Deconstructing Housing (Policies)

Spatial guidelines in response to Rotterdam's new housing policy: designed to mitigate the impact of displacement caused by urban redevelopment

TU Delft

Master Thesis

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Content

Introduction **6**
Motivation 8
Summary 10

Context **12**
Housing Crisis 14
History of Rotterdam's Housing Policies 18
Social Justice and The Right to the City 24
Local Conflict and Distrust: The Tweebosbuurt 26
Recent Introduction of a New Housing Vision 28
Positioning 30

Research Plan **32**
Problem Statement 34
Project Aim 36
Research Questions & Methods 38
Relevance 46
Ethical Reflection 48

Research results **50**
Theory of Displacement 52
Displacement in Rotterdam's Past Housing Policies 58
Direct displacement & Financial displacement *63*
Social displacement & Cultural displacement 70
The New Housing Vision: A New Policy Direction? 78
Problem Statement 80
1: The new Housing Vision pressures the Right to Housing *80*
2: The current social mixing strategy is insufficient *84*
3: The new Housing Vision lacks a localized approach *90*
Concluding: Problem statement *93*

Guidelines **96**
Objectives and Guidelines: An Introduction 98
1. Provide sufficient housing *100*
2. Fair, inclusive, research-based social mixing *104*
3. A more localized approach *112*

Design **116**
Introducing the Chapter 118
Introduction: The Tweebosbuurt 120
Introduction: Case Study Relevance 124
Context: The Development of the South 126
Context: The Development of Parkstad 128
Towards Design: Scenario-Thinking 130
Towards Design: Choice of Final Scenario 132
Design Objectives: Sufficient Housing 134
Design Objectives: Localized Approach 140
Design Objectives: Mixing Strategy 144
Further Integration into Final Design 150
Financial Viability 180

Conclusions **188**
Conclusions 190
1) The development of guidelines *190*
2) The implementation of guidelines *194*
Discussion 196
Validity *196*
Interpretation of results *197*
Implications of the research *202*
Research limitations *203*
Suggestions for further research *204*

Appendix **206**
Reflection 208
The research – positioned within the Master Programme *208*
Reflection on process and results *210*
Feedback from mentors and the implementation *213*
What I have learned *215*
Academic Value & Implications *216*
Societal Value & Implications *217*
Transferability of the results *218*
Ethical reflection *219*
Bibliography *220*

01. INTRODUCTION



Fig. 1. How a modern democracy collapses (Schot, 2020).

Motivation

With a background in both urban design and architecture, I have always been intrigued by the intersection of these fields with housing. During my academic years, I've focused on social issues, especially in the realm of inclusive, community-led design. Whenever possible, I've blended this focus with my interest in social counter-movements, such as those led by artists, squatters, or protest groups.

This combination of interests, along with being in an environment that actively advocates for housing rights, has led me to explore the context of the housing crisis. This focus allows me to explore the social issues within this context and to understand the conflicting voices of the people that are involved. Through this thesis, I aim to offer valuable insights that could help address some of the challenges tied to social housing and urban redevelopment.

Summary

This thesis investigates the relationship between displacement and Rotterdam's housing policies, focusing on their social mixing strategy, which has been integral to the city's redevelopment of vulnerable neighborhoods. Through the lens of spatial justice, it addresses past displacement issues and evaluates the effectiveness of the new Housing Vision (2023) in counteracting these issues, amidst increasing national housing challenges. The primary aim is to provide practical and actionable design tools that can limit displacement in future redevelopment.

The research seeks to answer: *How can Rotterdam's new housing policy integrate spatial guidelines to address displacement more effectively in the future redevelopment of vulnerable neighborhoods?*

Key findings indicate that government-enforced changes in the housing stock and social composition, central to the social mixing strategy, are primary drivers of displacement. Comparing these (direct, financial, social, and cultural) displacement issues to the new policy direction reveals that displacement is a persistent risk, as the new policy pressures the universal right to housing, includes a social mixing strategy that is unjust and insufficiently grounded in research, and lacks opportunities for a localized approach. In response, this thesis proposes objectives to ensure the provision of sufficient housing, develop a fair and inclusive social mixing strategy, and encourage policy adaptability based on local characteristics. Each objective has corresponding spatial guidelines, implemented in the Tweebosbuurt, illustrating how this strategy can help achieve Rotterdam's broader development goals while mitigating displacement.

Policymakers can utilize these insights to revisit and adapt the new housing policy objectives. Moreover, the design guidelines developed through this study can assist urban planners and architects in structuring developments in a way that minimizes displacement, and ultimately, contribute to a more equitable and socially just resolution to Rotterdam's housing challenges.

Key words: *displacement, social mixing, affordable housing policies, Rotterdam, urban redevelopment, spatial justice*

02. CONTEXT



Fig. 2. De Veldstraat (Schot, 2020)

Housing Crisis

The issues that are brought forward in this research are relevant within the borader context of the housing crisis, a term that encompasses a range of housing-related issues affecting a growing segment of the population, which is manifesting itself throughout the whole of the Netherlands. An increasing number of people are facing significant challenges in finding affordable housing, not only within major cities but also in regions outside the Randstad. Common issues include extended waiting lists for social housing, soaring housing prices, and homeowners who are consistently outbid (Hochstenbach, 2022).

Housing is internationally recognized as a fundamental human right, as articulated in the Universal Declaration of Human Rights (United Nations, 1948) and the Dutch constitution. Both declarations acknowledge the government's obligation to ensure access to adequate housing. While they don't explicitly mandate the construction of housing units by the government, they do emphasize that it is the government's responsibility to take adequate measures to safeguard housing quality and prevent homelessness.

The roles and influences of the government are fundamental to the narrative of the housing crisis. The current challenges in the housing market did not arise spontaneously; rather, they developed through a complex interplay of political and economic factors. In his book *Uitgewoond*, Cody Hochstenbach illustrates how the housing crisis is the result of deliberate political policies implemented over an extended period. By doing so, he dispels the misconception that the housing crisis emerged unexpectedly or was an inevitable scenario (Hochstenbach, 2022).

However, it is essential to add nuance to this statement. The impact of the housing crisis is not only intensified by deliberate political policies but is also influenced by complex international forces that are challenging to address accurately. Discussions with Peter Boelhouwer, expert in housing systems, highlighted the difficulties governments face in responding to housing challenges amidst an international shortage, increased immigration, unfavourable investment climates, and a general decline in construction (personal communication, 11/04/2024). Therefore, this research aims to recognise both the impact of political policies and the complex external forces at play.

Fig. 3: Indicative overview (mindmap) of the housing crisis's complexity (by author)

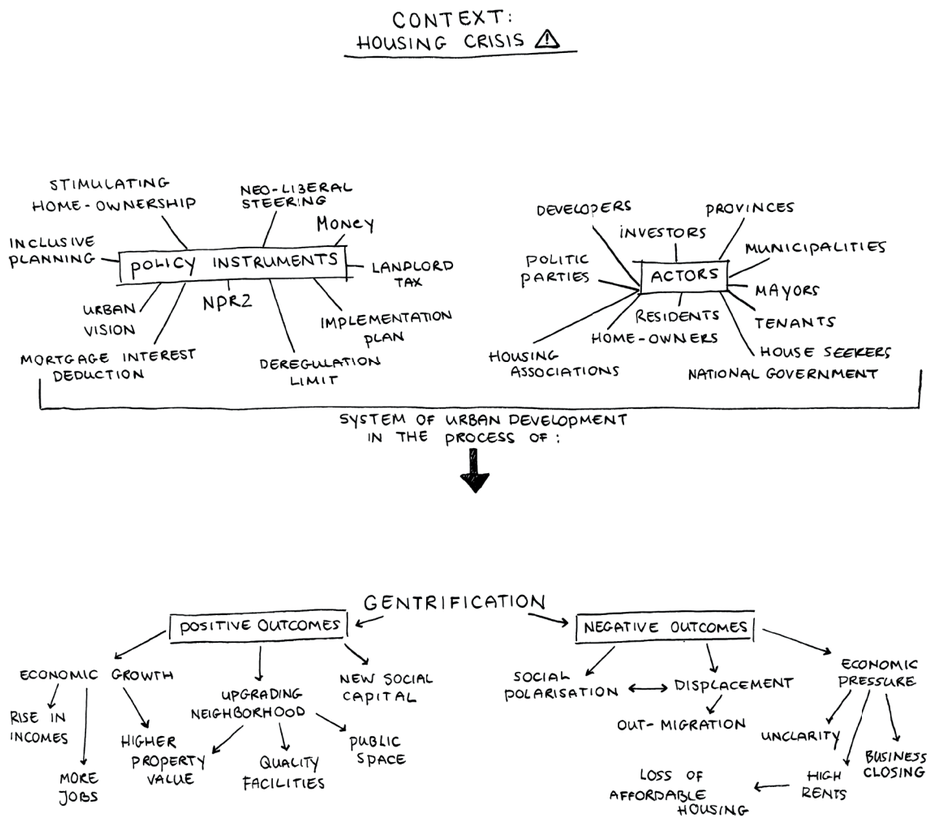


Fig. 3

The following text will briefly introduce the trajectory of deliberate political policies highlighted in the book *Uitgewoond*, which have shaped the housing market for over thirty years, before escalating into a widespread housing crisis beginning in 2013. From that point onward, the issues spread throughout the country, affecting not only marginalized groups but also the middle class.

Already since the 'Nota Volkshuisvesting' of 1982, policymakers have viewed homeownership as the ultimate goal, as homeowners are presumed to be more likely to invest in their neighborhoods, participate in local activities, and maintain their properties (Flint & Kearns, 2006). With this reasoning, the core objectives of the national housing policy have been to stimulate the market, promote ownership, and increase privatization (Fig. 4). This was achieved through mechanisms such as the mortgage interest deduction, which contributed to subsidies for homeownership that reached a total value of 15 billion euros in 2009 (CBS, 2009).

As one of the consequences of this political strategy, renting became accompanied by uncertainty and inadequate tenant protections, making renting increasingly unattractive. The government targeted social housing by actively reducing the social housing stock, cutting investments, and further restricting access to this sector, limiting it to those with the lowest incomes (Fig. 5). Consequently, social housing acquired the stigma of serving as a safety net for economically disadvantaged groups and was seen as a cluster of social issues and poverty (Hochstenbach, 2022). This created a situation where high demand for homeownership, coupled with an extreme escalation in housing prices (Fig. 6), met a limited housing supply, contributing to a housing shortage of 390,000 homes in 2022 (ABF Research, 2023).

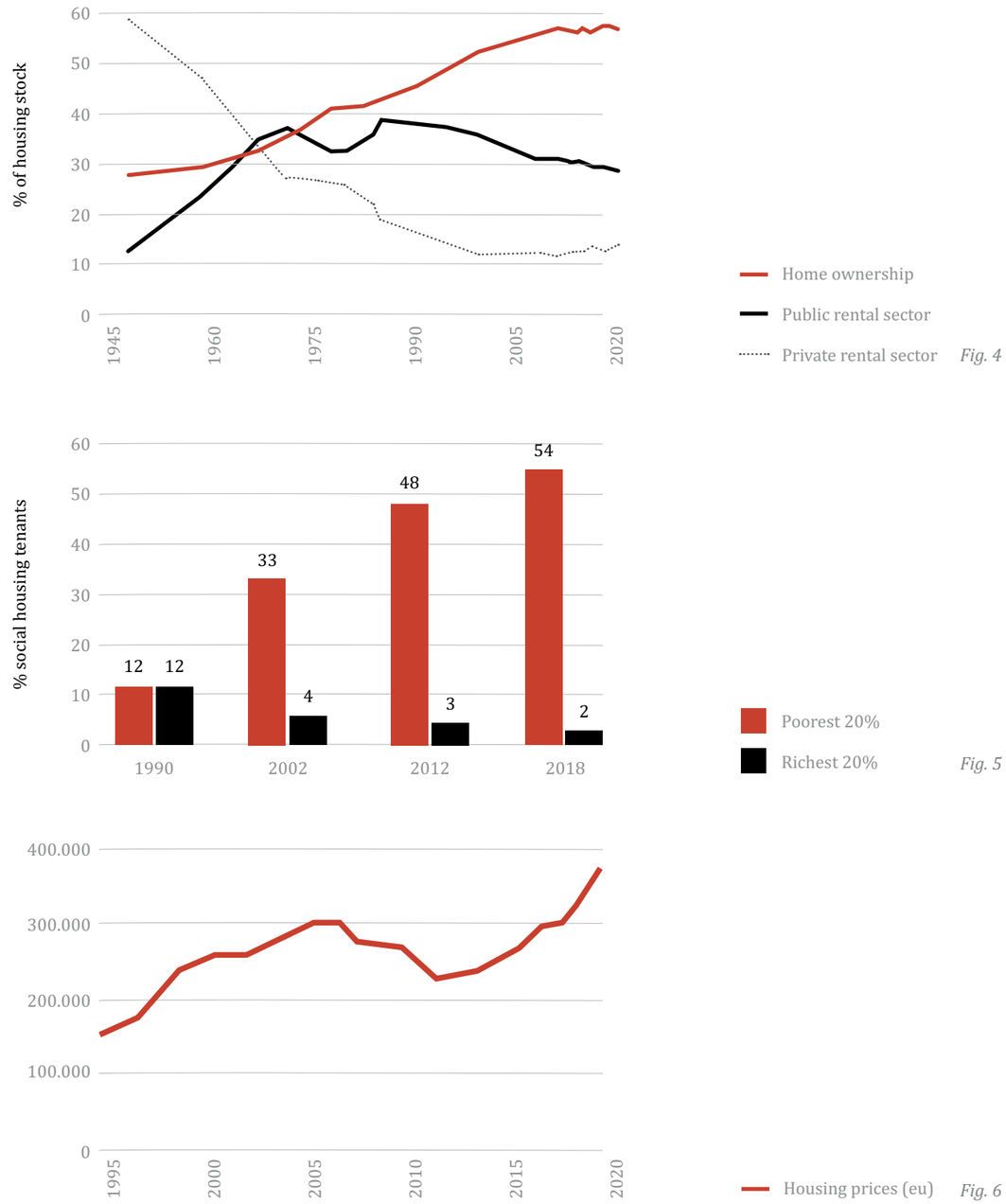
However, as previously mentioned, deliberate political policies are intertwined with complex external forces, contributing to the escalation of the housing crisis. Figure 3 provides an indicative overview of the housing crisis's complexity, including some of the different forces, actors, and regulations involved. While this thesis recognizes the context's complexity, it does not aim to address the entire scope of the housing crisis. Instead, it focuses on displacement pressures caused by housing-related issues. This will relate back to the broader scope of the housing crisis by resulting in strategies for adequate housing and more inclusive redevelopment.

Fig. 4. Form of ownership on the Dutch housing market (Hochstenbach, 2022).

Fig. 5. Percentage of social housing tenants with a low income (poorest 20%) or high income (richest 20%) (Hochstenbach, 2022).

Fig. 6. Average housing prices in the Netherlands, adjusted for inflation (Hochstenbach, 2022).

Fig. 4-6. Developments of the housing crisis under deliberate political policies



History of Rotterdam's Housing Policies

Building upon the discussion of deliberate political policies that have influenced housing issues, this segment will delve into housing policies specifically relevant to Rotterdam.

The stigma that had been placed on social housing on a national level, has also been noticeable in Rotterdam. The city, which has long been recognized as the poorest city in the Netherlands, perceived the promotion of home-ownership and the stimulation of mixed neighborhoods as a way to upgrade the city and build social capital. As Rotterdam had a high rate of social housing, creating mixed neighborhoods mainly meant decreasing the social housing stock to attract more high-income residents (Doucet et al., 2011). In academic discourse, this strategy is being refered to as **'social mixing'.** Already since 1988, the municipality started implementing this strategy to address the city's challenges, primarily centered on minimizing the clustering of 'problematic' demographics and stimulating gentrification.

The previous pages help contextualize this strategy within a nationally recognized shift that emerged around the 1980's, where the attitude towards social housing changed, and a greater emphasis was placed on owner-occupied, higher-end housing. Specific characteristics in the development of Rotterdam can further clarify why and how this strategy became particularly dominant in Rotterdam's housing policy. Therefore, the following text will explain the evolution of urban development strategies in Rotterdam from 1940 to 2023, within the city's specific context. Alongside the text, a timeline (not to scale) is provided, detailing the characteristics of each period of urban development in black text. As the main body of this thesis will concentrate on the relevant policy documents from 2000 to 2023, these documents are highlighted in *red* on the timeline. They will later serve as a critical basis for evaluating the effects of displacement under previous policy directions.

Timeline	Policies	
1940		In the period from 1880 to 1940, Rotterdam developed a large, thriving port economy that grew rapidly. At the time of the city's large-scale reconstruction, after the Second World War, Rotterdam focused on realizing social housing to accommodate the majority of the port's workforce quickly and cost-effectively. The post-war expansion of the port attracted an increasing number of migrant workers, many of whom had limited financial resources. The growth of this demographic group, combined with the oil crisis of the 1970s and an economic shift in the port towards greater automation and reduced traditional labor, led to escalating unemployment rates and lower average incomes compared to other Dutch cities. During the 1970s and 1980s, a particularly stark decline was observed in the city's southern parts. Those with the means to relocate did so, leaving behind housing that became occupied by new migrant groups from Spain, Turkey, Morocco, the Antilles, and Suriname. This transition furthered social challenges, marked by a diminishing sense of community cohesion, increased segregation, and rising poverty levels (NPRZ, 2011).
Post-war expansion: housing the port's workforce		
1970		
Decline of the port: unemployment and poverty		
1975		In response to these challenges, the city initiated an urban restructuring strategy from 1975 to 1990, aimed at reversing urban decline and mitigating the effects of escalating poverty. This period was marked by the approach of 'building for the neighborhood', which facilitated the renovation or replacement of approximately 70,000 dwellings with small-scale new construction, enhancing the living conditions of existing residents (Maandag, 2019). This primarily involved the acquisition of neglected private properties to be replaced with social housing, thereby ensuring minimal rental costs and offering improved and affordable housing options. However, an unintended consequence of this policy was selective migration of wealthier inhabitants away from the city, while simultaneously drawing a larger influx of new, lower-income residents, including a significant number of immigrants (NPRZ, 2011).
'Building For The Neighborhood': renovation and new social housing		
Low incomes, and a growing migrant population		
1988		This development led to Rotterdam distancing itself from its previous objectives, as evidenced by the 1988 memorandum 'The Renewal of Urban Renewal'. The city transitions from 'building for the neighborhood', with a preference for 100% social housing in new developments, to aiming for a balanced demographic mix. This approach seeks to create a 'city for everyone', rather than one 'exclusively for lower-income groups' (Municipality of Rotterdam, 1988). This vision reflects the city's concern over social segregation and the poor integration of its substantial low-income, migrant population. The resulting housing policy stipulates that an undivided city is one where there are no concentrations (exceeding 50%) of individuals on benefits, households earning a minimum income, or ethnic minorities (Priemus & Wassenberg, 1995).
"A balanced city for everyone": a shift in policy direction	*The Renewal of Urban Renewal (1988)*	

2002

Population Forecast until 2017 (2002)

Growing intolerance towards ethnic diversity: strong representation of right-wing, populist parties

The population forecast of 2002, detailing projections by the Centre for Research and Statistics on Rotterdam's demographic development for the forthcoming fifteen years, further fueled concerns about the concentration of ethnic minorities with low incomes. According to the study, the population of Rotterdam's residents with non-Dutch backgrounds was anticipated to increase from 275,000 to 365,000 (Bik & Stolk, 2002). The analysis further anticipated a continued migration of affluent, primarily Dutch residents to surrounding municipalities, expected to raise the share of immigrants from 46% to 57% of the total population in Rotterdam. This increase was attributed to the significant influx of individuals from 'other poor non-western countries' and the birth rates among the second-generation Turkish and Moroccan communities.

At the time, most major Dutch cities were grappling with a significant influx of migrants. Concurrently, there was a noticeable shift towards right-wing populist political parties at the national level, characterized by campaigns fueled by intolerance towards ethnic diversity and anti-Islam sentiments (Ouwehand & Doff, 2013). In Rotterdam, the party led by Pim Fortuyn was strongly represented, viewing the prominent presence of Turkish, Moroccan, and Surinamese communities as a threat to Dutch norms and values.

2003

Rotterdam Pushes Through (2003)

'Towards a balanced city'': social engineering

In response to the 2002 population forecast, the action plan 'Rotterdam Pushes Through: Towards a Balanced City' was launched in 2003. This plan established a policy framework for top-down governance to regulate population flows, with the goal of countering the projections for 2017 and achieving a more balanced demographic composition (Municipality of Rotterdam, 2003). Within just two years, the Rotterdam Act was formed, embodying this strategy, with significant influence from Pim Fortuyn's party within the municipal executive. This new law legalized the decline of residents with incomes below a certain level from vulnerable neighborhoods (Municipality of Rotterdam, 2006). This law has been in place for 16 years, while facing criticism for disproportionately affecting ethnic minorities (Ouwehand & Doff, 2013).

2006

Rotterdam Act (2006)

In the years that followed, Rotterdam's urban development strategy centered on creating mixed neighborhoods with a socio-economic balance, as the main catalyst for improving the city. Given the high rate of low-income residents and social housing, creating mixed neighborhoods mainly meant decreasing the social housing stock to attract more high-income residents (Doucet et al., 2011).

2007

Urban Vision (2007)

Building on this strategy, The Urban Vision (2007) proposed large-scale plans for urban restructuring, aiming at creating living environments that cater to more affluent and well-educated groups (Municipality of Rotterdam, 2007). The emphasis was on promoting gentrification, increasing the attractiveness of living environments, stimulating business activity and improving the city's economic status. Significant changes were proposed for social housing areas to kickstart the gentrification process and improve housing quality, including plans to demolish approximately 20,000 homes in vulnerable neighborhoods before 2020. Additionally, some of the remaining social housing was to be upgraded to attract higher-income families, and some units were planned to be sold, either to current residents or new arrivals (Ouwehand & Doff, 2013). These efforts often specifically target the South of Rotterdam under the name of the National Program Rotterdam South ('NPRZ'). Alongside urban restructuring projects, the NPRZ program is a comprehensive, long-term social initiative aimed at improving education, employment, housing, and safety within the South district.

2011

National Program Quality Leap South (2011)

2016

Housing Vision 2030 (2016)

The Housing Vision of 2016 extended the strategy of achieving a more balanced city, and further intensified the goals for decreasing the social housing stock. The goal was set to decrease the inventory of social housing by 46,700 homes before 2030, to shift the socio-economic balance in favor of middle and higher-income groups (Municipality of Rotterdam, 2016). This was expected to further address the city's challenges by minimizing the clustering of 'problematic' demographics, and by introducing social risers from outside Rotterdam, who were expected to lead and inspire broader citywide change. The ambitions of the Housing Vision were highly impactful, initiating widespread demolition and restructuring across most of the South district as well as parts of the North, as depicted in the map on the following page.

2019

Addendum Housing Vision 2030 (2019)

In 2019 and 2020, several updates to the Housing Vision were proposed. The Addendum Housing Vision 2030 'Home in Rotterdam' (2019), suggests an increased focus on new construction and improving housing sustainability. The Addendum concludes that a balanced housing stock should be achieved faster, which calls for an intensified strategy, especially at the neighborhood level (Municipality of Rotterdam, 2019).

2020 *Revised District Atlas (2020)*

As a response to this, the 'Revised District Atlas' is published in 2020. This document proposes a more comprehensive strategy for achieving a balanced housing stock, introducing the possibility of adding additional social or mid-segment housing in districts where such options are currently lacking, rather than solely adjusting the stock to cater to the higher segment. This document outlines a vision for achieving the desired housing stock balance in each neighborhood by 2030. The vision map reveals that nearly twenty neighborhoods previously dominated by social housing, are progressing towards a more balanced housing stock. Paradoxically, the number of neighborhoods with a surplus of middle and higher segment housing remains the same (Municipality of Rotterdam, 2020a).

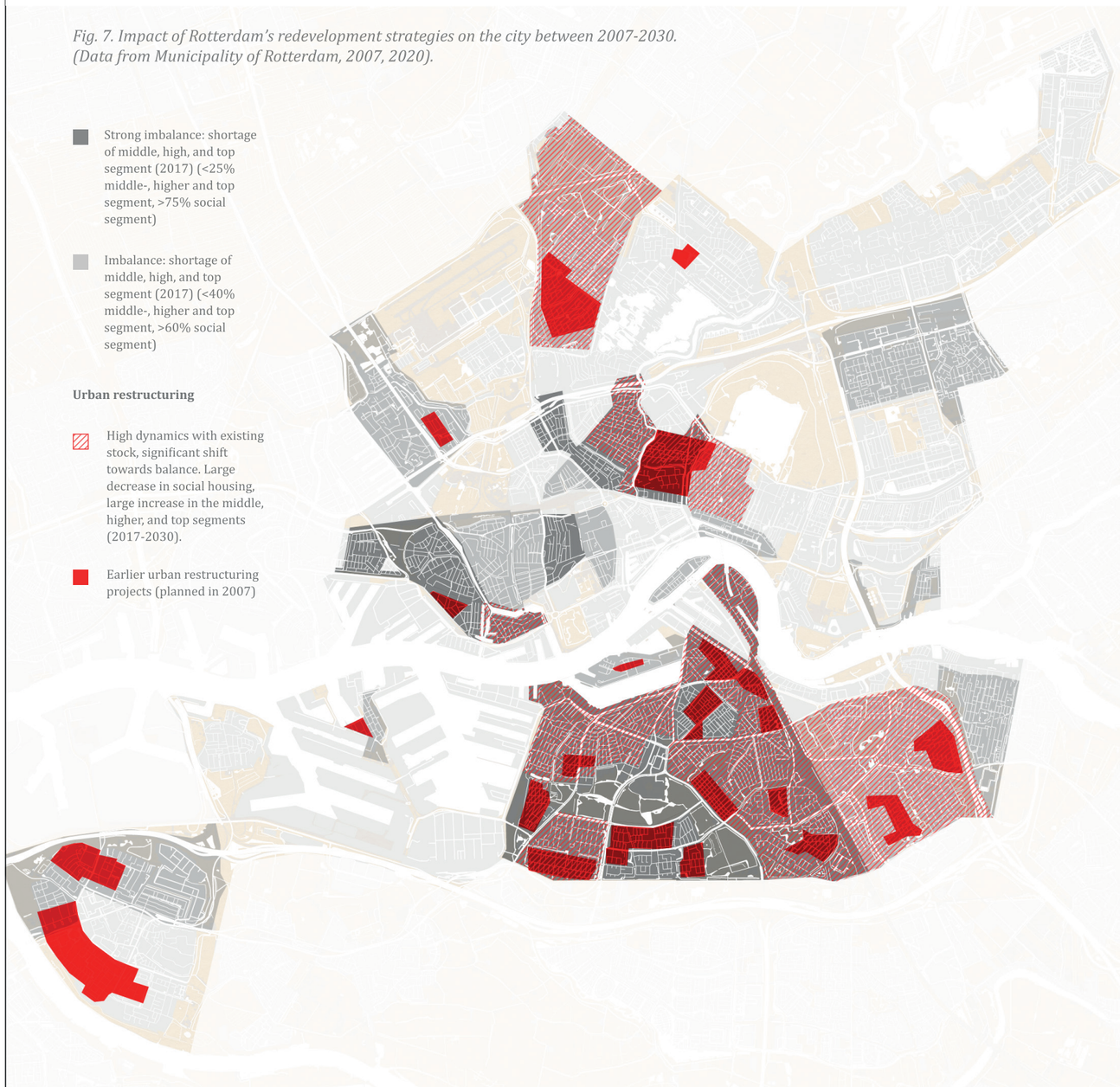
2023 *Housing Vision 2040 (2023)*

Finally, the new Housing Vision is being formed at the end of 2023, which strongly emphasizes affordability and inclusivity. This new vision prioritizes the provision of affordable housing and housing for vulnerable groups, fair rental and leasing practices, and the development of vibrant, future-proof neighborhoods with a balanced composition.

In the subsequent sections of this thesis, it will be evaluated to which extent the 2023 Housing Vision represents a new policy direction (in the context of displacement), compared to earlier policies from between 2000-2023. The figure below outlines the *key policy documents* that will be the primary focus of this thesis:

	Year	Policy	Author
1	2006	Act on Extraordinary Measures for Urban Problems [Rotterdamwet]	*Tweede Kamer [House of Representatives]*
2	2007	Urban Vision Rotterdam 2030 [Stadsvisie]	*Municipality of Rotterdam*
3	2011	South Works! National Program Quality Leap South	*National Program Rotterdam South (NPRZ)*
4	2016	Housing Vision Rotterdam 2030 [Woonvisie]	*Municipality of Rotterdam*
5	2020	Revised District Atlas	*Municipality of Rotterdam*

Fig. 7. Impact of Rotterdam's redevelopment strategies on the city between 2007-2030. (Data from Municipality of Rotterdam, 2007, 2020).



Social Justice and The Right to the City

The ‘History of Rotterdam’s Housing Policies’ highlights practices such as housing allocation, the sale of rental properties, and the eviction of established residents to facilitate the demolition of social housing, all aimed at creating more mixed neighborhoods.

This approach is relevant within the context of social justice, as it raises the question of whether certain groups are afforded a greater right to the city than others. Can individuals be forced to move or denied access to a neighborhood because their personal profile is perceived to be undermining the city’s development? In light of this, the concept of the “Right to the City,” originally introduced by Henri Lefebvre in 1968, provides a suitable framework for assessing the social injustices embedded in the discourse of urban development.

With his concept Lefebvre advocates for open access to the city, not only through the democratization of use but also through the democratization of control and production of collective space (Lefebvre, 1967). Nowadays, designers build upon this concept as an effort to create more inclusive and accessible cities, challenging the effects of privatization, intensifying economic inequalities and social polarization (Brenner, 2013). Aiming for inclusive urban development involves touching on the issue of social justice: the fair and equitable distribution in space of socially valued resources and the opportunities to use them (Soja, 2009).

In the context of Rotterdam’s housing policy, the main discussion revolves around this concept of social justice. The top-down housing allocation, demolitions, and population flow management place vulnerable groups in a marginalized position, making the policies highly susceptible to injustices and the deprivation of rights. In the remainder of this research, the theory of social justice will support the identification of displacement issues that have arisen from Rotterdam’s policy directions.

Fig. 8. Hevig woonprotest door de stad (Odé, 2021).



Fig. 8

Local Conflict and Distrust: The Tweebosbuurt

The previously discussed policy directions in Rotterdam have led to numerous injustices experienced by established residents, contributing to local conflicts manifested as social unrest, protests, and legal cases. These injustices are particularly evident in Rotterdam South, where intense urban restructuring, driven by the National Program for Rotterdam South (NPRZ), has had a significant impact.

A prime example is the Tweebosbuurt, where 535 social housing units were demolished to make way for 137 new units rented at market value, effectively displacing current residents. The housing association Vestia, the municipality, and the residents engaged in a series of legal battles, culminating in the approval of the demolitions in 2021. Such cases profoundly affect the residents involved, who often spend several uncertain years opposing these developments. Communication and participation among stakeholders in these cases are complex and frequently reveal serious deficiencies. As the Tweebosbuurt exemplifies the injustices embedded in Rotterdam's past housing policies, this location will be used as a case study later in this research.

Rotterdam has multiple highly sensitive cases that have faced strong conflicting interests during urban restructuring. The map on this spread highlights several projects where the organization Right to the City [Recht op de Stad] has advocated for local residents during demolitions. Most of the listed cases, such as Gerdesia Midden and the Tweebosbuurt, had judgments rendered in 2021. However, some are more recent; the decision to demolish Patrimoniumshof was made in June 2022, and the Pompenburg flat is scheduled for demolition in 2025.

These findings emphasize the impact of Rotterdam's policy directions on established residents, which, alongside the map with recent demolition cases, highlights the urgency and contemporary relevance of this research. This underscores the need for fundamental change in housing policies to address and prevent such issues.

Fig. 9: Map with recent/ active cases of local conflict in the context of demolishing affordable housing (Data from Recht op de Stad, 2020)

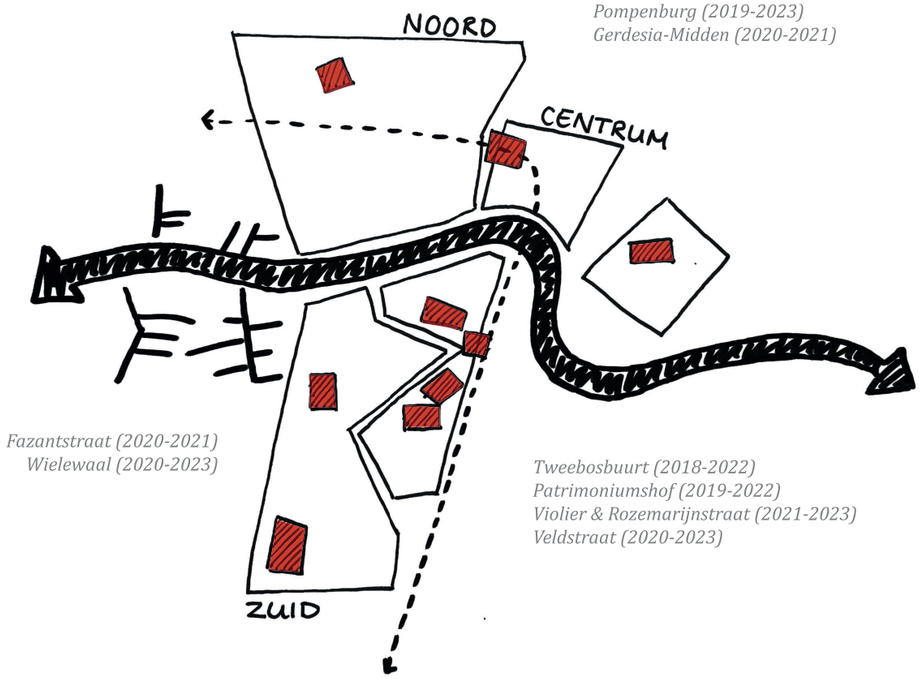


Fig. 9

Recent Introduction of a New Housing Vision

The local issues and injustices discussed thus far have evolved under the policy directions implemented between 2000 and 2023. However, in 2023, the municipality of Rotterdam introduced a new housing policy encapsulated by the slogan “A Home for Everyone” [Een Rotterdams thuis voor iedereen]. This policy suggests a more accurate response to the issues that have been mentioned earlier, as it claims to support a progressive shift towards a sustainable and inclusive future. The focus lies on increasing the availability of affordable housing, fostering future-proof and resilient neighborhoods, providing better accommodations for vulnerable groups, and improving overall access to the housing market.

Despite these inclusive intentions, the new housing policy requires a critical examination to determine whether it truly represents a departure from previous strategies or merely adopts a softer tone. The analysis in this research finds that the new housing policy reflects similar ideologies to past housing policies, extending earlier displacement issues. Consequently, related problems recur, including the ongoing stigma against social housing, the use of inconsistent and unreliable data, and a non-inclusive social mixing strategy. These issues will be discussed in more detail under the Research Results section.

These findings necessitate a revision of the newly introduced Housing Vision to more accurately address displacement issues, and promote a more socially just approach to housing in Rotterdam. The main body of this thesis will work towards spatial guidelines that can enable such an approach.

Positioning

This thesis focuses on the examination of the planning system as an institutional framework, with a specific emphasis on housing policies enacted by the Municipality of Rotterdam. Over the years, the municipality pursued a top-down, macro-economic strategy, underpinned by a high-level of central control, as they concluded that the scale of the issues in Rotterdam could not be properly addressed at a local level anymore. This zoomed-out top-down view, meant that the regeneration of the city was aimed at enhancing the city's image as whole, while relying on other cities to absorb Rotterdam's decline in social housing.

However, this strategy overlooked the interests of existing communities, failing to prioritize their collective well-being, which should be a fundamental objective in spatial planning. The governance approach of pushing 'problematic' demographics outside the city and relying on other municipalities to address the housing issue, did not effectively address the social challenges faced by Rotterdam; instead, it merely relocated them elsewhere.

As housing-related challenges escalated, a paradigm shift in urban planning became apparent. During the 1990s, scholars began to be more explicit about the concept of justice (Fainstein, 2013). In this context, the municipality's approach of deconcentrating specific demographic groups and glorifying gentrification was no longer viewed as socially just. Consequently, social practices emerged as influential institutions, where like-minded groups united based on shared social norms, values, and ideas, championing the right to the city, as seen in local action groups.

To address the demand for a more sustainable and socially just approach to spatial planning, a new form of governance is required. Top-down steering remains necessary to create a more just and balanced dynamic between market forces and municipal interventions. In his book *Uitgewoond* (2022), Cody Hochstenbach emphasizes that the housing crisis has been driven by deliberate political policies, reinforcing the argument that the government also carries the responsibility to turn tides. To enable this change, the top-down approach must be integrated with bottom-up design considerations, highlighting the need for enhanced engagement with stakeholders and the public. Civic engagement necessitates a more small-scale, performative approach to spatial planning, allowing for negotiation and iterative processes.

03. RESEARCH PLAN



Fig. 10. En toen bleef dit rijtjeshuis moederziel alleen achter. (Kievit, 2018).

Problem Statement

A pressing context

The current housing challenges in Rotterdam necessitate a critical evaluation and redesign of its housing policy, particularly the strategy of social mixing, to address the risk of future displacement. The urgency stems from the shortcomings of past housing policies, which have inadequately tackled the rising homelessness and ongoing housing shortage due to their focus on reducing social housing to address local issues. These issues have been exacerbated by escalating housing prices and the growing number of individuals, especially among vulnerable groups, in urgent need of housing. Furthermore, past policy directions have undermined social justice in urban development, further compounding displacement issues.

Challenges of the new policy

While the newly implemented housing policy in Rotterdam aims to address these challenges, a critical examination of its effectiveness and authenticity is necessary. There are concerns about the extent to which it represents substantial change, and about its capacity to effectively counteract the directions of previous policies. These concerns are amplified by the continuation of controversial objectives, ambiguities in the new ambitions, and overlapping timelines with conflicting actions in recent or ongoing demolition cases, raising the possibility of persisting displacement pressures. Although the policy includes objectives that suggest a shift towards a more inclusive and accessible housing market, this transition faces several obstacles. Inclusivity remains selective, deep-rooted old policy patterns appear to be difficult to significantly change, and there are challenges in rebuilding trust with communities negatively affected by past policies.

In response to these issues, this study aims to address the current knowledge gap by providing the first comprehensive assessment of Rotterdam's new housing policy from the perspective of displacement. Currently, there is a notable absence of scholarly work that evaluates the new policy direction and its implications in the socio-spatial realm. The study seeks to contribute to this area by developing practical and actionable design tools, informed by displacement theories. These tools are intended to facilitate a more effective policy approach that is grounded in theoretical understanding.

Fig. 11: Mindmap illustrating the problem statement (by author)

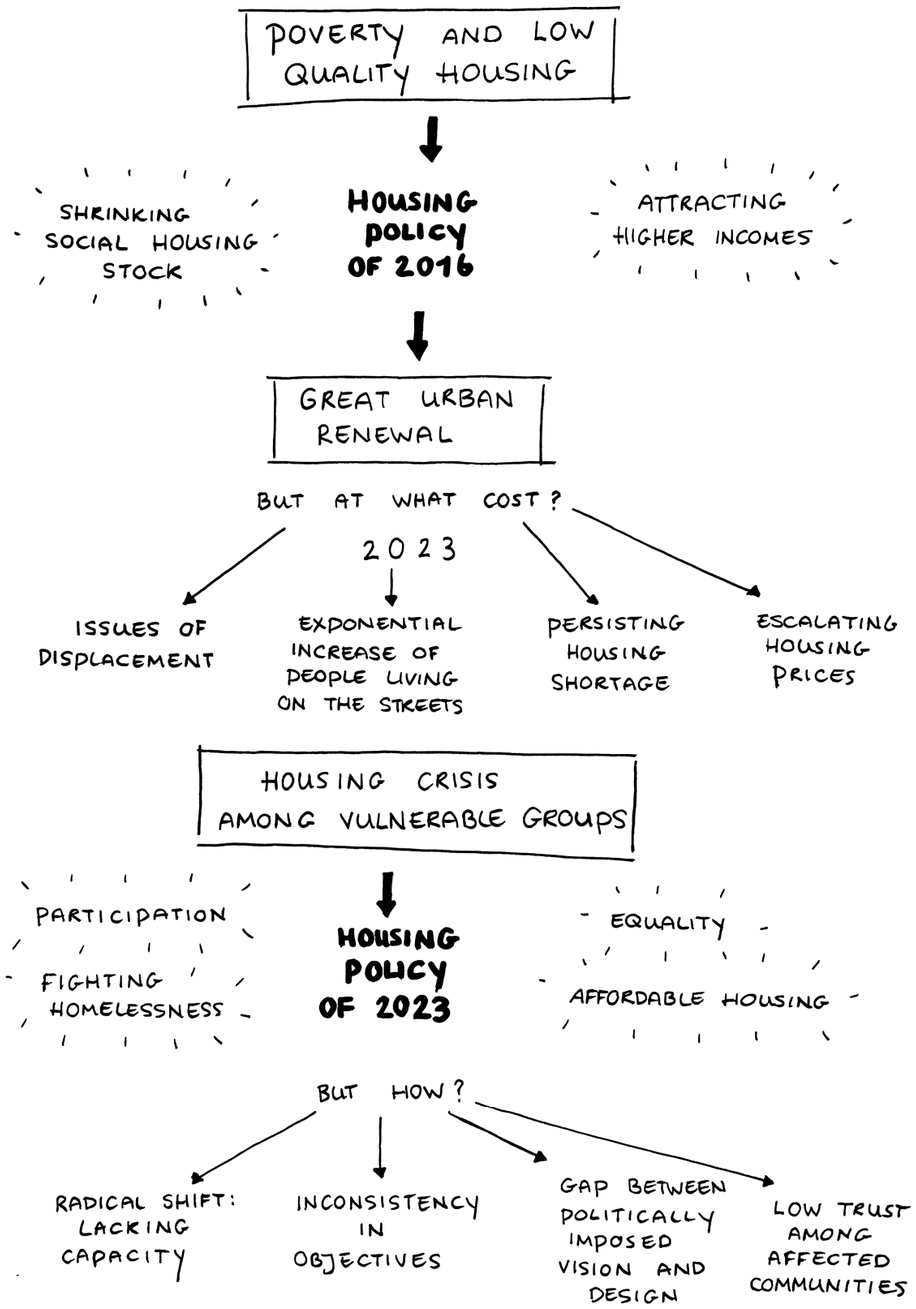


Fig. 11

Project Aim

The outcomes of this research aim to effectively mitigate the impact of displacement in future developments, by offering practical guidelines that bridge the gap between regulatory objectives and their spatial implementation. Through a critical analysis of past policy shortcomings and an assessment of future displacement risks, this research aims to underscore the necessity of revising certain existing guidelines and considering implementing additional guidelines within the new policy direction.

