

Reinterpreting the working-class neighbourhood

Urban Transformation Framework for Oud Crooswijk, Rotterdam

Preface

Before you lies the master's thesis "Reinterpreting the working-class identity: Urban transformation framework for Oud Crooswijk, Rotterdam." This thesis has been written in the period of September 2024 to June 2025 to fulfill the graduation requirements of the Urbanism master's programme at the TU Delft.

I want to thank my first and second mentor Teake Bouma and Remon Rooij for the guidance and support throughout my graduation process on both academic and personal level. In addition I would like to thank the studio coordinators Tess Broekmans and Marco Lub for the inspiring studio sessions and guiding me and my fellow students through this year.

Finally I would like to thank my friends, family and girlfriend for being there for me and your emotional support throughout my graduation process. I would also like to thank you, my reader; I hope you enjoy the reading.

Rick Klootwijk

Rotterdam, 24 juni 2025

Disclaimer

All images and drawings are own material unless stated otherwise. All the material has been referenced properly to the best of the creator's capability. For the photos depicting the local residents, the assumption was made that these people are okay with their face being recognizable since all of the material was gathered from publicly televised images. Nevertheless, if somebody recognizes him-/herself or their work without proper referencing or without their consent, please contact the creator of this thesis.

Abstract

Oud Crooswijk is a typical working-class neighbourhood in Rotterdam and a vital part of the city's identity. Today, the area is in urgent need of urban renewal. However, this renewal risks displacing current residents and transforming the neighbourhood's physical and social fabric. As a result, Oud Crooswijk is at risk of becoming unrecognizable, potentially erasing its working-class character.

To address this challenge, this thesis presents a transformation framework that explores how the urban fabric of Oud Crooswijk can be renewed while reinterpreting—rather than simply preserving—its working-class identity. The concept of a working-class neighbourhood is constantly evolving, and this framework anticipates how that identity may shift in the 21st century.

The research follows a circular process involving four key activities. First, an analysis was conducted to understand the urgency of renewal, the spatial identity-carriers of working-class identity, and how this identity is defined. Based on these findings, a design assignment was created and translated into a proposal, including a vision, design principles, a potential masterplan, and key interventions. This was followed by an evaluation that redefined the spatial expression of working-class identity and informed further analysis—completing the cycle.

The thesis concludes that “conceptualizing working-class identity in the 21st century is complex and continuously evolving.” To maintain Oud Crooswijk's recognizability post-renewal, the redesign must anticipate how this identity could be represented in the future. The transformation framework does this by embedding spatial identity-carrying elements into the urban fabric through design principles.

While the outcomes are promising, the framework is currently limited to the context of Oud Crooswijk. To test its broader applicability, it must be applied to other neighbourhoods facing similar urban renewal challenges.



Ooit de trots van een Rotterdamse volkswijk, nu verpauperd en onveilig – oudgediende moet Crooswijkseweg opknappen



Wijken voor de yuppen in Rotterdam
Crooswijk: "Het idee dat
moet, vind ik heel ake"

antrouwen in plannen
sloodrift in Rotterdam

Dit is een nieuwsbericht van
Rijnmond

Zaterdag 11 september 2021, 09:00

Bewoners zijn verkno
Crooswijk: 'Vroeger
huilkoppie, maar ik la
mijn wijk'



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Oud Crooswijk: a victim of urban renewal

Introduction



Introduction

Crooswijk is one of the original neighborhoods of the city of Rotterdam. It is considered one of the foundational areas that shaped the city's typical working-class character (Wijkprofiel Rotterdam, n.d.).

The neighborhood was established in the late 1800s, when the city of Rotterdam sought room for expansion. Space was needed for heavy industries such as a cemetery, a cattle market, an abattoir, and a large beer brewery. Due to health concerns, the city no longer wanted these types of industries in the inner city and decided to expand into the polders on its edge.

Shortly after these industries arrived, unplanned housing developments emerged around the industrial sites to accommodate the workers. This led to a very densely populated neighborhood of working-class residents. Since then, Crooswijk has been defined by its working-class character (Van Es and Voerman, 2019; Maandag, 2019).

Even today, by modern standards, Crooswijk could still be classified as a working-class neighborhood. However, this character now appears to be under threat.

The neighborhood is in need of urban renewal. In the early 2000s, the area of Nieuw Crooswijk underwent a complete physical transformation. This not only changed its appearance but also attracted new residents, displacing many of the original inhabitants. The remaining working-class residents have expressed concerns that the renewal resulted in a completely unrecognizable neighborhood, with its working-class character largely lost (NPO, 2018; Volksbuurt Museum, 2020).

At present, the oldest and original part of Crooswijk—Oud Crooswijk—is in need of urban renewal (Wijkraad Crooswijk, 2021). Since Crooswijk is such a vital part of Rotterdam's working-class heritage, it is important that Oud Crooswijk does not suffer the same fate as Nieuw Crooswijk.

To prevent this from happening, this thesis presents a transformation plan for Oud Crooswijk. The objective is to create a redesign of the neighborhood that ensures necessary renewal while preserving its working-class character.

The following chapter will address the importance of the working-class character for the city of Rotterdam, how urban renewal threatens to remove it, and will conclude with a clear problem statement. Chapter 3 will address the approach and theories used to tackle this problem state-

ment. To clearly define the (design) assignment at hand, Chapters 4 and 5 will address the urgency for urban renewal and how to define the working-class character. Chapter 6 will synthesize the conclusions from Chapters 4 and 5 into an integrated design assignment.

Chapters 7, 8, and 9 translate the assignment into an actual design. This includes a design vision, design principles, and key interventions that illustrate how the urban fabric of Oud Crooswijk can be renewed without losing its working-class character. Chapters 10 and 11 will present the conclusions and discussion. The final chapter will provide an academic reflection on the design process and a personal reflection on the journey of writing this thesis.

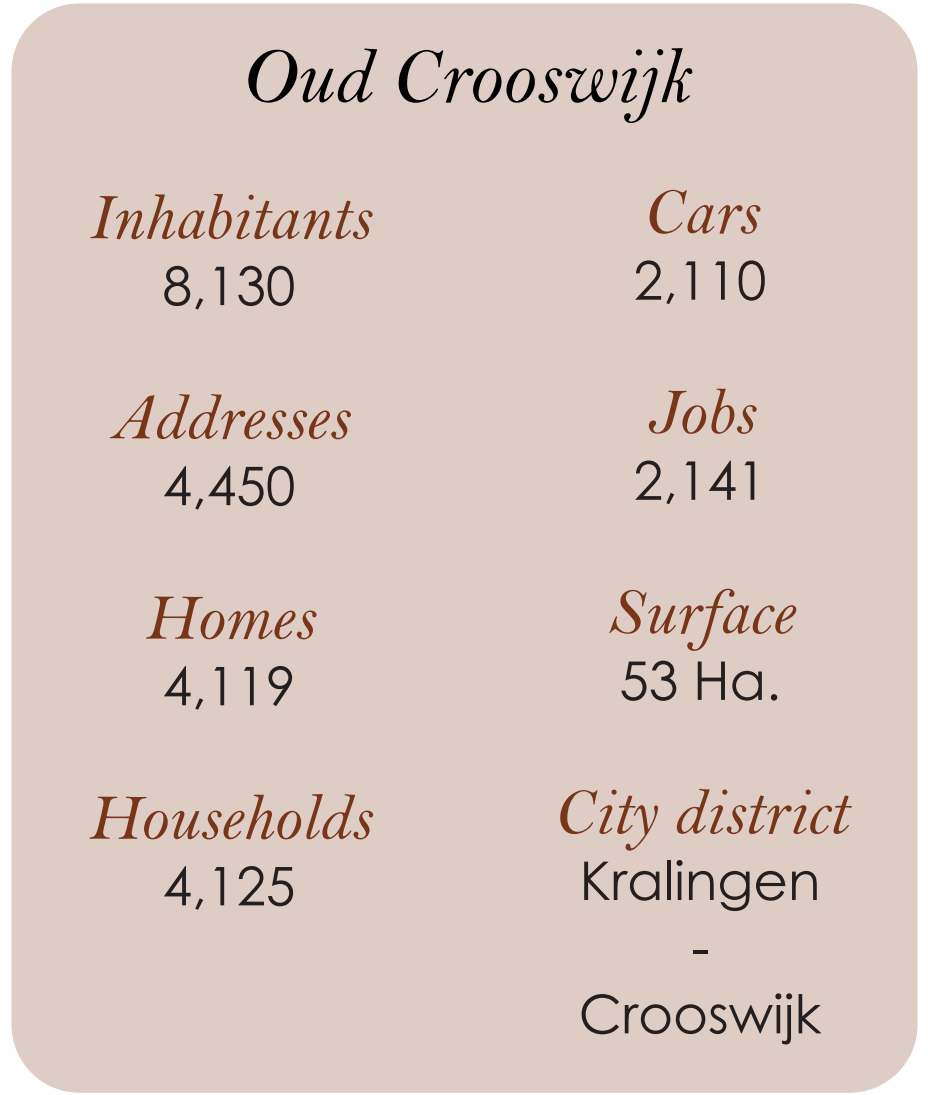


Figure 1. Generic statistics Oud Crooswijk (Oud Crooswijk Allecijfers, 2025 & Wijkprofiel Oud Crooswijk 2023)



Figure 2. Aerial view of Oud Crooswijk in 1967 (Rotterdam City archive)



Figure 3. Aerial view of Oud Crooswijk in 2025 (Google Earth)

The threat on the working-class

Problem Statement
&
Objectives



Dit is een nieuwsbericht van
Rijnmond

Zaterdag 11 september 2021, 09:00

Bewoners zijn verknocht aan 'klotebuurt' Oud-Crooswijk: 'Vroeger lachte ik, nu heb ik een huilkoppie, maar ik laat me niet wegpesten uit mijn wijk'



19 JUNI 2024

**HUURDERS CROOSWIJK VOEREN ACTIE VOOR
BETERE WOONOMSTANDIGHEDEN**



Woonproblemen

Wijken voor de yuppies in Rotterdam Crooswijk: "Het idee dat ik weg moet, vind ik heel akelig"

REPORTAGE

Ooit de trots van een Rotterdamse volkswijk, nu verpauperd en onveilig – oudgediende moet Crooswijkseweg opknappen



Dit is een nieuwsbericht van
Rijnmond

Vrijdag 10 september 2021, 08:10

Een diepgeworteld wantrouwen in plannen Oud-Crooswijk door sloopdrift in Rotterdam

KRO-NCRV (2020) NOS and Rijnmond (2021), SP Rotterdam (2024) and Volkskrant (2024)

Introduction

As mentioned in the introduction. Nieuw Crooswijk underwent urban renewal in the early 2000s. However, when the renewal was done, the urban fabric may have improved, but the neighbourhood became completely unrecognizable. The typifying working-class neighbourhood that once was Nieuw Crooswijk, no longer existed (NPO, 2018 and Volksbuurtmuseum 2020).

This was largely due to the neglect of identity-carrying elements. One issue was that the physical appearance of the neighbourhood was drastically changed. Historical objects and structures that referred to the industrial past were no longer there, removing the recognizability of the working-class history.

However, the most pressing issue was that the new plans completely disregarded the original working-class inhabitants. Instead, the plans focussed on attracting a new target group to the neighbourhood; the middle- and upper-class. As a result, more expensive houses were being built. These were unaffordable for the original working-class, resulting in them having to leave their beloved neighbourhood (Maandag, 2019 and Volksbuurtmuseum, 2020).

This push for a demographic shift, in combination with the change in physical appearance, changed the identity of Nieuw Crooswijk with the remaining working-class inhabitants now describing it as a ‘Yuppen-paradijs’¹ (NPO, 2018).

¹ Yuppen: Young and highly educated people with a well paid job and a trend-sensitive lifestyle (Yup Nederlands Woordenboek - Woorden.org, n.d.).

The fear of Oud Crooswijk

Now that Oud Crooswijk is facing urban renewal, there is growing concern among the remaining working-class inhabitants that Oud Crooswijk will suffer the same fate as Nieuw Crooswijk.

Their main concerns are that the new plans will have no room for them and that the physical appearance of the neighbourhood will completely change. They fear that the working-class has to make room for middle- and upper-class. They state that this process has already started and that it is irreversible already. In the 2018 documentary *Creme de la Crooswijk*, inhabitants address the disappearance of local shops such as butchery, bakery and grocery store. They state “All the coziness and familiarity is disappearing. The working-class neighbourhood as we knew it no longer exists.” (NPO, 2018).



‘This is a working-class’ neighbourhood. But people want us out. The ‘Yuppen’ (upper-class) are going to kick me out’

*“It all started
when they started renovating Nieuw Crooswijk.”
&
“Crooswijk has
been ruined, and I fear this cannot be fixed
anymore.”*



“People are chased out. People had a rent of €350,-. They were promised to be able to return after the renovation. However, their rent increased to €720,- which they could not afford ofcourse.”



“Everyone helped each other, everyone knew and greeted each other. Nowadays, if you say hello to someone, they will not even look at you.”



Figure 4: Local residents expressing their concerns (NPO, 2018)

The importance of the working-class

This fear of the disappearing working-class character highlights the urgency of incorporating the neighborhood's identity into urban renewal plans. This identity is what gives a neighborhood its character and has the potential to unite its residents—fostering social cohesion and ultimately contributing to a healthier and more prosperous community (Forrest & Kearns, 2001).

In the case of Rotterdam, preserving the working-class character may be even more important. As mentioned earlier, the identity of the entire city is rooted in its working-class origins.

The city describes its unique characteristics as its “DNA.” This DNA distinguishes Rotterdam from other cities and serves as the foundation for creating a distinct and attractive urban identity. According to the city itself, this DNA is embodied in the words Bold (Rauw), Forward (Ondernemend), and Culture (Internationaal) (DNA, n.d.; Make it Happen, n.d.).

The working-class character has been instrumental in shaping this DNA (Custers & Willems, 2024). Rotterdam was formed by its port and its industries (Nevescanin, 2023). The workers employed there needed housing, and as the port rapidly expanded, the city had to provide large numbers of homes in a very short time (Maandag, 2019).

This led to the development of so-called “non-planned expansion neighborhoods” (niet-planmatige uitbreidingswijken), such as Crooswijk. As a result, many of these neighborhoods share similar physical characteristics: street or old waterway parcel patterns, compact public spaces, and closed building blocks (Welstandsnota, Rotterdam). Due to this distinct physical appearance—and the large working-class population—Rotterdam quickly became known as a working-class city (Maandag, 2019; Volksbuurt Museum, 2020).

In short, working-class neighborhoods have shaped Rotterdam into what it is today. They are deeply embedded in the city's unique identity, or DNA. Since Oud Crooswijk is strongly associated with this character, it serves as an essential component of Rotterdam's identity. Therefore, if Oud Crooswijk were to lose its recognizable working-class character, it would mean the loss of a foundational element of what makes Rotterdam unique. Preserving the working-class character of Oud Crooswijk is, therefore, essential for the city of Rotterdam.

Bold

Rotterdam is a city that's direct and unpolished. Rotterdammers say what they mean. Rotterdam is a city where anything is possible. Rotterdam is constantly changing and never finished. The city is young and unpolished. This means that anyone can contribute to the city and connect with it.

Forward

In Rotterdam it doesn't matter where you come from, it matters where you're going. Those who want to create something new can find what they want in Rotterdam. Rotterdam is the city of initiative and innovation.

Culture

Rotterdam is a world port city. The port is the largest and most modern of Europe and belongs to the top 10 ports globally. Additionally, the city knows a powerful skyline and modern architecture. 178 different nationalities live together in Rotterdam and the city has an international network. Rotterdam is the city with an open mind.

Gemeente Rotterdam, N.D.



*Figure 5. Port of Rotterdam in 1950
(Rotterdam City archive)*



*Figure 6. Crooswijk abattoir in 1946
(Rotterdam City archive)*



*Figure 7. Port workers
(Rotterdam City archive)*

Problem Statement

In order to formulate a clear project objective, this chapter is summarized in the problem statement below. This statement serves as the foundation for the issues this thesis aims to solve.

“The required urban renewal of Oud Crooswijk threatens to push out the current inhabitants and drastically alter the physical appearance. As a result, Oud Crooswijk would become completely unrecognizable as a working-class neighbourhood, harming the DNA and attractiveness of the city of Rotterdam.”

*You should see it like this...
In the essence of it, we will
give Crooswijk a complete
makeover. We will provide
beautiful new houses, streets,
lighting, etc...*

And...



*And for new inhabitants
ofcourse!*

*And with our plans we
immediately solved your
parking problem as well*



*What do you mean parking
problems?! I don't have any
parking problems.*

*That problem will only start
existing when these new
“richies” want to dump their
car here*

*So... if I understand this
right. They want to make
Crooswijk more attractive for
those rich people.*

*In that case they can just tear
down the entire city
immediately right?!*

For sure!!!



Figure 8, Gentrification of Crooswijk in a nutshell
(Rotterdams Dagblad, 2004)

Problem Statement

“Urban renewal threatens to push out the current inhabitants and alter the physical appearance of the neighbourhood. As a result, Oud Crooswijk could become completely unrecognizable, removing the working-class character of the neighbourhood.”

Objectives & Focus area

Design objective

The aim of the design objective is to tackle the problem statement. The design objective is to create a redesign of the urban fabric that ensures Oud Crooswijk remains recognizable as a working-class neighbourhood after urban renewal.

To keep Oud Crooswijk recognizable as a working-class neighbourhood, the design will reinterpret what it means to be such a neighbourhood in the 21st century. Since urban renewal requires spatial interventions, the focus will be on the spatial elements that define this working-class character. This reinterpretation will involve preserving existing elements that embody this character, while also anticipating on new ones that could shape its identity in the future.

The working-class character is deemed recognizable, if after renewal, the original spatial characteristics are still identifiable. In the case of Oud Crooswijk these characteristics consist of:

- A compact public space
- Closed building blocks
- Old waterway-/street parcellation
- Streets as the image carriers of the public space (Gemeente Rotterdam, 2012)

Like many other working-class neighbourhoods, Oud Crooswijk was a non-planned expansion neighbourhood. The characteristics mentioned above, are typical to such neighbourhoods. Because many working-class neighbourhoods were developed this way, these spatial characteristics are typical for working-class neighbourhoods and their (spatial) character.

Thesis objective

The overall objective of this thesis is to create a transformation framework that serves as a design tool. The goal is to develop a framework that can be applied to other locations facing similar challenges related to urban renewal and neighbourhood character.

This framework will be used as the design tool for the redesign of Oud Crooswijk. In turn, the redesign will help to test and refine the framework. Additionally, the redesign serves as a demonstration for the practical application of the framework. The aim of this, is to show that the transformation framework does not lead to a fixed outcome, but instead establishes desirable conditions that provide a reinterpretation of Oud Crooswijk as a working-class neighbourhood.



Figure 9. Focus area of thesis
(Photo: Google Earth)

Design objective

“Ensuring that Oud Crooswijk is recognizable as a working-class neighbourhood after urban renewal.”

— *Ensuring the
working-class character*

*Approach
&
Theory*

**NIET LULLEN
MAAR POETSEN**

*Don't talk
Just do it*

03



*Skyline of Rotterdam
(Rotterdam.info)*

Introduction

The following chapter presents how this thesis aims to reach the objectives stated in chapter 2. The chapter starts by addressing the overall approach and will be followed by a subsection addressing the methods and theories used to achieve the objectives.

Approach

To approach the objective in an academic manner, the problem statement has been translated into research questions. These questions define the scope and focus of this thesis. They identify the specific topics to be addressed and establish boundaries for the design assignment. The conceptual framework on page 20 further emphasizes this scope.

The research questions will be addressed using various academic methods and will be grounded in theory. By approaching the problem statement in this way, the likelihood of achieving the desired outcome is increased.

The Transformation framework

The applied methods and theories are bundled in the methodology scheme on page 21. This scheme serves as the foundation of the transformation framework. It summarizes the applied approach, and how the applied steps relate to one another.

Methods & Theory

The following subsections will elaborate on the research- and design steps in order to create the transformation framework and redesign for Oud Crooswijk. The steps combined form the transformation framework.

The framework can be roughly divided into four activities (1) Analysis, (2) Assignment definition, (3) Design and (4) Evaluation. The textual elaboration suggests a linear process. In practice however, this process is circular and iterative. The scheme on page 21 shows a more accurate depiction of the transformation framework and the relation between research and design.

1. Analysis

Addressing the urgency for urban renewal

To address the urgency for urban renewal in Oud Crooswijk, a spatial analysis was conducted in combination with fieldwork and a literature study. Foundational information for this came from a participation evening for the inhabitants of Oud Crooswijk. During this event, organized by the municipality of Rotterdam, residents were invited to express their needs and wishes regarding the urban fabric. Additional information for the spatial assignment was obtained from geospatial sources such as Wijkatlas and Gisweb.

Defining working-class character and neighbourhood identity.

In order to reinterpret the working-class character of Oud Crooswijk, it was important to gain insight into what currently defines this character. To achieve this, an identity analysis was conducted. This analysis consisted of a literature study, spatial analysis, and mixed media analysis.

Each method resulted in a different definition of the working-class character. The literature study produced a scientific definition, based on the academic paper *What Does It Mean to Be Working-Class?* (2023). According to this paper, the modern-day working class is defined by poverty, limited access to goods and services, residence in social housing, and employment in manual professions.

The mixed media analysis produced a social definition of the working class, based on how residents of Oud Crooswijk described the uniqueness of their “working-class” neighborhood. The information for this analysis came from the NPO documentary *Crème de la Crooswijk* (2018) and interviews from the OPEN Rotterdam channel (2023 & 2024).

The spatial analysis produced a spatial definition, describing the working-class character as the tangible, character-defining elements and remnants derived from the neighborhood’s industrial history. This analysis was largely informed by the *Cultuurhistorische Verkenning Crooswijk* (2019), the book *Stadsvernieuwing in Rotterdam* (2019), and the report *Crooswijk in Rotterdam* (2020).

Establishing the spatial identity-carriers

Since this thesis aims to create a redesign of the urban fabric, it is important to understand how the working-class character translates into spatial form. To establish this, the MSP-method (Monumenten Selectie Project), developed by the Dutch Rijksdienst voor het Cultureel Erfgoed (RCE), was used.

For the application of the MSP-method, the RCE documents *Transformeren met Cultureel Erfgoed* (2022) and *Eenheid en Verscheidenheid* (2014) were consulted. These documents explain how the MSP method helps to inventory and evaluate objects and structures that contribute to the quality of the landscape and built environment.

The method consists of criteria that determine whether an object or structure can be classified as character-defining for the spatial environment. These criteria were applied to identify which spatial elements of Oud Crooswijk define the neighborhood’s working-class character. These elements have been labeled as “identity-carriers.”

2. Assignment definition

Formulating the design assignment

The design assignment for the transformation plan is formulated based on the conclusions from the analysis (chapter 4 and 5) and consist of two components:

1. Achieving the urban renewal goal of improving the liveability, safety and sustainability of Oud Crooswijk
2. Achieving the identity goal of integrating the current spatial identity-carrying elements as well as anticipating on potential new ones in the future.

Achieving these goals has been done by reinterpreting the concept of a traditional working-class neighbourhood. This will ensure that the urban fabric of Oud Crooswijk can successfully be renewed while also preserving the working-class character.

3. Design

Designing with ambition and design principles

Based on the formulated design assignment, the transformation plan was developed. This began with the creation of a design vision derived from the assignment. The vision was then translated into design principles. The aim of these principles is to create the desired conditions and serve as a bridge between the vision and the actual design.

Next, the principles were applied to redesign the urban fabric. This was done by identifying key locations that were essential to fulfilling the design assignment. These locations were then redesigned in further detail. This was achieved by creating different design variants, based on the theory of Jaoude, G. A., Mumm, O., & Carlow, V. M. (2022), which included plans, sections, diagrams, aerial views, and 3D models.

By developing multiple variants, the design process was used to test and refine the design principles. This ensured that the principles successfully created the intended conditions. The iterative process of moving back and forth between the design and the principles allowed for a thorough evaluation of whether the design fulfilled the assignment.

As the final step of the design process, a development strategy was added to the transformation plan. This included conducting a stakeholder analysis and creating a development timeline. The stakeholder analysis provided insight into which stakeholders need to be involved and in

what capacity. The development timeline outlines the necessary activities, their timing, and the stakeholders involved at each stage.

4. Evaluation

Spatial identity-carriers

To evaluate which spatial elements characterize Oud Crooswijk, an evaluation method developed by Van Emstede, C. (2015) and the Rijksdienst voor het Cultureel Erfgoed (RCE) is used. Along with Programma Mooi Nederland (2024), the RCE states that spatial quality arises when there is coherence between the material and immaterial elements of the urban environment. According to Programma MooiNL and the RCE, this coherence is achieved through the interplay of four key values: Use Value, Future Value, Origin Value, and Experience Value.

The necessity of this interplay was already emphasized by the Roman architect Vitruvius, who stated that all buildings should embody Future Value (Firmitas), Use Value (Utilitas), and Experience Value (Venustas) (Marconi, 2014). Building on the belief that “in order to know where we want to go, it is important to know where we came from,” Programma MooiNL and the RCE added Origin Value to this framework.

Based on these values, Step 5 classifies the identity-carriers by labeling them as: (1) Highly contributing, (2) Positively contributing, or (3) Indifferent. This method provides greater clarity on the importance of each spatial element to the working-class character of Oud Crooswijk. As a result, this step plays a key role in formulating appropriate ambitions and design principles.

Reinterpretation of the working-class character

As stated by Gildea (2021) and Rolfe (2017), conceptualizing what it means to have a working-class identity in 2025 is complicated, multifaceted, and continuously debated. The redesign presented in this thesis offers a reinterpretation of that identity. However, given the complexity of this task, the reinterpretation will be critically evaluated through an academic reflection.

This reflection begins by outlining the approach used to define what it means to have a working-class identity in 2025. Next, a reference framework will be constructed, incorporating alternative approaches. The approach used in this thesis will then be positioned within that framework. A comparison will be made between the chosen approach and the alternatives, highlighting the strengths of the meth-

od applied and identifying aspects that could have been addressed differently.

Research and design process

Lastly, this thesis will reflect on its own research and design (R&D) process, also through an academic reflection. This reflection will describe the iterative process of moving between research and design. The process will then be placed within a reference framework and compared to other personal R&D approaches used in previous projects. Based on this comparison, a concluding statement will be made about which aspects of the chosen approach were effective and what could be improved in future projects.

Problem Statement

“Urban renewal threatens to push out the current inhabitants and alter the physical appearance of the neighbourhood. As a result, Oud Crooswijk could become completely unrecognizable, removing the working-class character of the neighbourhood.”

Design Objective

“Making sure that Oud Crooswijk is still recognizable as a working-class neighbourhood after urban renewal.

This requires a reinterpretation of what it means to be such a neighbourhood in the 21st century. Since urban renewal requires spatial interventions, the focus will be on the spatial elements that define this working-class character.

To achieve this, the reinterpretation will involve preserving existing elements that embody this character, while also anticipating new ones that could shape its identity in the future. “

Research Questions

“How to renew the urban fabric of Oud Crooswijk and reinterpret it's working-class character? “

1. What is the urban renewal assignment of Oud Crooswijk?
2. What defines the modern-day working-class character of Oud Crooswijk?
3. What are the spatial elements that carry the neighbourhood's identity?
4. How to embed the spatial identity-carrying elements into the urban fabric?

*Project scope
&
Conceptual framework*

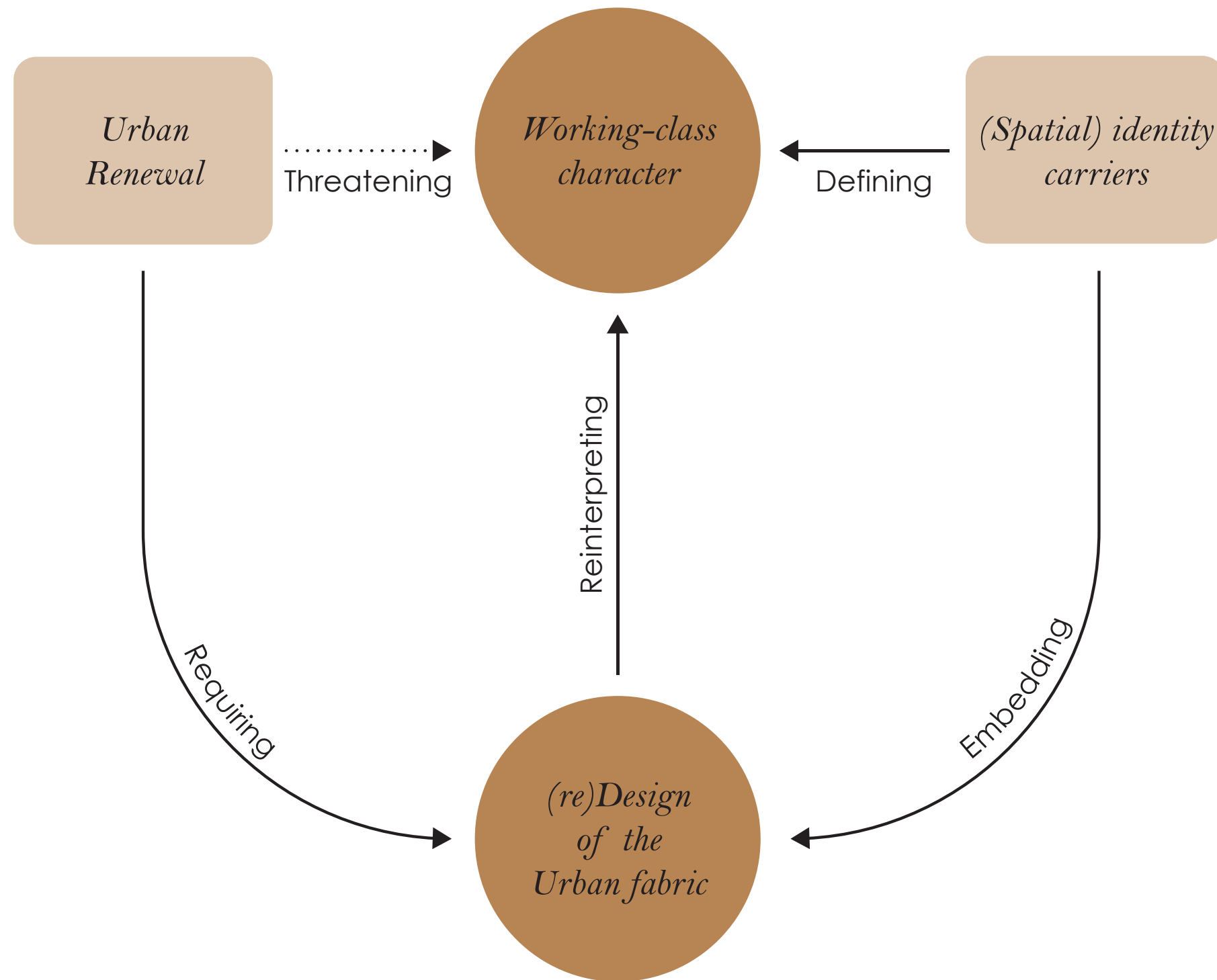


Figure 10. Conceptual framework

Transformation Framework

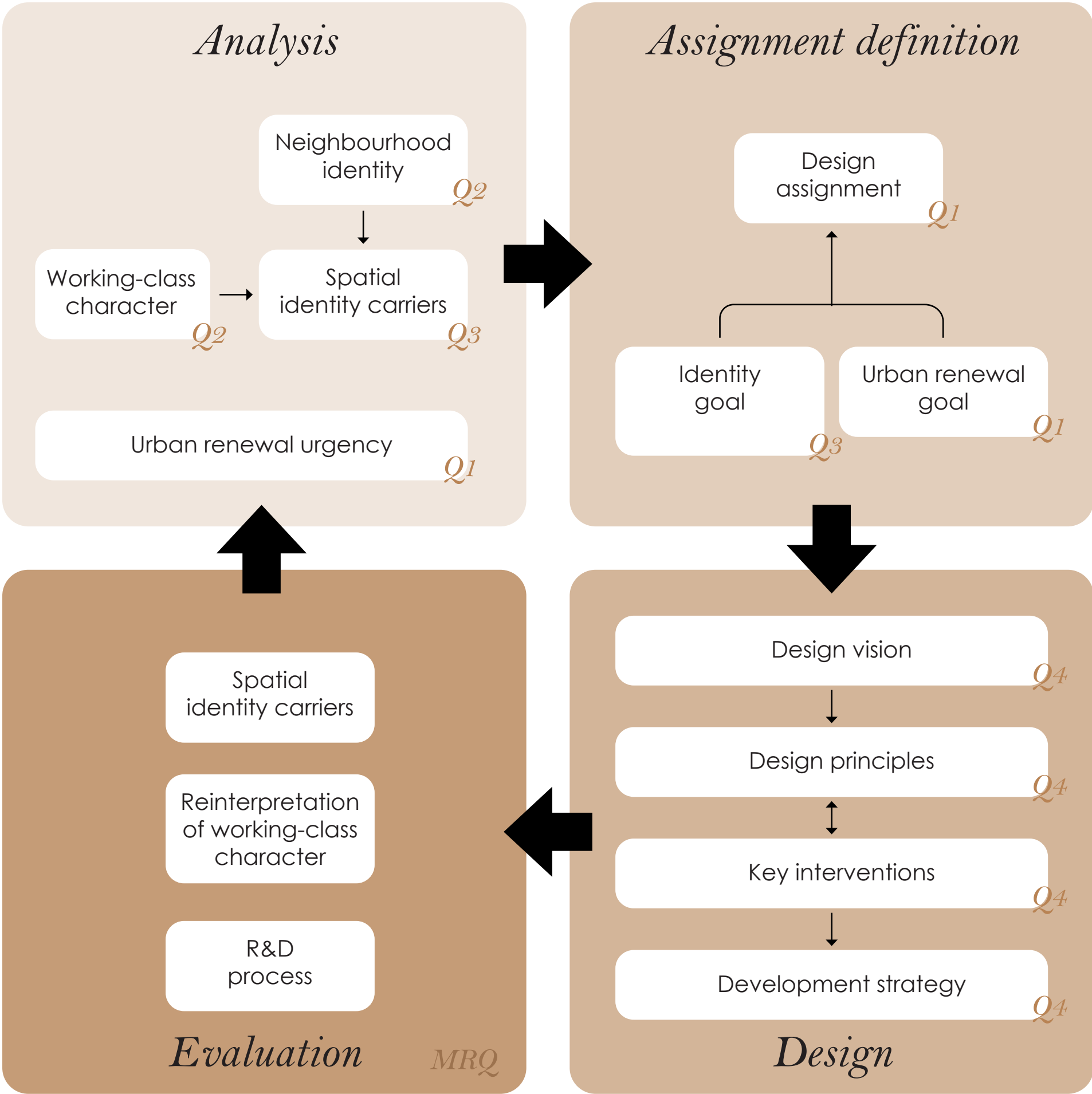


Figure 11. Transformation framework

Urgency for urban renewal

Introduction

04



Pleretstraat, Oud Crooswijk

Introduction

The need for urban renewal of Oud Crooswijk knows a multiple of causes and can be dissected into two categories. The first is the spatial agency and consists of issues directly related to the physical urban fabric. These issues include heat stress and a strong decay of the building conditions. The second perspective are the social issues. Oud Crooswijk is dealing with issues such as poverty, poor liveability and low experience of safety. To elaborate on the causes for urban renewal, the following subsections will dive deeper into the spatial and social challenges.



Figure 12. Administrative borders of Oud Crooswijk
(Photo: Google Earth)

Spatial urgency

From a spatial point of view, the urban fabric can be perceived as fragmented. This fragmentation arises from the materialization of the built environment and public spaces, as well as from the layout of the main structures (Ruimtelijk Ontwerp en Advies, Gemeente Rotterdam [ROA] & Klatser, 2025).

In addition to the fragmentation, many real estate properties are in need of maintenance. Numerous buildings have poor energy performance ratings or suffer from decaying foundations (Energie labels van Gebouwen, n.d.; Fundering, n.d.).

Regarding public space, there is a strong need for improvement to enhance climate resilience. Many surfaces are almost completely paved, with little to no greenery, leading to a pronounced urban heat island effect¹. From a climate-adaptivity perspective, public space is therefore in dire need of an upgrade. This upgrade should support healthier biodiversity, mitigate the urban heat island effect, and improve local water retention.

From a programmatic perspective, the housing supply is extremely monotonous. Almost all dwellings consist of apartments, and the majority are rental units (Buurt Oud Crooswijk, AlleCijfers.nl, 2025).

Lastly, the main service area is poorly functioning and has been described as a cheerless and unsafe place. The area has an uninviting atmosphere due to a lack of connection between public and private spaces. Many ground-floor façades are covered by commercial banners, which block visual interaction between the private and public domain (Rijnmond, 2023 & Gemeente Rotterdam and Havensteder 2023).

¹An urban heat island occurs when a city experiences much warmer temperatures than nearby rural areas. The difference in temperature between urban and less-developed rural areas has to do with how well the surfaces in each environment absorb and hold heat (Yang, L., Qian, F., Song, D., & Zheng, K, 2016).

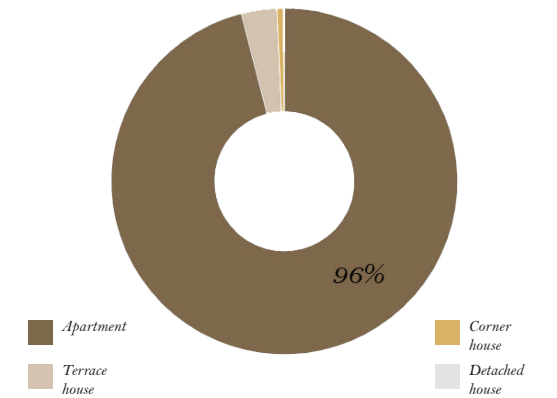


“Ooit de Trots van een Rotterdamse volkswijk, nu verpauperd en onveilig.”

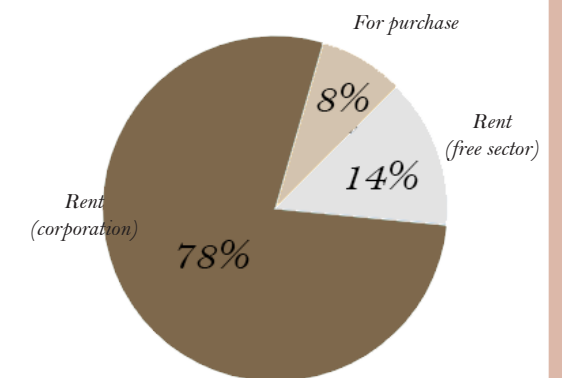
“Als buurtbewoners door de Crooswijkseweg in Rotterdam moeten, gaan ze soms liever een blokje om. ‘Malafide ondernemers trekken onguur volk aan.’

Figure 14. News articles stressing the decay of the Crooswijkseweg (Volkskrant, 2024)

Type of home



Ownership



Housing type

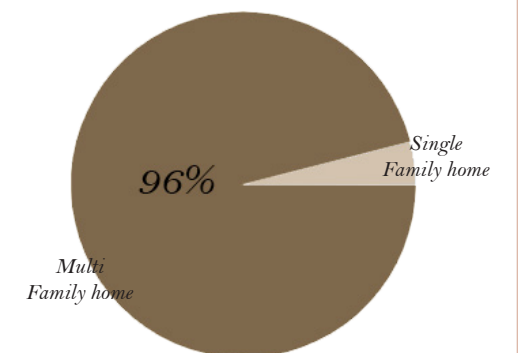
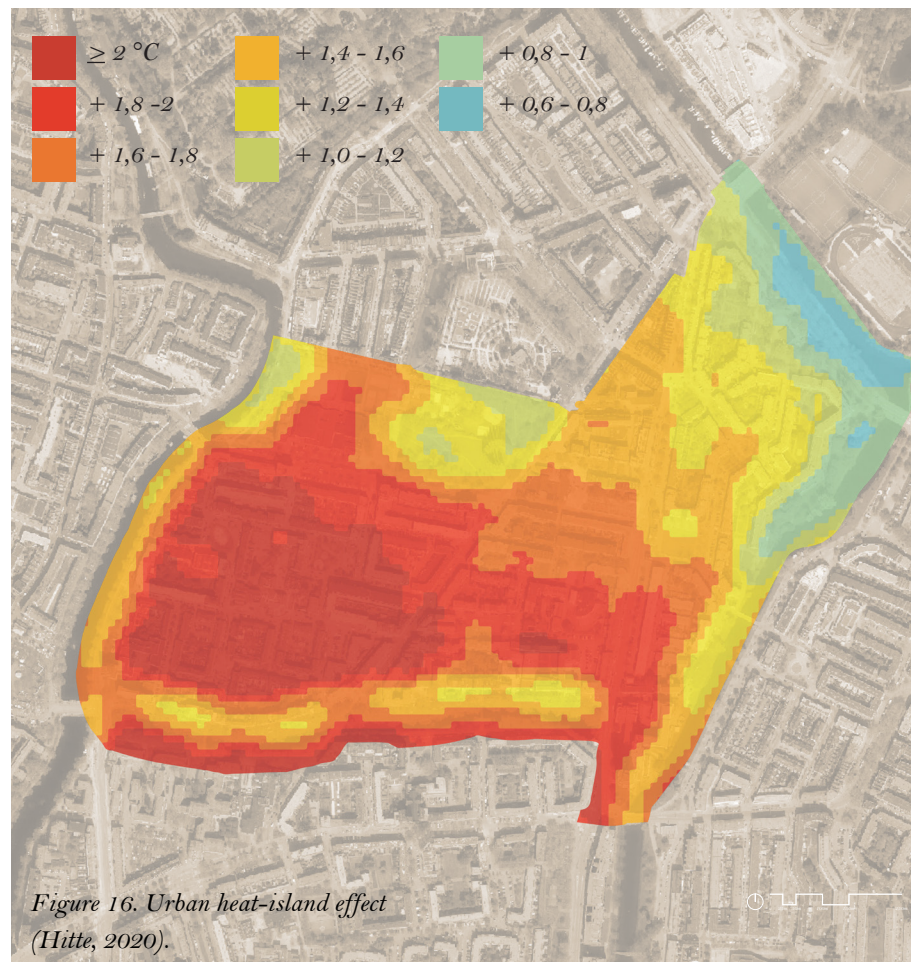


Figure 15. Buurt Oud Crooswijk AlleCijfers.nl, 2025
Urban renewal urgency



Social urgency

From a social point of view, the neighbourhood suffers heavily from poverty. In 2013, Oud Crooswijk was classified as the poorest neighbourhood in the Netherlands (Sociaal en Cultureel Planbureau et al., 2016). A few years later, in 2021, reports stated that circumstances had slightly improved. However, statistics still show that the number of households living below the social minimum remains nearly five times higher than the national average. This also applies to the number of people receiving welfare benefits (Buurt Oud Crooswijk, AlleCijfers.nl, 2025; NOS, 2021).

This poverty is also reflected in the housing market. Due to their financial situation, it is nearly impossible for many inhabitants to purchase a home. The average annual income per person was €22,900.

For a couple both earning this amount, this would translate to a mortgage of approximately €200,000. Meanwhile, the average real estate price in 2024 was €294,000 (Buurt Oud Crooswijk, AlleCijfers.nl, 2025). This difference makes it practically impossible for current inhabitants to buy a home in their own neighbourhood, leading to strong dissatisfaction.

Due to the continuing rise in housing prices (Redactie In-Finance, 2025), fewer and fewer residents can afford to stay in Oud Crooswijk. As a result, local people are forced to move out, while new residents with a different social status move in. The remaining working-class population loses its social network, leading to a decline in social cohesion within the neighbourhood (Wijkprofiel Rotterdam, 2024).

The new inhabitants engage in different activities than the original residents. As a result, there is less social interaction, which has contributed to a decline in social and safety conditions in recent years. According to the Wijkprofiel Oud Crooswijk (2024), fewer people are inclined to help one another, and their connection to the neighbourhood is gradually fading. The profiles show that the quality of life in Crooswijk is below the city average, with key issues including a low sense of safety, weak neighbourhood ties, and limited confidence in the municipality.

These statistics are further supported by findings from a neighbourhood gathering organized by the municipality. At this meeting, traffic nuisances such as parking problems and speeding were identified as contributors to the neighbourhood's safety concerns. Poor living conditions were also linked to a lack of diverse services and amenities, waste-related nuisances, and a general lack of coziness

and community spirit (Gemeente Rotterdam, Havensteder, 2023 and OPEN Rotterdam, 2024).

Lastly, there is growing fear among the remaining residents that Oud Crooswijk will undergo the same transformation as Nieuw Crooswijk. They worry that the working class will be forced to make room for the middle and upper classes. Many residents claim this process has already begun and is irreversible. In the 2018 documentary Crème de la Crooswijk, residents lament the disappearance of local shops such as the butcher, bakery, and grocery store. They state, "All the coziness and familiarity of the past has disappeared. The neighbourhood has become completely unrecognizable" (NPO, 2018).

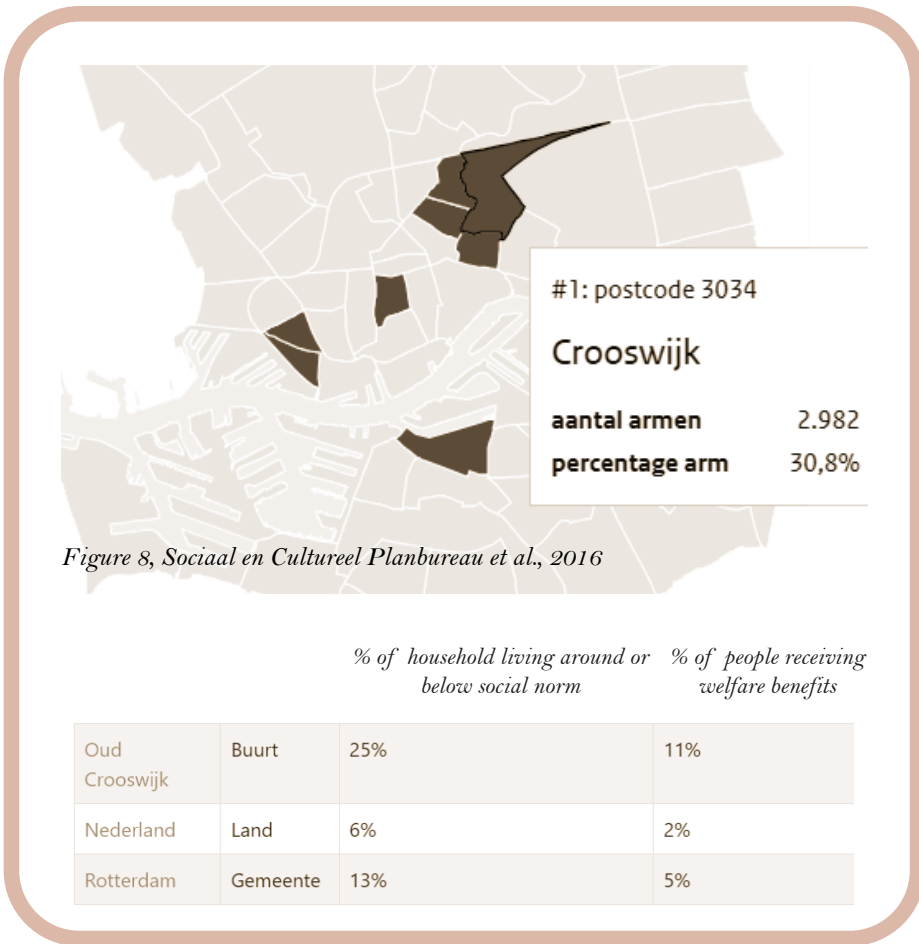


Figure 22.
(Buurt Oud Crooswijk AlleCijfers.nl, 2025)

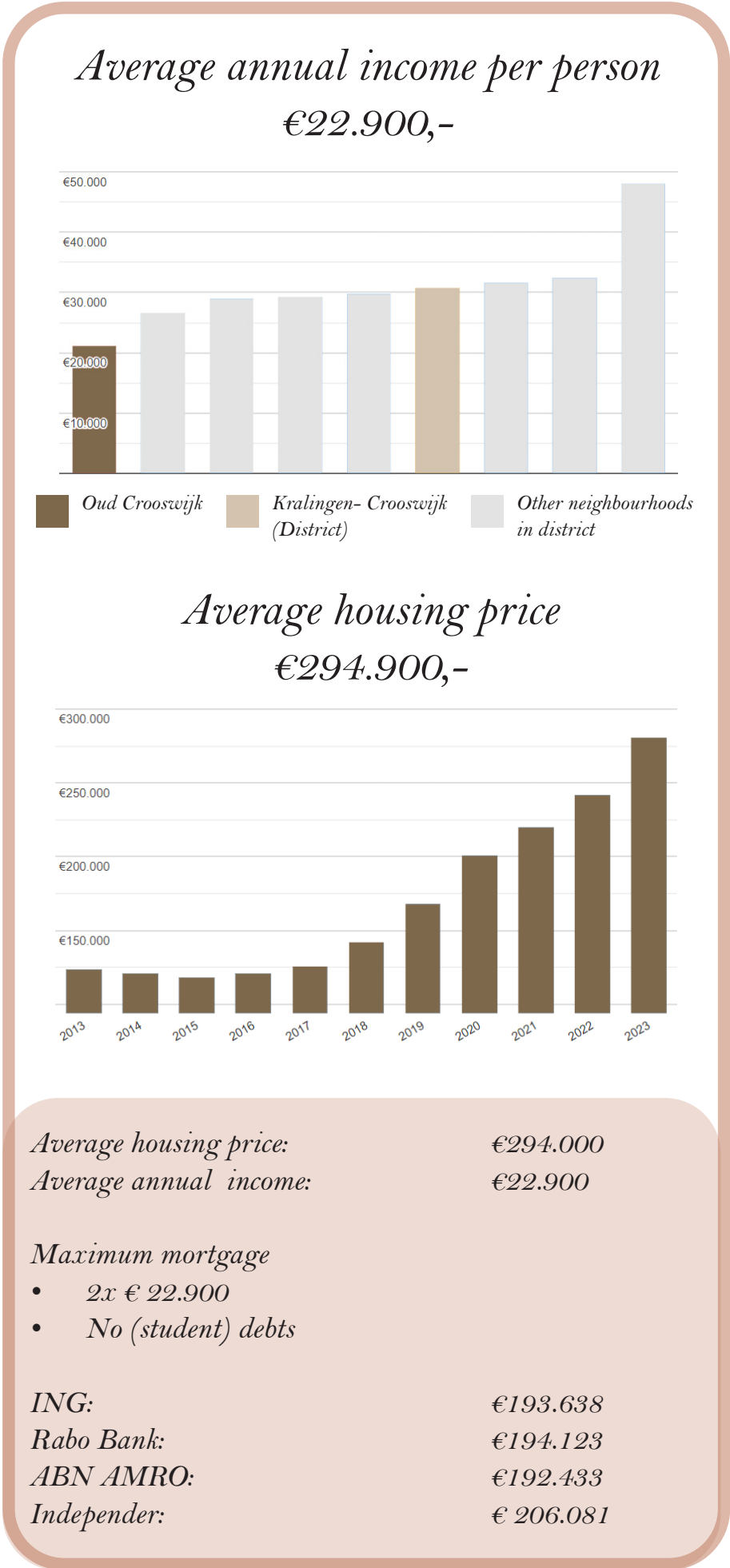


Figure 23. Buurt Oud Crooswijk AlleCijfers.nl, 2025 and ING, Rabo Bank, ABN AMRO, © Independer (2024)

“Creating a coherent and sustainable urban fabric, designed from the public space perspective”

In short, the urgency for urban renewal is stressed by some of the most pressing issues such as the impoverished Crooswijkseweg, affordability of homes, poor energy labels, spatial fragmentation, heat stress and a lack of green. As a result the living conditions in Oud Crooswijk are poor.

