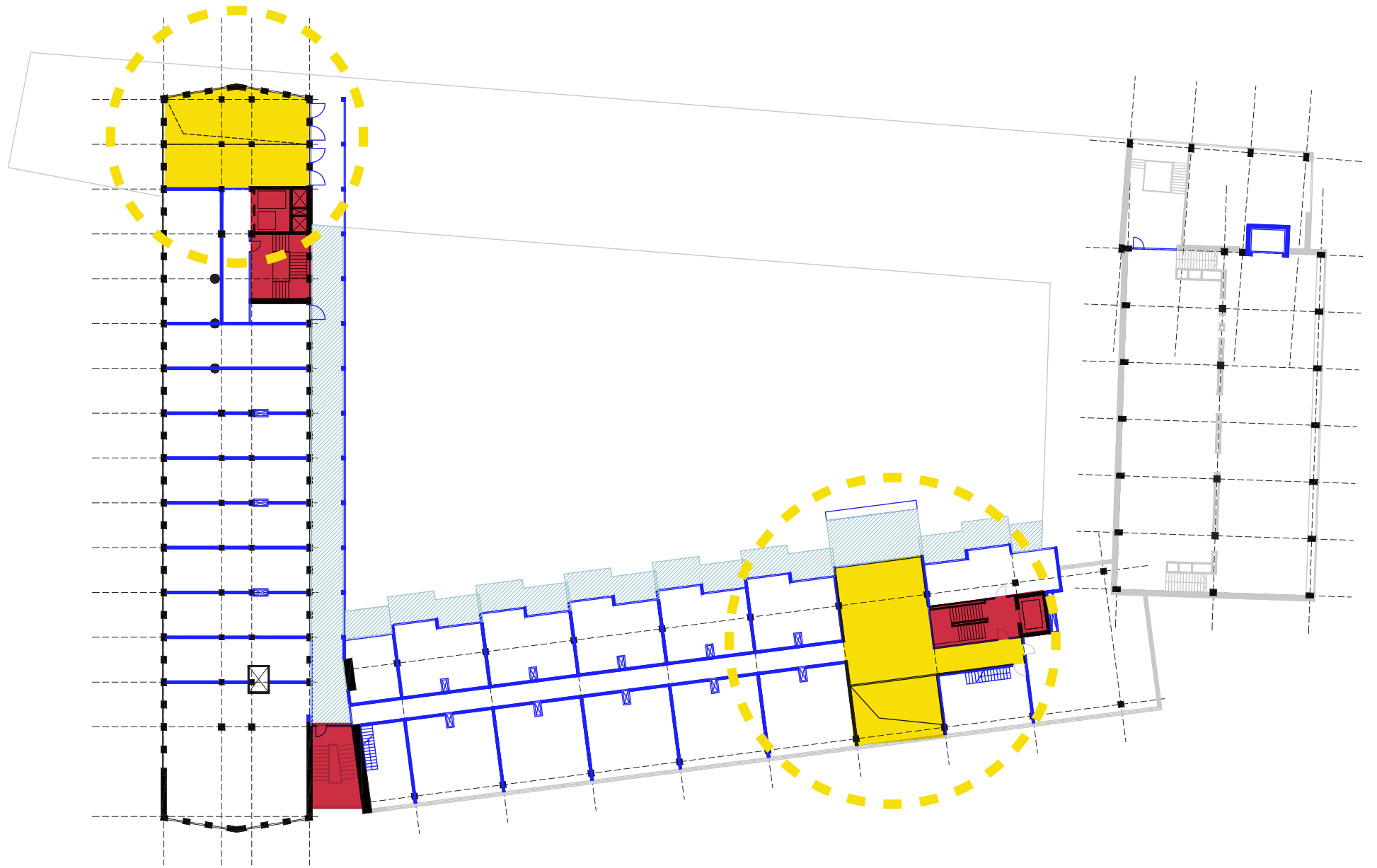
FLEXIBILITY



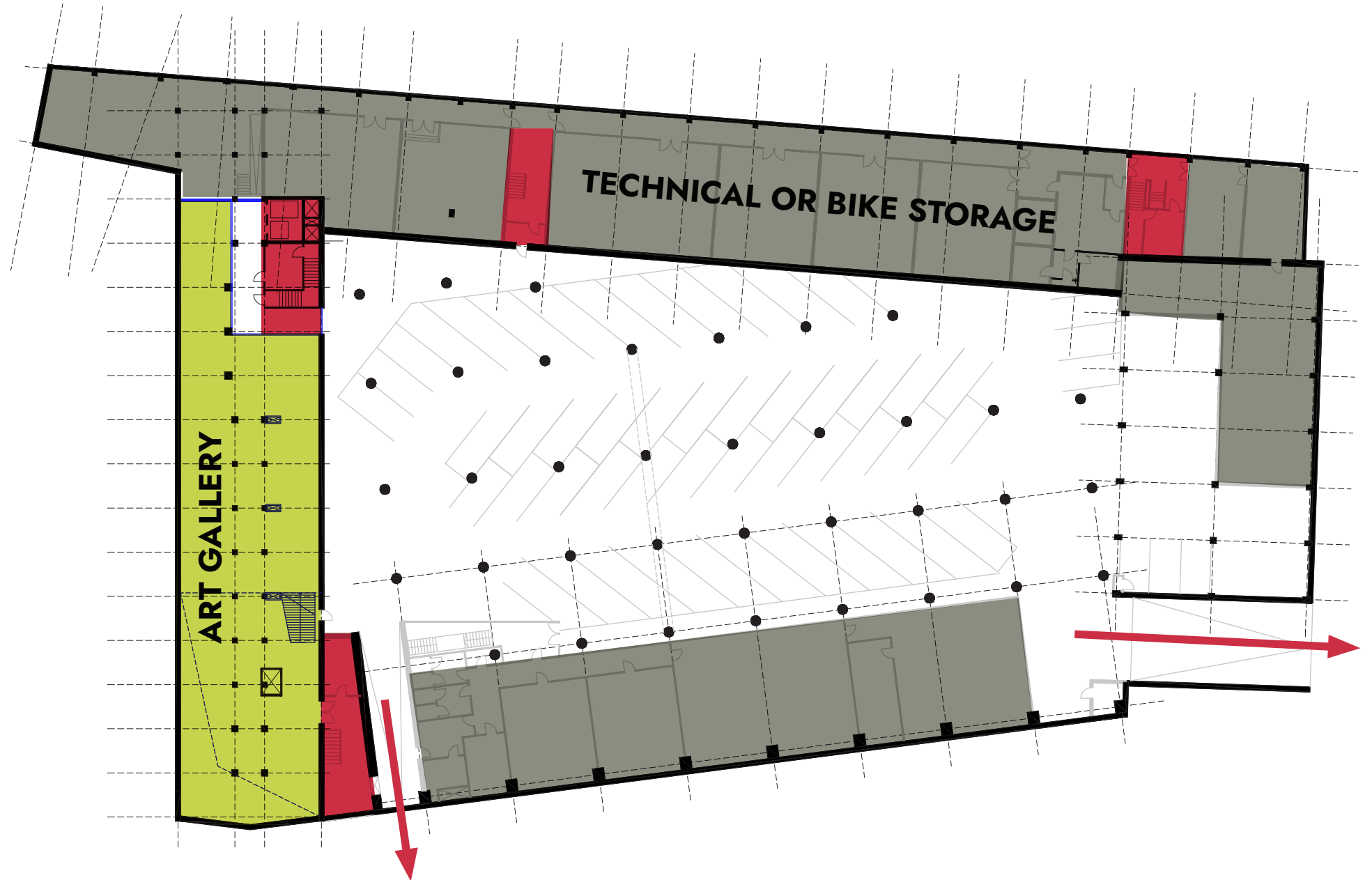
FLEXIBILITY



02 FLOOR. COMMUNAL SPACES



-01 FLOOR



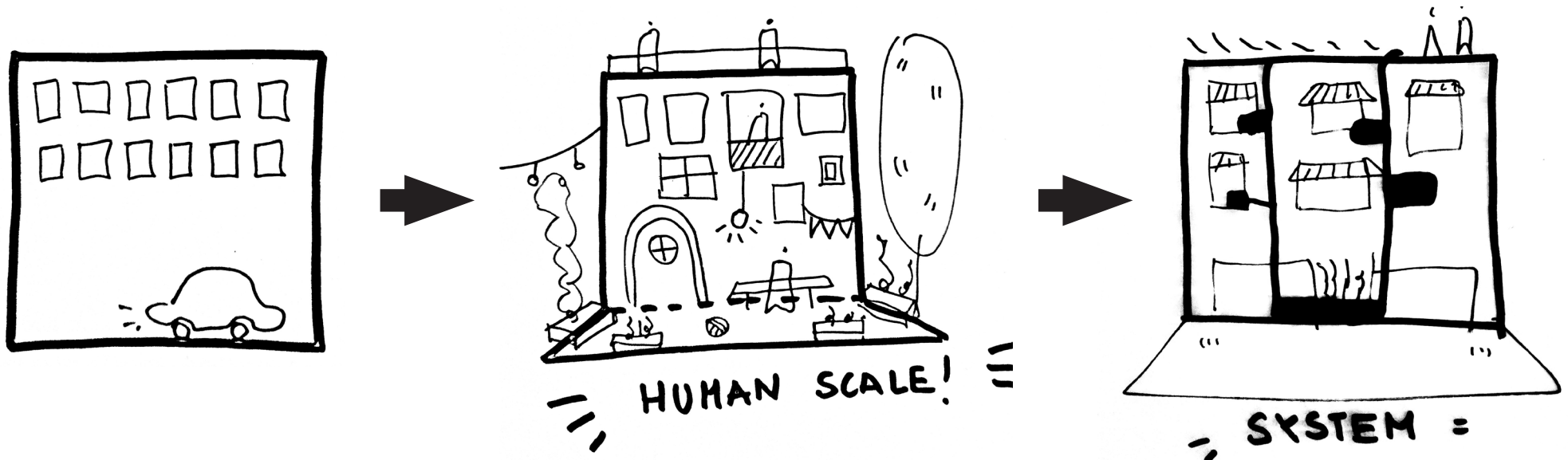
PARKING

< 43 m²

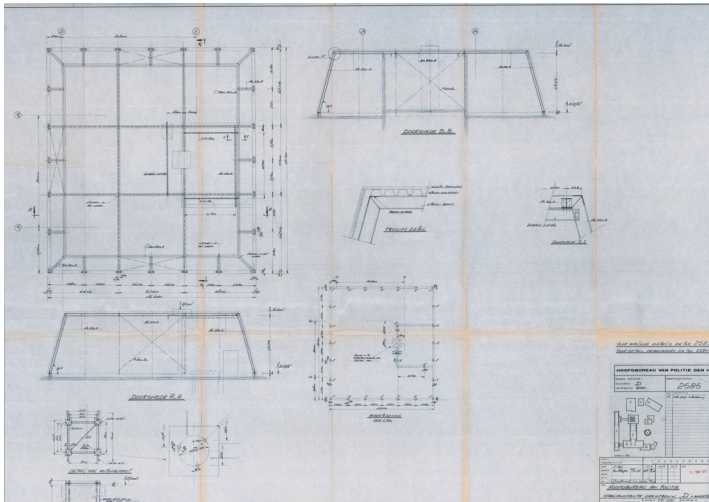


no parking
affordable
student housing subsidy
flexible

WHAT DO I WANT TO ACHIEVE?