The study uses the redevelopment of Tweebosbuurt as a case study, illustrating how a more thoughtful approach could have led to more socially just urban development. Considering the likely recurrence of similar redevelopment projects, the thesis proposes a practical framework to guide the municipality in realising future redevelopment objectives while simultaneously implementing strategies to mitigate displacement.

Ultimately, this research seeks to contribute to a more equitable and spatially just resolution of Rotterdam's housing challenges, aiming to prevent local conflicts and build community trust. By integrating theoretical insights from the field of displacement studies, the study advises a new design approach to guide the development of a housing policy in Rotterdam that is not only responsive to current challenges but also proactive in preventing future displacement.

Research Questions & Methods

The risks of persistent displacement pressures in Rotterdam within the new policy direction, particularly in the context of urgent housing challenges, highlighted the need for an investigation into guidelines that can mitigate displacement in future development, leading to the formulation of the research question:

How can Rotterdam's new housing policy integrate spatial guidelines to address the issue of displacement more effectively in future redevelopment of vulnerable neighborhoods?

Introduction: Methodology

To answer the research question, this thesis employs a qualitative research approach. Initially, the study involves an analysis of existing displacement theories. Using deductive reasoning, these theories will serve as a framework to systematically identify and understand displacement issues that emerged under the previous housing policy.

Subsequently, the research compares these identified issues with the objectives of the new housing policy, to discern how displacement might be a persistent risk within the new policy direction. This phase of study represents an inductive approach that uses empirical research, including an analysis of policy documents, reports, and interviews, to formulate a new hypothesis about potential displacement pressures within the new housing policy.

This research will result in the development of a practical, advisory conclusion, offering design guidelines that help address the issue of displacement more effectively. Subsequently, the focus will shift from Research for Design (formulating research-based guidelines), to Research by Design, an iterative process that explores the spatial implications of different guideline combinations in the case of the Tweebosbuurt.

Reading guide

The following text will explain how each sub-question contributes to the formulation of the answer to the main research question. It addresses each sub-question individually, detailing the specific type of data that is used. At the end, the text will revisit the broader scope of the research, by concluding on the rationale behind the choice of interviews as a research method, and the limitations inherent in the study.

RQ1: Reflecting back

First, the research will provide answer to the research question:

1. How did earlier housing policy directions (from between 2000-2023), particularly the strategy of social mixing, contribute to displacement during urban redevelopment in Rotterdam?

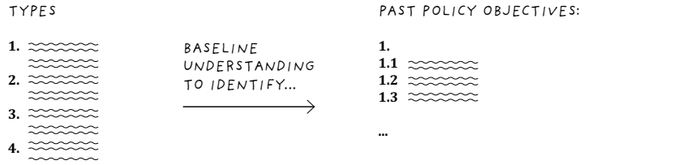
This research question is answered through a qualitative literature review, which is suitable to establish a baseline understanding of displacement pressures within earlier policy directions. The research will kick off with a literature review focusing on the definition and categorisation of displacement pressures. This will involve a thematic analysis of academic texts that explain direct displacement, social displacement, and other indirect displacement types.

These definitions will serve as a framework to understand how earlier policy objectives (from between 2000-2023) contributed to these various displacement types. For this, the research will delve into literature specifically related to Rotterdam's urban renewal from 2000-2023. This will involve a detailed examination of earlier policy directions, particularly focusing on the strategy of social mixing, and their link to displacement outcomes. While this research does not claim to be fully comprehensive in its coverage of policy directions, it does take into account all major, relevant policy documents, as summarized on page 22. The selection of literature will be guided by its relevance to displacement in Rotterdam, taking into account a broader range of themes such as demolition, social exclusion, and gentrification.

Finally, this sub-question will deliver an overview of Rotterdam's past policy directions that contributed to various displacement types. In the following step this will serve as a framework of reference to assess the risk of displacement within the new housing policy.

Results of RQ1:

1. Theoretical framework of displacement types
2. Overview of Rotterdam's past policy directions contributing to displacement



RQ2: Looking forward

Secondly, the following sub-question will be answered:

2. In what ways does the new policy direction maintain a risk of displacement in future redevelopment due to the continuation of past policy objectives known to cause such issues?

This research question will be explored through a combination of policy analysis and expert interviews. Building on the findings from RQ1, which established how past policy directions led to various types of displacement, this phase assesses how these objectives have been reintegrated in the new housing policy. A comparative analysis of the past and present housing policy objectives will be done, aiming to identify overlaps in objectives that historically led to displacement.

To further support the formulation of a new hypothesis regarding potential displacement pressures within the new housing policy, interviews with experts will be conducted. Given the subjective nature of policy interpretation, as a result of some unclarities in objectives, and the existing gap in literature regarding expert reviews of the new housing policy, these interviews are essenial to enrich the hypothesis. Experts from the domains of policy-making, social sciences, and urbanism (in NPRZ-areas) will be consulted to provide a comprehensive, more nuanced understanding of the new policy objectives. Ultimately, this approach will result in a well-informed hypothesis about the persistence of displacement risks within Rotterdam's new housing policy. The rationale behind the choice of interviews as a research method will be elaborated on in the concluding paragraphs of this segment.

Results of RQ2:

3. Comparative analysis, hypothesizing...
4. An overview of Rotterdam's new policy directions with a risk of contributing to displacement



RQ3: Solutions

The subsequent sub-question to be addressed is:

3. What spatial guidelines could be recommended in response to the objectives of the new housing policy, to more effectively mitigate displacement during future redevelopment?

This phase involves recommending spatial guidelines that help mitigate the impact of displacement. It includes improving or revising existing guidelines within the new housing policy, introducing new guidelines, and putting forward guidelines that are suitable for implementation. This advice draws upon insights from literature reviews and expert interviews. Through a 'Research for Design' approach, this phase will use literature to formulate guidelines capable of effectively addressing displacement. The selection of literature will depend on the specific solutions required. For instance, if social mixing is recognised as a displacement-risk, the research could focus on finding guidelines that define what target groups should be mixed to minimize displacement. The formulation of guidelines will be shaped with expertise from the field of urban design and guidance from design tutors.
Additionally, interviews will be conducted with experts who specialize in social sciences and housing systems, are affiliated with the right-to-housing movement, or hold positions in resident associations involved in urban redevelopment. These experts are chosen for their ability to provide practical, experience-based suggestions for mitigating displacement. Given the recent introduction of the new housing policy, and the resulting lack of literature on more effective solutions in the context of Rotterdam, targeted interviews can attempt to fill this knowledge gap.

Results of RQ3:

5. Using the identified risks of displacement as a foundation to formulate..
6. An overview of guidelines that effectively mitigate displacement



RQ4: Implementation

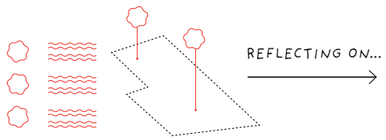
As a final step, the last sub-question will be answered:

4. How can the recommended guidelines be applied in the Tweebosbuurt case study to showcase their potential in mitigating displacement in future redevelopment?

A preliminary site analysis will lay the foundation for the development of the design, including research into relevant development projects in the surrounding area, key structures within the urban fabric, and the site's position within the mobility network. Additionally, data will be collected to map the types and quantities of housing in the neighborhood, and to develop a profile of the current target group. Special emphasis will be placed on comparing the neighborhood's original situation with the plan proposed by the municipality. This will help situate the design of this thesis within the relevant spatial context and address the conflicting objectives at play. Then, through Research by Design, the guidelines will be implemented. This will be an iterative process that explores the spatial implications of different guideline combinations in the case of the Tweebosbuurt. This has a highly reflective nature, where the design process informs the understanding of displacement strategies, and this understanding, in turn, refines further design iterations.
The design will feature a detailed description that systematically translates the proposed guidelines into specific design decisions. It will conclude with summarized advice for public space design and a reflection on financial viability. Instead of making definitive statements about financial viability, it will include a preliminary, indicative exploration of the design's position within complex economic dynamics. This exploration will be supported by an interview with an expert on market systems.

Results of RQ4:

7. Application of guidelines in the case-study of the Tweebosbuurt



8. Description of design decisions, and an exploration of the financial viability

Concluding:
The use of interviews for data-collection:
The purpose of the interviews in this research is to gather information from diverse perspectives, including those from municipal authorities, designers, researchers, and residents' interests. These perspectives should be represented in similar quantities, to ensure a balanced view on the research topic. This page aims to illustrate how the chosen amount and type of interviews aims to achieve this balance.

Individuals affiliated with the right-to-housing movement, particularly in the context of displacement, tend to share similar values; thus, this group is represented in yellow in the diagram on this page. In contrast, municipal representatives often embody different interests and are therefore depicted in red. The potential overlap between these parties is acknowledged, as indicated in the accompanying figure. The selection of two municipal housing policy representatives (1), the urban designer of the Tweebosbuurt (2), a multi-disciplinary panel discussion (3), one all-round researcher (4), and the representitative from the Tweebosbuurt residents' movement (5) reflects a commitment to a balanced interview sample size, thereby aiming to offer a nuanced view.

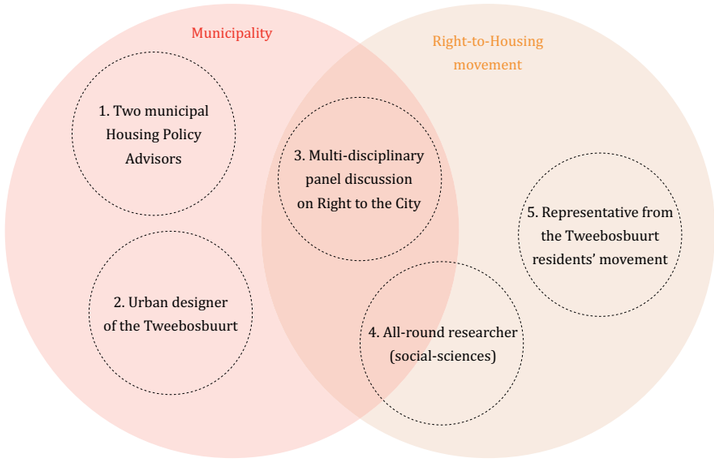


Fig. 12: Diagram of the five interviews that will be conducted, and the corresponding 'group' they represent (red and yellow)

To further explain the role of expert interviews in this research, the following table details the interviewees and their relevance to the research context. The table outlines specific characteristics unique to each interview. In addition to this, there are certain overarching attributes, such as the exploratory, semi-structured format of all interviews. It is planned to conduct these interviews in person, and with the consent of the participants, they will be recorded. The data derived from these recordings will be processed through thematic analysis, wherein relevant quotes are categorised into themes that align with and enhance the research narrative.

RQ		Topic	Who	Amount	Purpose	Addressed knowledge gap
2	V	**Policy**	1. Two municipal Housing Policy Advisors	1 (2 people)	Further explanation of the new housing policy objectives, for a more nuanced interpretation	Unclarities or inconsistenties in the objectives of the new Housing Vision
1/4	V	**Policy/ Solutions**	2. Urban designer of the Tweebosbuurt	1	Further explanation of the municipal objectives applied to the Tweebosbuurt, and the dynamics at play.	Limited public information about concrete design decisions that are a result of Rotterdam's policy direcction.
2	V	**Policy**	3. All-round researcher (policy-/ resident advisor active within Right-to-Housing movement)	1	Provide additional input to enrich the hypothesis on persistent displacement pressures	Given the recent introduction of the new policy there are no other expert reviews that can be used as reference
3		**Solutions**			Form as inspiration to formulate guidelines to address displacement	Lack of new knowledge-based solutions to displacement specific to the context of Rotterdam's new policy
1/2/3	V	**Policy/ Solutions**	4. Multi-disciplinary panel discussion on Right to the City	1	All-round information from various actors, discussing both past injustices, needed policy redirections, and the specific context of the Tweebosbuurt.	Few public sources directly showcase the complex dynamics between municipal values, affected residents, and human rights experts
3/4	V	**Solutions**	5. Representative from the Tweebosbuurt residents' movement	1	Form as inspiration to formulate guidelines to address displacement/ input for reflection based on the resident experience	Lack of new knowledge-based solutions to displacement specific to the context of Rotterdam's new policy

Limitations of the research:
This research, while comprehensive in its approach to addressing displacement in urban redevelopment, is subject to several limitations. Firstly, the qualitative nature of the study, relying predominantly on literature reviews and expert interviews, may introduce subjective biases. Using quantitative data to measure displacement brings significant challenges, and therefore this research chooses to rely on displacement theories to anticipate displacement pressures within the changing neighborhood dynamics. Additionally, the recent introduction of the new housing policy, still in its conceptual phase, limits the availability of recent interpretations and insights that can be used as reference. This gap is partly bridged by conducting expert interviews.

Secondly, the interviews have a limited sample size and may not fully represent the diversity of perspectives within the broader community. Hence, the interview data mainly serves as additional support for the policy- and literature analysis. While interviewees' perspectives may be coloured by their stance within the right-to-housing movement, this does not substantially undermine the study's integrity. By incorporating diverse perspectives, the research aims to present a nuanced view where different viewpoints are weighted.

Relevance

Scientific relevance

This research holds scientific importance as it positions policy advice within the context of the current housing crisis, a context that is relevant not only in the Netherlands but also on a broader international scale.

The scientific contribution of this research lies in addressing Rotterdam's new housing policy, particularly from the perspective of displacement, given there are currently little to no academic reviews in this context yet. This enriches displacement theories by providing a nuanced understanding of how various components of housing policies may inadvertently lead to both direct and indirect displacement. This is achieved through a detailed focus on the Tweebosbuurt case study, offering a contextualized analysis of policy impacts. Secondly, by applying displacement theories as a framework for evaluating housing policies, this study introduces a methodological approach that can inform future housing policy analysis.

Additionally, this research builds upon an existing critical narrative surrounding social mixing strategies. By extending this narrative to include the implications of Rotterdam's newly introduced Housing Vision, it elaborates on existing research, further challenging the prevailing assumption that social mixing automatically leads to positive outcomes.

Moreover, this study's timing aligns with the recent introduction of Rotterdam's new housing policy, positioning it as a critical resource for providing timely feedback and constructive recommendations for policy implementation. This alignment not only enhances the study's relevance to current academic debates but also engages with broader discussions on social justice in urban studies, a topic that has gained increasing prominence in urban studies.

Societal relevance

The research addresses critical societal issues stemming from the housing crisis, which significantly affects both lower and middle-income groups, impacting a large segment of society. By highlighting injustices within Rotterdam's housing strategies, it offers a platform that brings attention to the challenges faced by residents.

This study emphasizes the principles of social justice and advocates for a resident-centric approach in housing policies. These priorities are likely to resonate with housing rights organizations, supporting their efforts to advocate for more equitable urban development.

Additionally, the research highlights the crucial role of governance in facilitating change, making it particularly relevant to municipal authorities responsible for policy implementation. Policymakers can use the provided insights to refine and adapt new housing policy objectives, ensuring that they accurately consider the impacts of the anticipated neighborhood changes on vulnerable populations and adjust strategies to prevent further displacement.

Ultimately, if the proposed guidelines are implemented, they could lead to a more socially just and equitable approach to urban development. For the residents of Rotterdam, this would translate into a housing strategy that prioritizes a resident-centric approach, contributing to a more inclusive environment.

.

Ethical Reflection

This research adheres to TU Delft's guidelines to ensure the ethical integrity of the interviews conducted. Informed consent will be obtained from all participants, clearly outlining their voluntary involvement, the scope of the research, and the use of their contributions. Official consent is secured in cases where quotes from interviews are associated with the personal names of the interviewees. Given that the interviews involve experts in authoritative positions, the focus is predominantly on professional insights rather than personal experiences, thereby minimizing the risk of emotional or psychological harm to participants. A disclaimer is provided that disadvantaged individuals reading this thesis, especially those from the Tweebosbuurt, might experience discomfort through revisiting past injustices mentioned in this research.

While the study primarily addresses issues prevalent within minority groups, any proposed enhancements to Rotterdam's housing policy are intended to benefit society at large. The research recognizes and respects the contrasting objectives in urban redevelopment among different stakeholders. By conducting interviews with diverse groups and developing a design that finds middle ground in conflicting objectives, this research adopts a nuanced approach. Awareness of the different political stances relevant to this thesis will be further elaborated upon in the reflection.

Given my background in urban design and architecture and my affiliation with the right-to-housing movement, I acknowledge an inherent personal bias towards issues surrounding social housing and urban redevelopment. This bias could potentially influence the interpretation of data and the formulation of guidelines. To counteract this, the methodology incorporates interviews with diverse groups to mitigate the risk of overemphasizing a single perspective. Furthermore, the research employs a systematic approach in analyzing interview data and reviewing literature to minimize subjective interpretations. Throughout the research process, regular feedback sessions with tutors and peer students provide external checks on potential biases, ensuring a balanced and comprehensive analysis.

04.
RESEARCH RESULTS



Fig. 13. De Katendrechtse Lagedijk in de Tarwewijk. (Hanswijk, 2021)

Theory of Displacement

Used theories

This text establishes the theoretical framework for understanding displacement, drawing primarily on key works by Grier and Grier (1978) and Marcuse (1985). These authors explore displacement within the context of neighborhood change, differentiating between direct displacement and indirect displacement (also being referred to as displacement pressures). While they recognize the complexity of indirect pressures, they do not categorize them into distinct themes, a practice that has become more common in later research.

In contrast, this research adopts a thematic categorization of indirect displacement pressures—beyond direct displacement—into social, financial, and cultural displacement. While social and financial displacements are widely acknowledged, the concept of cultural displacement has been more specifically tailored to the context of this research. This category emphasizes the well-documented link between spatial aspects and their reflection of people's socio-cultural identity, familiarity, and attachment to a place. Consequently, within this category, less emphasis is placed on non-spatial aspects that can result in similar feelings, such as familiar social values and networks, which are instead explored under social displacement.

Introduction to displacement

Displacement, defined as the forced relocation of residents from their residential housing units (Easton et al., 2020), is increasingly recognized as a social injustice stemming from housing policies such as those implemented in Rotterdam. The concept carries a multi-layered definition that has been, particularly in the context of gentrification and urban renewal, the subject of extensive research. Grier and Grier (1978) further clarify the term, by stating that displacement involves forced relocation that is involuntary and occurs due to conditions beyond the residents' control, despite them having met all previously imposed conditions of occupancy. These conditions render continued occupancy impossible, hazardous, or unaffordable.

Types of displacement

Direct displacement

Displacement is often categorized into direct and indirect forms. Direct displacement arises from very direct, practical changes such as a sudden rent increase or physical eviction by landlords. It usually expresses the experience surrounding direct relocation or eviction from ones housing unit, often involving the demolition or significant alteration of the building.

Fig. 14. Sloopwerkzaamheden in de Tweebosbuurt te Rotterdam-Zuid (Snoek, 2022). Article by Nuland (2022) in Trouw.

Reportage Achterstandswijk

De sloop werd per brief aangekondigd: in Rotterdam is de sloopkogel sterker dan het spandoek



Sloopwerkzaamheden in de Tweebosbuurt te Rotterdam-Zuid. Beeld Otto Snoek

Met ferme hand knapt Rotterdam zijn achterstandswijken op. Daarbij verliest de stad geregeld het bewonersbelang uit het oog, zegt een evaluatiecommissie. 'De sloop werd per brief aangekondigd.'

Merijn van Nuland 20 juli 2022, 08:53

Fig. 14

Indirect displacement, on the other hand, comprises a wide variety of influences from urban renewal that can evolve without someone's housing unit being directly affected. Indirect displacement typically arises from a gradual accumulation of displacement pressures over time, leading to a sense of displacement. Marcuse (1986) stresses that recognizing these indirect pressures provides a fuller understanding of the emotional and societal consequences of urban renewal. The following examples of indirect displacement pressures are derived from a comprehensive review of the literature and are categorized based on a personally devised classification consisting of: financial displacement, social displacement, and cultural displacement.

Financial displacement

An example of indirect displacement pressure occurs when the upgrading of properties leads to increased rents and property prices in the surrounding area, forcing residents to relocate even though their own homes were not directly affected (Easton et al., 2020). This scenario is typically referred to as financial or economic displacement (Marcuse, 1985). This type of displacement may result not only from residents being unable to afford higher rents, but also from a general rise in living costs, such as increased prices for goods and services in the area.

The following two examples of indirect (social and cultural) displacement pressures stem more from psychological impacts, such as disrupting people's emotional attachment to a place, than from practical concerns. This is discussed in research, demonstrating how changes in a neighbourhood can affect one's sense of familiarity and stability, ultimately reducing feelings of belonging or being at home (Dossa & Golubovic, 2019; Fullilove, 1996; Vandemark, 2007). This thesis carefully considers these issues, particularly as discussions in Rotterdam often focus on the psychological effects residents experience, such as feeling undervalued, discriminated against, or emotionally affected by the disruptive nature of the city's urban restructuring. The following text will briefly introduce the two categories of social and cultural displacement considered in this research:

Social displacement

The first example of displacement related to people's attachment to a place, is social displacement. This can occur due the arrival of new groups with different lifestyles or values, or the departure of long-standing neighbors and community members, leading to a loss of familiar social networks and support systems. When residents feel they

don't hold a valued position within the greater community, it can erode their sense of belonging.

Cultural displacement

Cultural displacement typically arises as social change progresses, affecting the feeling of being at home. This shift occurs as familiar cultural structures, such as amenities, adapt to demographic changes, reflecting new tastes, norms, and values (Brown-Saracino, 2009; Zukin, 2010). As shops and services increasingly cater to new residents, and the character of the neighborhood changes, existing residents may feel a sense of alienation - that the neighborhood no longer reflects their cultural or socio-economic identity.

This research focuses on the relevance of spatial aspects for cultural displacement, including physical attributes like urban structures, landmarks, architectural styles, and local services. Manzo (2014) emphasizes the attachments that residents form at different spatial levels, such as their housing unit, block, or entire community, often expressed physically through house design, location, and neighborhood amenities. In the context of involuntary relocation or neighborhood change, these aspects are crucial for understanding displacement, as they are linked to experiencing not only the loss of community but also the loss of place and home (Atkinson, 2015).

Measuring displacement

Given the multi-layered character of the definitions and pressures surrounding displacement, it is inevitable that the data related to these instances can be hard to measure. The paper *Measuring and Mapping Displacement: The Problem of Quantification in the Battle Against Gentrification* by Easton et al. (2020) elaborates on this by discussing several research methods and their limitations.

To identify displacement, interviews can be used to gather data about migrant characteristics. This offers the advantage of exploring the motivations behind migration which will help distinguishing between 'voluntary' and 'involuntary' migration - a distinction often challenging to make in displacement studies (Grier & Grier, 1978). However, conclusions might contain inconsistencies as achieving a diverse sample can be challenging and time consuming (Marcuse, 1985), and people's willingness to participate might be influenced by traumatic experiences (Baeten et al., 2017).

Recent research has attempted to quantify displacement by analyzing demographic and socio-economic shifts in neighborhoods. Studies typically observe how specific sub-groups are replaced by younger, more affluent populations using population and housing data (Van Criekingen, 2009). An example is Brousseau's (2015) study on the Mission District, which linked displacement to rent increases outpacing income growth (Brousseau, 2015). However, caution is advised in drawing conclusions, as the causal connection between in-migration and out-migration can often remain speculative (Easton et al., 2020).

Furthermore, the paper highlights several factors that influence the impact of displacement but are challenging to assess and, therefore, are frequently overlooked in research. These include "*(...) the intensity of psychosocial ties that bind people to places* (Davidson, 2009)*, the sacrifices lower-income residents may make over time to remain in their homes in gentrifying areas* (Newman & Wyly, 2006)*, or the limitations that gentrification may place upon their future residential choices* (Slater, 2009)", as summarized by Easton et al. (2020, p. 2).

In conclusion, quantifying displacement poses significant challenges. However, by employing qualitative research and using a solid understanding of displacement theories, it is possible to predict residents' feelings of displacement due to changing neighborhood dynamics. Consequently, this thesis focuses on analyzing these evolving factors and their potential impacts, acknowledging both the complexity and feasibility of forecasting displacement in such contexts.

Fig. 15: Definitions of displacement, drawing on Grier & Grier (1978), and Marcuse (1986), using additional research (Brown-Saracino, 2009; Easton et al., 2020; Fullilove, 1996; Manzo, 2014; Zukin, 2010)

Direct (last-resident) displacement	Direct last-resident displacement is caused by both physical- (e.g. harassment from landlords) and economic actions (e.g. sudden rent increase). This form of displacement is usually immediate and visible, often involving the demolition or significant alteration of existing housing.
Indirect displacement	Indirect displacement occurs when residents are compelled to leave their homes due to changes in their neighborhood that make living there untenable or unaffordable, even though their actual housing unit isn't directly affected. Unlike direct displacement, which involves immediate relocation, indirect displacement usually emerges gradually from accumulating pressures over time, that erode someone's sense of belonging or financial viability of staying.
Indirect displacement types: **Financial displacement**	This form of displacement is primarily economic, affecting residents who can no longer afford their neighborhood due to rent increases or a general rise in living costs (such as increased prices for goods and services in the area).
Social displacement	This could be due to the arrival of new groups with different lifestyles or values, or the departure of long-standing neighbors and community members, eroding the sense you belong in a place due to the loss of familiar social networks and support systems.
Cultural displacement	This includes changes in physical attributes, such as urban structures, landmarks, architectural styles, and neighborhood amenities, that carry meaning, structure and familiarity. When such familiar structures are significantly altered or replaced, original residents may feel that the neighborhood no longer meets their needs or reflects their sense of home and socio-economic identity.

Fig. 15

Displacement in Rotterdam's Past Housing Policies

Introduction to the framework

The impact of the introduced displacement types (direct, financial, social, and cultural) under Rotterdam's policy directions will be assessed using a research framework, which will be detailed in the following pages.

The section '*History of Rotterdam's Housing Policies*', starting in 1940, sets the stage for understanding the development of the city's more recent strategies. This thesis focuses specifically on policies from 2000 to 2023 to analyze displacement patterns. These more recent policies consistently derive from a strategy of social mixing. While the focus of each policy document varies slightly—for instance, the Urban Vision of 2007 aimed to enhance both the socio-economic situation and economic vitality, whereas the Housing Vision of 2016 more narrowly targeted housing segments and their specific groups—they all fundamentally advocate for social mixing as a means to improve the city's socio-economic balance.

Thus, while analyzing displacement issues in Rotterdam, they will be assessed within a framework that considers the primary drivers of displacement: housing and social differentiation, integral to the city's social mixing strategy. The analysis will begin with a detailed explanation of social mixing to better contextualize the displacement issues within this framework as the analysis progresses.

Social mixing

The strategy of social mixing is primarily guided by **housing differentiation**. Given that the majority of the city's housing stock consisted of publicly owned social housing, the municipality had the ability to directly and substantially influence the stock. The principal method involved diversifying housing types, primarily by reducing social housing units and introducing more high-end, owner-occupied properties. This theme was a focal point in key policy documents such as the Urban Vision (2007), the Housing Vision (2016), and the subsequent District Atlas (2020). The purpose behind differentiating housing was to facilitate **social differentiation**— essentially the city was actively engineering its demographic composition. Over the past 23 years, social differentiation has been the primary goal: the issue was not so much a lack of housing variety, but rather the demographic composition associated with this limited variety. Most policy documents from 2000 to 2023 highlight the concern that an overrepresentation of social housing has led to high concentrations of ethnic minorities and low-income households, framing this as a key problem to address.

Fig. 16: Framework showing the relation between Rotterdam's Housing Policy direction (social mixing) and the resulting displacement issues.

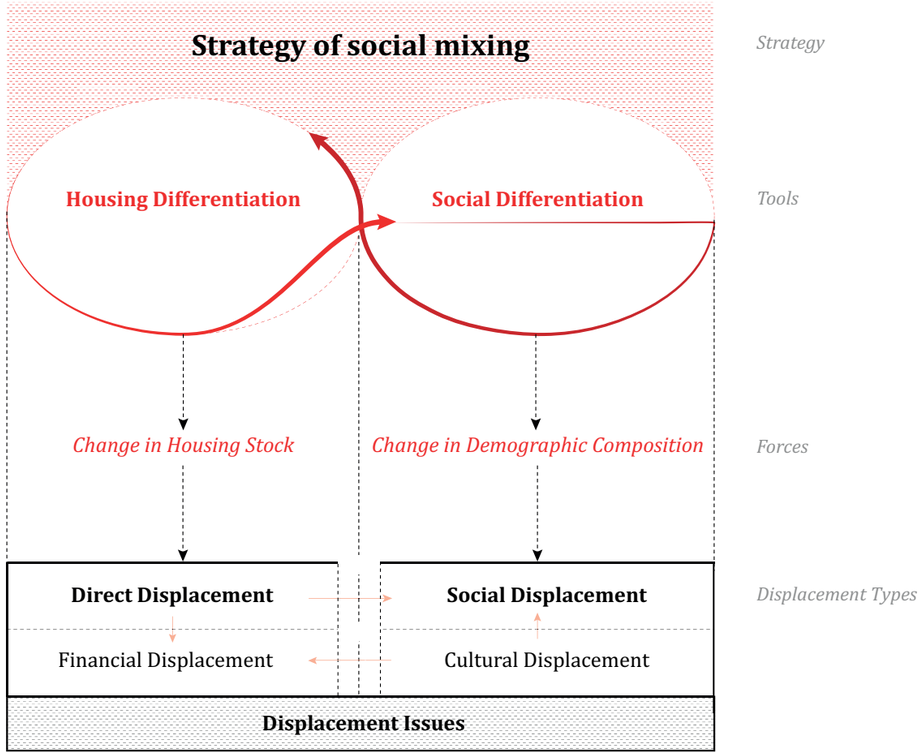


Fig. 16

However, it must be noted that social mixing has not always been used with this priority. The strategy gained popularity in the late 1980's in the Netherlands as, especially in larger cities, the social renting sector often failed to serve its intended demographic. In the late 80's, the Ministry of Housing, Spatial Planning and the Environment (1989) published a policy document, asserting the need to increase the number of expensive houses in cities, particularly in the purchasing sector. This was to motivate higher incomes to relocate, making social houses available for their intended demographic: lower incomes. Bolt & van Kempen (2009) explain in their article on social mixing in the Netherlands, that at this point the strategy did not aim to create mixed neighborhoods or improve social cohesion, but rather aimed to make social housing available to the right households.

Nevertheless, in the 1990's the notion grew that housing differentiation was needed to address the low socioeconomic status of economically challenged, homogeneous urban districts. When the Ministry of Housing, Spatial Planning and the Environment (1997) introduced a new policy direction for urban restructuring, achieving an urban mix to tackle social and economic issues became a key focus. This involved proposals for demolishing part of the social housing stock to be replaced by an increased number of expensive houses. This approach was widely adopted by most large cities in the Netherlands in the subsequent years. After 2001, the strategy of social mixing was increasingly proposed to counter the clustering of ethnic minorities. Such clustering was perceived negatively, as it was thought to limit their social chances and integration into the Dutch native society, thereby leading to a culmination of social issues.

In the following years, a strategy of urban restructuring was implemented that focused on the influx of middle-class and higher-income households in low-income neighborhoods. In these neighborhoods, over-representation of (non-western) low-income groups was viewed as problematic, primarily because it was thought to threaten the social cohesion in the neighborhood (Bolt & van Kempen, 2008). Additionally, the clustering of these groups was believed to restrict their ability to improve their social position and housing career, a concept referring to the ability to move through various types and qualities of housing over time. The Ministry of Housing, Spatial Planning and the Environment (1997) supported this view by necessitating the de-concentration of (non-western) low-income groups to enhance integration, strengthen social networks, and to provide role models for disadvantaged residents. As Bolt & van Kempen (2009) summarize, this was expected to lead to a range of positive outcomes, like social cohesion, social mobility opportunities, more social capital, better services, less crime, an improved neighborhood reputation, and more residential stability (see e.g., Arthurson 2002; Bolt and Van Kempen 2008; Kleinhans 2004; Tunstall 2003).

In this context, Rotterdam developed a similar strategy of social mixing, aligned with the concept of the 'balanced city'. The strategy underscores the importance of a balanced housing stock in improving the city's socio-economic status and tackling extensive socio-economic challenges like low education levels, high unemployment, and prevalent debt issues, as highlighted in NPRZ reports (2011, 2019). The municipality relates these issues to areas with an over-representation of ethnic

Fig. 17. The figure summarizes the main arguments, found in research and policy papers, that are used to support the need for social mixing. Based on various documents (Atkinson & Kintrea, 2000; Bolt & van Kempen, 2008, 2009; Brophy & Smith, 1997; R. Kleinhans, 2004; Ministry of Housing Spatial Planning and the Environment, 1989, 1997; Municipality of Rotterdam, 2003, 2023; NPRZ, 2011, 2019).

minorities, a view that was common in most large cities of the period (Municipality of Rotterdam, 2003; NPRZ, 2011). Introducing more high-income residents was seen as a way to positively impact these areas, reinforcing the national perspective of such residents as role models. In the new Housing Vision of 2023, the notion remains apparent that social housing areas, often facing higher instances of disturbance, safety issues, and reduced livability, are in need of a more diversified housing stock to improve the socio-economic balance (Municipality of Rotterdam, 2023b, pp. 11–13).

Summary of common strategic motives for social mixing

Adressed issues	Strategy (parameters)	Reasoning	Aim
• **Socio-economic issues** (low level of education, high unemployment, criminality, debt issues) • **Low social cohesion** or integration (social exclusion, social segregation, insufficient integration of ethnic groups, increasing divisions) • **Low livability** (low quality of public space and housing) • **Problem cumulation** (perpetual nature of issues, disadvantaged residents being stuck in unfavorable surroundings, further emphasized by selective outmigration) • **Limitation of (social) growth** (restricted housing career options, low social mobility, no options to 'improve')	• **Change in housing** through differentiation (demolition, new construction, renovation, merging, etc.) Synchronized with a **change in people**, conform the strategy of 'social mixing'.	*Role-model ideology:* • **Exemplary social norms** (in a surrounding where people go to school or work every day) • **Informal networking** (with higher incomes, leading to job opportunities) • **Stricter community rules** (through a higher level of social control, contributing to decreased crime rates and increased safety) • **Better access to high-end facilities** (such as high-quality education and jobs).	• **Create a socio-economic balance**, an equally accessible, inclusive environment • **Improve economic development** of residents/ neighborhoods (through higher social capital, improved economic position, and access to better services) • **Improve overall competitive position** (reputation) of the city for businesses and investors • **Decrease of social issues,** increase of social stability, higher levels of social integration and community participation (or via problem dilution). • **Increase of livability** and urban quality

Fig. 17

Concluding the framework

The information above has further clarified the application of social mixing in the recent context of Rotterdam, which is important for understanding its impact on the city and, consequently, on displacement. The framework demonstrates how housing differentiation and social differentiation serve as integrated tools to facilitate the mixing strategy.

These tools result in two main changes: *changes in the housing stock, and changes in the demographic composition*, which can be viewed as separate forces in the context of displacement. Direct and financial displacement issues are closely associated with changes in housing stock, primarily due to the reduction of social housing (direct displacement) to accommodate higher-end housing (financial displacement). Conversely, social and cultural displacement relate more to shifts in the demographic composition, as these changes tend to disrupt established social structures (social displacement), and significantly transform the physical settings that embody these structures (cultural displacement).

It should be noted that these categorizations are not absolute. The framework includes red arrows with low opacity to indicate the interconnections between different types of displacement. Just like the tools of differentiation, they are part of one integral system of change. Nonetheless, this research will mostly adhere to the dual classification.

In the following text, this framework will be used to assess displacement under Rotterdam's previous policy directions. Direct and financial displacement will be merged into one narrative, evaluated as outcomes of changes in the housing stock. Meanwhile, social and cultural displacement will be analyzed in relation to demographic changes. Any relevant interrelations will be addressed.

Direct displacement & Financial displacement

Having established the theoretical background of various types of displacement, this text will delve into how direct and financial displacement have manifested within the discourse of Rotterdam's housing policies up to 2023. These forms of displacement are analyzed together because they both stem directly from changes in the city's housing stock. Direct displacement, characterized by the immediate and visible relocation of residents due to actions such as demolition, serves as the primary focus. Financial displacement, which involves economic pressures forcing residents out of their neighborhoods due to rent increases or rising living costs, is considered as a secondary but interrelated theme.

Reduction of social housing:

Since 1988, Rotterdam's housing strategy has been driven by the goal of improving socio-economic balance through the reduction of social housing. This policy direction led to a notable decrease in affordable housing units from 2000 to 2009, with 20,000 units lost and only 6,000 new homes built, resulting in a net loss of nearly 14,000 houses (Dol & Kleinhans, 2012). During this period, Rotterdam distinguished itself by demolishing more social housing than any aother Dutch municipality, thereby becoming the only city in the Netherlands to see a decline in its overall housing stock, resulting in the displacement of many residents (Uitermark & Duyvendak, 2008).

The continuation of this strategy was evident in the new Housing Vision of 2016, which set forth a particularly impactful strategy by setting the goal of further reducing the affordable housing stock by 47,600 units by the year 2030. The city's southern districts were particularly targeted, as the NPRZ execution plan (2019) aimed to renew one third of the district's housing stock through renovation, merging, or demolition-new construction (Arkins & French, 2023).

The reduction of affordable housing, coupled with an emphasis on higher-segment housing, can intensify gentrifying forces, leading to increased property values and higher living costs. While rising property values can enhance the financial capital of homeowners, they often result in higher rents, thereby increasing financial pressure on established residents. Additionally, local individuals aiming to advance their housing careers by purchasing property may find themselves priced out of the market, compelling them to seek housing further from the city center.

The Urban Vision (2007) specifically targeted the Afrikaanderwijk in the South district, among other neighborhoods near the city center, for gentrification (Municipality of Rotterdam, 2007, p. 70). Between 2015 and 2020, property values in Rotterdam saw an average increase of 119%, with values in the Afrikaanderwijk surging by 212% (CBS, 2020). These trends demonstrate how gentrification policies can significantly alter both the housing stock of neighborhoods and their corresponding financial dynamics.

Lack of a right to return:

The large-scale redevelopment projects, aimed at decreasing the social housing stock, often did not include provisions for displaced residents to return. Entire neighborhoods, like the Tweebosbuurt, were targeted for demolition. In this area, plans were set to demolish 535 social housing units - predominantly inhabited by residents with a migrant background - while only 137 social housing units were being reconstructed as social housing, actively displacing long-term residents (Arkins & French, 2023). In response, special rapporteurs from the United Nations criticized Rotterdam's housing policy for jeopardizing the human right to housing, highlighting the lack of a right to return for affected residents, and warning of major family disruptions (United Nations, 2021). A representative from the SP highlighted the emotional impact of such policies on displaced residents, stating: *"I have spoken to people in the city and they had to move twice. They came from somewhere and were placed somewhere different in a neighborhood, then their house got demolished. They had to leave again. Over time I can imagine that you get the feeling you aren't welcome. Like if we feel like moving you, we move you."* (as cited in (Versluis, 2017)).

Overall scarcity:

In such cases of relocation, residents are entitled to a 'Certificate of Urgency,' which prioritizes them in seeking alternative housing. However, due to scarcity, the options for rehousing are limited, and the distribution of priority statuses generally leads to longer waiting lists for social housing (Kleinhans et al., 2022; Versluis, 2017). Research by the Court of Audit (2022) indicated that the housing policy direction from 2015 to 2020 significantly contributed to a shortage of affordable housing in Rotterdam. Data shows a 1.9% decrease in the number of low-income individuals, contrasted with a 17.8% reduction in affordable housing units – significantly more

Fig. 18: Planned housing stock changes (2000-2030) based on the Housing Vision (Municipality of Rotterdam, 2016)



Fig. 18

concerning mutations compared to other segments (see figure 19). This trend is also mirrored in the decreasing success rate of housing seekers from the primary target group in the social sector, which fell from 12.2% to 5.9% during this period (OBI, 2023). The scarcity of affordable housing options, along with prolonged waiting lists, heightens the risk that households will spend a larger portion of their income on housing over extended periods, beyond what they can sustainably afford. Additionally, individuals may feel compelled to rent or buy housing that exceeds their budget, further contributing to financial pressures.