In order to improve these conditions, the goal has been set to create a more cohesive and sustainable urban fabric that is designed from the public space perspective. Many of the issues are related to the public space. Therefore, re-thinking and redesigning how the public space works offers great opportunities to improve the living conditions in Oud Crooswijk.

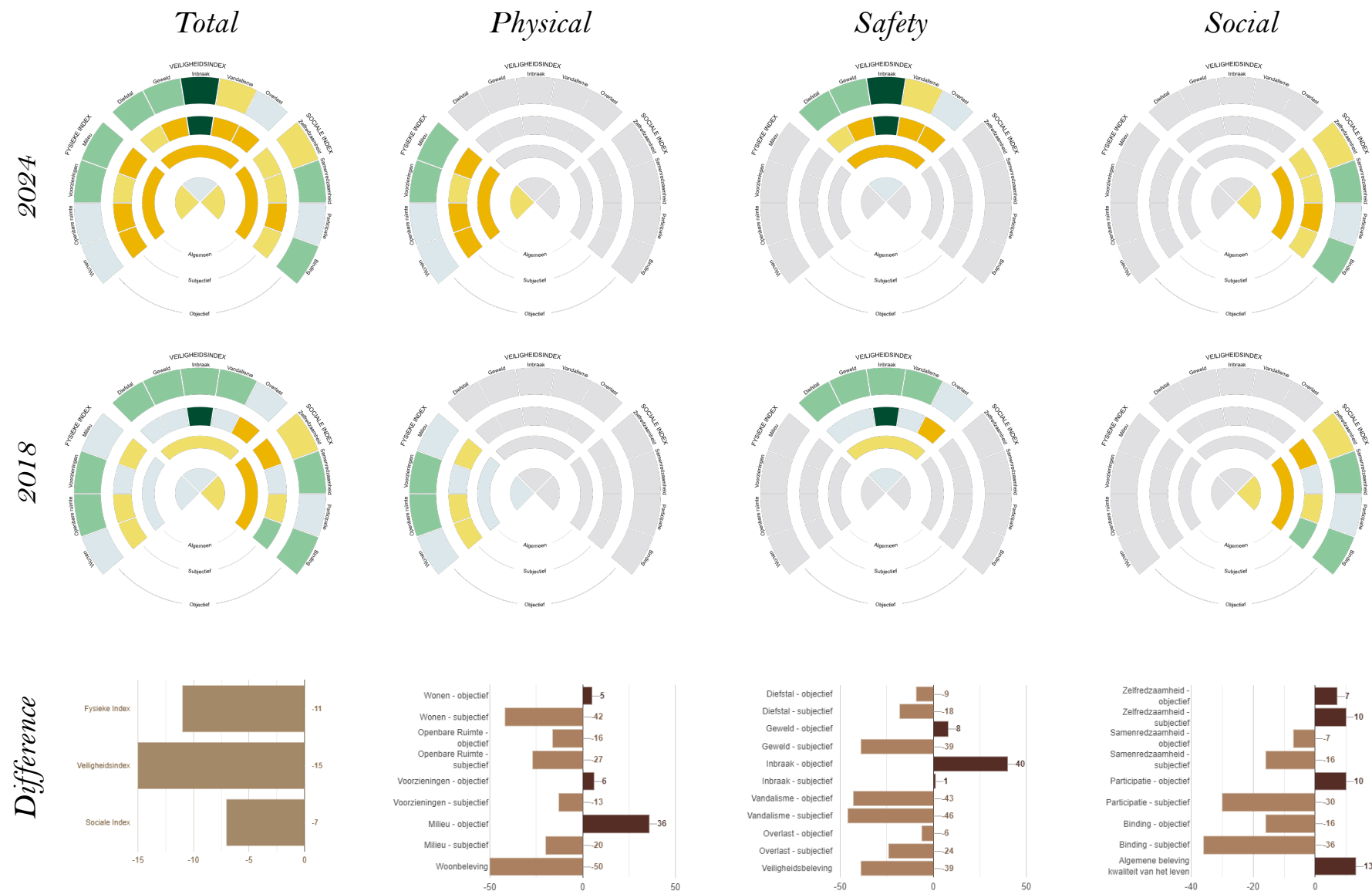


Figure 24. Neighbourhood profile of Oud Crooswijk (Wijkprofiel Rotterdam Oud Crooswijk, 2024)

“Anno 2021, Oud Crooswijk is still one of the poorest neighbourhoods of the Netherlands. People are still struggling to make ends meet, children grow up in poverty and there significant language issues. Maybe the most worrisome part is that theses statistics do not even include the effects of the Covid pandemic yet”

Figure 25. News article stressing the poverty of Oud Crooswijk (NOS, 2021)

*Defining the modern-day
working-class character*

Identity analysis

05



Statue of famous Oud Crooswijk native and boxer Bep van Klaveren

Introduction

To ensure the presence of the working-class character after urban renewal, a clear definition of the character is required. Therefore, the following chapter will provide a deep dive into how to define the current working-class character of Oud Crooswijk.

In order to define this character, the first subsection will do a deep dive into the history of the neighbourhood. This will provide more insight into how the working-class identity of Oud Crooswijk came to be. This will be followed by subsections that provide 3 different perspectives on how to clearly define this working-class identity.

The first perspective will provide a scientific definition. In this subsection, the working-class character is described according to science and will make a clear distinction between the modern-day definition and how working-class was defined in the past. The second perspective provides a social definition. This definition will provide insight into how to residents of Oud Crooswijk describe the working-class identity of their neighbourhood. The third perspective offers a spatial definition. In this definition, the scientific and social definition are translated to tangible spatial elements that define the working-class character of Oud Crooswijk.

Finally, since the redesign encompasses spatial interventions, the chapter concludes with stating how these spatial characterizing elements need to be handled in order to keep Oud Crooswijk recognizable as a working-class neighbourhood.

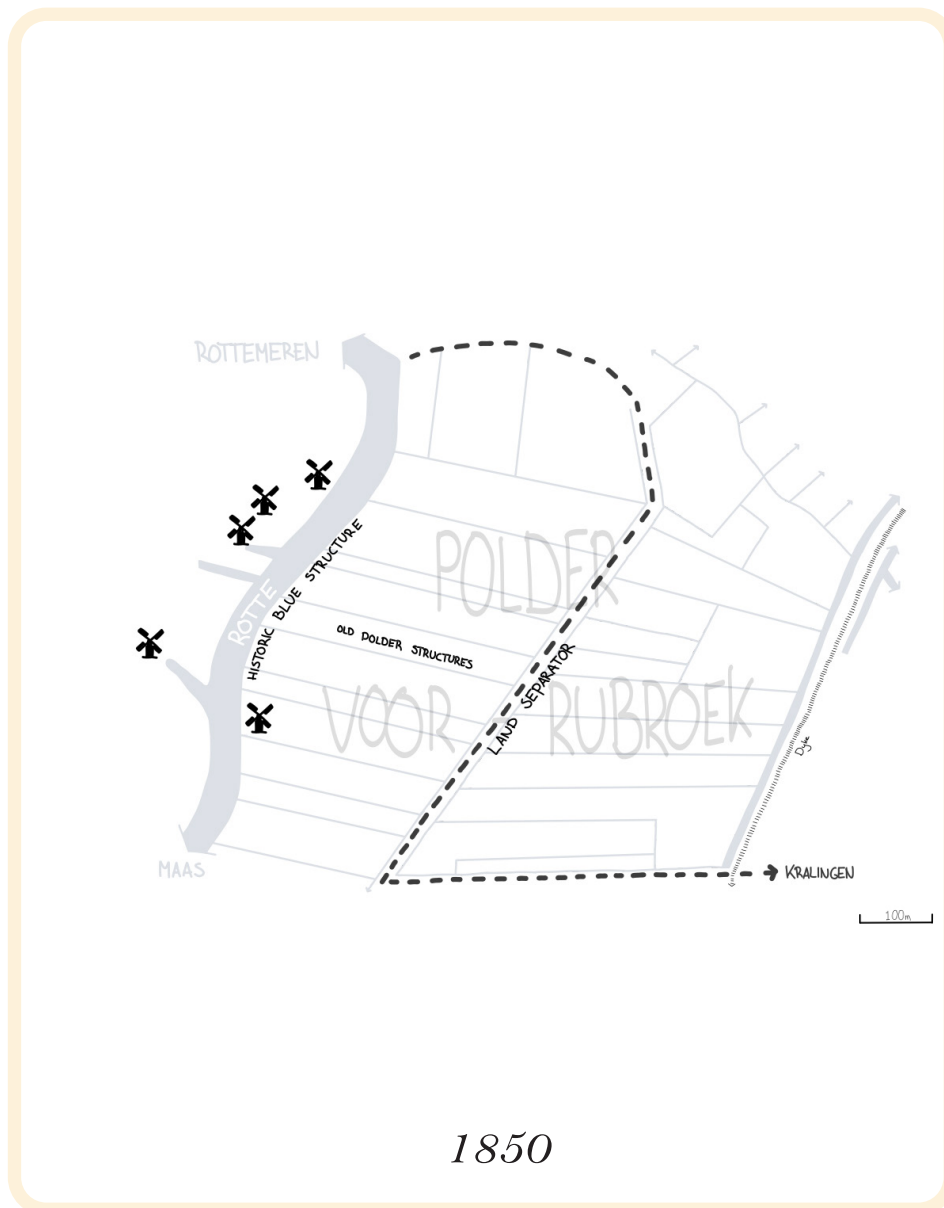


Figure 26. The polder Voor Rubroek in 1850

The story of Crooswijk

It's not easy to find an old working-class neighborhood in Rotterdam. This labor-oriented port city has had many such neighborhoods, but due to the World War II bombing, very few remain. The very oldest, the Zandstraat area, was already cleared before the bombing to make space for a city hall and post office. The remaining old working-class neighborhoods in or near the center disappeared in the bombing—except for two: the Oude Westen and Oud Crooswijk, with Oud Crooswijk being the oldest (Volksbuurt-museum, 2020).

There could be a theoretical debate about whether Crooswijk is a working-class district or a traditional “volksbuurt” (people’s neighborhood). According to theory, working-class neighborhoods arose only after the 1901 Housing Act, when housing corporations started planning

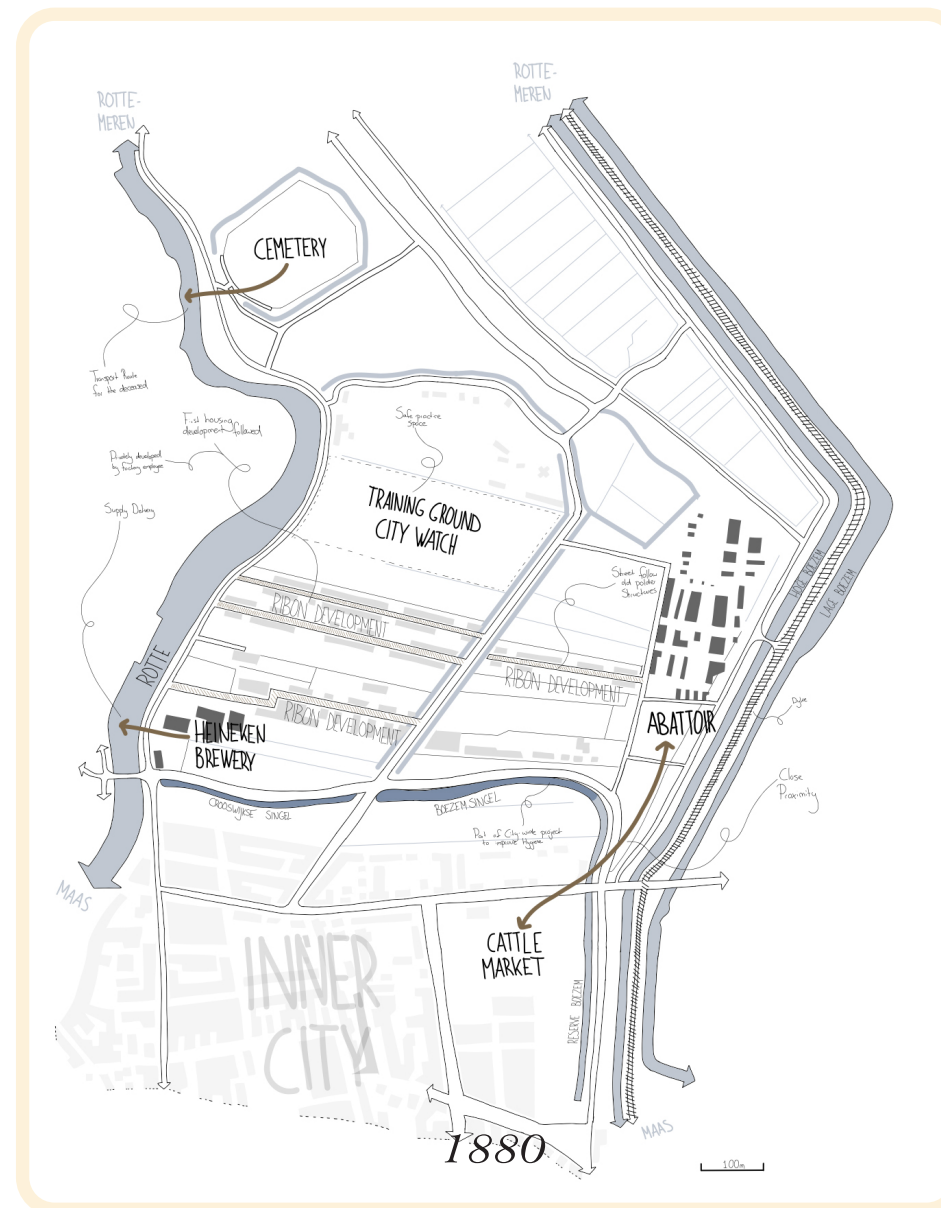


Figure 27. Expansion of the city to make room for unwanted industries in the inner-city

neighborhoods for workers. Older “volksbuurten” developed organically (speculatively), built by private landlords (called “huisjesmelkers”) who often exploited day laborers. Crooswijk includes elements of both: Oud Crooswijk was largely built by landlords, Nieuw Crooswijk by corporations. From the beginning, both areas were home to many workers (Van Es & Voerman, 2019).

The birth of Crooswijk: speculative development

Crooswijk consists of three former polders that were incorporated into Rotterdam in different phases. Initially, the area was mainly developed with farms and country estates for wealthy city dwellers. In the 19th century, the area was also used for cemeteries, which triggered further urbanization.

The Rubroek polder was the first to be developed, with residential neighborhoods and businesses such as the livestock market and the Jamin candy factory. This was followed by

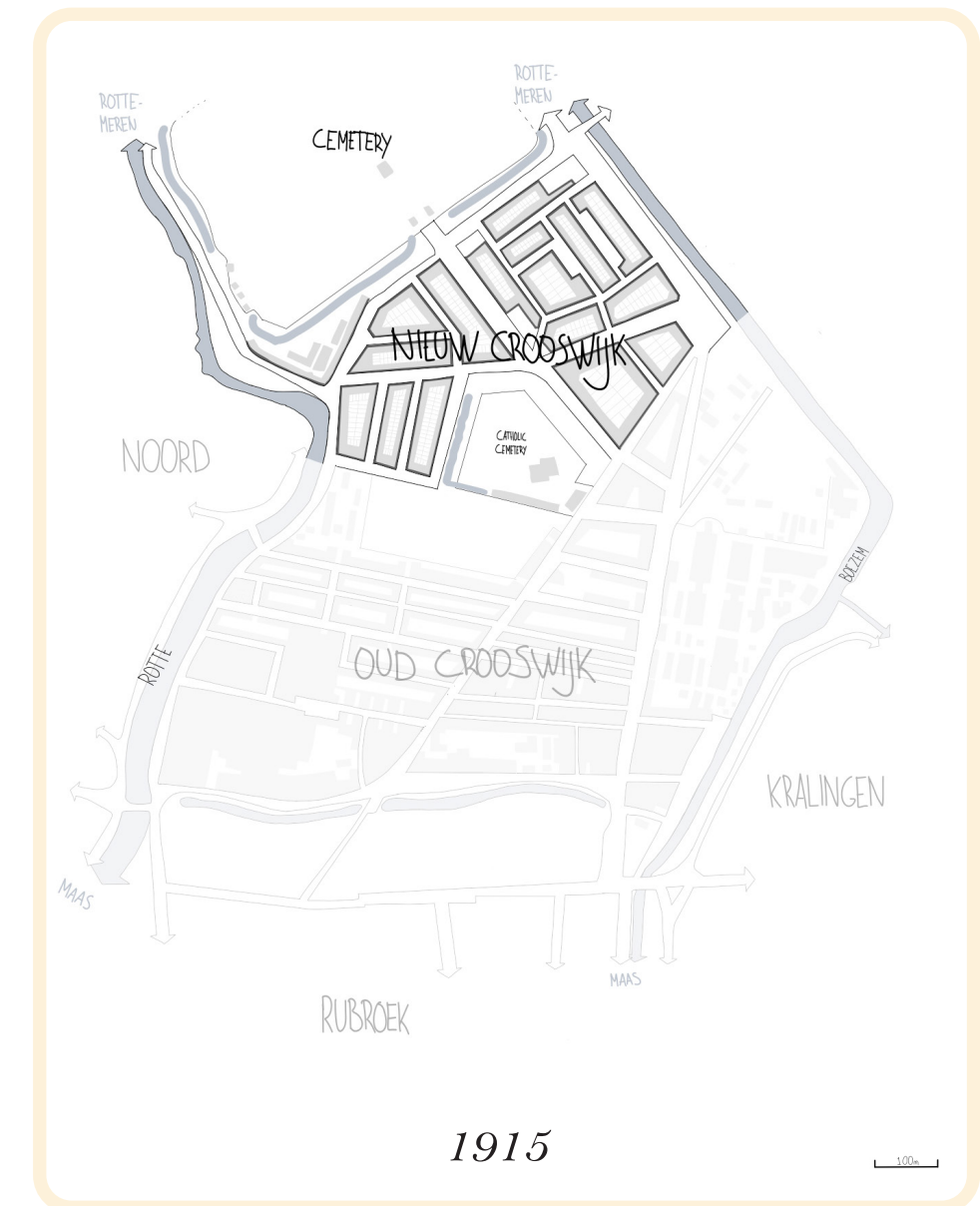


Figure 28. The birth of Nieuw Crooswijk in the beginning of the 1900s

Oud-Crooswijk, where many workers' houses were built, along with large companies like the Heineken brewery and the municipal slaughterhouse. The reason these companies settled here was because its type of industry was being banned from the city centre. Oud Crooswijk had straight streets with back-to-back housing and some public green space in the north, the Exercitieveld, now known as Schuttersveld and two cemeteries (Maandag 2019 and Van Es & Voerman, 2019).

Most people moved to Crooswijk during the industrialization. They moved to Crooswijk not because it was pleasant, but because there was space and work. Many workers came from Protestant Zeeland and Catholic Brabant. Churches, cemeteries, and schools were built for both religious groups (Volksbuurt museum 2020).

After the First World War, Nieuw-Crooswijk was developed, featuring improved housing situated between and along-

side the cemeteries. Crooswijk grew into a typical Rotterdam working-class neighborhood, with a distinct character and a mix of residential, industrial, and small-scale commercial activity. The neighborhood was shaped in part by the presence of major companies and the livestock market, which created a lively area with cafés and trade (Maandag, 2019, Van Es & Voerman, 2019 and Volksbuurt museum, 2020).

The neglect of Crooswijk

In the period after World War 2, Rotterdam decided to prioritize on rebuilding and renewing the neighbourhoods that were hit by the bombings. Around the 1950s, Oud Crooswijk was largely in need of urban renewal. However, because the neighbourhood was not hit during the war, it was not until the 1970s before the renewal actually took place. As a result the living conditions of the neighbourhood were very poor. As a result, the neighbourhood attracted many immigrant workers who were looking for an affordable home (Maandag, 2019 and Van Es & Voerman, 2019).

Community spirit

What characterizes Crooswijk is its strong community spirit (Saamhorigheid). A strong example of this was the demolition of the Koninginnekerk in 1972. Although residents were not particularly religious, the church was cherished. The city council demolished it without public input, which was the last time such a decision would be made without community involvement—or so the residents thought. From then on, all changes were to be made together with them.

However, when Nieuw Crooswijk was facing urban renewal in the early 2000s, this ended. The city decided that working-class neighborhoods should be “mixed” with higher-income residents—a process known as gentrification¹. This process is still present with the most recent example to be the demolition of several buildings in 2023 (Volksbuurt museum 2020).

The Fight for Crooswijk Begins

However, the struggle for more public input actually began earlier. It started in 1969, when residents founded the Wijkorgaan Crooswijk (Crooswijk Neighborhood Organization). The wijkorgaan was founded based on the demand of more public input in spatial interventions. In 1970, the city had already proposed filling in the Rotte River to build a road into the city center—a plan that outraged residents. When in 1972, the Koninginnekerk was demolished with zero input from the local inhabitants, this served as the final

straw for the demand of a drastic change in policy.

During this time, Rotterdam was finally making plans to address the neglect of Crooswijk. The plans aimed for full demolition (sanering) of Crooswijk, allowing only 30% of residents to return. It planned office buildings and green-space apartments, far removed from the moldy walls of the old homes. Crooswijk was to become a modern city center neighborhood.

To almost everyone's surprise however, the city passed the Urban Renewal Organization Ordinance in 1973, giving residents more power than civil servants, landlords, and corporations combined. Crooswijk was the first neighbourhood in Rotterdam to get a project group which could get the renewal underway (Maandag, 2019, Van Es & Voerman, 2019 and Volksbuurt museum, 2020).

Urban Renewal in the 1970s

There was no doubt that something needed to change. Oud Crooswijk was full of dilapidated homes, with poor foundations and back-to-back housing. By the 1960s, many of these were being demolished. The modern street map shows a massive increase in new homes post-1960. Long, narrow streets were replaced by curved streets, small squares, parks, and playgrounds. Narrow housing blocks largely disappeared (see figure 20 & 21) (Maandag, 2019).

Availability of relocation areas

Urban renewal was relatively fast and successful because many relocation areas were available for residents who wanted to stay within their neighbourhood. The room for internal relocation came from the departure of the major factories such as the livestock market (1867–1973), the Jamin candy factory (1888–1980), the Heineken brewery (1873–1974), the tram depot, and the municipal slaughterhouse (1883–1981) (figure 18). The people who wanted to stay—the so-called “blijvers” (stayers), couldn't afford high rents, so they fought hard for affordable housing.

Despite the relocation areas, there were people (mostly wealthy) who moved elsewhere—the so-called “vertrekkers” (leavers). They left for newer suburbs like Alexanderpolder or nearby towns (Maandag, 2019 and Volksbuurtmuseum 2020).

The relocation process

The first relocation area in 1974 was the old Heineken brewery site. The transformation resulted in a friendly neighbourhood, strongly contrasting with the adjacent slums.

Most of the renewal consisted of demolition and rebuilding. The guiding principle was “building for the neighbourhood” and was even supported by policies from the national government. However, the approach was very expensive and

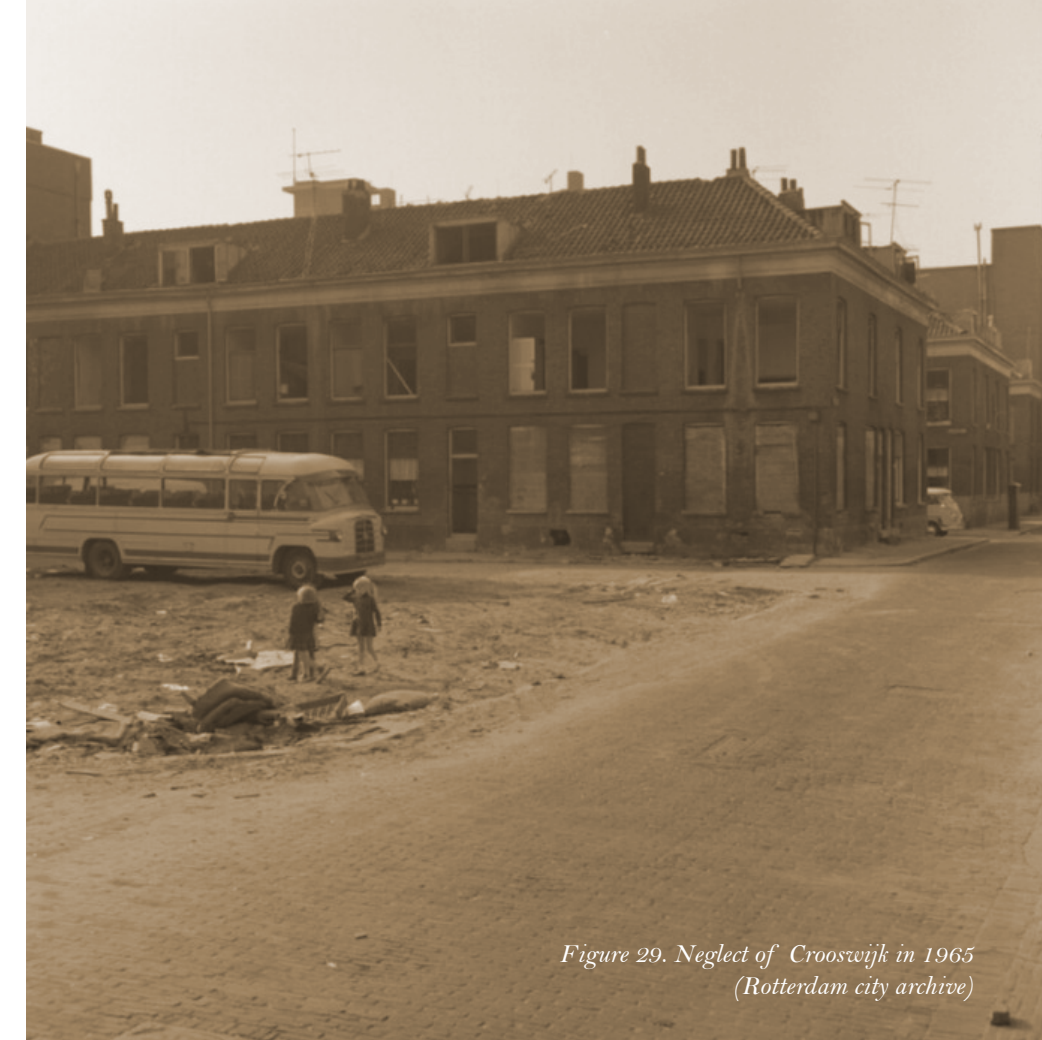


Figure 29. Neglect of Crooswijk in 1965
(Rotterdam city archive)



Figure 30. Demolition of the Koninginnekerk in 1972
(Rotterdam city archive)

¹ the process whereby the character of a poor urban area is changed by wealthier people moving in, improving housing, and attracting new businesses, often displacing current inhabitants in the process (Andersson, 2006, Lees, 2008 and Bridge, Butler and Lees, 2011).

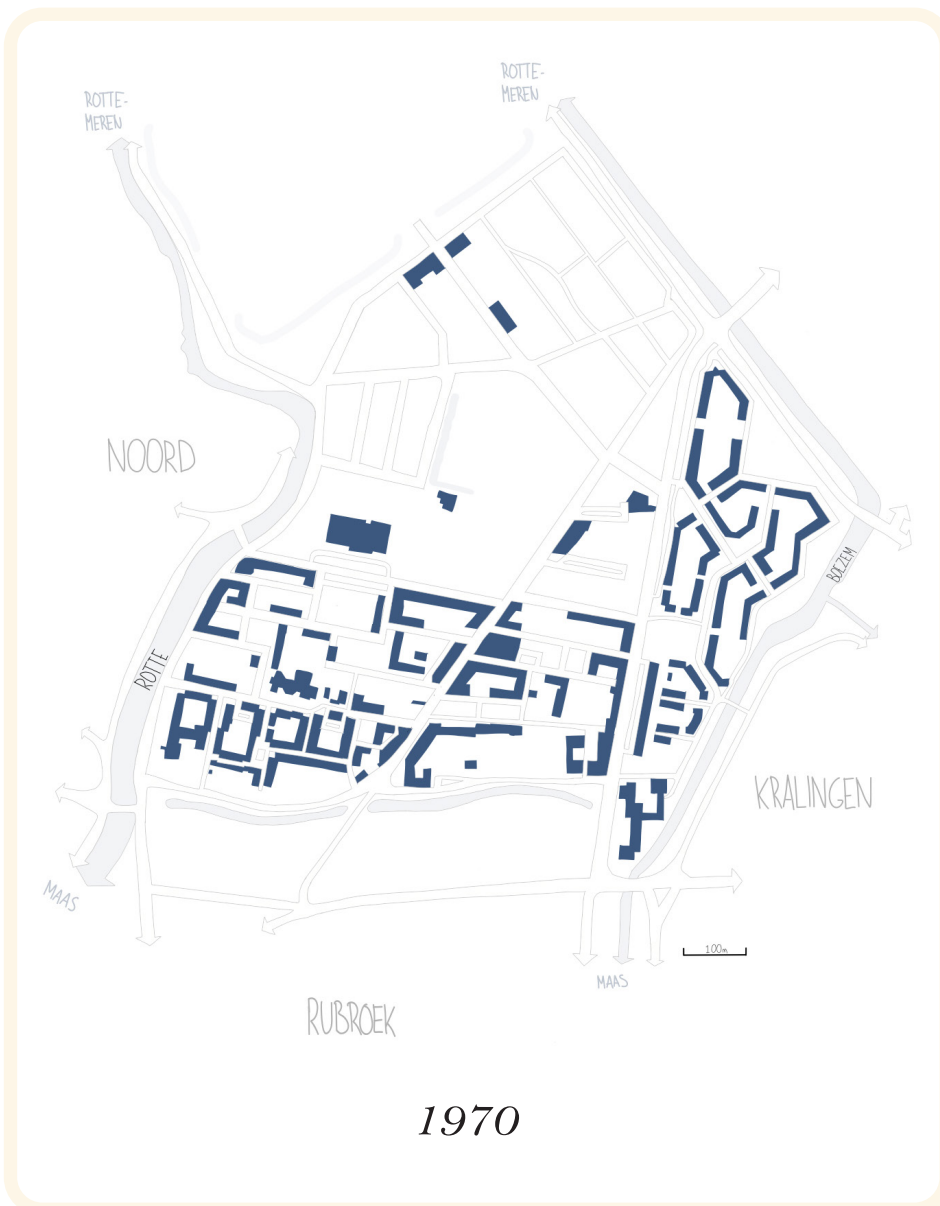


Figure 31. New buildings built during the urban renewal of the 1970s

controversial. The demolition and rebuilding oftentimes resulted in increased rents. If the residents resisted these rents, things could become very tense in the project group (Maandag, 2019).

Urban renewal affecting the community spirit

Crooswijk's strong community spirit may be more characteristic of a working-class neighborhood than a traditional volksbuurt, but the residents likely don't make that distinction. For them, togetherness means sharing joys and sorrows, whether on the street, in the café, or through clubs.

However, in the urban renewal period of the 1970s, many of these places that fostered the togetherness of the community disappeared. The main reason for this were changes in retail and a shift in lifestyle. Due to health reasons, the habit of stopping at a café after work, before heading home, slowly disappeared (Maandag, 2019 and Volksbuurtmuseum 2020).



Figure 32. The old sites of the Heineken brewery and abattoir offering room for housing

One community space that is still present however, is the Schuttersveld. The area was used to host gymnastics festivals and became home to the local playground association in 1932. Today, it's a park with a sports field and playground, located between Oud and Nieuw Crooswijk and is symbolic for the community spirit of Crooswijk.

Even though the urban renewal caused community spaces to disappear, it also increased community spirit. The main reason for this was the solidarity of the residents against the strong increases in rent. Standing together against the increased rents created a tremendous bond and a strong sense of unity among the residents (Maandag, 2019).

To represent this community spirit, multiple green play areas and squares were added to the neighbourhood. One of these areas features an obelisk, commemorating the renewal period from 1973 to 1990 and the community spirit

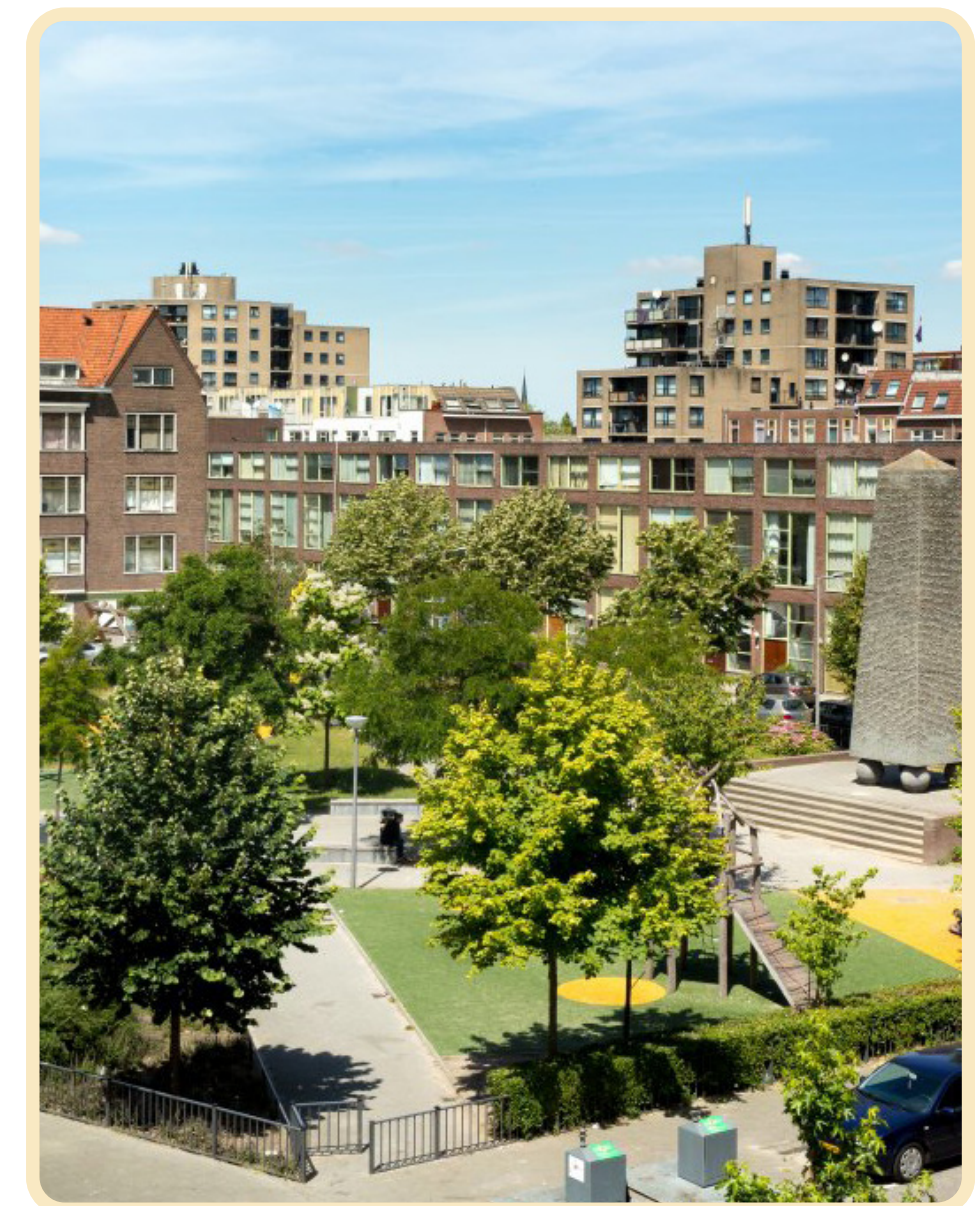


Figure 33. The Marnixplein together with the obelisk statue as commemoration to the community spirit of Crooswijk

it brought with it.

The gentrification of Crooswijk

Urban renewal did not stop after 1990. In 2004, the city suddenly introduced a demolition-rebuild plan for Nieuw Crooswijk—not for current residents, but for new, wealthier and better-educated inhabitants. With this plan, the gentrification-phenomenon was introduced in Crooswijk.

The plan sparked outrage among the residents. A Federation of the Residents' Committee Nieuw Crooswijk was hastily formed and opposed the demolition of social housing. Nevertheless, the plans were largely executed and led to dramatic changes in the neighbourhood. These dramatic changes formed the foundation for the 2018 TV series *Crème de la Crooswijk*, highlighting how these changes resulted in the neighborhood to lose its charm (Maandag, 2019 and Volksbuurtmuseum 2020).

Changing Policies

The city's shift in direction had been in the air for some time. The independence of housing corporations in 1995 and the rise of the creative economy furthered this shift. Earlier researchers of working-class neighborhoods (1973–1990) hadn't anticipated this; they spoke of stayers, newcomers, and immigrants—not realizing that their newcomers might be wealthy and highly educated.

In 2007, the city introduced the Rotterdam City Vision, explicitly embracing gentrification for central neighborhoods. The 2016 Housing Vision further emphasized this goal: developers were urged to create more diverse and expensive housing, reducing areas of concentrated poverty (Gemeente Rotterdam, 2007 & 2016 and Volksbuurt museum, 2020). The idea is that gentrification improves the social mix of a neighbourhood. This means mixing different social classes together and is based on the theory that mixing different social classes improves the overall quality and liveability of cities. This mix is believed to enhance economic efficiency² and distributive equity³ (Delorenzi, 2006, Musterd, 2002 and Musterd, S., Ostendorf, W. and de Vos, S. (2003).

Current Situation

When looking at the current situation in Oud Crooswijk, about 80% of the homes still consist of social housing, and average incomes are well below the city average. With the current urban renewal assignment, gentrification is creeping in at the edges, testing the community's strong sense of togetherness (Volksbuurt museum 2020).



Figure 34. Aerial photo from 1940
(Photo: Municipality of Rotterdam)



Figure 35. Aerial photo from 2024
(Photo: Google Earth)

2
3

e.g. making society as a whole better off by enhancing solidarity, labour productivity and community sustainability

improving the life-chances and social inclusion of disadvantaged groups

Defining the working-class character

Based on the history of the neighbourhood, the recurring themes are (1) the survival of the working-class character in relation to urban change, (2) a strong solidarity of the community (3) constant tension between redevelopment and displacement of the residents and (4) an ever ongoing battle between gentrification and affordability of the neighbourhood.

These themes have a strong influence on defining the character of the neighbourhood. To make sure that the working-class character is still recognizable after urban renewal, it is important to make these definitions more explicit.

In order to do this, the following paragraphs, address a clear definition of what this working-class character is and will do this by exploring it through 3 different lenses.

1. Scientific definition
2. Social definition
3. Spatial definition

The explicit definitions provide a clearer understanding of how to integrate the working-class character into the urban fabric. This understanding is needed in order to create a clear design assignment (chapter 5). This assignment is what ultimately brings the urban renewal assignment (chapter 1) and integration of working-class character (chapter 4) together.

Scientific Definition

Over the past 50 years, the image of the labor market has transitioned from traditional manual labor and production towards a knowledge economy. As a result, conceptualising what it means to have a working-class identity in 2025, is complex and consistently under debate.

Previously, social class identity had been inextricably connected to type of employment, occupation and heavily associated with the means of production; working-class families had parents who were traditionally occupied with manual labour, artisanship and in some cases, low level administration (Gildea, 2021 & Rolfe, 2017).

To define a modern-day definition of working-class, Dr. Jess Pilgrim-Brown, a Doctor of Philosophy at the University of Bristol has created a redefinition. According to her, people identify themselves as working-class by one or more of the following characteristics

- Poverty
- Limited access to technology and goods
- Manual labour professions
- Living in social housing

The average income of Oud Crooswijk is the lowest of its entire city district. The amount of families living below the social norm is almost twice as high as the city-average, and almost five times as high as the national average. Almost 80% of the housing stock consists of social housing and roughly 50% of the inhabitants has a practical occupation (Wijkprofiel Rotterdam 2024 and (Onderzoek010 - Werk En Inkomen - Rotterdam, 2024). Therefore, looking at these statistics, Oud Crooswijk can be clearly defined as a working-class neighbourhood, based on the scientific definition.

However, if we only use the scientific definition to define a neighbourhood as 'working-class,' there are countless other neighbourhoods just like it. Therefore, a scientific definition alone is not enough.

		% of household living around or below social norm	% of people receiving welfare benefits
Oud Crooswijk	Buurt	25%	11%
Nederland	Land	6%	2%
Rotterdam	Gemeente	13%	5%

Figure 36. Poverty statistics compared to city- and national averages (Buurt Oud Crooswijk Allecijfers, 2024)

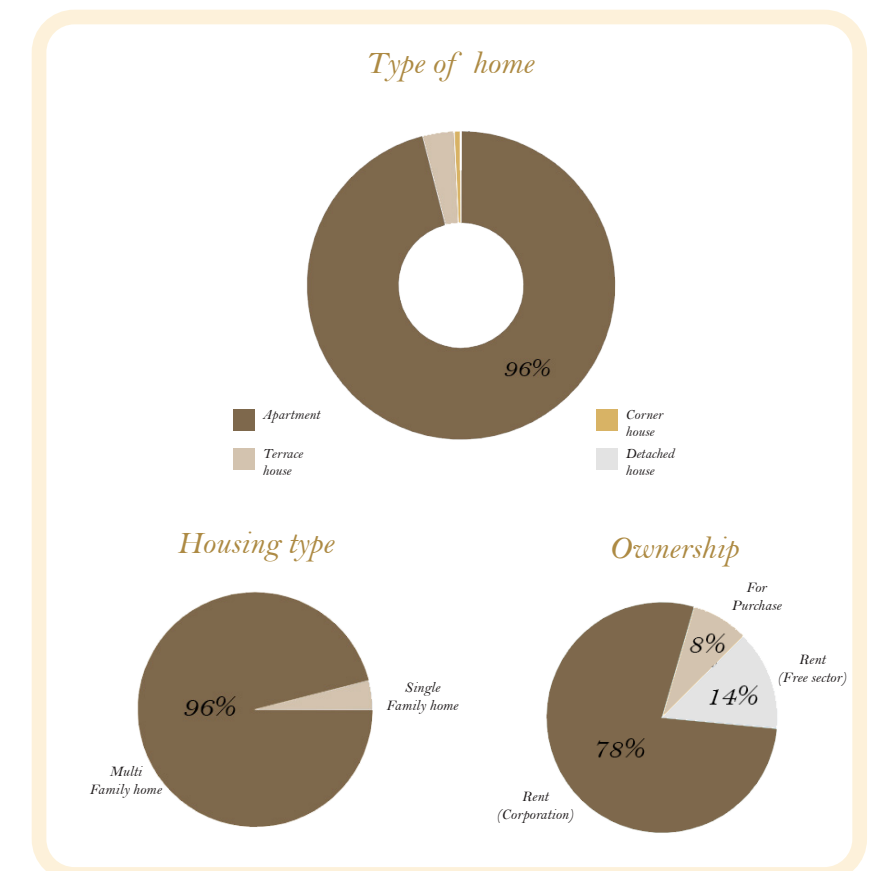


Figure 37. (Buurt Oud Crooswijk Allecijfers, 2024)

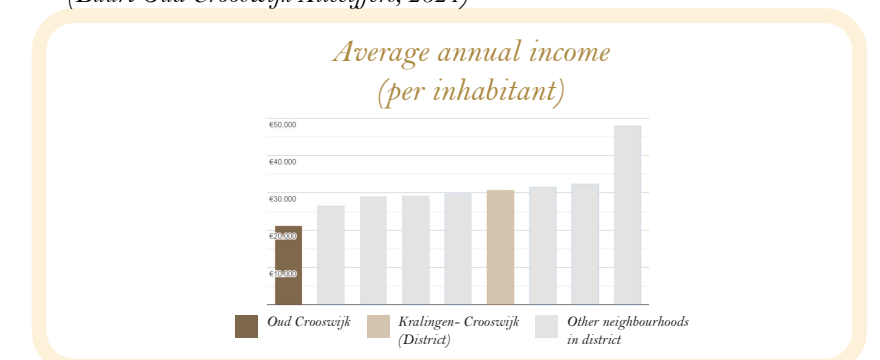


Figure 38. (Buurt Oud Crooswijk Allecijfers, 2024)

Total inhabitants	8130
Not working (students & other):	2195
Total working population	5935
Unemployed (counts as working class)	1068
Employed (with working-class occupation)	1805

48%

Of the total working population of Oud Crooswijk has a working-class profession

Figure 39. Total amount of working class residents (Onderzoek010 - Werk en Inkomen -Rotterdam, 2024)

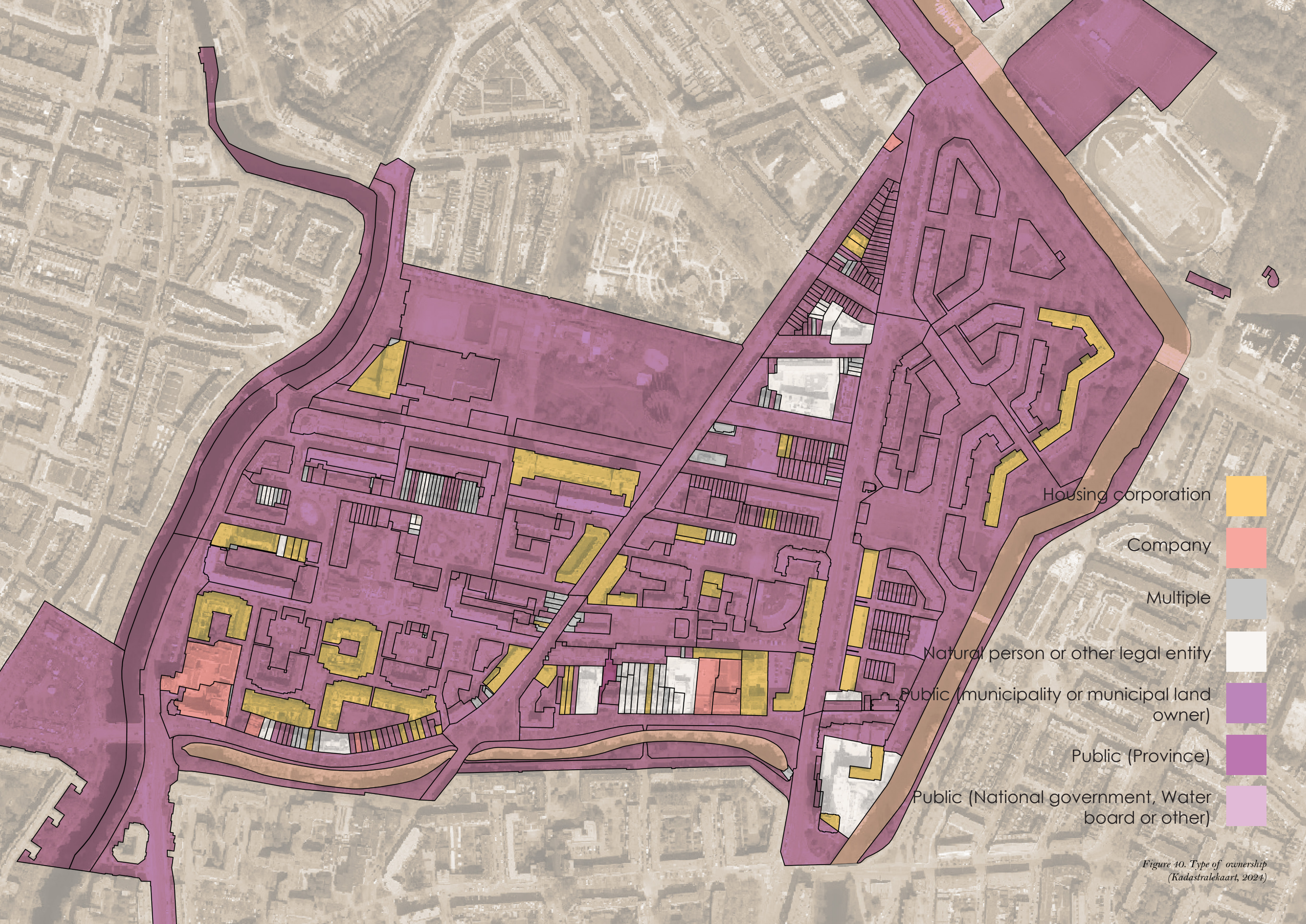


Figure 40. Type of ownership
(Kadastralekaart, 2024)

Social Definition

To define what makes the working-class character of Oud Crooswijk unique, research has been conducted on how residents describe the character of their neighbourhood.

The following descriptions were being used to describe the distinct working-class character of Oud Crooswijk:

- 'It's people'
- 'A real working-class neighbourhood'
- 'It's own little world'
- 'Just like Friesland'
- 'Strong unity'
- 'A very cosy neighbourhood'
- 'A strong social cohesion and sense of community'
- 'No nonsense people'
- 'Everyone knows and helps each other, you could actually describe it as one large family.'
- 'A town in the city. People would live here there whole life without ever leaving. At first they could not leave, and later they never wanted to anymore.'
- It's location... close to the city centre and also close to the forest (Kralingse Bos)

(NPO, 2018, Maandag, 2019 and OPEN Rotterdam, 2017-2025).