MATERIAL REUSE - POLICE STATIONS/OOGSTKAART



EENHEIDSBUREAU DEN HAAG



EENHEIDSBUREAU DEN HAAG

HUIS 'T VELDE WARNSVELD



OOGSTKAART - ARNHEM

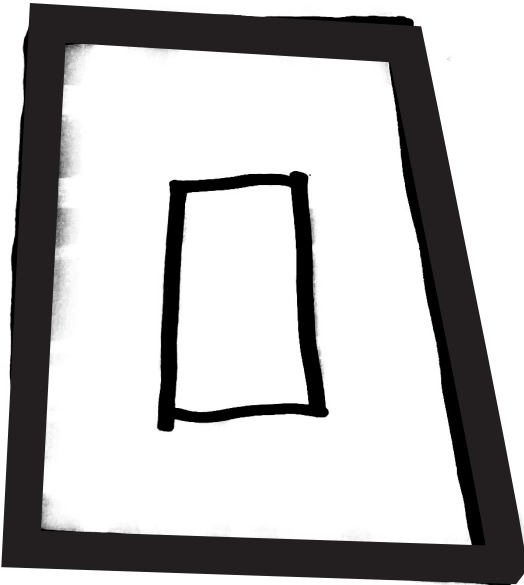


GRONINGEN POLITIEBUREAU

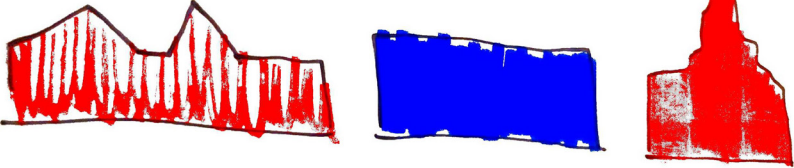


KOUDENHORN HAARLEM

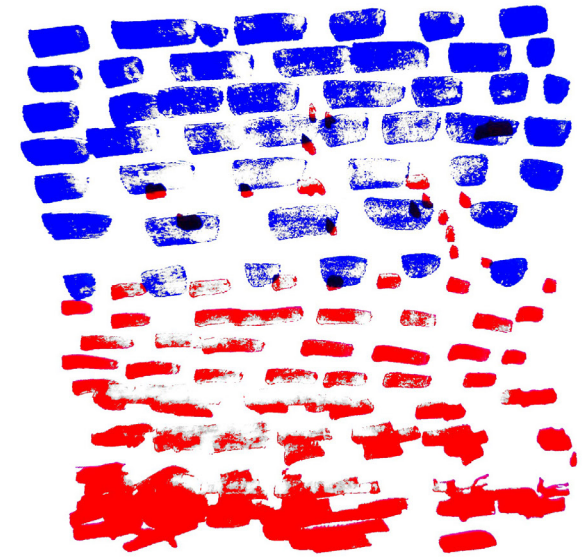
FACADES



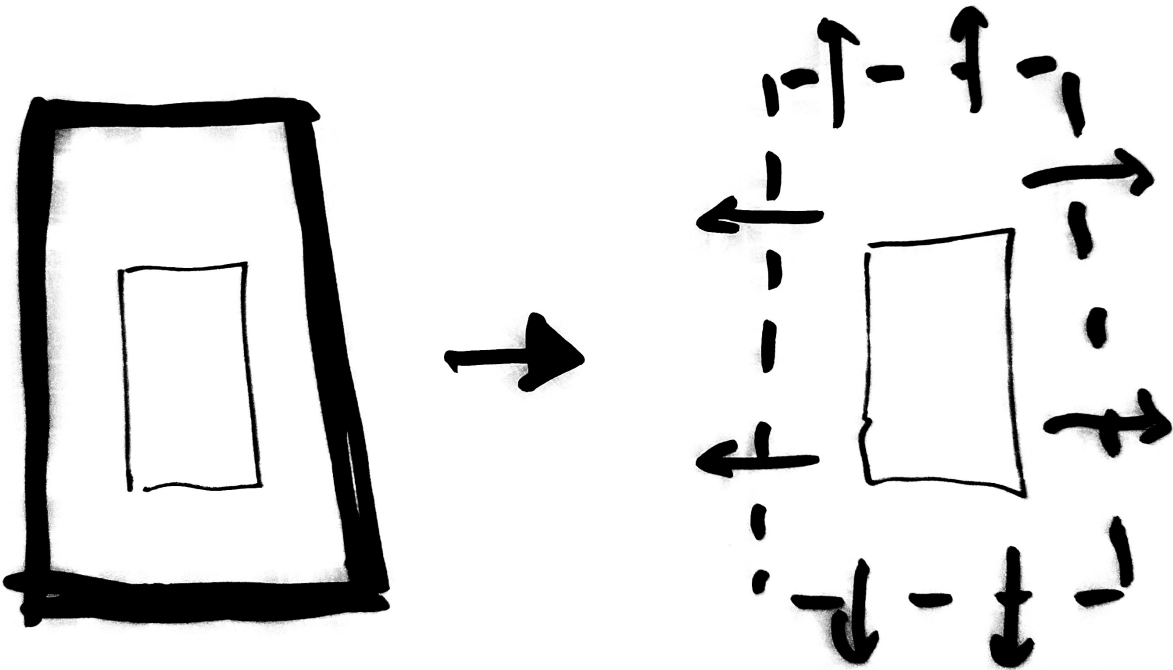
WHY IS IT BLUE?