Income Distribution Rotterdam		**Housing** Distribution Rotterdam	
	Mutation 2015-2020		*Mutation 2015-2020*
Low-incomes	**-1,9**	Low segment	**-17,8**
Middle-incomes	0,5	Middle segment	10,1
High-incomes	1,4	High segment	7,7

Fig. 19

Unfair and inconsistent use of data:
The continuous demolition and liberalization of social housing units during a broader housing shortage, was partly being facilitated by inaccurate supply and demand estimations. The Audit Office (2022) has criticized the Municipality for its changing definitions of housing segments across multiple policy documents. These shifts have hindered the ability to make consistent year-to-year comparisons, making it difficult to oversee the impact of their measures. Particularly, Rotterdam's definition of the social housing segment has often been broader than national standards, leading to a distorted perception of the social housing stock's size. Furthermore, the data used in prior housing policies frequently relied on estimates or models, such as landlord surveys for determining the size of the private social housing stock, leading to potential overestimations. The first plans for demolition were based on an estimated surplus of 40,000 to 27,000 houses in the social segment. Later research revealed that the data used did not conclusively support these numbers, and was later proven to be a severe overestimation.

Fig. 19: Mutations in the income- and housing distribution in Rotterdam (2015-2020). (Data from Audit Office, 2022)

In conclusion, Rotterdam's housing policies, particularly highlighted by the Housing Vision (2016) which aimed to reduce social housing by 47,600 units by 2030, and the extensive restructuring plans outlined in the Urban Vision (2007) and NPRZ plans (2019), have caused substantial direct displacement and added to financial pressures for lower income households. These policies not only actively limited the availability of affordable housing but also often failed to provide displaced residents with the right to return. This process further added to the overall housing scarcity, which was noticeable through limited rehousing options and prolonged waiting lists. These conditions intensified the impact of changes to the housing stock, affecting both the relocation of directly displaced residents and increasing financial displacement for those not directly involved.

The magnitude of these issues has gone unaddressed for extended periods due to unfair and inconsistent use of data. As a result, the rapid and extensive changes to Rotterdam's housing stock from 2000 to 2023 not only transformed the housing landscape but also had significant repercussions on affected communities, particularly as entire neighborhoods faced forced relocations without adequate measures to mitigate their effects.

Summary

The figure on the right summarizes how Rotterdam's housing stock alterations (2000-2023) contributed to direct and financial displacement. The four main issues; the reduction of social housing, the overall housing scarcity, the unfair and inconsistent use of data, and the lack of a right to return will remain as important themes in the assessment of future displacement risks, and the subsequent policy recommendations.

Change in Housing Stock

Direct displacement

Definition

Involves direct relocation, caused by both physical- (e.g. harassment from landlords) and economic actions (e.g. sudden rent increase). This form of displacement is usually immediate and visible, often involving the demolition or significant alteration of existing housing.

In Rotterdam (2000-2023)

Reduction of social housing: Rotterdam adopted an exceptionally aggressive strategy to decrease social housing, as detailed in the Housing Vision of 2016, which set a target to reduce the social housing stock by 47,600 units by 2030. Complementary plans, such as the NPRZ execution plan (2019) aimed to achieve this reduction through large-scale redevelopment of entire neighborhoods, such as the southern districts where one-third of the housing stock was marked for restructuring.

Related Effect

Overall scarcity of (affordable) housing: The demolition and limited reconstruction of social housing have added to the overall housing scarcity in Rotterdam. The impact of these policies was intensified by relocation procedures that offered limited housing alternatives and led to prolonged waiting lists.

Unfair and inconsistent use of data: The policy measures that led to most (direct) displacement issues were justified using inaccurate supply and demand estimations. Therefore, the extend of displacement remained unseen for an extended time

Lack of a right to return: The redevelopment projects, particularly in neighborhoods like Tweebosbuurt, often excluded provisions for the right of return for displaced residents. The limited efforts to offer displaced residents the option to return has drawn criticism from international organizations such as the United Nations, which highlighted the policy's failure to uphold housing rights.

Change in Housing Stock

Financial displacement

Definition

This form of displacement is primarily economic, affecting residents who can no longer afford their neighborhood due to rent increases or a general rise in living costs (such as increased prices for goods and services in the area).

In Rotterdam (2000-2023)

Related Effect

As the social housing stock is being decreased, and the focus shifts towards attracting higher-income residents, neighborhoods experience intensified gentrification. This shift contributes to a rise in property values and living costs, which can marginalize and eventually displace existing lower-income residents who can no longer afford to live in their own neighborhoods.

Related Effect

Due to a scarcity of (affordable) housing and prolonged waiting lists, households are at a higher risk of spending a larger portion of their income on housing for extended periods, beyond what they can sustainably afford. Additionally, individuals may feel compelled to rent or buy housing that exceeds their budget or to seek housing in more affordable locations further from the city center.

Fig. 20. Summary of the effects of Rotterdam's housing stock alterations (2000-2023) on Direct and Financial Displacement.

Fig. 20

Social displacement & Cultural displacement

Social displacement involves the loss of familiar social networks and support systems due to the arrival of new groups with different lifestyles or values, or the departure of long-standing neighbors and community members. The loss of security and attachment can be exacerbated by insufficient integration of a new, contrasting group. Like social displacement, cultural displacement stems from the erosion of familiarity and identity due to social changes, yet it is expressed spatially. This includes changes in physical attributes, such as urban structures, landmarks, architectural styles, and neighborhood amenities, that carry meaning, structure and familiarity. The following text will explore how Rotterdam's policy objectives from 2000 to 2023 have impacted both types of displacement, integrating them into one narrative.

Urban restructuring for higher-incomes:

Urban restructuring aimed at higher-income residents forms a core part of Rotterdam's housing strategy. The City Vision (2007) and Housing Vision (2016) focused on extensive urban developments to elevate the city's living conditions, targeting middle- and high-income, well-educated groups. These efforts particularly targeted areas like Rotterdam South, historically known for limited housing variety and lower living standards, with the objective of attracting 'social risers' capable of driving and inspiring broader city-wide change. The NPRZ policy (2019) further aimed to reshape the demographic composition in these districts, supported by the Rotterdamwet, which facilitated the decline of lower-income households in vulnerable neighborhoods labeled as '*krachtwijken*' (Municipality of Rotterdam, 2006). This strategic emphasis on attracting higher-income groups has led to the systematic replacement of lower-income populations with wealthier newcomers, thereby transforming the demographic composition of these neighborhoods.

Transformation of commercial sector to meet high-income demands:

As such demographic changes evolve, neighborhoods often face cultural displacement pressures when new, higher-income residents demand different amenities and services. Historically, Rotterdam's commercial landscape has been shaped by a significant number of 'ethnic' businesses. Rath (2022) explains that these were mainly formed during Rotterdam's urban decline in the 1970s, when migrants from

countries like Turkey, Morocco, and the Antilles, occupied both the vacant living units and empty commercial spaces that the original residents that moved away left behind. Over time, however, these amenities gradually deteriorated due to disinvestment and neglect, typically alongside the neglect of social housing in these neighborhoods.

The municipality's efforts to enhance disadvantaged neighborhoods in Rotterdam brought renewed focus on urban quality and services. Yet, the introduction of well-educated, creative workers, and entrepreneurs often resulted in the displacement of existing workers and their businesses by trendier and more expensive establishments such as coffee bars, vintage boutiques, and vegetarian restaurants (Rath, 2022). In line with this, De Vries (2017) observed that between 1996 and 2014, Rotterdam experienced a rise in upscale, specialized services, particularly in the real estate and accountancy/tax advisory sectors, and a decline in more informal, community-focused amenities, including casual food and beverage facilities.
This transformation was partly driven by strategic policies such as the 'South Works' document, which aimed to develop new businesses - alongside housing - to create economic value in these areas (NPRZ, 2011). This policy sought to establish new economic focal points in the South, in sectors like technology and healthcare. A more diversified and high-end commercial sector was supposed to overcome the limitations of these neighborhoods, characterized by 'low-quality retail with limited investment capacity'.

Although the upgrading and possible diversification of the commercial sector are generally positive outcomes of urban redevelopment, this shift towards attracting a new, 'economically active' community (NPRZ, 2011) can contribute to cultural displacement. New high-end services and businesses might conflict with the needs and socio-economic identities of existing residents. The NPRZ policy document partially addresses this by supporting small-scale, local business initiatives that could empower younger residents to enhance the economic profile of the South, aligning more closely with the area's existing identity. However, special attention needs to be paid to maintaining spaces where diverse groups can express themselves, essential for social leveling and community vitality.

Disregard for (existing) community networks:
To further enhance social integration and community vitality while attracting new target groups, it is essential to consider existing community networks and implement effective strategies to preserve or strengthen social cohesion amidst significant demographic shifts. However, Rotterdam's policy documents lack specific measures for successfully integrating new residents into the existing social fabric, raising concerns among researchers. For example, a Woonstad manager noted that social mixing initiatives in a Rotterdam gentrification project did not succeed at the neighborhood level, as the wealthier new residents formed separate groups and used different schools and shops than the original inhabitants, as described by Arkins & French (2023). Similarly, Doucet & Koenders (2018) reported minimal interaction between new and long-standing residents in the Afrikaanderwijk, indicating a lack of community integration despite efforts at local cultural centers like the Klooster. Additionally, the Rotterdamwet has hindered the development of community networks by restricting the influx of low-income residents, who typically share similar economic backgrounds and cultural ties with existing residents, thus disrupting the natural processes that renew and sustain community networks.

Highly disruptive character of urban development strategy:
Based on above findings, it can be concluded that generally, the highly disruptive, non-localized character of Rotterdam's housing policy has been a main factor in many displacement issues. This comes forward in both the large-scale demolition of housing (direct displacement) as well as aiming to significantly alter the demographic composition, without adequately declaring goals for preserving and enhancing existing local amenities and community networks. Additionally, this issue is relevant for cultural displacement as the highly disruptive approach of urban restructuring has contributed to a loss of identity and place.

In an interview, Mustapha Eaisaouiyen, former resident of the Tweebosbuurt, emphasizes the great impact of demolition on people's lifes. Fullilove (1996) effectively captures this sentiment within the context of neighborhood change, using the term 'root shock', a phenomenon frequently voiced by residents facing eviction by expressing grief towards losing their home and the attached memories (NOS, 2022).

Literature on place-attachments suggests this extends beyond the scale of the house. Mustapha confirms this assumption, as he passionately describes how the residents of the Tweebosbuurt have fought to preserve public spaces and green infrastructure that were considered to be typical for the neighborhood (personal communication, 27/03/2024). Similar links between people's attachment and spatial characteristics come forward in earlier interviews with residents in the Afrikaanderwijk, as a resident expresses grief towards losing the view on the school he attended as a child, or as residents describe they highly value other key spatial features integral to their daily lives, like the bakery, butchery, and public transport connections (Municipality of Rotterdam, 2019b; Rijnmond, 2019). Considering the loss of identity and place that occurs when these characteristics are disrupted helps to fully understand the complex psychological effects of displacement.

Undermined value of certain social groups:
To wrap up this evaluation of displacement, the final segment of this text will discuss how devaluing particular social groups is linked to social and cultural displacement. Rotterdam's housing policies imply there is a need of a new target group to adequately address the city's challenges, undermining the relevance of established residents in future urban development. This approach contributes to social displacement, as it implies that current residents do not hold a valued position within the broader community.

This undermined relevance is emphasized by aiming for '*people from outside the area*', such as social climbers and young potentials, and by building housing to fit the needs of the '*future residents of the South*' (NPRZ, 2011, 2019). The South Works policy paper specifically dismisses the current residents' ability to enhance urban quality, by stating that the South has to be temporarily excluded from the usual housing distribution system – referring to the Rotterdamwet - to attract people that can have a '*meaningful contribution*' to South (NPRZ, 2011). People that can have a meaningful contribution, also referred to as '*strong shoulders*', are specified as primarily Dutch, aged 25-35, working, and highly educated (Municipality of Rotterdam, 2020b).

In 2015, several researchers from the University of Amsterdam concluded that the measures of the Rotterdamwet have had no proven effect on improving the livability in these neighborhoods, and that the measures mainly disadvantaged certain ethnic minorities (Hochstenbach et al., 2015; Ouwehand & Doff, 2013). Arkins & French (2023) observe that these strategies are primarily proposed in areas of Rotterdam with high rates of affordable housing, lower-income households, and migrant communities; there's no equivalent strategy for integrating low-income households into upper-class dominated areas. This lack of balanced strategy leads to the stigmatization of migrant communities, linking them with social issues, poverty, and criminality (Kleinhans et al., 2022).

The way policy objectives are framed exacerbates this problem, with urban issues being referred to as '*un-Dutch*', and statements such as '*the color is not the issue, but the issue does have a color*' (Municipality of Rotterdam, 2003; NPRZ, 2011). This contributes to certain groups feeling unwelcome in the city, as a researcher illustrates: ''*You could also see this in the Tweebosbuurt but also in Charlois, Feyenoord and so on: when people with a bi-cultural background, for instance, Moroccan-Dutch or Antillean-Dutch etc. really directly ask 'are we not allowed to live here?' because they are made to feel that way*'', cited by Arkins & French (2023). Consequently, Rotterdam's past housing policies do not only actively displace groups based on social status but also sidelines specific demographics from participating in urban development, undermining their ability to add value.

In conclusion, Rotterdam's strategic focus on urban restructuring in favor of higher-income and well-educated groups, particularly in the City Vision (2007) and Housing Vision (2016), neglected the preservation of a diverse, small-scale local commercial landscape and existing community networks. The Rotterdam Act (2006) exacerbated this by restricting low-income residents from moving into certain neighborhoods, thereby disrupting the natural development of community networks. This disruptive restructuring strategy significantly contributed to a loss of identity and place, thereby contributing to cultural displacement. Furthermore, the NPRZ documents (2009, 2011) have systematically marginalized established residents and ethnic minorities, portraying these groups as irrelevant to the city's development and diminishing their sense of belonging.

Summary

The figure on the right summarizes how Rotterdam's alterations in the social composition (2000-2023) contributed to social and cultural displacement. The four main issues of social displacement: the focus on higher-incomes, the disregard for existing community networks, the undermined value of established residents, and the selective influx - and the two main issues of cultural displacement: the transformation of the commercial sector to meet high-income demand, and the highly disruptive character of the urban development strategy, will remain as important themes in the assessment of future displacement risks, and the subsequent policy recommendations.

Change in demographic composition

Social displacement

Definition

This could be due to the arrival of new groups with different lifestyles or values, or the departure of long-standing neighbors and community members, eroding the sense you belong in a place due to the loss of familiar social networks and support systems.

In Rotterdam (2000-2023)

Urban restructuring for higher-incomes: The City Vision (2007) and Housing Vision (2016) explicitly targeted the transformation of the city's living environment to cater to higher-income and well-educated groups. This focus led to the replacement of lower-income populations with wealthier newcomers, thereby transforming the demographic composition of these neighborhoods.

Related Effect →

Disregard for existing community networks: The strategic focus on new demographics disregards established social networks and community cohesion. No policy documents show a vision for effectively integrating the new target group, with research indicating challenges in achieving social cohesion.

Undermined value of certain social groups: This housing strategy, particularly the NPRZ documents (2009, 2011), systematically marginalized established residents and ethnic minorities, by conveying that these populations lack relevance within the development of the city.

Selective influx in community networks: The Rotterdam Act (2006) restricted new low-income residents from moving into certain neighborhoods, thus disrupting the natural processes that renew and sustain community networks and furthering the sense of exclusion among these communities.

Change in demographic composition

Cultural displacement

Definition

This includes physical attributes, such as urban structures, landmarks, architectural styles, and neighborhood amenities, that connect the community to its unique identity. When such familiar structures are significantly altered or replaced, the original residents might no longer feel that the neighborhood caters to their needs or reflects their cultural or socio-economic identity.

In Rotterdam (2000-2023)

Transformation of the commercial sector to meet high-income demands: As such demographic changes evolve, neighborhoods often face cultural displacement pressures when new, higher-income residents demand different amenities and services, possibly conflicting with the needs and socio-economic identities of existing residents.

Related Effect →

Highly disruptive character of urban development strategy: The highly disruptive, non-localized character of Rotterdam's housing policies has contributed to the loss of identity and place. The large-scale demolitions, and significant changes in the social and commercial landscape compromised cultural and emotional attachment.

Fig. 21: Summary of the effects of Rotterdam's alterations in the demographic composition alterations (2000-2023) on Social and Cultural Displacement.

Fig. 21

The New Housing Vision: A New Policy Direction?

In 2023, the municipality of Rotterdam proposed a new Housing Vision encapsulated by the slogan '*A home for everyone*' [Een Rotterdams thuis voor iedereen]. Contrary to the displacement issues identified under earlier policy directions, the document suggests a progressive shift towards a sustainable and inclusive future. The following text will briefly introduce the new Housing Vision, followed by a detailed examination of potential displacement issues under this new policy direction.

The new policy is structured around four key principles aimed at transforming the housing landscape: increasing the availability of affordable housing, fostering future-proof and resilient neighborhoods, providing better accommodations for vulnerable groups, and improving overall access to the housing market. These principles stem from

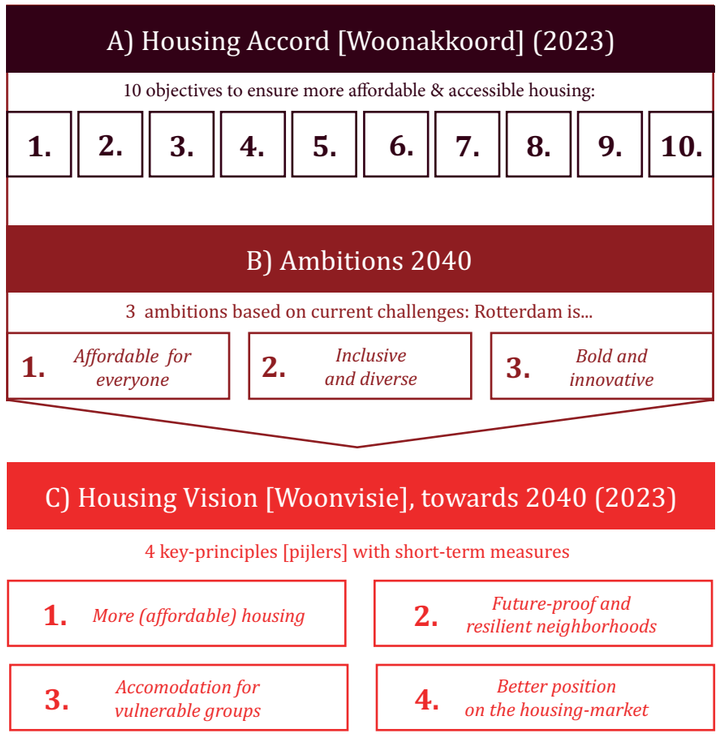


Fig. 22: Overview of the relevant policy documents leading up to the proposal of the new Housing Vision (2023)

Fig. 22

the Rotterdam Housing Accord, established by the city council on 17 February 2023, which in turn evolved into three overarching ambitions for Rotterdam (B). The new Housing Vision (C) connects these visionary ambitions with a more concrete strategy towards 2040, and sets out a set of measures that should be implemented in the following five years.

The new housing policy shows an increased awareness of the need for an accessible and inclusive housing market. This redirection of Rotterdam's housing strategy can be embedded in a changing socio-political Dutch context, where, unlike for example the period when the Rotterdamwet was initiated, there has been a notable political shift towards more left-leaning parties that prioritize social welfare issues and sustainability, including housing. Additionally, there has been a growing awareness of the housing shortage, widely recognized in many Dutch cities facing increasing demand, stagnating new construction, and limited space for new developments. Increasing activism and urgent public demand is being voiced by activist groups and housing protests, underscoring the urgent need for affordable housing and equitable housing policies. This socio-political landscape likely influenced the city's renewed focus on accessibility and inclusivity.

Despite its more inclusive intentions, the new housing policy requires a critical examination to determine whether it truly represents a departure from previous strategies or merely adopts a softer tone. An evaluation of the new policy, in light of previously identified displacement issues, reveals that similar problems persist. This continuation is primarily due to the extension of earlier ideologies reminiscent of 'the city in balance'. Consequently, recurring issues include the ongoing stigma against social housing, the use of inconsistent and unreliable data, and a non-inclusive social mixing strategy.

The outcomes of this critical examination, aimed at identifying potential future displacement risks, are discussed in the following sections. The findings are categorized into three main points: 1) The new Housing Vision pressures the right to housing, 2) The current social mixing strategy is unjust and not sufficiently grounded in research-driven measures, 3) The new Housing Vision lacks opportunities for a localized approach.

Problem Statement

1: The new Housing Vision pressures the right to housing

Peristent stigma favoring the decrease of social housing remains to fail housing rights

Based on the analysis of direct and financial displacement in past policy directions, the most critical policy measure in Rotterdam between 2000-2023 was the active reduction of the social housing stock. However, the analysis of the new vision reveals statements that suggest a continued stigma favoring the decrease of social housing, persisting despite previous concerns over past policies' failure to uphold housing rights.

For example, the municipality presents two scenarios to assess the housing demand, referred to as assessments of needs [behoefteramingen]. One scenario, labeled as 'more balance', predicts an increase of 22,500 people with higher incomes, and a decrease of 3,700 people within the EU-target group (Municipality of Rotterdam, 2023, p. 17). The EU-target group refers to the primary and secondary target group for social housing, in earlier policy documents referred to as 'lower-incomes'. The introduction of a new terminology for this groups reflects an awareness of the controversy related to explicitly addressing the movement of lower-income populations in policy documents.

Referring to these projections as assessments of needs implies they are driven by naturally evolving changes in demand. Instead, the predicted demographic flows in this scenario are based on a more balanced top-down redistribution of housing segments across the South-Holland region, to create an impulse for surrounding municipalities to take more responsibility in the provision of social housing (Ibid., p. 17). Interestingly, the intended balance is to be achieved not merely through a relative increase in the higher-segment, by adding new housing, but through an absolute decrease in lower-income households. This raises concerns for an ongoing risk of displacing established residents.

The scenarios that are shown in the introduction chapter of the new Housing Vision are concluded by acknowledging a required focus on developing expensive housing (Ibid., p. 19). Yet, this is followed by the main body of the Housing Vision introducing the primary goal for 2040: 'More and affordable housing' (Ibid., p. 24). This initially causes come confusion, until it becomes apparent that the 'and' in this statement is strategically placed, differentiating 'More' from 'Affordable'. Thus, it becomes a word that holds significant meaning in the municipality's ambitions.

1) The new Housing Vision pressures the right to housing

To illustrate this, the remainder of the document reveals that while 'affordable housing' includes both social and mid-segment housing, increasing the stock of affordable housing is exclusively focused on the middle segment. Despite the increased focus on affordability, the construction targets for high-segment housing are nearly double those of social housing (Ibid., p. 28). Coupled with plans to reduce the quantity of social housing in areas where this is dominant, the objective for expanding the affordable housing stock is eventually being reduced to ''*we aim to maintain the current volume of the social housing stock*'' (Ibid., p. 28). Multiple interviews have revealed concerns regarding the uncertain nature of terms such as 'aiming to maintain', reflecting a general mistrust in the municipality's commitment to achieving these ambitions (A. Ouwehand, personal communication, 25/01/2024; M. Eaisaouiyen, personal communication, 27/03/2024).

To more effectively evaluate the risk of displacement pressures inherent in the new Housing Vision ambitions, it is important to understand how they respond to supply and demand estimations. The greater the (potential) pressure on the social housing market, the higher the likelihood that the above ambitions increase displacement pressures. Specifically, increased pressure may drive households to seek housing options outside the city or compel more low-income households to resort to renting in the public sector. For this evaluation, the document Scarcity in the Rotterdam Housing Market [Schaarste Rotterdamse Woningmarkt] (OBI, 2023) is used.

No response to the overall housing scarcity

The report by the Research and Business Intelligence department from the Municipality (OBI) anticipates a continued rise in housing demand, primarily driven by an influx of young households and foreign migrants. The total estimated housing demand is projected at 78,300 units, with the most significant demand concentrated in the affordable segment. There are 56,860 actively searching households with lower incomes, of which, on average, 58% are from Rotterdam. The report indicates that the supply in the social sector is not keeping up with this growing demand, due to a decrease in the social housing stock and fewer properties becoming available. Consequently, the success rate for social housing seekers has diminished, and the waiting times have been increasing over the past few years.

In line with these numbers, the construction target in the social segment (up to the liberalization limit) until 2040 is estimated at 37,600 units. This expectation is based on active housing seekers from Rotterdam, but it is important to note that it does not fully include foreign housing demand or domestic movers, which would increase the target further.

These estimations in demand sharply contrast with the new Housing Vision, that anticipates a 3,700 decrease in the EU-target group. The projected absolute decrease has already raised concerns about the potential displacement of established residents. Moreover, when paired with the growing demand, this strategy intensifies concerns about further displacement issues.

Persistent use of unreliable data

Alongside these concerns regarding demand, the supply estimations require attention. The new Housing Vision continues to classify parts of the private rental sector as social housing, despite longstanding criticism. Given that both the designation of target groups for these housing units and the regulation of rental prices fall outside municipal control, these factors significantly heighten concerns regarding the reliability of estimates about the current and future availability of social housing.

Furthermore, the assumption that constructing new units in the middle and higher segments will prompt residents from the social segment to move up, thus freeing up existing units, relies on factors beyond municipal control. The OBI report estimates that 46,300 rental units would become available, if all households wishing to move do so. This number surpasses the estimated need for 37,600 units, suggesting no need for additional social housing construction (OBI, 2023). However, research has highlighted that the gap between the social and middle segments is typically substantial, making it unrealistic to expect individuals within the social sector to easily move up. Additionally, studies indicate that people generally do not relocate to match housing with their new income levels; instead, moves are more often prompted by family changes such as marriage, or children moving out (Ommeren, 2006).

In conclusion, the new Housing Vision raises concerns about future displacement through their vision on the social housing sector. By anticipating a decrease of lower-income households on a city-wide level, aiming to reduce the social housing stock in neighborhoods where this is dominant, established residents will be forced to relocate. Anticipated risks of displacement are worsened by a growing housing demand in the social sector that remains unmet. Uncertainties in objectives, strategically phrased information, and relying on factors outside municipal control lack honesty and transparency.

2:The current social mixing strategy is unjust and not sufficiently grounded in research-driven measures.

Social mixing – the mechanism behind displacement

Earlier in the research process, it was determined that the majority of displacement issues in Rotterdam stemmed from the implementation of the social mixing strategy. This strategy has contributed to displacement through two main mechanisms: Firstly, its practical implementation involved forceful changes to the existing (affordable) housing stock, leading to direct and financial displacement, as well as changes in the demographic composition, leading to social displacement. Both of these forces, and their highly disruptive character, have had their contribution to cultural displacement. Secondly, the underlying ideology of social mixing has increased displacement issues by systematically devaluing specific social groups. The strategy is rooted in the problematization of neighborhoods with a clustering of lower incomes, promoting the notion that successful urban development requires the displacement of these groups rather than improving local conditions, like employment opportunities and housing standards. Historically, such perspectives in Rotterdam's housing policies are intertwined with discriminatory values and anti-Islam sentiments, making the strategy of social mixing highly significant in assessing displacement, particularly as the new Housing Vision is being marketed as inclusive.

Reflecting on the new Housing Vision of Rotterdam, it can be concluded that the ideology of the 'city in balance', incorporating more expensive housing in areas dominated by social housing, remains visible in the new Housing Vision of 2023. However, it must be noted that the municipality clearly opts for a different tone. Unlike the previous policy, which made statements such as '*the issue does have a color*', the new policy avoids linking social issues to specific (ethnic) groups.

2) The current social mixing strategy is unjust and not sufficiently grounded in research-driven measures.

Previously, the strategy for creating mixed neighborhoods was limited to areas with excessive social housing. The new Housing Vision also connects creating mixed neighborhoods with adding social housing in areas where this is scarce (Municipality of Rotterdam, 2023, p. 36).

Additionally, rather than focusing on attracting *'higher incomes from outside'*, the municipality shifts its focus to the middle incomes, families, social climbers, and people in social professions. This indicates a more inclusive approach than before, as each of these groups could include current residents as well. Financially improving residents (from Rotterdam South) are explicitly mentioned as social climbers (Ibid., p. 42). When objectives aim for an improved socio-economic balance, or more diversified neighborhoods, this is increasingly related to providing current residents with opportunities to advance their housing situations.

However, it remains questionable whether the municipality has distanced itself from its previous strategy of social mixing through housing differentiation, or simply adopted a softer tone. Their strategy appears to be more inclusive, but it could still be argued that there are certain groups that have a higher risk of being displaced than others. Moreover, continuing to use social mixing as a foundation for the new Housing Vision raises concerns, given the strategy's controversial history marked by protests, legal battles, UN criticisms, and documented discrimination. The subsequent sections will further elaborate on the problem statement surrounding social mixing in the new Housing Vision.

Persistent (non-inclusive) social mixing strategy

As discussed above, the notion of social mixing continues to significantly shape the strategic direction for Rotterdam's housing supply. The 'more balance' scenario advocates for a reduction of 3,700 lower-income households in the city, displaying a consistent preference for creating a perceived 'balance' or 'improved mix' rather than addressing challenges such as the increasing housing shortage.

At a more 'detailed level', the new Housing Vision aims to achieve a socio-economic balance in neighborhoods characterized by disproportionately high concentrations of either high-segment or low-segment housing. However, given the earlier failed attempts documented in the District Atlas (2020) to balance the number of neighborhoods dominated by higher-segment housing (see p. 22), the objective of

creating an improved balance across all neighborhoods is highly unlikely to be met. This unlikelihood is further emphasized by the fact that the practical measures for improving balance, outlined in the document, primarily focus on areas with social housing. Housing differentiation is repeatedly mentioned as a key objective, and although the municipality intends to be cautious with demolitions, it is cited as one of the strategies to achieve a more diversified housing stock (Municipality of Rotterdam, 2023, p. 42). In this regard, NPRZ areas are specifically identified as suitable for initiatives like renovation, selective demolition, and new construction, as well as the combination or enlargement of social housing units (Ibid., p. 48). Moreover, the vision appears to prioritize certain demographic groups, for example by proposing to sell social rental properties to middle-income groups. These proposed measures seem to be reminiscent of earlier ideas on 'the city in balance' or 'social mixing' and raise concerns about the potential displacement of lower-incomes within the anticipated neighborhood changes.

Misconception of the anticipated effects

While the notion of social mixing continues to significantly shape the strategic direction for Rotterdam's housing supply, only limited attention is being given to why and how exactly social mixing should have a positive contribution to the city. This text aims to clarify the misconceptions surrounding the anticipated effects of social mixing in Rotterdam's housing policy by first examining the rationale for its implementation from a national perspective.

Introduced on page 58, social mixing is contextualized within a range of socio-economic challenges it was meant to address. In short, since the 1990's, the notion grew that housing differentiation was needed to address the low socioeconomic status of economically challenged, homogeneous urban districts. It was used to address a wide range of socio-economic issues, such as lowered social cohesion, crime, low social mobility, insufficient ethnic integration, and so forth (K. Atkinson, 2004; Bolt & van Kempen, 2008; Kleinhans, 2004; Tunstall, 2003). Figure 17, shown alongside the introduction to social mixing, outlines how, with what reasoning, and with what goals, social mixing has been implemented nationally since the 1990s. Given the diversity of problems and the complex solutions expected from this single strategy, a gap between strategy and outcomes is suspected. This is reinforced by a review of relevant academic research.

Bond et al. (2011) did a systematic review of recent studies on the effects of social mixing, which showcase a lack of positive effects, very mixed results, or even negative outcomes of social mixing. Their analysis indicated that mixing tenures did not improve social disadvantages, inequalities, or deprivation, nor did it boost employment opportunities or reduce unemployment rates (Allen et al., 2005; Andrews & Reardon Smith, 2005; R. Atkinson & Kintrea, 2000; Beekman et al., 2001; Harding, 1998; Jupp, 1999; Pawson et al., 2000; Rowlands et al., 2006). Claims that social mixing can serve as a catalyst for social advancement through role modeling are considered exaggerated by Atkinson (2005). Supporting this, Miltenburg (2017) found that although many social mixing strategies hinge on the idea that new residents will assist in improving the overall community, such social-interactive mechanisms are largely absent in mixed neighborhoods. Instead, any perceived socio-economic improvements are typically attributed to the 'dilution' of problems by introducing economically active households, rather than actual enhancements in the living conditions of the existing residents, as found by Beekman et al. (2001), Kleinhans (2004), and Pawson et al. (2000).

Furthermore, reviews show minimal to no positive impact on social interaction and cohesion, with some studies even noting increased social tensions and division among different groups (Beekman et al., 2001; Cole et al., 1997; Wood & Vamplew, 1999). This counters the notion that a social mix inherently leads to cohesive, inclusive communities. Gans (1961) criticizes the valuation of heterogeneity in urban planning, arguing that merely having a mix does not guarantee mutual respect or integration among diverse populations.

The figure summarizes the main arguments, found in research and policy papers, that are used to support the need for social mixing. Based on various documents (Atkinson & Kintrea, 2000; Bolt & van Kempen, 2008, 2009; Brophy & Smith, 1997; R. Kleinhans, 2004; Ministry of Housing Spatial Planning and the Environment, 1989, 1997; Municipality of Rotterdam, 2003, 2023; NPRZ, 2011, 2019).

Similar misconceptions are evident in Rotterdam's new Housing Vision. The policy briefly mentions issues that have to be addressed in neighborhoods dominated by social housing, such as nuisance, unsafety, and reduced livability, noting that poor-quality environments adversely affects residents' health, safety, and social stability. It quickly concludes that it is therefore essential to enable a mix of different housing typologies and pricing segments (Municipality of Rotterdam, 2023, p. 45). However, this prompts existing residents to question how the introduction of higher-income housing blocks will resolve neighborhood issues. Are established residents expected

to emulate the norms and values of higher-income newcomers, as suggested by the 'role model theory'? Or are the newcomers expected to personally make an effort to enhance neighborhood security?

This approach reveals a disconnect between the strategy employed and the outcomes it anticipates. Within the complex network of multi-faceted problems where social mixing is currently applied, it becomes evident that this approach is ineffective. Given the predominantly inconclusive or adverse outcomes, and its undeniable contribution to displacement, the use of this strategy needs to be reconsidered.

Unclear guidelines and lack of research-based objectives

In addition to a misalignment between the identified issues, the strategy of social mixing, and the validity of the desired outcomes, many policy documents fail to specify how a desired mix should be designed. Bolt (2004) problematizes the fact that Rotterdam strives for an equal distribution of minorities over the city as a whole, without ever specifying guidelines for how an optimal mix in each neighborhood would need to be designed.

Firstly, it is unclear how the process of socio-economic improvement would have to be facilitated by design. Earlier documents from the NPRZ suggest potential improvement through the influence of role models and 'strong shoulders', yet it remains unclear how this exchange between the newcomers and existing groups would occur, and where these different groups will meet. Interaction could take place at shared facilities such as sports clubs or primary schools, at workshops, in the street, or at a communal entrance of a housing complex. To accurately design this, it is essential to determine the details on the scale of social mixing, vital to ensure the success of the strategy (Bolt & van Kempen, 2009; Bond et al., 2011; Kleinhans, 2004; Kleinhans et al., 2019). Clarification is necessary regarding whether the desired balance is attained by integrating rented and owner-occupied housing within a single block, or through a street-level mix of tenant types, with different housing types adjacent to or facing each other, or perhaps even distributed across larger zones.

Given the impactful nature of the process towards a balanced city, it is important to have a well-defined approach to designing a social mix. This underscores the need

for an execution with caution and specific design guidelines in mind. When these are ill defined, this can contribute to negative effects of social mixing, as summarized previously by Bond et al. (2011).

The research discussed above leads to the conclusion that social mixing often fails to deliver its intended benefits and may even exacerbate the problems it aims to address. Additionally, the previous paragraphs point out a problem with formulation: the solution of social mixing is often tossed around without much thought, not only with a lack of insight into the improvements it will provide, but also with limited consideration of how it could be designed best. Subsequently, in the process of housing differentiation and social mixing, policymakers lack control over the resulting displacement pressures. This necessitates a new design approach.

3: The new Housing Vision lacks opportunities for a localized approach

The analysis of past displacement in Rotterdam highlights a significant issue: the lack of a localized approach in housing policies. This has been particularly evident through extensive demolition and attempts to drastically change demographic compositions without clear goals for maintaining or enhancing local amenities and community networks. This issue also pertains to cultural displacement, where the disruptive nature of urban restructuring has led to a loss of local identity and place. Recognizing these issues from past policies underlines the necessity of addressing them adequately in the new housing strategy to mitigate future displacement.

The 2023 Housing Vision suggests an intention to adopt a more area-specific approach. The document begins by underlining the importance of a localized implementation: *"Each area and district has its unique characteristics, such as demographic composition, housing stock, and existing challenges, necessitating distinct approaches. We plan to develop these measures into concrete plans integrated into comprehensive strategies for these areas"* (Municipality of Rotterdam, 2023, p. 6). However, despite these positive intentions, the annex to the Housing Vision reveals that there is no funding available for area-specific approaches, nor are there any opportunities in ongoing requests to secure funding for this (Municipality of Rotterdam, 2007, p. 69).

3) The new Housing Vision lacks opportunities for a localized approach

This gap in funding suggests a possible disconnect between the Housing Vision's ambitions and its ability to execute them, mirroring past policy shortcomings where strategic goals were not fully supported by effective actions. Exemplary has been the strategy of social mixing, which, as established earlier, has proven to fail to address local issues. Further complicating the pursuit of a localized approach, the Housing Vision introduces an updated District Atlas to dictate which neighborhoods should be targeted for social mixing.

The role of the District Atlas is critical here; it proposes a highly top-down, numerical approach to diversify the housing stock across neighborhoods, focusing solely on altering the percentage distribution of housing segments. Here, the percentage distribution serves as the foundation for planning low, medium, to highly impactful changes in the housing stock – disregarding any specific local needs, challenges, or characteristics. With no allocated budget for integrally translating the Housing Vision based on neighborhood characteristics, the Atlas is poised to become the leading policy document that will guide local measures. In an interview, A. Ouwehand confirmed these concerns, expressing that the organization Right to the City [Recht op de Stad] is apprehensive about the upcoming District Atlas. They fear it will be treated as an absolute, irrefutable law, which could stifle open discussions about the needs and aspirations of neighborhoods (A. Ouwehand, personal communication, 25/01/2024).

On the positive side, the Housing Vision includes new ambitions that honor local identity and support community networks. For example, the vision emphasizes greater focus on architecture and heritage, which reflects a commitment to preserving local identity (Municipality of Rotterdam, 2023, p. 49). The introduction of the Social Statute also marks a significant move, aimed at enhancing resident involvement and delineating the rights and responsibilities of various stakeholders during redevelopment, thereby respecting the voices of established residents. Moreover, although most efforts at housing differentiation still involve altering the existing stock (through renovation, liberalization, merging, or demolition), there is now a proposal to consider densification as a method, representing a shift towards a more localized strategy. This approach could enable residents to remain in their communities during increased differentiation, potentially reducing direct and social displacement pressures.

To conclude this segment of the problem statement, it's evident that while there are positive efforts aimed at fostering a more localized approach—highlighting identity, architecture, and the introduction of densification strategies to retain local communities— there remains a significant gap in fully translating the housing policy ambitions into tailored plans for specific neighborhoods, which is essential. The primary dependence on the updated District Atlas as a more localized policy framework, emphasizes the lack of a localized approach, and raises the risk of ongoing displacement issues.

Concluding: Problem statement

The analysis began by categorizing various displacement pressures, including direct, financial, social, and cultural displacement. These have been critically examined within a framework focusing on primary forces of displacement in Rotterdam: changes in the housing stock and changes in the demographic composition.
Direct and financial displacement are closely associated with changes in housing stock, primarily due to the reduction of social housing (direct displacement) to accommodate higher-end housing (financial displacement). Conversely, social and cultural displacement relate more to shifts in the demographic composition, as these changes tend to disrupt established social structures (social displacement), and significantly transform the physical settings that embody these structures (cultural displacement).

The assessment of the effects of changes in the housing stock, primarily as drivers of direct and financial displacement, has demonstrated that a considerable number of households have been directly displaced in the past due to reductions in social housing. Despite the new Housing Vision showing an increased awareness of the need to maintain the overall number of social housing, it still plans a city-wide decrease in lower-income households and aims to reduce social housing in neighborhoods where this is dominant. This approach perpetuates a stigma against social housing, similar to past policies, and continues to enforce displacement. Moreover, previous housing policies focused specifically on higher-segment housing and intensifying gentrification, which has exacerbated pressure on the affordable housing market and made vulnerable neighborhoods less accessible to longstanding residents, particularly those without a right to return. The decision in the new Housing Vision to avoid adding new social housing before 2040 not only neglects these existing financial pressures but also further strains the financial conditions for lower-income

groups. Although poor use of data has perpetuated displacement issues under previous housing policies, the new housing policy continues to misclassify parts of the social segment, rely on factors outside municipal control, and lack genuine intentions in its objectives. This has led to the first main element in the problem statement: **The new Housing Vision pressures the right to housing**, underscoring the insufficient provision and protection of affordable (social) housing.