The findings of this research give better insight in how the working-class character of Oud Crooswijk is perceived and experienced on a social level. What stands out is that the neighbourhood is being described as its own entity within the city and that is being characterized by a strong community spirit.

However, since the objective is to keep Oud Crooswijk recognizable as a working-class character neighbourhood after urban renewal, it is important to translate the scientific and social definition to the urban fabric. Therefore, the next paragraph will elaborate on the spatial characteristics that define Oud Crooswijk as a working-class neighbourhood.



"Crooswijk is just like it's own little world"

*"A real cozy neighbourhood.
Everyone laughs and is always happy"*



*"It's location... Crooswijk is close to the vibrant city
centre but also close to the forest."*



*"It's a village in the city, where people were born and
grew old without ever leaving the neighborhood"*



¹ A province in the north of the Netherlands, oftentimes described as being a bit isolated from the rest of the country due to still having an own language and culture.

Figure 41. Local residents describing the working-class character
(Achter het Nieuws, 1965, Maandag, 2019, NPO, 2018 and Open Rotterdam, 2024)

Spatial Definition

Based on the social and scientific definition of the working-class character of Oud Crooswijk, an inventory has been made of the spatial elements that characterize Oud Crooswijk. These are the spatial elements that carry the working-class character of the neighbourhood. Therefore, these elements are described as he 'identity-carriers.' These identity-character can be defined as the tangible characterizing elements and remnants that have derived from the industrial history of the neighbourhood. These elements will be addressed and elaborated on, on the following pages.



Figure 42. Defining the term 'working-class'

1. Old waterway parcellation

Large parts of the current parcellation can still be traced back to the old waterway structures from when Crooswijk was merely a polder. During the speculative development of the late 1800s, these waterways were transformed into streets, and the spaces in between were used for housing. Following the course of the old waterways when laying out the street pattern resulted in long viewlines. However, during the urban renewal of the 1970s, these long viewlines were broken up. Nevertheless, the original waterway parcellation remains clearly visible. The current Crooswijkseweg follows the old reclamation axis, and streets such as Crooswijksestraat, Frederikstraat, Isaïc Hubertstraat, Pootstraat, and Van Meekerenstraat are remnants of the historic waterways.

The parcellation is one of the original spatial characteristics of the neighbourhood. This characteristic is inherently linked to the working-class character and therefore will be brought back to become more recognizable again. The possible future programme on these parcels however, is adaptable.

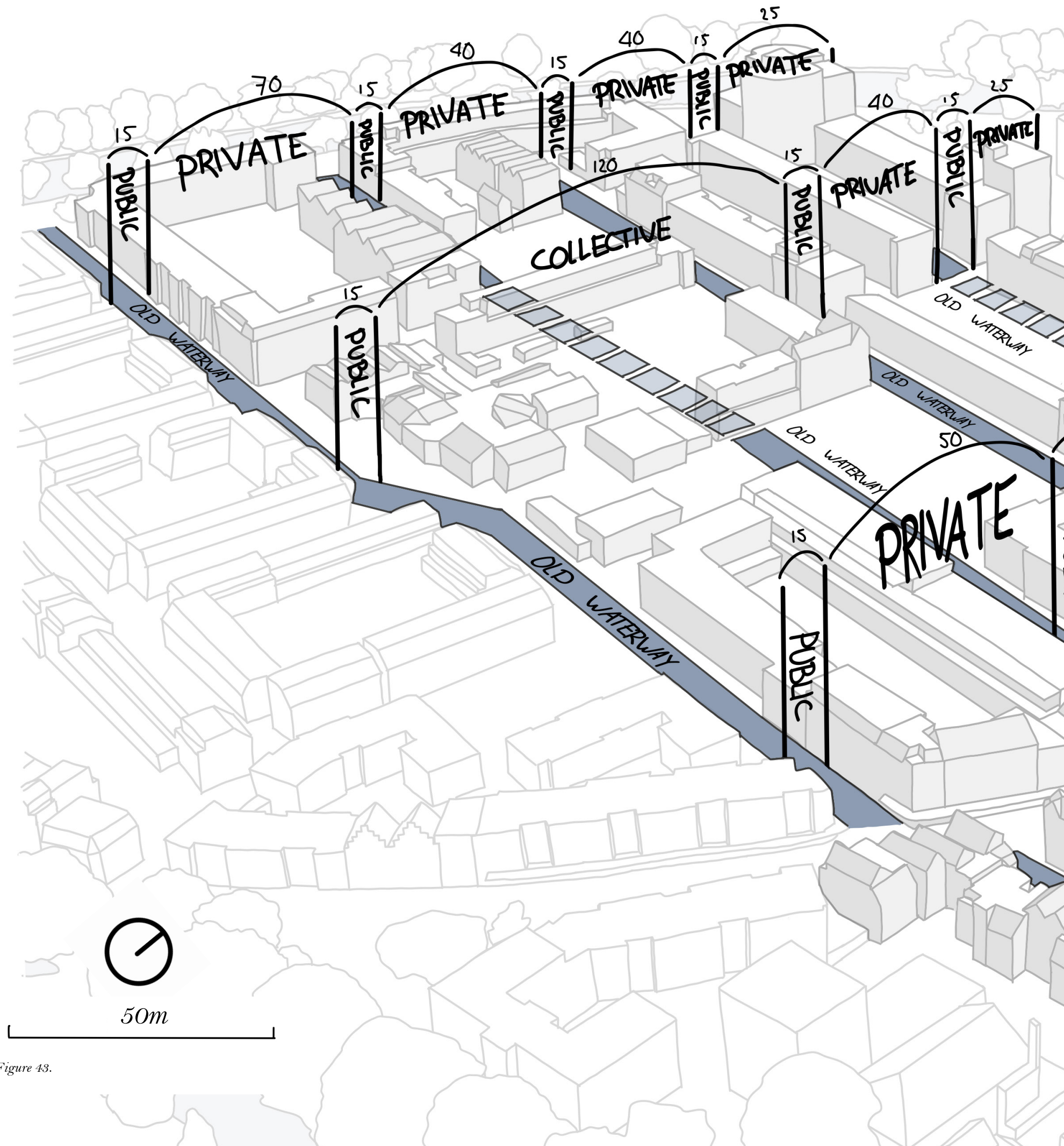
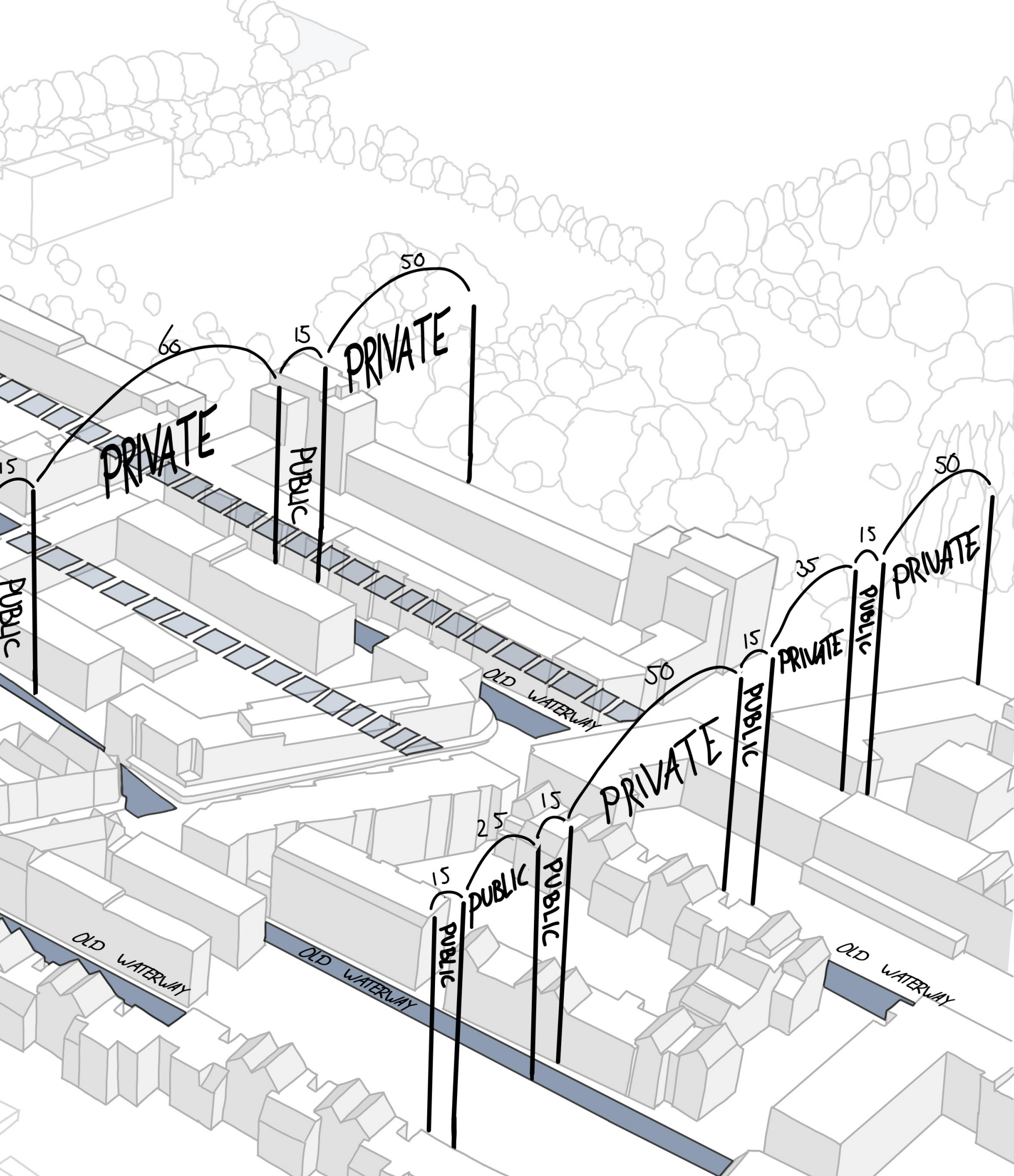


Figure 43.



2. Compact public space

Because the urbanization of Oud Crooswijk was carried out by private landlords, their objective was to create as many homes as possible. This resulted in a very densely built neighbourhood with compact public spaces. The old waterways, which were transformed into small streets, became virtually the only forms of public space. Each street was flanked by buildings approximately four stories high. This led to very compact public spaces, with almost all street profiles being as wide as the height of the buildings. This proportion is still evident in the current urban fabric and remains a defining characteristic of Oud Crooswijk's industrial history.

Because the compact public space is also one of the original spatial characteristics, preservation is required to ensure the presence of the working-class character in the future. This means that the proportions of the street profiles have to remain similar to what they are. The layout (i.e. wider pavements, trees, etc.) of these profiles can be changed however.

3. Closed building blocks

The buildings adjacent to the narrow streets consisted almost entirely of back-to-back housing. During the urban renewal periods of the 1920s and 1970s, the city aimed to improve the liveability of these homes by replacing them with closed building blocks. Almost the entire neighbourhood still consists of this building typology. These blocks are characterized by their courtyards, which served as private outdoor spaces to enhance living conditions for factory employees. The blocks comprised tenement housing, resulting in many entry points into each building functioning as transition spaces between the private building blocks and the public streets. The blocks featured either pitched or flat roofs and had numerous openings in their façades. Almost all these elements remain recognizable in the urban fabric today. The characteristic features—such as façade openings and courtyards—contribute to the interaction between private and public spaces. They encourage residents to meet and engage with one another, playing a significant role in fostering the neighbourhood's strong community spirit.

The closed building blocks are one of the original spatial characteristics. In the future, new buildings will need to be a variation of this typology. However, the types of housing and other programme within the blocks can be adapted to the needs of the future working-class.

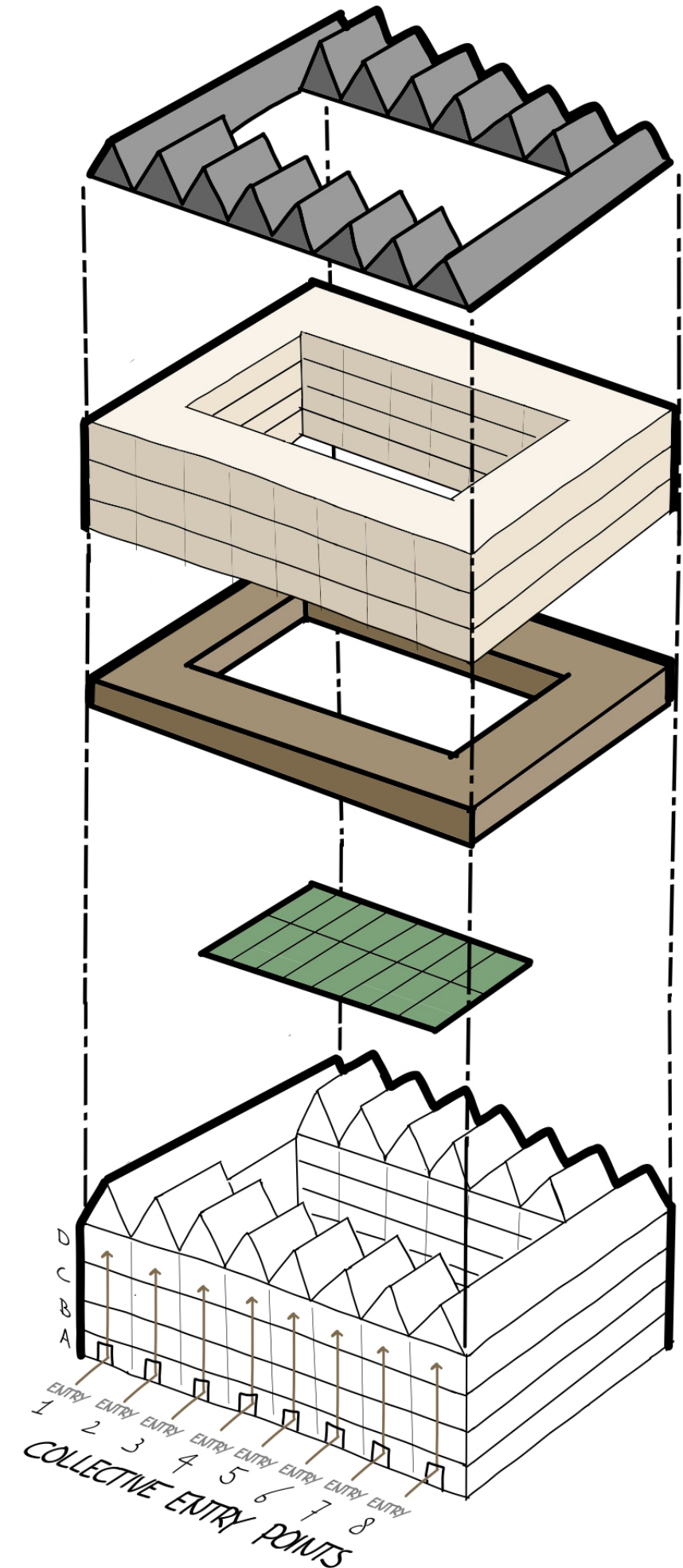
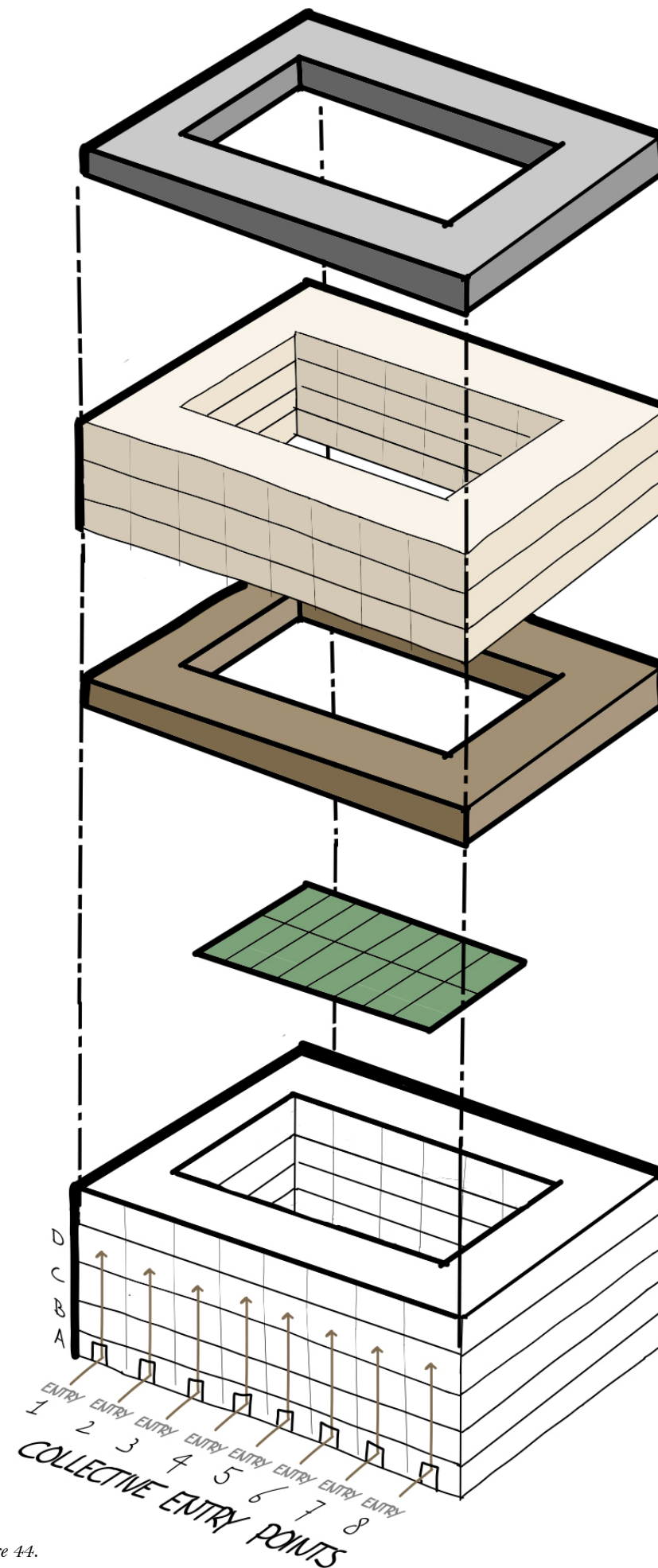


Figure 44.

4. Social housing

Large parts of the closed building blocks consist of social housing. In the case of Oud Crooswijk, this primarily means many small homes, mostly located within large apartment complexes. The presence of these social housing complexes is a strong remnant of the urban renewal of the 1970s. As mentioned earlier, residents advocated for a significant amount of affordable housing due to their low incomes from working-class professions.

The expectation is that the average income of the working-class will significantly rise in the coming years (Business Insider Nederland, 2022 and Prijsstijgingen Bouwprojecten Houden Aan, n.d.). Therefore, there will most likely be less need for the enormous amount of social housing in the future. New real-estate will need to be of a more expensive segment, and the current supply of social housing has to be revised to see if it still meets the demands. As a result of this shift, social housing might not be an identity-carrier of the working-class character in the future.

Figure 27.



100 M

Figure 45.

5. Urban ensemble

The relocation of large factories, such as the municipal slaughterhouse and the Heineken brewery in the 1970s, opened up large new sites for housing. Due to the size of these sites, substantial housing projects could be developed all at once, resulting in distinct urban ensembles. Both the ensembles on the Heineken site and the slaughterhouse site follow the closed building block typology, but their architectural styles are notably different from one another.

The ensemble of the Heineken terrein largely consists of social housing. With less need for social housing, the need for renovation and transformation to larger houses could arise in the future. The transformation is allowed to alter the architecture of the ensemble but with the side note that the entire ensemble has to retain the same architecture.

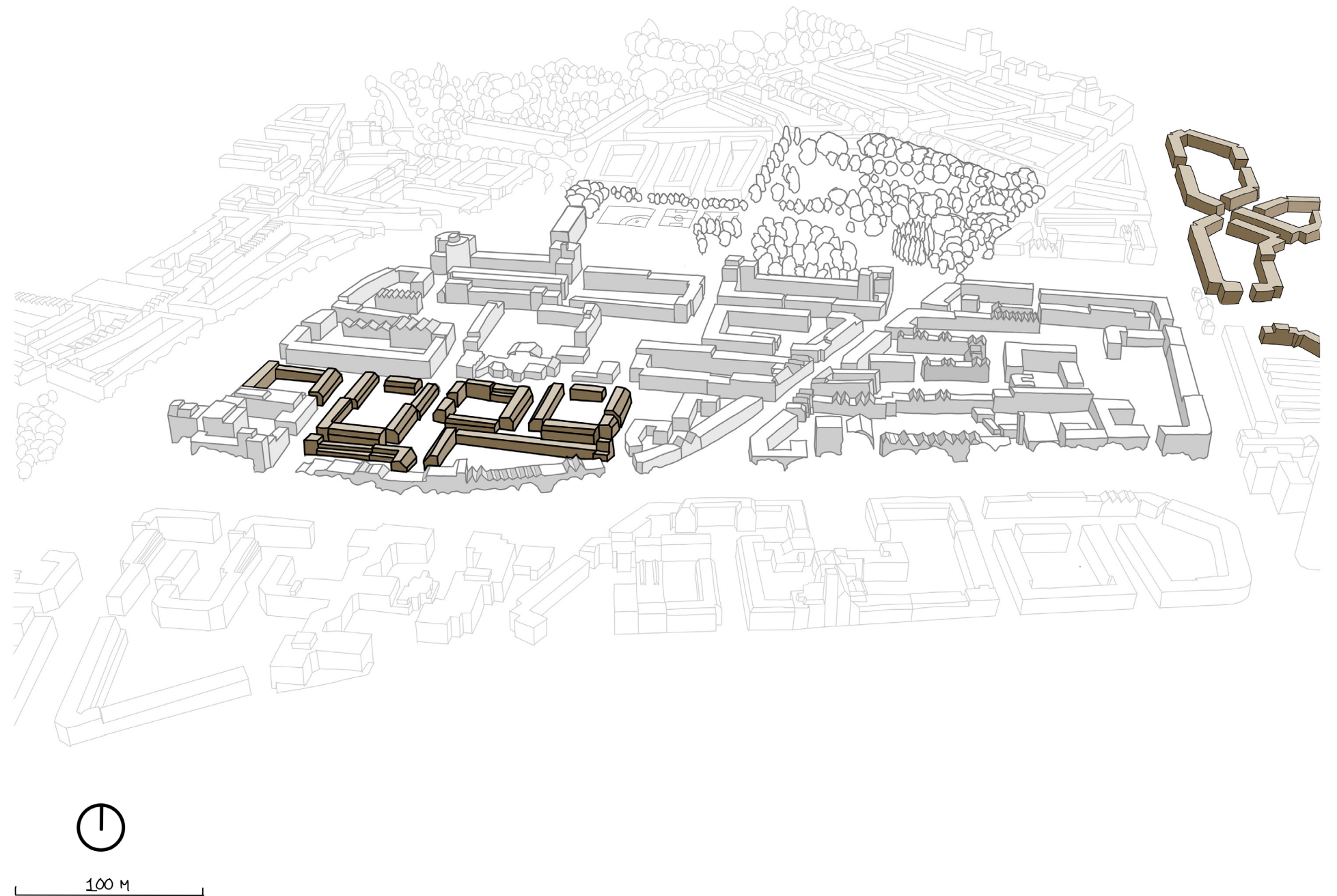


Figure 46.

6. Historic and monumental objects

In addition to the urban structures from the earliest days of development, there are also built objects that remain intact and serve as reminders of Oud Crooswijk's industrial past. For example, the old office building of the Heineken factory (1932) and the terraced houses from the late 1800s that were part of architect Rose's Waterproject. These structures can be seen as the most literal and tangible elements of the area's industrial heritage.

Because the historic and monumental objects serve as physical remnants of the past, preservation is required. The presence of these objects cherish the industrial history of the neighbourhood and ensure that this history remains a part of the neighbourhood character.

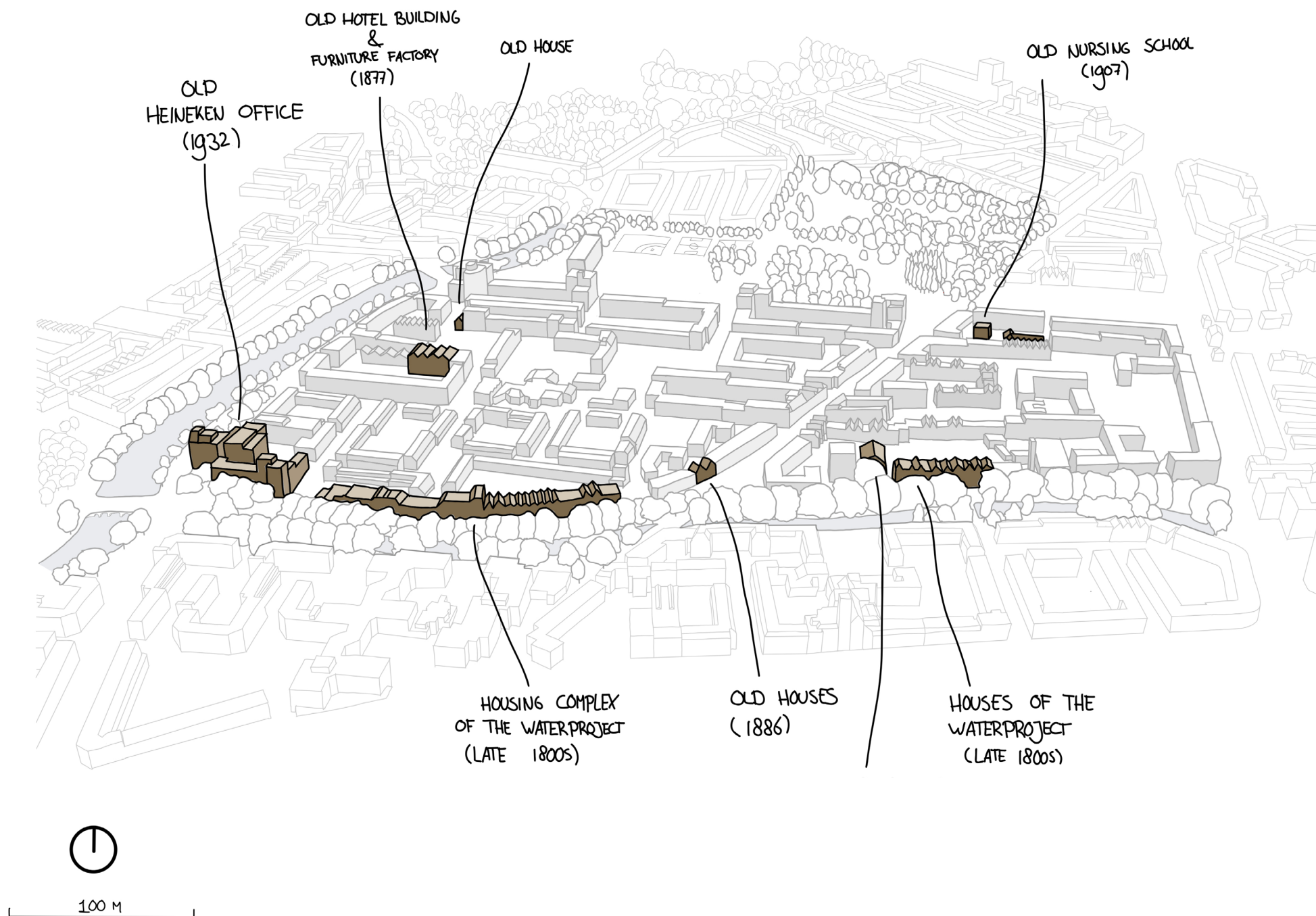


Figure 47.

7. Enclosing green structures

The sense of Oud Crooswijk being its own distinct entity applies not only from a social perspective but also in terms of its urban fabric. The neighbourhood is separated from the surrounding areas by green-blue structures such as the River Rotte, the Crooswijkse- and Boezemsingel, and Park Schuttersveld. These features serve as clear neighbourhood boundaries, reinforcing the sense that Oud Crooswijk is a separate and self-contained area.

To ensure that this feeling of a distinct entity remains integral part of the neighbourhood character, the enclosing structures need to be preserved.

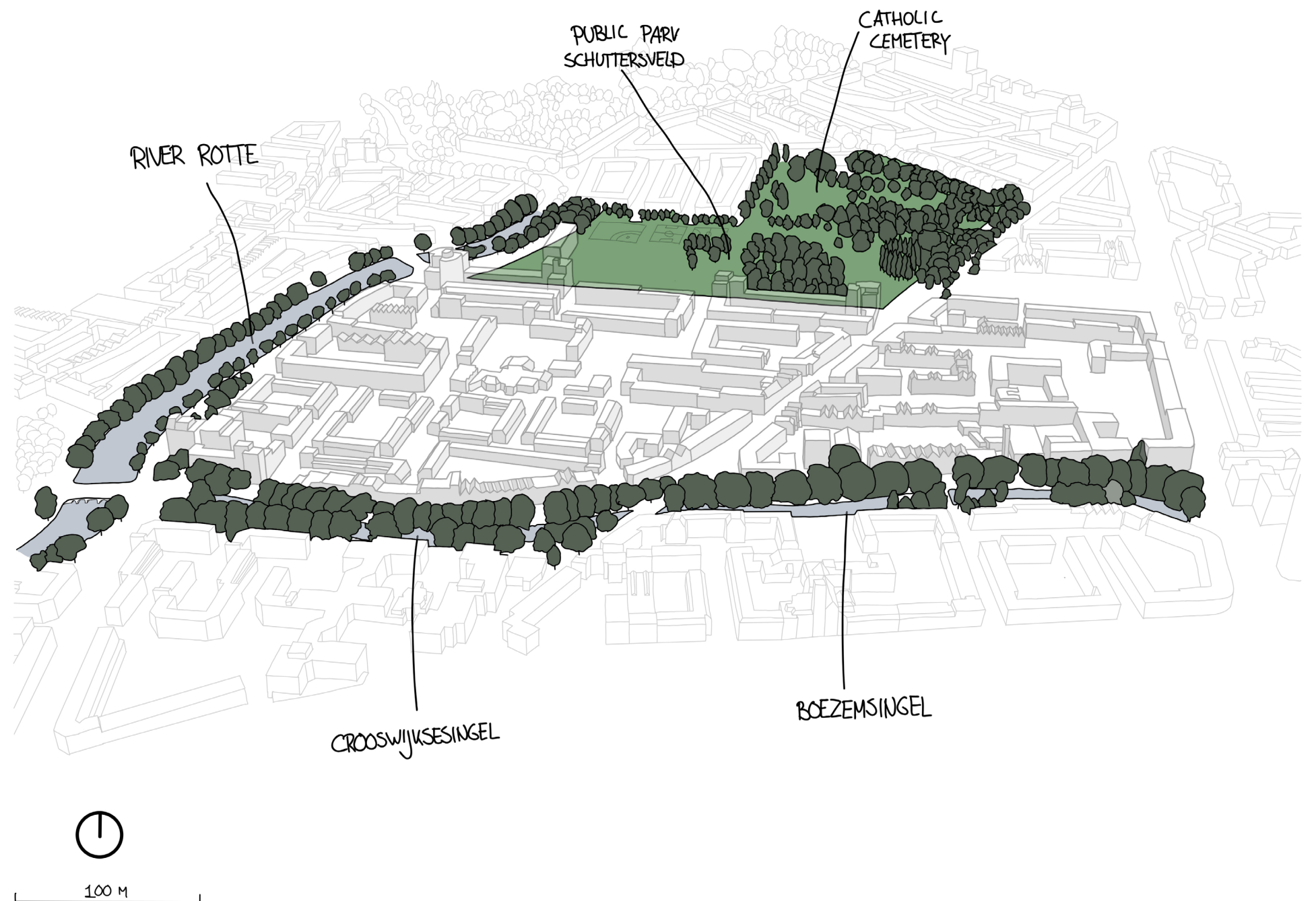
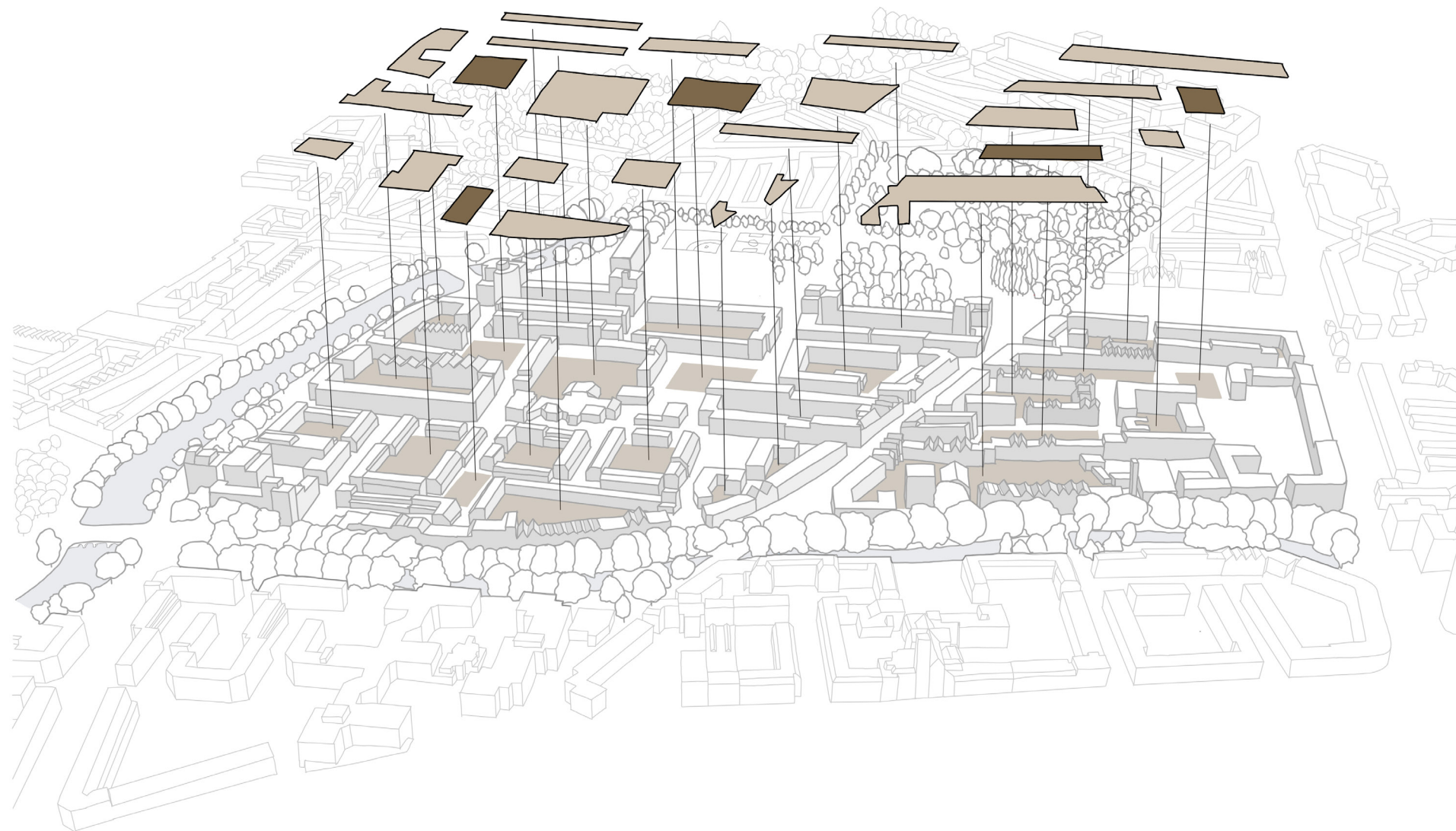


Figure 48.

8. Open spaces and courtyards

Oud Crooswijk is characterized by strong social cohesion and a vibrant community spirit. This is greatly supported by physical spaces that encourage interaction among residents. The many courtyards within the closed building blocks, along with the squares added in the 1970s to commemorate and foster community life, serve as key physical features that promote this interaction. As such, the courtyards and squares are essential elements that contribute to the strong sense of community in Oud Crooswijk.

With the need for more social cohesion in Oud Crooswijk, it is expected that open spaces and courtyard can play an important role in the spatial identity of the working-class neighbourhood of the future. The specific locations however, are of lesser importance. Therefore, the current open spaces and courtyards can be removed or altered, as long as alternatives are provided.



100 M

Figure 49.

9. Low urban density

Oud Crooswijk is characterized by a low urban density. This refers to the proportion of land covered by buildings relative to open space. Due to the compact nature of its public spaces, the building coverage in Oud Crooswijk is similar to that of Rotterdam's inner city, with both areas having an approximate Ground Space Index (GSI) of 0.3. However, when considering the number of building layers, Oud Crooswijk has a significantly lower density compared to the city centre. The Floor Space Index (FSI) in Oud Crooswijk ranges from 0.5 to 0.75, whereas the city centre has an FSI of 1.5 to 2.0.

Even though the urban density is not one of the original spatial characteristics, it is a defining feature of Oud Crooswijk and contributes significantly to the neighbourhood's working-class character. With the objective to focus on the current inhabitants and keeping the physical appearance recognizable, preserving this density is recommended.



Figure 50.

10. Car dedicated space

Between 1950 and 1990, the car became increasingly important in people's daily lives—especially for the working-class residents of Oud Crooswijk. Their professions include home nursing, electrical work, plumbing, carpentry, and similar trades. These jobs cannot be performed from behind a desk and often require workers to travel to multiple locations in a single day. As a result, the working class in Oud Crooswijk relies heavily on their cars. Consequently, the car takes up a tremendous amount of the public space. Making car-dedicated space a prominent feature in the spatial-identity of Oud Crooswijk.

Currently, working-class professions are highly dependent on their car. The expectation is that in the future this will still be the case. Nevertheless, there is also the desire to reduce the impact of the car on the public space. Therefore, the design needs to rethink the place of the car in the neighbourhood and in its public space.

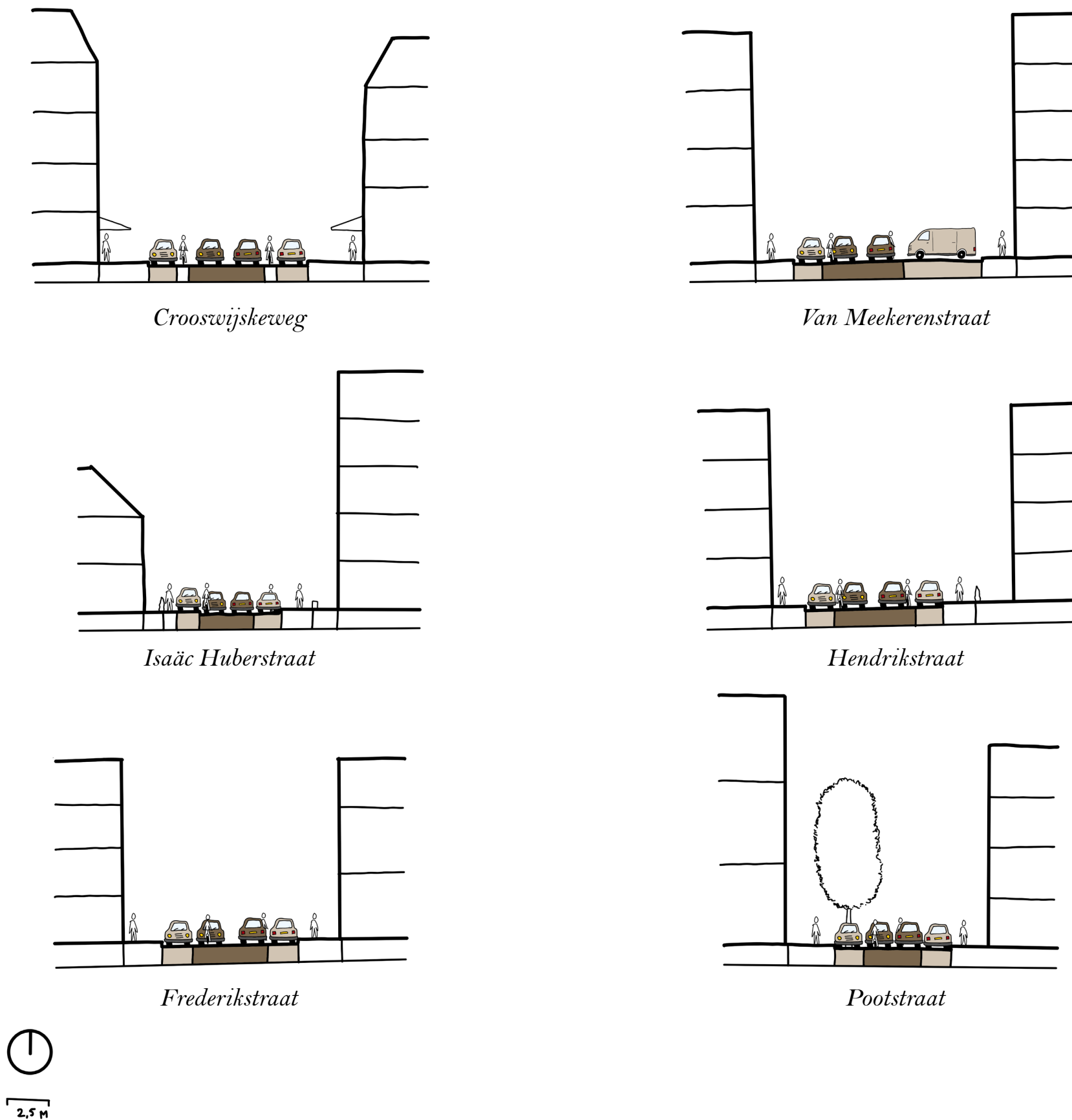


Figure 51.

11. Working in the neighbourhood

A typical feature of Oud Crooswijk was the integration of work and living. With factory sites such as the Heineken brewery, the tram depot, the municipal slaughterhouse, and the cemetery, work and home were literally next to each other. With the disappearance of most large factory sites, this mix has become less prominent in the neighbourhood. Nevertheless, some places in the neighbourhood still serve as remnants of this mix. For example, the old Heineken office is now used as an office building for several companies. The Catholic cemetery is still in use, with a funeral home located in the southeastern part of the neighbourhood. Close to this funeral home, there are also some small local workshops that remain, serving as reminders of the former mix of work and living in the same neighbourhood.

Concluding, working in the neighbourhood is inherently linked to the character of Oud Crooswijk. The way this is organized however, has strongly changed over the years. The expectation for the future is that the working-class will consist of small craftsmen companies (Carpenters, plumbers, home-nurses, etc.). To keep 'working in the neighbourhood' an integral part of the character, the design needs to rethink what conditions need to be provided for these companies to stay in the neighbourhood.

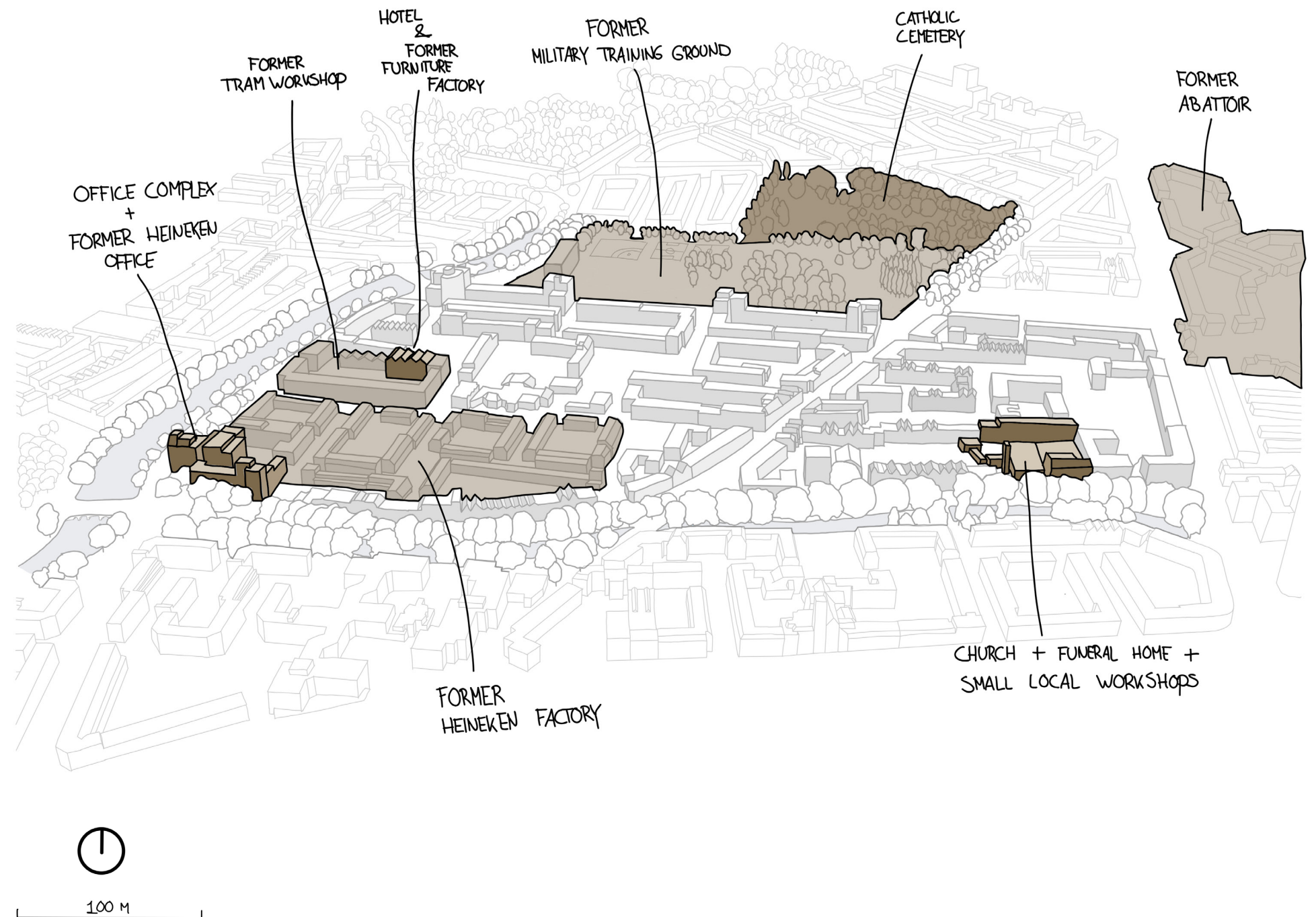


Figure 52.

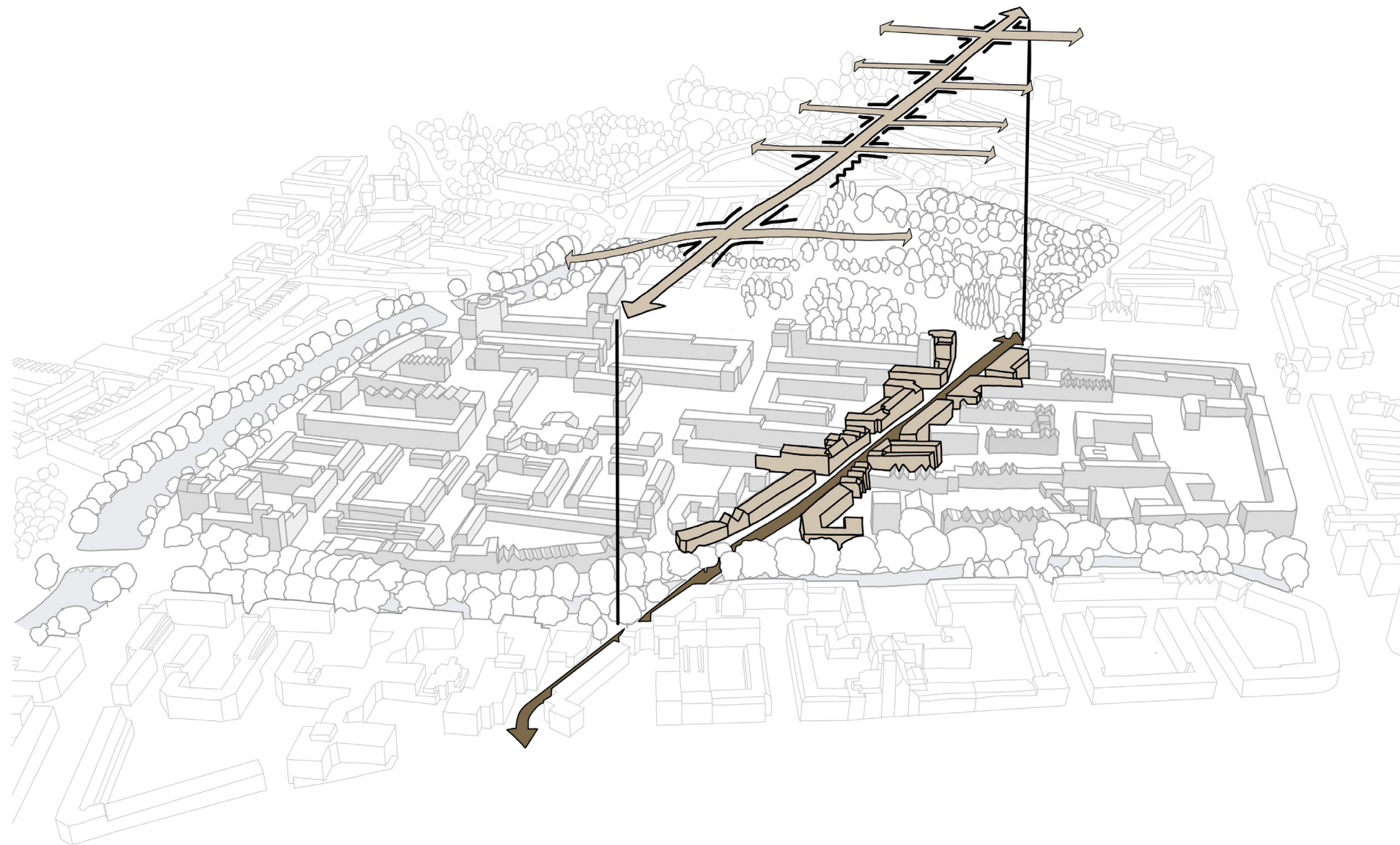
12. Cozy neighbourhood street with characteristic corners

An important aspect of Crooswijk's character is the Crooswijkseweg. It serves as the hub for local services and amenities and was once the heart of the neighbourhood. In recent years, however, the Crooswijkseweg has experienced significant decay, and it is no longer the cozy neighbourhood centre it once was.