HISTORICAL LAYERS: ORIGINAL + RENOVATION

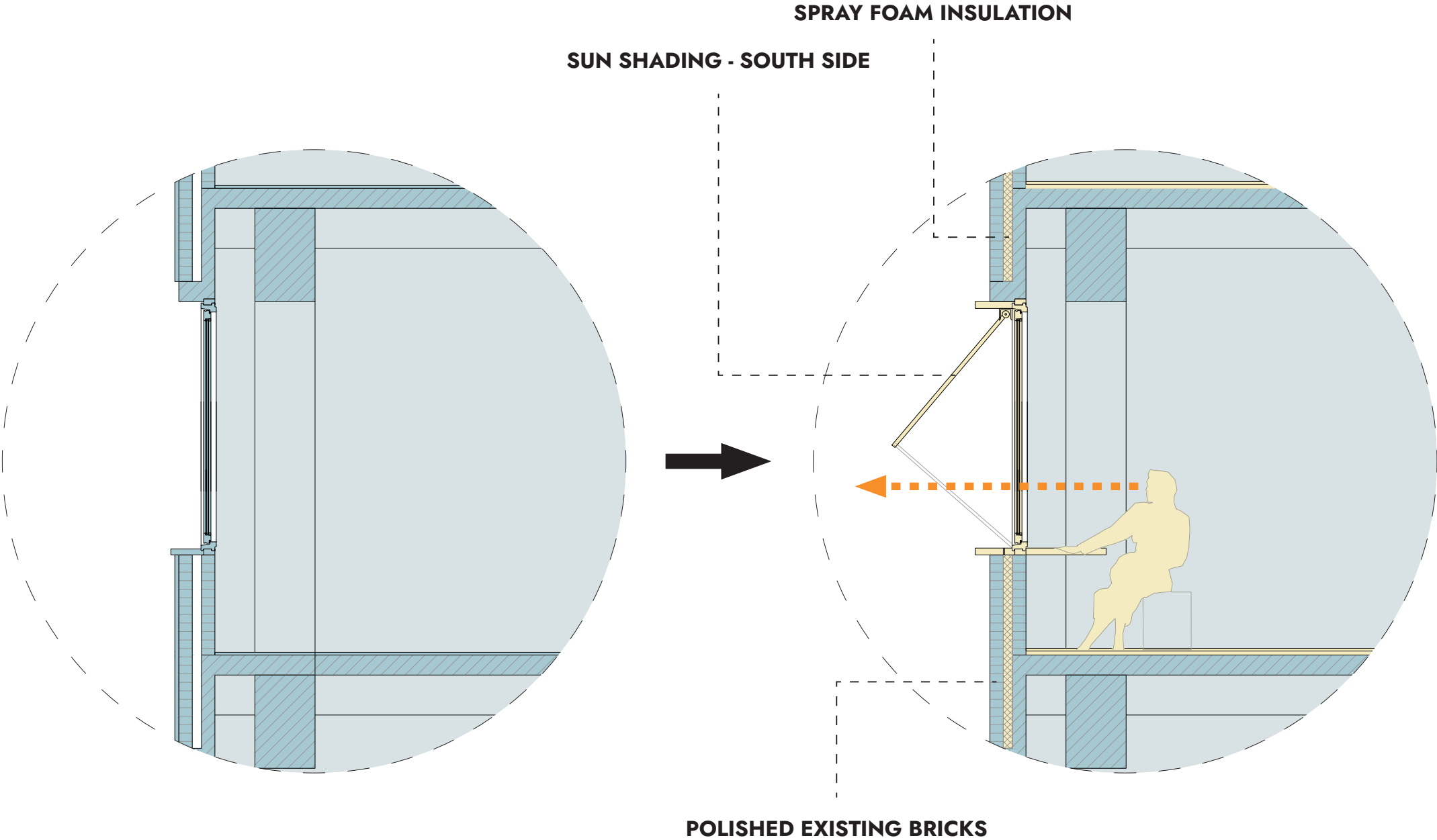


FACADES



INTERACTING / HUMAN SCALE

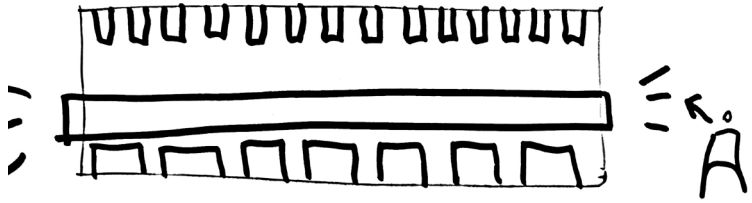
FACADES



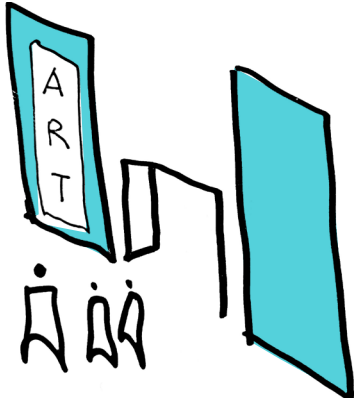
EXISTING WEST FACADE



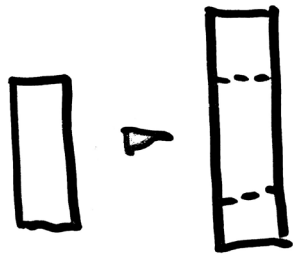
PROPOSAL WEST FACADE



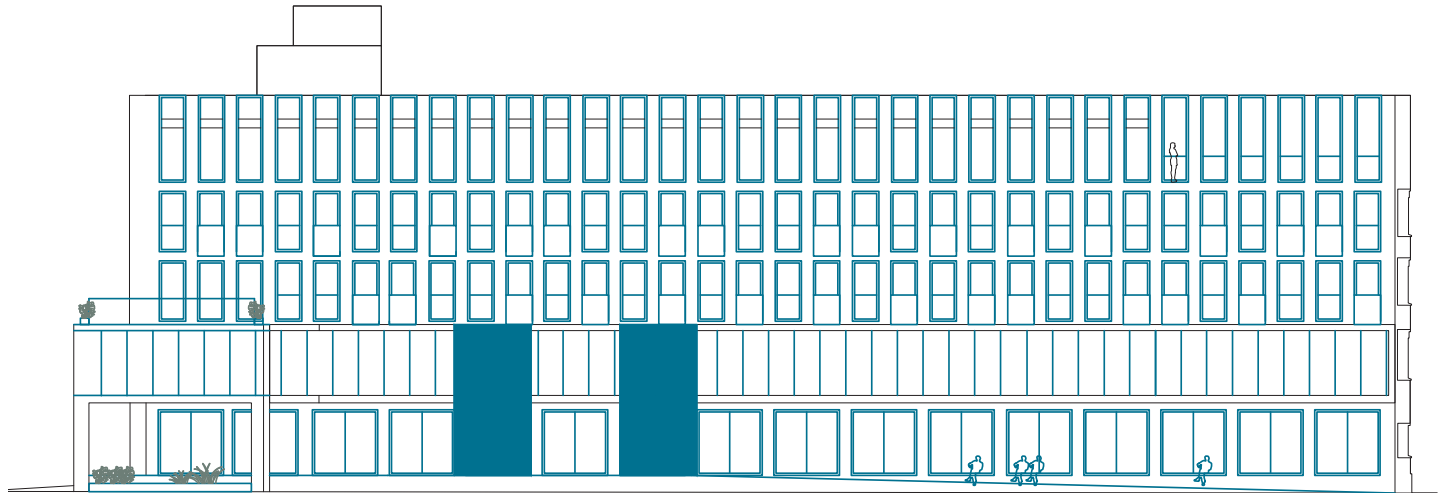
LIGHT



ENTRANCE



BIGGER WINDOWS



PROPOSAL WEST FACADE

BALCONIES



DEN HAAG



EINDHOVEN

ENTRANCE

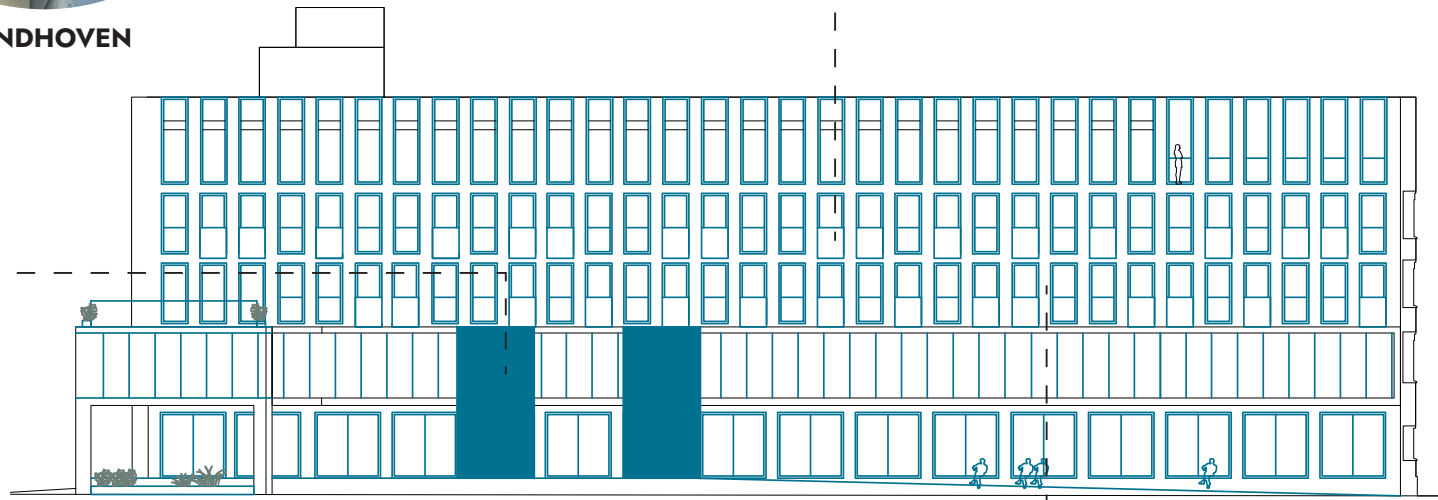


GRONINGEN - PAINTED IN BLUE

SHADING



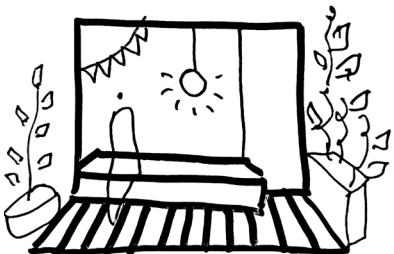
SAIL POLYESTER CLOTH



EXISTING SOUTH FACADE



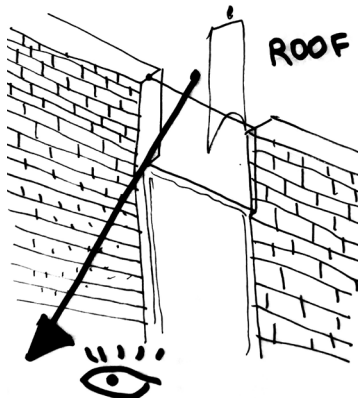
PROPOSAL SOUTH FACADE



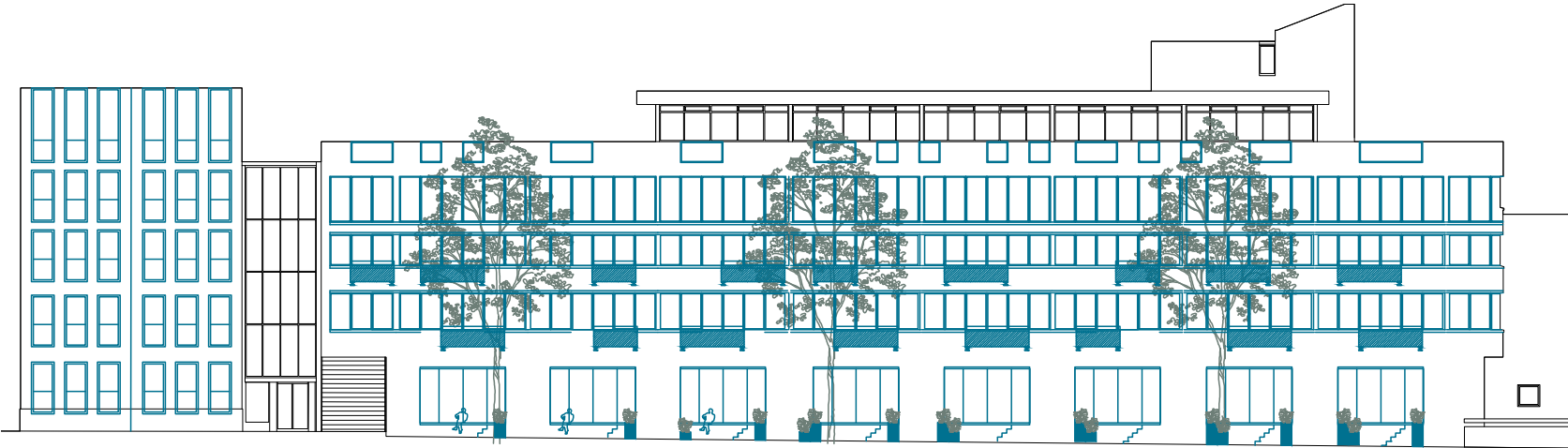
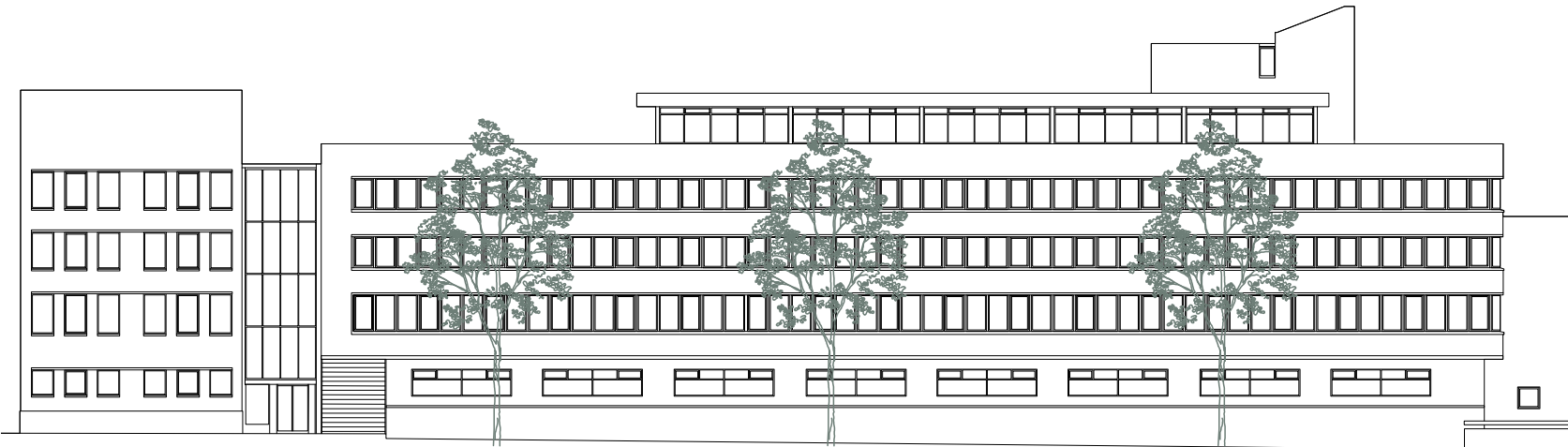
HUMAN SCALE