Secondly, assessing the changes in the demographic composition, reveals that the previous strategic emphasis on restructuring urban areas to favor higher-income groups has marginalized established, lower-income residents. The planned demographic shifts devalued established residents, inadequately considered the existing commercial landscape and community networks, and lacked a strategy to integrate these groups to ensure social cohesion and effectively address complex socio-economic challenges. This has contributed to social and cultural displacement - eroding the sense of belonging among affected groups. The ongoing advocacy for social mixing in the Housing Vision, with a lack of clear benefits beyond the assumption that affluent groups enhance the city, supports the second problem statement element: **The current social mixing strategy is unjust and not sufficiently grounded in research-driven measures.**

Lastly, the research revealed that earlier displacement issues were often worsened by a lack of a localized approach. Past policies, driven by top-down strategies, prioritized improving the overall socio-economic balance over addressing local needs and concerns. Engineering the demographic composition through extensive demolitions and liberalizations proved highly disruptive to local structures, especially when entire neighborhoods were demolished. While the new Housing Vision aims to foster a localized approach, it still relies too heavily on an undefined, top-down mixing strategy. Continuing to use the District Atlas to dictate these strategies at a 'local' level, based on numerical distributions of housing segments, increases the risk of ongoing displacement due to its lack of granularity in addressing neighborhood-specific needs. This absence of localized planning, combined with plans to redistribute social housing across the city and reduce the number of lower-income residents, heightens the risk of ongoing social and cultural displacement. Especially concerning is that these impactful alterations risk causing residents to lose their sense of identity and place within their neighborhood, which are crucial to emotional and cultural attachments. This forms the third main element of the final problem statement: **The new Vision lacks opportunities for a localized approach.**

Fig. 24: Framework showing the relation between Rotterdam's Housing Policy direction (social mixing) and the resulting displacement issues.

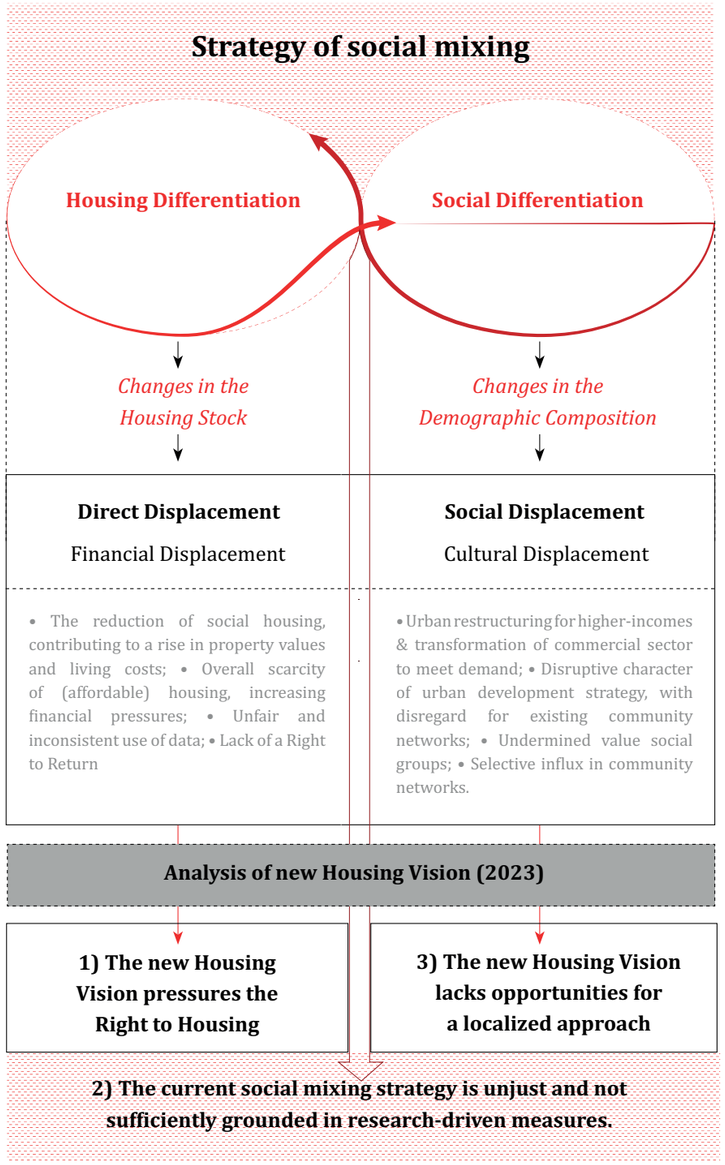


Fig. 24

05. GUIDELINES



Fig. 25. Leeuwenkuil, Rotterdam. (Orange Architects, 2020)

Objectives and Guidelines: An Introduction

In the previous chapter, the Research Results were concluded with a *problem statement* that outlines why persistent displacement is anticipated under the new policy direction, namely: 1) The new Housing Vision pressures the right to housing, 2) The current social mixing strategy is unjust and insufficiently grounded in research-driven measures, and 3) The new Vision lacks opportunities for a localized approach. These problems are highlighted in bold at the top of the figure on the right.
This chapter will propose a set of strategic solutions, by aligning the **three problems**, with **three objectives** designed to more effectively address displacement. These objectives, numbered 1-3 to correspond with the identified problems, are highlighted in bold in the figure within the *'solution space.'* To ensure these objectives are actionable for policymakers and designers, each is associated with a set of spatial guidelines**,** which are depicted in light grey in the accompanying figure.

The remainder of this chapter follows the structure of the three objectives, each of them concluded with a set of guidelines summarized on a bright red page.
This red page offers a concise description for each guideline, and an indication of its relevance either as regulatory advice or as spatial design advice, or occasionally as a blend of the two. The relevant actors are also noted, including: the regional government, the municipality, housing associations, private developers, designers, and local residents. Moreover, the manner in which each guideline responds to the new Housing Vision of 2023 is detailed under the heading 'Vision (2023)'. The guideline can engage with the Housing Vision in one of four ways:

- *Introduce*: The guideline is presented as a new addition, not previously incorporated into the new Housing Vision.
- *Implement*: This involves an existing guideline from the new Housing Vision recognized as an effective solution to displacement, set for further implementation, without any considerable enhancements.
- *Improve*: These guidelines, already part of the Housing Vision, are further refined and enhanced to more effectively tackle displacement.
- *Revise*: Relates to aspects of the new Housing Vision that increase displacement issues, which are therefore critiqued and revised to mitigate such impacts.

The guidelines will be applied through a location-specific design for the Tweebosbuurt in Chapter 6 'Design', demonstrating their practical implementation.

Fig. 26. Extension of the framework, from problem statement to solution space.

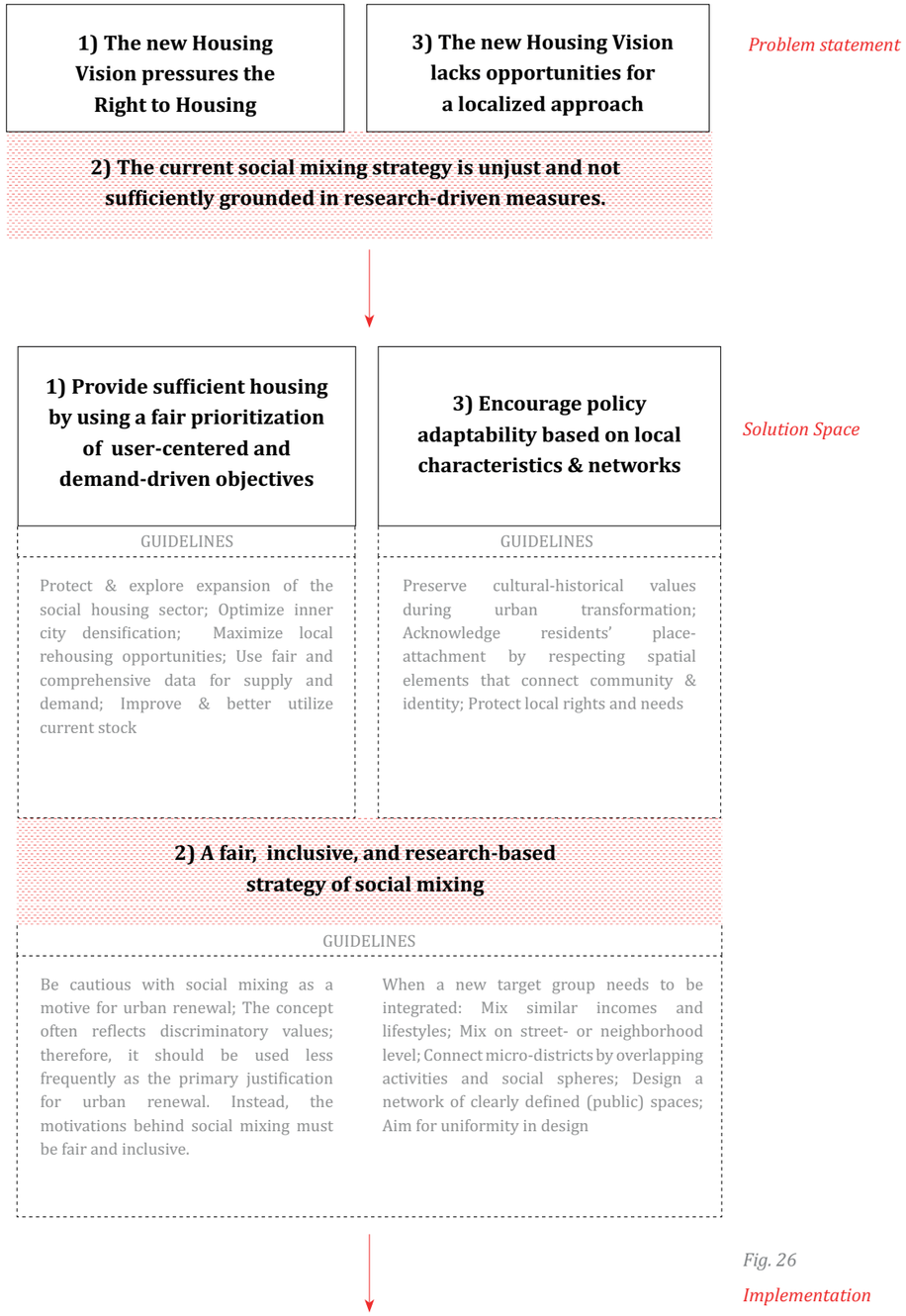


Fig. 26

1. Provide sufficient housing

This segment will include guidelines to achieve the first objective: providing sufficient housing through fair prioritization of user-centered and demand-driven objectives.

Guidelines

a. Protect & explore expansion of the social housing sector

Revise the 2023-2040 construction targets to address the persistent increase in demand for affordable housing as identified in '*Scarcity in the Rotterdam Housing Market*' (OBI, 2023) and reflected upon in '*At Home in Numbers*' (Audit Office, 2022). The uncertainties in future supply and demand further necessitate a protective approach to social housing and the possible expansion of this sector. The current new Housing Vision plans to allocate 20-25% of new constructions to social housing by 2040, yet this is coupled with reductions in neighborhoods dominated by social housing, effectively only maintaining the existing stock levels. It is advisable to use this 20-25% of new construction to genuinely increase the housing stock, at least to accommodate part of the city's natural growth. Consider expanding the new construction targets for this sector to 40%, as advocated by organizations like Right to the City [Recht op de Stad], to adequately meet increasing demand.

This objective overlaps with regional governance, as Rotterdam's construction targets are part of the broader South Holland agreements. By revising their construction targets, the municipality would distance oneself from the goal of merely achieving a balanced distribution, and instead actively increase the social housing stock. Housing associations are relevant actors by taking direct charge of construction activities.

Responding to demand, rather than prioritizing balance, addresses displacement by challenging the stigma around social housing, enhancing the sense of belonging among affected social groups, and increasing housing options for those at risk of displacement due to redevelopment or financial pressures.

b. Optimize inner city densification

Intensify the focus on inner-city densification to meet the growing demand. When aiming to increase housing differentiation in neighborhoods, prioritize adding density as the primary strategy through innovative, high-quality, and efficient living forms and building typologies. Although the new Housing Vision emphasizes exploring options for qualitative densification, it does not sufficiently focus on using this to facilitate differentiation; instead, the emphasis lies on approaches that

Fig. 27. Objective 1, with the corresponding guidelines.

1) Provide sufficient housing by using a fair prioritization of user-centered and demand-driven objectives

Guideline	Description	Vision (2023)	Type	Actors
PROTECT & EXPLORE EXPANSION SOCIAL SECTOR	Revise the new construction targets for 2023-2040: Acknowledge the persistent increase in demand within the affordable sector and the uncertainties in future supply and demand, leading to a protective approach towards social housing and possible expansion of the sector.	*Revise*	*Policy*	*Regional Government, Municipality, Housing Associations*
OPTIMIZE INNER CITY DENSIFICATION	Intensify the focus on inner-city densification to meet the growing demand, and use this as the primary way to increase differentiation. Promote innovative, high-quality, and efficient living forms and building typologies.	*Improve*	*Policy/ Design*	*Municipality, Designers*
MAXIMIZE LOCAL (RE)HOUSING OPPORTUNITIES	Alternative housing must be directly allocated to the displaced residents, or the development should be strategically phased to construct new housing prior to demolition. The 'expanded flexible housing supply' can be utilized as in-between housing.	*Improve*	*Policy*	*Municipality, Housing Associations/ Private Developers*
USE FAIR AND COMPREHENSIVE DATA	Estimations in supply & demand should be informed by a fair and comprehensive data analysis, and not driven by the aim of attracting a specific group. Cease categorizing part of the private rental sector as social housing.	*Improve*	*Policy*	*(Regional Government), Municipality*
IMPROVE & BETTER UTILIZE THE CURRENT STOCK	The objectives and available budget for improving the quality and sustainability of the current stock can be used to prioritize renovation over demolition and new construction during urban restructuring.	*Implement*	*Policy*	*Municipality*

Fig. 27

reduce the availability of affordable housing. However, while increasing density, it is crucial to balance preserving local identity with densification strategies, as will be demonstrated in the design process.

Similar to the previous guideline, this approach addresses displacement by expanding housing options for those at risk due to redevelopment or financial pressures, and addresses direct displacement by focusing on densification rather than alterations in the existing stock. Relevant actors include the municipality, as policies can support such initiatives, and designers, as they play an important role in crafting these new, innovative densification strategies.

c. Maximize local rehousing opportunities

Alternative housing should be directly allocated to displaced residents, or developments should be strategically phased to construct new housing prior to demolition. Although the new Housing Vision suggests that the Social Statute will inform residents about rehousing rights, this could be enhanced by explicitly aiming to maximize local rehousing opportunities.

Additionally, the new Housing Vision plans to expand the flexible housing supply with 2,000 units before 2026 (removable, deconstructable units) to absorb peaks in demand. It is advisable to use such units to provide temporary housing in neighborhoods undergoing urban restructuring. For instance, this approach could have been implemented in the Tweebosbuurt/Afrikaanderwijk, where large plots of empty land near redevelopment sites are available.

Implementing these measures would mitigate displacement issues by providing housing in or near residents' familiar environments, enhancing their sense of belonging, and making the relocation process less disruptive. By explicitly incorporating rehousing rights into regulations and utilizing the flexible housing supply, the municipality can play a significant role. Additionally, both housing associations and private developers are responsible for organizing the strategic phasing mentioned.

d. Use fair and comprehensive data for supply and demand

Estimations in supply and demand should be informed by a fair and comprehensive data analysis, and not driven by the aim of attracting a specific group. Although the new Housing Vision makes efforts to better align with national definitions in the housing landscape, largely adhering to the government's definitions of income groups and price segments, it is crucial to cease misclassifying parts of the private rental sector as social housing. The municipality does not control this segment of the market, and such misclassification inaccurately represents the actual gap between supply and demand.

Implementing these changes would address displacement by ensuring that housing strategies more accurately reflect local needs, moving away from stigmatized views, and preventing the continuation of past housing policies that promoted the reduction of affordable housing. This primarily involves municipal policies, but regional governments also need to base agreements on fair and comprehensive data.

e. Improve and better utilize the current stock

The new Housing Vision reflects a commitment to improving the existing housing stock by promoting healthy, sustainable, and high-quality living conditions. This is facilitated through the 'Good Renting and Leasing' [Goed huren en verhuren] policy, which addresses issues such as poor-quality housing for migrant workers and landlord abuses, and by providing government support for homeowners' associations [VvE's] to implement sustainability measures. Additionally, there is a focused effort to more effectively combat vacancy. These initiatives are beneficial in the context of displacement, as they enhance the living conditions of established residents, reduce the need for relocation, and increase housing availability by addressing vacancies.

The municipality has a budget available for such measures, that enhance the quality and/or sustainability of the current stock. Displacement issues can be further mitigated by strategically allocating the budget in redevelopment projects towards facilitating renovations rather than demolitions, potentially allowing more residents to remain in their homes.

2. Fair, inclusive, research-based social mixing

Moving on to the second objective, this segment will include guidelines to achieve a fair, inclusive, and research-based social mixing strategy that ensures positive outcomes for overall social cohesion.

Guidelines

a. Be cautious with social mixing as a motive for urban renewal

The motivations behind social mixing must be fair and inclusive. The new Housing Vision demonstrates an effort towards more inclusivity by affirming that in Rotterdam, racism or discrimination of any kind is unacceptable. However, the concept of social mixing often reflects discriminatory values; the strategy is predominantly one-sided, used as a pretext to reduce the number of lower-income groups without fostering mutual benefits or enhancing social cohesion. For instance, the new Housing Vision aims to increase the social mix by selling association-owned properties to middle-income earners, effectively displacing one group without genuinely integrating the new. This approach fails to provide mutual benefits or to treat all groups involved in social mixing as equally valuable. Therefore, in this context, 'social mixing' does not serve as a valid justification for urban redevelopment.

Instead, a social mixing strategy should be implemented when it emerges as a secondary challenge during urban development, such as when densification is used to address the increasing housing demand, automatically introducing a new group. When the motivations behind social mixing are fair and inclusive, they help mitigate social displacement and prevent the marginalization of specific social groups. Currently, the municipality is the principal actor in advocating an unjust and inadequate mixing strategy, emphasizing its responsibility in implementing this guideline.

The subsequent guidelines detail how a sufficient mix can be designed to enhance social cohesion and limit tensions, further reducing displacement. The municipality is responsible for promoting these guidelines through its housing strategy. For implementation, private developers are identified as key players, as they are primarily involved in mixed housing projects and need to collaborate with housing associations to effectively organize the development. Designers can contribute to this process through implementing the guidelines in design.

Fig. 28. Objective 2, with the corresponding guidelines.

2) A fair, inclusive, and research-based social mixing strategy, ensuring positive outcomes for overall social cohesion.

	Guideline	Description	Vision (2023)	Type	Actors
	BE CAUTIOUS WITH SOCIAL MIXING	The motivations behind social mixing must be fair and inclusive. The concept often reflects discriminatory values; therefore, it should be used less frequently as the primary justification for urban renewal.	*Revise*	*Policy*	*Municipality*
	MIX SIMILAR INCOMES & LIFESTYLES	Recognize the challenges of integrating diverse residents in close proximity: excessive heterogeneity can increase tensions and conflicts. Instead, seek for similarities in residents' characteristics, such as income levels and lifestyles.	*Introduce*	*Policy/ Design*	*Municipality, Private Developers (in colab. with Housing Associations), Designers*
	MIX ON STREET-/ NEIGHBORHOOD LEVEL	Favor social mixing at the street- or neighborhood level over the creation of large separate zones or micro-scale pepper-potting.	*Introduce*	*Policy/ Design*	*Municipality, Private Developers (in colab. with Housing Associations), Designers*
	CONNECT MICRO-DISTRICTS THROUGH OVERLAPPING ACTIVITIES & SOCIAL SPHERES	Avoid creating segregated micro-districts based on tenure types by connecting them through aligned activity patterns and social spheres to enhance interaction opportunities. Casual, positive interactions among residents of different backgrounds can be promoted through public spaces such as informal play areas, footpaths, and green spaces.	*Introduce*	*Policy/ Design*	*Municipality, Private Developers (in colab. with Housing Associations), Designers*
	DESIGN A WELL-DEFINED NETWORK OF SPACES	Design a well-defined network of public spaces of different levels of publicness, encouraging mutual respect and various types of encounters among different groups.	*Improve*	*Design*	*Municipality, Private Developers (in colab. with Housing Associations), Designers*
	AIM FOR UNIFORMITY IN DESIGN	Design housing in a way that minimizes noticeable differences among various social groups, as this can help bridge social gaps.	*Introduce*	*Design*	*Municipality, Private Developers (in colab. with Housing Associations), Designers*

Fig. 28

However, it is important to note that while these are generally beneficial guidelines, it is important to realize that each community requires a unique development approach, with the local context informing decisions on design, scale, and layout (Roberts, 2007).

b. Mix similar incomes and lifestyles

To facilitate an effective social mix, blending similar income levels and lifestyles is recommended. Policy documents on social mixing often imagine neighborhoods with a diverse mix of residents, where the socio-economic position benefits from a harmonious blend of incomes, lifestyles, and ethnicities. However, studies reveal that such approaches tend to be more complex. People with different incomes (Rosenbaum et al., 1998), and especially different lifestyles (Kleinhans, 2004) appear to have a very low probability of developing social relations. Strong differences can trigger a negative effect on one's sense of community, leading to people turning inward or isolating themselves, as observed by Putnam (2007) and Volker et al. (2007).

Instead, similar characteristics (van Ham & Feijten, 2008) and activity patterns (Jupp, 1999; van Beckhoven & van Kempen, 2003) are very important in allowing for social interaction. Gans (1961) warns that without enough similarities in for example income and age, it is unlikely that social interactions will evolve beyond a polite exchange of greetings. Therefore, enough common ground should be established between residents to prevent conflicts, to foster a sense of shared responsibility for common needs and obligations, and to potentially leave room for more the evolvement of more intensive social relations.

The new Housing Vision aims to create balanced neighborhoods through a mix of affordable, mid-range, and high-segment housing. While the exact balance remains unspecified, the Vision promotes diversifying areas dominated by social housing by increasing the presence of mid-segment housing. According to the municipality's target group definitions, this integration involves groups whose annual incomes differ by as much as €32,000 to €42,000 per household. Due to the lack of definitive data on the impacts of such income disparities, we cannot conclusively predict that these gaps will lead to significant social tensions or conflicts. However, it is reasonable to speculate that such income differences may result in different lifestyles and activity

patterns, suggesting that the anticipated benefits of social mixing, such as enhanced social cohesion and socio-economic upliftment, should not be automatically assumed.

Given these considerations, it is advised to either reduce the income disparities, perhaps through intermediate income classifications, mixing social housing primarily with the lower middle segment, or to focus more on lifestyle similarities, such as integrating groups with similar professions. Regardless, additional well-designed guidelines are necessary to further enhance the harmonious integration of various groups.

d. Mix on street- or neighborhood level

When mixing different groups, it is advised to favor social mixing at the street- or neighborhood level over the creation of large separate zones or micro-scale pepper-potting.

Drawing from studies by Atkinson & Kintrea (2000), Cole et al. (1997), and Jupp (1999), it is evident that the proximity of residents plays a significant role in forming social networks. Everyday interactions that occur among neighbors – saying hello on the street, the act of borrowing items, offering advice, or even more engaged activities like visiting each other – are crucial in building these connections (Jupp, 1999; Kleinhans, 2004). These voluntary social interactions are predominantly seen within the same apartment block or street, according to Cole et al. (1997) and Kleinhans et al. (2000).

The concept of social mixing at the street and neighborhood level is broadly perceived as positive, compared to the creation of larger, separate zones of different tenures. However, perceptions of mixing on a smaller scale, like within one building, are mixed. Jupp (1999), in his research on micro-scale mixing, referred to as 'pepper potting' in British literature, stresses the importance of close living for interaction, noting that even a street can act as a barrier. However, subsequent studies indicate several challenges with this level of mixing. The financial and practical challenges inherent in this approach, combined with the uncertainty surrounding its social benefits—such as potential tensions arising from significant heterogeneity on a small scale—raise questions about its viability (C. Andrews & Reardon Smith, 2005; J. Atkinson & Martin, 2003; Goodchild & Cole, 2001; Minton, 2002; Norris, 2006).

Based on these findings, Roberts (2007) concludes that that the rigid application of 'pepper potting' in mixed income communities may not be feasible or beneficial. Focusing on larger-scale integration on the street and neighborhood level could be more effective for fostering genuine social cohesion and interaction.

c. Connect micro-districts by overlapping activities and social spheres

To increase social cohesion, align daily routines and social environments of different groups to enhance opportunities for interaction. It is essential to avoid strictly segregated or monolithic developments, which can lead to social isolation, as discussed by Andrews & Reardon Smith (2005). Encouraging interaction between different micro-districts through overlapping activity patterns and social spheres can counteract this issue.

However, designing these overlaps requires acknowledgment of the varying activity patterns between owner-occupiers and renters, which are often influenced by differences in income, age, household composition, and education levels (Kleinhans, 2004). Atkinson and Kintrea (2000) observed that while owner-occupiers typically participate in activities outside the neighborhood, renters are more likely to engage in local employment and utilize local amenities.

This variation highlights the necessity for deliberate planning of shared spaces that cater to the unique needs and behaviors of different social groups. Strategies to integrate districts could include developing communal areas such as streets, informal play areas, and green spaces that facilitate casual, positive interactions among residents from diverse backgrounds, as Tunstall and Fenton (2006) suggest. Such interactions might occur in parking lots or along footpaths. Children's play areas, in particular, are effective in bridging activity pattern gaps because children generally stay closer to home, and the differences between groups are less pronounced. Additionally, in (highly) urban settings where car use is discouraged, public transport routes can also serve as a means to integrate activities across different groups.

A thoughtful approach to designing such spaces, catering to diverse activity patterns, can reduce segregation and mitigate the risks associated with poor community networks and social displacement.

g. Design a network of clearly defined (public) spaces

A well-defined public realm, with a network of public spaces of different levels of publicness can encourage mutual respect and serve as indicators for the desired and expected types of interaction. Shared zones that connect micro-districts, as mentioned under the previous guideline, should usually possess a more public character, to prevent tensions that might arise from differing uses of the zones among groups. Such public spaces allow for the facilitation of "bumping into strangers" – a type of superficial contact that allows for the exchange of small courtesies in what is perceived as a 'safe environment' to observe others with markedly different habits (Gehl, 2010; Roberts, 2007; Talen, 1999).

Furthermore, integrating spaces with varying levels of publicness and ownership into this structure, with a clear hierarchy, allows for a choice in the level of intimacy of encounters. Interactions between contrasting groups may be more superficial in public spaces, while more intimate relationships can develop in semi-public spaces that are clearly defined and used by people with similar lifestyles. Transitional zones, such as those from houses to front gardens to public spaces, are crucial. They act as a pretext for expected behaviors or levels of contact, facilitating casual interactions like greetings or brief conversations (Gehl, 2010).

The effective functioning of such layered networks of spaces can be enhanced by creating pleasant pedestrianized areas, encouraging residents to move through different types of public spaces in a slow, socially engaging manner. Conversely, when intimate contact is forced among groups that do not naturally mix, especially in semi-public spaces that are too close to personal spheres, tensions can increase. Tersteeg and Pinkster (2016) illustrate this point with their analysis of a mixed housing block in Amsterdam, where the different uses of a semi-public courtyard and clear spatial distinctions between tenant types have led to tensions, highlighted by polarizing complaints such as 'the children from renters yell'.

The new Housing Vision does provide attention to the creation of a well-designed network of public spaces, aiming to provide adequate social infrastructure across all districts and neighborhoods, tailored to the specific needs of each area. In this they recognize the importance of meeting spaces for social cohesion. When such objectives

are put into practice, the design of public spaces should be aligned with the above guidelines of the mixing strategy. This approach allows for careful consideration of how spaces are defined and their level of public accessibility in relation to different groups. It also facilitates the design of connections between micro-districts and the integration of overlapping activities and social spheres, as previously mentioned.

f. Aim for uniformity in design

When integrating diverse groups, it is essential not only to follow guidelines regarding community composition but also to incorporate architectural features that minimize social disparities. As noted by Tersteeg and Pinkster (2016), clear spatial or architectural distinctions between tenant types can exacerbate disparities. Therefore, cohesive design can be utilized to reduce visible differences and effectively bridge social gaps (Groves et al., 2003; Norris, 2006; Roberts, 2007). By ensuring that clusters of different tenant types are not easily identifiable, this approach shifts the focus from disparities to commonalities, helping to reduce stigma and bias among residents, as supported by Arthurson (2013), Casey et al. (2007), and Kearns et al. (2013). The final choice of architectural expression should tailored to specific characteristics and identity of the location.

3. A more localized approach

Lastly, this segment will include essential guidelines for achieving the third objective: encouraging policy adaptability based on local characteristics and networks.

Guidelines

a. Respect cultural and historical values

Facilitate urban transformation in a way that emphasizes the neighborhood's historical narrative and preserves its unique historical and cultural characteristics. In the context of displacement, such elements have the potential to contribute to the connection between community and place, serving as reference points for meaning and familiarity. Outside of this context, historical buildings can particularly be seen as important elements concerning Rotterdam's already limited pre-war history.

The new Housing Vision introduces a guideline that emphasizes the value of architecture and neighborhood identity, but focuses primarily on the architecture of housing blocks. The municipality carries responsibility in emphasizing the broader cultural-historical values in the context of residents' place-attachment. Alongside existing frameworks that can help identify elements for their cultural or historical value, or heritage status, resident engagement can be used to identify commonly valued historical characteristics. In the final stages, designers play an important role in integrating these characteristics into the overall design.

b. Acknowledge residents' place attachment

To build on this, other key spatial elements such as existing urban structures, landmarks, architectural styles, and local services should be recognized as vital links that can reflect residents' cultural or socio-economic identity. This acknowledges the role of residents' place attachment in broader spatial elements, relevant for cultural displacement.

It must be noted that someone's attachment to a place or its identity can be highly personal, often shaped by specific memories accumulated over the years, and influenced by personal interpretations of stability and familiarity (Manzo, 2014). Therefore, engaging residents is likely the most effective method for identifying relevant elements, filtering out those that resonate broadly with people's notion of home. This engagement can also enhance understanding of important factors in the local social network, spatial configuration, and local amenities, which are crucial in the design of public spaces as outlined in the guidelines of objective 2 (Mixing Strategy).

Fig. 29. Objective 3, with the corresponding guidelines.

3) Encourage policy adaptability based on local characteristics & networks

	Guideline	Description	Vision (2023)	Type	Scale
	RESPECT CULTURAL/ HISTORICAL VALUES	Facilitate urban transformation in a way that accentuates the neighborhood's historical narrative, preserve unique historical and cultural characteristics.	*Implement*	*Policy/ Design*	*Municipality, Designers, (Residents)*
	ACKNOWLEDGE RESIDENTS' PLACE-ATTACHMENT	Adopt a more comprehensive approach to identity preservation that recognises elements that contribute to residents' attachment, such as existing urban structures, landmarks, architectural styles, and neighborhood amenities, thereby connecting the community to its unique identity.	*Improve*	*Policy/ Design*	*Municipality, Designers, Residents*
	PROTECT LOCAL RIGHTS & NEEDS	Enhance collaboration with residents during urban transformation projects to respect local rights and needs and to help established residents feel valued, and enable them to contribute to their environments.	*Implement/ Improve*	*Policy*	*Municipality, Housing associations, Private developers, Designers, Residents*

Fig. 29

The new Housing Vision indicates a desire to include residents in urban redevelopment and to respect existing social structures. This engagement can be extended by the municipality to recognize and identify not only existing social structures but also the spatial structures in which they operate and which they value.

While policies play an important role in supporting these guidelines, their relevance is particularly significant for local stakeholders such as designers. This is due to the specific emphasis on valuing and integrating such elements into the design process.

c. Protect local rights and needs

It is important to enhance collaboration with residents during urban transformation projects to respect local rights and needs and to help established residents feel valued, and enable them to contribute to their environments. The new Housing Vision seeks to involve existing residents more actively; however, given Rotterdam's urban development history, this area requires special attention due to the probable shortage of expertise and manpower needed for genuine collaboration with residents, rather than merely providing them with information. It is a positive development that the municipality has introduced the Social Statute, which outlines the rights and responsibilities of social housing residents, including details on the right to return and the management of resident support.

The municipality plays a central role in defining rights and responsibilities in its policy documents. Private developers and housing associations can facilitate the engagement of residents by organizing workshops and engagement programs. Designers can also be involved in these initiatives, ensuring that residents' contributions are effectively incorporated into the final design.

06. DESIGN



Fig. 30. Het verhaal van David en Goliath in de Tweebosbuurt (Schot, 2020).

Introducing the Chapter

The guidelines proposed in the previous chapter will now be applied in a design for the Tweebosbuurt, aiming to bridge the gap between regulatory objectives and their spatial implications. This implementation serves as a model to guide and inform future applications of these guidelines in similar contexts. The structure of Chapter 06 'Design' will be outlined below.

The chapter begins with two introductory sections:

- **Introduction: The Tweebosbuurt**
- **Introduction: Case Study Relevance**

The first section introduces the Tweebosbuurt and the dynamics between the actors involved in the neighborhood's redevelopment, including a timeline of important events. The second section explains the relevance of applying the proposed guidelines in the Tweebosbuurt case study, considering the context of this research.

Following the introductions, the development of the Tweebosbuurt is placed within the broader spatial context of the surrounding developments at two scales:

- **Context: Development of the South**
- **Context: Development of Parkstad**

These sections compare the original situation with the plans originally proposed by the municipality (in 2018), providing essential context for understanding the thesis design's response to both the original situation and the municipality's vision.

The chapter then delves into the specifics of the design process, starting with how scenario thinking was used to select the final scenario in which the spatial guidelines are implemented:

- **Towards Design: Scenario-thinking**
- **Towards Design: Choice of Final Scenario**

The main and most crucial part of the chapter illustrates the implementation, specifying how the guidelines related to each proposed objective are translated into the final design. The objectives are: *Provide sufficient housing through fair prioritization of user-centered and demand-driven objectives*; *Encourage policy adaptability based on local characteristics and networks;* and *Implement a fair, inclusive, and research-based strategy of social mixing.* These are addressed in the following sections:

- **Design Objectives: Sufficient Housing**
- **Design Objectives: Localized Spproach**
- **Design Objectives: Mixing Strategy**

Subsequently, the chapter demonstrates how the implemented guidelines integrate into an overarching urban design that extends outside the thematic focus of this thesis. This will enhance the designs' value for the municipality by showing that, in addition to an improved response to displacement, the final design addresses broader trends, multi-perspective objectives, and local challenges, which the municipality highly values:

- **Further Integration into the Final Design**

This section showcases the integration of these elements with additional diagrams, sections, and reference images, concluding with the overall vision on the quality of public spaces.

Lastly, the chapter explores the financial feasibility of constructing the housing segments proposed in the final design. This analysis is intended as an initial explorative assessment; definitive statements on financial viability are beyond the scope of this thesis. However, this section positions the research within contemporary challenges in housing construction and hints at the relationship between finance and regulations in the segment:

- **Financial Viability**

Introduction: The Tweebosbuurt

The Tweebosbuurt, located in the Afrikaanderwijk of South Rotterdam, has undergone forceful restructuring as part of the 2016 housing policy ambitions and the NPRZ development vision. Vestia (now: Hef Wonen), the housing association owning nearly all the properties in the area, announced in summer 2018 its plans to demolish 525 social housing units and replace them with 367 new units, of which only 130 would be designated for social housing. This redevelopment has made the Tweebosbuurt a symbol of Rotterdam's controversial vision of 'balancing the city,' which involves extensive redevelopment of social housing areas to introduce more high-segment housing.

The municipality justified the large-scale demolition by citing an oversupply of small, poorly maintained social housing units under singular ownership, and the concentration of social issues (Municipality of Rotterdam, 2021). The transformation of the Tweebosbuurt is integral to the broader redevelopment of the Afrikaanderwijk, contributing to the creation of a new urban district that aims to be a high-quality gateway to the South of Rotterdam, making the enhancement of the Tweebosbuurt's image essential to achieve this.

The notable controversy surrounding the redevelopment of the Tweebosbuurt exemplifies the failures of Rotterdam's housing policy, particularly due to procedural issues with local residents. Instead of engaging with the existing community, residents were abruptly notified of the demolitions through a letter in July 2018. The subsequent period witnessed notable conflicts between residents, the municipality, and Vestia. Initially, Vestia legally terminated leases citing 'urgent personal use', but a 2020 court ruling found that Vestia lacked sufficient financial or structural reasons to evict the tenants. The court emphasized the need for earlier resident involvement and doubted the social benefits claimed by the redevelopment. Vestia appealed to higher court and could proceed with the demolitions, driven by a deadline to secure 24 million euros in municipal subsidies.

The conflict between residents and the municipality has drawn international criticism over violations of resident rights. Residents' attempts to establish a housing cooperative in March 2021 were denied, despite their legal rights. Questions about tenant rights were raised in the parliament, and the United Nations issued a warning to the municipality for violating human rights. Although most buildings had already been demolished, the Council of State rejected the zoning plan for Tweebosbuurt South-East in 2022 due to insufficient assessment of the environmental impacts and neglect of the area's historical value. This ongoing legal tug-of-war and significant local opposition highlight the project's complexity and the inherent injustices involved.

Fig. 31. Timeline of Events in the Tweebosbuurt Redevelopment. Sources:
1) Dagblad010 (2023)
2) Recht op de Stad (n.d.)
3) Tweede Kamer (2021)
4) NRC (2020)
5) Rijnmond (2021)
6) Rechtspraak (2021)
7) NVVN (2021)
8) De Correspondent (2020)
9) Omgevingsweb (2021)
10) Rijnmond (2023)

2017

December 21, 2017 - **The first plans are initiated (in silence)**
In line with the municipality's strategy of urban regeneration, following the NPRZ, the municipal executive board [Het College van Burgemeester en Wethouders] of Rotterdam granted Vestia permission to request demolition subsidies for Tweebosbuurt, despite the buildings not being technically 'worn out' (1).

2018

July, 2018 - **The residents are informed**
The residents of Tweebosbuurt receive a letter at home announcing the demolition of their neighborhood.

Oktober, 2018 - **Political majority agrees**
A political majority agrees with the demolition. In a council meeting they decide on offering the residents a moving allowance of 6000 euros, and a priority declaration for a new house (5).

November 29, 2018 - **Agreement Municipality & Vestia**
Vestia and the Municipality of Rotterdam sign a cooperation agreement concerning the restructuring of the Tweebosbuurt (9).

2019

September, 2019 - **Court agrees with demolition**
The first 11 residents who take their case to court are unsuccessful. The judge grants Vestia permission to terminate the leases based on the claim of 'urgent personal use'.

Augustus, 2019 - **Ongoing resistance**
Some residents continue to refuse lease termination. Vestia sends summons. The residents appear in court in August (5).

2020

January, 2020 - **Court disagrees with demolition**
The second group of 17 residents is ruled in favor by the judge: Vestia does not have sufficient reason to terminate the rental contracts, as no financial or structural objections have been presented (4). The judge believes that residents needed earlier involvement in planning, and that Vestia failed to prove the redevelopment would lead to social and societal improvement (5).

January, 2020 - **Vestia appeals to higher court**
Vestia appeals to higher court. Later, in 2021, the director of Vestia admits they were this urgent with proceeding with the demolition, as they risked missing the deadlines for the government's execution subsidies, which would have led to Vestia missing out on 24 million euros. (4).

March, 2020 - **Evicting the squatters**
In the meantime, the already vacant houses have been squatted. After a legal summary procedure, Vestia is granted permission to evict the squatters. The neighborhood welcomes a mobile police unit [ME], accompanied by police dogs and helicopters (8).

October, 2020 - **Roundtable discussion**
Roundtable discussion: Vestia sits down with the remaining resistant residents (70 households). Some agree with the offer of alternative housing (5).

2021

March 2021 - **Initiate for housing cooperative**
Residents want to initiate a housing cooperative, to maintain their homes, and submit a request for investigation to Vestia. This request is rejected, despite the legal right to organize a cooperative (2).
Parliamentary questions are raised, questioning the legal rights of tenants and why the initiative is being hindered despite the current coalition agreement that encourages housing cooperatives (3).

April 2021 - **Warning for violation of human rights**
The United Nations sends a letter to the municipality questioning whether their strategy of urban regeneration is in violation of human rights. The municipality does not make this report public yet (5).

April 20, 2021 - **Start of demolition**

November 2021 - **Ongoing legal cases**
There are still residents engaged in lawsuits fighting demolition. A final verdict is issued in favor of the demolition (6).

2022

November, 2022 - **Rejection of zoning plan**
The Council of State [Raad van State] rejects the zoning plan for Tweebosbuurt South-East, based on insufficient research on the environmental impact, and no adequate consideration of the historic values of the neighborhood. Unfortunately it is too late for the already demolished houses (2).

2023

August 2023 - **The remains**
The first new building block is almost ready for 137 of the former households, who agreed on alternative housing, to move into. In the middle of over 550 demolished properties, a few privately owned houses remain, after an unsuccessful attempt to buy out their owners. The municipality appears to be paying more attention to the cultural-historical values of the houses (10).

Fig. 31

The images on this page compare the original state of the Tweebosbuurt with the municipal plan of 2018. The bottom left image displays the initial layout consisting of five large longitudinal blocks of social housing that accommodated about 614 households. With the redevelopment, 525 of these units are being demolished, displacing around 1,350 residents. About 137 households, depicted in dark red, are granted the right to return to the new block 'S', shown in the bottom right corner, which was completed four years post-demolition. This leaves approximately 854 people from 388 households to seek housing elsewhere, indicated in bright red. The plan replaces the demolished units with 237 homes in higher market segments, significantly decreasing the density. With this, they aim to attract middle- and high-incomes, professionals, social climbers, and young potentials by offering a diversified, high-quality housing mix in a green, quiet urban environment (Municipality of Rotterdam, 2021).