Nevertheless, the Crooswijkseweg remains one of the most important identity markers, as it sits on the old reclamation axis. As such, the Crooswijkseweg can be considered the birthplace of the neighbourhood. It is characterized by uniquely shaped corners, formed by the intersections with the diagonally positioned adjacent streets (the old waterways).

The expectation is that in the future, the working-class still desires a central place that brings the neighbourhood together. Therefore, the Crooswijkseweg should become a recognizable place that the neighbourhood can relate to. To ensure this, it is important to preserve the characteristic corners to create a distinct and unique area compared to the rest of the neighbourhood.

The way the neighbourhood heart is utilized will most likely not change. The expectation is that the working-class will still have the desire for a cluster of local amenities. The type of amenities however will most likely change. To provide this, the layout of the street profile will have to be revised.



100 M

Figure 53.

Working-class character in the 21st century

*“The tangible characterizing elements and
remnants that have derived from the
industrial history of the neighbourhood”*

The traditional conception of a working-class identity was solely linked to the type of employment. However, the modern-day understanding appears more diffuse, complex, and constantly under debate.

Nevertheless, this thesis has identified three distinct ways to conceptualize the modern working-class character: (1) Scientific, (2) Social, and (3) Spatial.

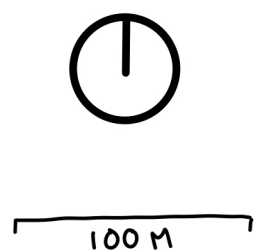
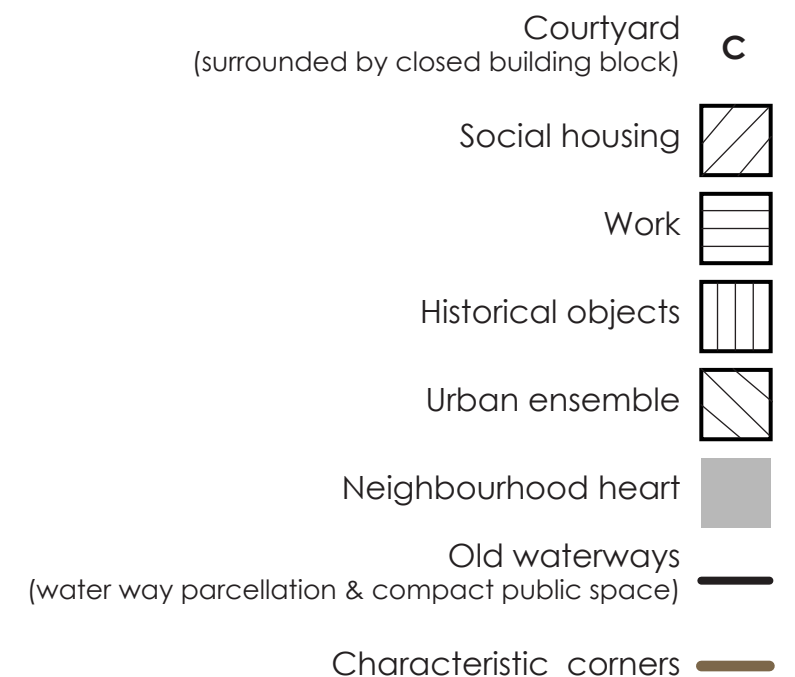
According to the scientific definition, the modern working-class character is shaped by factors such as social housing, poverty, type of employment, and limited access to goods and technologies. Based on this definition, Oud Crooswijk qualifies as a working-class neighbourhood.

However, this definition tends to remain somewhat generic. The social definition offers deeper insight into what makes Oud Crooswijk's character unique. It emphasizes unity, strong social cohesion, and the neighbourhood's distinct identity within the city.

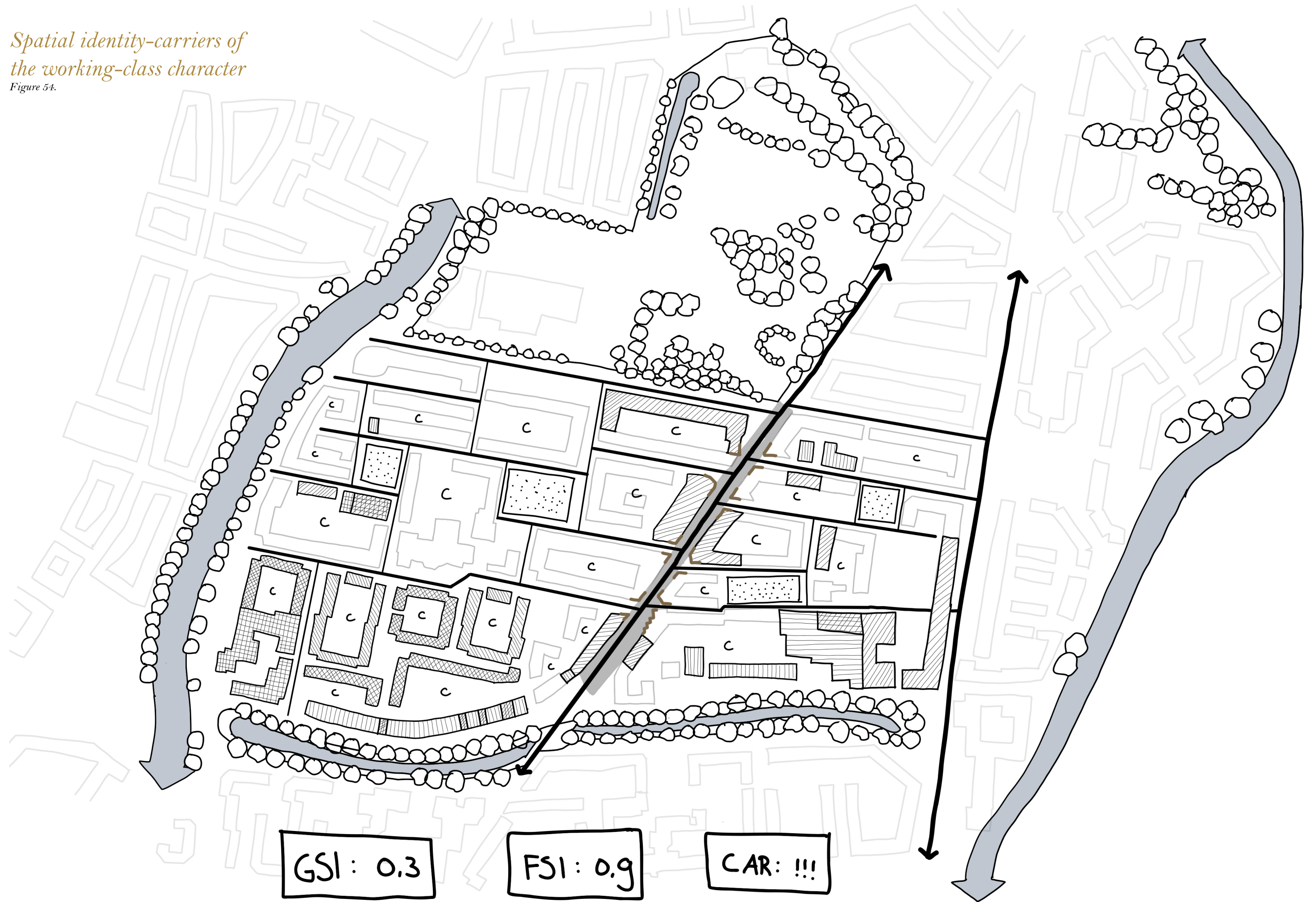
Lastly, the working-class character can also be defined by spatial elements. In the case of Oud Crooswijk, twelve elements of the urban fabric have been identified as carriers of this character. Since urban renewal involves spatial interventions, this thesis adopts the spatial definition as the foundation for the design.

Identity goal

In order to ensure that the working class character is still present after urban renewal, the goal has been set to integrate the current identity-carriers into the urban fabric of Oud Crooswijk. However, as society keeps evolving, so will the concept of having a working-class identity. Therefore, the goal is to not only integrate the current identity-carriers but also anticipate on potential identity carriers in the future.



*Spatial identity-carriers of
the working-class character*
Figure 54.



*Reinterpreting the
working-class neighbourhood*

Design assignment

06



*The Crooswijksesingel and the Heineken office in 1935
(Rotterdam City archive)*

Design Assignment

“Oud Crooswijk as a reinterpretation of the traditional working-class neighbourhood.”

Design assignment

The design assignment forms the foundation for the re-design. To create a succesful redesign for Oud Crooswijk, the Design assignment bundles the Urban renewal goal (chapter 4) together with the identity goal (chapter 5). To achieve these goals and create a clear starting point for the design, the design assignment has been dissected into 5 subassignments.

Reinterpreting the working-class neighbourhood

Because the design focuses not only on the identity carriers of the past and present but also on the potential carriers of the future, it will result in a new and modern interpretation of the working-class neighbourhood. Consequently, the proposed design represents Oud Crooswijk as a reinterpretation of the traditional working-class neighbourhood

Urban renewal goal

“Creating a coherent and sustainable urban fabric, designed from the public space perspective”

Overall, the urban renewal assignment is to enhance the liveability, safety and sustainability of the urban fabric of Oud Crooswijk. The most important elements are:

Public space

- Creating more spatial coherence and keeping the physical appearance recognizable
- Reducing heat stress
- Adding more public green
- Making the current building stock more sustainable
- Reducing traffic nuisance
- Revitalizing the Crooswijkseweg
 - Increased amount of green
 - Lightning
 - Increased diversity in amenities
 - Decreased car-nuisance
 - Speeding
 - Parking
 - Loading & unloading

Built environment

- Renovating decaying buildings
- Improving the sustainability of the housing supply
- Affordable housing

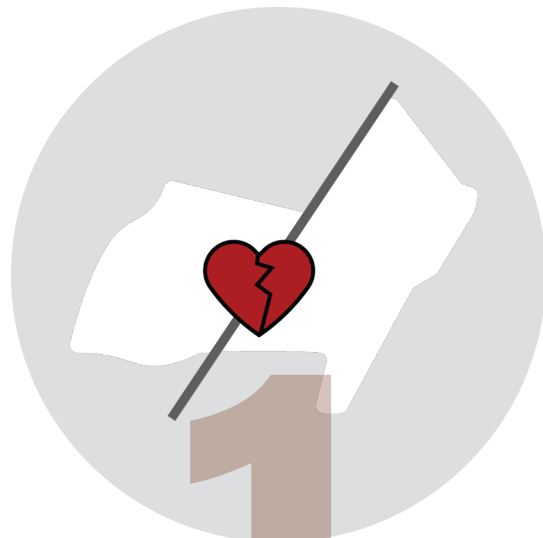
Identity goal

“Preserving the identity-carriers of the present and anticpating on carriers from the future ”

For the embedding of the identity-carriers the overall objective is preservation and integration into the urban fabric. This consist of:

- Reinterpretingthe recognizability of the original spatial principles
 - Old waterway parcellation
 - Compact public space
 - Closed building blocks with small houses
- Preserving the enclosing green structures, historical objects and urban density
- Creating room to work in the neighbourhood
- Renovating and/or transforming the urban ensemble
- Providing public and collective meeting spaces
- Finding room for the car
- Revitalizing of the service cluster Crooswijkseweg with preservation of the characteristic corners

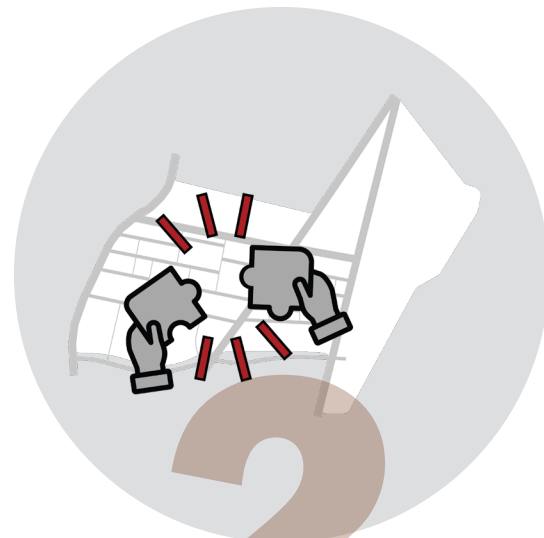
5 subassignments



*Revitalizing the
neighbourhood heart*

A communal space that brings the entire neighbourhood together, regardless of origin or background, evoking a sense of neighbourhood pride.

The creation of this communal space serves to strengthen the neighbourhood's sense of unity.



*Creating more spatial
coherence*

A unique spatial character ensures that the neighbourhood is clearly distinguishable from other areas, contributing to a strong sense of identity. This identity makes the neighbourhood more attractive to new residents and strengthens the connection with current residents.

By shaping this into a cohesive spatial whole, the neighbourhood becomes more legible. This enhances the overall neighbourhood experience and, in turn, improves the livability of Oud Crooswijk.



Improving the liveability

Improving livability can be divided into two aspects: (1) the public space and (2) the built environment.

For the public space, this involves greening and cooling the neighbourhood. These measures are necessary to reduce current heat stress and to make public spaces more pleasant for both use and leisure.

For the built environment, improved livability means renovating and making the small (affordable) workers' homes more sustainable. Many buildings are in decline or in need of sustainability upgrades. The goal is to achieve this primarily through renovation, as demolition and rebuilding are highly sensitive issues among residents. Moreover, renovation aligns well with modern sustainability trends.

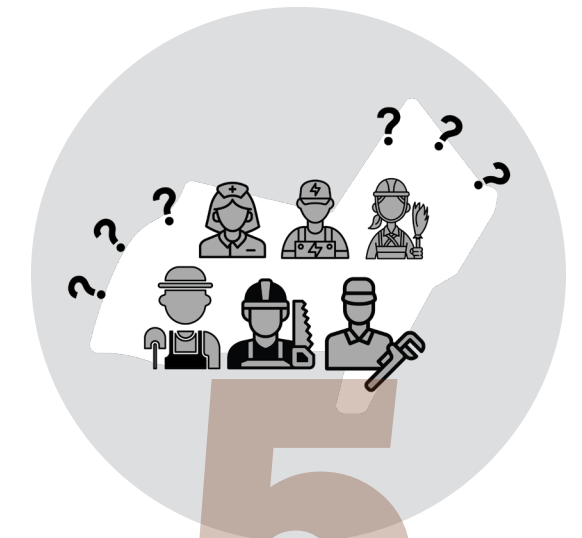


Finding a place for the car

As a large portion of the working population is heavily dependent on it, the car holds significant importance in Oud Crooswijk.

However, cars also cause significant traffic nuisance, negatively impacting the neighbourhood's livability.

Therefore, it is important to find a balance between creating more space for slow traffic users, such as pedestrians and cyclists, and maintaining sufficient space and parking capacity for cars. In addition to this the assignments aims to accomodate in more sustainable forms of transport such as E-modes of urban goods transportation.



Offering a place to work

Working within the neighbourhood has traditionally been a defining characteristic of Oud Crooswijk. To maintain this as an intrinsic part of the area, it is important to find space for employment within the neighbourhood itself.

Since the vast majority of the working population has practical professions, it is essential to identify locations that meet the needs of hands-on businesses. This should include workspaces or storage for professions such as electricians, plumbers, carpenters, artists, and gardeners.

Een dorp in de stad
Design Vision



Atmospheric impression of Oud Crooswijk as a reinterpreted working-class neighbourhood

Design Vision

“Een dorp in de stad”

Oud Crooswijk

Een dorp in de stad

To enhance the feeling of Oud Crooswijk being its own distinct entity within the city, the design vision will be to transform Oud Crooswijk into a “town in the city” (Een dorp in de stad). The neighbourhood will transform into a quiet, green residential area, yet it will remain only 10 minutes away from the vibrant city centre. The surrounding green structures will separate Oud Crooswijk from the rest of the urban fabric, enhancing the feeling of it being its own entity.

The overall atmosphere of the neighbourhood will be cozy, with the Crooswijkseweg serving as the thriving heart of the area. The urban density will remain similar to what it was, creating a clear distinction between the urban fabric of Oud Crooswijk and the rest of the city.

The old waterways will be reinterpreted as green axes to enhance spatial coherence. Squares will be transformed into green community gardens, and the closed building blocks will be renovated. Renovating the building blocks will preserve the collective courtyards, which allow for meetings and interactions.

Many people living in Oud Crooswijk engage in manual labour. Professions such as carpentry, electrical work, plumbing, and home nursing cannot be done remotely. These jobs require workers to move between different locations during the day, carrying materials and tools, which makes car use essential.

To address this, the design vision will aim to keep the neighbourhood accessible by car while also creating physical workspaces, such as workshops, within the neighbourhood. In this way, the design vision ensures that working within the neighbourhood remains a prominent feature of Oud Crooswijk.

To realize this vision for Oud Crooswijk, the design vision has been divided into five pillars.



Figure 55. Design vision of Oud Crooswijk

5 Pillars



De Crooswijkseweg as the main street

The Crooswijkseweg as a true main street — characterized by a lively atmosphere, events, and a diverse range of amenities.



Old waterways as green image carriers

The old waterways, including the Crooswijkseweg, as green visual corridors of the area.

By restoring the old waterways in the form of green axes, the different parts of the neighborhood are connected, creating a cohesive whole.



Neighbourhood gardens & renovated building blocks

Transforming old squares into public community gardens. These gardens serve as meeting places while also contributing to the greening and cooling of the neighbourhood.

The closed building blocks are to be made more sustainable and renovated. The closed building block is an excellent typology for encouraging interaction and social connection, and it has traditionally provided room for the required small and affordable housing.



A pedestrian friendly neighbourhood

The liveability of the area is being improved by creating more room for slow-traffic users such as pedestrians and cyclists. In the future, the area will remain accessible by cars but they will be parked in clustered parking facilities on the outskirts of the city that are well accessible by bike or by public transit.

Through this way, the area will remain accessible by cars but the traffic nuisance and visual pollution caused by them will be significantly reduced.



Neighbourhood workshops

Oud Crooswijk will offer working space for practical professions at various locations in the neighbourhood. This way, working in the neighborhood remains an intrinsic part of the neighborhood identity.

Additionally, the clustered parking facilities will serve as collective storage spaces where the small companies can store their materials and tools.

*Translating the vision
to Design
Design principles*

08



Statue Waterstand in the Crooswijkse singel

Introduction

The design principles will serve as the bridge between the pillars of the design vision and the actual design. There will be an overarching set of principles aimed at translating the design vision as a whole. Additionally, each pillar of the vision will have its own set of principles. The design principles are closely related to the design itself. On the one hand, the design is created based on the principles; on the other hand, the design serves as a testing tool for the principles and may lead to the development of new principles.

Each principle will follow a consistent format. The principles will include a number and a title, and these numbers will be referenced in the design. In this way, each design principle acts as a direct link between the vision and the design. Each principle will also specify the scale at which its effects are felt (XL, L, M, S, XS). Finally, the principles will be prioritized into the categories (1) Must have, (2) Good to have, and (3) Nice to have. This categorization aims to address the urgency of each principle, allowing the designer to prioritize what is most important to achieve the overall design objective.

Overarching principles

Must have

oA, oB, oD, oI, oJ

Important to have

oC, oE, oF, oH

Nice to have

oG,

Principle oA

Preserving the enclosing green structures

L

To ensure that Crooswijk continues to feel like a unique part of the city, it is important to preserve the surrounding green structures. These structures serve as clear boundary areas and thereby emphasize a distinct neighborhood character from a spatial perspective.

Principle oB

Preserving the current spatial density

M

The spatial density of Oud Crooswijk is characteristic of the neighbourhood. For this reason, the principle is to maintain this density. The built surface of the neighbourhood can be translated into a Ground Space Index (GSI)¹ of approximately 0.27. Additionally, most building blocks consist of closed blocks of 4–5 stories, resulting in a Floor Space Index (FSI)² of approximately 0.9. Therefore, the principle is to maintain the spatial densities of GSI \approx 0.27 and FSI \approx 0.93.

Principle oC

Renovation over demolition & reconstruction

M

Demolition and new construction are highly sensitive issues among current residents. To generate sufficient support for future developments, renovation is set as the guiding principle and needs to align with the welfare note of Rotterdam to ensure the working-class character. Demolition and new construction are only considered if necessary from a spatial or structural/technical perspective.

Principle oD

Greening and cooling the neighbourhood

M

The current heat stress calls for a strong focus on greening and cooling the neighborhood. This can be achieved by increasing shaded areas and removing paved surfaces. Therefore, the guiding principle is to increase the tree canopy area (surface covered by shade) by roughly 1 ha. In addition, the existing squares will be greened, which involves the removal of at least 7,300 m² of paving.

Principle oE

Tree lines connecting the enclosing green structures

XL/L

To create a more robust ecological network, the surrounding green structures will be connected to one another. This will be achieved by adding rows of trees to the street profiles.

Principle oF

Romanticizing the industrial past through materialization

S/XS

To strengthen the 'traditional and village-like' character, the public space will feature historicizing materials and detailing, referencing the industrial past of Oud Crooswijk.

Principle oG

The toolkit Rotterdamse Stijl as base for materialization of the public space

S/XS

The Toolkit Rotterdam Stijl serves as the basis for the materials and detailing of the public space. However, the guiding principle is to apply it in combination with principle oG. Deviation from the Rotterdam Stijl is therefore permitted, provided it clearly contributes to the historicizing narrative.

Principle oH

Enhancing the quality of public and collective spaces

M

To promote social cohesion, it is important to strongly focus on high-quality collective and public spaces. Public spaces, such as the existing squares, should therefore serve a social function. Collective spaces, such as inner courtyards and transitional zones between private and public domains, will be designed with the aim of encouraging interaction and encounters.

Principle oI

Phasing out personal vehicles

M

To improve safety and quality of life, private cars will be gradually phased out of the neighborhood. Given the importance of cars to the neighborhood's identity, the area will remain accessible to cars, but long-term parking will be relocated to parking hubs at the edge of the city. However, parking options for commercial vehicles must remain available.

Principle oJ

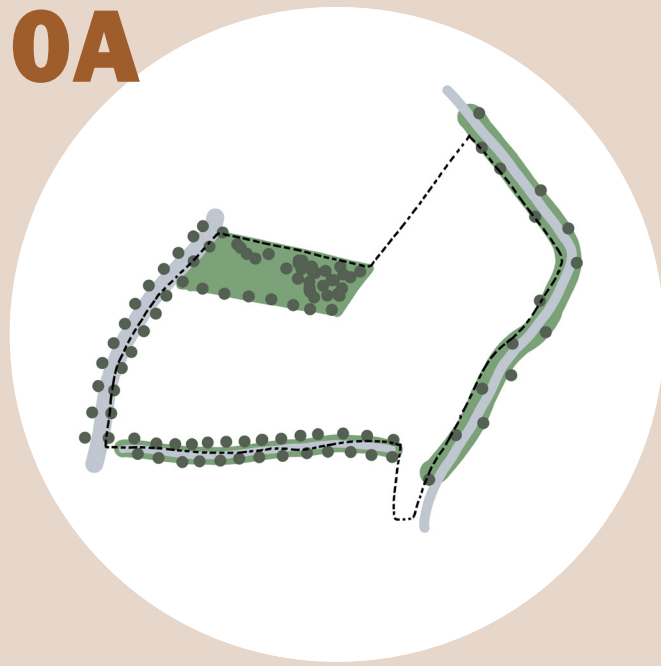
More room for cyclists & pedestrians

S

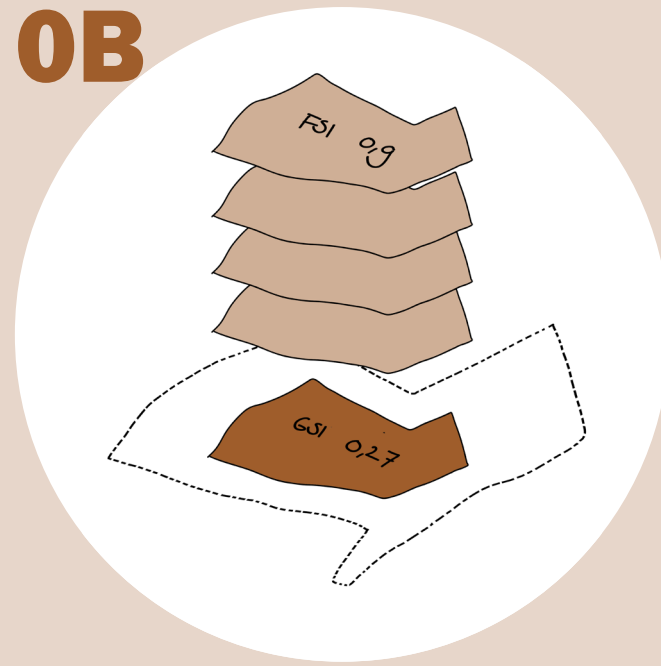
To enhance liveability and accessibility, the old waterways should provide more space for pedestrians and cyclists. This requires wider sidewalks and sufficient space for bike parking.

¹ GSI: Total built surface (m²) in comparison to the surface of an area
² FSI: Total surface (m²) of all the building floors in an area

0A



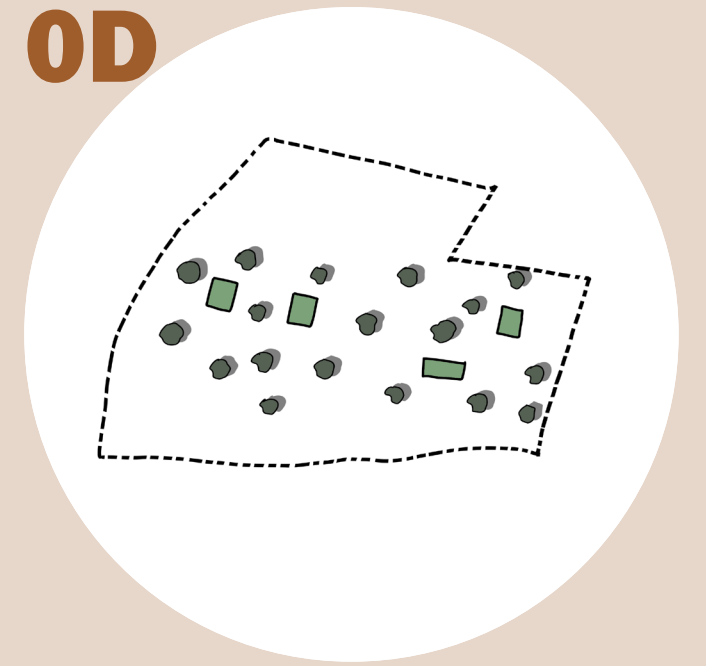
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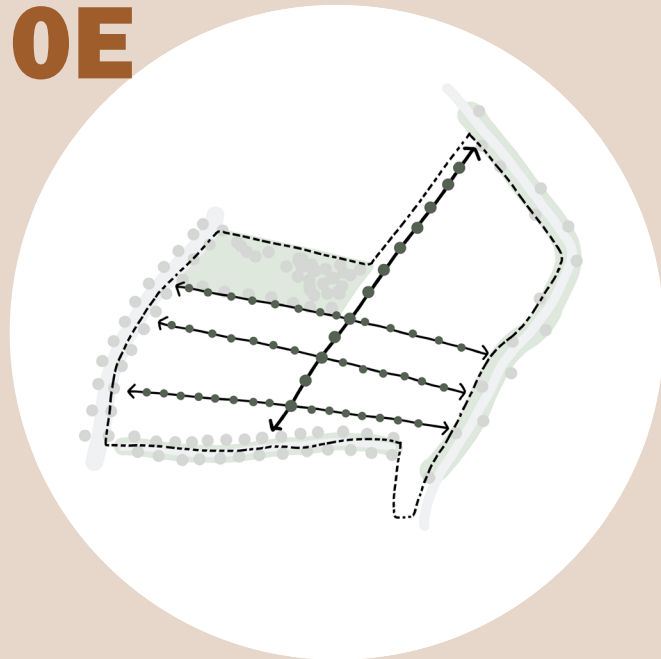
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0D



0E



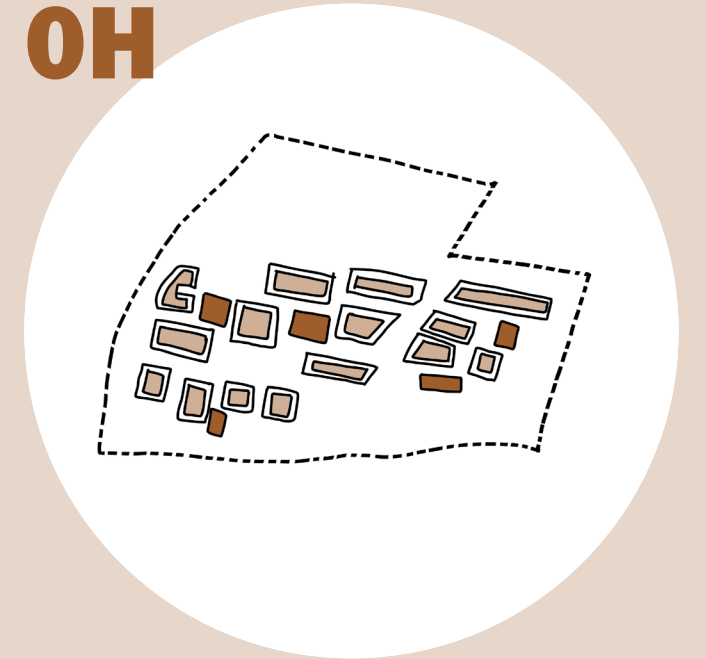
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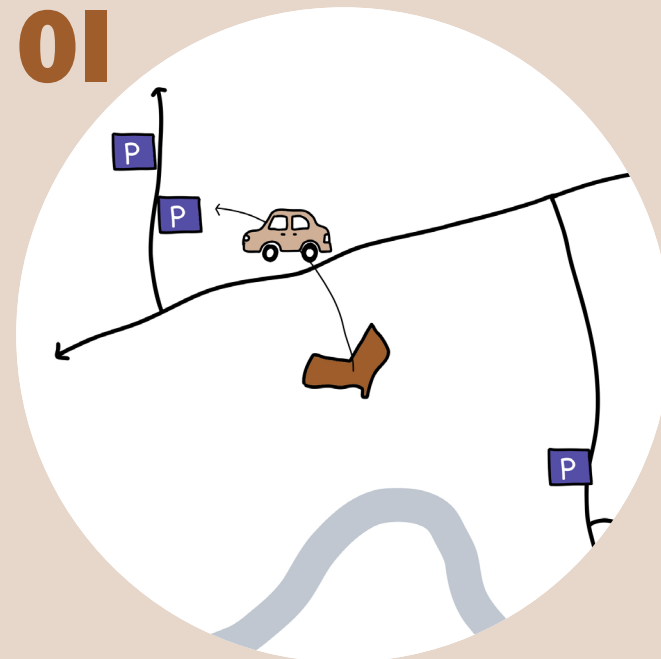
0G



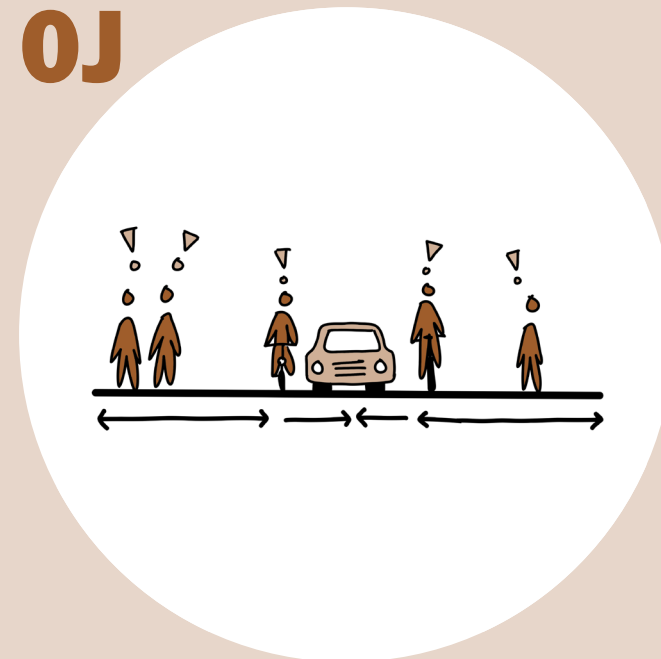
0H



0I



0J



Crooswijkseweg as the main street

Must have
1B, 1D, 1E, 1G

Important to have
1A, 1F, 1H

Nice to have
1C

Principle 1A

Street profile proportions of at least 1:1

S

The Crooswijkseweg is characterized by a profile ratio of 1:1 (height to width). To keep the street easily recognizable, it is important to maintain this ratio.

Principle 1B

Activating plinths

S/XS

To create more vibrancy, it is important to activate the ground floors. The ground floors should encourage more interaction between the private and public domains and serve as the transitional zone between the two. This means transparant plinths and furniture such as benches or shop supply in front of the facades. The purpose of this is to stimulate interaction and movements between the programme of the public and private domains.

Store signs and advertising will be will have a historicizing character. In addition to this, the facade windows on the ground floor are not allowed to be blocked by large advertisements and need to be open and transparant.

Principle 1C

Creating more space to stay

S

More space to stay ensures that people stay longer on the Crooswijkseweg, which leads to greater vibrancy. This can be achieved through wider sidewalks that provide space for things like terraces, benches, or local events such as a market.

Principle 1D

Greening by adding trees

S

As part of cooling and creating more spatial cohesion and 'coziness,' trees will be added to the street profile of Crooswijkseweg.

Principle 1E

Clustering local services and amenities

M

The local amenities are clustered along the Crooswijkseweg and should include at least Bakkerij Rif, a local hardware store, small warehouse, grocery store, (housing) corporation hub and traditional cafe. This draws people from the neighborhood to Crooswijkseweg, contributing to the creation of a vibrant neighborhood hub.

Principle 1F

No car parking space

S

To reduce traffic nuisance and improve livability, there will be no parking spaces on the Crooswijkseweg. The Crooswijkseweg provides local amenities and is within cycling and walking distance for the neighborhood.

Principle 1G

Dedicated supply and delivery zones

S

To enable the supply of amenities, it is important that safe loading and unloading zones are provided.

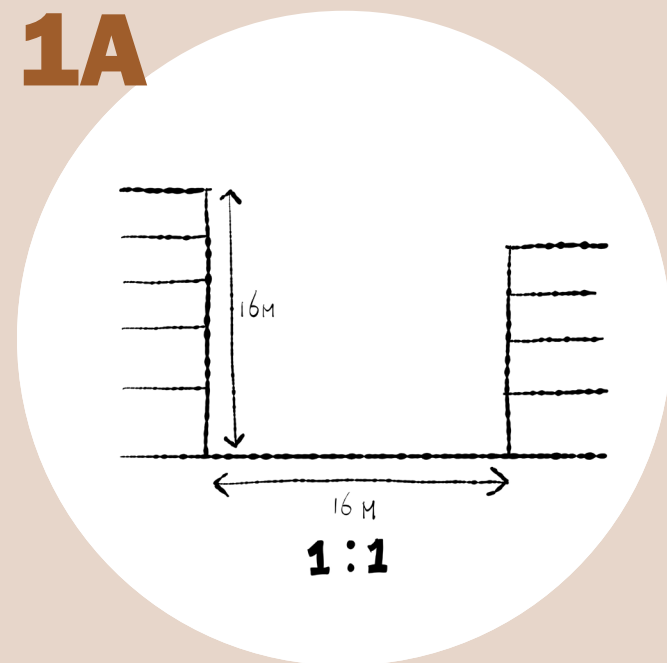
Principle 1H

Preserving characteristic parcel- and building corners

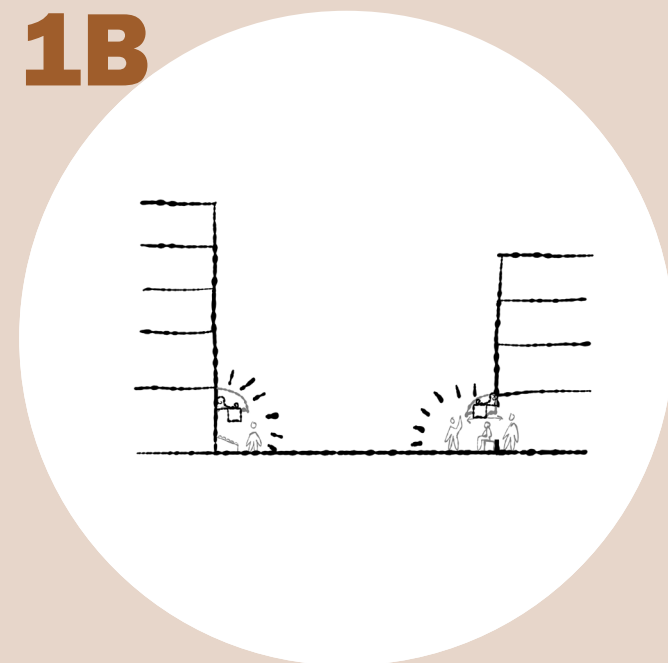
M/S

The characteristic building and plot corners greatly contribute to the recognizability of the Crooswijkseweg. For this reason, the characteristic corners should be preserved.

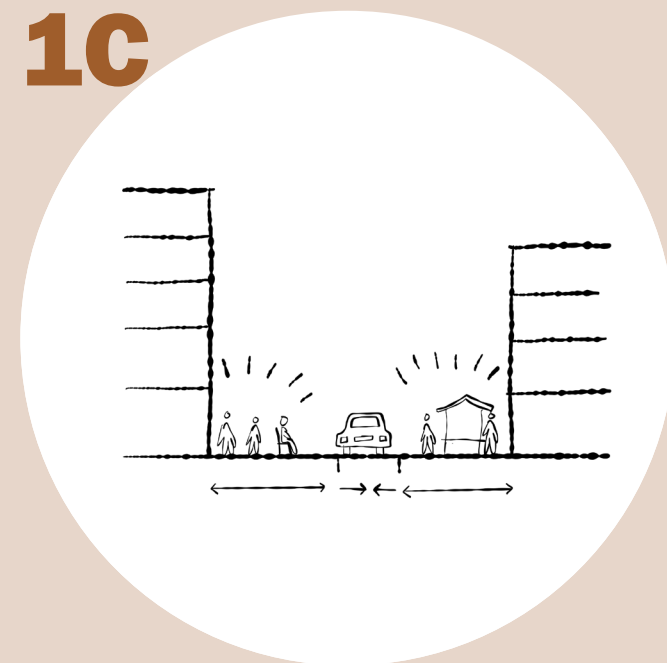
1A



1B



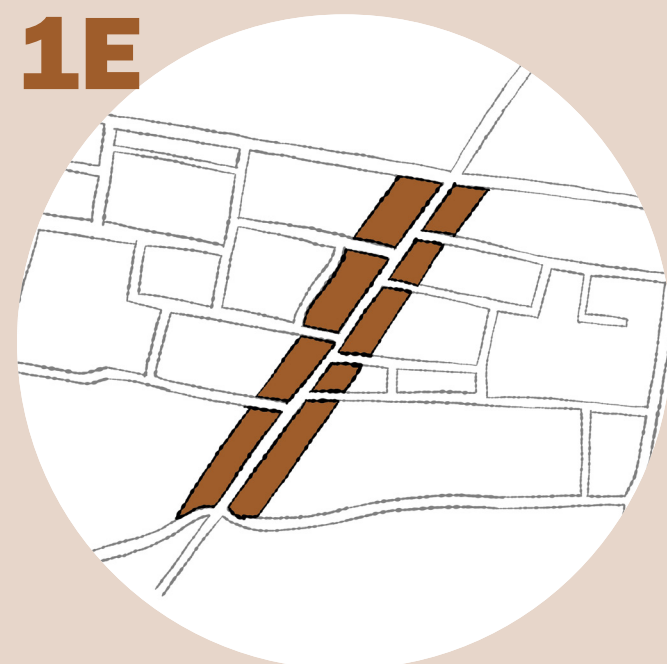
1C



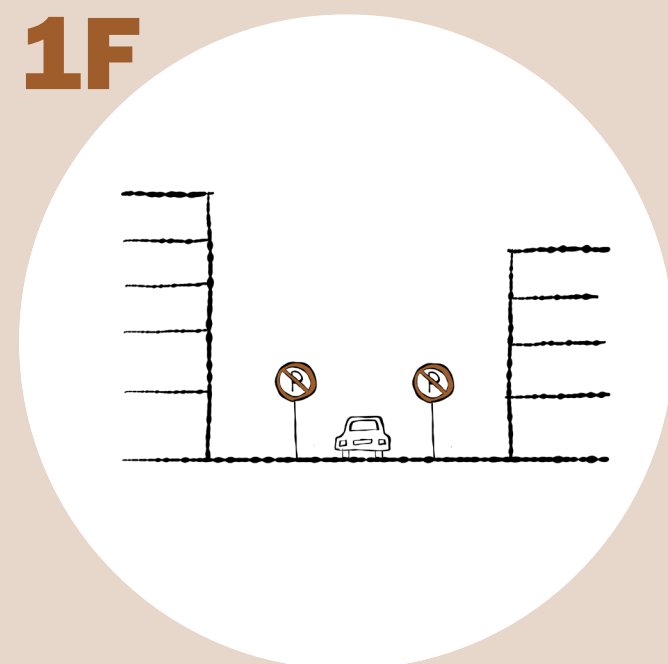
1D



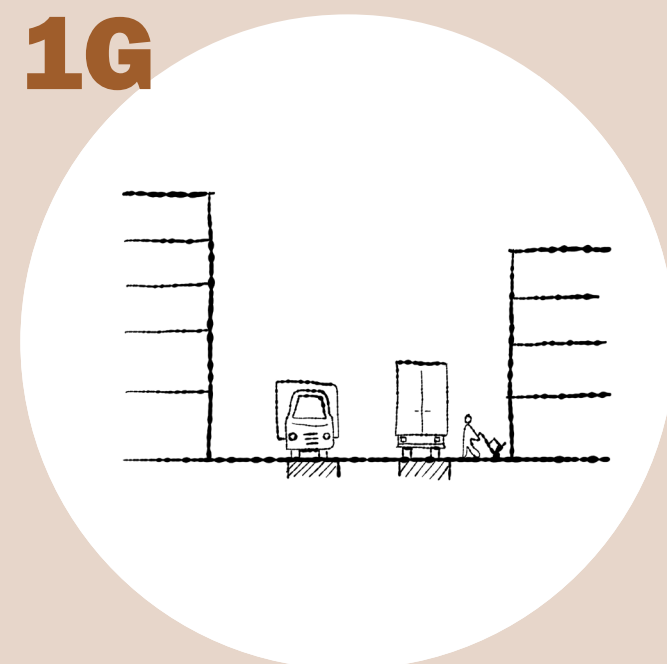
1E



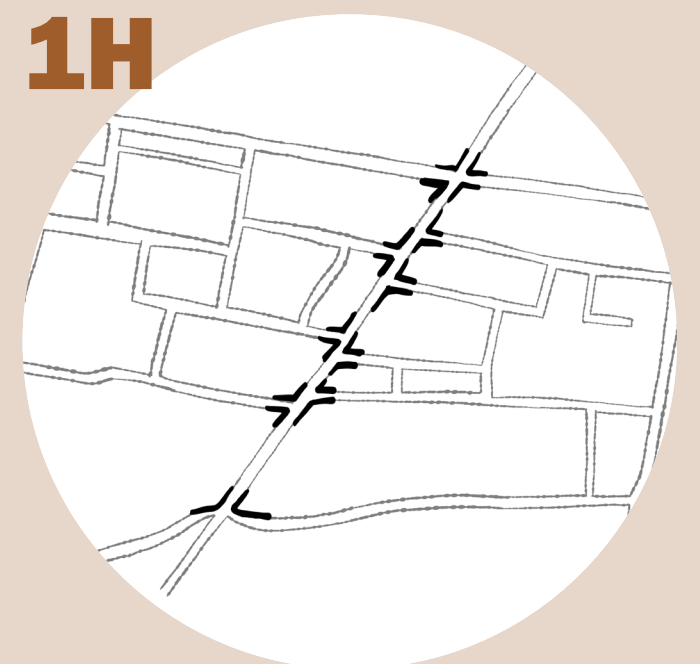
1F



1G



1H



Old waterways as image carriers

Must have
2A

Important to have
2B, 2D

Nice to have
2C

Principle 2A

Adding trees on the old waterways

S

As part of cooling and creating more spatial cohesion and ‘coziness,’ trees will be added to the street profiles of Van Meekerenstraat, Pleretstraat, Van Reynstraat, Pootstraat, Pijperstraat, Isaïc Huberstraat, Marnixstraat, Hendrik de Keyserstraat, Frederikstraat, Rubroekstraat, and Hendrikstraat.

Principle 2B

Each waterway it’s own character

M

Each old Waterway will have its own distinctive character through a unique tree rhythm and/or tree species.

Principle 2C

Fully integrating street furniture into street profile

S/XS

Street furniture is integrally designed to create a cohesive streetscape.

Principle 2D

No car parking space

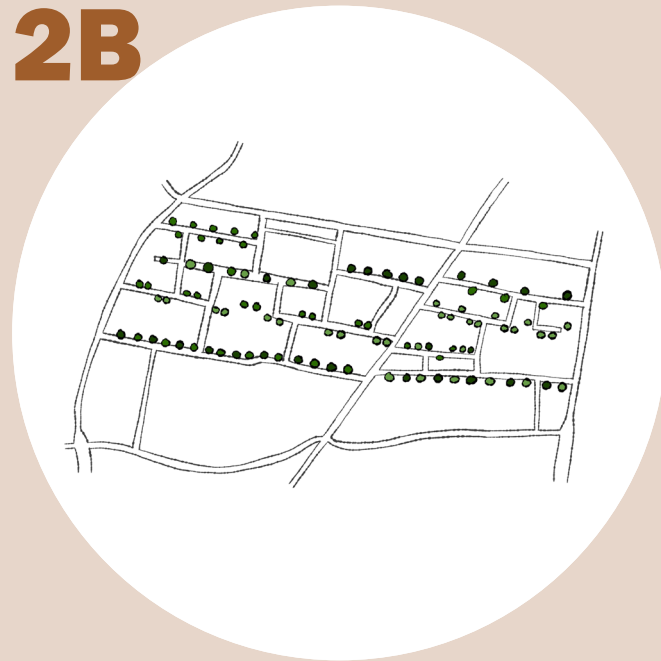
S

To reduce traffic nuisance and improve livability, there will be no parking spaces along the old waterways. Passenger vehicles will be parked in parking hubs on the outskirts of the city. Commercial vehicles can be parked in the neighborhood, but only in clustered parking facilities (Pr. 4B).

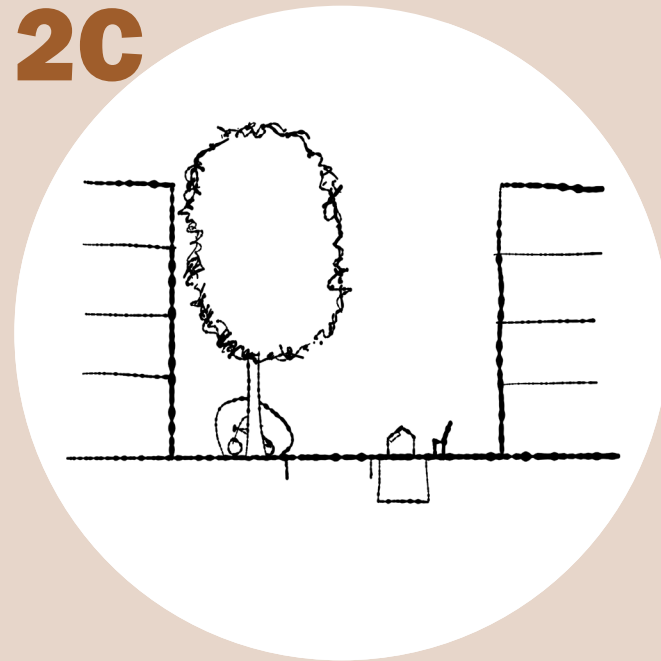
2A



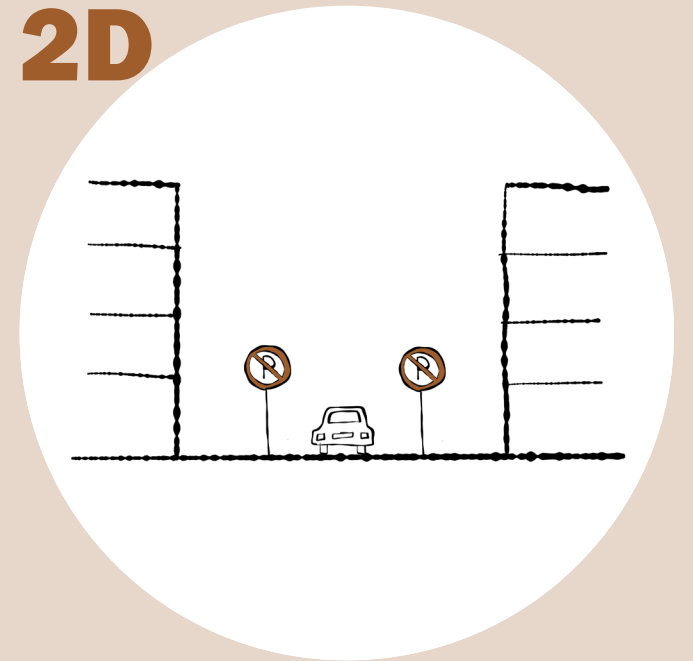
2B



2C



2D



Neighbourhood gardens & Renovated building blocks

Must have

3A, 3B, 3C,, 3H, 3J

Important to have

3D, 3E, 3F, 3I, 3K

Nice to have

3G

Principle 3A

Preserving the spatial characteristics of a not-planned expansion

neighbourhood

M

To contribute to the spatial recognizability of the neighborhood, the characteristic spatial principles of an unplanned expansion neighborhood will be maintained. This means adhering to the principles of compact public spaces, closed building blocks, and a street parcellation.

Principle 3B

Medium sized apartment houses

S

Most building blocks will consist of apartments. The footprint of the average apartment in Oud Crooswijk is 120 m². The average apartment that can be purchased with the estimate salary of a working-class profession is between 120 -130 m² ¹. Therefore, the average footprint of newly build apartments should be between 120 - 130 m². With the average form factor¹ of 0,7, this would result in 84 -91 m² of living space per apartment.

Principle 3C

Tenement building entries

S/XS

New building blocks will be connected to the streets through tenement entry points. These entry points serve as collective spaces that connect the public streets to the private homes.

Principle 3D

Many facade openings

S/XS

Characteristic for Oud Crooswijk is that most buildings have many facade openings. This creates the idea of many eyes on the street, improving the feeling of social safety. Therefore, new buildings are required to have many facade openings.