INTERACTION



VISIBLE ROOF



PROPOSAL SOUTH FACADE

BALCONIES



DEN HAAG



EINDHOVEN



NIJMEGEN

STREET LIGHTING



UTRECHT

FACADE - BRICKS



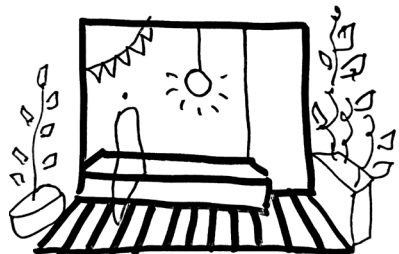
KEEPING EXISTING



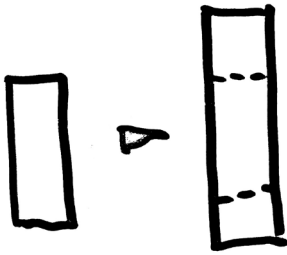
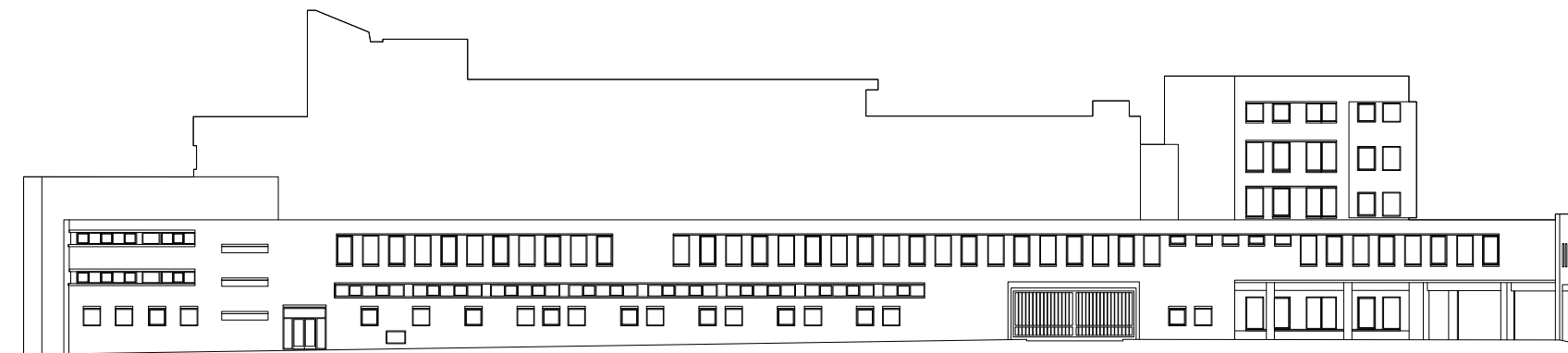
EXISTING NORTH FACADE



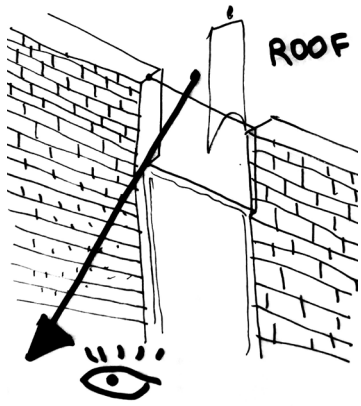
PROPOSAL NORTH FACADE



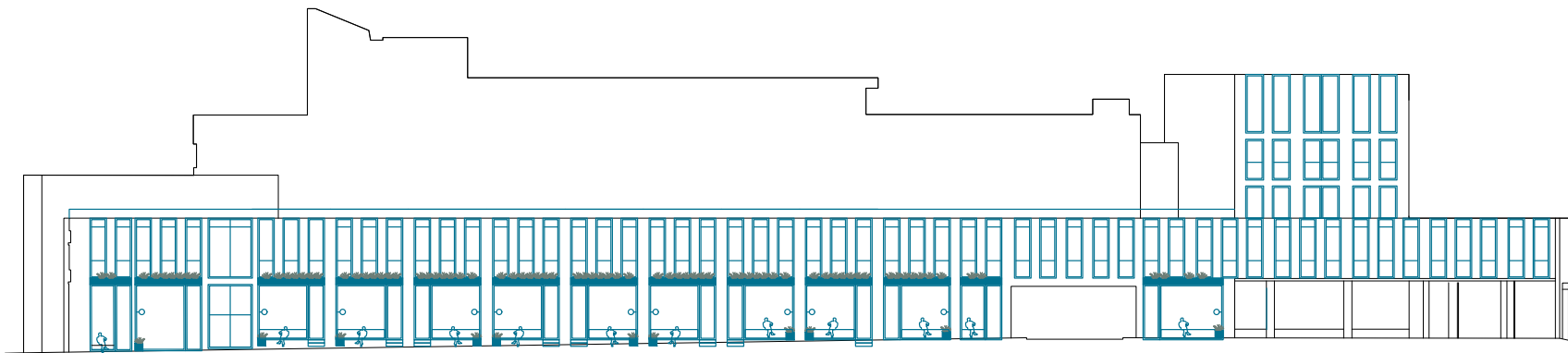
HUMAN SCALE



BIGGER WINDOWS



VISIBLE ROOF



PROPOSAL NORTH FACADE

TERRACES



GRONINGEN/LEIDEN

TERRACES



STANDDAABUITEN

STREET LIGHTING

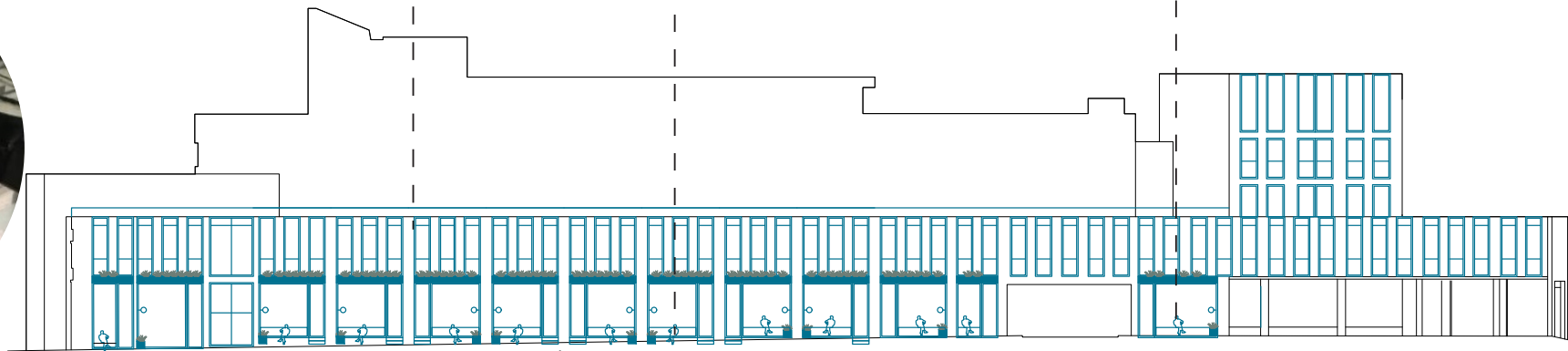


UTRECHT

FACADE - BRICKS



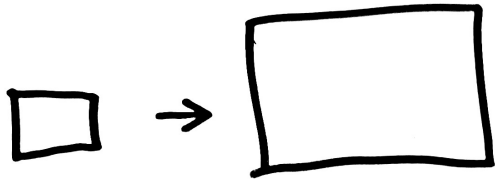
KEEPING EXISTING



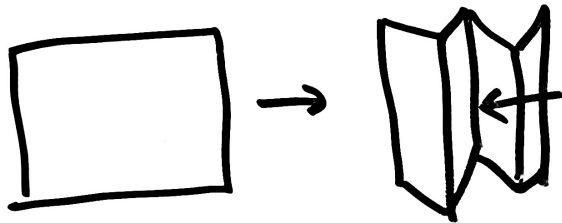
EXISTING EAST FACADE



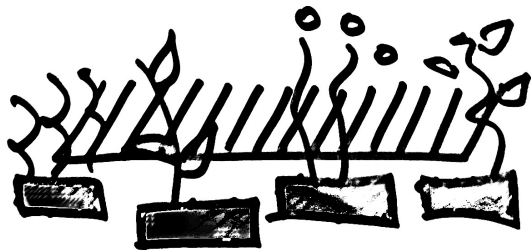
PROPOSAL NORTH FACADE



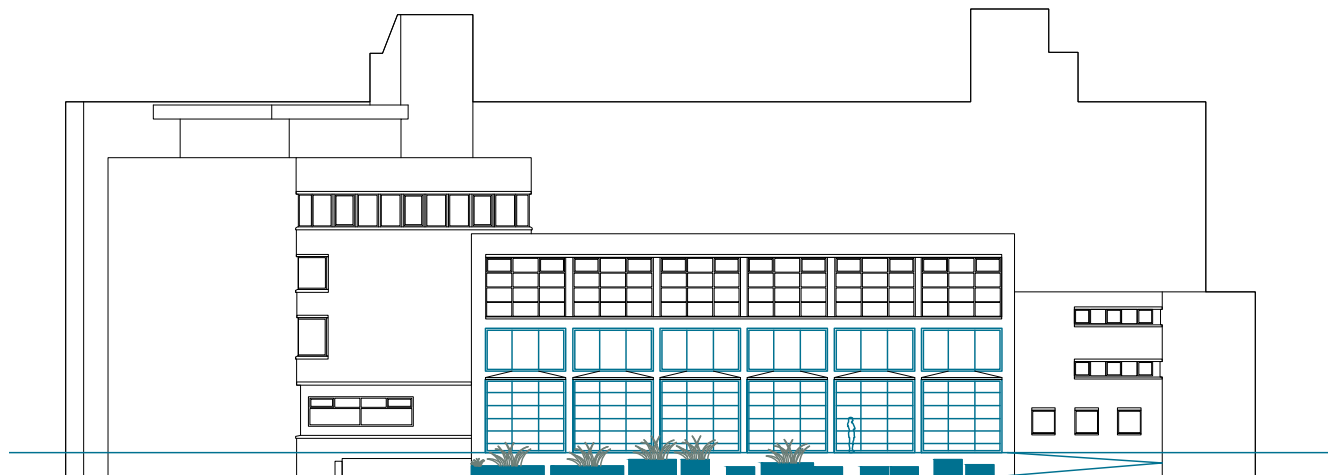
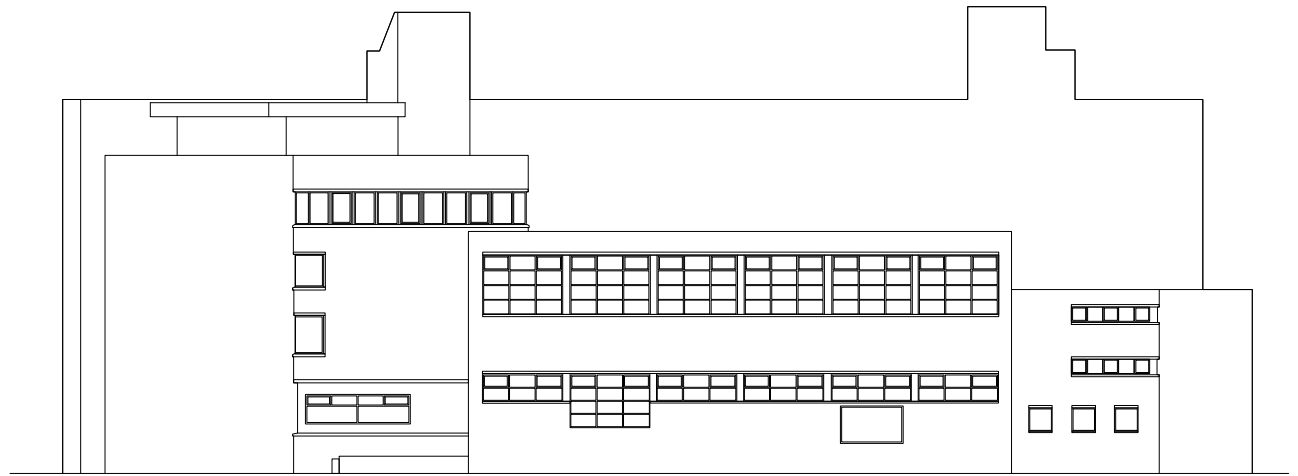
OPEN