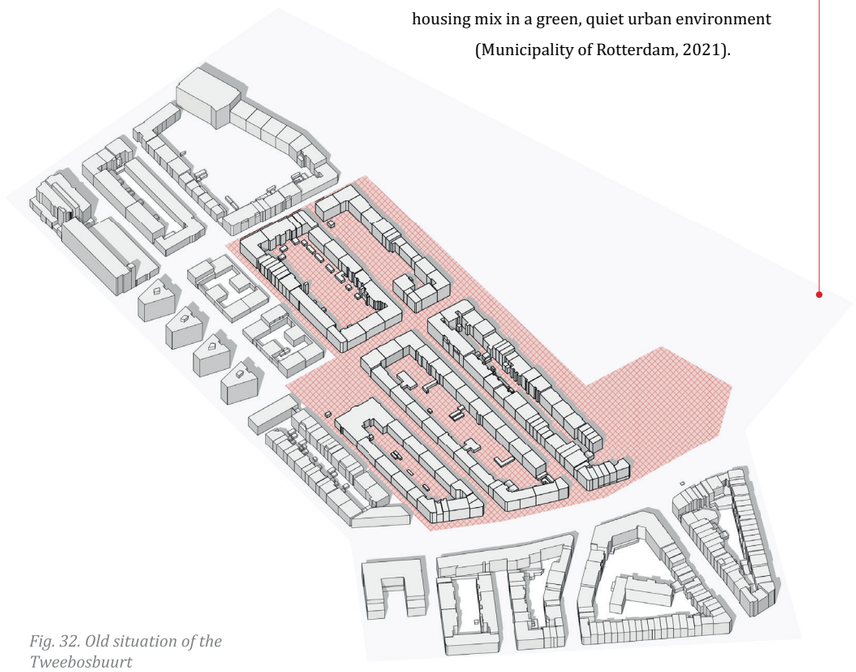
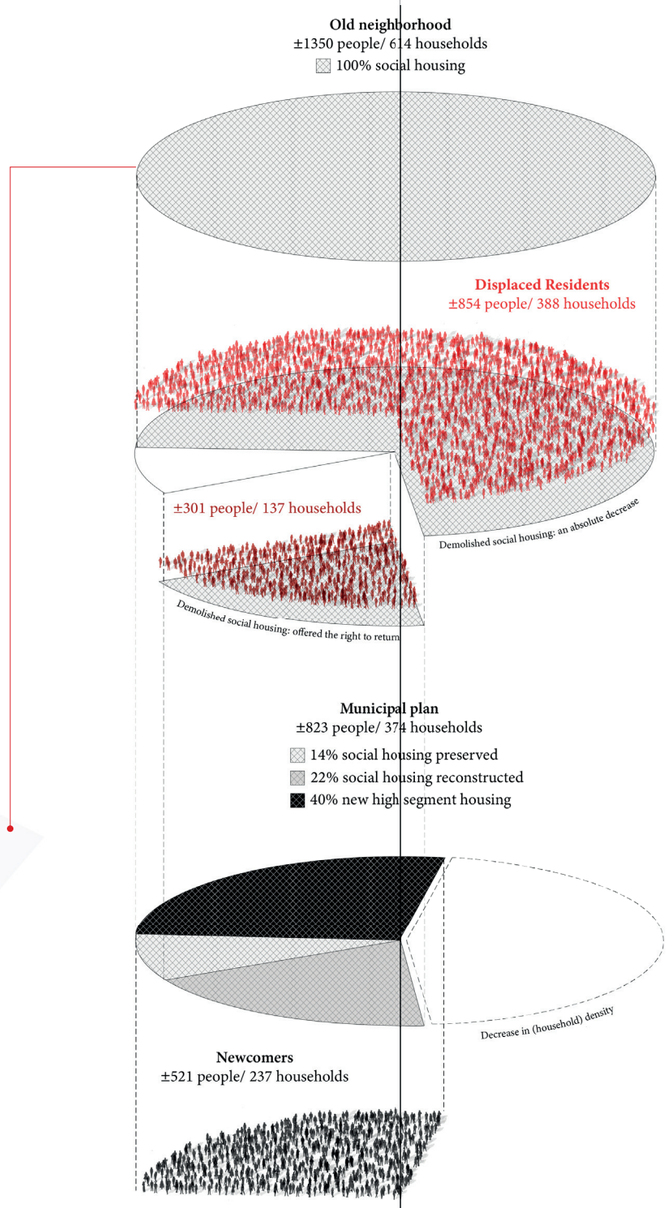


Fig. 32. Old situation of the Tweebosbuurt



Municipal objectives for the Tweebosbuurt:

- ☑ An attractive housing landscape for households with middle or high incomes, the working class, social climbers, and young potentials
- ☑ A diversified housing supply in a mixed neighborhood
- ☑ A quiet urban living environment, with larger homes of higher quality

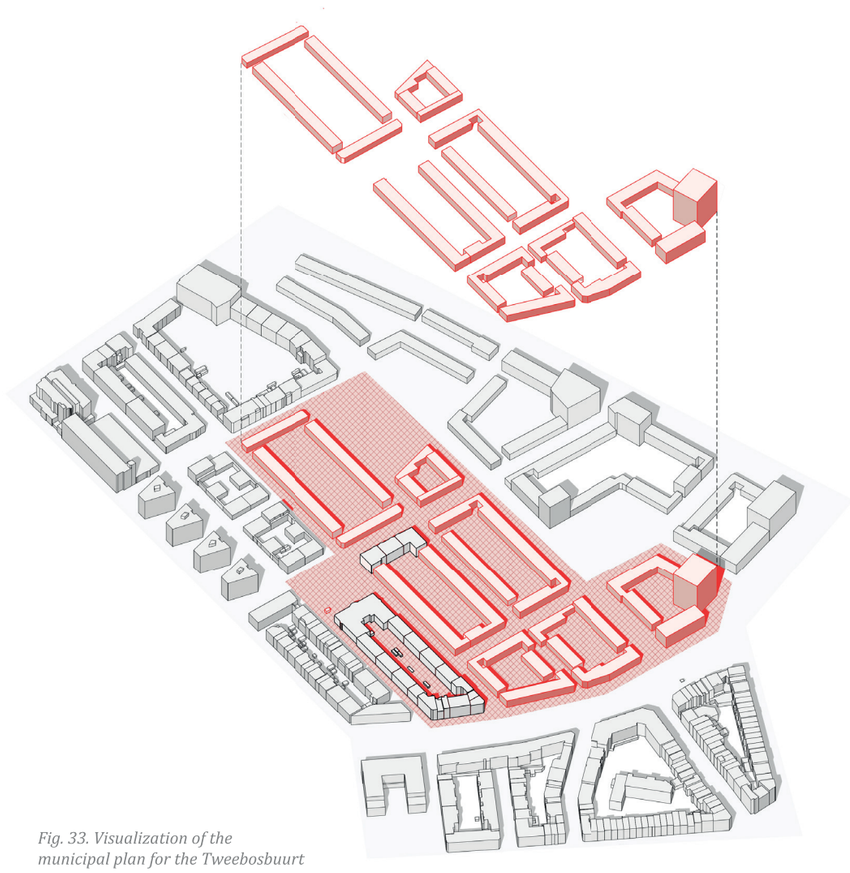


Fig. 33. Visualization of the municipal plan for the Tweebosbuurt

Introduction: Case Study Relevance

Building on the introduction to the case study, this section will discuss the relevance of the case study within the context of the research. It will do so by detailing how the displacement issues identified in this research manifest in the Tweebosbuurt, and by justifying the choice of the Tweebosbuurt—an older project—as a relevant example for demonstrating the implementation of objectives proposed for the new Housing Vision.

Firstly, the redevelopment of the Tweebosbuurt directly reflects Rotterdam's past housing policy by aligning with the ideology of 'the city in balance' and by decreasing the social housing stock to attract more affluent households. In line with past displacement issues identified in this research, the decrease in social housing directly displaces most of the established residents. Evicting most households, and only allowing 137 to return - after four years - without a vision for ensuring social cohesion, significantly disrupts existing social networks, which were reported to be very strong according to research by MARIONED (2018). Additionally, the reduction in affordable housing and the necessity for returning residents to move twice has compounded financial pressures on these communities. The experience of cultural displacement and the lack of consideration for local identity are underscored by the Council of State's rejection of the zoning plan due to inadequate consideration of historic values. These observations make the neighborhood a prime example of Rotterdam's past housing policy, illustrating displacement issues typical of similar NPRZ-neighborhoods undergoing restructuring.

Now that the Tweebosbuurt has demonstrated its relevance for the old housing policy, the remainder of this text will describe why the location is used to implement recommendations based on the new Housing Vision. The design for the Tweebosbuurt is still under development (as of May 2024), which means the implementation of the new vision is still relevant for the development of the final design. However, despite the new Housing Vision emphasizing affordable housing and community networks, the municipality does not show a genuine intention to protect or increase affordable housing in the area. Recent revisions propose adding 40 social housing units for the elderly, but these are inadequate. The added units do not extend the right to return to more residents, and the 137 social housing units in block S will transition to market rates as soon as residents leave. An interview with a municipal designer revealed that the municipality lacks a clear vision for designing a successful mix, exemplifying Rotterdam's failing mixing strategy (P. Nolten, personal communication, 01/02/2024). Additionally, the new Housing Vision continues to aim for a redistribution of existing social housing, particularly in NPRZ areas like the Tweebosbuurt, suggesting similar projects will recur that demand responses to similar design challenges. The planned enhancements in the area, including the Stadion Zuid development and the new mobility hub around Zuidplein, are expected to further transform neighborhood dynamics.

In conclusion, by implementing the proposed guidelines in the Tweebosbuurt, the research further illustrates the critical narrative on Rotterdam's past policy direction and provides evidence of the new Housing Vision's inability to mitigate displacement, highlighting a lack of ambition to revise the design. Considering the expectation of similar challenges recurring in the future, the implementation of guidelines in the Tweebosbuurt can guide and inform future design decisions under the new policy.

*Fig. 34. Collage of images of the Tweebosbuurt. Including quote: *Interview with P. Nolten, municipal designer of the Tweebosbuurt (personal communication, 08/04/2024). Direct translation from Dutch to English by the researcher.*



Fig. 34

Context: The Development of the South

Before implementing the guidelines on location, the following information will complete the introduction by providing a contextual understanding of the location and its surroundings. This segment will discuss the location on the scale of the district and the neighborhood, comparing the original situation (01) and the proposed municipal plan (02) for each. This understanding is essential to contextualize the final design within the developments in the surroundings and to understand how the design responds to both the original situation and the municipality's vision.

01 A bounded local neighborhood

The Tweebosbuurt is nestled within the fabric of older residential neighborhoods in the Afrikaanderwijk, known as 'the old south' [Oud Zuid]. Towards the north, near the Erasmusbrug, Kop van Zuid is being developed, referred to as 'the new south' [Nieuw Zuid]. This is a high-end, high-density development in Rotterdam, aiming to extend the high-quality city center across the Maas river.

The two developments are delineated by a green space along the Laan van Zuid, a former railway yard that has since become an empty, undeveloped green space. Despite this spatial separation, former resident Mustapha emphasizes that this disconnection is not perceived as negative for most residents, especially due to the neighborhood's close proximity to fast public transport connections to the city center. He explains that within the Afrikaanderwijk, there was a strong sense of community, with no sense of segregation felt. He points to Kop van Zuid as the prime example of a high-end gentrified area, remarking, "We have nowhere to be there anyway" [Wij hebben daar niks te zoeken] (M. Eaisaouiyen, personal communication, 27/03/2024).

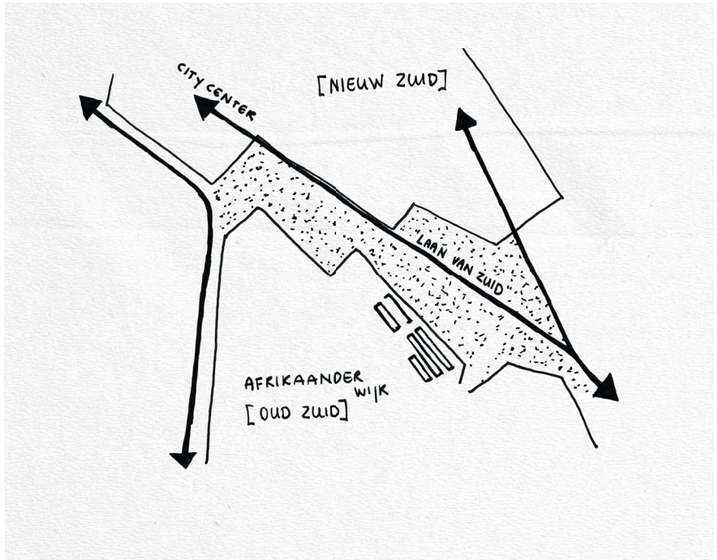


Fig. 35

Fig. 35. Sketch of the original situation on district-scale.

Fig. 36. Sketch of the municipal vision on district-scale

02 New urban connections

To enhance the quality in the southern region and extend the success of the Kop van Zuid, the municipality has ambitious plans scheduled for the district. These plans entail the construction of a new public transport link spanning the Maas, establishing a connection from the northern reaches of Rotterdam all the way to Zuidplein. This transport route was envisioned to reach the southern district at the new Stadion, accompanied by the development of new housing and significant sports and cultural facilities. The design of these plans will be further explored in the period 2024-2027.

As part of this development vision, Parkstad is being developed along the Laan van Zuid, reclaiming the vacant grassland adjacent to the Tweebosbuurt. This development, in progress since 2020, is described by the municipality as one of Rotterdam's most extensive urban undertakings, planning to bridge the gap between the Kop van Zuid, Feijenoord, and the Afrikaanderwijk, transforming this portion of Rotterdam South from a disparate collection of neighborhoods into a cohesive and vibrant urban district (Municipality of Rotterdam, 2021).

A new network of streets, complemented by a series of neighborhood parks and enclosed building blocks, aims to forge strong spatial and functional connections between the Afrikaanderwijk and Feijenoord. The Municipality of Rotterdam (2021) underscores in the Tweebosbuurt's zoning plan that demolition and new construction is a necessary step to create this new network of streets and to realize the ambitions integral to Parkstad.

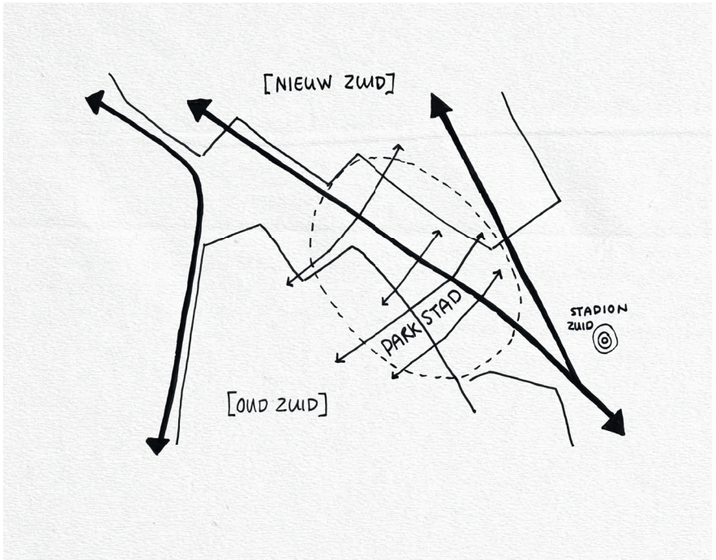


Fig. 36

Context: The Development of Parkstad

01 Strong barriers & local orientation

Looking at the smaller scale, the Tweebosbuurt is originally a rather urban neighborhood, characterized by closed building blocks with green courtyards. The street layout within the neighborhood is well embedded within the Afrikaanderwijk, Oud Zuid, providing nearly all the amenities needed for daily life. The disconnection between the Tweebosbuurt and the former railyard is further distinguished by the Hilledijk, a dike structure lined with old poplars, underscoring the division between the Afrikaanderwijk and 'Nieuw Zuid'.

02 Unifying neighborhoods

In the new development plan for the Tweebosbuurt, the emerging relationship between the Tweebosbuurt and Parkstad becomes evident. The municipality describes the extension of streets from the Afrikaanderwijk over the dyke, thereby breaking the current isolation of the Tweebosbuurt, as the key feature of the urban planning vision for Parkstad. Within this framework of streets and closed building blocks, a distinction is made in the architectural character between the Tweebosbuurt - as part of the Afrikaanderwijk - and Parkstad, the new construction on both sides of Laan op Zuid. In the Tweebosbuurt, a "reconstruction of the

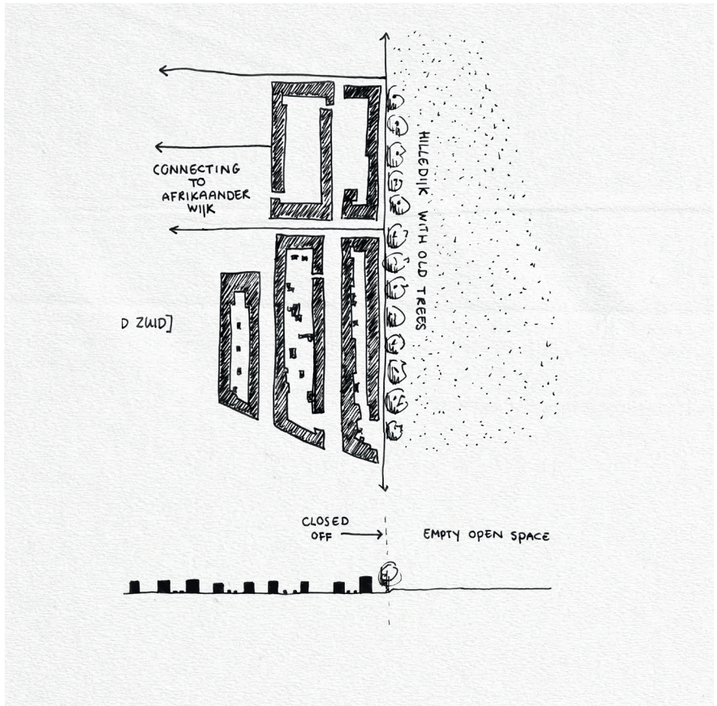


Fig. 37. Sketch of the original situation on neighborhood-scale.

Fig. 36. Sketch of the municipal vision on neighborhood-scale

closed building block" has been chosen, while Parkstad allows for a "reinterpretation of the closed building block" (Municipality of Rotterdam, 2021). The creation of a new green area, necessitating the demolition of existing housing in the Tweebosbuurt, enhances the functional relationship between the two developments.

During an interview with the designer of the Tweebosbuurt, I inquired about the significance of these connections, particularly for whom they were essential. He responded that the aim was not necessarily to connect the residents of the Tweebosbuurt with Parkstad, but rather to connect the new residents of Parkstad with the Afrikaanderwijk (P. Nolten, personal communication, 08/04/2024). This statement contextualizes the perceived injustice experienced by established residents: being compelled to relocate to enable new urban connections they did not find necessary, for residents who do not yet reside there.

In the remainder of this chapter, this thesis will implement the proposed guidelines in the Tweebosbuurt, while responding to the surrounding developments and conflicting values as described above. The clarity of this approach will emerge as the design is discussed. First, the subsequent pages will detail the type of design scenario chosen for implementing the guidelines.

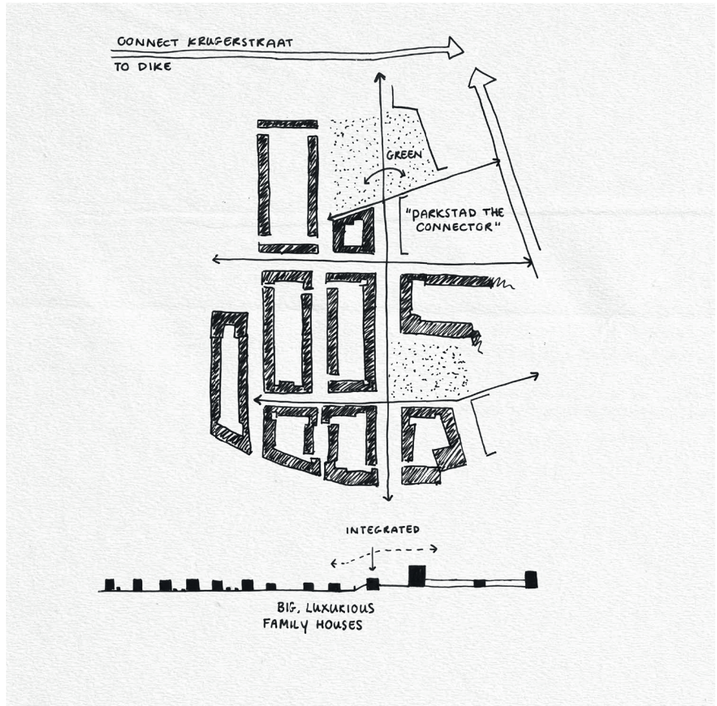


Fig. 37

Fig. 38

Towards Design: Scenario-Thinking

To revise the current municipal plans into a design that more effectively addresses displacement issues, this research will be implementing the proposed guidelines in an alternative design for the Tweebosbuurt. Although the outcome will be a singular design, multiple scenarios for implementation are possible, each offering a different relevance to displacement and approach to implementation. This text will detail the potential scenarios that have been explored.

A matrix, displayed on the following page, has been developed to explore relevant scenarios. It illustrates various approaches to the demographic composition, showing distributions of original and new residents and their impact on density (and thus housing availability).

The municipality is pursuing the option marked with an 'X' in the matrix, integrating 100% of the proposed new target group (237 households) and only 26% of the original residents (137 households). Positioned in the green zone, this option unfortunately reduces density, displacing most established residents and reducing housing opportunities.

To identify the most relevant alternative scenarios, a solution space with a red outline has been defined based on these criteria: 1) at least 65% of original residents are offered the right to return; 2) the introduction of the new target group does not exceed 100% to minimize further displacement pressures; 3) density remains stable or increases to meet the growing housing demand. Within this solution space, three scenarios offer varied responses to displacement:

The first scenario, considered the 'baseline,' allows 100% of established residents to stay without introducing any new residents. This option effectively prevents displacement and adopts a protective stance towards the social housing segment. It is particularly relevant for the Tweebosbuurt, where many residents believe that the existing buildings could have been renovated, challenging the notion that introducing new residents is necessary to address local problems. This scenario advocates for addressing such issues through less disruptive methods, such as preservation and renovation, new construction, or a mix of both. Despite its potential to minimize displacement, this scenario was not chosen for implementation because it poses minimal design challenges and thus offers limited illustrative value for future design considerations.

The second scenario serves as a 'middle ground'. Here, density is slightly increased to accommodate a balanced mix of 76% of both the old residents and the new target group. This scenario, necessitating changes in the housing stock and demographic composition, would effectively demonstrate the thoughtful application of the proposed guidelines. Yet, this approach is also not chosen because the modest increase in density and the reduction in social housing do

Fig. 39. Matrix used to explore relevant scenario's in which the implementation of guidelines can be illustrated

not fully align with the more progressive goals of this research.
Instead, the third scenario is selected for implementation. This approach aims to integrate the entire original resident group (100%) alongside the new target group (100%), aligning with both the desires of existing residents to stay and the objective of preserving the social housing stock, and the objective of the municipality to integrate a new group. This scenario presents substantial design challenges due to the dramatic change in demographic composition and the need to significantly increase density. Further details on the relevance of this scenario will be elaborated on the next page.

Beyond these scenarios, this research encourages exploration of additional possibilities. For instance: investigating whether integrating more than 100% of the new target group might increase the project's financial viability; exploring what the possibilities are for increasing the social housing stock; and maximizing density to its limits to explore the implications for design.

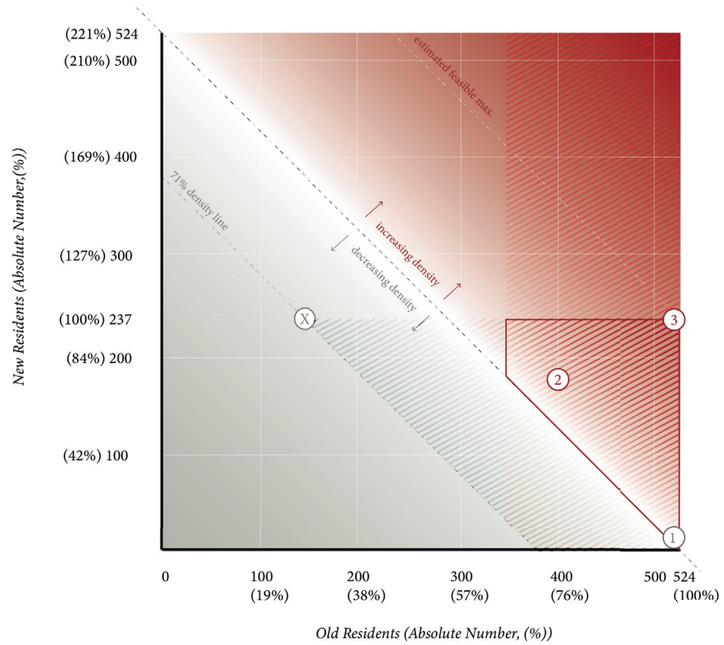


Fig. 39

Towards Design: Choice of Final Scenario

As previously discussed, the third scenario will be used for a final design, incorporating 100% of the original residents and 100% of the proposed target group. This scenario presents various risks of displacement, that will be addressed through the implementation of guidelines. The considerable demographic shift necessitates a well-considered mixing strategy to manage the risk of social displacement effectively. An increase in housing targeted at higher-income groups raises financial pressures, necessitating protective measures to ensure affordability, in both housing and amenities. Additionally, the substantial increase in density calls for strategies to mitigate cultural displacement by preserving neighborhood identity and important urban structures.

A fictional design

This scenario entails a fictional redesign of the neighborhood based on a new demographic composition. The design is partially fictional as it aims to protect some buildings and neighborhood structures that have already been demolished. Moreover, it is fictional because, aside from the blocks within the still-to-be-revised development plan of Tweebosbuurt South-East, the design for most of the other blocks is already at an advanced stage, which limits the feasibility of implementing the proposed design in its entirety. However, as outlined under research relevance, a fictional redesign is relevant due to the likely recurrence of similar projects with comparable design challenges in the future under the new housing policy. Additionally, as part of the Tweebosbuurt design is still under development, it can still inform some future design decisions for this specific project.

The image on the right illustrates the master plan derived from this scenario. The subsequent pages will detail each design objective, explaining their implementation and how they contributed to this final master plan.

The map displays three areas, each marked with a section line. Detailed designs for these sections can be found at the end of this chapter.

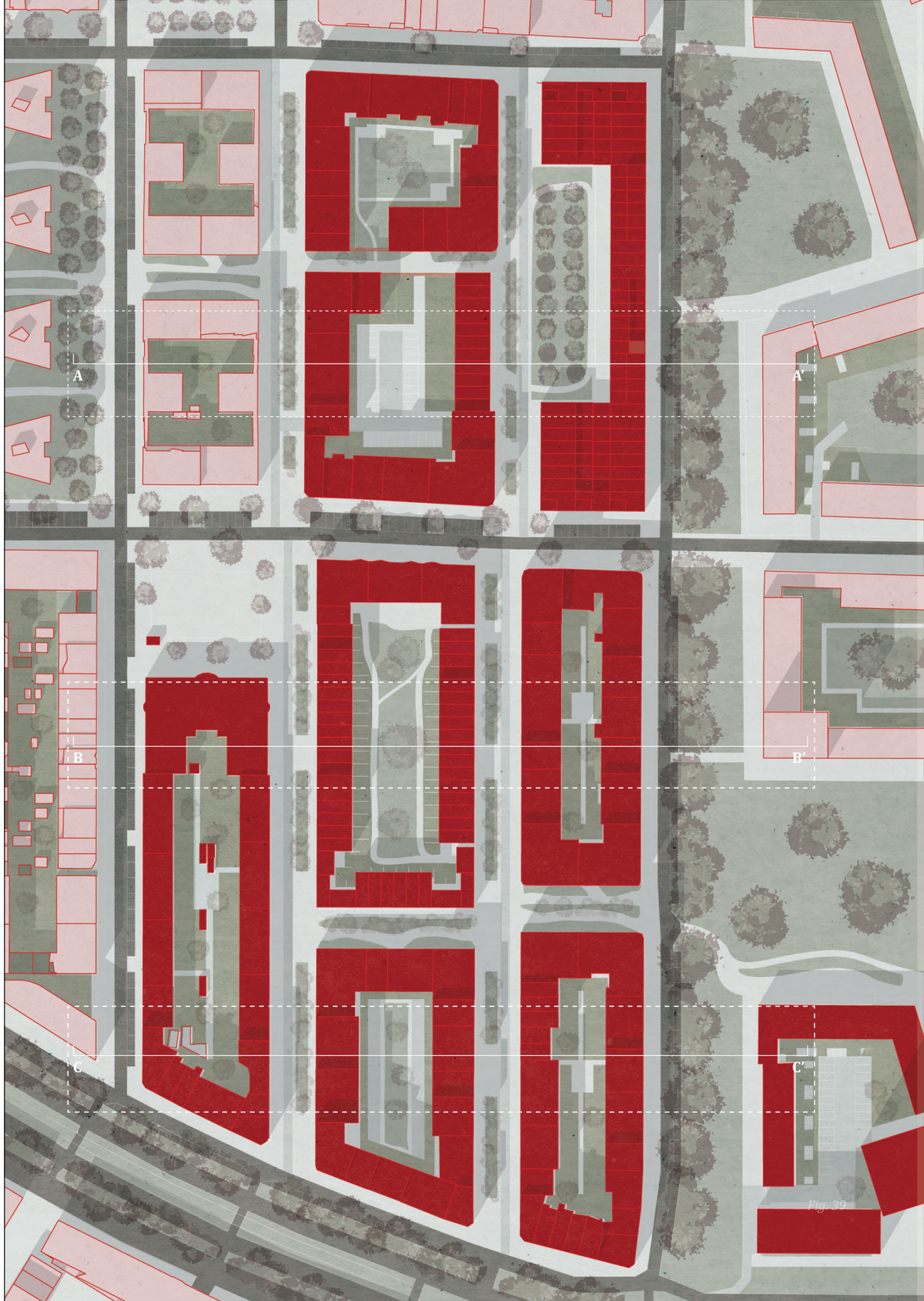


Fig. 40. Masterplan of this thesis' design for the Tweebosbuurt.

Fig. 39

Design Objectives: Sufficient Housing

Objective 1:

Provide sufficient housing by using a fair prioritization of user-centered and demand-driven objectives

- **Protection of affordable sector**
  Acknowledge the persistent increase in demand within the affordable sector and the uncertainties in future supply and demand, leading to a protective approach towards social housing and possible expansion of the sector.
- **Right to (re)housing**
  Alternative housing must be directly allocated to the displaced residents, or the development should be strategically phased to construct new housing prior to demolition. Maximize local rehousing opportunities.
- **Demand-driven objectives**
  Estimations in demand should be informed by a fair and comprehensive data analysis, and not driven by the aim of attracting a specific group.

The first objective has influenced the decision to design a neighborhood that accommodates the total housing needs of both all original residents, and the full new target group. This addresses the pressure in the affordable sector and ensures the right to return, while responding to housing needs outside the social sector. The following text will explain the composition of housing segments and types that this approach has resulted in.
As the original residents predominantly occupy social housing, 525 social housing units will be integrated into the design. For the newly added 237 units in the higher segment, which increase the density by approximately 40%, the composition of this segment will conform to the supply and demand estimations for new construction (2022-2040) provided by OBI (2023).
According to these estimates, 18% of the demand lies in the rental sector, and 52% in the purchasing sector. Applying this ratio to the additional 237 units results in 172 units in the purchasing sector and 65 in the private rental sector. Further applying the ratios of single-family homes and multi-family homes to these figures leads to the incorporation of 71 apartments and 101 family houses in the purchasing sector, and 40 apartments and 31 family houses in the rental segment. Within these units, the design focuses on the affordable/mid-segment price class, as this is most suitable for the location. While not adhering to the exact percentage desired for high-segment housing, the design provides guidance on where integrating higher middle-segment housing would be appropriate.

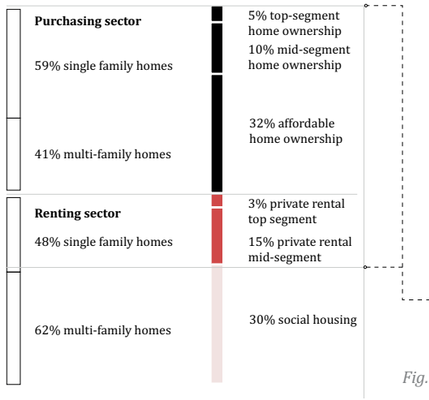


Fig. 41. Estimation of Demand (2022-2040) in new construction (OBI, 2023)

Fig. 42. Diagram showing the proposed composition and size of the target groups that will be integrated into the design.

Fig. 41

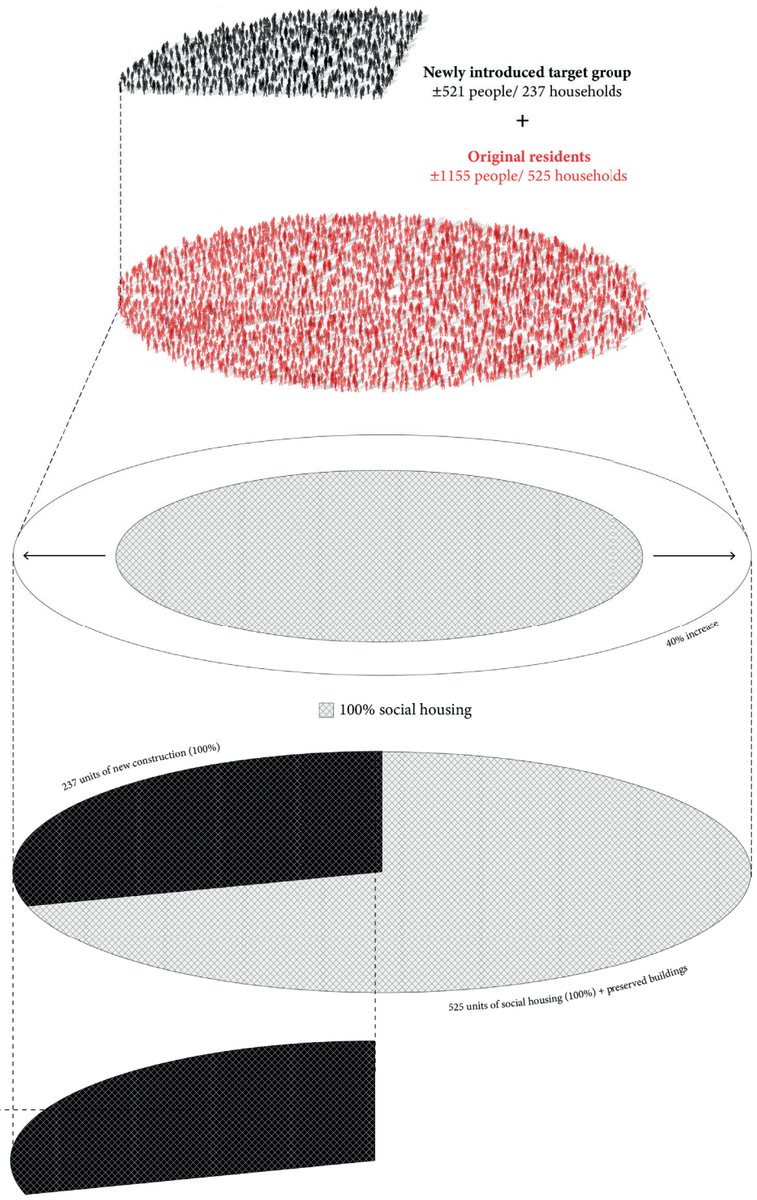


Fig. 42

Design Objectives: Sufficient Housing

Provide sufficient housing by using a fair prioritization of user-centered and demand-driven objectives

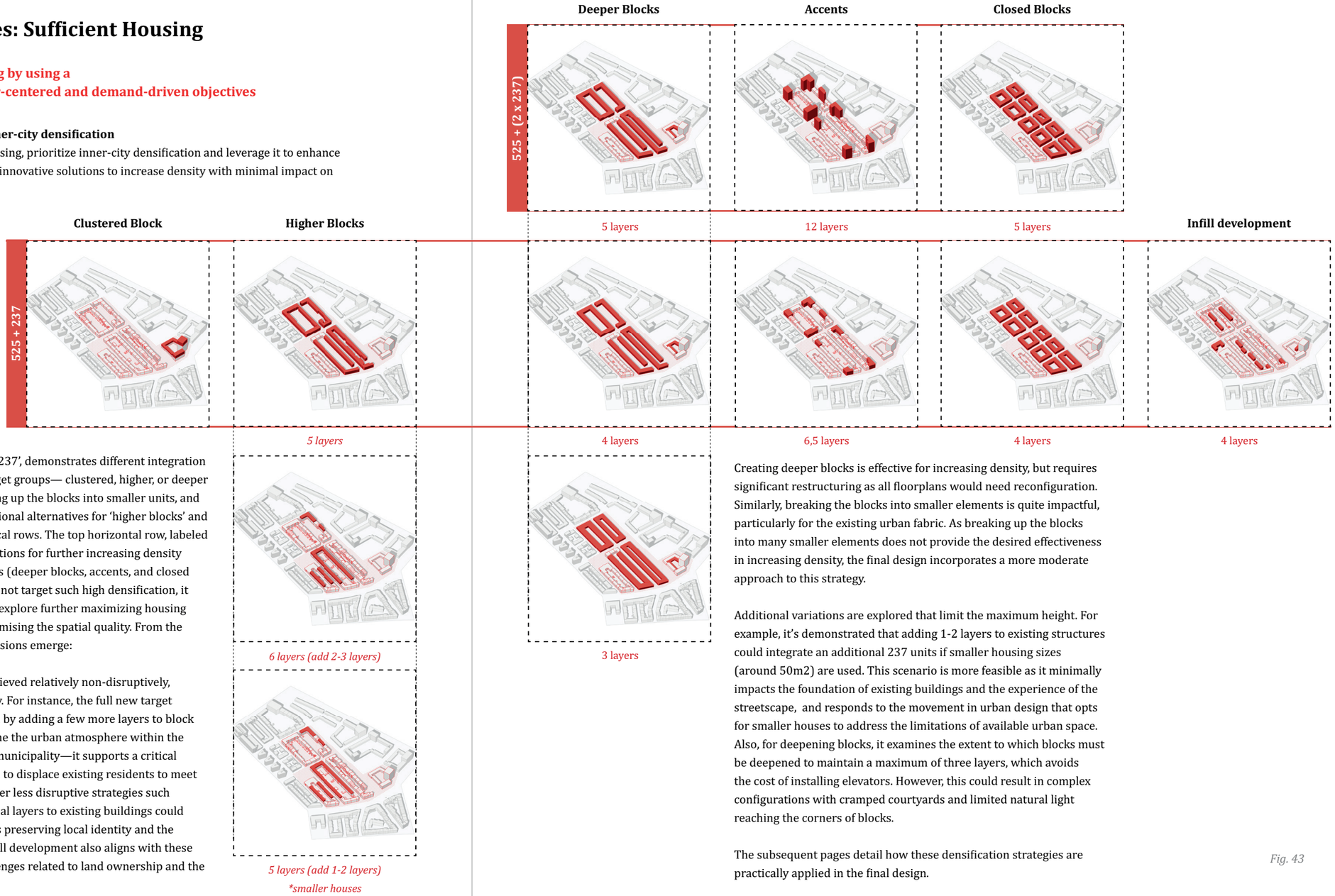
Increased focus on inner-city densification
To ensure adequate housing, prioritize inner-city densification and leverage it to enhance differentiation. Explore innovative solutions to increase density with minimal impact on spatial experience.

As the already dense neighborhood faces a 40% increase in density to house both groups, this segment investigates various densification strategies. It assesses which methods are most effective in allowing current residents to remain and in respecting local urban structures.

The middle row, labeled '525+237', demonstrates different integration methods for 100% of both target groups— clustered, higher, or deeper blocks, adding accents, breaking up the blocks into smaller units, and infill development - with additional alternatives for 'higher blocks' and 'deeper blocks' shown in vertical rows. The top horizontal row, labeled '525+(2x237)', explores the options for further increasing density for the most effective strategies (deeper blocks, accents, and closed blocks). While the design does not target such high densification, it encourages future research to explore further maximizing housing opportunities without compromising the spatial quality. From the density studies, various conclusions emerge:

Density increases could be achieved relatively non-disruptively, allowing most residents to stay. For instance, the full new target group could be accommodated by adding a few more layers to block S. Although this doesn't redefine the urban atmosphere within the Tweebosbuurt—a goal of the municipality—it supports a critical narrative questioning the need to displace existing residents to meet the higher-sector demand. Other less disruptive strategies such as adding accents and additional layers to existing buildings could maintain the urban fabric, thus preserving local identity and the current spatial experience. Infill development also aligns with these goals, though it presents challenges related to land ownership and the preservation of open space.

Fig. 43. Several densification strategies for the Tweebosbuurt case study.



Creating deeper blocks is effective for increasing density, but requires significant restructuring as all floorplans would need reconfiguration. Similarly, breaking the blocks into smaller elements is quite impactful, particularly for the existing urban fabric. As breaking up the blocks into many smaller elements does not provide the desired effectiveness in increasing density, the final design incorporates a more moderate approach to this strategy.

Additional variations are explored that limit the maximum height. For example, it's demonstrated that adding 1-2 layers to existing structures could integrate an additional 237 units if smaller housing sizes (around 50m2) are used. This scenario is more feasible as it minimally impacts the foundation of existing buildings and the experience of the streetscape, and responds to the movement in urban design that opts for smaller houses to address the limitations of available urban space. Also, for deepening blocks, it examines the extent to which blocks must be deepened to maintain a maximum of three layers, which avoids the cost of installing elevators. However, this could result in complex configurations with cramped courtyards and limited natural light reaching the corners of blocks.

The subsequent pages detail how these densification strategies are practically applied in the final design.