Principle 3E

Three-way split facades

S/XS

Most buildings are characterized by a clear division between a plinth, middle and top layer. This clear distinction will therefore also be required for new building blocks.

¹ With an average monthly income of €3,000 (Nationale Vacaturebank, 2025). The average mortgage for a 2-person household would be €370,000 (Rabobank, 2025). For this amount, the average available apartment in Rotterdam would be 120 - 130 m² (Funda, 2025). And while housing prices can be expected to increase, so are salaries of the working-class (Business Insider Nederland, 2022 and Prijsstijgingen Bouwprojecten Houden Aan, n.d.).

Principle 3F

Flat or pitched roofs

S

New building blocks will have either a flat roof or pitched roofs with itsnock perpendicular to the streets they are facing. Especially the pitched roofs are a membrant of the physical appearance of the Oud Crooswijk between late 1900 and the 1970s.

Principle 3G

Interwoven horizontal and vertical facade elements

S/XS

Typical for the building blocks are an intertwinement of horizontal and vertical facade elements. Facades of new buildings should strive for this intertwinement as well.

Principle 3H

Maximum building height of 5 layers and 16 meters

S

New buildings are allowed to have a maximum height of 16 meters with 5 building layers. This height aligns well with the existing typologies and helps to create spatial coherence. A few height accents up to 30 meters on the edges of the focus area are allowed.

Principle 3I

Straigh building lines

S

The building lines of new buildings will be aligned to one another, fitting into the existing building line structure of the neighbourhood.

Principle 3J

Preservation of historic and monumental elements

S

The historic and monumental buildings and ensembles will be preserved and integrated into the current urban fabric. These buildings and ensemble are the tangible remnants of the neighbourhood's past and therefore are important for the identity.

Principle 3K

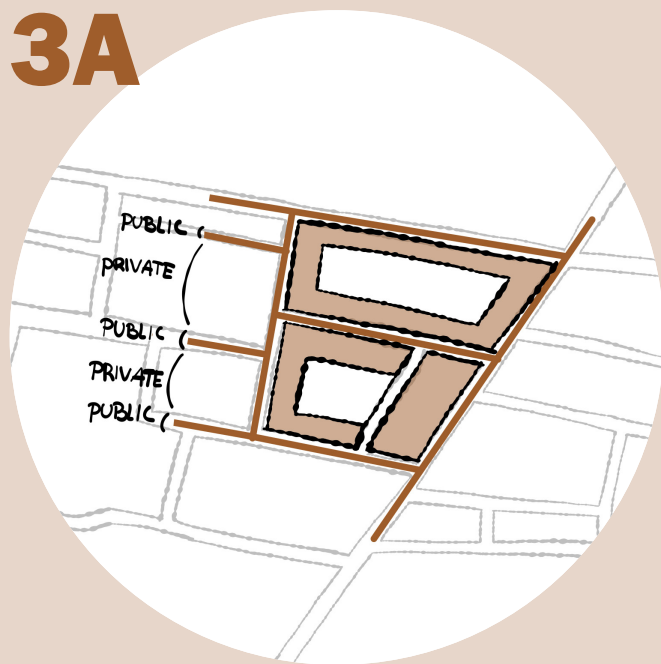
Presence of open spaces

S

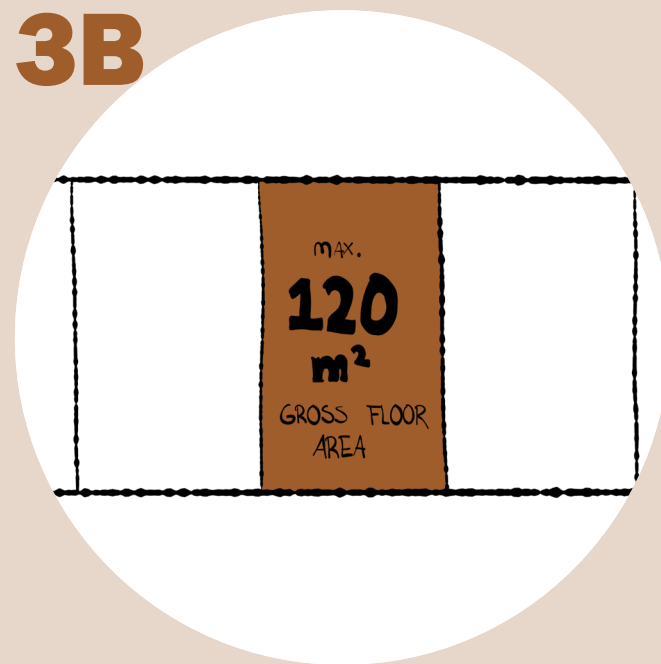
To compensate the dense and narrow public street profiles, open spaces with a social fucntion will be required. Spatially, these spaces will give some breathing room while at the same time serving a communal purpose.

¹ Form factor: a mathematical number to translate the gross floor space of a home to actual living space (Totaal surface - walls, stairs, etc.)

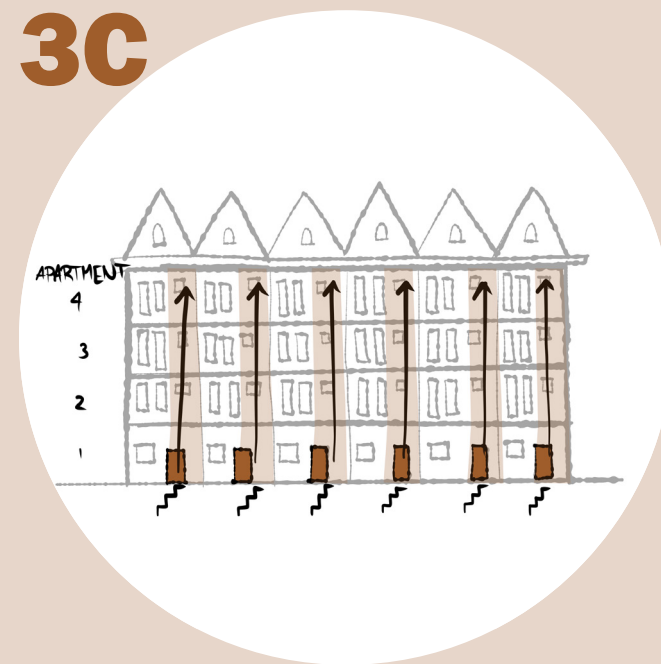
3A



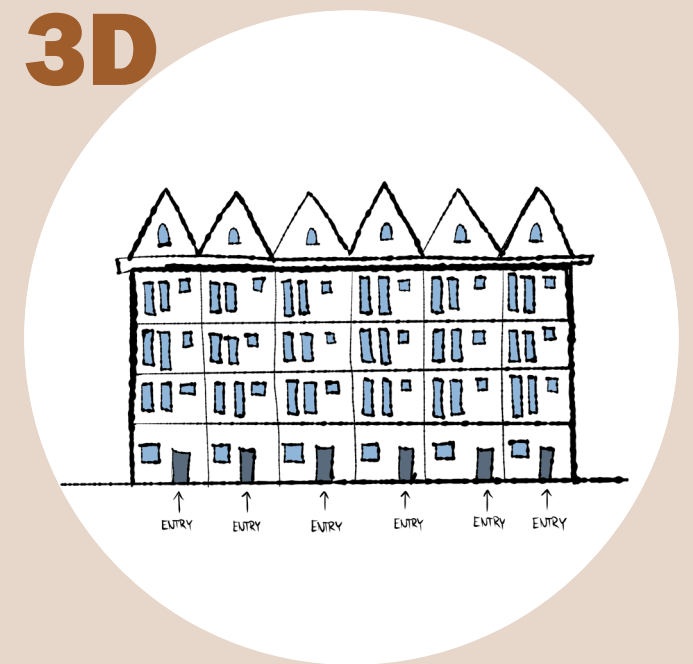
3B



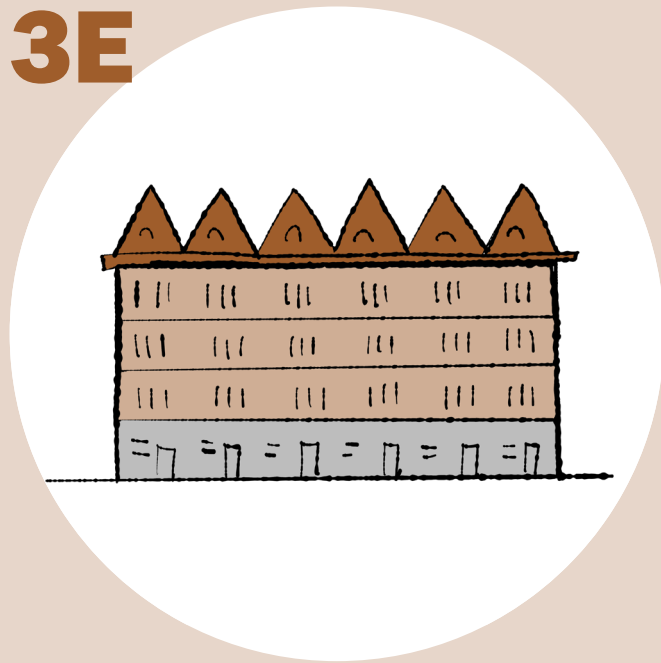
3C



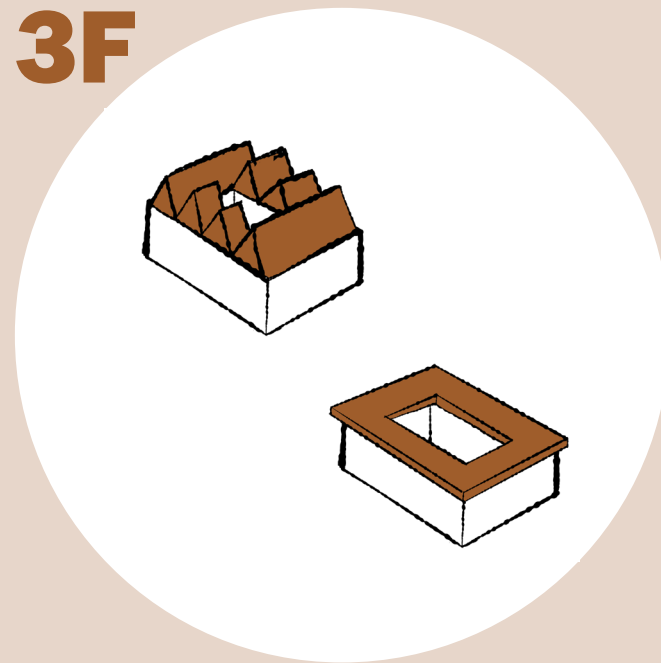
3D



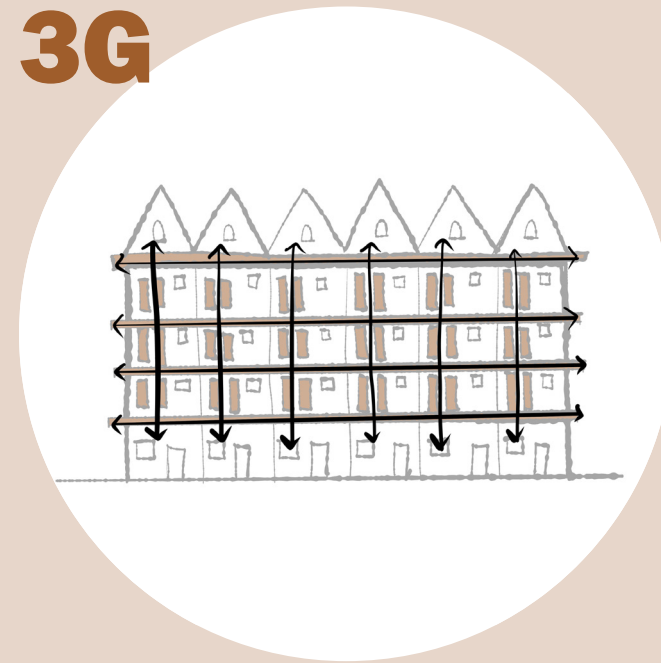
3E



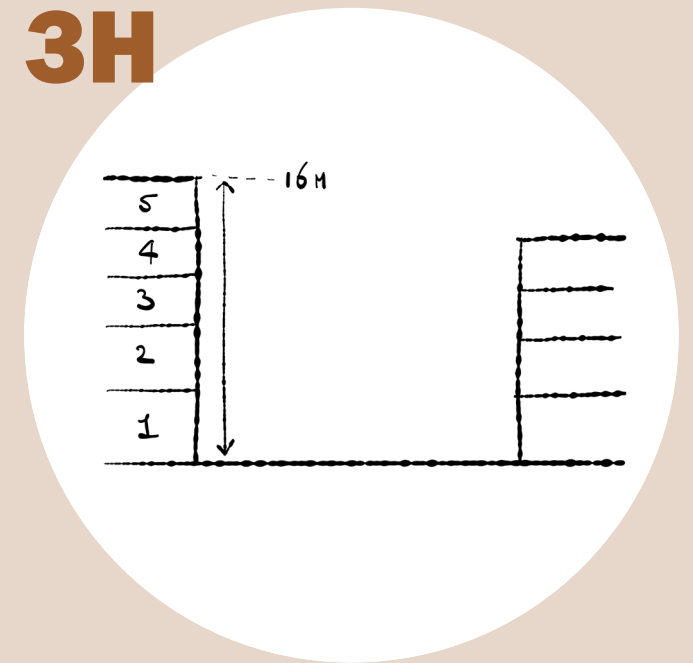
3F



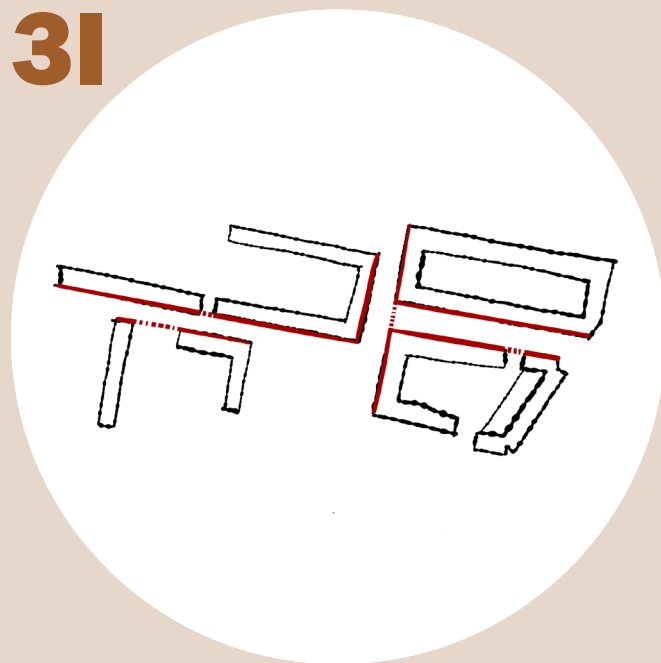
3G



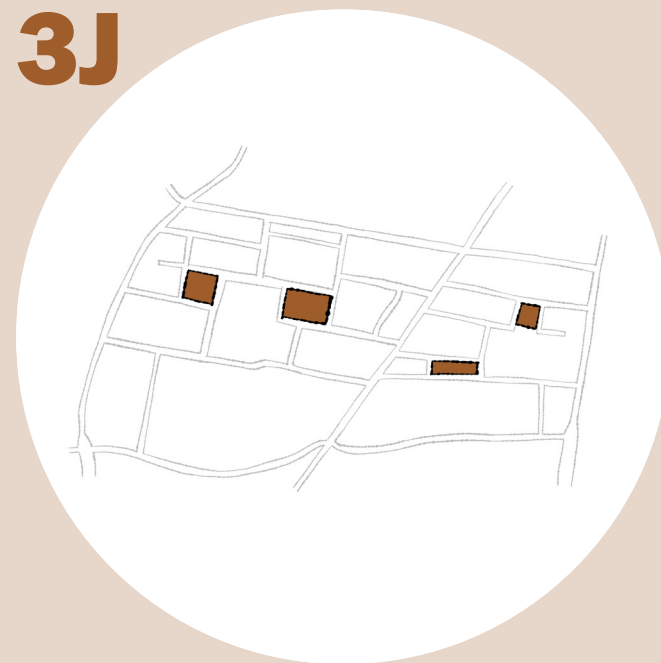
3H



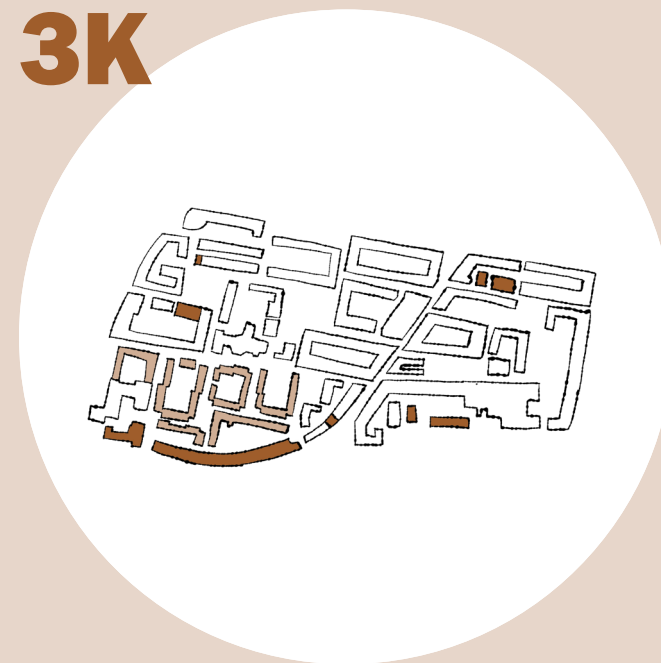
3I



3J



3K



4

A pedestrian friendly neighbourhood

Must have
4A, 4B, 4C, 4D

Important to have
4E, 4F

Principle 4A

No (personal) car parking space

M

The neighbourhood will not offer long-stay parking options for personal vehicles. Parking of personal vehicles will happen on the edges of the city in the designated parking hubs.

Principle 4B

Clustered parking facilities for commercial vehicles

M

For commercial vehicles, clustered parking facilities will be realized and will be provided with electric charging stations. Two of locations will be situated on the edges of the neighbourhood for easy access. The third location will be more in the centre so that it is surrounded by more expensive housing in order to finance the parking facility.

Principle 4C

Creating more bicycle parking facilities

S

To ensure the accessibility of the neighbourhood more bicycle parking facilities are required. Not everyone has a personal yard and because of the closed building blocks, many homes cannot access their back-yard by bicycle. Therefore, it is important that Oud Crooswijk is provided with sufficient parking facilities.

Principle 4D

Preserving and enhancing accessibility by public transit

S

To ensure the accessibility of the neighbourhood the public transit connections between Rotterdam Centraal (train), Station Noord (train), Oostplein (subway) need to remain accessible by bike, bus and tram within 10-15 minutes.

Principle 4E

Neighbourhood remains accessible by cars

L/M

Due to the importance of the car, the neighbourhood will remain accessible by car. However, as stated in principle 4A, long stay parking for personal vehicles will no longer be available.

Principle 4F

One-way streets

L/M

This is achieved by aiming for as many one-way streets as possible. This way, the area remains accessible by car while creating more comfort for slow traffic users such as pedestrians and cyclists.

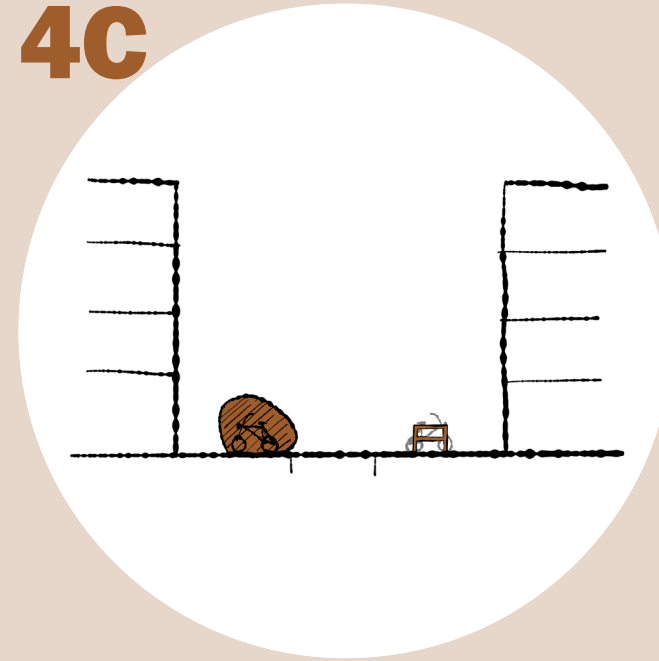
4A



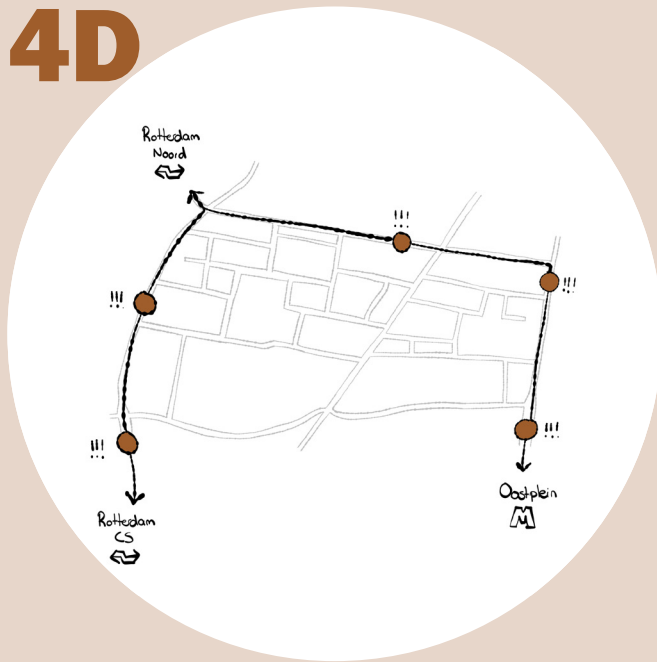
4B



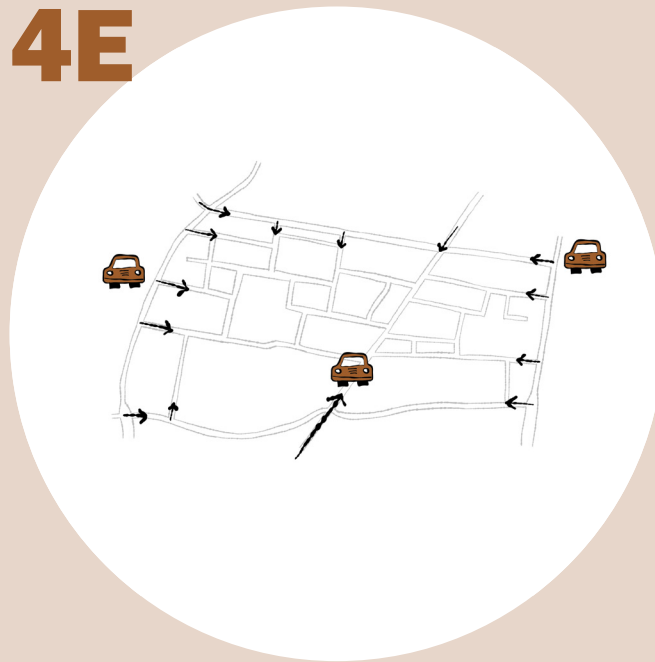
4C



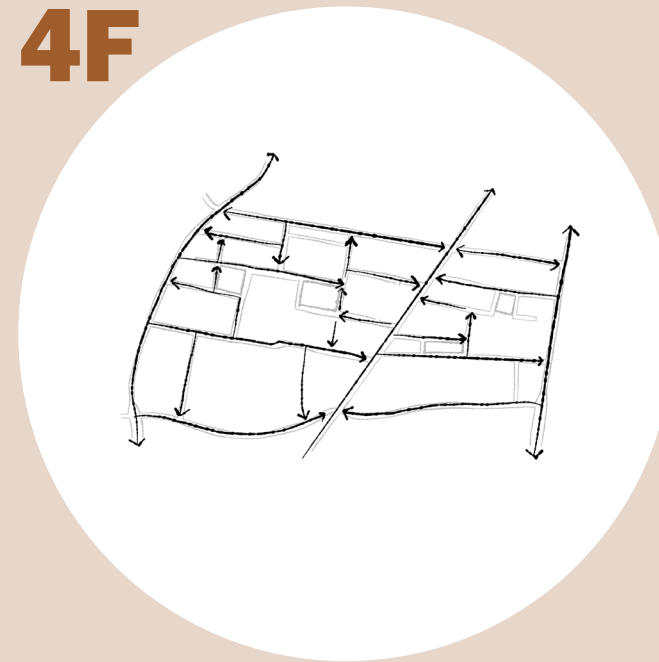
4D



4E



4F



Neighbourhood workshops

Principle 5A

Activating plinths

S/XS

Activating the plinths should contribute to the attractiveness of the facades. By activating the plinths of local workshops, working in the neighbourhood becomes more visible and therefore a more prominent feature in the urban fabric. Housing in the workshop plinths is not possible.

Principle 5B

Local “working-class” stores

S/XS

Manual labour is still a strong indicator of the working-class identity of Oud Crooswijk. Since many inhabitants still engage in this type of labour (carpenters, plumbers, electricians, healthcare workers, etc.), local stores should be provided that serve their needs. Such stores should include a small hardware store (to supply materials and tools), small warehouse (to supply cleaning tools and everyday necessities for elderly care) and a cafe (a place to relax before heading home from work).

Principle 5C

Collective storage units for tools and equipment

S/XS

The clustered parking facilities for commercial vehicles will also serve as a collective storage unit for tools and equipment of the working population. The units offer a safe and sustainable place for storing (often-times) expensive tools and equipment.

Must have

5A

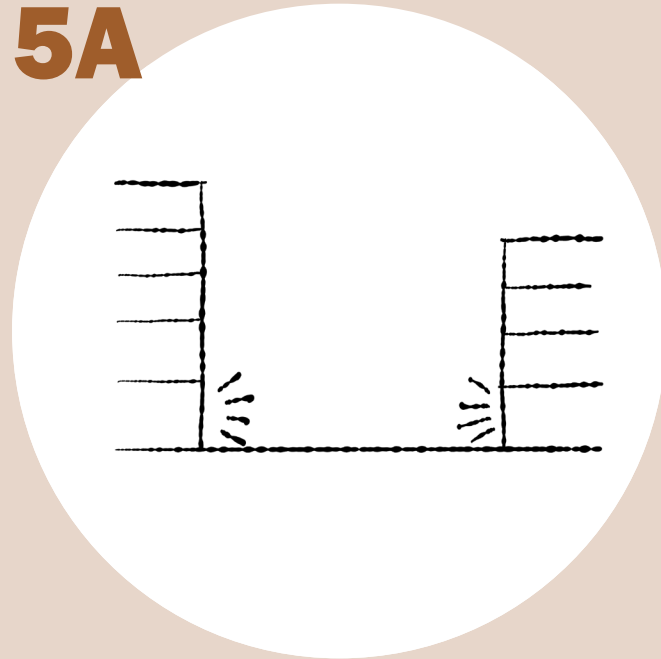
Important to have

5C

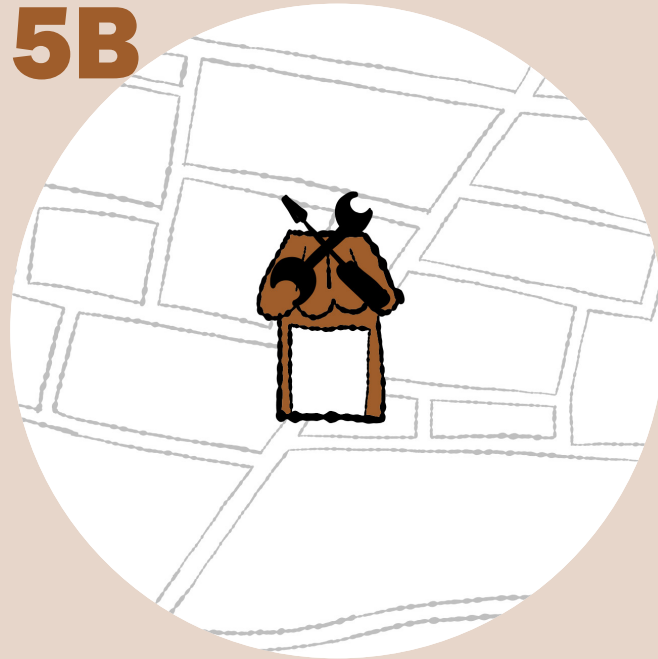
Nice to have

5B

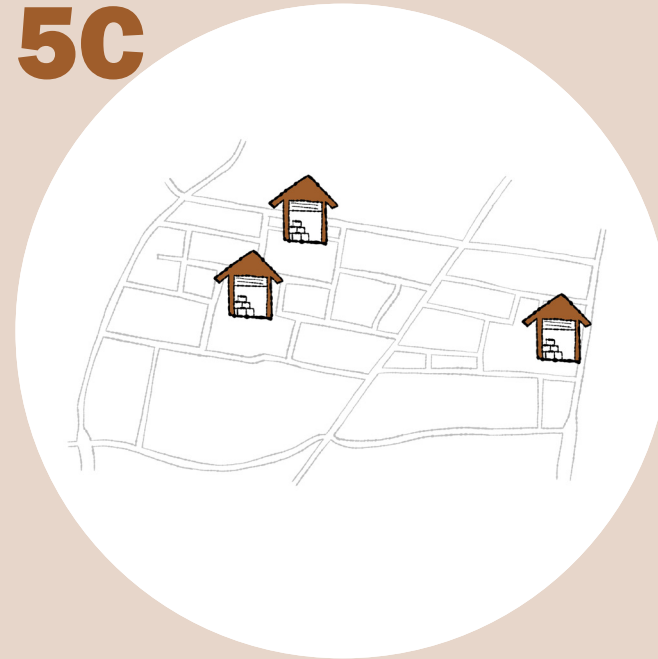
5A



5B



5C



The Design

Potential masterplan & key interventions



Birds eye view of the proposed redesign

Introduction

In the following chapter, the translation from the design principles to the actual design is presented. This chapter will elaborate on how the principles have been applied and how they have led to the design.

The design consists of a master plan for Oud Crooswijk. The master plan is further developed through a number of key locations and interventions. These are explained using cross-sections, thematic maps, atmospheric impressions, and material choices. The design concludes with a phasing plan outlining the steps to be taken and the stakeholders who should be involved.

To concretely link the design principles with the design itself, the design will reference the principle numbers (0A, 1A, 2A, 3A, 4A, 5A).

Masterplan

Een dorp in een stad

The new design is realized within the confines of the enclosing green structures (0A). This is done to create clear boundaries between Oud Crooswijk and the surrounding areas, ensuring it feels like its own entity.

The design features a revitalized Crooswijkseweg and a transformation of the old waterways into green image-carriers. The Crooswijkseweg is revitalized by clustering and diversifying the local amenities (1E). To ensure a vibrant atmosphere, most buildings will be renovated (0C), and where necessary, plinths will be activated (1B). During this renovation, the original parceling and building corners will remain intact (1H). Simultaneously, the street profile of the Crooswijkseweg will be rearranged to make it cozier. This will be done by creating more space for pedestrians and cyclists (0J) and by adding trees. The treeline will help connect the enclosing green structures, create more spatial cohesiveness, and cool the area (0D, 0E, 1D, & 2A).

Transforming the old waterways into green image-carriers means rearranging the street profiles of Crooswijkseweg, Rubroekstraat, Hendrikstraat, Frederikstraat, Hendrik de Keyserstraat, Marnixstraat, Isaäc Hubertstraat, Pijperstraat, Pootstraat, Van Reynstraat, Pleretstraat, and Van Meekerenstraat. These streets will each receive a unique line of trees to cool the area and create spatial cohesion throughout. The new trees on the old waterways add roughly 10.240 m² of shade (total canopy surface). (0D, 2A, & 2B).

To make room for the trees, the space dedicated to cars will be significantly reduced. Parking spaces will be removed, and most streets will become one-way for car traffic (2D, 4A, & 4E). Within these street profiles, more room will be created for pedestrians and cyclists by widening the pavement and providing sufficient parking space for bicycles (0J & 4C). In the early stages of development, cars will be able to park in clustered temporary parking facilities within the area. However, over time, personal vehicles will be phased out. In the future, personal cars will be parked in parking hubs on the outskirts of the city, accessible by bike and/or public transit (4A & 4D).

For commercial vehicles, however, the area will remain well-accessible. Due to the dependency of the working-class population on their cars for work, three underground parking facilities will be created, designated for commercial vehicles only (4B). These parking facilities will

be located beneath newly developed real estate and will also provide room for local storage units. These units can

be used to store hardware or tools needed by local workshops and businesses (5C).

To further cool the area, the current squares of Martinplein, Van Meekerenplein, Frederikplein, and Marnixplein will be transformed into community gardens (0D & 0H). These gardens will offer cooling for the area while also serving a communal purpose. By creating small allotment gardens and an attractive atmosphere, the community gardens will invite people to meet and interact.

Lastly, the real estate in the area will be made more sustainable, primarily through renovation (0C). However, some demolition is required to restore the old waterway structures and create room for the community gardens. The demolition of this real estate serves to enhance spatial cohesiveness and cool the area. The demolished houses and functions will be fully compensated.



Current



100 m

Figure 56.



Figure 57.

To demolish & transform

The design has made every effort to keep demolition to a minimum (0C). Only two building blocks will be demolished, while the other two blocks will be largely integrated into new structures. For these blocks, only small parts will need to be demolished.

The total number of demolished buildings will be 186 houses, 1 school gymnasium and a kindergarten. The footprint of the gym is 375 m², and the footprint of the kindergarten is 750 m². On the far east side of the focus area, there is also a school that is already being demolished. The footprint of this school was approximately 840 m².

To build & renovate

To compensate for the lost houses and amenities, new buildings will be constructed, accumulating to approximately 26,585 m² of new floor space. Within this floor space, a new school (840 m²), kindergarten (750 m²), and school gym (375 m²) will be included. This leaves approximately 24,620 m² available for new houses. Using the set footprint of 120 m² per apartment (3B), this would allow room for 205 new apartments.

The newly built apartments will become available for purchase in the free sector. This is to ensure that the housing supply keeps meeting the demands of the working-class. The estimate yearly income of a 2-person household with a working-class profession is roughly €78,000. (Rabobank, 2025 and Nationale Vacaturebank, 2025). The income-limit for a 2-person household to qualify for social housing is €52,671 (Ministerie van Algemene Zaken, 2025).

The total amount of households, floor footprint, heights, and layers of the new buildings will be similar to those of the surrounding structures (3H). As a result the spatial densities will remain similar to what they are (0B).

Additionally, most current buildings will require renovation to make them more sustainable. Several plinths along the Crooswijkseweg, community gardens, and local workshops will also be activated (5A).



Figure 58.



Figure 59.

Figure 60.



- Housing
- Work
- Social (schools, daycare, etc.)
- Services & amenities
- Communal green



- Parking facility (commercial vehicles)
- Streets

Figure 61.

Programme

Most of the neighborhood will be dedicated to housing. The local amenities will be clustered alongside the Crooswijkseweg (1E). To serve the needs of the local working-class population, these amenities should include at least a small hardware store, small warehouse, café, bakery, two grocery stores, and a small office/hub for the Havensteder housing corporation (5B).

On both the east and west sides of the Crooswijkseweg, an elementary school and community garden (0H) will be established. Space for work will be scattered throughout the area. On the east side of the Crooswijkseweg, there will be room for local workshops. On the far southwest corner of the focus area, the old Heineken office will provide office workspace.

Both sides of the Crooswijkseweg will feature an elementary school. According to the documents *Voorzieningenniveau gezonde leefomgeving* (2024) and *Ruimtelijke Kwaliteit in de 10-minutenstad* (2025), an elementary school is required for every 3,000–4,000 inhabitants. Since Oud Crooswijk has slightly over 8,000 residents, two to three schools should be sufficient. A grocery store serves approximately 3,000–5,000 residents, so two should be sufficient.

Accessibility

To ensure more room for pedestrians and cyclists, the space allocated to cars will be reduced (0J). To achieve this, many roads will become one-way. This way, the neighborhood remains accessible by car (4E) but reduces the space it occupies.

Underneath the newly developed buildings, clustered parking facilities will be created for the storage of commercial vehicles (4B). These underground parking garages will also serve as spaces to safely store tools and materials (5C). These underground parking facilities will be financed through the real-estate development.

During the planning and development of the new buildings, these locations will be used as temporary parking lots for personal vehicles. Upon completion, personal vehicles will be parked in the parking hubs on the outskirts of the city and will need to be accessed by bike or public transit (4A & 4D).

Materialization

Since the interventions of the redesign largely emphasize the public space, this paragraph will focus on the materialization and furnishing from the public space perspective.

For the materialization, the design has used the Rotterdamse Stijl toolkit as the base (OG). This toolkit divides the public space of the city of Rotterdam into different zones. For each of these zones, the toolkit specifies what pavement and furniture should be applied when (re)designing the public space in these areas.

For the redesign of Oud Crooswijk, however, deviations from the Rotterdamse Stijl are allowed if it enhances the recognizability of the industrial past (OF). The main objective for the choice of materials is to romanticize the industrial past. Therefore, many of the materials chosen have a historical character. The idea behind this is to bring back some of the historical elements because of the strong relation between the neighbourhood's history and the working-class character.

The materialization has been divided into 3 categories: (1) Pavement & Surface, (2) Trees & Green, and (3) Furniture.

In some cases, the materialization makes a distinction between the different key intervention areas: Crooswijkseweg, Old Waterways, and the Community Gardens.

Pavement & Surface

Pavement

The pavement for the car and bicycle lanes consists of grey cobble stones. The Rotterdamse Stijl prescribes these quay stones for shore areas but they will be applied in Oud Crooswijk because of their historical 'feel.'



Pedestrian pavement

For the pedestrian pavement a mix of brown bricks will be used. Just like the cobble stones, the brown bricks have a historical feel and help to romanticize the industrial past of Oud Crooswijk



Pedestrian pavement (Crooswijkseweg)

To separate the Crooswijkseweg as the main street of the neighbourhood, it will receive a different type of pedestrian pavement.

For the Crooswijkseweg the pavement will consist of light brown cobble stones but in a different shade. This allows the street to stand out but also maintain an historical 'feel.'



Turf (Play area)

For play areas such as football- and basketball courts, turf will be applied. The turf retains less heat than paved or asphalted courts but is less sensitive to high maintenance such as real grass.



Trees & Green

Trees (Old water ways)

For the old waterways, the design can use the Aesculus campestre. The tree is of the second size to make sure it fits in the street profile and to offer significant shade (cooling). It is also very resilient against wet and dry periods, making it a good option from a climate-adaptive perspective.



Trees (Old water ways)

For the old waterways, the design can use the Acer Carnea. The tree is of the second size to make sure it fits in the street profile and to offer significant shade (cooling). It is also very resilient against wet and dry periods, making it a good option from a climate-adaptive perspective.



Trees (Old water ways)

For the old waterways, the design can use the Alnus Glutinosa. The tree is of the second size to make sure it fits in the street profile and to offer significant shade (cooling). It is also very resilient against wet and dry periods, making it a good option from a climate-adaptive perspective.



Trees (Community gardens)

For the old waterways, the design can use the Aesculus Hippocastanum. The tree is of the first size and therefore offers a lot of shade (cooling). It is very resilient against wet and dry periods, making it a good climate adaptive option. Other first-size trees are also allowed in these areas as long as they are resilient against dry and wet periods.



Hedge (front)

Transition zones between the private and public domains on the front side of buildings, are allowed to be separated by a small hedge. On the one hand, the green adds to the coziness of the neighbourhood, while also clearly separating someone's private space. The maximum height is 1,20m in order to always ensure the possibility of interaction between the private and public domain.



Furniture

Street lanterns

The 'romantic' street lanterns from the Rotterdamse Stijl toolkit help to enhance the historic town-like feeling of the neighbourhood.



Lamp posts

Adjacent to the lanterns, the historic lamp posts from the Rotterdamse Stijl will be utilized. The historic lanterns and posts are not prescribed for Oud Crooswijk but they have been incorporated into the design nonetheless because of their historical appearance.



Seating

For the seating, the design has also chosen for the 'romantic' variant. According to the toolkit Rotterdamse Stijl this would not be the seat-style for this specific area. But considering the historical narrative of this design, the romantic seats and street lights are very fitting.



Planter

For the planters the design has chosen for a moveable steel seating planter. The steel is reminiscent of the industrial past while the seaters offer more comfort. For the Crooswijkseweg, it is a necessity for the planters to be moveable as they are very important in creating the delivery zones.



Underground container

The underground containers offer a compact unit in the public space causing little visual pollution while offering lots of storage capacity.



Public trash cans

For the public trash cans, the design also makes use of the 'romantic' variant of the Rotterdamse Stijl. According to the toolkit this trash can would not be placed in this specific area. But considering the historical narrative of this design, the romantic seats and street lights are very fitting.



Bicycle storage units

The bicycle storage units offer a safe place for bicycle parking. Since many of the building blocks are completely closed, people oftentimes cannot access their backyard with their bicycle. In combination with many people not having a backyard, a safe bicycle storage in the public space is mandatory.



Bicycle parking (short)

For short stay bicycle parking, small bicycle racks will be placed in the public space. This will mostly be used on the Crooswijkseweg as most people only (shortly) visit this area for the local services



Fencing

To create safe play areas, these cable fences will be used. The cable fences offer a transparent fence while also ensuring safety by preventing children and balls from going onto the streets.





Figure 62.a Atmospheric impression of the redesigned Crooswijkskeweg



Figure 62.b Atmospheric impression of the redesigned Crooswijkseweg



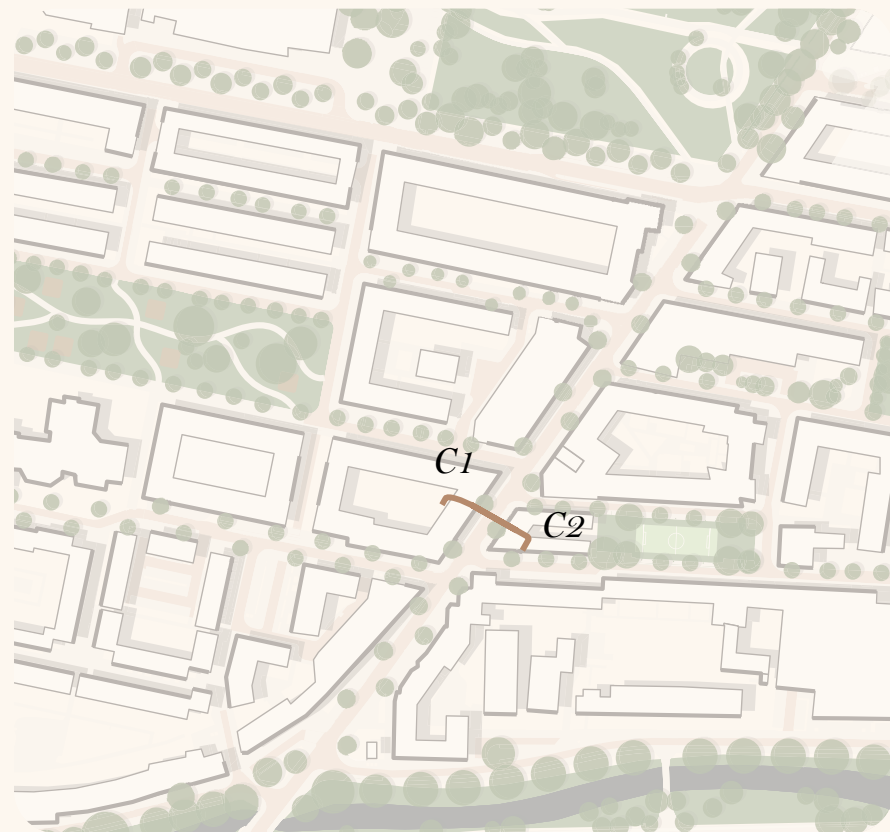
Figure 52.c Atmospheric impression of the redesigned Crooswijkseweg

The Crooswijkseweg

The Crooswijkseweg becomes the vibrant heart of the neighborhood. Local services and amenities will be clustered here to fit the needs of the inhabitants (1E). This will include services such as a hardware store (5B), a local pub, the bakery RIF, and a small warehouse.

To create a more vibrant atmosphere, closed plinths will be opened up to create more interaction between the private and public domains (1B & 1I). With the renovation of the current building blocks (0C), the “eyes on the street” principle, through many facade openings (3D), will remain intact in order to enhance the feeling of public safety.

To create more “coziness” and enhance safety, more greenery and streetlights will be added (0G, 0F, 1D, 2A & 2C). The trees will also contribute to the cooling efforts and are one of the important image carriers of the neighborhood (0D), helping to create more spatial coherence. Additionally, the trees are part of connecting the green structures to the enclosing green structures of the neighborhood, creating a more robust ecological network (0E).



Current situation

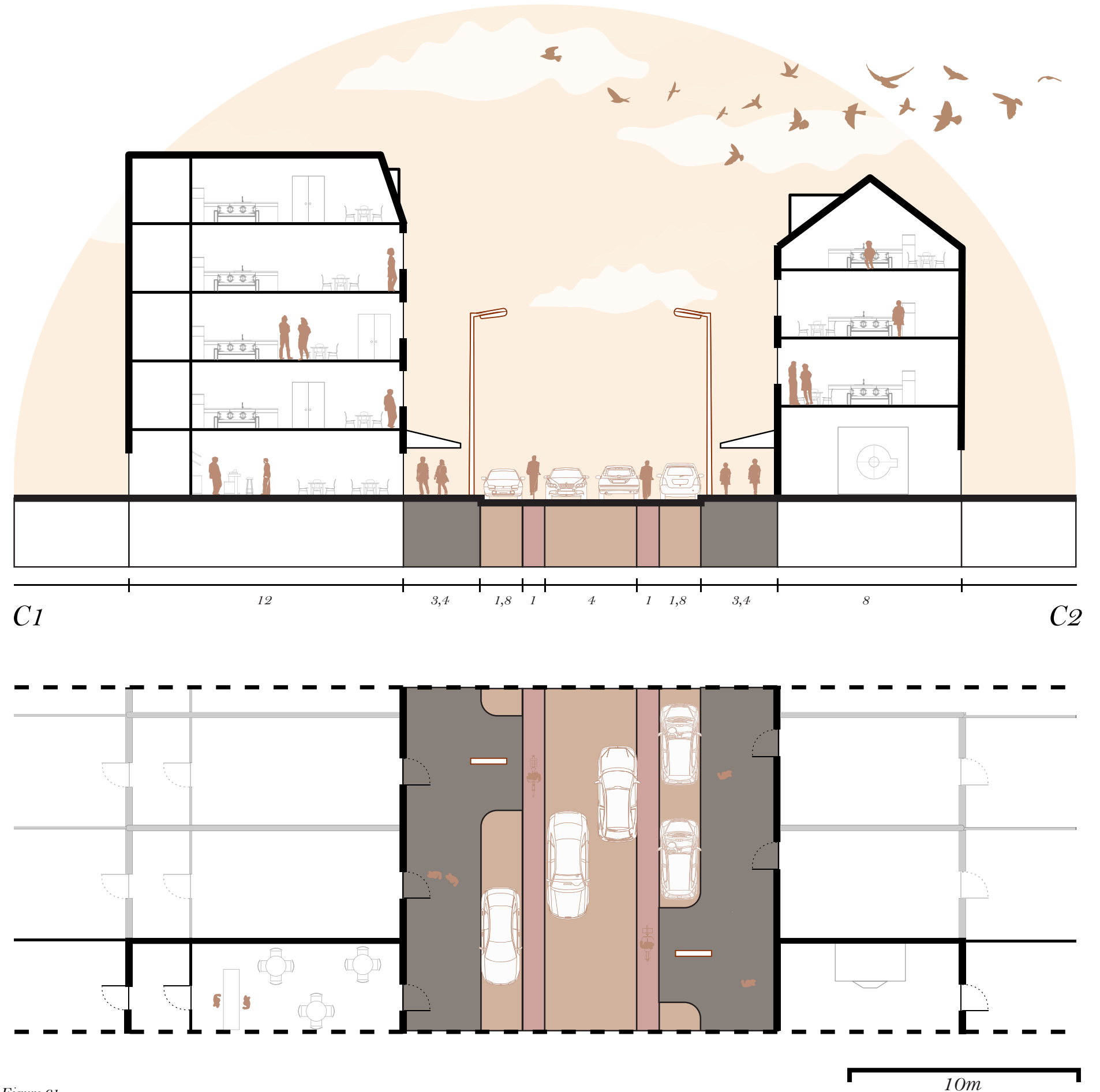


Figure 61.

New situation

The reimagined street profile offers more room for pedestrians and cyclists (0J). In this way, the Crooswijkseweg focuses on the comfort of people rather than the car. The broad new pavements provide space to host neighborhood events or markets in order to create more liveliness and activity (1C). The road for cars will become one-way with no parking (1F). The services and amenities are for the local residents; therefore, accessibility by car or bicycle is prioritized.

In the morning, between 6:30 am and 11:00 am, there will be a delivery window for shop suppliers. During this window, the moveable planters will create safe areas for delivery vehicles. After this window, the planters will be moved back to widen the pavement again for pedestrians (1G). To further prioritize pedestrians, all the pavement will be leveled, making the car feel like a guest in the area (0J).

Lastly, the recognizability of the physical appearance will be preserved. This will be achieved by maintaining the current proportions of the street profile and preserving the characteristic corners (1A & 1H).