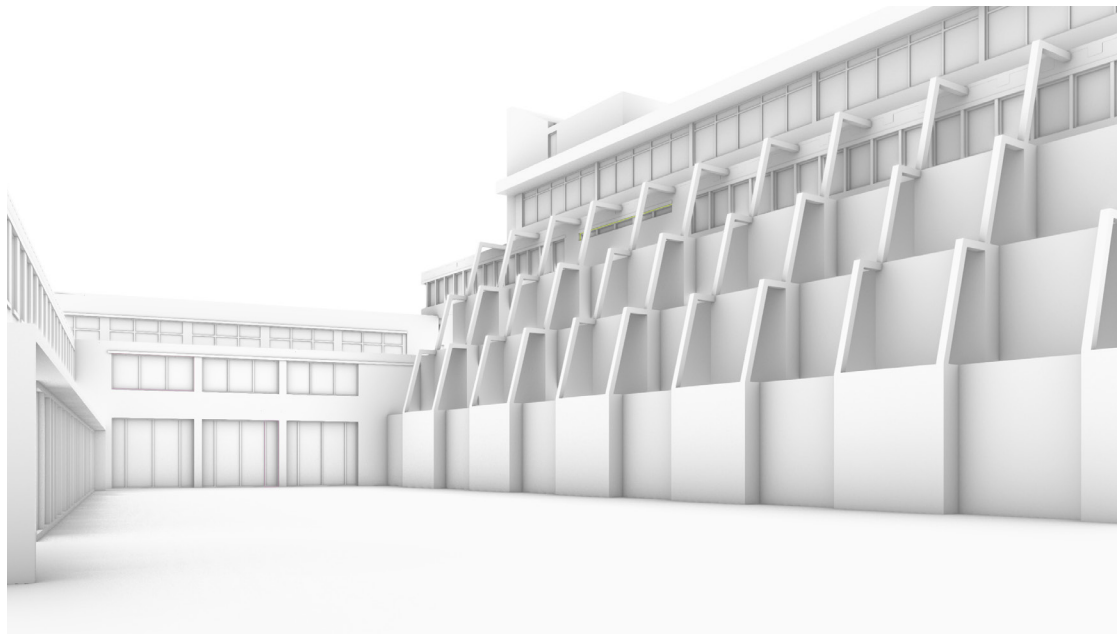
TRANSFORMABLE



INVITING



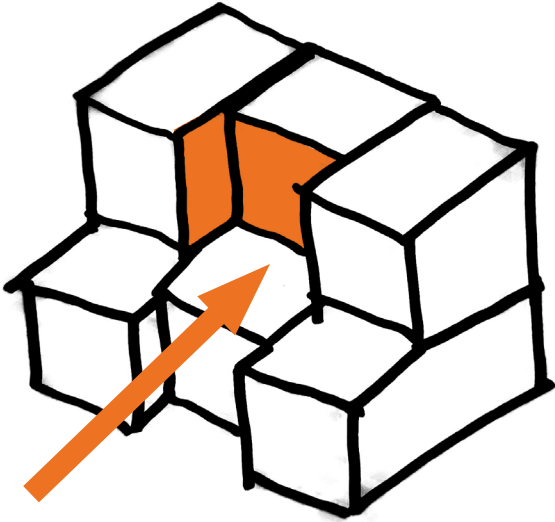
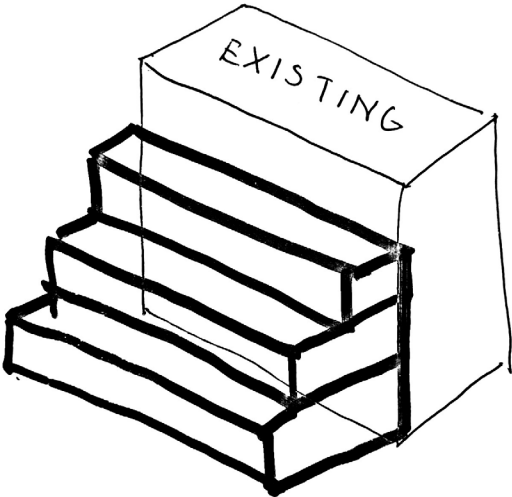
COURTYARD FACADES



COURTYARD FACADES

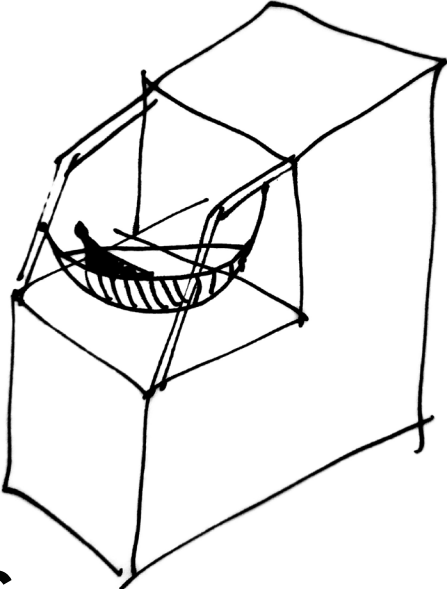
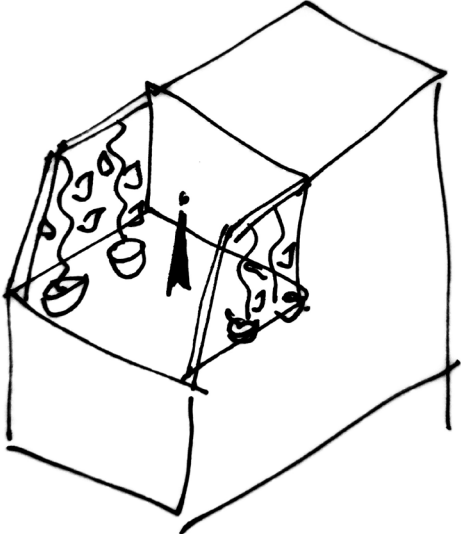


PREFABRICATED



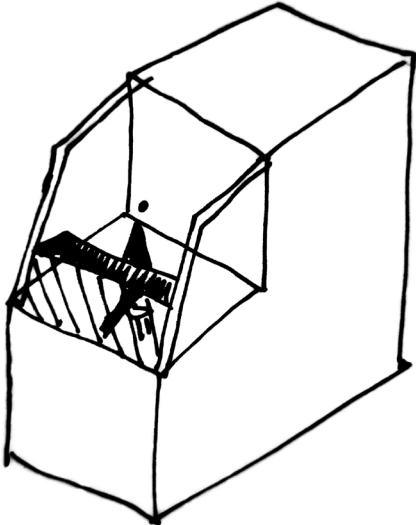
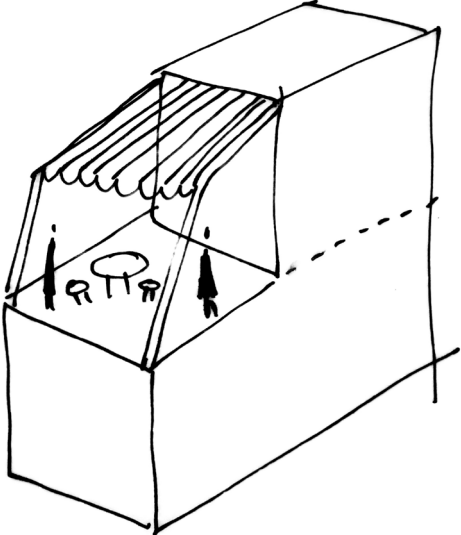
PRIVACY