Fig. 43

Design Objectives: Sufficient Housing

Provide sufficient housing by using a fair prioritization of user-centered and demand-driven objectives

Increased focus on inner-city densification
To ensure adequate housing, prioritize inner-city densification and leverage it to enhance differentiation. Explore innovative solutions to increase density with minimal impact on spatial experience.

Based on earlier findings, the design employs a blend of strategies tailored to effectively and suitably densify the area, respecting the local context.

On the right page, the overall measures for densification are displayed. They are projected on the original building footprint to understand the impact of these changes.

Firstly, demolished units are reconstructed with increased height, leading to heights of 3-4 layers alternating with heights of 5-6 layers, occasionally reaching a maximum of 7 layers. Instead of concentrating height accents at corners, they are distributed throughout the neighborhood on a smaller scale, maintaining the grain of the original urban fabric. Additionally, blocks that are demolished are rebuilt with deeper footprints in courtyards that accommodate such expansion. Moreover, some original open courtyards are utilized to further increase density by breaking up blocks and establishing horizontal connections.

On this page, a specific typology is proposed for one of the blocks, designed to respect the original block measurements while optimizing use of space. A high-density block of family houses is suggested, featuring small but deep houses with a 4x16 meter floorplan incorporating a patio design. This layout ensures sunlight penetration throughout, reaching even the rear spaces on the ground floor. This design is inspired by the high-density housing at Borneokade in Amsterdam.

The combination of these densification strategies leads to a final urban configuration, that is depicted in the axonometry on page 142.

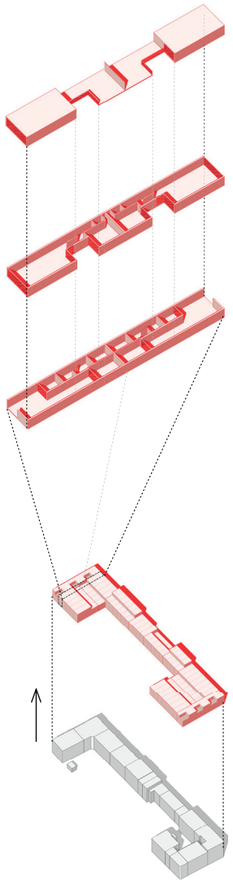


Fig. 44. New compact typology of family houses.

Fig. 45. Applied densification strategies, projected on the original urban fabric to illustrate their impact.

Fig. 44

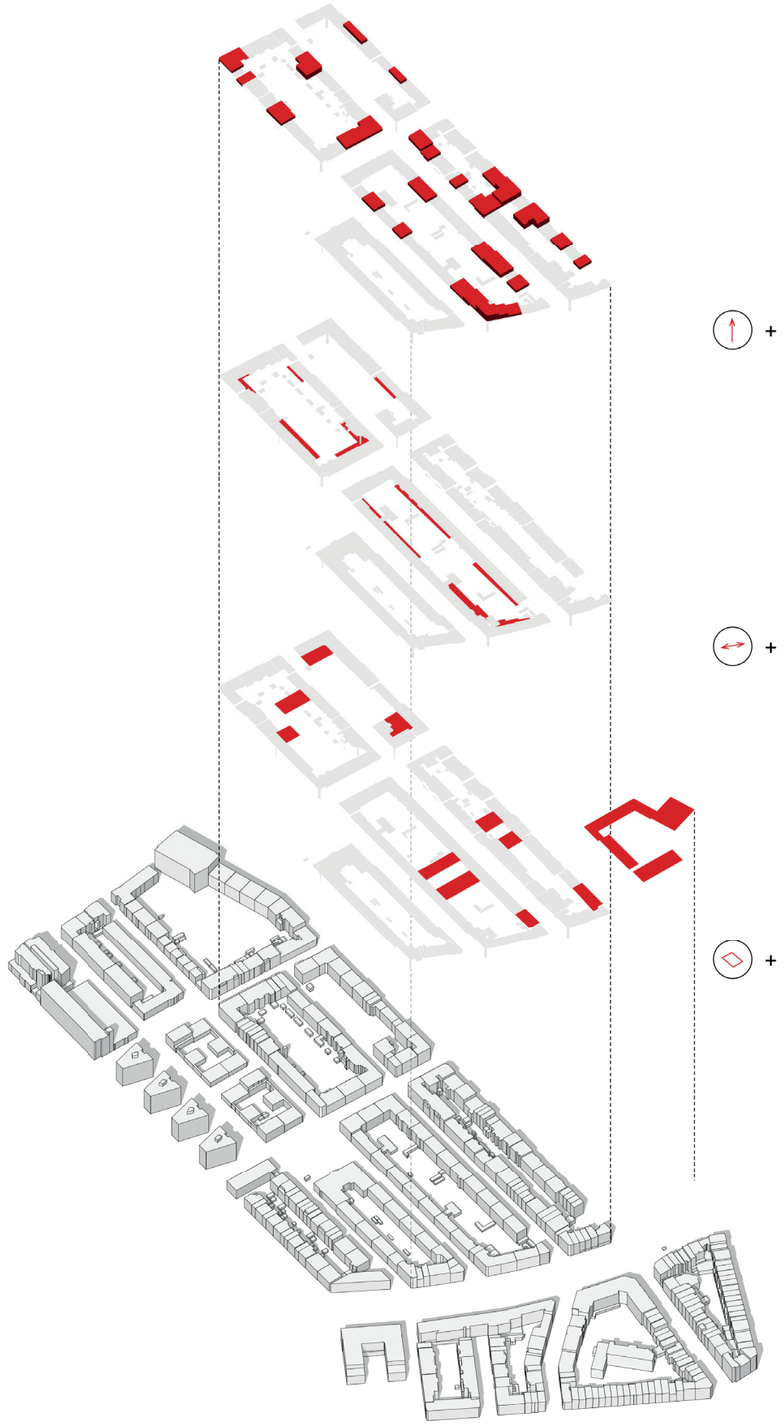


Fig. 45

Design Objectives: Localized Approach

Objective 2:

Encourage policy adaptability based on local networks & identity

- ☑ **Acknowledge residents' place-attachment:** Adopt a more comprehensive approach to identity preservation that recognises elements that contribute to residents' attachment, such as existing urban structures, landmarks, architectural styles, and neighborhood amenities (and their existing social networks), thereby connecting the community to its unique identity.

Along with densification measures, the design adopts a localized approach, preserving key urban structures, landmarks, architectural styles, and neighborhood amenities to support local identity and residents' sense of place. These elements are integrated into the spatial network designed to facilitate the mixing strategy, which will be detailed later in this chapter. The identified elements are based on personal interpretation and insights from Mustapha Eaisaouiyen, a representative of the residents' movement, who highlights features valued universally by the community (personal communication, 27/03/2024).

Mustapha identified critical elements within the neighborhood, such as the proximity to the market and the large Essalam Mosque. The market is essential for providing affordable produce and fish and serves as a cultural gathering spot. The mosque is a unifying space for residents, especially on Fridays and during Ramadan. The design values the routes to these places, emphasizing their role in the social fabric. Mustapha also notes the importance of resident-led organizations and associations in strengthening social bonds.

He pointed out valued green spaces, particularly the private courtyards in the block adjacent to the school, which were cherished and well-maintained. An anecdote about a resident who refused to relocate because of the fruit trees in his garden that he had tended for over fifty years, illustrates the value placed on these spaces. The smaller, newer trees on the 'neighborhood square' were maintained during restructuring, and will play a significant role in the final design. Besides green spaces, the neighborhood featured essential amenities like a Turkish store on the Martinus Steijnstraat and a smaller shop on the Riebeekstraat, which, along with the proximity to the market, the mosque, and the shops along Beijerlandselaan, form a vital network of facilities used predominantly by residents. Mustapha notes that these facilities are primarily towards the west and south, and that he seldom uses facilities towards the east or north, near Kop van Zuid.

- Text continues on the next page -

Fig. 46. Identifying structures that are important for residents' place-attachment. Notes from an interview with Mustapha Eaisaouiyen (personal communication, 27/03/2024)

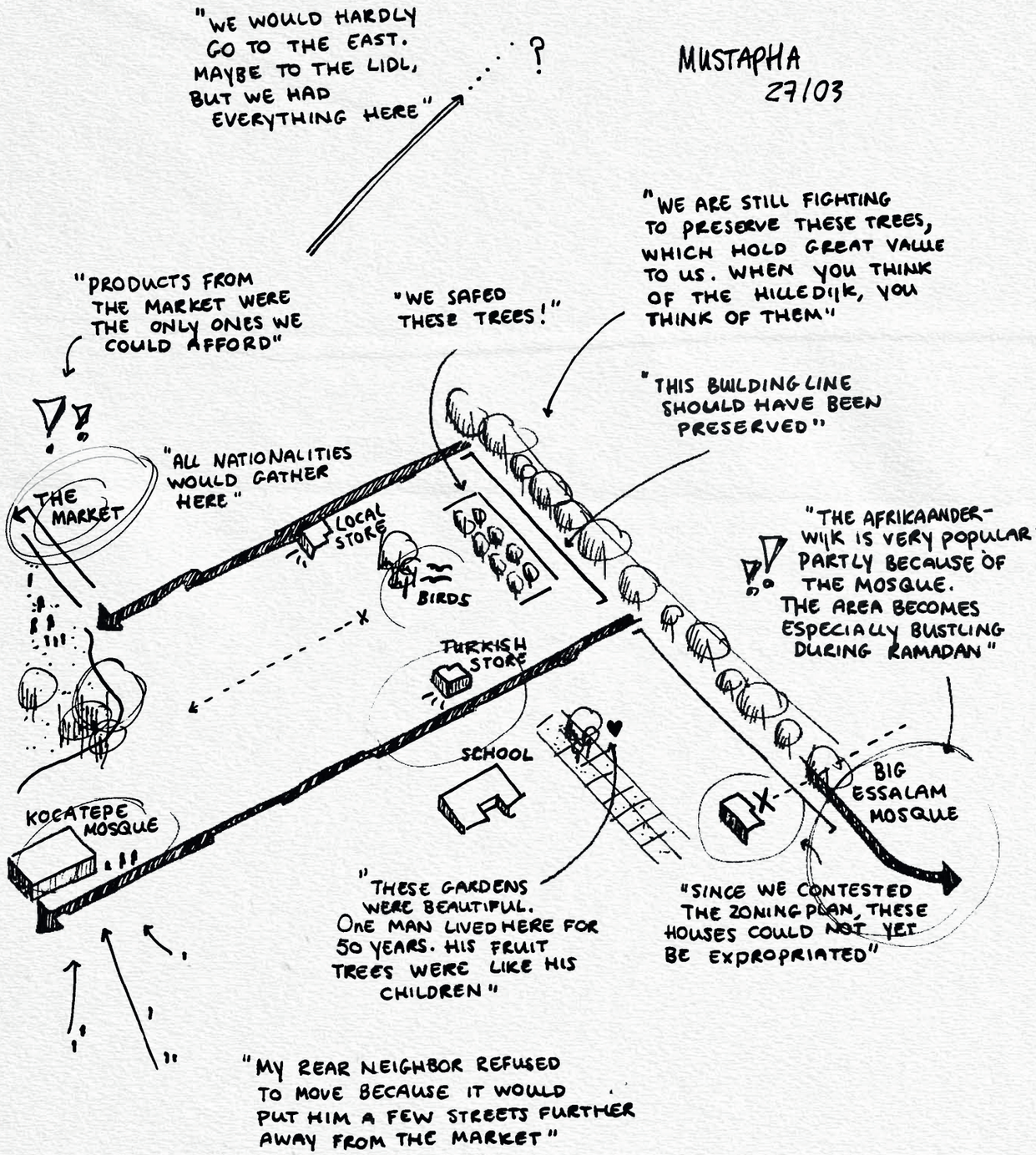


Fig. 46

Design Objectives: Localized Approach

Encourage policy adaptability based on local networks & identity

- **Respect cultural/ historical values:** Facilitate urban transformation in a way that accentuates the neighborhood's historical narrative, by preserving unique historical and cultural characteristics.

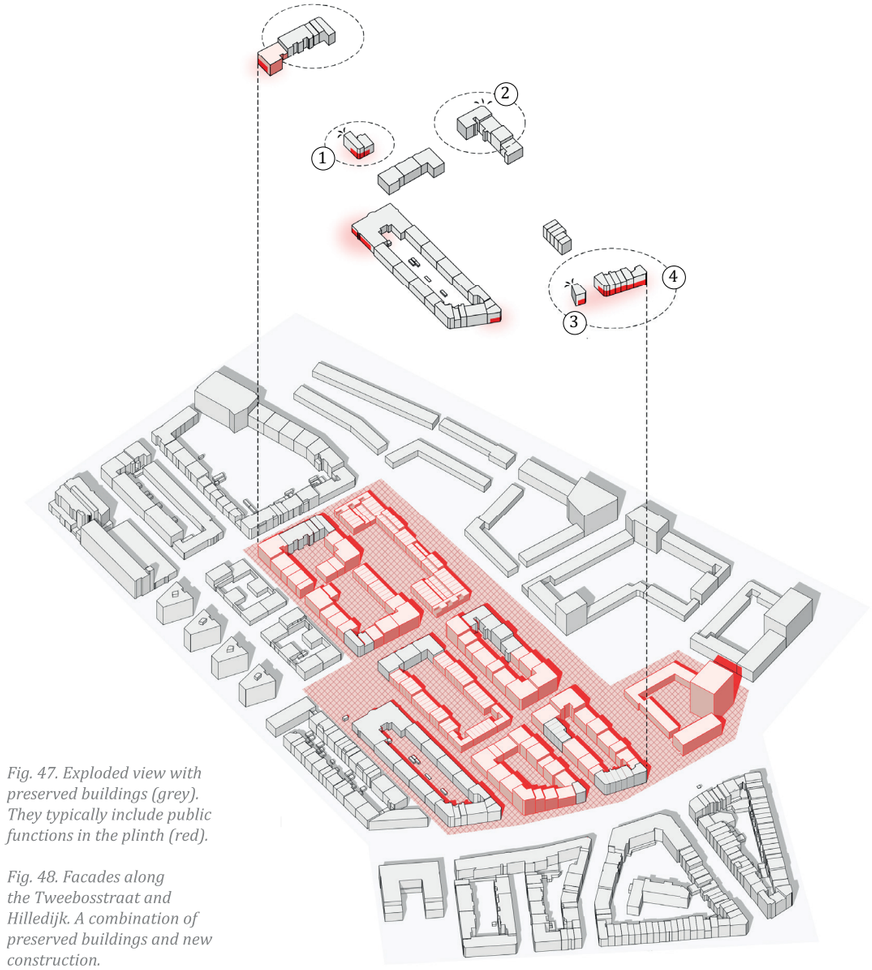


Fig. 47. Exploded view with preserved buildings (grey). They typically include public functions in the plinth (red).

Fig. 48. Facades along the Tweebosstraat and Hilledijk. A combination of preserved buildings and new construction.

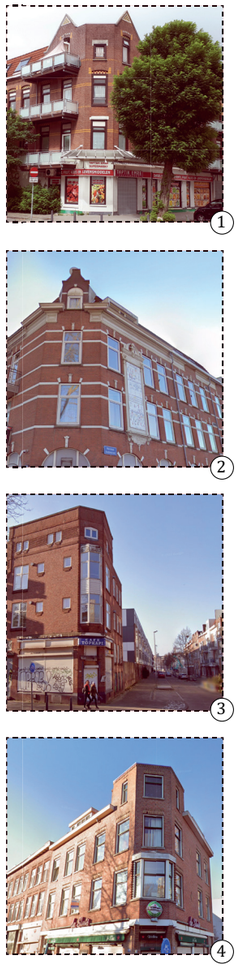
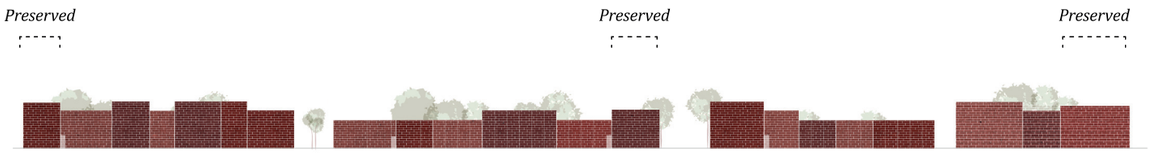


Fig. 47

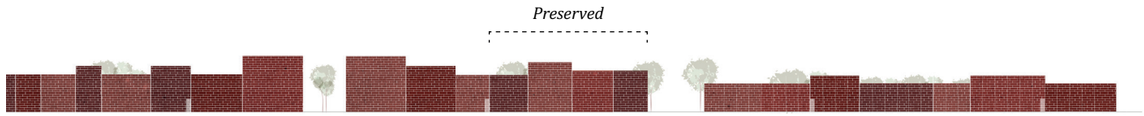
Lastly, Mustapha discusses elements still contested in ongoing conflicts with municipal plans. The ongoing revision of the zoning plan could lead to the removal of trees along the Hilledijk, currently seen as a barrier between the Tweebosbuurt and Parkstad. He emphasizes these trees as a defining green structure for the area. Additionally, he mentions ongoing negotiations over the last five buildings on the Tweebosstraat, which the municipality aims to expropriate for a new road that links Block S with the neighborhood. This thesis' design proposes less disruptive alternatives to these plans, while still establishing connections with Parkstad; balancing the needs of both the municipality and residents.

In addition to the key structures mentioned previously, the design also integrates important architectural landmarks and styles. The buildings shown in grey in the axonometric drawing are proposed to be preserved. Some of these are already included in the municipal plan, while others, identified for their significant cultural-historic value, are additional proposals. These blocks, typically pre-war constructions, often house neighborhood amenities (shown with a red glow) and feature distinctive architectural elements on their corners, serving as familiar landmarks within the daily life of the neighborhood. They are accompanied by photographs that illustrate their unique architectural expressions.

The preserved buildings are integrated into the streetscape alongside new constructions that mirror similar architectural styles, as demonstrated in the facade renderings below. These images provide an overview of the buildings' grain sizes and illustrate how the densification strategy aligns rhythmically with the original architectural patterns along the street.



Facades along the Tweebosstraat



Facades along the Hilledijk

Fig. 48

Design Objectives: Mixing Strategy

Objective 3:

Both the motivations behind social mixing and the resulting guidelines must be fair, inclusive, and research-based, ensuring positive outcomes for overall social cohesion.

- ☑ Design a succesful social mix, following the guidelines: **Mix similar incomes and lifestyles; Mix on street- or neighborhood level; Connect micro-districts by overlapping activities and social spheres; Design a network of clearly defined (public) spaces**

This section of the design will demonstrate how an improved mixing strategy is being developed for the case study of the Tweebosbuurt. The network of public spaces, integral to this strategy, will include key public structures identified in the previous section, aimed at fostering a more localized approach.

Firstly, to understand the complexity of achieving an effective social mix, it is important to note that the design strictly follows the OBI estimations of demand for new construction (2023) regarding the composition of housing types newly added to the area, as introduced at the start of this chapter. Adhering to this framework presented significant challenges for designing a successful mix. Adjusting the proportions of, for example, family homes for purchase to more rental apartments would have simplified the design. Instead, by strictly adhering to the dictated composition of the 237 newly introduced housing units, the design demonstrates how, even with various typologies and segments, and limited availability of space, a sufficient mix can be smartly achieved.

To understand the information on the map, it is important to refer to the legend. Solid colors signify the housing segments: the darkest red represents the private purchasing sector, and a mid-tone red represents the private rental sector, both within the lower-middle segment. Two shades of pink highlight the new social houses (dark pink) and the existing social houses (light pink). The design also strictly follows the distribution of apartments and family houses within these segments, although this is not specifically depicted on the map.

The map features two red striped hatches indicating exceptions to the above-mentioned allocation categories. A horizontal red hatch represents a target-group exception in the housing distribution system, which will be discussed later. Meanwhile, a diagonal red hatch indicates the option to integrate higher middle-segment housing, due to its proximity to other higher-end developments and/or the option for slightly larger floorplans.

Various shades of green delineate the system of public spaces integral to the mixing strategy. A darker green signifies a space of great importance in the social mixing strategy, as it functions on a larger scale and/or aims to connect more diverse housing types and social groups. A lighter shade of green indicates a space that plays a more important role on a local scale, often just facilitating connections within the block or with the adjacent block across the street. The following text will elaborate on the strategy behind the design.

LEGEND

Housing segments

- Priv. sector; purchasing *Lower-middle segment*
- Priv. sector; rental *Lower-middle segment*
- Public sector (social) housing *Affordable segment*
- Existing (social) housing

Exceptions

- *Option for higher middle segment*
- Special (target-group) exception to the housing allocation system

Fig. 49. Final master plan with the proposed mixing strategy explained.

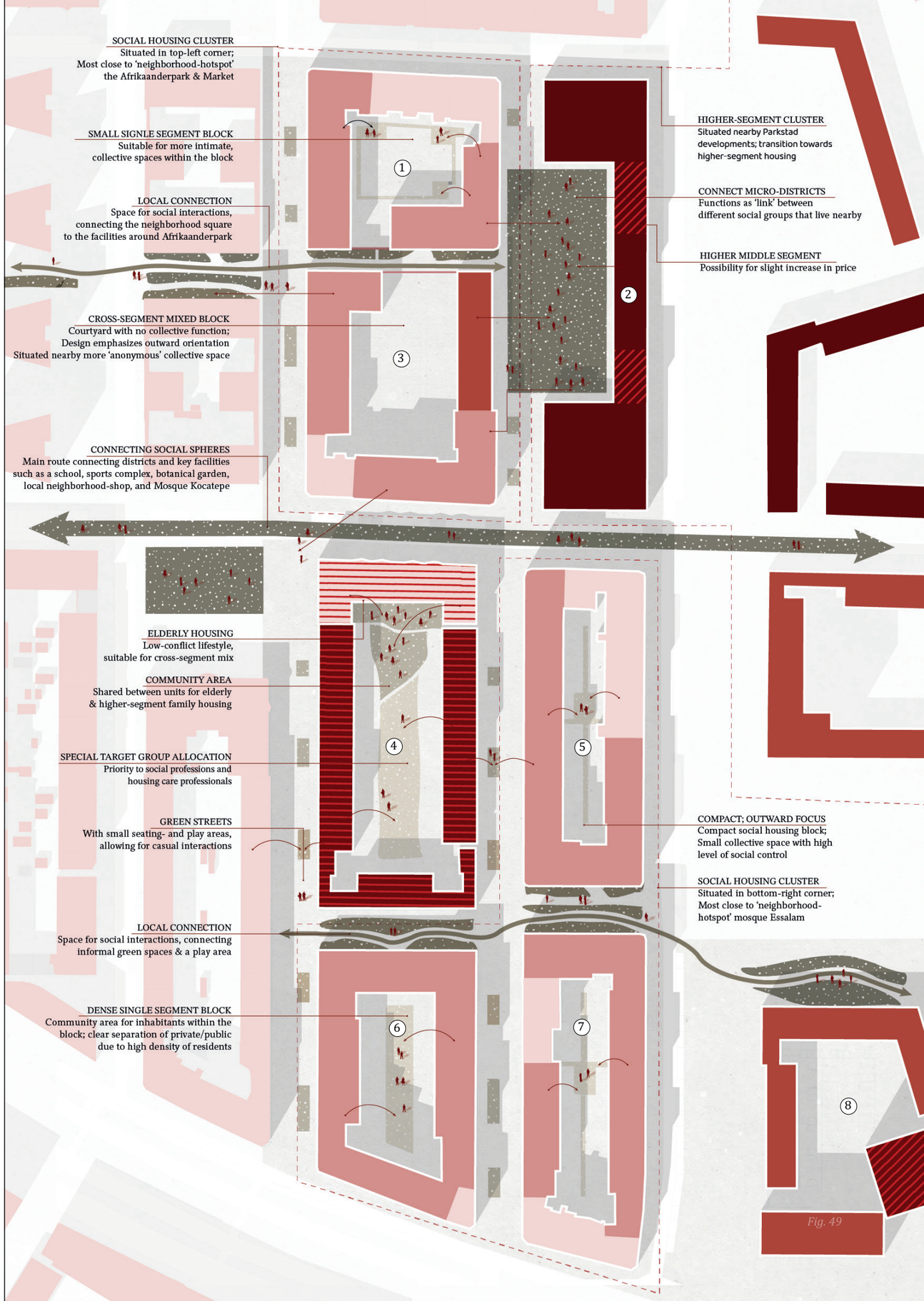


Fig. 49

The allocation of houses

To only mix similar incomes and lifestyles, the design clusters housing segments as much as possible within each block. This creates a design with a mix on street-/ neighborhood level. Based on this guideline, blocks where existing social housing is being preserved and renovated, are being used to form social housing clusters. Fortunately, with a modest increase in density, these blocks (labeled as pink) could accommodate the 525 original units. Additionally, it is beneficial that blocks 1, 3, 5, 6, and 7, positioned in the north-west and south-east corners of the neighborhood, are highly valued by the original residents for their proximity to the market (north-west) and the mosque (south-east), according to Mustapha.

Originally, the municipality planned to reconstruct part of the social housing stock in block 8, also known as block S, located in the bottom right corner to the east of the Hilledijk. However, this design proposes that block 8 consist of a higher segment, which aligns better with the more high-end Parkstad developments, ensuring a smoother transition between segments. Based on this rationale, the tower in this block is indicated with a diagonal red hatch - meaning that the tower, in both size and location, is ideal for housing higher middle-segment purchasing apartments, as determined by the demand estimations from OBI. Allocating middle-segment housing to this block instead of social housing allows for most social housing to be rebuilt in the original neighborhood and prevents the integration of higher-segment housing within blocks designated for social housing.

With the social housing now strategically positioned, integrating the remaining housing into the neighborhood poses design challenges. In the top right corner, block 2 houses the family homes in the purchase sector. This location is particularly suitable for this type of housing, firstly because it is adjacent to the Parkstad development, forming a cluster with the newer high-end developments to the east. Moreover, the shape of the block, dictated by the preservation of trees in the square, was highly functional for a dense composition of family homes. The width of the block accommodates exactly two compact back-to-back family homes with patio designs, while its narrower sections fit a deeper, thinner family house floorplan perfectly. Due to its proximity to the Parkstad developments and slight variations in the family house design, such as an additional floor and private roof terrace, this block also allows for some higher middle-segment housing, as indicated by the hatch.

In the center of the neighborhood, along the main road, part of block 4 is being renovated to integrate the 40 elderly social housing apartments. This location is ideal for elderly due to its connection to the central artery, linking to local shops and public transport, thus enhancing accessibility for this group. The block also features a spacious and attractive courtyard, perfect for a community garden that can be shared with neighboring residents.

As the social housing units are occupied by elderly residents, this block is particularly well-suited for a 'contrasting' mix with higher segments. The typically quiet and stable lifestyle of the elderly complements that of residents in the family houses. To further support the successful integration of these groups, the family houses in this block are designated for a special target group allocation system.

This special target group allocation system gives priority to social professions that enhance community spirit and social engagement, such as educators, healthcare providers, artists, and small business owners. These groups are often civically engaged and can positively influence the social dynamics of the block. Housing care professionals such as nurses, carers, social workers, activity coordinators, or part-time caregivers are given particular priority, as they can also play a role in caring for the elderly, further contributing to a stronger community spirit.

Public space design

The design of the public space is integral to the mixing strategy. The overarching structure consists of a well-defined network of different types of public space. Firstly, it features a primary connection from west to east along Martinus Steijnstraat, linking major public functions utilized by various groups in the Afrikaanderwijk and the new Parkstad area. On a neighborhood scale, green pedestrian routes connect key local green facilities. Furthermore, the two vertical streets through the neighborhood core are pedestrian-friendly and incorporate options for seating, small play areas, and greenery, fostering smaller-scale interactions primarily with neighbors from the block or adjacent blocks. These streets transition from private ‘front gardens’ to public spaces, creating an intimate yet public sphere that encourages casual encounters and provides a safe space for observation. Additional public areas within this framework, along with specific inner courtyard designs for each block, will be detailed later in this text.

First, the public space design across blocks 1, 2, and 3 will be discussed. This area, where various housing types and segments are in close proximity—including social housing, and lower and higher middle-segment housing in both the rental and purchasing sectors—features a large public neighborhood square. This square, clearly distinguished from the slightly elevated back gardens of block 3, offers a more public, anonymous setting suitable for casual interactions among different groups, serving as a connection between micro-districts.

The courtyard design of block 3 articulates that this is not a recreational space, with many private gardens and a ground-level parking lot. This is a deliberate choice due to the combination of different housing segments in this block, whose residents may have differing desires for the use of space, potentially leading to tension. Instead, the block is oriented outward, encouraging people to gather and interact in more public areas such as the square or small open spaces along the street.

In contrast, block 1 is one of the smallest and most intimate blocks, consisting solely of single-segment housing. Therefore, its courtyard is designed with smaller, intimate outdoor spaces that act as semi-public meeting places for people within the block.

The various types of public spaces in this area connect to a green neighborhood pathway extending westward toward Afrikaanderpark. Along this route, social spheres from different groups overlap, connecting to the market—a popular spot among Moroccan and Turkish community members—and to facilities like the sports center, botanical garden, and large playgrounds, which are used by multiple groups. A similar local green connection between blocks 4, 5, 6, 7, and 8 facilitates use by different groups by linking informal green areas and a play area in front of block 8, crossing the 'barrier' of the Hilledijk.

In the southern part of the neighborhood, the courtyard design of blocks 5, 6, and 7 mirrors that of block 1, providing intimate courtyard spaces for single-segment blocks. However, the courtyards in these blocks include bigger private gardens. As the blocks are even more compact, especially block 5 and 7, the private gardens prevent excessive gatherings, reducing nuisance and increasing social control within the collective areas of these courtyards.

Block 4 is an exception to the usual courtyard design. As previously mentioned, this block combines elderly housing and family houses, resulting in a courtyard where private gardens merge into a community garden. This setup provides a clear shared function for both the residents of the family houses and the elderly, enhancing their interaction and community spirit.

In summary, the design is constructed from strategically placed housing segments that facilitate a harmonious mix, without any sharp contrasts. The blocks are positioned within a network of public spaces that intentionally connects target groups where possible, and provides more private, intimate spaces as required. Any compositions that might initially seem unsuitable for a good social mix can be addressed through deliberate design choices, to still enable a successful integration of those segments and groups.

Further Integration into Final Design

Project vision

The previous pages of this chapter have demonstrated how the proposed guidelines interrelate and can be adapted to a local context. The remainder of this chapter will further elaborate on the final design, presenting detailed sections, plans, and references. Rather than merely implementing the guidelines on location, this final design reflects a project vision that extends beyond the thematic focus on displacement: a vision for a high-density urban development that utilises environmentally positive solutions to create a green and inclusive neighbourhood, pleasant for children and families. This includes a fine-grained green network and a reduced focus on motorised traffic, contributing to a more pleasant micro-climate within the streets and providing layered opportunities for social interaction. Together with the implemented guidelines, this forms the final design of this thesis.

To demonstrate the quality of this final design, the following pages will showcase the broader relevance of the complete project vision. This will enhance the designs' value for the municipality by showing that, in addition to an improved response to displacement, the final design addresses broader trends, multi-perspective objectives, and local challenges, which the municipality highly values.

This broader relevance is illustrated by responding to the most recent Environmental Vision (2021) of Rotterdam. This document specifies the trends and challenges the city faces (0.), resulting in a development strategy for the city called Quality Growth [Goede Groei] (1.). The Environmental Vision is concluded by discussing the local challenges in the South District to which this strategy should be applied, as detailed in the segment 'Gebiedskeuzes Rotterdam Zuid' (2.).

In the following text, the broader trends and challenges relevant to this thesis' design will be extracted, explaining how the design addresses them. Then, the objectives of the Quality Growth strategy will be discussed, explaining how the design aligns with these objectives or extends beyond them. This section will conclude by illustrating how this enhanced Quality Growth strategy simultaneously addresses the local challenges specified for the South District, including the nearby Parkstad development, resulting in a higher quality and more comprehensive multi-perspective plan that exceeds municipal ambitions. As you read through this chapter, a more complete image of the final design will be developed as each part is supported by images.

0. Trends in Rotterdam

The first trend Rotterdam is encountering is the increasing migration to the city, reffered to as *Urbanisation* in the Environmental Vision. Rotterdam's migration balance is positive, partly due to immigration and an ageing population. The population of Rotterdam is expected to increase by 50,000 residents by 2035 (Municipality of Rotterdam, 2021). This is a familiar trend within the thesis narrative: the pressure on the housing market is rising, and the design addresses this by offering an increased and diverse supply of housing.

Fig. 50. Content of the Environmental Vision (2021) by the Municipality of Rotterdam explained.

0. **Trends in Rotterdam**

Urbanisation;
Increasing diversity;
Climate & Circularity;
Need for qualitative public space;

1. **Quality growth; Evironmental Vision**
[Goede groei; Omgevingsvisie]

The strategy of quality growth of specificied in the Environmental Vision [Omgevingsvisie] of Rotterdam (2021). Integral to this strategy are three elements:

Local qualities; Preserving existing identities and cultural heritage
Co-creation; Involving Rotterdammers in the planning and implementation of projects
Multi-perspective plan; Providing a comprehensive future vision guided by four urban perspectives **(The Compact City, The Healthy City, The Inclusive City, and The Sustainable City).**

The Compact City
Inner-city densification, soft mobility options, active plinths, proximity to green, layering functions

The Healthy City
Bicycle-friendly, sports and physical activity, balance of urban and green, one low-noise facade, green and safe school area

The Inclusive City
Accessible public transport, housing career options, removing barriers, accessible schools, walking routes for elderly, affordable services, diverse groups and uses

The Sustainable City
Energy roofs, shared mobility, sustainable underground systems, greening existing buildings, heat stress reduction, water management, repair cafes, smart grid, low emission mobility

2. **Local challenges for the South District [Gebiedskeuzes Rotterdam Zuid]**

Fig. 50

More people mean more movement, and, according to the document, Rotterdam aims to focus more on efficient, clean, and active forms of mobility. Additionally, the city faces a significant sustainability challenge, brought forward by the document's focus on *Climate & Circularity.* This thesis' design addresses this by combining a redesign of public spaces with sustainability objectives, including the incorporation of more green spaces and non-motorised mobility options, which will be further explained later.

Rotterdam already has a *high diversity of population groups*, and with the increasing urban growth and ongoing immigration, the municipality recognizes the need to enhance connections between different groups within the city. The vision document expresses pride in Rotterdam's multicultural identity, and mentions social functions and communal spaces as valuable options to better integrate people with migrant backgrounds into neighbourhood structures (Municipality of Rotterdam, 2021). This thesis' design actively enhances these diverse identities and seeks to achieve this connection between different groups. This is achieved through an improved mixing strategy that connects new and existing residents of various nationalities, and by proposing several social facilities that can accommodate different groups and uses, which will be further elaborated upon later.

According to the Environmental Vision, these trends present a significant challenge for designing *qualitative public spaces* that respond to the increasing housing demand, new mobility systems and sustainability goals, while facilitating connections between old and new residents. This thesis' design aligns perfectly with these challenges, while also limiting displacement, meaning it can help the municipality address the most pressing issues the city currently faces.

1. Quality Growth

Introduction

The city-wide trends and challenges have led to the development of a strategy called Quality Growth [Goede Groei]. This strategy consists of three main elements, defined by the municipality, highlighted in red: preserving and enhancing **local qualities**, involving Rotterdammers in the planning and implementation of projects to facilitate **co-creation**, and using these elements to guide a **multi-perspective plan**. According to the document, all three elements are equally important for the strategy.

The 'multi-perspective plan' should address five perspectives. The image highlights four of these perspectives in green (as the fifth perspective primarily concerns working and industrial areas): **The Compact City, The Healthy City, The Inclusive City, and The Sustainable City.** The size of each perspective is simply determined by the number of sub-elements *(inner-city densification, soft mobility options, etc.)* the vision document associates with it, and carries no meaning in terms of importance. All sub-elements mentioned by the document are included in the figure, except for three that are related to waterfronts and water mobility, which hold no relevance for the Tweebosbuurt.

Fig. 52. Diagram explaning the relation between the Quality Growth strategy (Municipality of Rotterdam, 2021) and the design of this thesis.

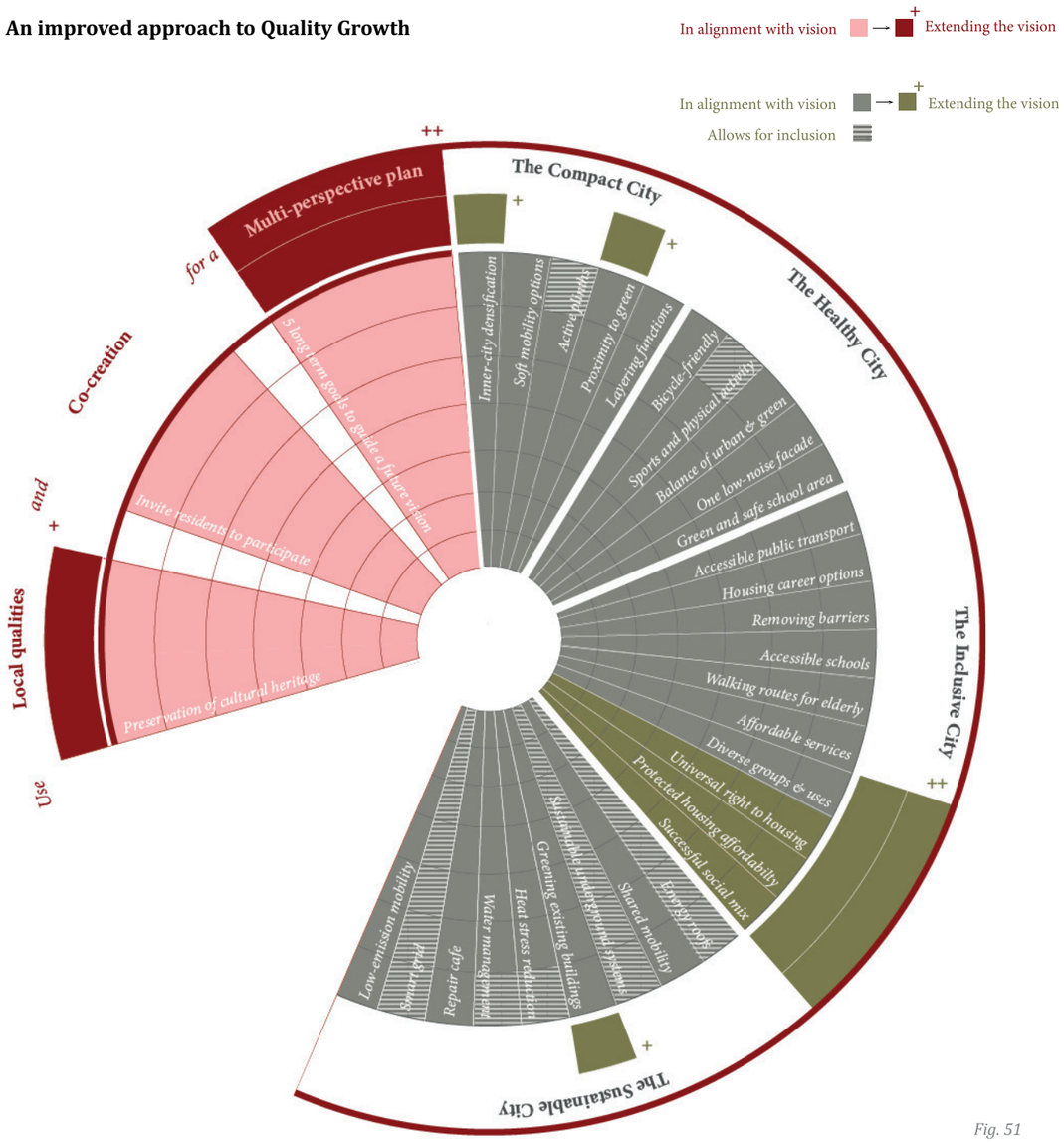


Fig. 51

The infill of the figure illustrates how this thesis' design aligns with the Quality Growth strategy. These infills are not based on exact numerical gradings but reflect a qualitative assessment, which will be explained below. Thus, the figure is not intended as a definitive grading tool but rather as an overview of the different elements of the Quality Growth strategy and their relation to the design.

A solid pink or muted green indicates full alignment with that element of the strategy, while a more vibrant red or green shows where the design adds more value than the municipal ambitions. There are two levels of intensity: an extension of one cell above the municipal vision suggests that this thesis places more emphasis on that topic than the vision document, and an extension of two cells indicates that the topic has a very specific focus and is significantly more comprehensively integrated within the design solutions.

A hatched infill suggests that this sub-element is not explicitly designed, but the design allows for its future inclusion. There are two levels of intensity for this: a full hatch of all cells indicates that the design products and scope of this thesis completely left out the design of that element - such as underground structures - although it allows for future inclusion. The second option is a one-cell hatch, which reflects that while the theme is included in the design (e.g., green spaces for heat stress reduction), further elaboration could more strongly represent it (e.g., the design of additional green roofs). Intermediate ratings are not included to reduce complexity. This results in an image where the design consistently aligns with the municipal strategy and, in some areas, enhances it. The following text will elaborate on this.