Between delivery hours (6:30 - 11:00)

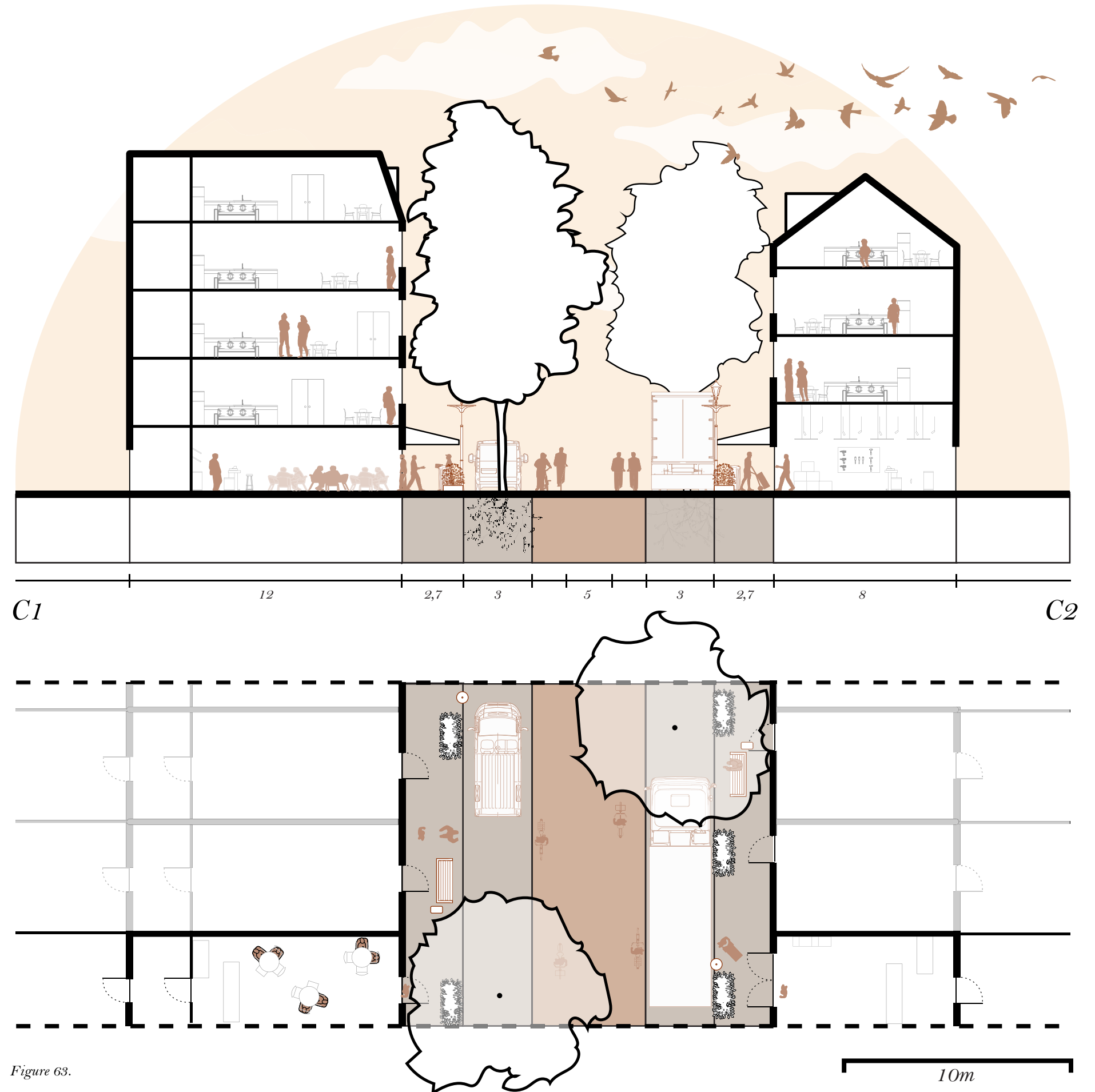


Figure 63.

Outside delivery hours (11:00 – 6:30)



Figure 64.

Western old waterways

The (street) profiles on the western part of the Crooswijkseweg will be transformed into green image-carriers (2A). This transformation concerns the street profiles of Isaïc Hubertstraat, Marnixstraat, Frederikstraat, Hendrikstraat, Hendrik de Keyserstraat, Rubroekstraat, and Crooswijksestraat. Each profile will now have a distinct character (2B). This will be accomplished by giving each profile its own tree rhythm and/or type.

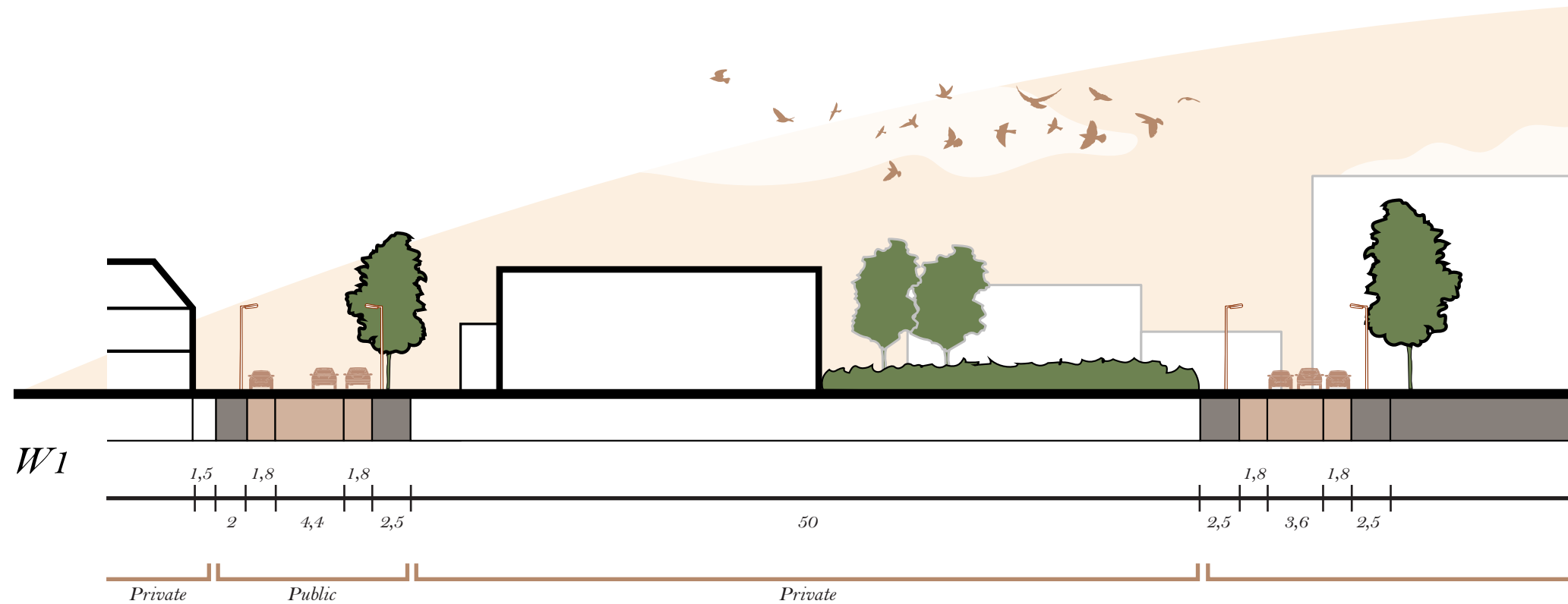
The parcels between Marnixstraat/Hendrik de Keyserstraat and Frederikstraat will be transformed into a public neighborhood garden (0D, 0H & 3K). Part of this transformation includes the current Marnix and Frederik squares. Underneath the public garden, one of the three underground parking facilities will be created, designated for commercial vehicles only (0I & 4B).

Multiple building blocks will be added to compensate for the demolished buildings in place of the neighborhood gardens. The new buildings will consist of closed building blocks with an emphasis on creating collective spaces (0H, 3A & 3K). Additionally, these building blocks have been designed to integrate as much of the existing buildings as possible (0C). The new building block on the far right side will also house one of the three underground parking facilities for commercial vehicles (4B).

The sections on the following pages serve as examples of how the old waterway (street) profiles will be transformed in a more detailed way.

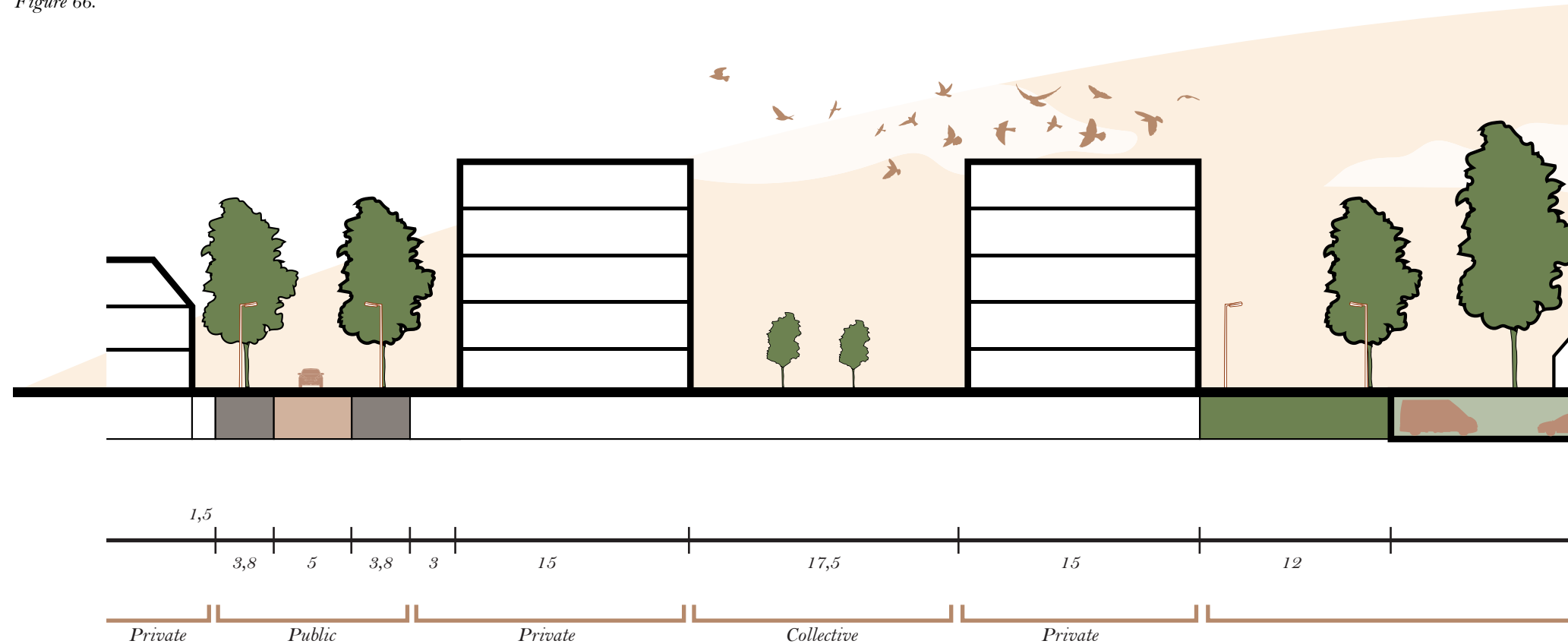
Current

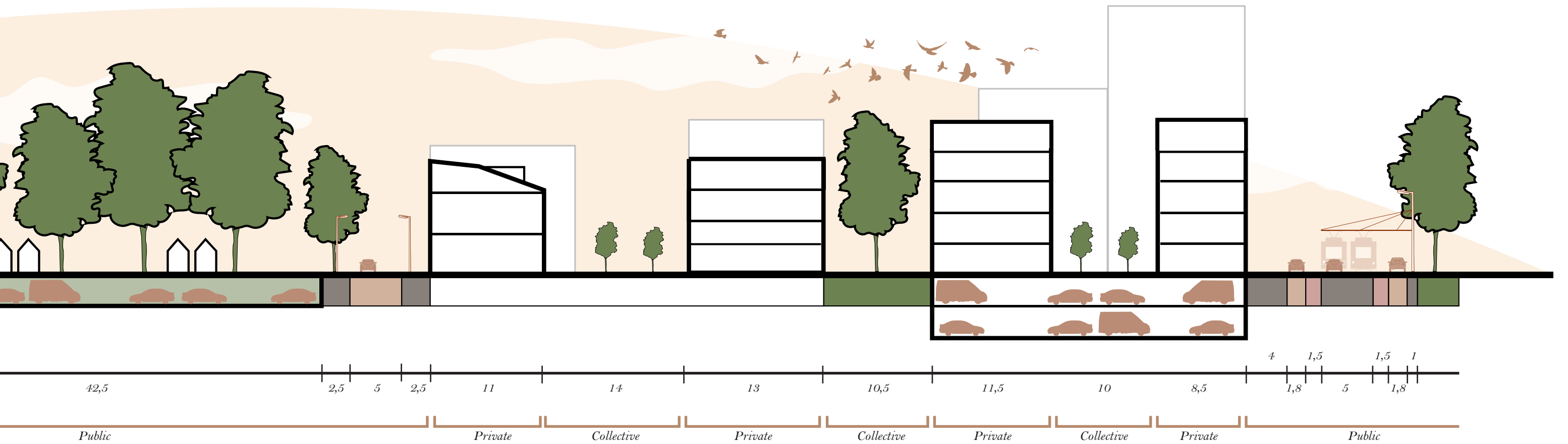
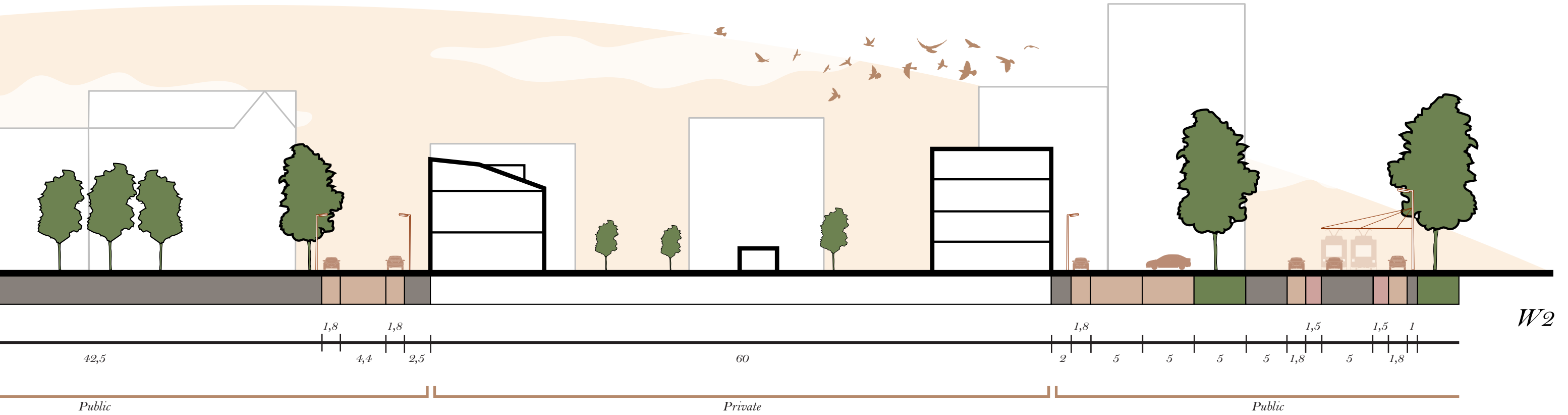
Figure 65.



New

Figure 66.





25m

Isaïc Hubertstraat

The street profile of Isaïc Hubertstraat will be rearranged and transformed into a green image carrier. The parking spots will be removed, and the pedestrian pavements will be widened (0J & 2D). Trees will be added on both sides of the street as part of the image-carrying green network (2A & 2B). In this way, the tree lines will help create more spatial coherence and cool the area (0D).

The street will become one-way for car traffic without distinguishing between car and bicycle lanes (0J, 2D, 4E & 4F). This has been done to ensure that the car feels like a guest in the street profile.

The current kindergarten building will be replaced by a closed building block (3A). The block will have a maximum height of 5 building layers / 16 meters and will house small housing units as well as the old kindergarten (3B, 3H). Both the current and new building blocks will have a small transition zone between the public and private domains, with a small bit of green serving as a separator (0H).

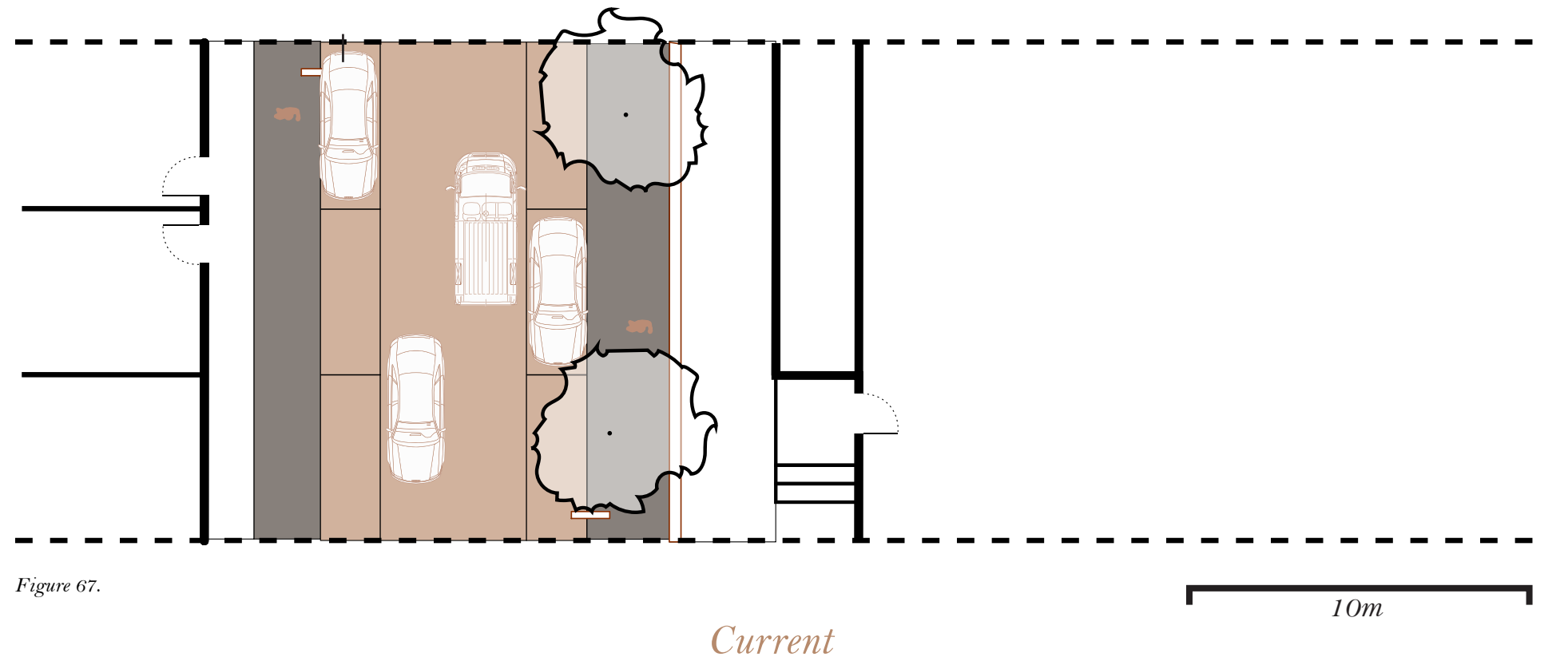
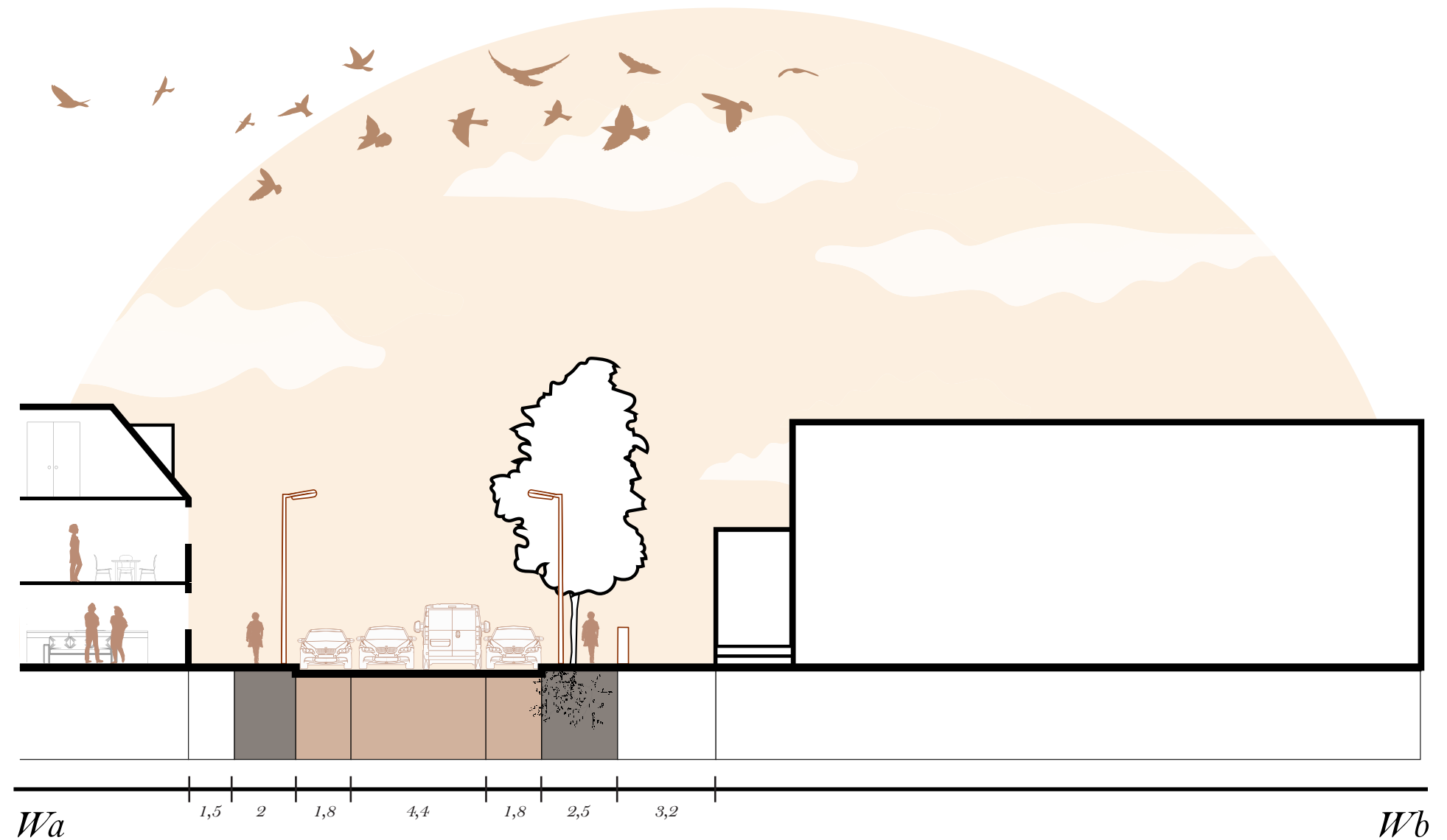
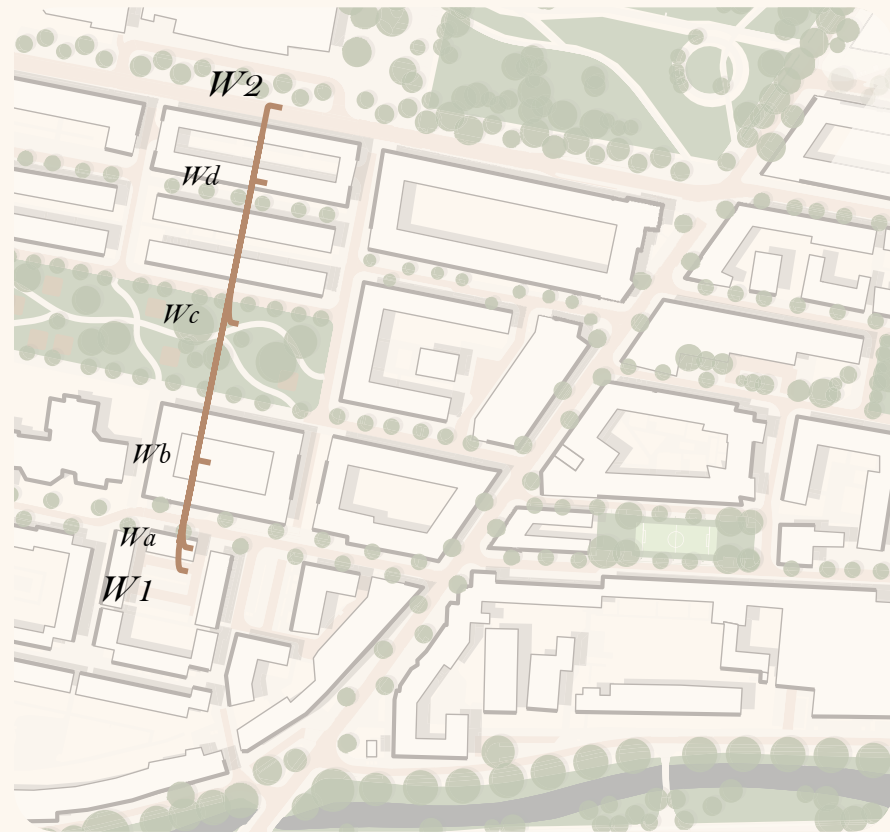


Figure 67.

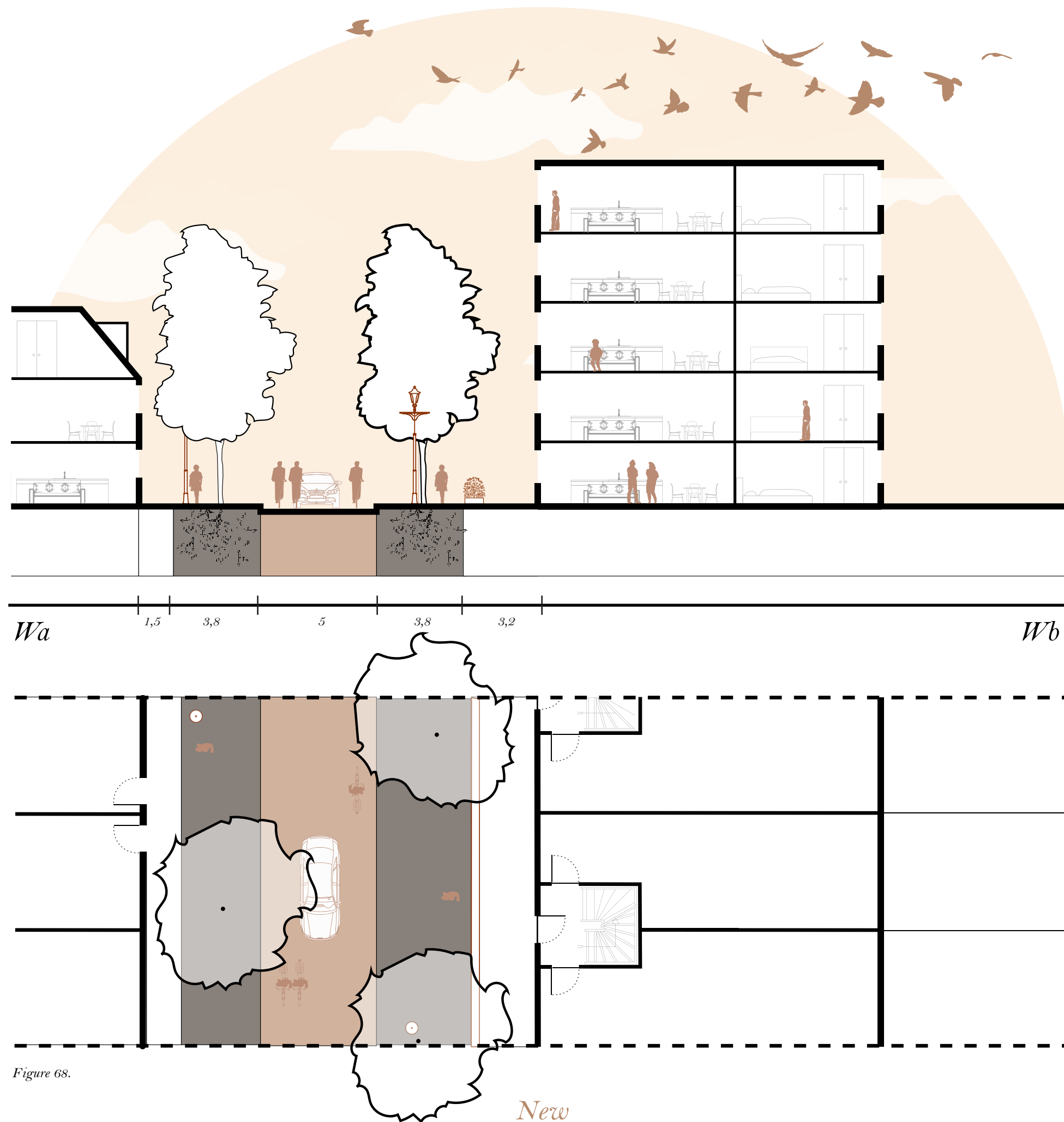


Figure 68.

Frederikstraat

The street profile of Frederikstraat will be rearranged and transformed into a green image carrier. The parking spots will be removed and replaced with pedestrian pavement (0J & 2D). A tree line will be added on the left side of the profile (2A & 2B). In this way, the tree lines will help create more spatial coherence and cool the area (0D). Like the other profiles, Frederikstraat will become one-way for car traffic (0J, 4E & 4F).

The current Marnixplein will be transformed into a large communal garden (0H & 3K). Underneath this garden, one of the three parking facilities for commercial vehicles will be situated (4B).

The parcel and closed building block on the right side of Frederikstraat will be divided into two separate closed building blocks (3A). The new courtyards in these building blocks will be designed as collective spaces (0H). The new open space between the building blocks was originally one of the old waterways and will now be designed as a collective space as well. For this, the front side of the old building block will need to be flipped.

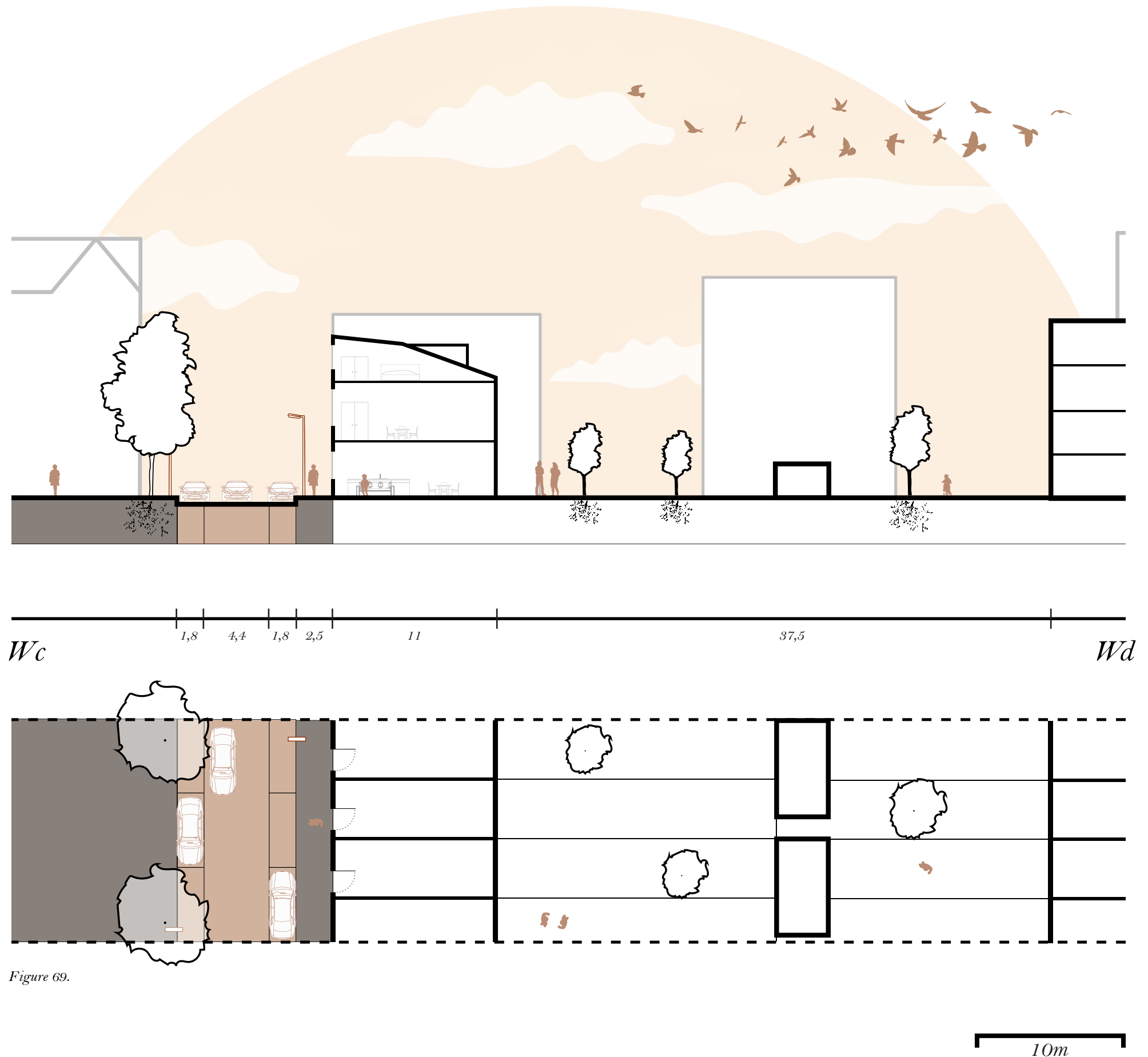


Figure 69.

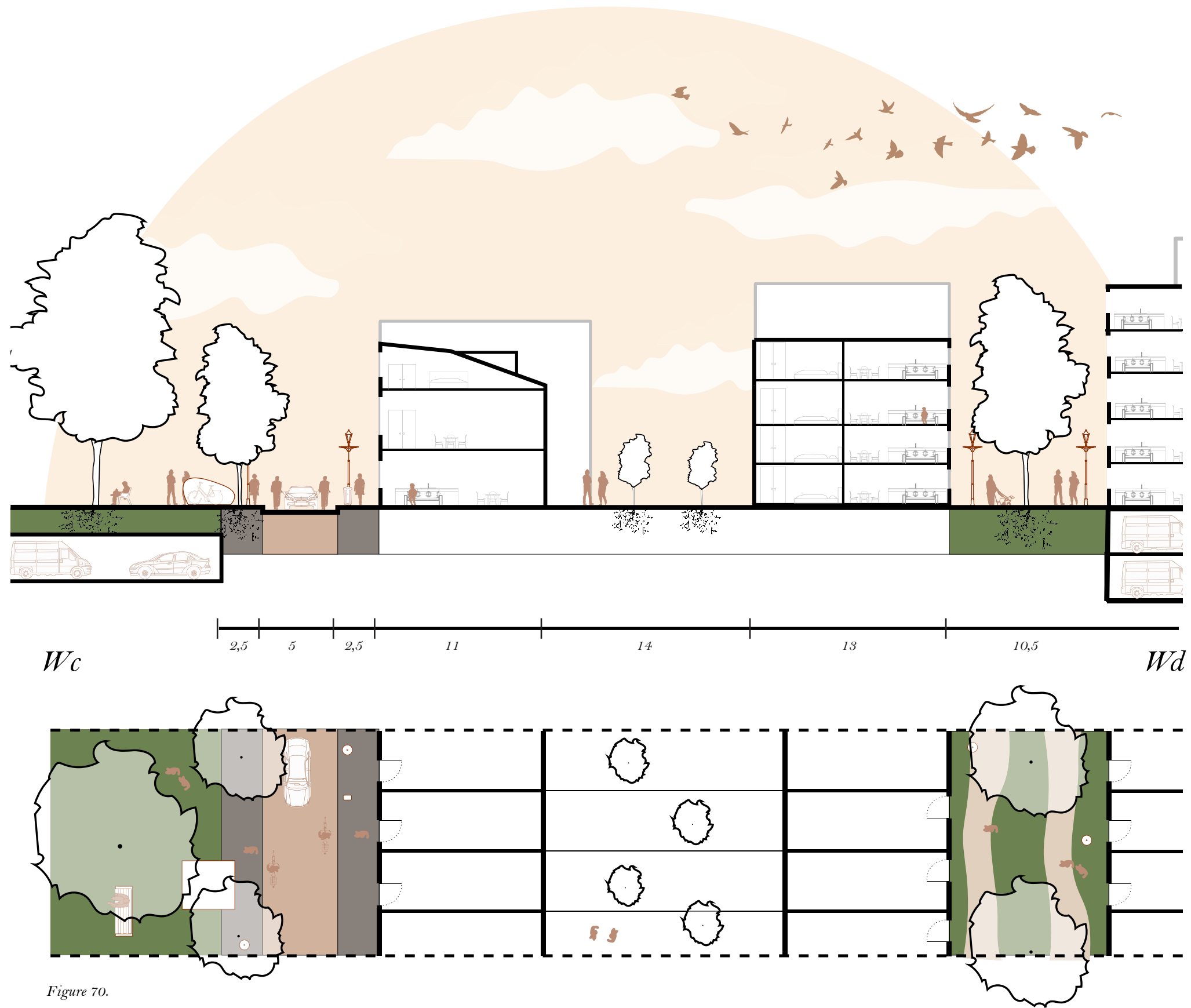


Figure 70.

New

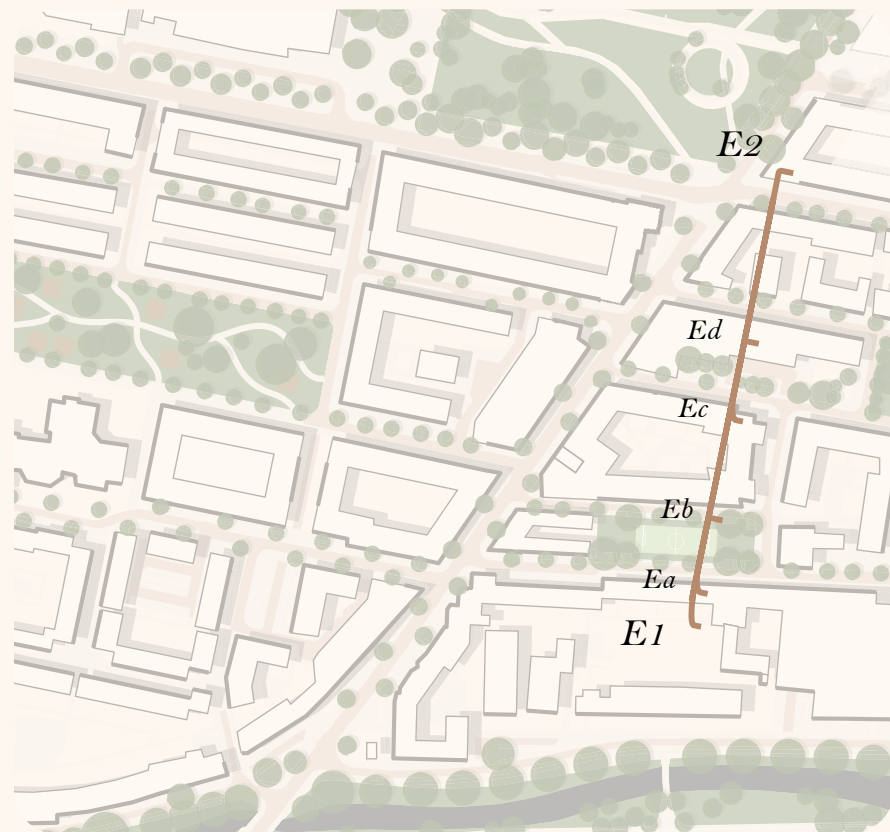
Eastern old waterways

The (street) profiles on the eastern part of the Crooswijkseweg will be transformed into green-image carriers. This transformation concerns the street profiles of Van Meekerenstraat, Pleretstraat, Van Reynstraat, Pootstraat, and Pijperstraat. Together with Crooswijkseweg and the western old waterways, these profiles form the green-image carrying network of Oud Crooswijk (0D, 2A). As mentioned earlier, each profile will now have a distinct character (2B). This will be accomplished by giving each profile its own tree rhythm and/or type.

The most important transformations here are the play area between Van Meekerenstraat and Pleretstraat, and the open space on the backside of the building block between Van Reynstraat and Pootstraat.

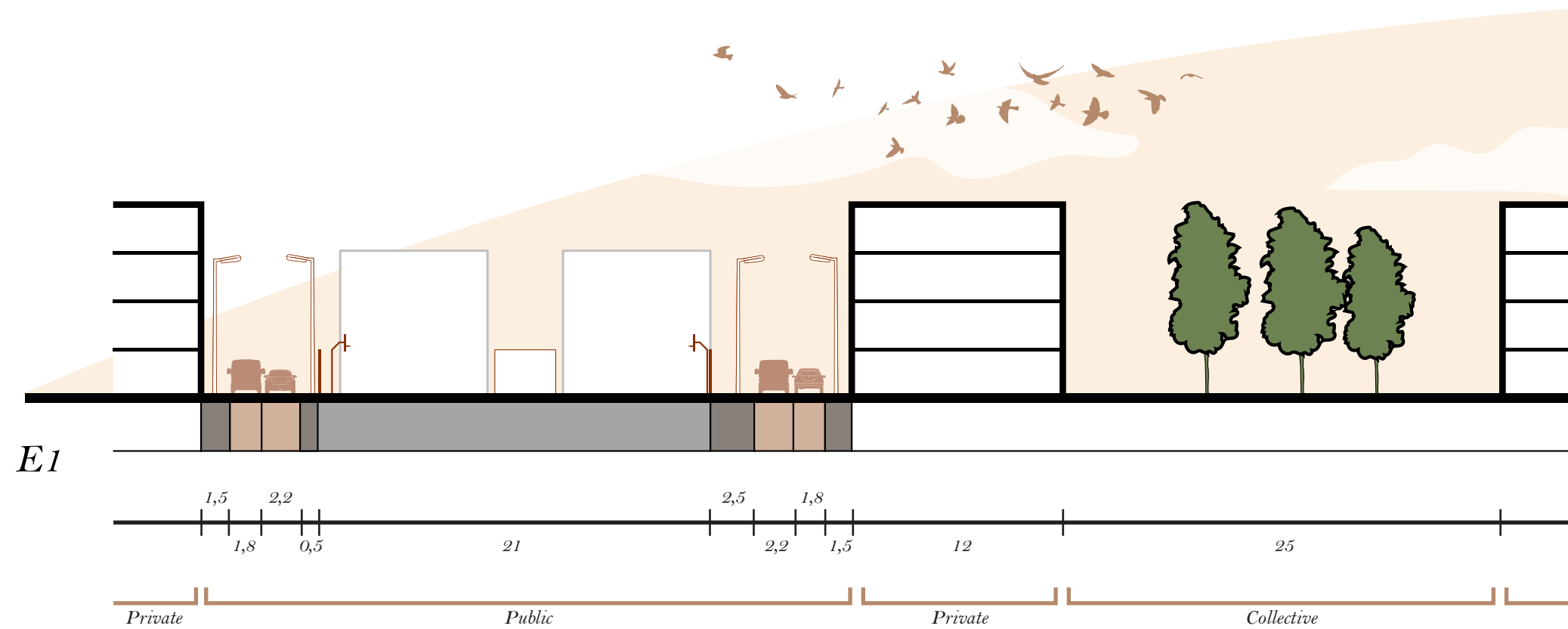
The asphalted play area will be transformed into a green recreational space (0D, 0I & 3K). More greenery will be added to cool the area and serve as a small local park. The same goes for the public parking space behind the building block between Van Reynstraat and Pootstraat.

Just like the western waterways, the sections on the following pages serve as examples of how the old waterway (street) profiles will be transformed in more detail.



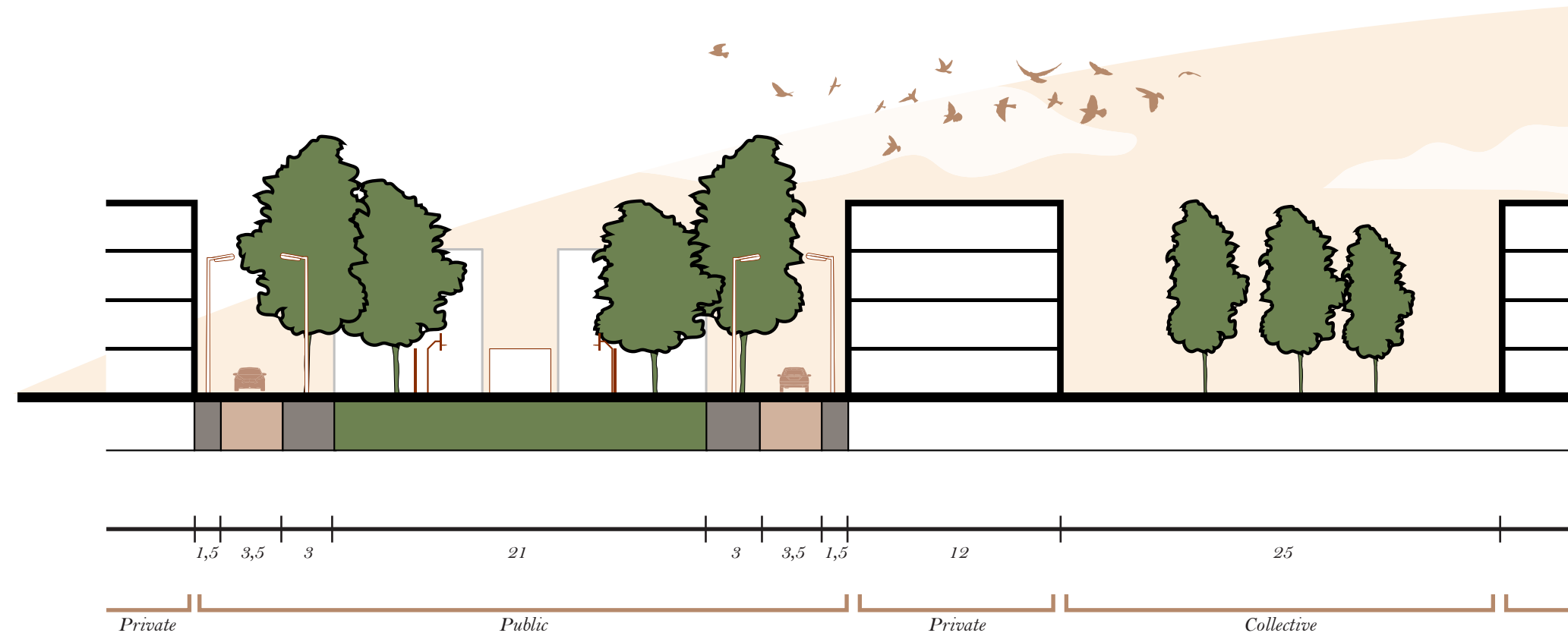
Current

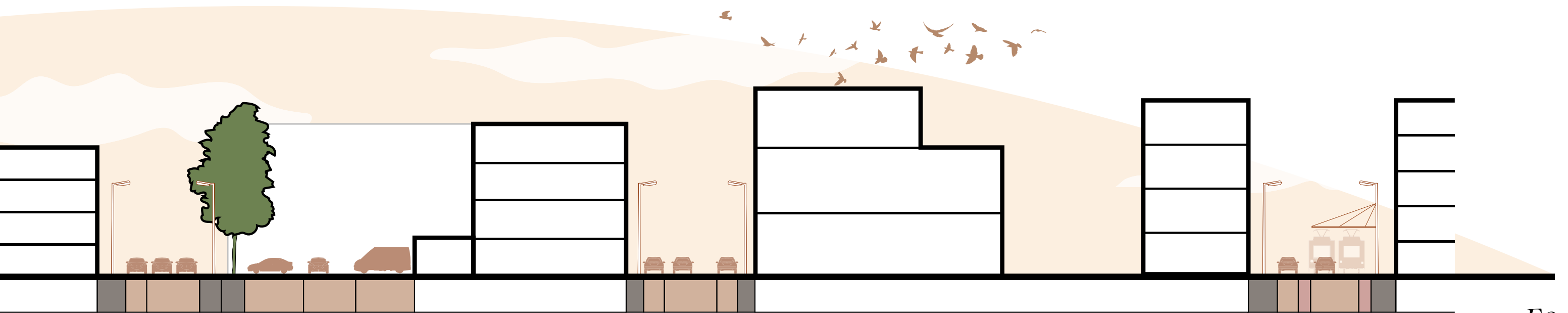
Figure 71.



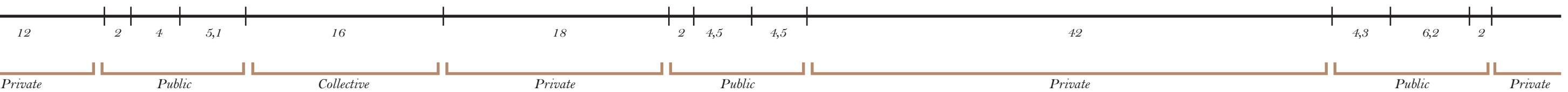
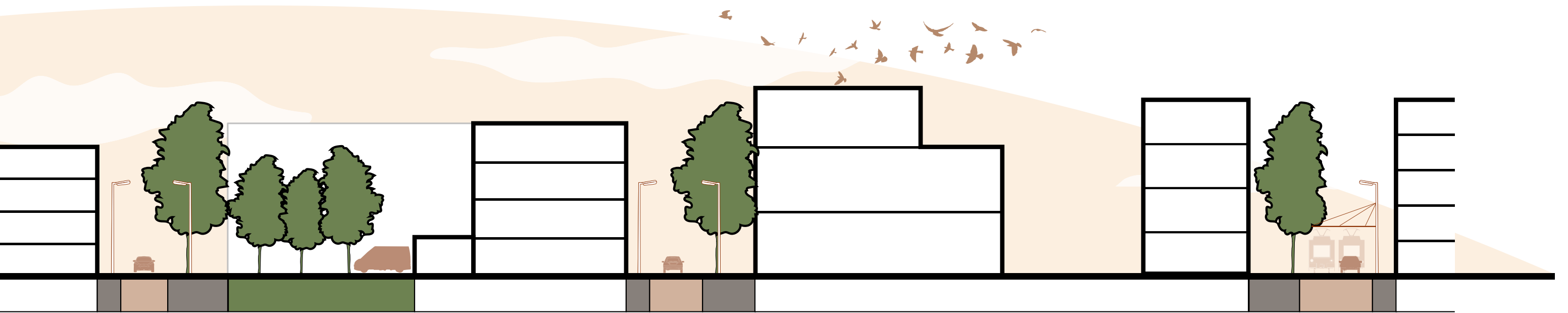
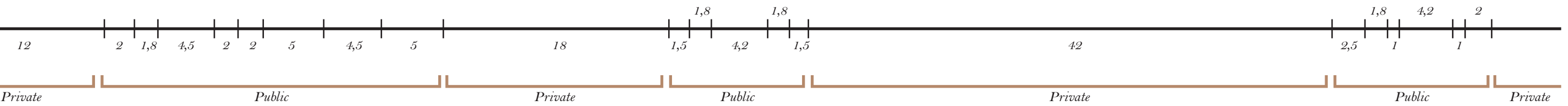
New

Figure 72.