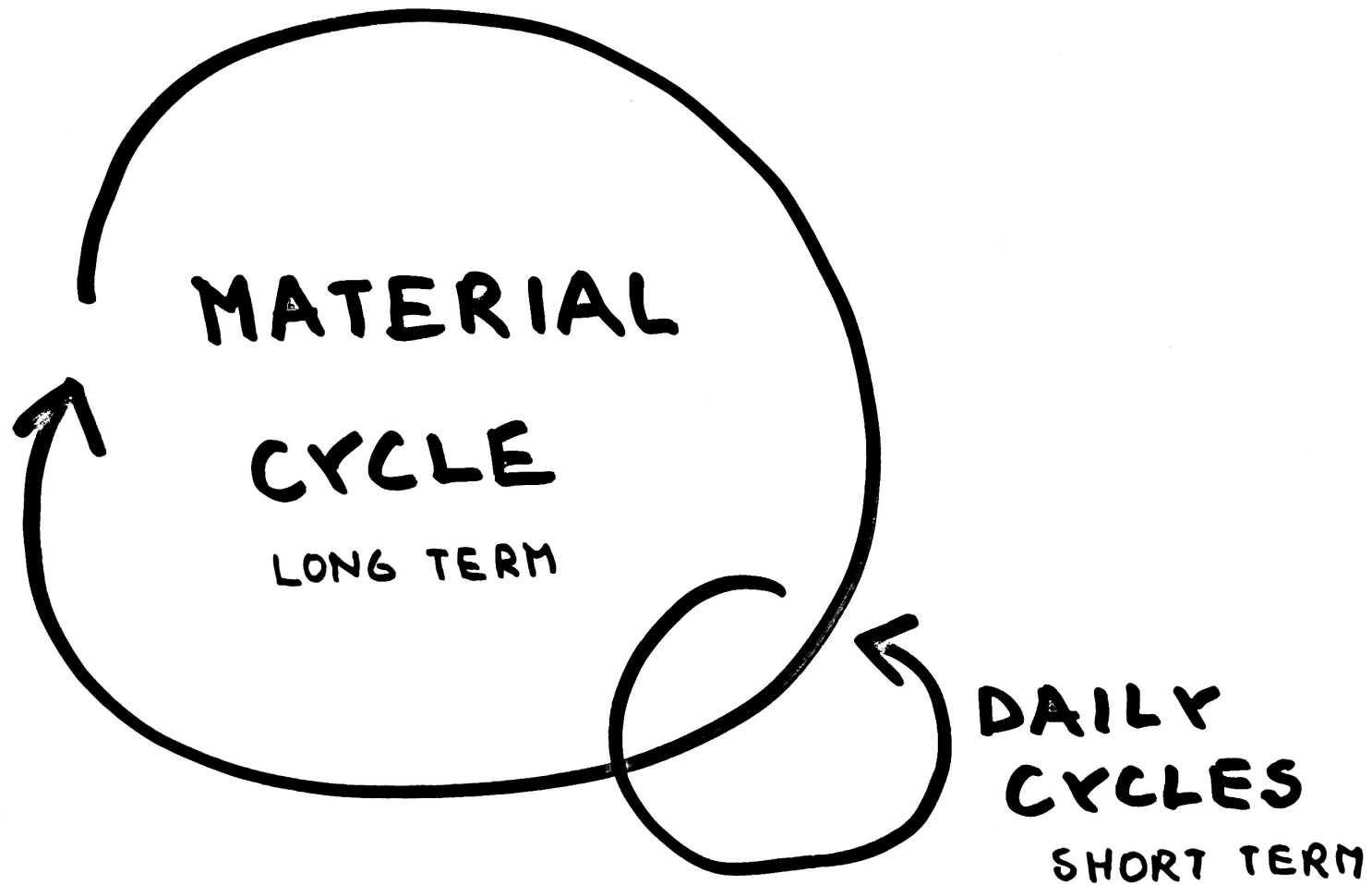
COURTYARD FACADES



POSSIBILITIES

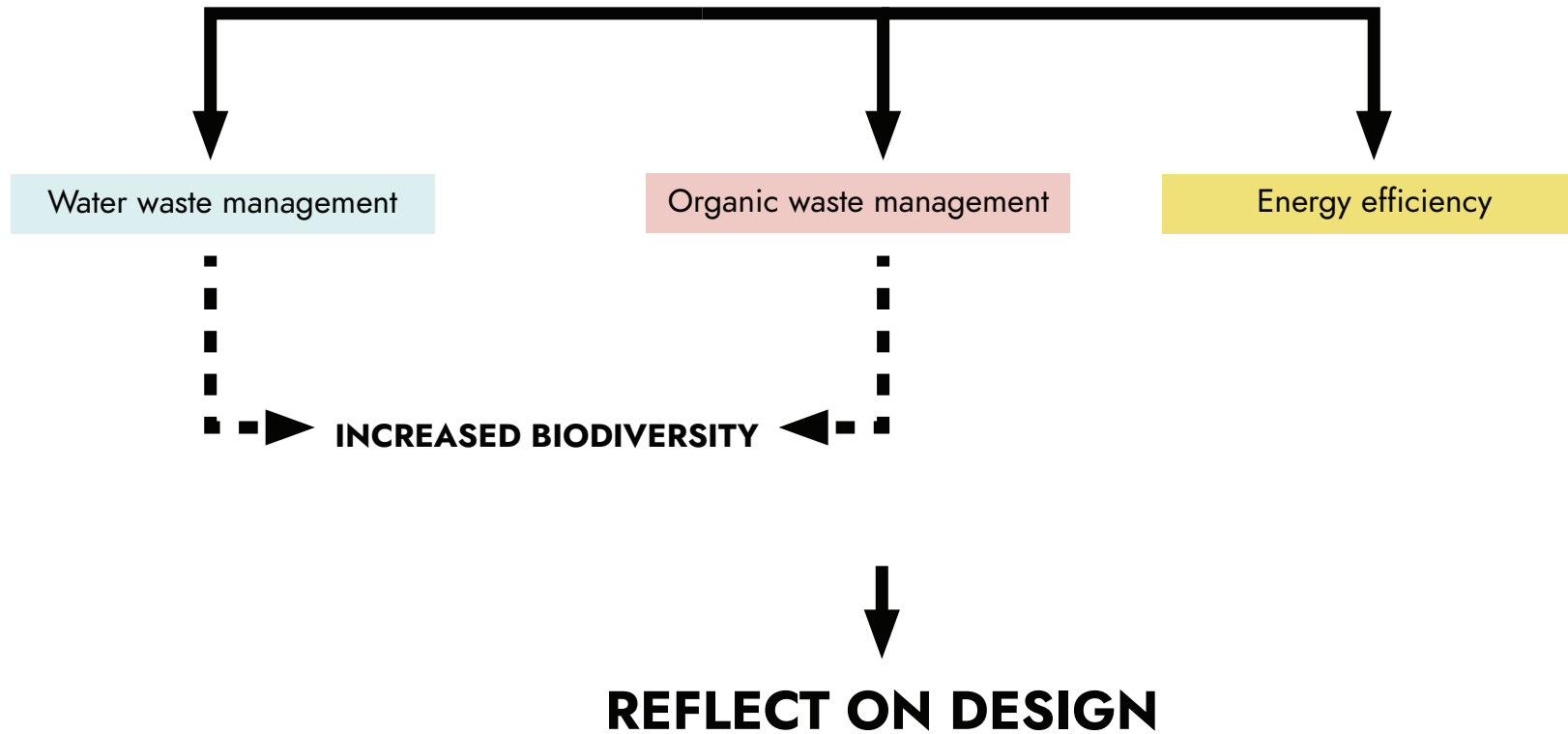
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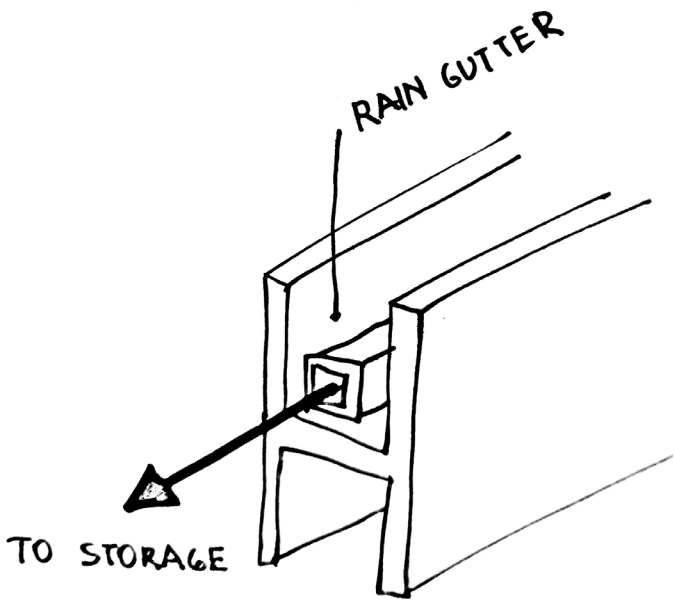
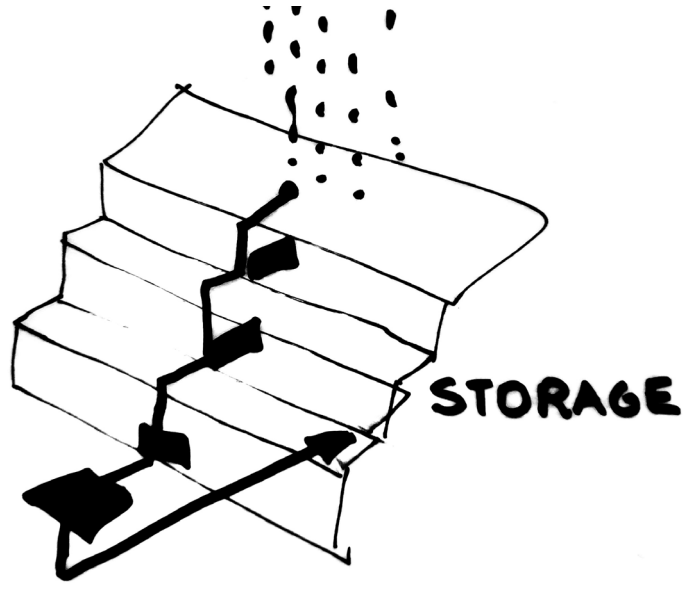
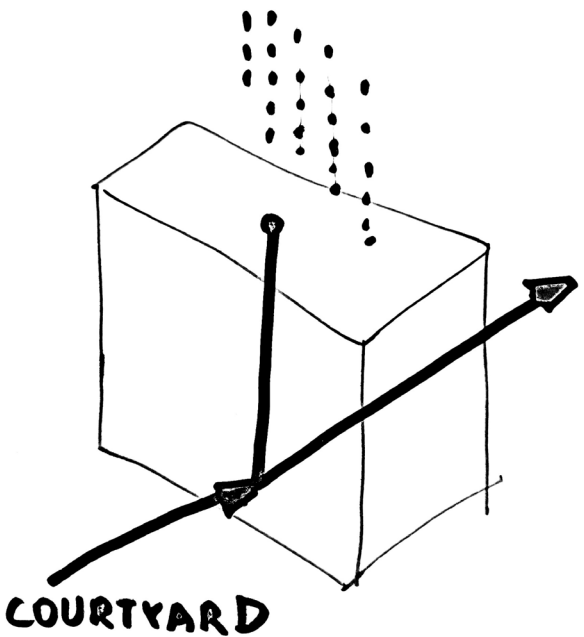


DAILY CYCLES

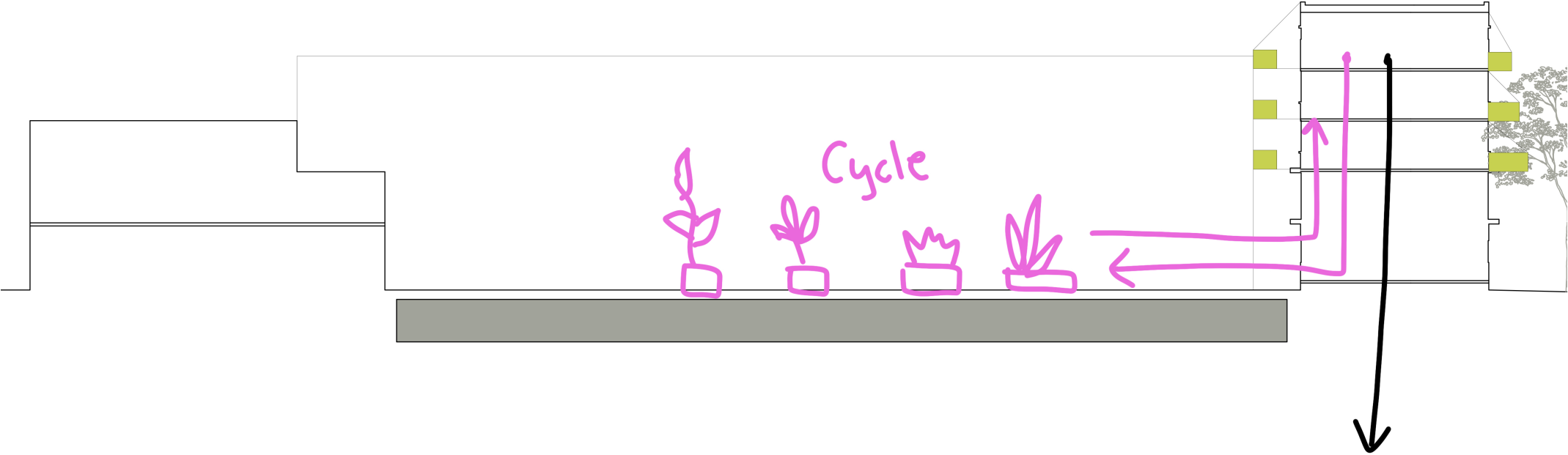
working independently or with maintenance