Local Qualities, Co-creation, and a Multi-perspective Plan

Firstly, the design showcases an improved response to preserving local qualities. The municipal strategy of Quality Growth aims to respect the existing character, referring to historical narratives and cultural heritage. In this, they actively link cultural heritage to status and economic value, emphasizing Rotterdam's character as a hub for development, innovation, and international allure. This thesis design improves this strategy with one cell by aligning resident-centred objectives for co-creation with the preservation of local qualities: instead of just focusing on the economic value of identities, the design also includes larger structures that are relevant for residents' sense of identity, such as green spaces, public space networks, and social structures. Additionally, the design integrates Rotterdam's character of cultural diversity into the programming of public space, which will be elaborated on later. Therefore, the design includes a more comprehensive strategy for preserving and enhancing **local qualities** and identities. In the design, structures that are valuable for identity are identified by engaging with residents, meaning that the design aligns with the municipal vision of **co-creation.**

Secondly, the proposed design reflects an improved **multi-perspective approach**. A two cell extension is given to this element, as the design enhances multiple perspectives, including The Compact, Healthy, Sustainable, and particularly The Inclusive City. In addition to this, the design addresses local challenges specified for the South District, further increasing the multi-perspective value of the design, which will be discussed later. First, the following text will go through each of the perspectives:

Fig. 52. Comparison of the original and new green structure in the Tweebosbuurt.

The Compact City

The design enhances the municipal strategy for The Compact City by putting a particular focus on *inner-city densification,* significantly increasing the density with optimized floorplans, and using this approach to achieve housing differentiation. Rather than merely providing *proximity to larger green areas*, the design integrates an overall green experience within the streets, even amidst increased densification. This Compact City design features *active plinths* with well-defined, socially interactive transitions from front yards to public spaces, as well as several neighborhood facilities along the Martinus Steijnstraat. Future iterations could include more active plinths along the Hilledijk, developed in collaboration with the amenities plan for Parkstad to ensure there is no overlap and adequate support. The inclusion of local supermarkets in the plinth, combined with the multifunctional use of the soccer court and communal space, ensures *layered functions*. This results in a compact, high-density design with sufficient amenities within walking distance.

The Healthy City & The Sustainable City

Initially, the streets of the Tweebosbuurt presented a very urban, paved atmosphere, with parking along both sides. While the courtyards were green, they were mostly private or shared but fenced at night, limiting their contribution to the neighborhood's social atmosphere. This situation necessitated a new approach to facilitate the transition into a high-density, green, and inclusive neighborhood that is pleasant for children and families.

To achieve this, the final design disperses and 'inverts' the green qualities of the original courtyards onto the streetscape, resulting in a fine-grained, external green streetscape that facilitates layered opportunities for social interaction, as shown in figure 52. It includes a 100% preservation of the total green space ratio (13,165 to 13,095 m^2) while increasing density, ensuring a *balance of urban and green*—contributing to The Healthy City.



Original *New* *Fig. 52*

This means that while the total water retention capacity in the area remains unchanged, the fine-grained green structure distributes water runoff more evenly across a broader area and improves micro-climate control, reinforcing the perspective of The Sustainable City. The design can offer additional opportunities for the municipal goals of *water management* and *heat stress reduction* by including green roofs and/or solar systems on newly constructed blocks.

The integration of more green spaces within the streets is facilitated by a lowered focus on car use. The revised mobility network within the Tweebosbuurt, which is more pedestrian- and *bicycle-friendly*, is illustrated on the map on this page and further detailed on the next spread with corresponding references.

The roads in mid-tone red (2) and pink (4) best represent the integration of pleasant, pedestrianized, informal green spaces that facilitate social interactions among various groups adjacent to these routes. The vertical roads through the core of the area (2) are predominantly for pedestrian use, where cars are considered guests and can pass one way. These roads feature larger green plots and play areas, acting as connectors between different housing zones. Additionally, there are fully pedestrianized connections (4), the smallest horizontal routes in pink, which can be found referenced on this spread.

To still provide proper access to the neighborhood, the roads in dark red accommodate more space for cars and integrate smaller green plots. These roads (1/3) allow limited two-way car traffic and some parking spaces, serving as important connections to areas outside the neighborhood. The horizontal type of this road design (labeled as 5) has a wider profile, permitting some perpendicular parking distinctly separated from a more intimate, social zone close to the houses, including sidewalks and small front yards. The section for this road is not specified here, but a reference can be found on the next spread.

Any remaining parking needs are smartly integrated within the courtyards of the blocks, supporting the social functions of these spaces without diminishing the green areas. These parking spaces within the courtyards of blocks are highly suitable for clusters of *shared electric cars*, aligning with The Sustainable City.

In response to The Healthy and Inclusive City, the new green, slow-traffic road system facilitates a *green, safe and accessible school zone*, as the De La Reystraat (labeled as 2) connects to the main entrance of the Leewenkuil, where the Nelson Mandela school will be relocated to.

The focus on slow traffic and green streets is made possible by a changing mobility system, where the emphasis shifts towards *active mobility forms* and *public transport* connections, valued within The Compact, The Healthy, and The Sustainable City. Currently, the Tweebosbuurt is well-served by public transport connecting the Afrikaanderwijk to central Rotterdam and surrounding major cities, and this network will be further expanded in the coming years. This expansion includes the development of a new high-quality public transport connection from Kralingsezoom in the north to Zuidplein in the south, with a new train station, Stadion

Fig. 53. New road system of this thesis' design, including three corresponding sections.

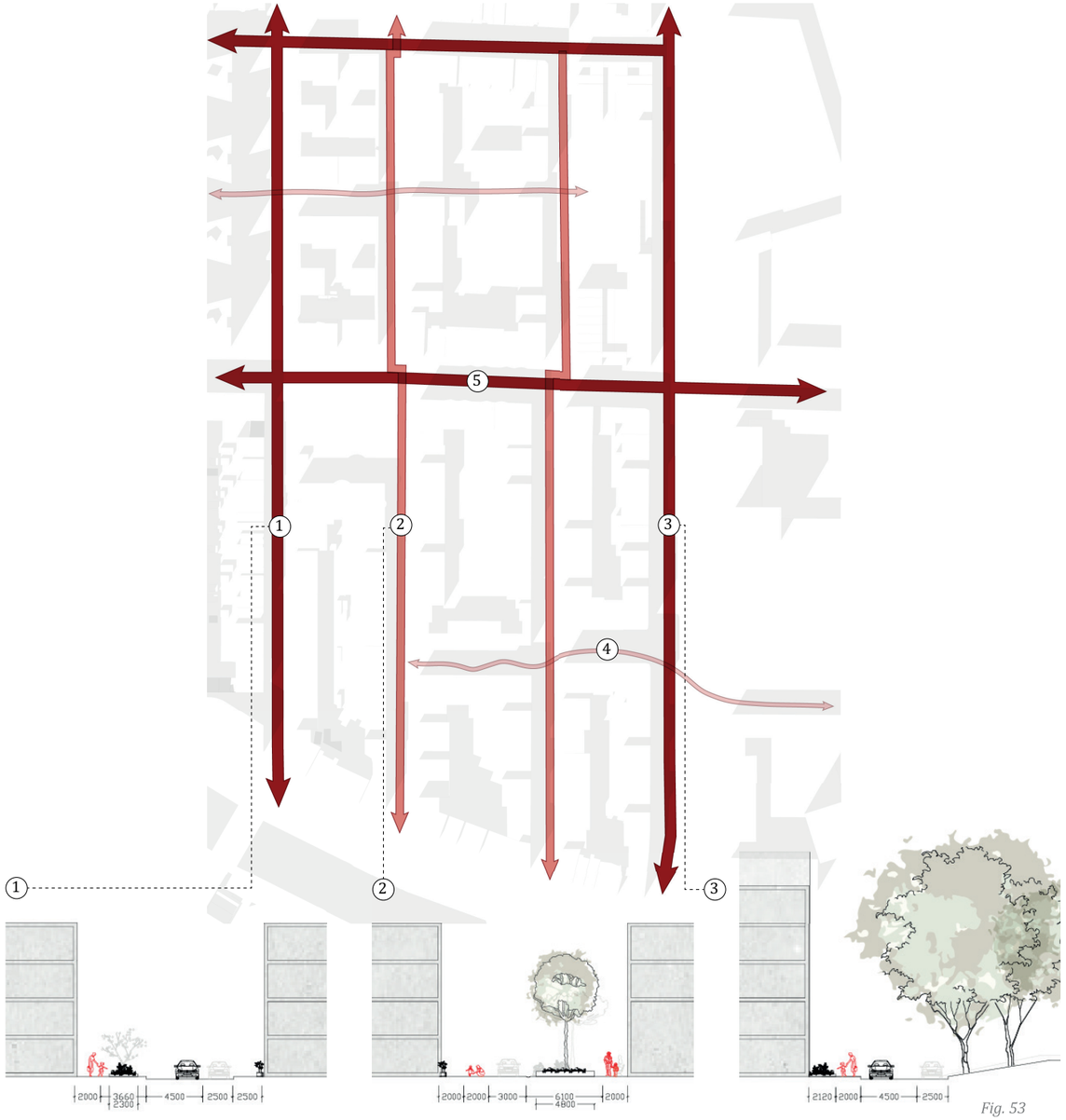


Fig. 53

Zuid, being developed within 1,200 meters of the Tweebosbuurt. Additionally, the Martinus Steijnstraat in the Tweebosbuurt connects to the Laan van Zuid, a crucial public transport link to the city centre. This connection to cities like Leiden, Den Haag, Delft, Schiedam, Rotterdam, and Dordrecht will undergo significant upgrades, further enhancing connectivity.

Such developments mean that residents will rely less on their cars, leading to a reduced parking norm in the final design. The current parking norm for social housing units has been calculated, and along with the parking standards for new construction in Rotterdam, these have all been reduced by 20%, supporting sustainability goals. The revised parking standards are as follows:
Existing social housing: 0.4 cars per housing unit
Units sized 65-85m²: 0.6 cars per housing unit
Units sized 85-120m²: 0.8 cars per housing unit

In conclusion, the perspectives of The Healthy City and The Sustainable City are integrated into the design through fine-grained green spaces and a reduced focus on car use. This contributes to a *balance of urban and green* areas, with a mobility system that encourages *physical activity*, is *bicycle-friendly*, and offers *shared mobility options*. The fine-grained character of the green spaces facilitates *heat stress reduction* and *water management*. Although not explicitly designed, the final design offers additional opportunities for sustainability, such as *green (energy) roofs* and the installation of *sustainable underground systems* like district heating networks and geothermal systems, which can be part of the redesign of public spaces and roads. Combined with the strategy for The Compact City, which emphasizes *proximity to green* spaces during increased *inner-city densification*, this results in a perfect alignment with the municipal vision, aiding in the achievement of their goals for compactness, health, and sustainability.

Ref. 4.1. Artist impression of Schalkwijkerhout, Haarlem. (BOOM Landscape, n.d.)

Ref. 4.2. Blomstraat, Weesp. (Braaksma & Roos Architecten, 2013).

Ref. 2.1. Artist impression of Leidsche Rijn, Utrecht. (VORM, 2021).

Ref. 2.2. Amsterdam, Stettineiland. (Schlijper, 2021)

Ref. 2.3. Artist impression of Florijn, Utrecht. (Hurks, n.d.)

Ref. 5.1. Artist impression of KOER Rotterdam. (Helleman, 2021)













The Inclusive City

The design of The Inclusive City not only aligns with the municipal strategy, but further expands and improves upon their inclusivity goals. Consequently, the design's integration of inclusivity significantly contributes to a more comprehensive implementation of the Quality Growth strategy, increasing the design's value and relevance concerning the municipality's ambitions.

Before discussing how the design enhances the municipal intentions, this text will provide some examples of how the design is aligned with the municipal strategy. For instance, *walking routes for elderly* are integrated in the design, with elderly units strategically positioned within a pedestrian-friendly network, adjacent to a local supermarket and communal garden. Additionally, *community initiatives* are included through resident engagement and the introduction of the new community center, detailed on the following spread. *Affordable services* are preserved by maintaining two local Turkish supermarkets and creating a pedestrianized connection to the Afrikaanderplein market. *Barriers are removed* by using strategic routes and zoning to connect Parkstad and the Tweebosbuurt, with the extension of the Martinus Steijnstraat further improving *public transport accessibility* along the Laan van Zuid. The design also offers an increased and diverse housing supply, providing inclusive *housing career options* for residents in the social and middle segments who wish to move to a higher and/or purchasing sector, or larger homes.

Secondly, the final design enhances and expands on the municipality's intentions for The Inclusive City in various ways. This improvement is partly facilitated by the thesis' guidelines, which ensure the *universal right to housing* and *protect affordability* within the social and lower middle segments— sub-elements currently absent in the municipal vision, which is why they are added to the circular plot in bright green. Additionally, by implementing guidelines for a *successful social mix*, the design increases inclusivity by reintegrating original residents back into the neighbourhood within a social network that connects both original and new residents.

Lastly, the final design advances the municipal perspective on facilitating public spaces for *diverse groups and uses*, by programming public spaces to accommodate Rotterdam's increasing multicultural identity. This carries a lot of relevance for the city, as the Environmental Vision introduces the increasing (cultural) diversity as one of the main challenges for future public space design. This sub-element of the strategy will be elaborated on in the next spread.

Fig. 54. Specific enhancement of The Inclusive City.

Specific enhancement of The Inclusive City

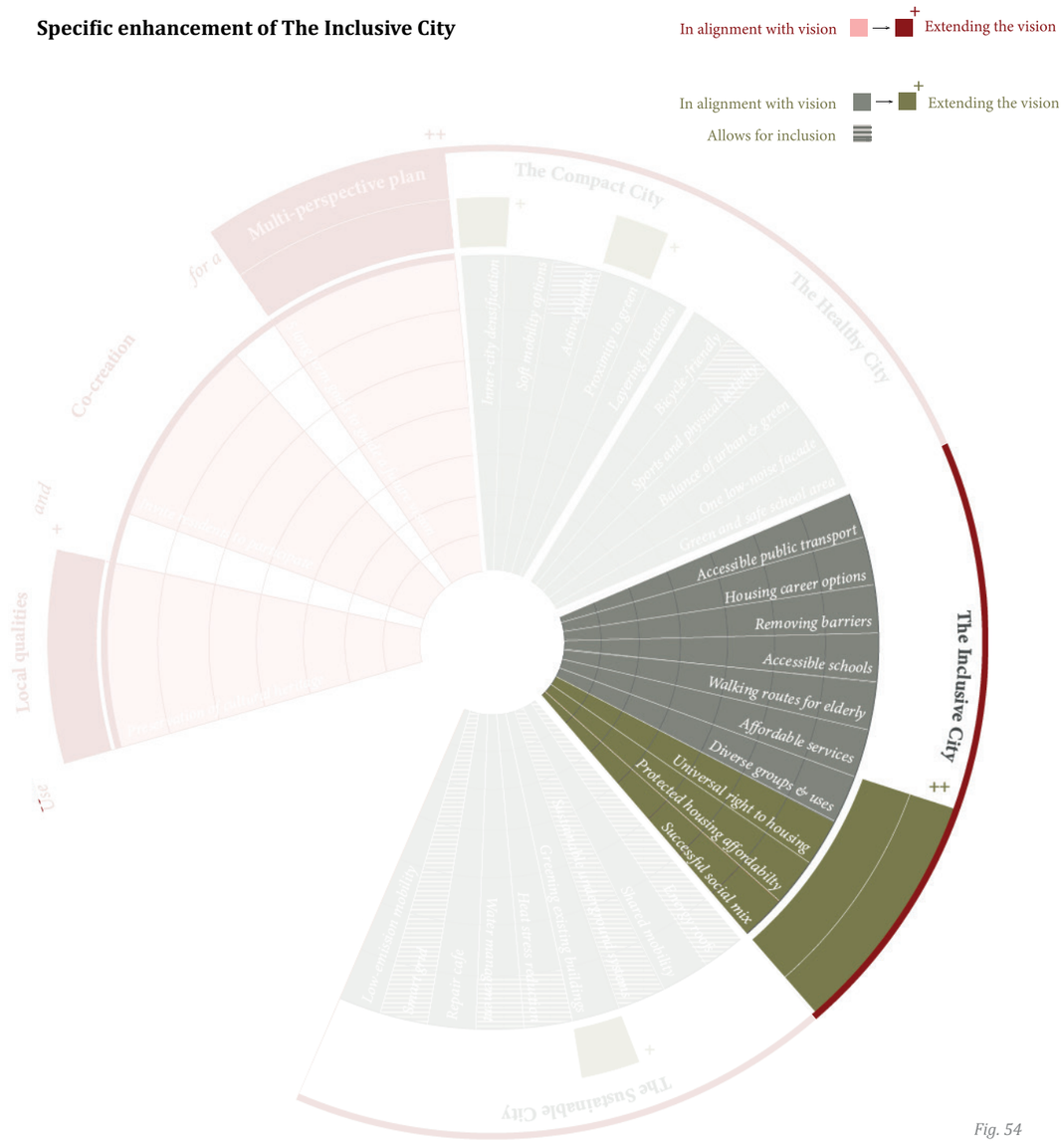


Fig. 54



Fig. 55.



Fig. 56. 1

Fig. 55-56. Communal gathering space for multi-cultural associations and local youth. Reference: Het Wijkpaleis in the West District. (van Drenth, 2021; Wijkpaleis, n.d.)



Fig. 57. 2

Opportunity for outside communal cooking. Reference: Serve The Burger Initiative in a neighborhood in Tilburg (Tilburg.com, 2015)



Fig. 58. 3
Taptuk Emre Supermarkt (Kok, 2019)

1. Communal space
Mustapha highlighted the need for a communal space with extended opening times to provide local youth with a place to gather, reducing evening disturbances outside. This function can be housed in the old space of the Nelson Mandela School, which is relocating to the nearby Leeuwenkuil according to municipal plans. This space can be multifunctional, offering a venue for multicultural associations and local youth to organise events and activities. Such a space promotes collective understanding of traditions and customs, encouraging bonds between residents of various cultural backgrounds. A successful example is the Wijkpaleis in the West district, where people with both Dutch and non-Dutch backgrounds connect through hosting neighborhood initiatives like communal meals, creative workshops, and textile *repair cafes*.

2. Outdoor communal cooking area
An outdoor communal cooking area, designed in the neighbourhood square, provides a platform for residents to prepare and share traditional meals. An exemplary initiative is Serve The Burger in Tilburg, where local students organise outdoor communal cooking events with residents. This promotes cultural exchange, creating a sense of community and mutual appreciation through the activity of sharing food.

3. Affordable local (Turkish) supermarkets
Preserving two local Turkish supermarkets ensures that culturally specific goods remain available, supporting the cultural identity of established residents. Positioned centrally in the neighbourhood and offering affordable prices, these supermarkets attract diverse groups, encouraging interaction between them.

4. Multi-functional soccer court
With the Nelson Mandela School relocating, and thus the current square no longer functioning as a schoolyard, the local soccer court could offer opportunities for more multifunctional use. By adding a temporary roof structure to the existing walls, such as a fabric canopy, the court could occasionally transform into space for neighborhood gatherings. As it is located in front of the new communal space, it is suitable to host communal events such as local markets, community film screenings, small cultural festivals, performances, and sports classes, facilitating social interaction and cultural exchange.

5. Communal garden
The communal garden, shared by the elderly (social) housing units and mid-segment family houses, encourages collaboration and shared responsibility among residents. Although primarily intended for those living in the adjacent houses, exchange with the communal space can enable the garden's produce to be used in communal cooking events, making the garden more prominent in neighborhood activities.

6. Connection to existing street art route
The existing street art route through the Afrikaanderwijk, which passes through the Christiaan de Wetstraat, can be extended to include the Tweebosstraat. A new mural can reflect the

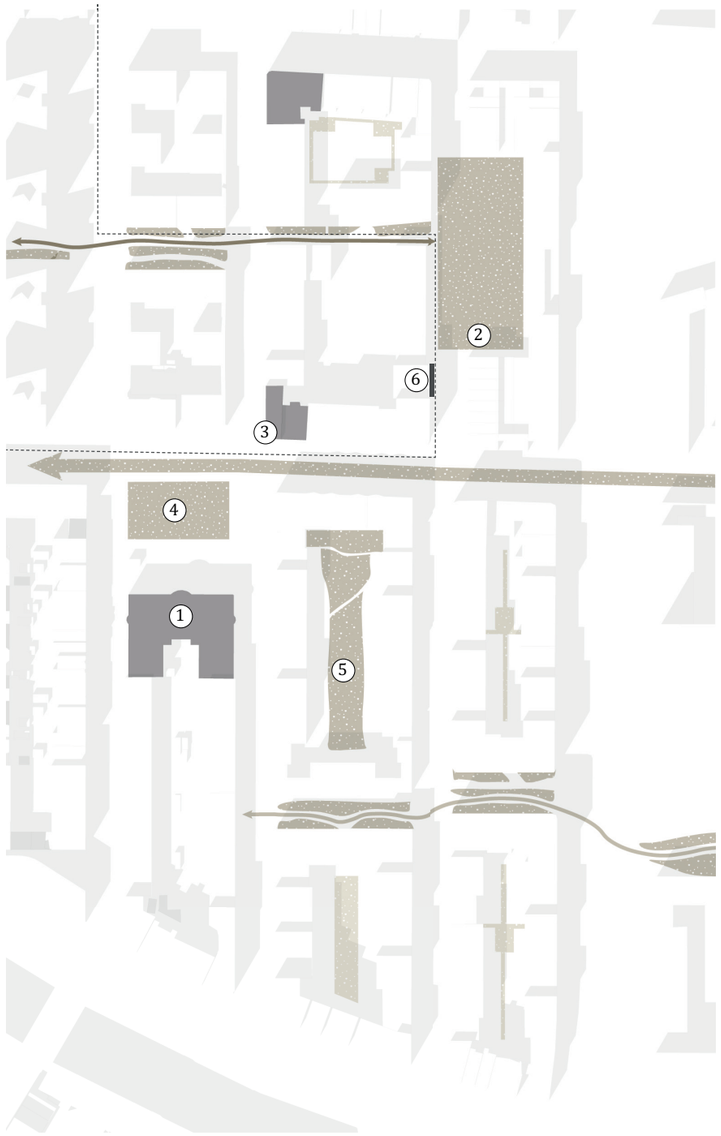




Fig. 59.



Fig. 60.

Multi-functional soccer court. Temporary roof structure can facilitate neighborhood events. Reference: Sports viewing event in New York's meatpacking district (Weiss, 2010) & Community activities on Stamford Quarter (Prior, 2022)



Fig. 61.

Communal garden where residents can cultivate their own vegetables and herbs. Reference: Collective living in Utrecht, Veemarkt (Kas & Co, 2022)



Fig. 62.
Streetart Route Zuid (de Rooij, 2019)

Tweebosbuurt's demolished heritage and celebrate stories that original residents link to a sense of pride and ownership. As part of an existing street art route, it attracts both visitors and residents, and therefore it can facilitate a shared discussion on the area's (cultural) identity and history.

Such facilities integrate Rotterdam's cultural diversity into the programming of public spaces, allowing for the expression of various ethnicities and cultures. Additionally, they create connections between current and new residents from different backgrounds by organizing shared activities for both Dutch and non-Dutch people through communal spaces, shared gardens, and local events. Along with other inclusivity goals detailed in this design, these efforts contribute to a strategy that offers an improved response to the increasing diversity in Rotterdam and the need for interaction and connections.

2. Local challenges for the South District [Gebiedskeuzes Rotterdam Zuid]

The above text has outlined how the design both aligns with and further enhances the municipal development strategy of Quality Growth. This enhanced strategy, along with guidelines that help limit displacement, is implemented in Tweebosbuurt, where it helps address local challenges typical of the South District. These local challenges are also outlined in the Environmental Vision, and are highlighted in cursive in the following text. Thus, the design contributes to the municipality's intended quality enhancements within the district, further strengthening the multi-perspective value of the design.

The design responds to the common vulnerabilities of neighbourhoods within the South District, such as the *'limited quality and variety of housing'*, by introducing new, varied housing options while renovating some of the older, more characteristic buildings. By increasing density and attracting a new target group, the design increases the *'typically low support for amenities'*. Integrating a fine-grained green network, including 100% of the original green surfaces, alongside increased densification, enables the municipality to achieve its goal of *'targeted urbanisation while maintaining the South's green character'*. Redesigning public spaces to encourage social interaction, and introducing a communal gathering space for youth helps address potential *'safety issues'.*

A significant challenge for the South is *'developing the mobility network to support various forms of transportation, primarily in the east-west direction, strengthening the fine-grained network, and removing barriers'.* The new mobility network of this thesis' design favours non-motorised transportation and pedestrian connections, and creates connections across the Hilledijk, helping the municipality address these challenges. The South also has a particular need for *'meaningful meeting places and routes that encourage spontaneous encounters, strategically placed along routes with functions, public spaces, and public transport stops'.* By integrating a social mixing strategy within a layered public space network, and designing for cross-cultural exchange through public space programming, the design contributes to more meaningful meeting places and connections within the South.

In addition to adressing local challenges, the quality improvements designed for the Tweebosbuurt align with contemporary projects in the South, such as Parkstad. The overarching project vision described in this segment is consistent with the municipal vision for Parkstad as a green, urban environment, attractive for children and families. Although the design does not explicitly address the municipal ambitions to reduce social housing, it does decrease the relative share of social housing, thus responding to their objective of creating a mixed neighborhood in the area. By demonstrating how the issues typically associated with an excess of social housing by the municipality—such as low-quality housing, safety concerns, and limited accessibility for diverse target groups—can be addressed through this approach, the argument for an absolute reduction in social housing loses its validity anyway.

The design also acknowledges the municipal ambitions within Parkstad to enhance east-to-west connections to Tweebosbuurt. It incorporates cross-barrier zoning and physical connections across the Hilledijk, while ensuring the preservation of the original green structure. By integrating such (green) structures, which currently face significant opposition and extensive legal challenges, this design's approach can streamline the municipal projects within both the Tweebosbuurt and Parkstad.

Lastly, this thesis design aligns with contemporary developments in the South through the redesign of the mobility network, taking future projects such as the construction of the new South Stadion into consideration to facilitate the increased emphasis on public transport and soft mobility.

Culminating in a more comprehensive multi-perspective plan

The combination of all these elements in the final design culminates in a more comprehensive multi-perspective plan (illustrated on the next page), effectively responding to and further enhancing the ambitions set by the municipality in the Environmental Vision of 2021:

- It addresses the most pressing trends and challenges in Rotterdam, including urbanisation, increasing diversity, climate change, circularity, and the need for qualitative public space.
- These trends are tackled through an enhanced municipal strategy of Quality Growth, which both enhances the preservation of local qualities and adds value to the perspectives of The Compact, Healthy, Sustainable, and particularly The Inclusive City.
- This improved strategy is used to address displacement and improve typical vulnerabilities in the South District, further increasing the multi-perspective value of the design.
- This results in a highly qualitative multi-perspective plan, where trends, future city perspectives, and local challenges converge.

Compared to the municipal approach in the neighborhood, this enhanced multi-perspective plan reveals a significant gap between vision and practice. This gap is especially evident in the Tweebosbuurt concerning the municipal objectives for local qualities, co-creation, and the perspective of The Inclusive City:

By demolishing most of the neighborhood, disregarding existing structures, and not involving residents, the municipality has failed to meet its goals for 'local qualities' and 'co-creation,' indicating a significant misalignment between the set ambitions and the actual design and process. Furthermore, despite the increasing diversity in Rotterdam and the need for connections between different groups, the municipal approach in the Tweebosbuurt shows no appreciation for the (culturally) diverse communities in the area. The project is known for its social injustices, including the displacement of nearly all existing residents and the absence of a social mixing strategy, highlighting the municipality's inability to achieve its targets for The Inclusive City. While there may be adequate consideration for The Healthy City and The Sustainable City due to the introduction of additional parks and large green spaces, this has come at the cost of sufficient housing.

In contrast, this thesis's design demonstrates how co-creation and resident engagement can be used to enhance the focus on local qualities. The multi-perspective value of the plan is mostly increased by enhancing inclusivity, combining a set of measures in both the spatial design of spaces and the allocation of housing, that ensures the inclusion of various target groups and the promotion of social exchange. Additionally, the design's programming of public spaces celebrates the (cultural) diversity of Rotterdam and further facilitates the inclusion of all groups within neighborhood structures. These design decisions do not undermine other ambitions; rather, they are designed to reinforce each other. This results in a higher-quality, more comprehensive multi-perspective plan, particularly as this improved strategy also addresses typical challenges in the South District.

The previously mentioned gap between vision and implementation implies that documents such as the Environmental Vision are more likely to function as tools for city marketing, than as guides that effectively direct urban development. However, this does not diminish the importance of the vision document. It clearly addresses significant trends such as urbanisation, individualisation, and climate challenges. Based on these trends, it sets meaningful goals for both the city and its residents, offering an integrated approach to urban challenges while enhancing sustainability and inclusivity. Therefore, beyond the municipality's responsibility to follow up on its stated ambitions, the vision holds intrinsic value for the qualitative development of the city, which this thesis design helps to achieve.

This concludes the description of the overall project vision, its relevance to broader trends and challenges, and its contribution to aiding the municipality in reaching their ambitions. The remainder of this chapter will further illustrate the final design through detailed sections, plans, and references, demonstrating how these qualities are integrated spatially.

Fig. 63. Culminating in a more comprehensive and multi-perspective plan.

Culminating in a more comprehensive multi-perspective plan

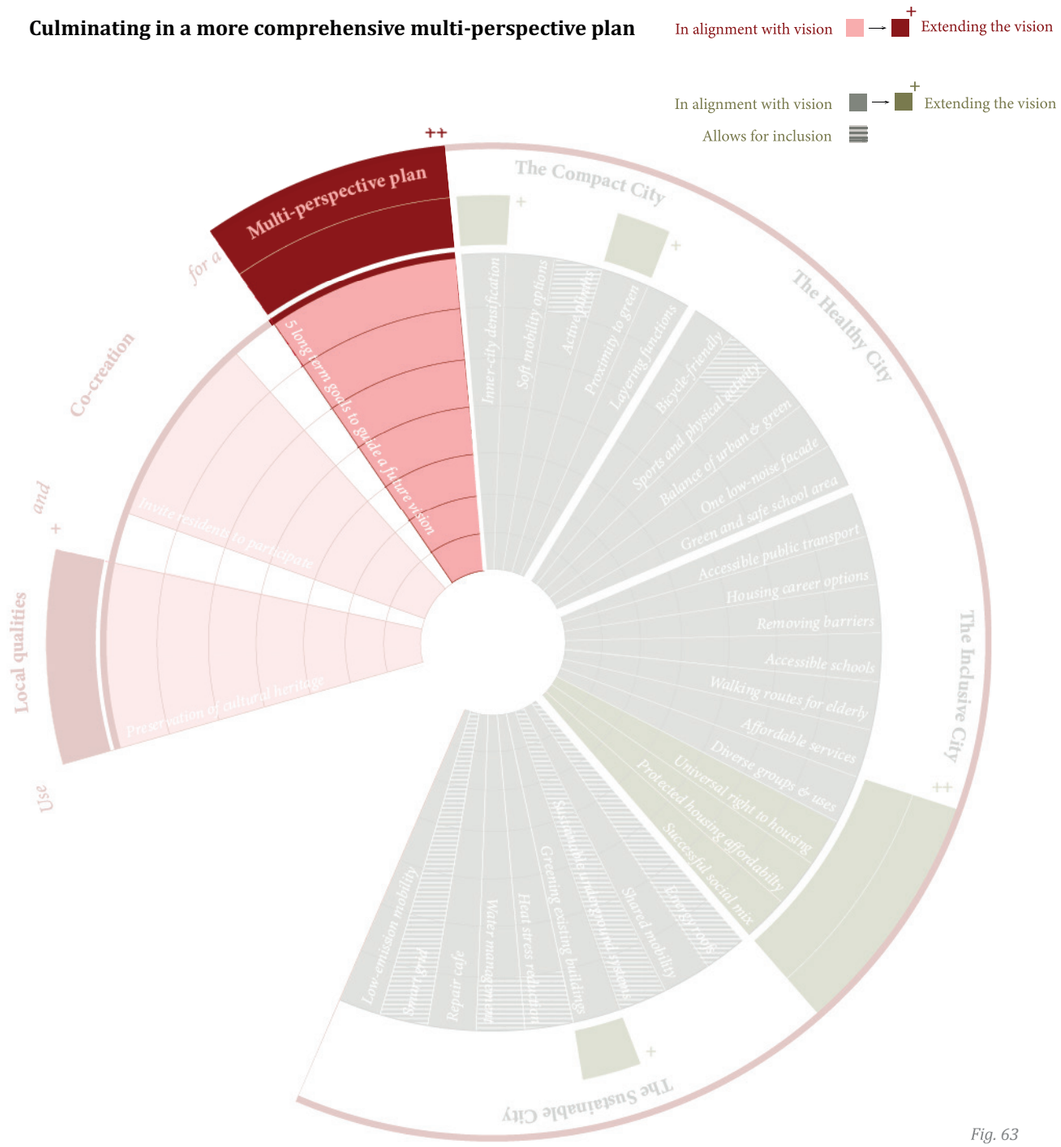


Fig. 63

Section A: The neighborhood square

The sections on the following pages will move through the area from north to south, accompanied by pages with reference images. Each reference image is labeled with the corresponding number in the section to indicate its specific location.

The description will continue on the following page.

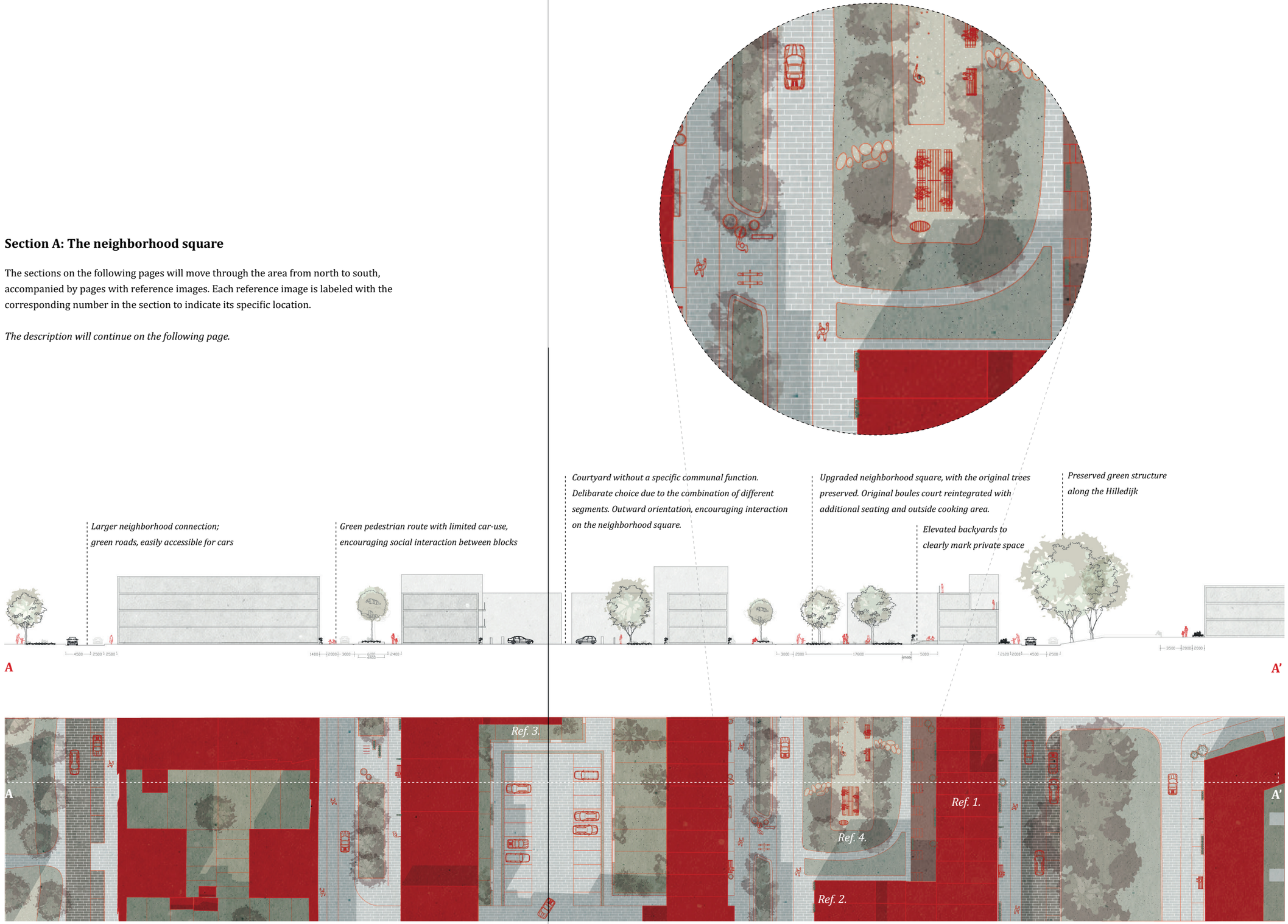


Fig. 64. Section A, The neighborhood square.

Section A, located at the northernmost part of the area, features a variety of housing segments in close proximity. Centrally within this section, labeled as reference 3, lies the courtyard of the mixed housing block. The design of this courtyard deliberately does not encourage communal gatherings, aiming to prevent potential social friction. The reference provides an example of a configuration of a mixed block with both apartments and back gardens of family houses. It demonstrates how a courtyard can be of high spatial quality without necessarily serving as a place for staying. Instead, the block is outward-facing, promoting interaction in the public pockets on the streets and the neighborhood square.

In this square, the original trees and boules court have been reintegrated with additional seating and an outdoor cooking area as part of the cross-cultural programming of space, as shown in the zoomed-in circle. The scale and atmosphere of such a space, especially when connected to back gardens, are illustrated by reference 4. To ensure the public character of this area, suitable for casual interactions between groups with various backgrounds, elevated backyards clearly mark the end of private space for the block along the Hilledijk. These back gardens and roof terraces provide sufficient social control in this space.

Within this block, a compact typology of family houses is situated. An example of this typology, in the form of a single row of houses, is shown in reference 1. These houses have parking spaces along the Hilledijk. The double row of this typology, referred to in reference 2, features integrated parking spaces in the plinth.


Ref. 1.


Ref. 2.


Ref. 3.


Ref. 4.

Ref. 1. Stuurmankade, Amsterdam (Lukkien, 2010).

Ref. 2. Panamakade 60, Amsterdam (Oozo, n.d.)

Ref. 3. Geuzentuinen, Amsterdam (Faro, 2004)

Ref. 4. De Deeltuin, Utrecht. (Delva Lanscape Architecture, 2019)

Section B: The mixed block with a communal garden

Section B illustrates the middle segment of the plan. Central to this section is the communal garden, situated within the courtyard of the elderly and family houses. Sunken parking spaces create a smooth transition from the back gardens to the communal middle area, enhanced with small greenhouses and outdoor plots for communal plants. Elderly residents in the adjacent houses can engage in shared gardening activities or stroll along the pathway surrounding this collective space. This green, intimate area is designed to encourage social bonds within the block. References (5, 6, and 7) for this section can be found on the next page.

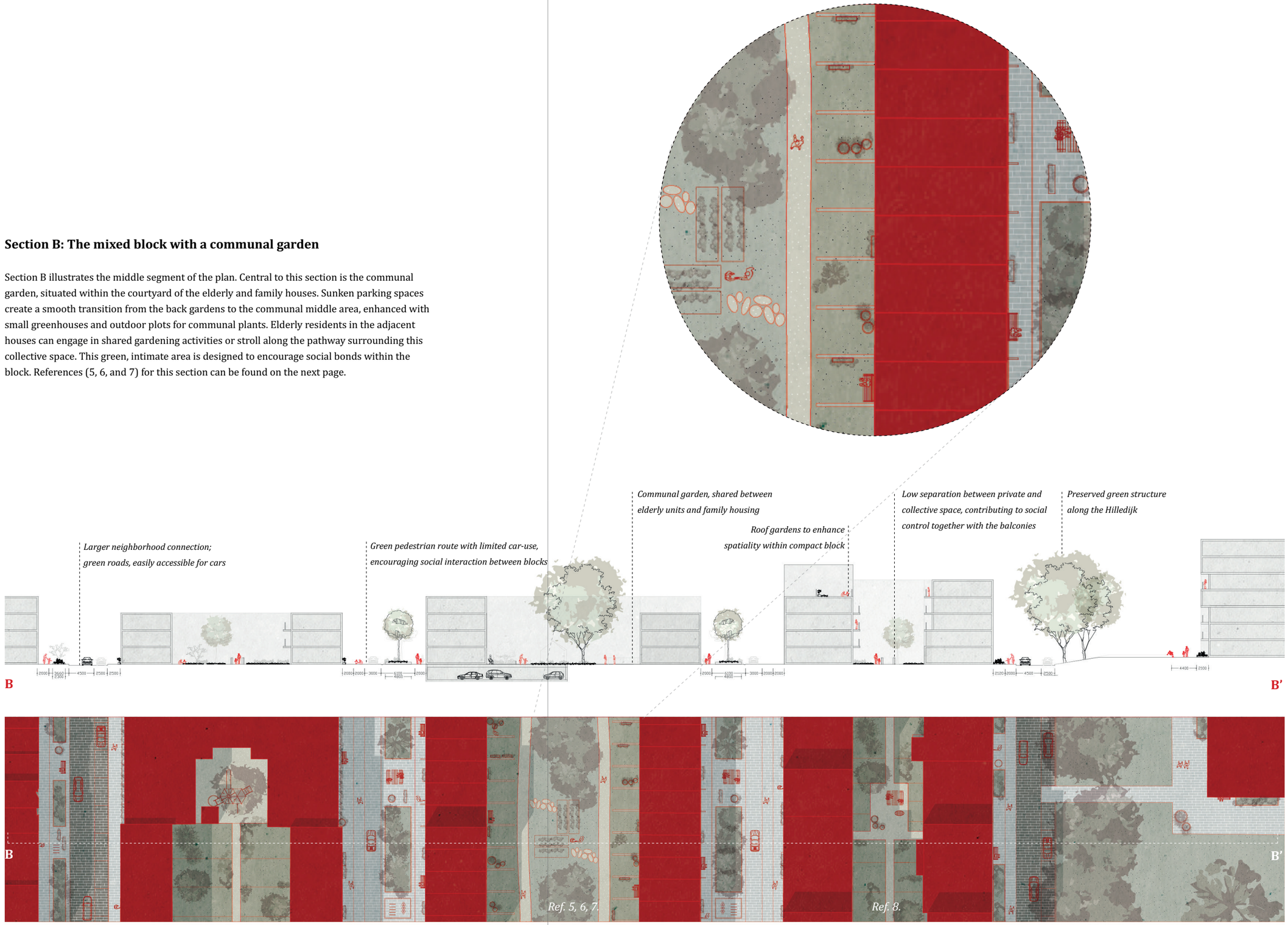


Fig. 65. Section B, Mixed block with communal garden.