E2



25m

Van Meekerenstraat

The street profile of Van Meekerenstraat will be rearranged and transformed into a green image carrier. The parking spots will be removed and replaced by pedestrian pavements (0I, 0J, 2D & 4A). A tree line will be added on the right side of the profile. In this way, the tree lines will help create more spatial coherence and cool the area (0D, 2A & 2B). Just like the other profiles, Van Meekerenstraat will become one-way for car traffic (0J, 4E & 4F).

The asphalted square will be transformed into a green recreational area (0D & 0H). The sports field will be narrowed to create green buffer zones (0D & 2B). These buffer zones will provide space for more trees, which will help transform the space into a more park-like area (0H & 3K).

The plinth along Van Meekerenstraat will be renovated in order to make the physical appearance of the local workshops more attractive and visible (0C & 5A). Since working in the neighborhood is an important identity-carrier, making these workshops more visibly attractive enhances the integration of "working in the neighborhood" into the urban fabric.

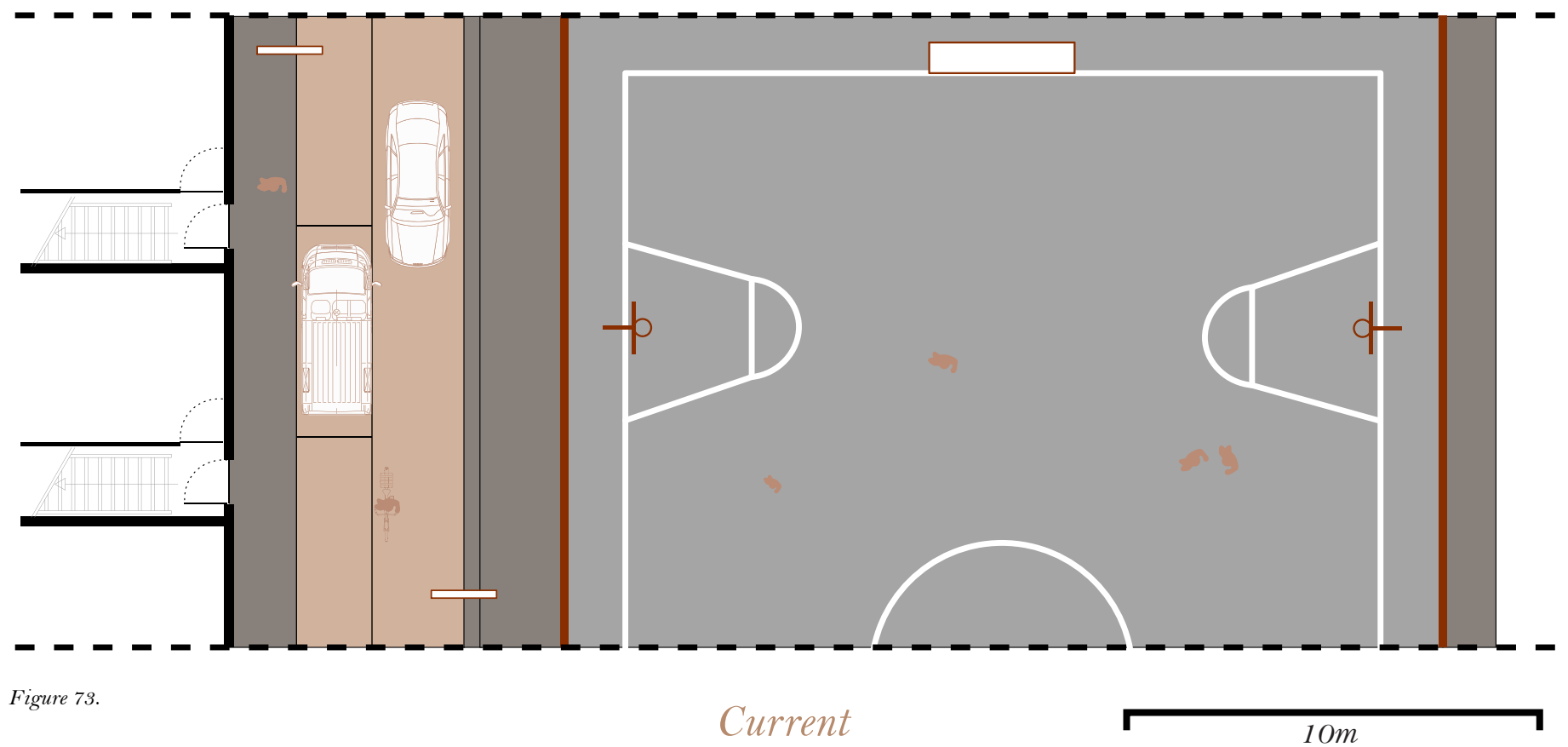
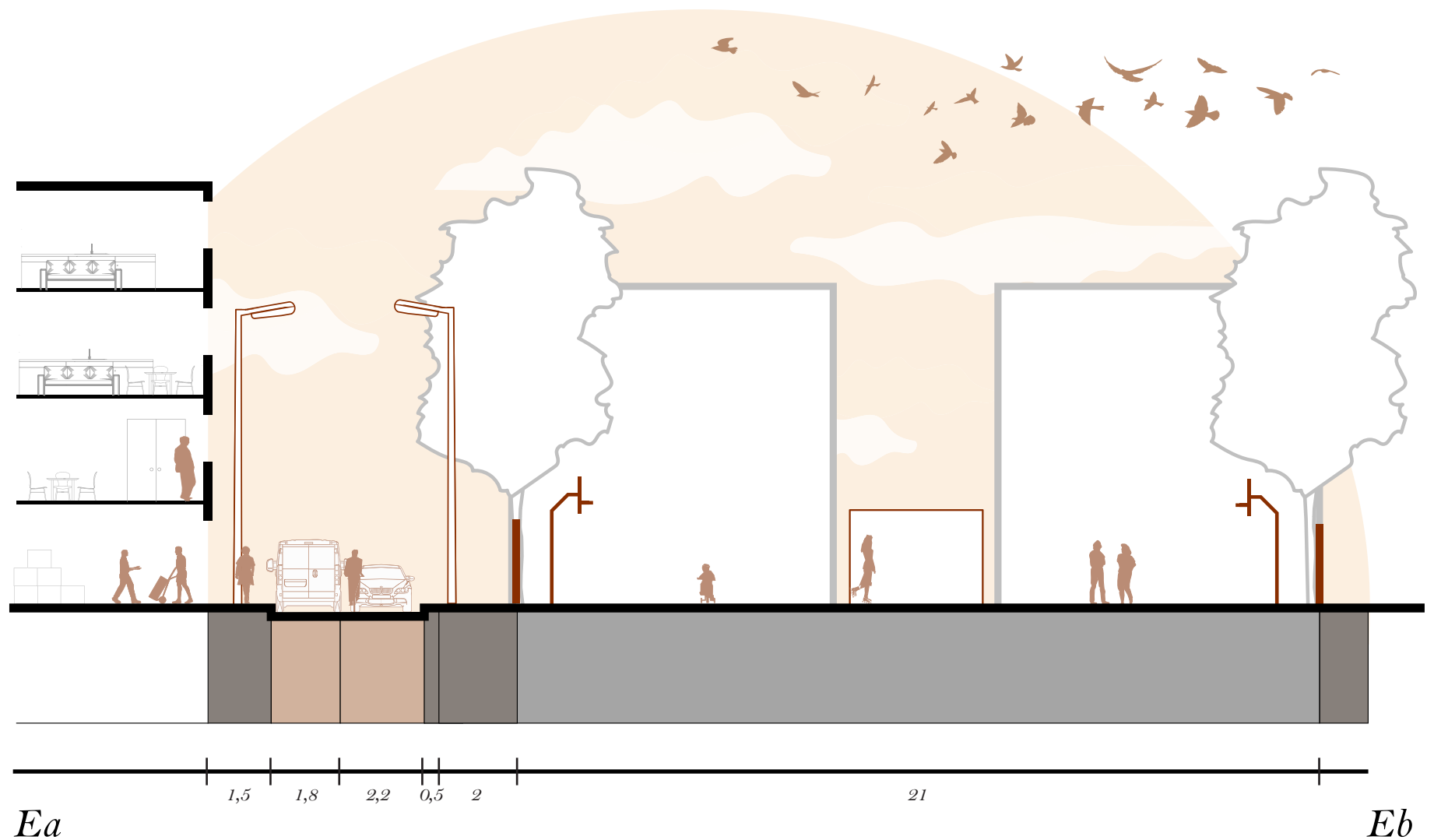


Figure 73.

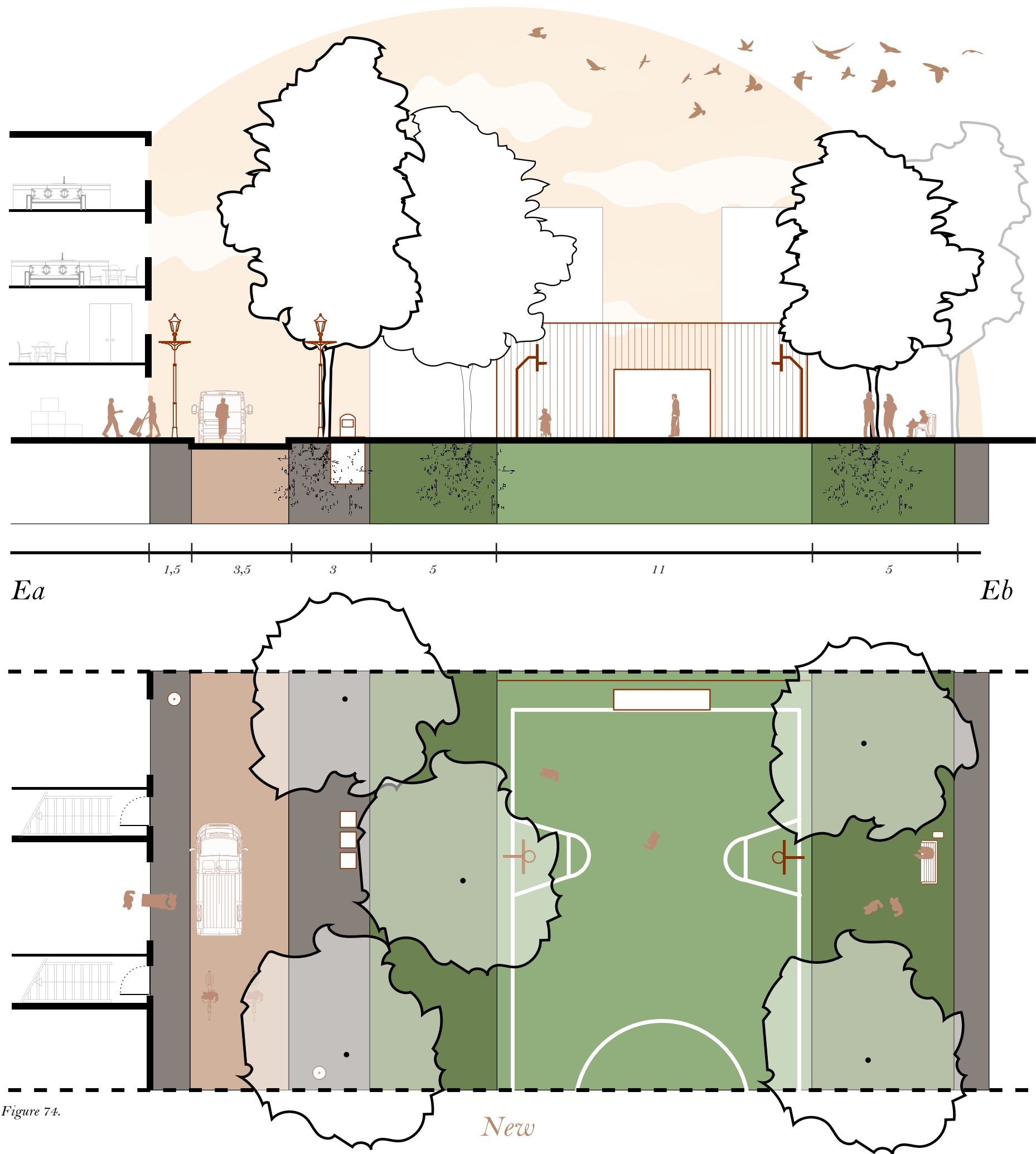


Figure 74.

Van Reynstraat

The street profile of Van Reynstraat will be rearranged and transformed into a green image carrier. The parking spots will be removed and replaced by pedestrian pavements (0J & 4A). A tree line will be added on the right side of the profile. In this way, the tree lines will help create more spatial coherence and cool the area (0D, 2A & 2B). Just like the other profiles, Van Reynstraat will become one-way for car traffic (4E & 4F).

The public parking area on the backside of the building between Van Reynstraat and Pootstraat will be transformed into a collective green area (0H). In this way, more room will be created for trees to help cool the area (0D). Short-stay parking will remain available since the backside of the building is being used by small local workshops.

In this way, these workshops will remain attractive and accessible by cars (4E & 5A).

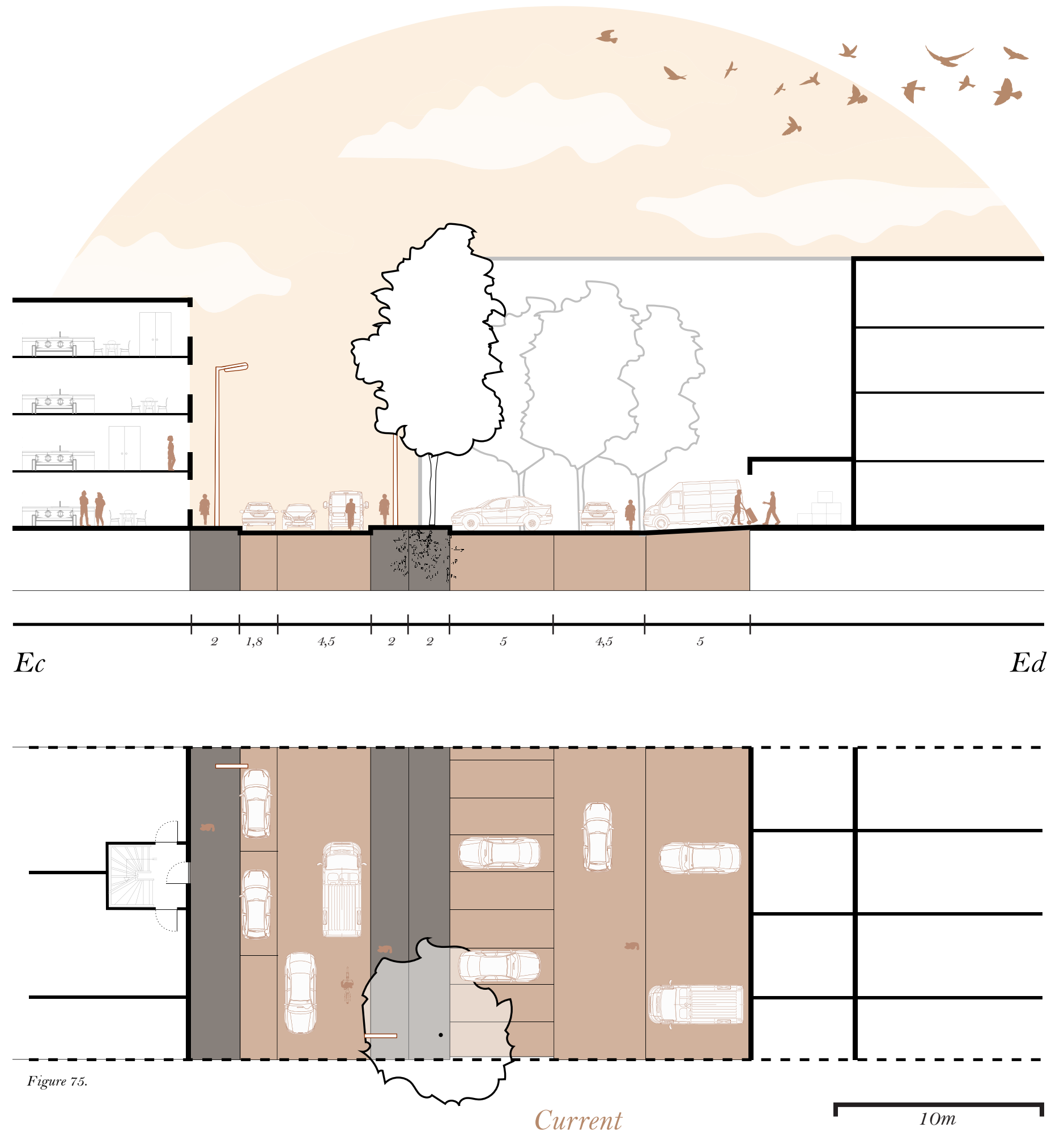


Figure 75.

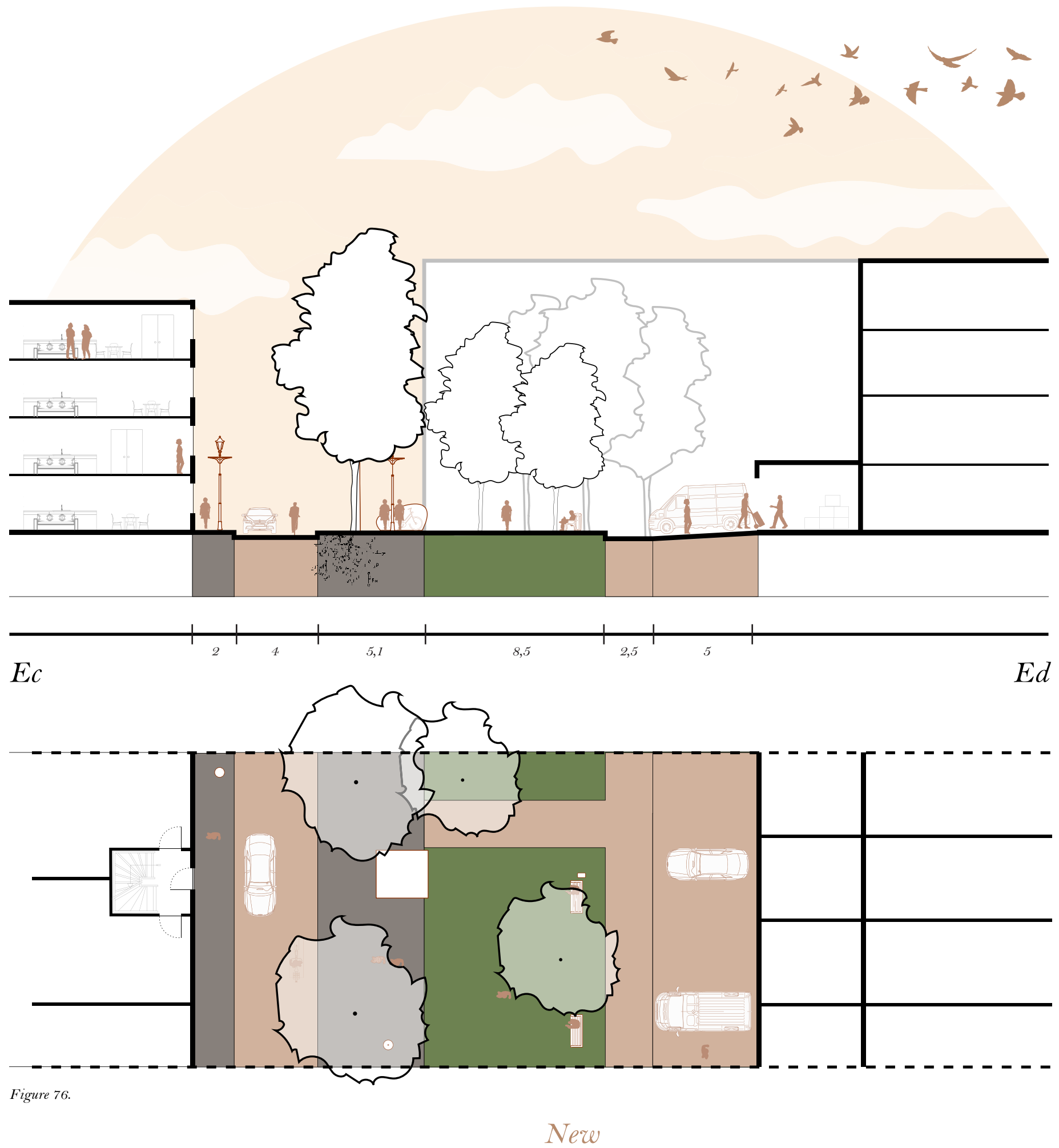


Figure 76.

New

Atmospheric impression Hendrikstraat

Current situation

To create a better understanding of how the proposed interventions could look like over time, the following impressions are made. The first impression shows the the current situation while the following drawings provide insight into what an old waterway could potentially look like in ten years time and also in 25 years.



Figure 77.a Atmospheric impression & principal section



Atmospheric impression Hendrikstraat
In 10 years time

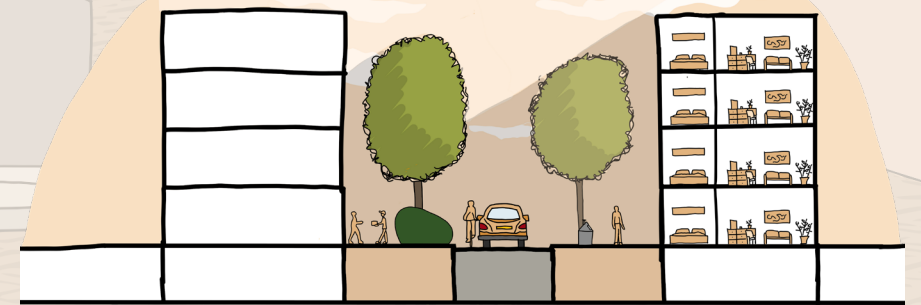


Figure 77.b Atmospheric impression & principal section

Atmospheric impression Hendrikstraat
In 25 years (renovated building block)



Figure 77.c Atmospheric impression & principal section



*Atmospheric impression Hendrikstraat
In 25 years time (new building block)*



Figure 77.d Atmospheric impression & principal section

Development strategy

Stakeholder analysis

In order to ensure the design is executed successfully, a clear understanding is needed of the stakeholders that must be involved. These range from the local inhabitants to the municipality to project developers. The stakeholder matrices on pages 88 and 89 show the stakeholders and how they should be involved in the development strategy. The phasing plan on pages 90 and 91 shows when these stakeholders should be involved and what is required of them.

For example, the inhabitants and local business owners need to be informed and consulted during the further design and development stages. Design firms need to be involved in order to translate the design from an urban scale to an architectural scale. Additionally, private landlords and housing corporations need to be involved to acquire real estate that will undergo large-scale transformations. Private investors and project developers need to be found for the development of the new real estate. As the design progresses, it must be tested to meet certain standards and requirements set by the regional safety council, network managers, and mobility organizations.

Inhabitants

The development directly impacts the inhabitants because it alters their living environment.



Owner's associations

Building blocks sometimes are managed by an association of owners. Renovation or demolition cannot happen without involving them.



Educational institutes

Educational foundations need to be involved in relocating the demolished school(s)



Neighbourhood council

The neighbourhood council consists of inhabitants which oversee and address local issues to a delegate of the municipality.



DCMR

The DCMR is the regional environmental service and has certain regulations and standards that need to be met.



Hoogheemraadschap van Schieland en de Krimpenerwaard

The regional water board has certain regulations and standards that need to be met.



MRDH

More people will likely start to use public transit which will impact on their network. The MRDH oversees the regional public transit network.



RET

More people will likely start to use public transit which will have an impact on their network.



Project developers

Project developers are needed for the execution of the developments in the private domain such as building block and new real-estate.



Design firms

Design firms such as architectural and urbanist firms are needed to further develop the designs.



Stadsherstel Rotterdam

This foundation is committed to preserving cultural heritage. With Crooswijk being an important factor for the DNA of Rotterdam, the foundation could be a valuable partner.



Bewonersgroep Slachthuisterrein

This group organizes walks for elderly people in Oud Crooswijk to combat loneliness. Their knowledge on local needs needs to be taken into account in the redesign.



Natuurstad Rotterdam

This nature organization provides climate awareness through education, recreation and participation. Their role in connecting local residents is of great value.



Schoonmaakbendes Crooswijk

A local initiative that consists of a group of residents that clean and maintain the public space of Crooswijk. Their involvement after completion is of great value.



Stakeholder overview

















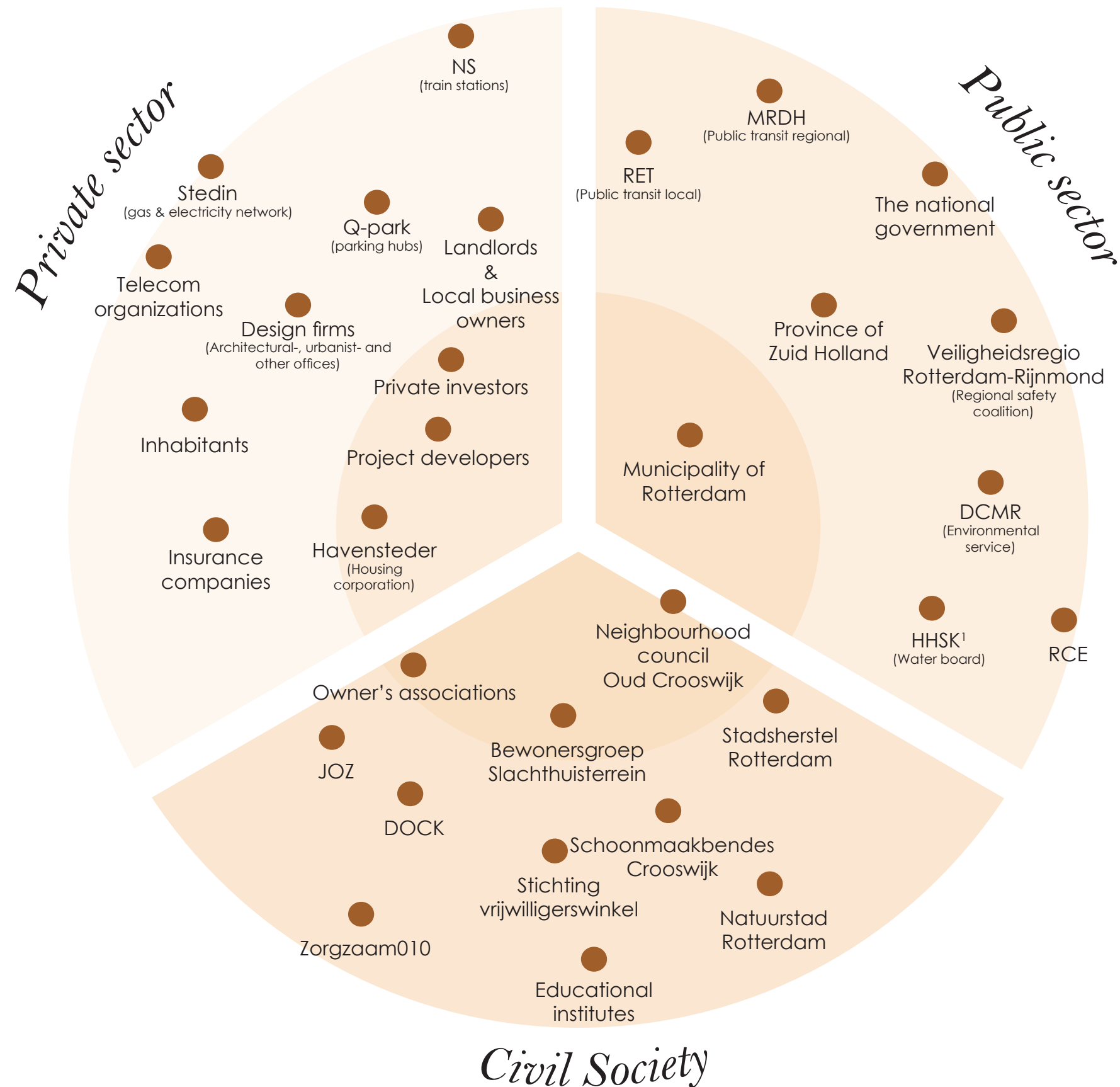
<p>Landlords</p> <p>Landlords own private property which might need to be acquired in order to reach the desired goals.</p>		<p>Local business owners</p> <p>Local business owners own the services and amenities. Revitalizing the Crooswijkseweg therefore requires their involvement.</p>		<p>Havensteder</p> <p>Havensteder is a housing corporation which owns a majority of the real-estate in Oud Crooswijk</p>	
<p>Municipality of Rotterdam</p> <p>The municipality owns most of the public property and will also have a prominent role in the further design stages.</p>		<p>Province of Zuid Holland</p> <p>The Province of Zuid Holland has certain regulations and standards that need to be met.</p>		<p>National government</p> <p>The national government has certain regulations and standards that need to be met.</p>	
<p>Veiligheidsregio Rotterdam-Rijnmond</p> <p>The veiligheidsregio certain safety regulations and standards that need to be met.</p>		<p>Stedin</p> <p>Stedin owns and manages the electricity and gas network. Redesigning street profiles requires coordination with them</p>		<p>Telecom organizations</p> <p>The developments have to be coordinated with the telecom organization that own underground infrastructure in the area.</p>	
<p>NS</p> <p>More people will likely start to use public transit which will impact the local train stations owned by NS.</p>		<p>Q-Park</p> <p>Q-park owns and manages most of the parking hubs on the outskirts of the city.</p>		<p>Private investors</p> <p>Private investors will be needed for the development, transformation and renovation of real-estate.</p>	
<p>Insurance companies</p> <p>Insurance companies are required to financially cover unforeseen circumstances in the development.</p>		<p>RCE</p> <p>The Rijksdienst voor het Cultureel Erfgoed (RCE) can provide further knowledge on how to deal with cultural heritage and how to define it</p>		<p>Stichting Vrijwilligerswinkel Kralingen - Crooswijk</p> <p>This foundation helps to keep elderly people involved in society and can provide valuable insight into the local demands of the public space and programme.</p>	
<p>JOZ Rotterdam</p> <p>A foundation in Rotterdam that provides guidance for vulnerable youth. Their knowledge is of great value to meet local demands of the younger generations.</p>		<p>DOCK Kralingen - Crooswijk</p> <p>A national foundation that provides help in connecting people to create better opportunities and combat loneliness. Their expertise is therefore of great value.</p>		<p>Zorgzaam010</p> <p>A city-wide foundation of volunteers that provide help in everyday chores or someone to talk to..</p>	

Figure 78.

Stakeholder fields

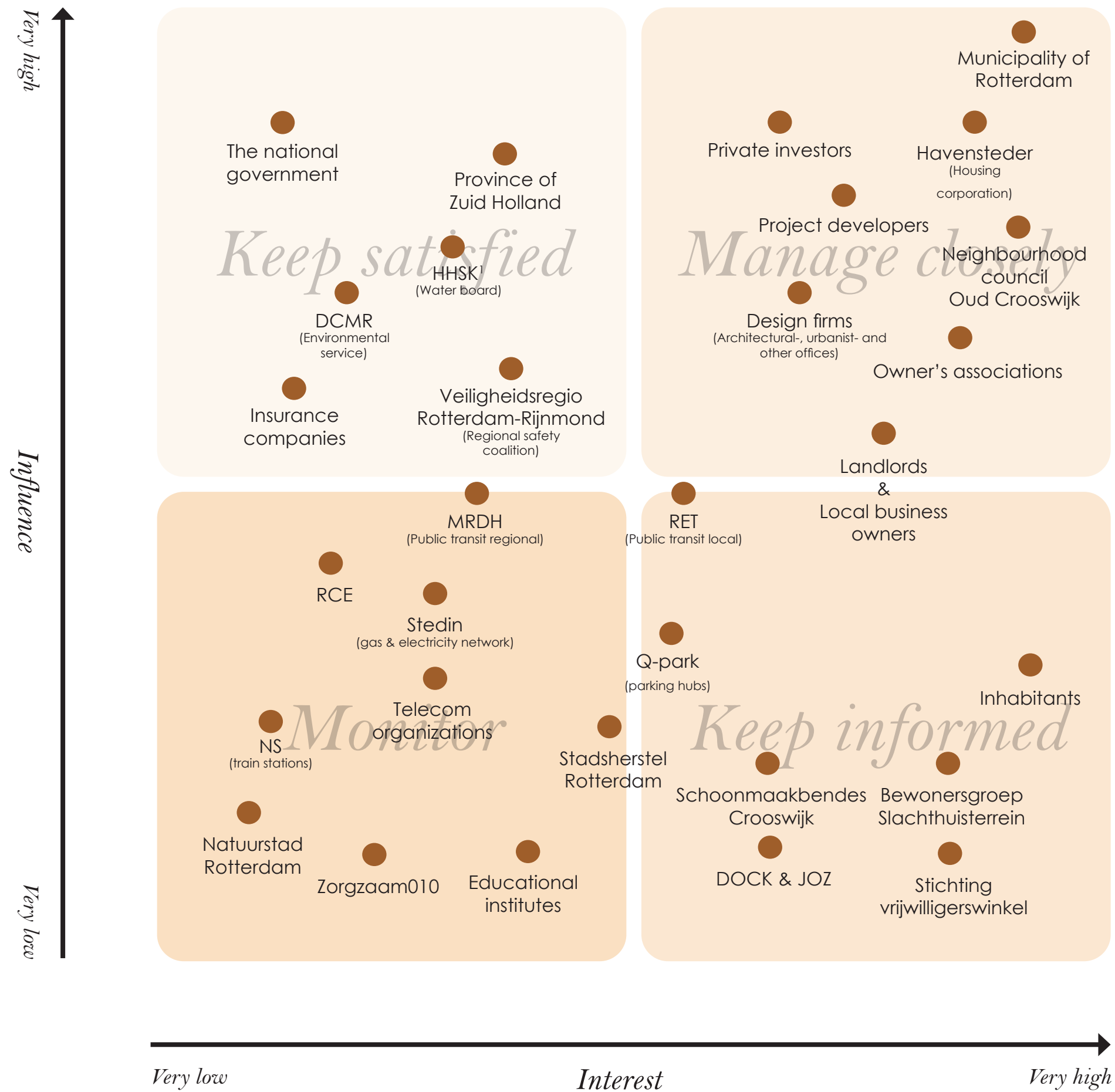
Figure 79.



¹ HHSK: Hoogheemraadschap van Schieland en de Krimpenerwaard

Power - interest matrix

Figure 80.



Phasing

The development strategy presents the ideal scenario and consists of five main phases. For each phase is presented what stakeholders are expected to act and to be involved.

Phase 1. Revitalizing the heart

The first phase will concern the revitalization of the Crooswijkseweg. The Crooswijkseweg is the heart of the area and a reflection of the working-class character. Therefore, starting with this area not only enhances liveability immediately, it also gives a tremendous boost to the character of the neighbourhood.

Phase 2. Enhancing recognition of the working-class character

The second phase starts by reinterpreting the old waterways. The old waterways are one of the original spatial characteristics. Ensuring their recognizability therefore greatly contributes to the character of the neighbourhood. This assignment is too large to carry out all at once however. Therefore, the assignment is broken down into stages from a pragmatic viewpoint. The area on the east side of the Crooswijkseweg will be developed first because of the presence of a available development area that can later serve as overflow area for later development areas. Additionally, the different stages allow for the residents to get used to the idea of the car being phased out of the neighbourhood.

Phase 3. Realization of first new working-class homes

The third phase consists of realization and completion of the first new working-class homes. The developed area will consist of more expensive housing, anticipating on the expectation of the increased income of the working-class. This phase will happen simultaneously with the start of the second stage of the reinterpretation of the old waterways.

Phase 4. Creating a central communal area

The fourth phase focusses on creating a large communal area for Oud Crooswijk. This communal space will help to stimulate interaction in order to contribute to the social cohesion. Simultaneously, stage 3 of the of the reinterpretation of the old waterways is carried out.

Phase 5. Monitoring and anticipating of future needs

the fifth and final stage focusses on the completion of the transformation plan. The maintenance of the public space ideally is done by the cleaning groups of local residents in order to enhance social cohesion. Simultaneously, this stage should focus on monitoring and anticipating on future trends and needs of the working-class.



Phase 1 Revitalizing the heart

The first phase of the development starts with the public space design of the Crooswijkseweg. During this phase, the inhabitants and local business owners will be informed and consulted throughout the further design process. The final design can be made by the municipality or a design firm. During this process, organizations such as Stedin, DCMR, the Waterboard, the Province, Veiligheidsregio, and telecom organizations need to be consulted in order to make the design feasible. Simultaneously, local business owners must be contacted about being bought out or about the transformation of their property.

Phase 2 Enhancing recognition of the working-class character

Phase 2 consists of transforming the first street profiles into green image-carriers. During the planning of the first development location, the empty grounds will be used for a temporary parking lot. This parking lot will provide space for cars that can no longer park on the streets that are being rearranged.

Upon completion of phase 2, the temporary parking lot will be removed. Users of this parking lot will now have to park their cars in one of the parking facilities on the outskirts of the city. The new real estate will offer space for housing, an elementary school, and a permanent underground parking facility for commercial vehicles. The street profiles of the Pijperstraat, Pootstraat, Van Reynstraat, Pleretstraat, and Van Meekerenstraat will have been transformed into green, pedestrian-friendly streets, and the squares will have been transformed into communal gardens.

While phase 2 is in the final stages, the planning for phase 3 will begin. This will involve finding investors and project developers, as well as acquiring real estate and obtaining the necessary permits for demolition.



Phase 3

Realization of first new working-class homes

While the planning of phase 3 has started, the second development location will be demolished and transformed into a temporary parking lot. The people living in the demolished buildings will be relocated to the completed real estate from phase 2.

The first street profiles to be transformed will be the Ru-broekstraat, Hendrikstraat, and Frederikstraat. Before the new real estate is realized, personal vehicles can be parked in the temporary parking lot. Upon completion, phase 3 will deliver # houses, as well as a permanent parking facility for commercial vehicles.

The design of the new real estate will be created by a design firm. The final design of the street profiles will be prepared by the municipality. Just like in the earlier phases, these designs will need to be discussed with governmental and civil societal bodies. The preliminary designs will also be presented and discussed with the local inhabitants.

Similar to the previous phases, the search and acquisition of permits, investors, and developers for the next phase will begin as phase 3 nears completion.

Phase 4

Creating a central communal area

During phase 4, the final street profiles will be transformed to complete the network of green image-carriers. This includes the Hendrik de Keyserstraat, Marnixstraat, and Isaäc Hubertstraat. The site of the demolished real estate will once again provide space for a temporary parking lot. Residents from the demolished buildings will be relocated to the new real estate delivered in phase 2.

During the realization of phase 3, the Marnix and Frederik squares will be integrated into a large community garden. Additionally, one of the existing building blocks along the Crooswijkseweg will be transformed and divided into two, creating space for # houses and a new kindergarten. Finally, the community garden will contain the last underground parking facility for commercial vehicles, completing the process of phasing out personal vehicles.

Phase 5

Monitoring and anticipating on future needs

The final phase consists of the completion of the development and ongoing maintenance. The housing in the newly developed real estate will first be offered to local residents. If any housing remains, it will then be offered to people from outside of Crooswijk.

The municipality will be responsible for maintaining the public green spaces within the image-carriers. The community gardens will be maintained jointly by the municipality (e.g., large trees) and local residents (Schoonmaakbendes). Requiring residents to take responsibility for minor maintenance tasks is intended to strengthen the sense of community in the neighbourhood.

To monitor and anticipate on future needs, regular contact will be required with the wellbeing foundations JOZ, Dock, the Bewonersgroep Slachthuisterrein and the neighbourhood council. These parties are closest to reality and can provide the best information on the desires and demands of the neighbourhood.

Integration on the larger scale

Oud Crooswijk within the urban fabric of Rotterdam

Oud Crooswijk will become its own entity within the larger urban fabric of the city. The structures such as the Rotte, Boezemstraat and Crooswijkse-/Boezemsingel serve as the physical borders of the neighbourhood.

The Rotte waterfront

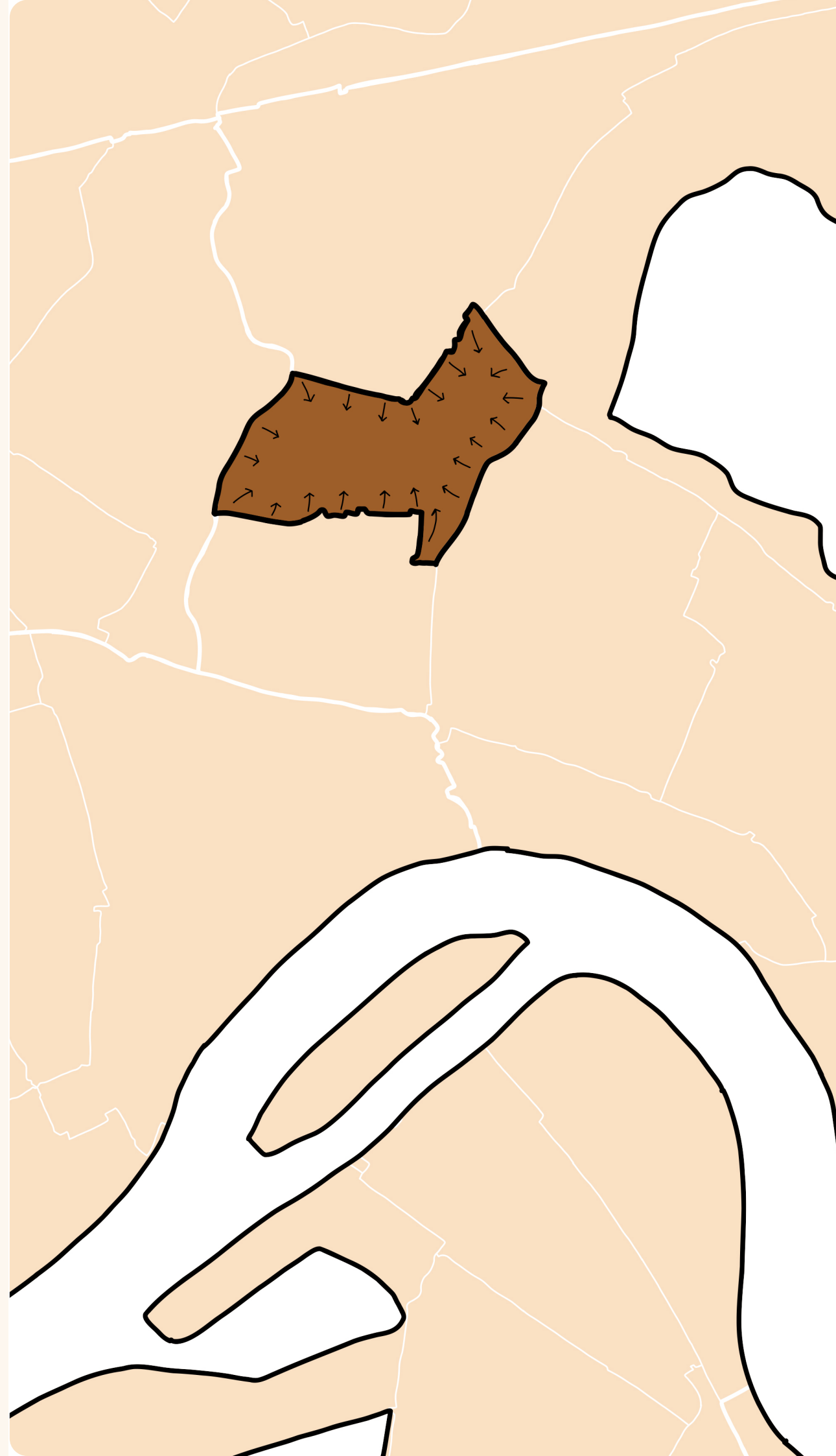
The waterfront of the Rotte will maintain its quiet and peaceful character. To enhance the recreational value of the waterfronts it is recommended to create more programme along the river that creates interaction between the water and the shores. This requires a more integral approach of the entire inner-city Rotte structure. Therefore, in this thesis, the emphasis is only on preserving the current structure.

The singelstructures

The Crooswijkse- and Boezemsingel are part of the Waterproject which was designed by city architect Rose in the late 1800s. The structure has strong recreational value and together with the other singels of the Waterproject, their physical appearance are protected cityscape (Beschermd stadsgezicht). Therefore, to maintain the qualities of the singels, the Crooswijkse- and Boezemsingel will be preserved as they are.

The Boezemstraat

The Boezemstraat is an important axis that connects car-traffic from the eastern part of the inner-city to the freeway. The current layout however is unsafe, unpleasant and largely paved. However, addressing these issues influences networks on the city scale. Therefore, a further study into the future purpose of the Boezemstraat is recommended.



The Rotte passing Oud Crooswijk



The Crooswijkse singel



The Boezemstraat

Figure 83.a Oud Crooswijk as its own entity within the city of Rotterdam



Freeway A20

Rotte

Boezemstraat

Crooswijksesingel & Boezemsingel

Hofplein

Rotterdam Centre

Erasmusbrug



0,5 Km

Integration on the larger scale

Parking hubs on the outskirts of the city

As stated earlier, parked personal vehicles will be phased out of Oud Crooswijk. In order to accomplish this, people will be able to park their vehicles in collective parking facilities on the outskirts of Rotterdam. There are currently several existing parking facilities. However, the expectation is that the municipality wants to decrease the car presence in other neighbourhoods as well. In order to offer parking space, more parking hubs are required. Figure 83.c proposes several new potential parking facilities (4A, 4D & 4E).

In addition to this, it is important that these parking hubs, as well as regional public transit is well accessible for the people of Oud Crooswijk. In general the public transit accessibility of the area is good. However, there is still potential to improve this network in order to enhance the accessibility of Oud Crooswijk.

- Road
- Train
- Metro
- Tram
- Potential tram connection
- Train station
- Subway station
- Tram stop
- Parking hub
- Potential parking hub
- 1 Km radius

Figure 83.c

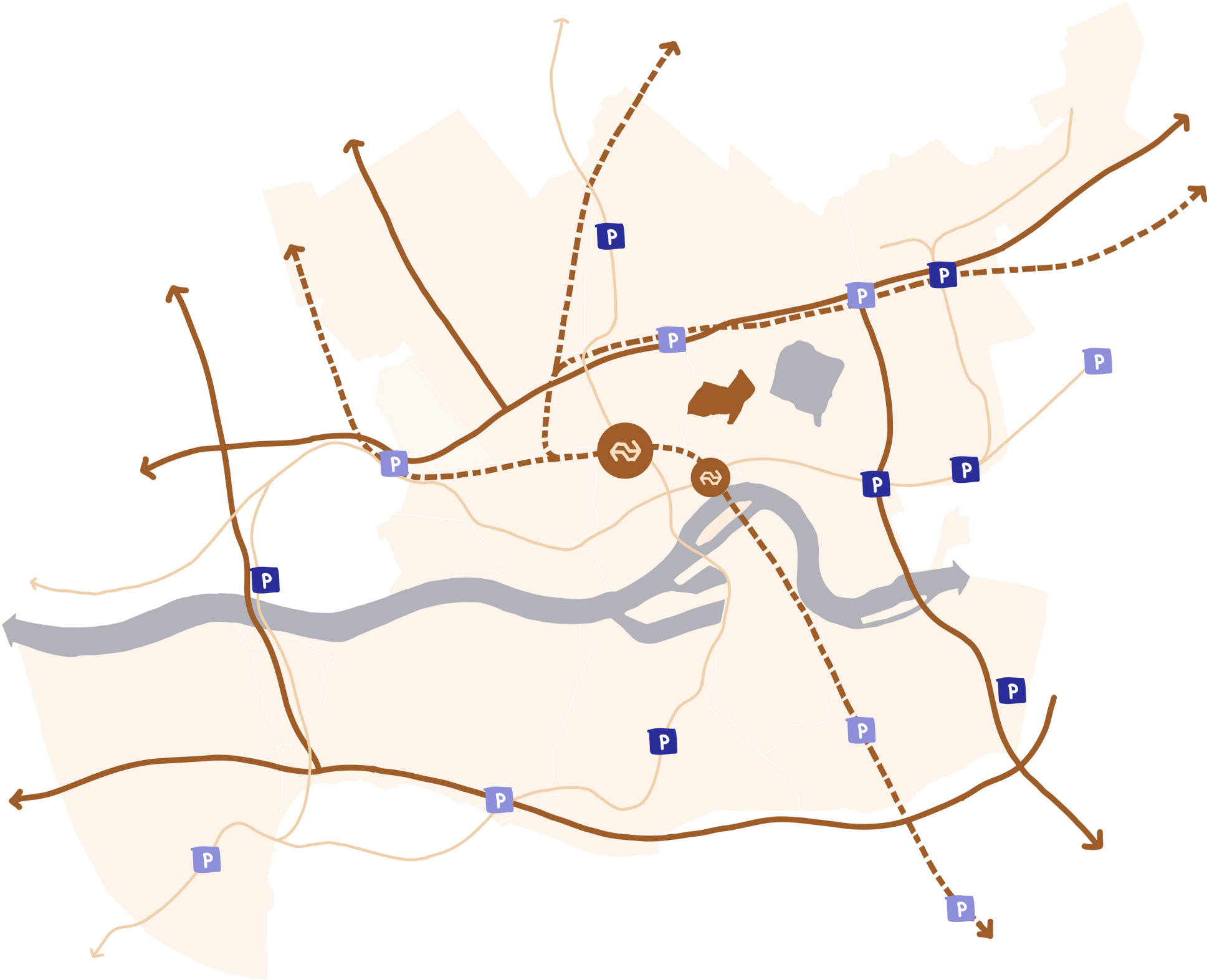


Figure 83.d



Risk assesment

The proposed strategy represents an ideal scenario. However, it includes several risks that may lead to dilemmas requiring proactive attention and mitigation to strengthen the robustness of the transformation plan. The risk assesment below aims to reduce the process and project delays by addressing and anticipating on potential risks.

Process

P1. Financial Feasibility of the Parking Strategy

There is a considerable risk that the proposed strategy of developing underground parking facilities may prove financially unfeasible. To enhance feasibility, the construction of larger housing units could be considered. Revenue generated from these developments could contribute to financing the underground garages. However, this approach presents a dilemma: maintaining the existing urban density would require reducing the number of replacement housing units. Conversely, compensating for all demolished units would necessitate increasing urban density, potentially compromising the working-class character of the neighborhood.