RAINWATER



DESIGN OF COURTYARD



ORGANIC WASTE



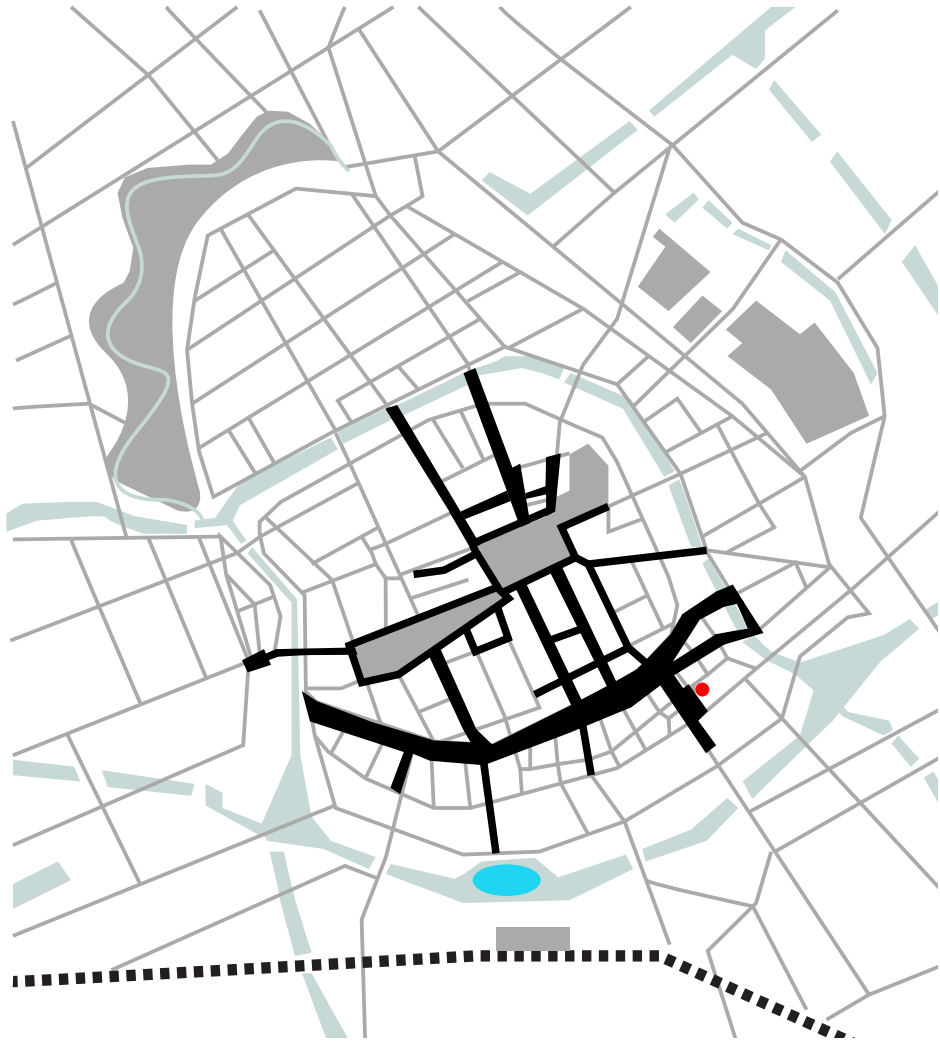
WHAT'S NEXT?

**SOCIAL ASPECTS
COMMUNAL SPACES
CLIMATE CONTROL
MATERIAL CYCLE
TECHNICAL ASPECTS**

REALITY CHECK

01. WHAT DO WE HAVE?

City quality
Location quality



Central part of Groningen



CONTRAST

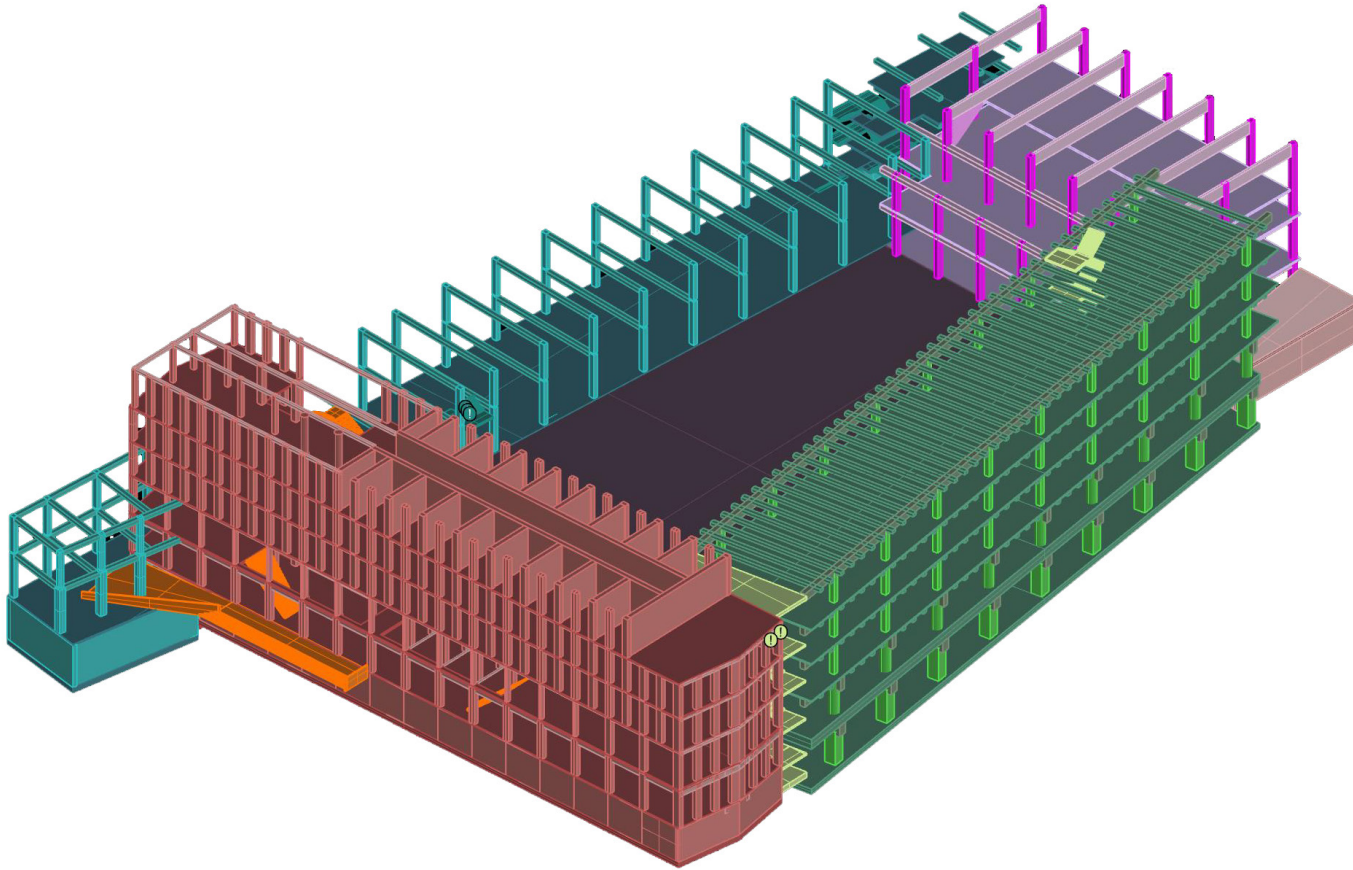


01. WHAT DO WE HAVE?

Building quality and structure

m2

Tenants/users



IN TOTAL EXISTING BVO: 13.775 m²

DEMOLISHING: 0 m²

ADDED NEW BVO: 1060 m²

Red: 3170 m² + 190 m²

Blue: 1585 m² + 130 m²

Purple: 1520 m²

Green: 3300 m² + 740 m²

Basement: 4200 m²

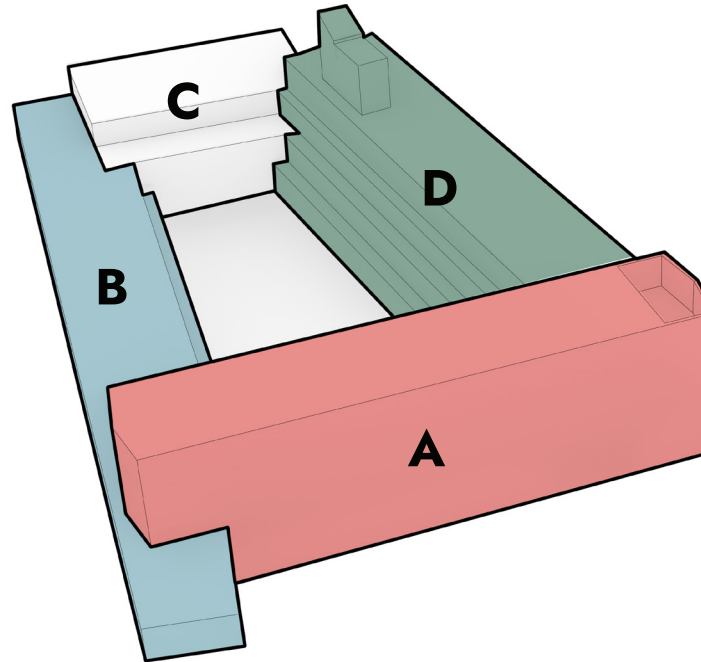


1971 - 1972
(Municipal architect Ele de Haas)

Renovation in 1996

03. WHAT IS THE IDEA?

Functions



A BLOCK: 3360 m2

Family housing: 25 %
Student housing: 10 %
Communal: 5 %
Office: 15 %
Hall/Art gallery/Cafe: 25%
Student hostel: 20 %

B BLOCK: 1715 m2

Family housing: 78 %
Student housing: 15 %
Communal: 0 %
Office: 7 %

C BLOCK: 1520 m2

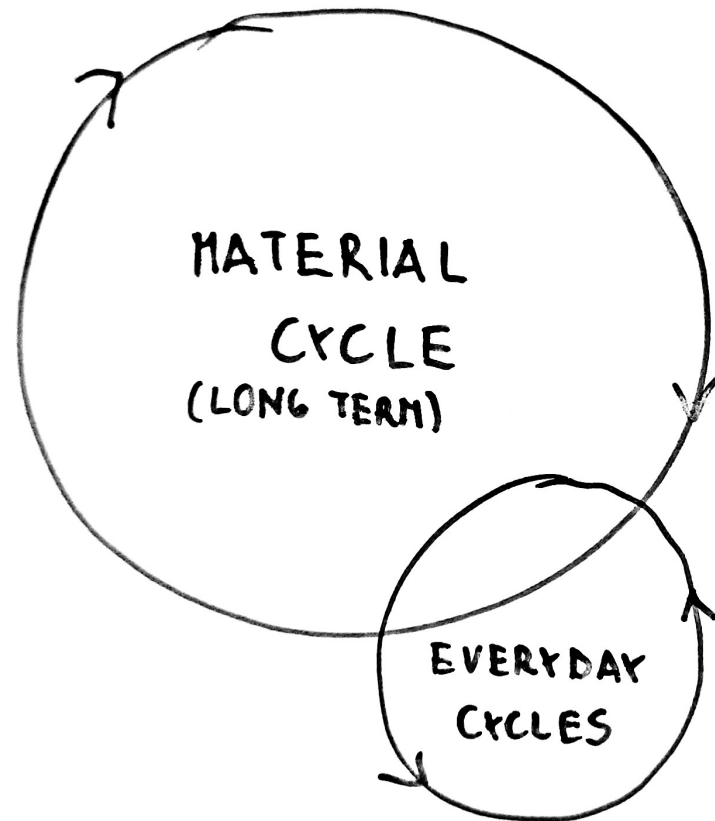
Communal: 100 %

D BLOCK: 4040 m2

Family housing: 55 %
Student housing: 35 %
Communal: 10 %

03. WHAT IS THE IDEA?

Environmental sustainability



03. WATER MANAGEMENT: RAINWATER

Environmental sustainability

The average rainfall in Groningen varies from 45 mm in the driest month (February) to 78 mm in the most humid month (November).

Average: $(45+78)/2/30=2,05$ mm = 0,00205 m

The ratio between the number of residents and the collected rainwater amount determines how the rainwater is used across households.

ROOF SURFACE:

Green: 1200 m²

Purple: 570 m²

Blue: 1000 m²

Red: 700 m²

HOW MUCH RAINWATER PER DAY CAN BE COLLECTED?

Green: $0,00205*1200 = 2,5$ m³ = 2500 l

Purple: $0,00205*570=1,2$ m³ = 1200 l

Blue: $0,00205*1000=2,1$ m³ = 2100 l

Red: $0,00205*700=1,4$ m³ = 1400 l

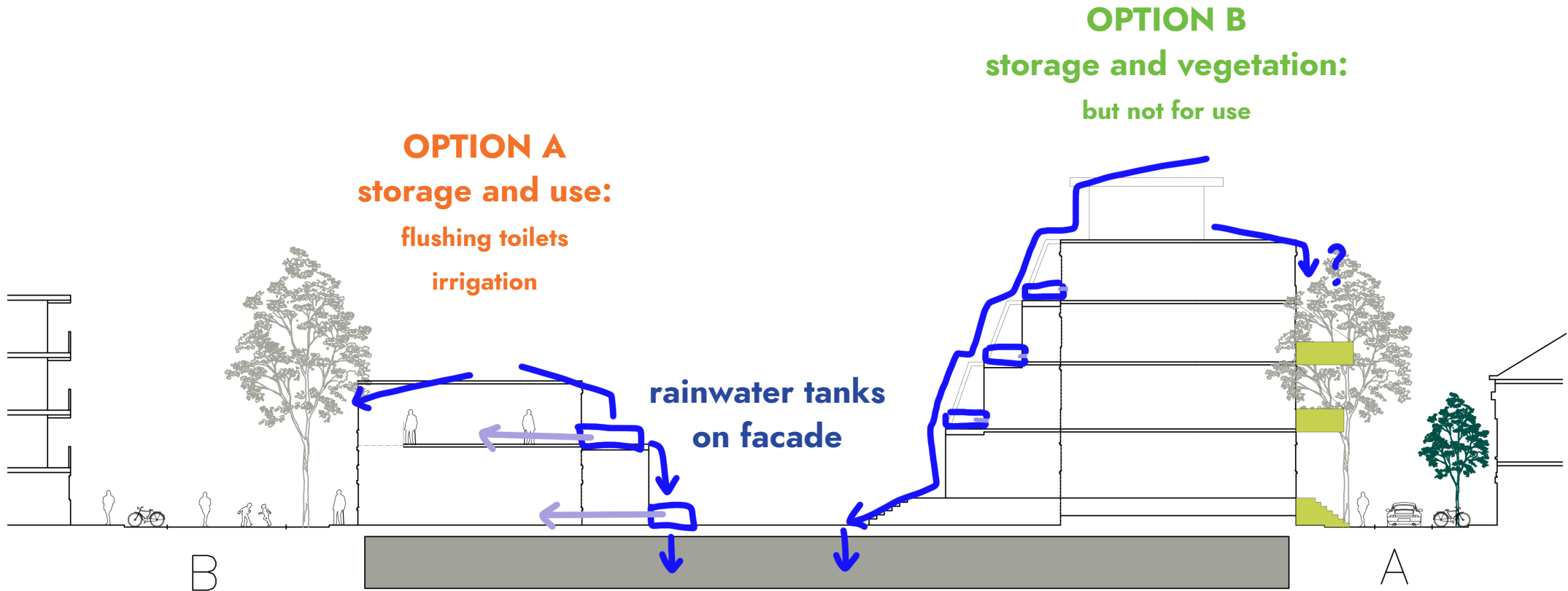
CONCLUSION: using rainwater:

- a. less water goes straight to sewer system - need to be stored
- b. drought - heavy rain seasons

- c. for everyday use. f.e. washing machine, shower (**small unit**)
- d. storage and vegetation (**big units**)

03. WATER MANAGEMENT: RAINWATER

Environmental sustainability



03. WATER MANAGEMENT: GREYWATER

Environmental sustainability

Average water consumption per person is around 90 l per day. About 30% of domestic wastewater can be recycled.

Greywater is collected from the household's shower, bath and washing machine and is directed to floatation and settlement tanks.

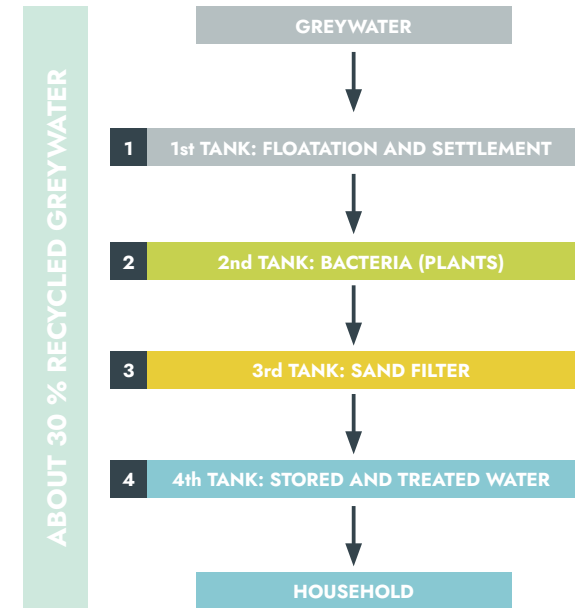
In this way, circular systems are installed in the courtyard and make sure that the water flows through different purification tanks.

The residents can use recycled greywater for irrigation, toilet flushing and washing machine.

Does it worth to be recycled according to energy efficiency?

Average water consumption 2016 (per person)

Position	Consumption per day *
Shower	44.2
Toilet	32.7
Washing machine	12.9
Washbasin	4.9
Wash by hand	3.0
A dishwasher	2.0
Take a bath	1.6
Wash clothes (hand)	1.0
Drink	0.8
Cooking	0.8
Other (kitchen)	3.0



WATER CONSUMPTION PER BLOCK:

Green: (3 persons - 20 apartments, 1 person - 31 apartments): $(2*20 + 1*31)* 90l = 6390 l$

Purple: According to the events

Blue: (3 persons - 10 apartments, 1 person - 9 apartments): $(30+ 9)* 90l = 3510 l$

Red: (3 persons - 22 apartments, 1 person 16 apartments): $82 * 90l = 7380l$

- CONCLUSION:** recycling grey water:
- a. less water goes straight to sewer system
 - b. using less drinkable water
 - c. reduction in the amount of pollutants entering the environment
 - d. saving money

30 % OF THIS CAN BE RECYCLED

03. ORGANIC WASTE

Environmental sustainability

Dutch households wasted on average 34.3 kg of solid food (including thick liquids and dairy products) per person per year in 2019*.

20 % of it can be composted and natural household garden fertilizer can be created.

Average: 95 g per day (one person)

ORGANIC WASTE PER BLOCK PER DAY (kg)

Green: $0,095 * 71 = 6,7$ kg

Purple: According to the events

Blue: $0,095 * 39 = 3,7$ kg

Red: $0,095 * 82 = 7,8$ kg

20 % can be composted: so 3,64 kg per day (not including neighbourhood around)

04. IS IT FEASIBLE?

Financial feasibility

OWNING

Blue: 11 units (100 m²)

Green: 3 units (70 m²)

15 units (65 m²)

Red: 11 units (35 m²)

SELLING PRICE (Funda):

100 m²: 430.000 EU

65 -70 m²: 340.000 EU

35 m²: 210.000 EU

IN TOTAL: 13 M

STUDENT RENT

Blue: 9 units (30 m²)

Green: 19 units (35 m²)

13 units (25 m²)

Red: 11 units (35 m²)

PRICE:

Studios to rent in Groningen:

25 m²: 600 EU per month

30 m²: 650 EU per month

35 m²: 700 EU per month

IN TOTAL: 34.650 EU per month
415.800 EU per
year

RENTING

Blue: -

Green: 14 units (43 m²)

Red: -

PRICE

43 m²: 850 EU per month

IN TOTAL: 11.900 EU per month
142.800 EU per year

PARKING PLACES

due to 43m² rule:

needed: 29

existing parking: 55

55 - 29 = 26 p.p. to sell/rent

IN TOTAL:

Renting: 80 EU per month
960 per year

For all the places:

26*960 = 24.960 EU per year

construction costs / additional costs / incentives?