P2. Misalignment with Municipal Parking Vision

Another risk is that the parking strategy may not align with the municipality's current vision. The strategy relies on clustering parking facilities at the city's periphery. Should this prove unfeasible, alternative parking solutions must be explored, including options within the neighborhood itself. This introduces difficult choices: on-street parking would reduce livability and spatial quality, while parking on private parcels would likely compromise shared courtyards—an important element of social cohesion. Increasing the number of underground garages is another option, though it would involve higher costs and financial risk as described above.

P3. Non-Alignment with Broader Municipal Policies

Beyond parking, there is a risk that the overall transformation plan may not correspond with existing municipal policies or long-term urban visions. It is essential to identify and address such inconsistencies early in the process to avoid procedural delays.

P4. Process Delay

The overall process is vulnerable to significant delays. Each of the risks outlined above has the potential to impede progress. Furthermore, it is likely that additional risks have not yet been identified. As such, this risk assessment should be reviewed and updated regularly throughout the devel-

opment process to minimize delays as effectively as possible.

P5. Yet to be discovered risks and uncertainties

There is still an unknown number of risks and uncertainties that are not incorporated into this assesment. Therefore, it is important to keep assessing the risks over the course of the entire process in order to anticipate as well as possible on potential new risks.

Design

D1. Non-Functional Pavement Material

While the proposed pavement materials contribute to the historical ambiance of the neighborhood, they may not be optimal for cyclists. Although the intention is to enhance the experience for cyclists and pedestrians, the chosen materials may discourage use, presenting a dilemma. A more functional material could improve usability but detract from the neighborhood's character. Conversely, retaining less functional materials could lead to increased car usage, negatively affecting livability.

D2. Insufficient Greenery

Due to narrow street profiles, there is limited space for planting trees. Attempting to place two trees per section may result in stunted growth, thus limiting their potential to serve as meaningful green identity markers. As a result, the intended visual and environmental benefits may not be fully realized.

D3. Obstruction of Daylight

While the addition of trees would enhance the visual and experiential quality of the streets, the narrow profiles could result in reduced daylight access to adjacent apartments. This may generate further resistance from residents.

D4. Bird Nuisance

In addition to obstructing daylight, trees may attract birds, which could diminish the quality of public spaces through droppings on benches and street furniture. One possible solution is to reduce the number of benches; however, this would compromise the vibrancy and usability of these communal areas.

D5. Buildings lose their character after renovation

If the renovation of the buildings does not occur according to the appropriate welfare principles (Welstandsnota), the threat looms the new buildings do not fit the working-class character anymore.

D6. Nuisance in Public Spaces

The creation of high-quality public spaces could inadvertently attract loitering youth, potentially deterring other users. However, designing spaces to discourage lingering would contradict their intended purpose as welcoming communal areas.

Societal

S1. Community Resistance

There is a potential for community resistance to elements of the transformation plan, particularly the complete removal of private vehicles. This issue is likely to be a sensitive topic among residents and should be addressed through careful engagement.

S2. Retail Vacancy

The rise of online shopping poses a threat to local businesses, increasing the risk of vacant retail spaces along Crooswijkseweg or a monotonous range of amenities. Converting these spaces into housing is a potential solution, but it may reduce the street's vibrancy and its function as a lively, mixed-use environment.

Maintainance

M1. Illegal Parking

With the strategy to phase out commercial vehicles, there is a risk that cars will be parked illegally on pedestrian pathways. Spatial interventions are necessary to prevent this, though these could also act as visual barriers that detract from the streetscape's aesthetic and spatial quality.

M2. Inadequate Law Enforcement

Proper law enforcement is essential to address issues such as loitering and illegal parking. However, excessive enforcement may create a perception of insecurity. Striking the right balance is therefore crucial.

M3. Neglect of Public Space

Post-completion, there is a risk that public spaces will not be adequately maintained, leading to neglect and a decline in their value as social meeting places. While the municipality could assume full responsibility for maintenance, involving local residents could foster social cohesion. Initiatives like De Schoonmaakbendes play an important role in this regard.

Risk assesment matrix

Figure 83.



*Linking the design
back to research
Conclusions*

10



The Rotte from the perspective of the Linker Rottekade

Introduction

This chapter serves as the translation of the design back into research. It does so by answering the research questions stated in Chapter 3, drawing on the findings from both the research and design presented in Chapters 4 through 8. The chapter begins with an overview of the conclusions for the sub-questions. These conclusions are then bundled to form a comprehensive answer to the main research question. The chapter concludes by providing practical recommendations based on the conclusions in order to translate the transformation plan to practice.

Conclusions & Recommendations

1. What is the urban renewal assignment of Oud Crooswijk?

Creating a coherent and sustainable urban fabric, designed from the public space perspective. The focus of this design should be to improve the liveability, safety and sustainability of the neighbourhood.

2. What defines the modern-day working-class character of Oud Crooswijk?

The working-class character of Oud Crooswijk can be defined from 3 perspectives (scientific, social and spatial).

Scientific definition

- Poverty
- Limited access to goods and technology
- Social housing
- Manual labour

Social definition

Definition of how local inhabitants identify and experience the neighbourhood's identity. Some of the most capturing definitions included (1) 'it's people' (2) 'a strong unity' (3) 'It's own little world' and (4) 'a strong social cohesion and sense of community.'

Spatial definition

The tangible characterizing elements and remnants that have derived from the industrial history of a neighbourhood.

The design has aimed to incorporate aspects of all 3 definitions. Due to the spatial context of this thesis however, the design emphasizes on the spatial definition.

3. What are the spatial identity carrying-elements of the neighbourhood?

Oud Crooswijk knows twelve spatial elements that currently carry the working-class character of the neighbourhood. The most important elements are the original spatial characteristics on which the neighbourhood was first developed. This includes the old waterway parcellation, compact public space and closed building blocks. The urban density could be added to this. The limited public space is compensated by the presence of public and collective squares and courtyards. The closed building blocks primarily consist of social housing and are marked by tenement-style entrances.

Additionally, Oud Crooswijk features historic and monumental buildings such as the Heineken ensemble, the old Heineken office, the terraced houses along the Crooswijkse singel, and the former furniture factory on the Hendrik de Keyserstraat. The Crooswijkseweg has the character of a cozy neighborhood street, further distinguished by its uniquely shaped corners.

The neighborhood is also defined by various workplaces scattered throughout, which has contributed to a strong car presence, as many residents depend on cars for their work.

Finally, the surrounding green structures—such as the Rotte River, Schuttersveld, and the Crooswijkse- and Boezemsingel—serve to separate Oud Crooswijk from the broader urban fabric of Rotterdam, giving the neighborhood a distinct identity within the city.

4. How to embed the spatial identity-carrying elements into the urban fabric?

To ensure that the spatial identity-carrying elements are embedded into the urban fabric, the design has to integrate the current identity-carriers, as well as anticipating on potential identity-carrying elements in the future. In the case of the design of this thesis, this has resulted in a reinterpretation of the traditional working-class neighbourhood.

This reinterpretation started with a design vision and was then translated into a set of design principles. These design principles serve as the bridge between the abstract vision and the tangible design.

Subsequently, these principles can be applied to develop a design. The design not only functions as the final product but also as a testing tool to refine and sharpen the design principles. The aim of the principles is to establish a framework that:

1. Ensures the desired outcome is achieved—namely, embedding the identity-carrying elements into the urban fabric and thereby preserving the working-class character;
2. While allowing sufficient freedom for the designer (architect, urbanist, landscape architect, etc.) to develop their own creative interpretation.

Final conclusion

“How to renew the urban fabric of Oud Crooswijk and reinterpret it's working-class character?”

To renew the urban fabric of Oud Crooswijk and reinterpret the concept of a traditional working-class neighbourhood requires a comprehensive redesign. The design has to address both the urban renewal goal, as well as the identity goal.

To meet the urban renewal goal, the design should result in a coherent and sustainable urban structure, developed from a public space perspective. Its primary aim should be to enhance the neighbourhood's liveability, safety, and environmental sustainability. In the case of Oud Crooswijk, the key priorities include revitalizing the Crooswijkseweg, improving spatial coherence, reducing heat stress, and raising the sustainability ratings of the housing stock.

To meet the identity goal, the redesign has to integrate the current spatial-identity-carriers as well as anticipating on potential new ones in the future. In order to achieve this, the design should incorporate two main aspects.

1. Keeping the physical appearance recognizable

The working-class character is deemed recognizable, if after renewal, the original spatial characteristics are still identifiable. In the case of Oud Crooswijk these characteristics consist of:

- A compact public space
- Closed building blocks
- Old waterway-/street parcellation
- Streets as the image carriers of the public space (Gemeente Rotterdam, 2012)

Like many other working-class neighbourhoods, Oud Crooswijk was a non-planned expansion neighbourhood. The characteristics mentioned above, are typical to such neighbourhoods. Because many working-class neighbourhoods were developed this way, these spatial characteristics are typical for working-class neighbourhoods and their (spatial) character.

2. Keeping the neighbourhood accessible for it's current inhabitants.

To ensure that the neighbourhood remains accessible for it's current inhabitants, it is important that the redesign

creates conditions that are tailored to the specific needs of the current residents, but also anticipates on their potential future needs. The residents are a vital element in the working-class character of Oud Crooswijk. Therefore, allowing them to stay in the neighbourhood is of the essence.

To create these conditions, the redesign should facilitate in important aspects such as specific programme (local hardware store, small warehouse, cafe, grocery store), affordable (small) housing, car-accessibility and improved liveability by reducing heat stress and adding green.

How to achieve this?

To create this redesign, the design has to start with a concept or vision. This tackles the urban renewal assignment and embeds the identity-carrying elements into the urban fabric. To translate this vision to a design, design principles have to be set up. These principles will be used and applied to create the actual design.

The design does not only serves as the final product, but also as a testing tool in order to sharpen the design principles. The objective of the principles is that they create a framework. The framework should ensure that:

1. It leads to the desired outcome (integration of- and anticipation on the identity-carrying elements of the urban fabric and thus reinterpreting the working-class character)
2. While leaving freedom for the designer (architect, urbanist, landscape architect, etc.) to create his/her own design.

By using this approach, the redesign ensures that urban renewal assignment can be completed successfully while also reinterpreting the working-class character of a neighbourhood.

Practical recommendations

Since the transformation plan has impact on a large area of public space, it is important that the municipality of Rotterdam officially becomes the public client and an official project group is created.

Then, the transformation plan can go through the formal stages of draft design (SO), preliminary design (VO) and definitive design (DO). The current transformation plan will serve as the draft design and needs to be further developed by the project group consisting of municipal departments such as municipal departments such as urbanism, landscape architecture, planning, mobility, financing and real-estate. Given the complexity of the parking issue, a strong emphasis needs to be on a parking-study that explores the possibilities of the proposed parking plan.

During this process, the plan has to be discussed with local parties of interest to gain insight in the local demands and desires. This includes parties such as local residents and business owners, neighbourhood council, wellbeing organizations and landlords (private, corporations and owner associations).

At the same time, the transformation plan needs to be positioned within the municipal strategy for city-wide parking and other strategies. This insight is required to see how transformation plan fits within this strategy. Additionally, a risk assesment has to be done by the project group to ensure gain insight in the potential risks and dilemma's of the design and how these can be dealt with.

Additionally, the search for investors and developing parties has to start. Together with these parties, the preliminary design can be created. When there is general consensus on the preliminary design, the design has to be tested by parties such as the Veiligheidsregio, Environmental service, Water board, network managers and the province. When these parties agree with the design, the transformation plan can be presented to the municipal council for official approval.

Discussion & Reflection

11



Frederikplein with in the back the old furniture factory on the Hendrik de Keyserstraat

Introduction

This final chapter reflects and discusses on the entire project. The discussion is mostly focussed on the content and credibility of the thesis. It will address the value, validity, interpretation, limitations, implications and recommendations based on the findings of this thesis.

The reflection focusses more on the personal development and design process. It will dive deeper into the relation of the thesis subject and the master's programme this thesis was written for. It will also elaborate on the relation between research and design. Furthermore, it will address personal obstacles and learning moments and will conclude with the final steps that finalize this thesis.

Discussion

1. Validity

Design objective

The design objective (ch. 3) of this thesis was to make sure that Oud Crooswijk is still recognizable as a working-class neighbourhood after urban renewal. For this thesis, a literature review of the Welstandsnota (welfare note) of Rotterdam was done to create a clear definition for the spatial character of the Neighbourhood. The welfare note described that working-class neighbourhoods are characterized by their non-planned spatial layout. This layout was typified by an old waterway-/street parcellation, compact public space, closed building blocks and the streets being the image-carriers of the public space.

Based on the welfare note, these elements are foundational for the recognizability of the working-class character of Oud Crooswijk. Therefore, these elements were incorporated into the design principles of the transformation plan. As a result, every design that is made with these principles, results in the recognizability of the original spatial characteristics that define the neighbourhood as working-class. Based on this, the results of this thesis can be considered valid.

Thesis objective

The overall objective of this thesis was to create a transformation framework. The aim was to develop a design tool that could be applied to other locations facing similar challenges related to urban renewal and neighbourhood character.

To achieve this, the thesis introduced a transformation framework, presented on page 25. The framework was developed specifically for the redesign of Oud Crooswijk, and the design process, in turn, helped to refine and strengthen the framework. Based on the findings of this research, the expectation is that the framework will be applicable on other locations as well. However, to truly provide a reliable answer to this, the framework has to be applied on other locations as well that deal with similar issues. Therefore, in regards to the thesis objective, the true validity of the results cannot be validated yet.

2. Value and scope

This thesis supplements to the literature on the conceptualization of what it means to be working-class by Pilgrim - Brown (2023). This thesis supplements to this literature by

translating the scientific definition of modern-day working-class of Pilgrim - Brown to a social- and spatial definition. Additionally, this thesis supplements the literature by anticipating on what defines spatial elements define a working-class neighbourhood in the 21st century.

The thesis also supplements to the existing literature on urban renewal strategies, with the emphasis on urban renewal in the city of Rotterdam. With a very specific perspective and target group, the thesis provides a different way of approaching urban renewal, adding to the list of more commonly applied approaches such as social mixing and gentrification.

3. Interpretation

The foundation of this thesis lies in the apparent process of gentrification that was initiated during the earlier urban renewal of Nieuw Crooswijk. In order to place this thesis in context, it is therefore important to clearly define this concept. According to the dictionary, gentrification is described as "the process whereby the character of a poor urban area is changed by wealthier people moving in, improving housing, and attracting new businesses, often displacing current inhabitants in the process."

Therefore, the expectation was that local residents would describe that the loss of neighbourhood character came from the new residents being more wealthy than they are. However, working-class incomes are steadily rising. This implied that the issue of a loss of character does not necessarily lie in the arrival of wealthier new residents, but rather in the fact that these new residents possess a different social status than the current inhabitants.

A possible explanation for this could be the difference in lifestyles and their educational backgrounds. The wealthier people that gentrification supposedly attracts, usually consist of young and ambitious people with a high education. As a result their interests, norms and values could differ significantly from the current residents with a lower educational level.

4. Limitations

Limitations

The findings of this thesis are subject to several limitations that must be taken into consideration.

The first limitation concerns the scarcity of academic literature on the definition of the modern-day working class.

The paper by Pilgrim-Brown (2023) was the only relevant academic source providing a clear and contemporary definition. As a result, the social and spatial interpretations derived from this single source are of limited generalizability, given the absence of broader academic consensus.

Secondly, the outcomes of this thesis may be constrained by the narrow focus adopted of the urban renewal approach. By placing strong emphasis on the neighborhood character, the research may have inadvertently deprioritized the resolution of other, often more practical, issues.

The final limitation relates to time constraints during the design phase, which hindered the ability to conduct a more comprehensive scenario study. Due to unforeseen personal circumstances, the design process was paused for approximately three weeks. Consequently, there was insufficient time to carry out a thorough scenario analysis, which would have further refined the design principles and contributed to a deeper, more nuanced design outcome.

5. Implication & Recommendations

This thesis presents a design tool intended to support urban renewal initiatives with a specific focus on preserving neighborhood character. A deeper understanding of this relationship is increasingly necessary, as urban renewal will play a growing role in addressing future spatial challenges. With continued population growth and limited available land, urban renewal is essential to maintaining attractive, livable environments. However, such renewal efforts must not come at the cost of erasing the unique character that defines our cities. This identity contributes significantly to the distinctiveness and appeal of urban neighborhoods. Accordingly, this thesis advocates for further research into strategies that allow cities to renew while retaining their identity.

As stated in the subsection 'validity,' the expectation is that the framework can be applied on other locations dealing with similar issues. However, to truly check the validity, this has to be tested in practice. This can be done by addressing the urban renewal urgency and conducting an identity-analysis. From these two analyses, a goal has to be formulated which can be translated into a design assignment. This assignment can then be converted to a vision and design principles. These principles then need to be applied and in turn tested by the design. By applying this approach on other locations, the findings of this thesis can be validated to see if the proposed framework is truly transferrable.

Given the limited availability of academic literature on the definition of the modern-day working class, it is crucial to expand our understanding of how the definition of working-class is evolving. Further investigation is recommended into the contemporary meaning of working-class identity in the 21st century and how this is defined.

Finally, it is recommended that the approach developed in this thesis is applied and tested in a different urban context facing similar challenges related to renewal and neighborhood character. Doing so would enhance insight into the transferability of the proposed method and helps to validate the findings of this research.

Reflection

This chapter will reflect on the process of creating this thesis. This will be done by (1) addressing the relation between the thesis subject and the masters course, (2) the relationship between design and research, (3) assessing the personal approach, (4) assessing the academic and societal relevance of the thesis topic, (5) assessing the transferability of the thesis results, (6) Lessons learned from this thesis project and (7) the next steps for the final coming weeks of this thesis.

1. Relation between the thesis and Urbanism master's programme

The aim of the Urbanism master's programme is to (re) create sustainable urban landscapes. These landscapes are created through interdisciplinary planning and design activities focusing on climate adaptability, circularity, social equity, and ecologically inclusive urbanization at all scales.

In this thesis, the focus was on urban renewal in relation to the preservation of neighbourhood character. In Oud Crooswijk, urban renewal was necessary to improve the livability and make the area more sustainable. However, previous attempts elsewhere in the neighbourhood led to increased social inequity. Therefore, the challenge of this thesis was to offer a solution on how to make the area more livable and sustainable, while also ensuring that the area remained attractive (by preserving its character) and accessible.

In other words, this thesis required a strong interplay between different disciplines in order to bring several urbanism elements together (sustainability, climate adaptability, and social equity) into one design. As a result, the thesis has become a fitting representation of what the department of urbanism stands for: an interdisciplinary planning and design activity.

2. Relationship between research and design

Research influencing design

The research was most helpful in setting and sharpening the design assignment. The initial issue of this thesis was that Oud Crooswijk required urban renewal, but previous plans elsewhere had led to the disappearance of the working-class character. To translate this issue into a design assignment, research was conducted into the urban renewal assignment and how the working-class character was defined. This research provided insight into which spa-

tial elements of Oud Crooswijk needed renewal and which spatial elements were vital to the working-class character. The research showed that heat stress, decaying houses, and a loss of social cohesion were important issues that required urban renewal. The analysis of the working-class character resulted in an overview of spatial elements (identity-carriers) that translated the working-class character into physical elements. These elements, together with the urban renewal assignment, created boundaries for what the design assignment and the actual design needed to achieve.

Design influencing research

The design mainly helped in further sharpening the design assignment and problem statement. Through designing, new problems became clear that needed to be solved.

For example, it became clear through the design process that the car was also a very important identity-carrying element for the neighborhood. In turn, this required more research into finding options on how to integrate the car into the urban fabric without diminishing the quality for pedestrians and cyclists.

Designing also served as a form of research. The final sub-questions, for example, asked how to integrate the identity-carrying elements into the urban fabric. To answer this question, design principles were created. Using these principles, multiple plans and sections were designed that explored how to integrate the identity-carrying elements. In turn, these designs were used again to sharpen and edit the design principles. In this way, designing was used as a research method to help answer the research questions.

3. Assessing the personal approach

The following subsection will reflect on the personal approach applied on this thesis. The reflection will be done by comparing the approach of this thesis to other approaches of previous academic and professional projects.

Thesis

This thesis has mostly been written from home. The formal presentation (P1 - P4) were used to make choices and collect feedback. The periods in between were used to create choices. The mentor meetings and studio session were used to gather intermediate feedback and to spar with fellow students about the thesis process and experience. What was valuable in this approach was that I was able to work on the thesis at any preferred moment. A downside however was that it allowed less room for sparring and gathering feedback from fellow students. The feedback that was received during the writing of this

thesis was to incorporate more small reflection moments and to trust on your own capabilities. As a result, I tried to look back more often on my produced work in order to decide and prioritize what needed to be done next. While doing this, I kept reminding myself about the feedback to trust on your own capabilities and that my produced work was well enough to make informed design decisions.

Other academic projects

For other academic projects, I used a slightly different approach. During the first year of the master's programme, I worked on projects both at home and at the university. The studio sessions and mid-term presentations were used to gather feedback and make decisions. Group meetings and working at the university helped with brainstorming and coordinating the projects.

The feedback I received during these projects mainly focused on encouraging me to step out of my comfort zone. Additional feedback emphasized the importance of reflecting more often and accepting that not everything needs to be solved immediately.

A valuable lesson was learning to create focus before starting to produce. Another important takeaway was to embrace a bit of discomfort in order to challenge myself to look at the assignment from a different perspective. Finally, I learned that not everything can—or needs to—be solved all at once.

Professional projects

For professional project I used a similar approach to the academic projects. During my time working for the urbanism department at the municipality of Rotterdam I combined working remotely with working on location. Project meetings were used to gather feedback on the design and worksessions with colleagues were used to spar and reflect on the design. The added value of this approach was the combination between working from home and on location. From home I was able to produce significant amounts of content while on location the real progress was made by collecting feedback and reflecting on the design.

The received feedback was that the design narrative oftentimes was clear but also to learn to prioritize more. To help in this, the suggestion was made to figure out what you are good at, and then perfecting this.

The most valuable lesson I took from this approach and experience was to trust more on my own capabilities as an urban designer as well as trying to become better in adding more focus and priority to a project.

Comparing the approaches

A recurring theme throughout both my thesis journey and other experiences and feedback has been the importance of taking time to look back. Creating intentional moments to pause, reflect, and document past work has proven valuable in gaining a clearer understanding of what still needs to be done. This habit helps in sharpening focus and setting priorities.

I've noticed that producing work and building a coherent narrative comes naturally to me. Through this process, I've also learned to place greater trust in my own abilities. The thesis served as an excellent opportunity to apply earlier feedback and practice integrating it into my design process.

As such, the thesis has been an incredibly valuable learning experience. It provided me with deeper insight into where I currently stand as a designer and offered a clearer vision of where I want to go and how I can continue to grow.

Looking ahead, one of the key takeaways I will carry forward is the balance between working from home—where I can focus and be productive—and working on location, which offers opportunities for alignment, feedback, and meaningful reflection.

4. Implications & academic and societal value

See '2. Value and scope' and '5. Implications and recommendations' on page 114.

5. Assessing transferability of the approach

See '1. Validity, Thesis objective' on page 114.

6. Relating the design to the model of Vitruvius

The roman architect Vitruvius has written a book *De Architectura* in which he describes a model of three related characteristics which all buildings must comply with; (1) *Firmitas*, (2) *Utilitas* and (3) *Venustas*.

1. *Firmitas* is about building quality: durability, safety, and the integration of the whole.
2. *Utilitas* is about functionality: the composition and quality of the components to ensure the design is useful.
3. *Venustas* is about beauty and aesthetics, the identity of the design, and its impact on the surroundings.

Present day, the model is not only being applied in architecture, but is also being followed in many other forms of design (IJzermans, 2021). To reflect on the created design

in this thesis, the model of Vitruvius will be utilized to position the design in relation to the three characteristics.

The underlying principle of the design is to reinterpret and reinforce the character of the working-class neighbourhood. According to the findings of this thesis, that character lies mainly in the aesthetics and experience value of the urban fabric (i.e. the recognizability of the original spatial characteristics and surrounding green structures).

In addition, the neighborhood's identity also has a functional component (cluster of local amenities, car-accessibility or working in the neighbourhood) which was integrated in the design.

Lastly, the design focus on the urban renewal aligns more with the *Firmitas* component. With these findings in mind, the design incorporates all components of the model but focuses primarily on *venustas* and *utilitas*.

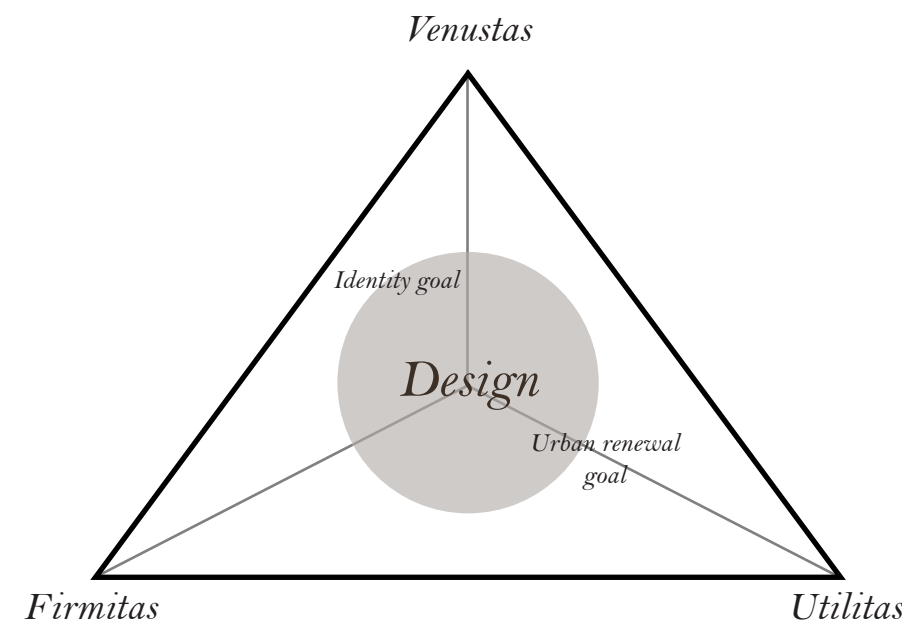


Figure 84. The model of Vitruvius (IJzermans, 2021)

7. Relating the master's experience to the bachelor's experience

In 2021, I wrote a thesis to obtain my bachelor's degree in Applied Sciences at Hogeschool Rotterdam. To reflect on my current thesis experience, I will compare it the thesis process at both Hogeschool Rotterdam and TU Delft. This comparison helps to position my current experience and highlight the lessons it has taught me.

The structure of both theses was quite similar. Each required academic research involving a problem statement and clearly defined research questions. However, a key differ-

ence for me was the emphasis: the thesis at Hogeschool Rotterdam focused strongly on offering a practical solution, while the TU Delft thesis places more emphasis on exploring possible implications and the dilemmas that come with proposed solutions.

There were also significant differences in the research and design processes. At Hogeschool Rotterdam, the process was linear—research was conducted during the first three-quarters of the project, followed by the design phase at the end. At TU Delft, the process was more circular and iterative: over the course of the entire project, research informed design, which in turn raised new questions requiring further research.

Personally, I found great value in experiencing both approaches. My bachelor's thesis taught me to think in a practical, solution-oriented way. The master's thesis, however, has taught me to look beyond that. This thesis reaffirmed that urban challenges are often complex and layered, making a singular, perfect solution unlikely. As a result, it has taught me the importance of offering insight into potential design implications and dilemmas, rather than focusing solely on proposing a solution.

8. Next steps

The final weeks of this project will be devoted to finishing up. This will include incorporating the design on a larger scale. This incorporation will provide insight into what the implications of the design are on the city- and regional scale. Additionally, the entire narrative will be evaluated, and feedback will be processed to ensure that the project results in a clear and cohesive narrative. The final weeks will also be used to complete some of the more practical aspects. These aspects include adding final drawings, conducting a plagiarism and spelling check, sourcing and numbering, and tidying up the appendix. Lastly, a final reflection, both content- and process-wise, will be done to evaluate what lessons can be learned from this project.

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Andersson, R. (2006) 'Breaking segregation:' rhetorical construct or effective policy? *The case of the Metropolitan Development Initiative in Sweden*, *Urban Studies*, 43(4), pp. 787–799.

Bridge, G., Butler, T., & Lees, L. (2011). *Mixed communities: gentrification by stealth?*

Business Insider Nederland. (2022, January 12). Tarieven van loodgieter en timmerman stijgen met wel 32 procent. https://www.businessinsider.nl/tarieven-stijgen-loodgieter-en-timmerman-202/?utm_source=chatgpt.com

Buurt Nieuw Crooswijk (gemeente Rotterdam) in cijfers en grafieken (bijgewerkt 2025!) | *AlleCijfers.nl*. (2025, January 16). *AlleCijfers.nl*. <https://allecijfers.nl/buurt/nieuw-crooswijk-rotterdam/>

Buurt Oud Crooswijk (gemeente Rotterdam) in cijfers en grafieken (bijgewerkt 2025!) | *AlleCijfers.nl*. (2025, January 16). *AlleCijfers.nl*. <https://allecijfers.nl/buurt/oud-crooswijk-rotterdam/>

Crooswijk in Rotterdam. (2023). In *Chrome-extension://Efaidnbmnnibpcajpcglclefindmkaj/https://volksbuurtmuseum.nl/wp-content/uploads/2023/11/CrooswijkDEFa.pdf*.

Custers, G., & Willems, J. J. (2024). Rotterdam in the 21st century: From 'sick man' to 'capital of cool.' *Cities*, 150, 105009. <https://doi.org/10.1016/j.cities.2024.105009>

Delorenzi, S. (2006) Introduction, in: S. Delorenzi (Ed.) *Going Places: Neighbourhood, Ethnicity and Social Mobility*, pp.1–11 (London: Institute for Public Policy Research).

DNA. (n.d.). Gemeente Rotterdam. <https://www.rotterdam.nl/dna>

DPG Media Privacy Gate. (n.d.). <https://www.volkskrant.nl/binnenland/ooit-de-trots-van-een-rotterdamse-volkswijk-nu-verpauperd-en-onveilig-oudgediende-moet-crooswijkseweg-opknappen~be08024a/>

Energielabels van gebouwen. (n.d.). Atlas Leefomgeving. <https://www.atlasleefomgeving.nl/energielabels-van-gebouwen>

Forrest, R., & Kearns, A. (2001). Social cohesion, social capital and the neighbourhood. *Urban Studies*, 38(12), 2125–2143. <https://doi.org/10.1080/00420980120087081>

Gemeente Rotterdam. (2012). Welstandsnota Rotterdam.

Gemeente Rotterdam. (2025). Gemeente Rotterdam. <https://www.rotterdam.nl/>

Gemeente Rotterdam & Havensteder. (2023). Verslag participatie van Meekerengebied. *GiSWeb 2.2 - Gisweb*. (n.d.). <https://www.gis.rotterdam.nl/gisweb2/>

Hitte. (2020). Atlas Leefomgeving. <https://www.atlasleefomgeving.nl/thema/klimaatverandering/hitte>

Home - Fundering. (n.d.). <https://www.duikinjefundering.nl/>

Hypotheek berekenen voor 2025 - Rabobank. (n.d.). Rabobank. <https://www.rabobank.nl/particulieren/hypotheek/hypotheek-berekenen>

IJzermans, J. J. (2021, October 28). Meer over de driehoek van Vitruvius - HKU Makersmanieren □ blogs. HKU Makersmanieren □ Blogs. <https://makersmanierenblogs.hku.nl/jijmeerovertitruvius/>

Jaoude, G. A., Mumm, O., & Carlow, V. M. (2022) An Overview of Scenario Approaches: A guide for urban design and planning. *Journal of Planning Literature*, 37(3), 467–487. <https://doi.org/10.1177/08854122221083546>

Koopwoningen Nederland - Huizen te koop in Nederland [Funda]. (n.d.). [https://www.funda.nl/zoeken/koop?selected_area=\[%22rotterdam%22\]](https://www.funda.nl/zoeken/koop?selected_area=[%22rotterdam%22])

Kro-Ncrv. (2022, August 29). Wijken voor de yuppen in Rotterdam Crooswijk: "Het idee dat ik weg moet, vind ik heel akelig."

Lees, L. (2008). Gentrification and social mixing: towards an inclusive urban renaissance? *Urban Studies*, 45(12), 2449–2470. <https://doi.org/10.1177/0042098008097099>

Maandag, B. (2019). *Stadsvernieuwing in Rotterdam: vijftig jaar bouwen in de buurt*. nai010 Uitgevers.

Make it Happen. (n.d.). Gemeente Rotterdam. <https://www.rotterdam.nl/make-it-happen>

Marconi, C. (2014). The Oxford Handbook of Greek and Roman Art and Architecture. In *Oxford University Press eBooks*. <https://doi.org/10.1093/oxfordhb/9780199783304.001.0001>

Ministerie van Algemene Zaken. (2025, January 21). Betere verdeling van betaalbare huurwoningen. Huurwoning Zoeken | Rijksoverheid.nl. [https://www.rijksoverheid.nl/onderwerpen/huurwoning-zoeken/maatregelen-tegen-woningnood/betere-verdeling-van-betaalbare-huurwoningen#:~:text=De%20inkomensgrens%20daarvoor%20is%20%E2%82%AC,%E2%82%AC%2047.699%20\(prijspeil%202024\).](https://www.rijksoverheid.nl/onderwerpen/huurwoning-zoeken/maatregelen-tegen-woningnood/betere-verdeling-van-betaalbare-huurwoningen#:~:text=De%20inkomensgrens%20daarvoor%20is%20%E2%82%AC,%E2%82%AC%2047.699%20(prijspeil%202024).)

Ministerie van Binnenlandse Zaken en Koninkrijksrelaties. (2022, August 17). *Programma Mooi Nederland*. Rapport | Rijksoverheid.nl. <https://www.rijksoverheid.nl/documenten/rapporten/2022/07/01/programma-mooi-nederland>

Musterd, S. (2002) *Response: mixed housing policy: a European (Dutch) perspective*, *Housing Studies*, 17(1), pp. 139–144.

Musterd, S., Ostendorf, W. and de Vos, S. (2003) *Neighborhood effects and social mobility*, *Housing Studies*, 18(6), pp. 877–892.

Musterd, S. (2003) *Segregation and integration: a contested relationship*, *Journal of Ethnic and Migration Studies*, 29(4), pp. 623–641.

Nationale Vacaturebank. (2025). Salaris Timmerman, Salaris Loodgieter. <https://www.nationalevacaturebank.nl/salaris/timmerman>

Nevescanin, A. (2023). Contemporary Urban Planning – Urban Regeneration, Rotterdam Case Study. *BUILDER*, 317(12), 70–74. <https://doi.org/10.5604/01.3001.0054.0128>
NOS. (2021, September 10). *Een diepgeworteld wantrouwen in plannen Oud-Crooswijk door sloopdrift in Rotterdam*. <https://nos.nl/regio/zh-rijnmond/artikel/175070-een-diepgeworteld-wantrouwen-in-plannen-oud-crooswijk-door-sloopdrift-in-rotterdam>

NPO (Director). (2018, April). *Crème de la Crooswijk* [NPO Start]. <https://npo.nl/start/serie/creme-de-la-crooswijk/seizoen-1/creme-de-la-crooswijk>

Omgevingsvisie. (2021, December 2). Gemeente Rotterdam. <https://www.rotterdam.nl/omgevingsvisie>

Onderzoek010 - Werk en Inkomen - Rotterdam. (n.d.). <https://onderzoek010.nl/mosaic/onderzoek010/werk-en-inkomen>

Partij, S. (2025, January 5). Huurders Crooswijk voeren actie voor betere woonomstandigheden. Rotterdam. <https://rotterdam.sp.nl/nieuws/2024/06/huurders-crooswijk-vo->

eren-actie-voor-betere-woonomstandigheden#:~:tex-
t=Huurders%20Crooswijk%20voeren%20actie%20voor%20
betere%20woonomstandigheden,-Foto%3A%20SP%20
Rotterdam&text=Op%2018%20juni%20zijn%20bewon-
ers,%2C%20funderingsproblemen%2C%20rioolucht%20
en%20schimmels.

Pilgrim-Brown, J. (2023). What does it mean to be working
class? Exploring the definition of a social class identity
through the eyes of working-class professional services and
administrative staff in Russell Group universities. *Journal of
Working-Class Studies*, 8(2), 51–68. [https://doi.org/10.13001/
jwcs.v8i2.8401](https://doi.org/10.13001/jwcs.v8i2.8401)

Prijsstijgingen bouwprojecten houden aan. (n.d.). Bin-
nenlands Bestuur. [https://www.binnenlandsbestuur.nl/
ruimte-en-milieu/bbn-adviseurs/prijsstijgingen-bouw-houd-
en-aan?utm_source=chatgpt.com](https://www.binnenlandsbestuur.nl/ruimte-en-milieu/bbn-adviseurs/prijsstijgingen-bouw-houd-en-aan?utm_source=chatgpt.com)

Redactie InFinance. (2025, January 16). 'Huizenprijzen
blijven stijgen en woningtekort neemt toe' - InFinance.
InFinance. [https://www.infinance.nl/artikel/
huizenprijzen-blijven-stijgen-en-woningtekort-neemt-
toe/#:~:text=%E2%80%99CDe%20huizenprijzen%20blijven%20
voorlopig%20nog,een%20verdere%20prijsstijging%20van%20
7%25](https://www.infinance.nl/artikel/huizenprijzen-blijven-stijgen-en-woningtekort-neemt-toe/#:~:text=%E2%80%99CDe%20huizenprijzen%20blijven%20voorlopig%20nog,een%20verdere%20prijsstijging%20van%207%25).

Rijksdienst voor het Cultureel Erfgoed [RCE]. (2014). Eenheid
en verscheidenheid: een zoektocht naar een integrale
cultuurhistorische waardestelling van het materiële
erfgoed. In *Cultureelerfgoed.nl*.

Rijksdienst voor het Cultureel Erfgoed [RCE]. (2022).
Transformeren met cultureel erfgoed.: Handreiking voor het
opstellen van transformatiekaders. In *Cultureelerfgoed.nl*.
Rijksdienst voor het Cultureel Erfgoed.

Rijnmond. (2023, December 10). Crooswijkseweg moet
weer veilig, gezellig en aantrekkelijk worden. *Rijnmond*.
[https://www.rijnmond.nl/nieuws/1748827/crooswijkseweg-
moet-weer-veilig-gezellig-en-aantrekkelijk-worden](https://www.rijnmond.nl/nieuws/1748827/crooswijkseweg-moet-weer-veilig-gezellig-en-aantrekkelijk-worden)

Ruimtelijk Ontwerp en Advies, Gemeente Rotterdam
[ROA], & Klatser, B. (2025). Gemeente Rotterdam. In

Gemeente Rotterdam. <https://www.rotterdam.nl/>

Sociaal en Cultureel Planbureau, Goderis, B., & Vrooman,
C. (2016, September 27). *Waar wonen de armen in
Nederland?* Retrieved December 10, 2024, from [https://
digitaal.scp.nl/armoedeinkaat2016/waar_wonen_de_
armen_in_nederland/](https://digitaal.scp.nl/armoedeinkaat2016/waar_wonen_de_armen_in_nederland/)

Stadsarchief Rotterdam. (n.d.). stadsarchief.rotterdam.nl.
<https://stadsarchief.rotterdam.nl/>

Van Emstede, C. (2015). Waardestelling in de Nederlandse
monumentenzorg 1981-2009. *Architecture and the Built
Environment*. <https://doi.org/10.59490/abe.2015.9.990>

Van Es, E. V. E., Voerman, L., & Gemeente Rotterdam.
(2019). *Crooswijk - Rubroek: Cultuurhistorische verkenning*.

Volksbuurt Museum. (2020). Crooswijk in Rotterdam. Volks-
buurtmuseum. [https://volksbuurtmuseum.nl/wp-content/
uploads/2023/11/CrooswijkDEFa.pdf](https://volksbuurtmuseum.nl/wp-content/uploads/2023/11/CrooswijkDEFa.pdf)

Wijkprofiel Rotterdam. (2024). [https://wijkprofiel.
rotterdam.nl/nl/2024/rotterdam/kralingen-crooswijk/oud-
crooswijk?toon=alles](https://wijkprofiel.rotterdam.nl/nl/2024/rotterdam/kralingen-crooswijk/oud-crooswijk?toon=alles)

Wijkraad Crooswijk. (2021). Wijkvisie Crooswijk 2023 - 2026. In
[https://archieven.watdoetdegemeente.rotterdam.nl/be-
groting2024/wijken/wijkagenda-crooswijk/Wijkvisie-Crooswi-
jk-2023-2026.pdf](https://archieven.watdoetdegemeente.rotterdam.nl/begroting2024/wijken/wijkagenda-crooswijk/Wijkvisie-Crooswijk-2023-2026.pdf). [https://archieven.watdoetdegemeente.
rotterdam.nl/begroting2024/wijken/wijkagenda-crooswijk/
Wijkvisie-Crooswijk-2023-2026.pdf](https://archieven.watdoetdegemeente.rotterdam.nl/begroting2024/wijken/wijkagenda-crooswijk/Wijkvisie-Crooswijk-2023-2026.pdf)

Yang, L., Qian, F., Song, D., & Zheng, K. (2016). Research on
Urban Heat-Island Effect. *Procedia Engineering*, 169, 11–18.
<https://doi.org/10.1016/j.proeng.2016.10.002>

yup Nederlands woordenboek - Woorden.org. (n.d.).
<https://www.woorden.org/woord/yup>

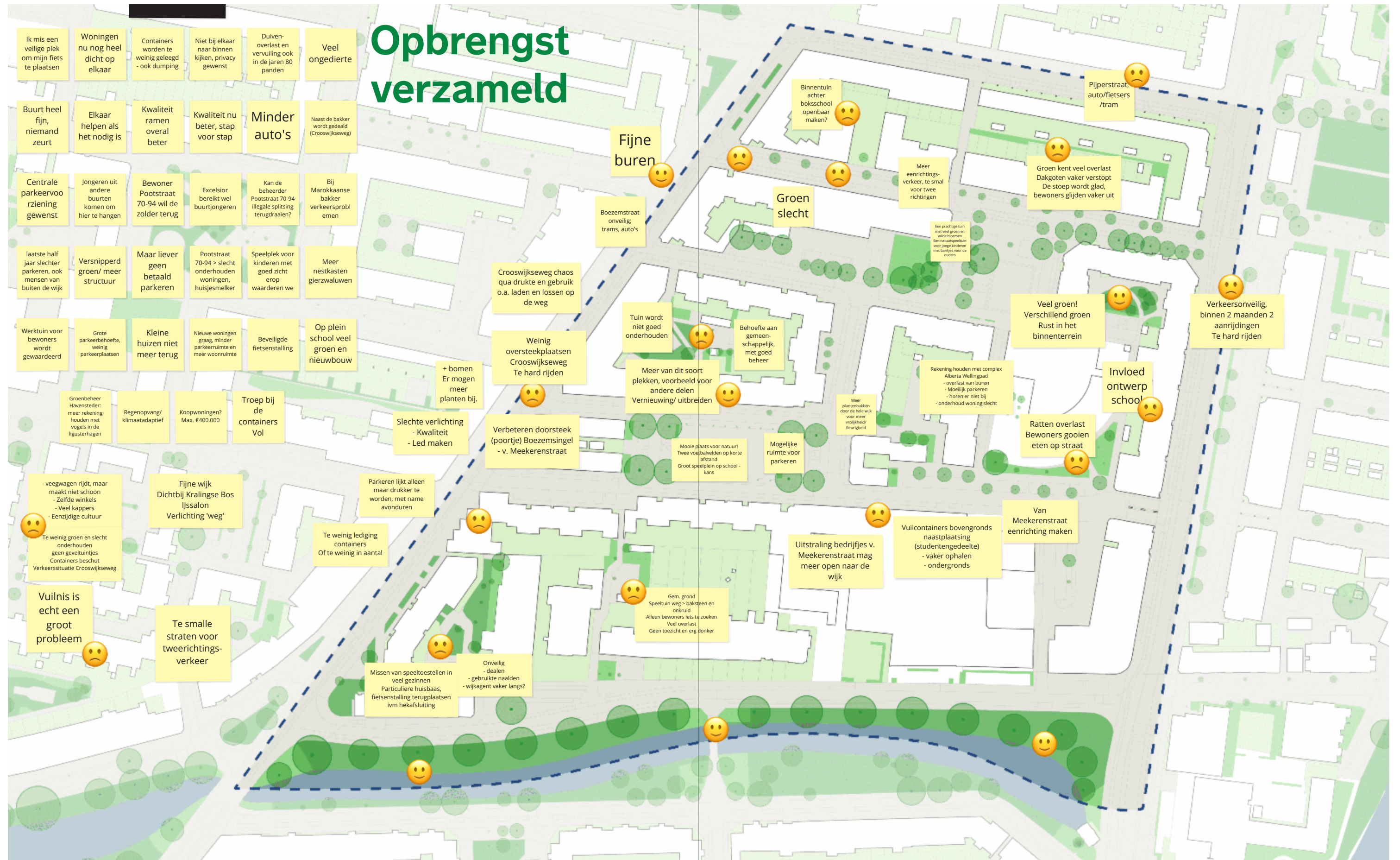
13



Replica of the facade of the Old Heineken Brewery alongside the Rotte

Appendix 1.

Results of the participation evening for the development of the Van Meekeregebied



Appendix 2.

Background data on the amount of required amenities per resident

Voorzieningen Oud Crooswijk

Onderwijsvoorzieningen

- Basisscholen: Vuistregel is 1 basisschool per 3.000–4.000 inwoners. Voor 8.130 inwoners zouden er dus 2 tot 3 basisscholen passend zijn.

Zorgvoorzieningen

- Huisartsen: Met 1 huisarts per 2.000–2.500 inwoners zijn 3 tot 4 huisartsenpraktijken adequaat.
- Apotheken: Bij 1 apotheek per 8.000–10.000 inwoners zou 1 apotheek voldoende zijn.

Winkels en horeca

- Supermarkten: Met 1 supermarkt per 3.000–5.000 inwoners zijn 2 tot 3 supermarkten passend.
- Winkelvoorzieningen: De Crooswijkseweg is een belangrijke winkelstraat in de buurt, met diverse winkels zoals bakkers, groenteboeren en drogisterijen

Wijkprofiel Rotterdam

Sportvoorzieningen

- Sporthal: Vuistregel is 1 sporthal per 10.000–15.000 inwoners. Voor Oud Crooswijk zou 1 sporthal voldoende zijn.
- Sportvelden: Het Schuttersveld wordt herontwikkeld tot een sportcentrum met vier zaaldelen, wat aansluit bij de behoeften van de buurt.
- Wonen in Rotterdam+ Wikipedia

Culturele en sociale voorzieningen

- Bibliotheken: Met 1 bibliotheek per 25.000–30.000 inwoners is een aparte bibliotheek in Oud Crooswijk mogelijk niet rendabel, maar aansluiting bij een wijkbibliotheek in de omgeving kan voorzien in de behoefte.
- Wijkcentra / buurthuizen: 1 per 3.000–5.000 inwoners; dus 1 tot 2 centra zijn passend.
- Speeltuinen: Het Marnixplein biedt speeltoestellen voor kinderen, wat aansluit bij de behoefte aan speelvoorzieningen

Bronnen, wijkprofiel Rotterdam & wonen in Rotterdam
“Handreiking Maatschappelijke Voorzieningen”,
“Normatieve huisvesting”, of “Ruimtelijke kwaliteit en voorzieningen”.

Appendix 3.

Neighbourhood data on occupations in Oud Crooswijk

Gemeente Rotterdam

Home

Databank

Nieuws

Arbeidssector werkenden - 2022

+

Inhoud1

Zoeken in onderwerpen

Ruimtelijke ordening, Wonen en Verkeer

Werk, Inkomen en Armoede

Arbeid

Arbeidsmarktpositie

Bruto Participatiegraad Beroepsbevolking

Netto Participatiegraad Beroepsbevolking

Arbeidsrelatie werkenden

Arbeidssector werkenden

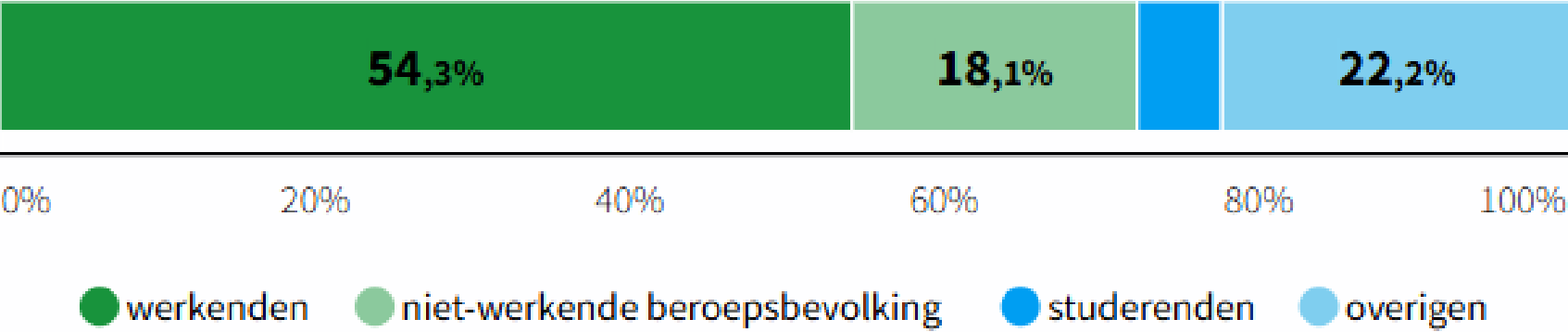
ZZP-ers

Werkzoekenden zonder baan

Arbeidssector werkenden - 2022 - Oud Crooswijk

	Buurt Oud Crooswijk	Gemeente Rotterdam	Gebied Kralingen-Crooswijk
zakelijke dienstverlening	475	51.621	4.908
gezondheids- en welzijnszorg	435	41.989	3.261
detailhandel en reparatie	388	27.875	2.038
uitzendkracht	230	19.022	1.204
horeca	205	16.321	1.454
openbaar bestuur en overheid	199	19.564	1.506
industrie en nutsbedrijven	198	19.500	1.328
onderwijs	179	18.740	1.920
overige dienstverlening	149	12.114	1.093
transport	143	18.699	1.106
groothandel	118	16.741	1.318
informatie en communicatie	116	12.483	1.242
bouwnijverheid	88	8.418	520
financiële instellingen	55	9.057	1.062

Oud Crooswijk



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