Fig. 65

The streets surrounding this block feature well-defined but smaller transitions from private to public spaces compared to the courtyard, contributing to a more public character where residents from various housing segments along the street can casually meet. Public pockets along the street, equipped with benches and small play areas, facilitate such interactions. Both the inner courtyard and the transition to the public street are highlighted in the zoomed-in circle.

To the right of this block is a more compact block of social housing units. These units have private backyards, which were highly valued by the original residents of the area, according to Mustapha. Behind these back gardens, a central pathway connects to a small communal space suitable for seating, such as an outdoor eating area. These blocks have a low separation between private and collective spaces within the courtyard, contributing to a high level of social control. Together with the balconies and roof gardens, this limits nuisance in the communal space within this densely populated block. An exact reference for the ratio between open space and building height can be found in reference 8, although this courtyard features a different garden design.

Ref. 5. Collective living in Utrecht, Veemarkt (Kas & Co, 2022).

Ref. 6. Artist impression of KOER Rotterdam (VORM, 2021).

Ref. 7. Artist impression of KOER Rotterdam (VORM, 2021)

Ref. 8. De Groene Kaap, Katendrecht, Rotterdam (Zoontjens, 2021).









Section C: High-density social housing blocks

The bottom section of the area, section C, primarily consists of social housing blocks. In addition to a compact block similar to the one described in Section B, there is a more spacious social housing block in the middle of this area, with a lowered collective space. Given the dense population of this block, half-sunken parking spaces create a clear distinction between private and collective areas, reducing potential nuisance. Setbacks in the positioning of the houses towards the courtyard enhance intimacy and privacy within the back gardens.

This section concludes the spatial integration into the final design. The following pages in this chapter will include a public space checklist and an exploration of the financial viability.

Fig. 66. Section C, Social housing blocks.

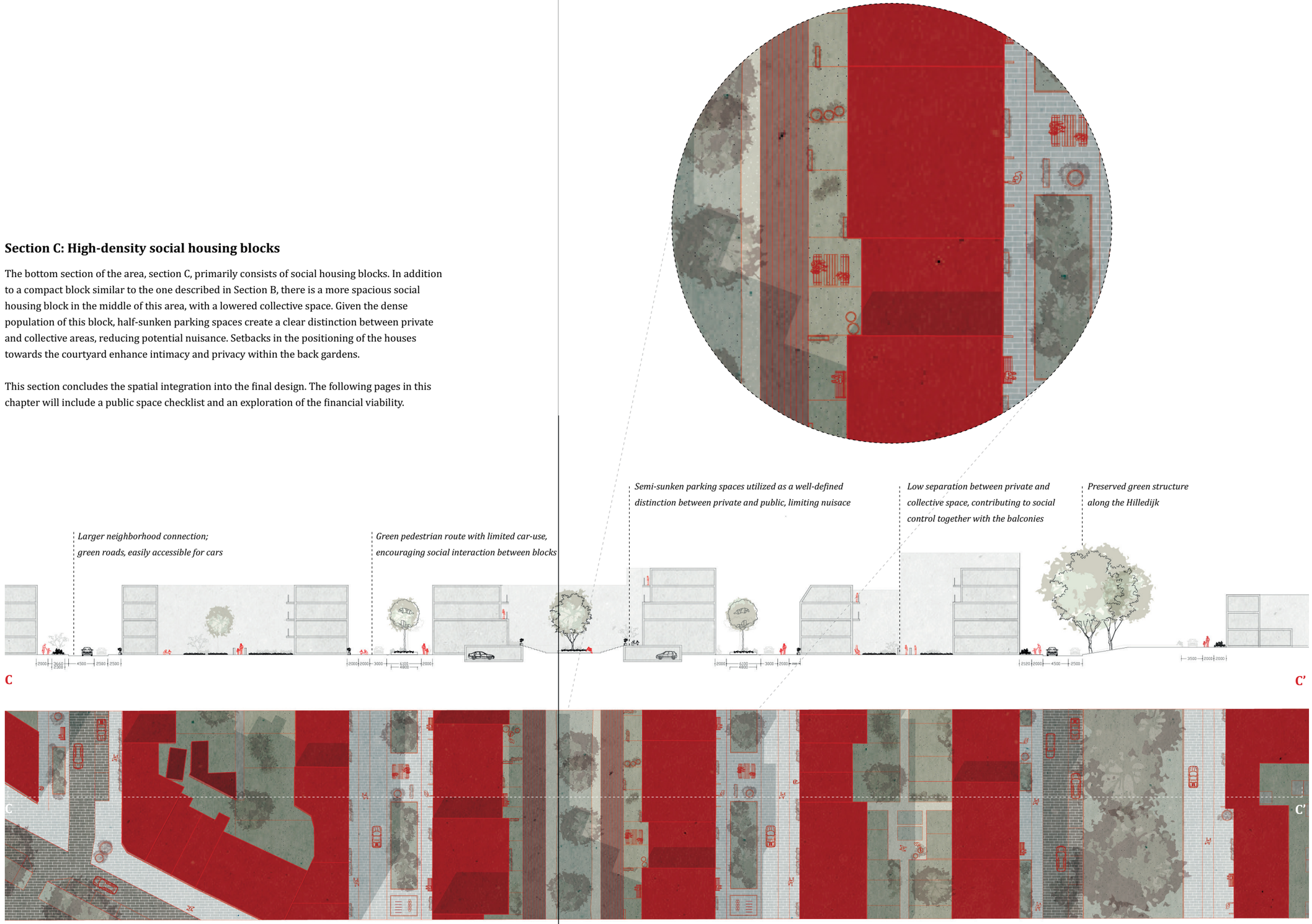


Fig. 66

Concluding Public Space Design

This chapter has demonstrated how the guidelines can be applied in the case study of the Tweebosbuurt. The checklist below summarises how the proposed guidelines from this thesis can be made explicit spatially, tailoring them to the neighbourhood's context. This serves as a practical checklist for designers, offering clear, actionable points that are distinct from policy measures and directly applicable to neighborhood design.

General vision statement

Design a new green urban environment, that utilizes environmental-positive solutions to create a pleasant, high-density neighborhood for children and families. This includes 'inverting' and dispersing the green qualities and social potential of the internal courtyards throughout the streetscape, thereby creating a more fine-grained, external green streetscape that facilitates layered opportunities for social interaction. Aside from better regulating water run-off and enhancing micro-climate control, this network leads to the formation of a welcoming system of external spaces and pathways among the blocks, which can be embedded into the final mixing strategy. To achieve this, prioritize pedestrian traffic, shift away from the focus on parking along the streets, and preserve the green space ratio by weaving green spaces into the streetscape - enabling pleasant spaces for social interactions.

Accommodate diverse groups and uses in the programming of public spaces, celebrating the area's multicultural identity and promoting social exchange between various groups. This includes shared activities and communal functions in multifunctional spaces where youth and various cultural and/or religious groups and associations can meet, as outlined in this chapter. Utilize these suggestions to refine the final design, although further research is recommended to develop public spaces that effectively accommodate the diverse needs of the involved target groups. Actively engage with residents to specify their needs and desires, recognizing the cultural diversity within the area and the variety of needs this might result in.

Design Checklist

Optimize Inner-City Densification

- [ ] Enhance density by strategically distributing subtle height accents across various blocks. Utilize corners facing main roads for height accents, limiting them to a maximum of 6-7 stories. For quieter, more intimate areas of the block, such as the apartments in Block 6 and those between Blocks 1 and 3 facing pedestrian routes, opt for 3-5 stories.
- [ ] Keep the average width of inner courtyards in denser Blocks like 5 and 7 (approximately 13.00-15.00m). For more spacious blocks (1, 3, 4, 6), consider slightly reducing the depth of courtyards by 3-9 meters to a minimum of 23.5m to increase density.
- [ ] Consider breaking up longer blocks (between 1 and 3, and 4 and 6) to enhance density and fragment the streetscape into more human-sized elements.
- [ ] Maximize the use of space within Block 2, while adhering to the existing building lines to allow for the preservation of the existing neighborhood square.

Mix Similar Incomes & Lifestyles at Street/Neighborhood Level

- [ ] Cluster similar income segments within a single block as much as possible. If exceptions are necessary, place them adjacent to areas with a public function to minimize social friction, such as Block 3.
- [ ] Facilitate a smooth transition of housing segments by clustering higher-segment housing towards Parkstad. In cases like Block 4, utilize a special target group allocation system to integrate the block into the neighborhood fabric.

Connect Micro-Districts through Overlapping Activities & Social Spheres

- [ ] Design smaller-scale pedestrian routes that pass through blocks of various segments, connecting functions such as play areas, informal green spaces, the Cruyff Court, and Afrikaanderpark.
- [ ] On a larger scale, extend the Martinus Steijnstraat into the Parkstad area to link functions like the supermarket, community center, and schoolyard with external amenities such as the Kocatepe mosque, sports cluster, and public transport along Laan van Zuid.

Design a Well-Defined Network of Spaces

- [ ] Develop a variety of spaces designed to align with different levels of publicness. Utilize the focus on slow-traffic and decreased car use on streets running through the heart of the neighborhood to enhance this network of public spaces.
- [ ] Focus on courtyards to accommodate parking.
- [ ] To reduce nuisances, repurpose the space previously occupied by the Nelson Mandela school into a community center and youth gathering spot.

Aim for Uniformity in Design

- [ ] Maintain architectural cohesion across blocks of different segments by opting for similar architectural expressions that fit the original style. Align family houses (4-6 units) with apartment blocks of social housing through similar grain sizes.

Respect Cultural/Historical Values & Acknowledge Residents' Place-Attachment

- [ ] Reinforce the original grain size of blocks by constructing blocks with varying lengths—small (8.5-12.5m), medium (12.5-17.5m), and large (17.5-20.5m)—with a focus on medium-sized blocks.
- [ ] Preserve historically significant buildings, mostly pre-war with public functions and special architectural expressions, located on corners and along main roads.
- [ ] Enhance and preserve the neighborhood square, and the green structure and building line along the Hilledijk.
- [ ] Design pedestrian-friendly connections that avoid disrupting buildings facing strong opposition against expropriation (within Block 7).
- [ ] Restore and enhance important local amenities such as the local (Turkish) stores along the Riebeekstraat and Martinus Steijnstraat.
- [ ] Design larger tables with seating —either in the neighborhood square or within community center spaces—adaptable for multiple uses, to facilitate gathering spaces or communal cooking for various cultural and/or religious groups and associations. Further engage residents to specify their needs and desires.

Financial Viability

Introduction
Regarding the expansion of the social housing market, there are significant challenges related to the feasibility of its construction. A recurring question is: *who will bear the costs?* In an interview with two policy advisors from the municipality, it was noted that achieving new construction targets for social housing under current conditions is challenging. The advisors mentioned that developers struggle to make projects viable when a portion of the development must be affordable, summarizing, "*We simply can't make the business case work*" (personal communication, I. de Bont, 01/02/2024).

To gain a clearer understanding of these issues, this section examines the financial feasibility of constructing both public and private sector housing. The analysis incorporates the following components:

<u>Outflow:</u>
- *Foundation Costs [Stichtingskosten], including:*
  - *Direct construction costs [Directe kosten]*
  - *Ancillary costs [Bijkomende kosten]*
  - *General expenses [AK]*
  - *Profit and risk [W&R]*
  - *Land acquisition costs*
- *Loan Interest and Financing Costs:*
  - *Calculated annually, offset by annual repayments from sales or rental income*
- *Maintenance and Management Costs:*
  - *Accumulated from the point of delivery*

<u>Inflow:</u>
- *Sales proceeds*
- *Rental income*
- *Service charge revenues*

The presented figures provide an initial, indicative cost analysis, designed to compare the viability of social versus private housing. The analysis primarily focuses on cash flows from construction through to the occupancy period. It excludes certain pre-construction expenses such as demolition of existing buildings or the installation of utility services in the area. Due to its generic and simplified nature, this model does not account for inflation or property value appreciation, which are important for a comprehensive understanding of the full development scope but are less crucial for this comparative analysis. The analysis addresses the following differences to adequately explore variations in feasibility between public and private sector housing:

- *Construction Costs:* Social housing enjoys lower construction costs due to differences in quality standards. These are specified by official regulations, separating 'standard quality' and 'higher quality' construction costs.
- *Ancillary costs:* Reduced by 15% due to faster permitting and simpler architectural requirements for the construction of social housing.
- *General Costs:* Reduced by 12.5% owing to efficiencies gained from larger scale operations and potential subsidies for social housing.
- *Profit and Risk:* Lowered by 7.5% because of a reduced or non-existent profit motive and diminished investment risk for social housing associations.
- *Land Costs:* Set at €250/m^2 for social housing according to the 2024 regulation for Rotterdam.
- *Financing Costs:* More favorable for social housing, with associations able to secure loans through low-cost government bonds [staatsobligaties] at approximately 2.5% (Moderate Scenario).

The model assumes a 10-year project completion timeline due to the project's scale, during which interest is paid on the loan. Maintenance costs are not incurred until after delivery. The model overlooks the possibility that units might be completed and occupied in phases before the end of this timeframe.

The figures present various scenarios concerning cost projections, focusing primarily on differences in construction costs, due to their significant increase in recent years and their substantial contribution to the total expenses. In the favorable scenario, construction costs are based on 2018 figures, coupled with current loan interest rates. The moderate scenario incorporates current construction costs as of 2024, alongside current loan interest rates. The unfavorable scenario forecasts future expenses, anticipating a further 15% rise in construction costs. Additionally, it projects an increase in loan interest rates from 2% to 4% for public housing associations and from 3.5% to 6% for private developers.

Findings

The initial and most evident conclusion from the analysis is that rising construction costs significantly hinder the development of new housing. This holds true particularly in the private sector, where the gap between initial revenue from housing sales and the initial investment is progressively narrowing. For instance, considering the construction costs of 2018, there was a positive margin between initial investments and revenues of nearly 40 million euros. Considering the possibility of housing being pre-sold before construction began, this margin could be further enhanced. However, with current construction costs, this margin has diminished to only 20 million euros and is expected to turn negative with further cost increases. Although this thesis does not specify the exact margin required for a project's feasibility, it is clear that shrinking profit margins increase risk and complicate new housing development. Particularly for private developers, tight margins can be critical, as they expose the projects to financial vulnerabilities from construction delays, unexpected cost increases, or market fluctuations. Such limited financial buffers afford little room for error or unforeseen expenses, which are common in large-scale construction projects.

Peter Boelhouwer, expert in housing systems, confirms that the investment climate in the Netherlands is becoming increasingly challenging. Historically, returns on investments hovered around 3-4%, but they have escalated to 6-7%, driven primarily by rising construction costs and related risks. This shift necessitates generating substantial revenue, often through significantly higher housing prices or rents, which complicates the construction of new homes, particularly affordable housing (P. Boelhouwer, personal communication, 11/04/2024).

In contrast, the financial dynamics of public housing associations significantly differ from those in the private sector. Unlike private entities that aim for profit, these associations focus on delivering housing as a public service. Peter Boelhouwer points out that these organizations frequently operate at a loss, a situation made sustainable not only by inherently lower risks but also by an operational framework that functions on various support mechanisms. These supports include direct subsidies, favorable loan conditions, and guarantees that buffer against market fluctuations. Unlike private investors, public housing associations are backed by multiple layers of guarantee: themselves, the housing sector, local municipalities, and the national government—providing a comprehensive safety net that ensures their operational stability. Moreover, the focus in social housing is on societal rather than financial gains, aimed at long-term community stability and affordability. Returns are measured in social benefits, such as reducing homelessness and improving security for low-income families.

However, as evident from rising construction costs, it is increasingly difficult for housing associations to develop new homes. The investment losses of these associations can largely be compensated by revenues from their existing housing stock, but this is not indefinitely sustainable given the continuously rising costs. Peter Boelhouwer points out that current social housing performance agreements are only just being met through extensive collaboration among various parties and interest rates that are just low enough. This highlights the growing challenges in this sector, as mentioned by the housing policy advisors from the municipality of Rotterdam.

Fig. 67. Extent of construction costs as part of the total expenses.

Fig. 68. Estimation of cashflows for a private developer.

Fig. 69. Estimation of cashflows for a housing association.

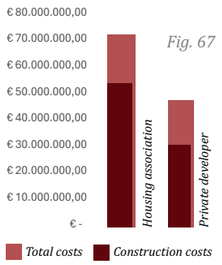
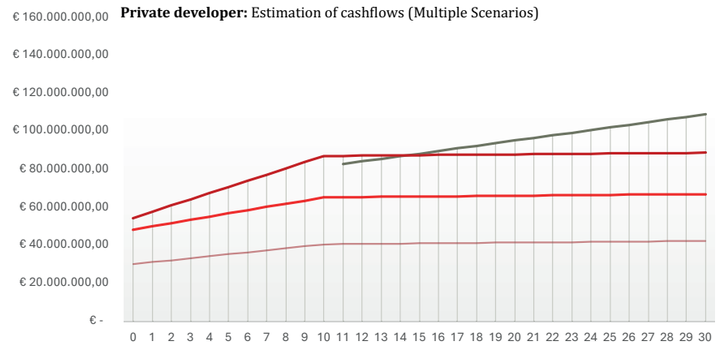


Fig. 67

Comparison between private developer & housing association



Private developer: Estimation of cashflows (Multiple Scenarios)

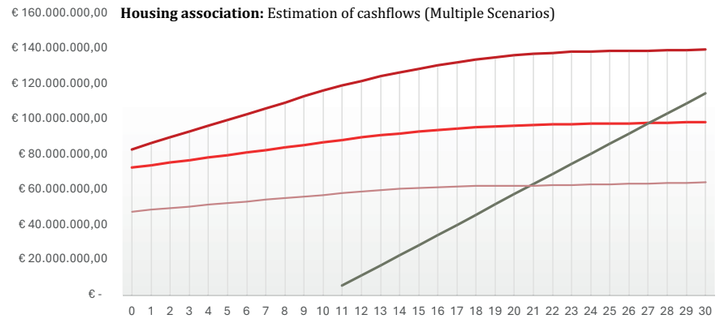
Outflow (cumulative costs)

- *Favorable Scenario: using construction costs from 2018*
- *Moderate Scenario: using construction costs from 2024*
- *Unfavorable Scenario: with expected future increase*

Inflow

- *Cumulative income*

Fig. 68



Housing association: Estimation of cashflows (Multiple Scenarios)

Outflow (cumulative costs)

- *Favorable Scenario: using construction costs from 2018*
- *Moderate Scenario: using construction costs from 2024*
- *Unfavorable Scenario: with expected future increase*

Inflow

- *Cumulative income*

Fig. 69

Solutions and the role of governance

Current relevant regulations

For the Tweebosbuurt project, a cost projection has been developed that assesses the impact of recently discussed regulations for social housing: the landlord tax and the regulations for ground prices – which reveal significant effects on the financial feasibility of social housing developments. The landlord tax [verhuurdersheffing], indicated by a striped line in the figure, (1) was levied on landlords owning more than 50 rental properties in the regulated social housing sector, calculated at 0.526% of property values. Initially aimed at reducing the national budget deficit, this tax faced criticism for potentially discouraging investment in social housing and was discontinued as of January 1, 2023. Analyzing its impact provides valuable insights into how similar government measures might influence housing projects, enhancing our ability to understand changes in project costs and investment appeal. The discontinuation of the landlord tax is generally seen as beneficial as it removes a significant financial burden, as seen in the figure.

However, the recent (January 1st, 2024) increase in ground prices from 100 EUR/m^2 to 250 EUR/m^2, shown with a red dotted line, (2), poses a new challenge. While this change seems to have a minimal impact on overall project costs, partly due to the large scale of the project and the wide range of the y-axis, major housing associations such as Woonstad, Woonbron, Havensteder, and Hef Wonen have expressed concerns that this increase might counteract the subsidies aimed at encouraging the construction of affordable housing (Kooyman, 2023). They warn this could lead to a decrease in the development of new social housing units.

In conclusion, it is advisable to reassess the subsidies and regulatory measures affecting the sector. The national discontinuation of the landlord tax provided a positive impulse by alleviating a significant financial burden. However, the subsequent municipal decision in Rotterdam to increase ground prices undermines this progress, sending a mixed message about the commitment to affordable housing. This increase not only contradicts the national trend of reducing financial pressures on social housing, but also underscores a continuing stigma and reduced emphasis on social housing in Rotterdam. A more coherent approach at both municipal and national levels is essential to ensure the continued support and expansion of affordable housing initiatives.

Housing cooperatives

In light of the financial analysis discussed, there is a compelling case for the municipality of Rotterdam to promote the development of more housing cooperatives. These entities present a financially viable alternative to traditional public and private sector housing models, particularly in the context of ensuring long-term affordability.

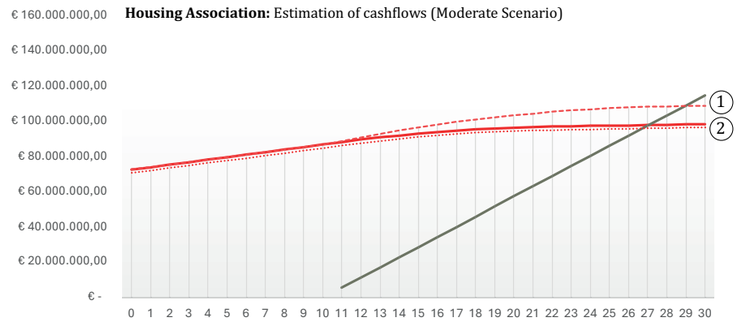
Housing cooperatives offer an unique financial structure that differs significantly from traditional public and private housing developments. In a cooperative, residents collectively own and manage the property, which typically involves members buying shares in the cooperative rather than individual units. This shared ownership model reduces the need

Exploration of the impact of changing regulations:

Fig. 70. Estimation of cashflows for a housing association.

Fig. 71. Estimation of cashflows for a housing association, combined with incoming cashflow of private developer.

Exploration of the impact of changing regulations



Housing Association: Estimation of cashflows (Moderate Scenario)

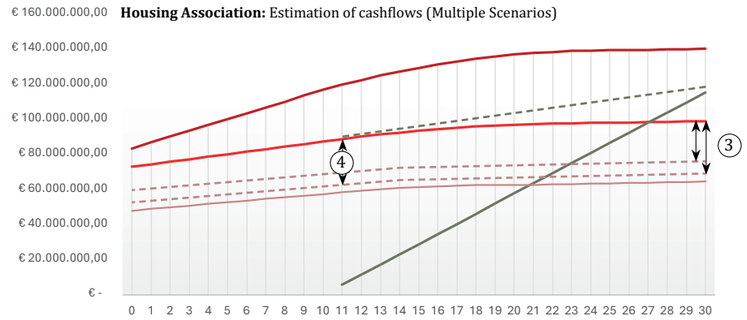
Outflow

- *Cumulative costs (Moderate Scenario)*
- *Before the discontinuation of the landlord tax (pre 2023)*
- *Before increasing the ground prices for social housing (pre 2024)*

Inflow

- *Cumulative income*

Fig. 70



Housing Association: Estimation of cashflows (Multiple Scenarios)

Outflow (cumulative costs)

- *Favorable Scenario: using construction costs from 2018*
- *Moderate Scenario: using construction costs from 2024*
- *Unfavorable Scenario: with expected future increase*

Inflow

- *Cumulative income*
- *Cumulative income from private developer*

Fig. 71

for substantial initial capital from any single member and spreads financial risks among all members. Arie Lengkeek (2022) discusses in his book Operation Housing Cooperation [Operatie Wooncooperatie] how costs associated with General Expenses [AK] and Profit and Risk [W&R] can be significantly reduced by tightly managing foundation costs within this alternative financial model.

Furthermore, cooperatives operate on a model that reinvests revenues, such as rent payments, back into the property. This approach promotes better maintenance and financial sustainability by eliminating the need to distribute profits to external investors, thus prioritizing the long-term well-being of the cooperative and its members.

In addressing the issue of financial displacement and ensuring sufficient affordable housing, housing cooperatives offer a viable solution through their focus on long-term affordability. By adopting a cooperative model, residents gain control over housing costs, as the pricing structure is specifically designed to cover only the necessary expenses such as maintenance, mortgages, and future repairs. Given these benefits, the municipality of Rotterdam should actively support the development of housing cooperatives. Implementing policies that provide municipal land at reduced rates for cooperative developments, offering tax incentives, and facilitating access to low-interest financing options are strategic moves to enhance such initiatives. Additionally, educational programs about the benefits and responsibilities of cooperative housing could engage and inform citizens, promoting wider participation in the creation of new cooperatives.

Innovative construction methods

The new Housing Vision aims to promote innovative construction methods to stimulate the development of more affordable housing. Considering future innovations in faster, modular, and prefabricated construction, it is reasonable to anticipate that construction costs may decrease due to more efficient production techniques. Sources suggest that a decrease of 20-30% in construction costs by 2050 is plausible when adopting such innovative solutions (Batikha et al., 2022; IGG Building Economics, 2023; VORM, 2019). Projecting this reduction on the current construction costs, this would bring the costs close to the earlier costs of 2018, making the construction highly more feasible for both social housing associations and private developers. (3) Therefore, it is highly advised to further explore the possibilities for innovative building methodologies that are faster and cheaper, to bridge the gap in financial viability that currently exists.

Public Private Partnerships

The new Housing Vision aims to stimulate Public-Private Partnerships (PPPs) to increase the pace of new housing production, particularly affordable units. These collaborative agreements between government bodies and private sector companies are designed to finance, build, and operate projects that may be too challenging to manage solely with public resources.

PPPs can improve the financial feasibility of projects by sharing financial risks between public and private partners. In a development like the Tweebosbuurt, which combines social and private housing, the project would be managed as a mixed-use development under one organizational structure. Here, revenue from market-rate housing could subsidize social housing units. Additionally, profits from the private housing sector could be reinvested to maintain the social housing stock. This approach would be particularly viable if construction costs would be reduced through the use of innovative, modular construction methods (4).

Even though the figure shows that the profit margins for the private developer are already tight, PPPs could still offer viable solutions. For example, the construction could be smartly phased, to allow revenue from initial phases fund subsequent ones. Additionally, through PPPs, governments can mitigate tight margins by providing incentives such as tax breaks, subsidized land costs, or direct financial contributions. Therefore, it is recommended that the municipality explores PPPs for such mixed-use developments, though additional research is needed to assess the specific feasibility for projects like the Tweebosbuurt.

07. CONCLUSIONS



Fig. 72. 'Eerst vertrekken, en dan nu tonnen betalen om terug te mogen komen' (Donders, 2022)

Conclusions

This chapter is divided into two important sub-chapters: the conclusions, which outline the conclusions for each research question, and the discussion, which provides a deeper understanding of the research including its validity, interpretation, implications, limitations, and suggestions for further research. Alongside the conclusion, it is advised to pay particular attention to the interpretation of results within the discussion to gain a comprehensive understanding of the findings of this research. To begin the conclusion sub-chapter, this text will present the answer to the main question:

How can Rotterdam's new housing policy integrate spatial guidelines to address the issue of displacement more effectively in future redevelopment of vulnerable neighborhoods? The answer to this question consists of two segments, which also depicted in red in the figure to the right.

1) The development of guidelines (Sub-Question 1-3)

1. How did earlier housing policy directions (from between 2000-2023), particularly the strategy of social mixing, contribute to displacement during urban redevelopment in Rotterdam?
2. In what ways does the new policy direction maintain a risk of displacement in future redevelopment due to the continuation of past policy objectives known to cause such issues?
3. What spatial guidelines could be recommended in response to the objectives of the new housing policy, to more effectively mitigate displacement during future redevelopment?

This segment of the thesis aims to provide spatial guidelines that can be implemented by the municipality of Rotterdam, based on an analysis of past and current policy directions, to effectively mitigate the impact of displacement in future (re)development of (vulnerable) neighborhoods. Within a broader societal context, these guidelines aim to contribute to a more equitable and spatially just resolution of Rotterdam's housing challenges.

2) The implementation of guidelines (Sub-Question 4)

4. How can the recommended guidelines be applied in the Tweebosbuurt case study, to showcase their potential in mitigating displacement in future redevelopment?

By implementing those in a case-study design, this thesis aims to bridge the gap between regulatory measures and their spatial implementation. In this segment, both the spatial and financial implications of the guidelines are explored, leading to specific conclusions on how Rotterdam's new housing policy can more effectively integrate the proposed spatial guidelines to address the issue of displacement. This chapter will address the conclusions for the two segments separately, in the following text:

1) The development of guidelines

This text provides an overview of the findings for sub-question 1, 2 and 3 in one coherent text, clearly illustrating how findings from one question informed the next. Finally, the text is concluded with a concise conclusion for each sub-question separately.

Fig. 72. Diagram of the main sub-chapters of this thesis, which will be used to structure the conclusion.

Research into past displacement issues reveals that displacement has consistently resulted from Rotterdam's development strategy, which is oriented around the ideology of achieving 'a balanced city.' Since 1988, the municipality has implemented a strategy of social mixing, using housing differentiation (changes in the housing stock) to drive social differentiation (changes in the demographic composition) in pursuit of a desired social mix. This research began by categorizing various types of displacement pressures—direct, financial, social, and cultural—within the context of these changes. The study then examined to what extent objectives similar to those that have led to these types of displacement are being reintegrated into the new Housing Vision.

(RQ1) The assessment of the effects of changes in the housing stock, primarily as drivers of direct and financial displacement, has demonstrated that a considerable number of households have been directly displaced in the past due to reductions in social housing. Moreover, previous housing policies focused specifically on higher-segment housing and intensifying gentrification, which has exacerbated pressure on the affordable housing market and made vulnerable neighborhoods less accessible to longstanding residents, particularly those without a right to return. The unfair and inconsistent use of data facilitated such policy directions and contributed to the extent of displacement remaining unseen for an extended period.

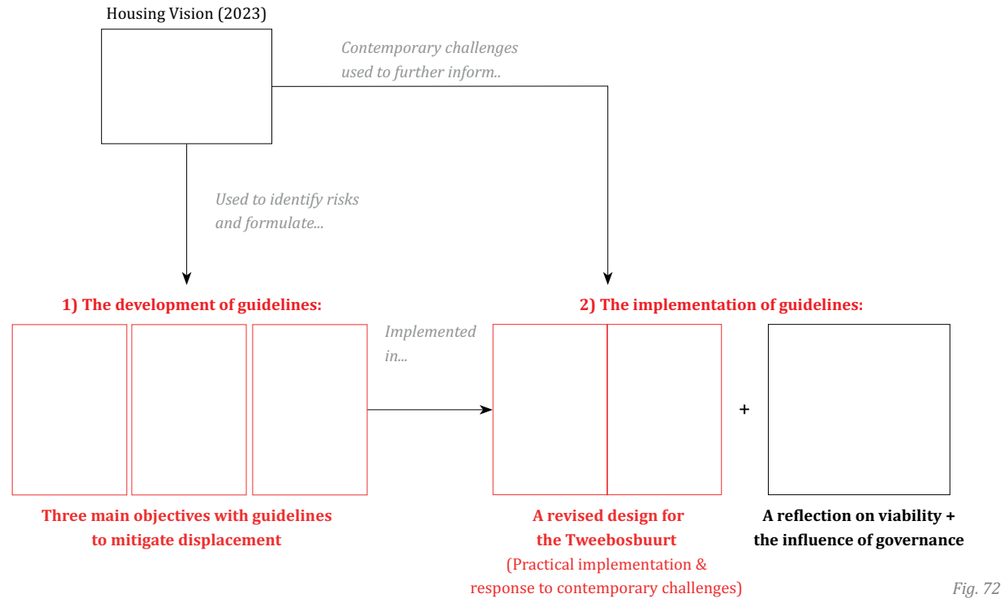


Fig. 72

(RQ2) Despite the new Housing Vision indicating an increased awareness of the need to maintain the overall number of social housing units, it still envisions a city-wide decrease in lower-income households and aims to reduce social housing in neighborhoods where it predominates. This approach perpetuates a stigma against social housing and fails to adequately address the overarching issue of housing scarcity, thereby continuing the cycle of displacement seen in past policies. The decision in the new Housing Vision to avoid adding new social housing before 2040 not only neglects these existing financial pressures but also further strains the financial conditions for lower-income groups. Although poor use of data has perpetuated displacement issues under previous housing policies, the new housing policy continues to misclassify parts of the social segment, rely on factors outside municipal control, and lack genuine intentions in its objectives. This has led to the first main element in the problem statement: **The new Housing Vision pressures the Right to Housing, underscoring the insufficient provision and protection of affordable (social) housing.**
(RQ3) This research has formulated guidelines that respond to these findings, by emphasizing the need to **provide sufficient housing through a fair prioritization of user-centered and demand-driven objectives.** These include a strategy to protect and potentially expand the social sector, informed by fair and comprehensive data on supply and demand. Additionally, to contribute to a more equitable approach to redevelopment, the guidelines advocate for maximizing local rehousing opportunities. Moreover, it is advised to improve and better utilize the current housing stock and increase the focus on inner-city densification, to enhance the provision of adequate housing and mitigate both direct and financial displacement.

(RQ1) Secondly, assessing the changes in the demographic composition, reveals that the previous strategic emphasis on restructuring urban areas to favor higher-income groups has marginalized established, lower-income residents. The planned demographic shifts devalued established residents and were highly disruptive to existing community networks, enforcing social displacement. Such negative effects have been exacerbated by an overall lack of vision for designing an effective social mix, worsening displacement issues through the failure to integrate these new groups and ensure social cohesion, and the inability to solve—rather than merely relocate—the complex socio-economic challenges they intended to address.
(RQ2) The new Housing Vision continues to advocate for social mixing, extending the stigma towards established, lower-income residents, and still lacks a clear vision on how to successfully design a social mix, beyond the assumption that affluent groups enhance the city. This supports the second element of the problem statement: **The current social mixing strategy is unjust and not sufficiently grounded in research-driven measures.**
(RQ3) Therefore, this research proposes an **improved social mixing strategy**, that enhances overall social cohesion by integrating similar incomes and lifestyles at the street or neighborhood level. It suggests connecting micro-districts through overlapping activities and social spheres, designing a network of clearly defined public spaces, and maintaining uniformity in design. Moreover, it advises caution in implementing such a strategy, emphasizing that the underlying motivations should be fair and inclusive, aimed at fostering mutual benefits among all involved groups, and ensuring equal value is placed on each.

(RQ1) Lastly, the research revealed that earlier displacement issues were often worsened by a lack of a localized approach. Past policies, driven by top-down strategies, prioritized improving the overall socio-economic balance over addressing local needs and concerns. Engineering the demographic composition through extensive demolitions and liberalizations proved highly disruptive to local structures, especially when entire neighborhoods were demolished.
(RQ2) While the new Housing Vision aims to foster a localized approach, it still relies too heavily on an undefined, top-down mixing strategy. Continuing to use the district atlas to dictate these strategies at a 'local' level, based on numerical distributions of housing segments, increases the risk of ongoing displacement due to its lack of granularity in addressing neighborhood-specific needs. This absence of localized planning, combined with plans to redistribute social housing across the city and reduce the number of lower-income residents, heightens the risk of ongoing social and cultural displacement. Especially concerning is that these impactful alterations risk causing residents to lose their sense of identity and place within their neighborhood, which are crucial to emotional and cultural attachments. This forms the third main element of the problem statement: **The new Vision lacks opportunities for a localized approach.**
(RQ3) To address this issue, the proposed solutions aim to **increase opportunities for a more localized approach** by emphasizing policy adaptability based on local characteristics and networks. They highlight the importance of preserving key spatial characteristics to maintain residents' sense of meaning and familiarity, including protecting cultural-historical values during urban transformations. Furthermore, the solutions call for recognizing residents' place-attachment by respecting spatial elements that connect community and identity, such as urban structures, landmarks, architectural styles, and neighborhood amenities, while also safeguarding local rights and needs.

As a final conclusion, this segment will conclude the above findings for questions 1-3 separately:
To conclude research question 1, most past displacement issues in Rotterdam are a direct result of the city's social mixing strategy. This strategy, implemented through changes in the housing stock, predominantly involves a reduction in social housing and a preference for higher-end housing, which directly displaces many residents and increases financial pressures. These changes have driven alterations in the demographic composition, contributing to social displacement by marginalizing and devaluing established residents and failing to maintain or enhance social cohesion. The disruptive, top-down nature of these actions has further contributed to cultural displacement.

To conclude research question 2, it is evident that future displacement risks primarily arise from the continued application of a top-down social mixing strategy. Such an approach drives similar changes in both the housing stock and demographic composition, yet it fails to demonstrate a genuine commitment to mitigating displacement resulting from these changes for local residents. Therefore, it is concluded that there remains a persistent risk of future displacement as the new Housing Vision continues to undermine the right to housing, does not provide a fair and effective mixing strategy, and lacks a tailored, localized approach. A policy redirection is needed, as this demonstrates an inability to achieve the more inclusive, affordable housing market the new Housing Vision claims to aim for.

In response to research question 3, it has been determined that to more effectively address displacement, three key objectives should be pursued to address the identified issues. These objectives are crucial for providing sufficient housing, an improved social mixing strategy, and facilitating opportunities for a localized approach, thereby reducing displacement. To make these objectives actionable, implementation must follow the spatial guidelines associated with each objective, as detailed on the red pages in the Research Results section. Implementing these guidelines is essential, given that future displacement is expected due to planned neighborhood changes.
Through a fictional redesign of the Tweebosbuurt, this project illustrates the practical application of the proposed guidelines. The outcomes provide valuable insights that could inform and inspire their implementation in similar contexts. The following text will conclude how the design effectively integrates these guidelines to mitigate the impact of displacement.

2) The implementation of guidelines

2.1 Implementation of 'Provide sufficient housing'
In response to providing sufficient housing and ensuring the right to return, the design integrates 237 public sector houses, originally planned by the municipality, alongside all 525 existing social housing units in the area. The variety within the new public sector houses is determined by the Estimation of Demand (2022-2040) provided by OBI (2023). The design strictly adheres to this distribution of housing segments and types, integrating them into one cohesive plan.
This approach demonstrates that through thoughtful design, it is possible to meet ambitions for increasing housing opportunities and responding to demand estimations, while also creating a successful mix that enhances social cohesion.
To illustrate the potential for increased focus on inner-city densification, the design explores various densification strategies. Visuals accompanying these strategies illustrate their effectiveness and the spatial impact on the existing urban fabric. This comparative analysis helps determine which densification strategies, or combinations thereof, are most suitable, taking into account additional guidelines such as maximizing local rehousing options and respecting local identity. Moreover, the design introduces a high-density typology of family houses that fits within the dimensions of an urban block, dictated by the preserved neighborhood square. This demonstrates how specific densification options can be aligned with the guideline that emphasizes respecting the unique characteristics of the location.

2.2. Implementation of: 'Encourage policy adaptability based on local networks & identity'
To foster a more localized approach, the design incorporates important urban structures, landmarks, architectural styles, and neighborhood amenities, identified using input from Mustapha, former resident, and personal observations. For future implementation in similar settings, this process illustrates how involving residents can help pinpoint key characteristics, and provides examples of architectural expressions, such as specific public landmarks on the corners of blocks, that can be identified as valuable for neighborhood identity.
By designing the front view of street facades, the design underscores the integration of various measures, particularly how the densification strategy is woven into the street scene, and how the rhythm and heights of the facades help preserve local cultural and historical values.

2.3. Implemetation of: 'the mixing strategy must be fair, inclusive, and research-based, ensuring positive outcomes for overall social cohesion'
This design harmonizes a variety of housing segments within the area by integrating similar incomes and lifestyles at street- and neighborhood level, using the distribution of housing segments and the higher-density urban fabric outlined in step 2.1 as a foundation. It also demonstrates how to connect micro-districts and establish a network of clearly defined public spaces to enhance social cohesion. Building on step 2.2, this strategy incorporates existing urban and social structures that are crucial for residents' place-attachment. Furthermore, the design of public spaces is responds to the needs and activity patterns of the target groups housed in the different housing segments.

2.4. Case-study analysis of financial viability
Lastly, the financial feasibility of constructing both public and private sector housing in the Tweebosbuurt is assessed through an initial, indicative cost analysis. While this analysis does not make definitive statements on the financial viability of the project, it helps to understand the financial challenges associated with such projects and the varied roles and responsibilities of the parties involved in realizing the project. Additionally, it places the design back into the broader context of the housing market, reflecting some of the general challenges currently faced in providing sufficient housing due to rising construction costs.
The results confirm contemporary challenges in the housing landscape, showcasing the significant rise in construction costs between 2018 and 2024, and how this substantially impacts financial viability. Within this analysis, the influence of government regulations is explored, leading to the conclusion that such regulations and incentives, such as the landlord tax and the regulation of ground prices, can significantly affect overall feasibility. The analysis concludes with the recommendation to reverse the increase in ground prices to align national and local intentions and ensure continued support and expansion of affordable housing initiatives. Furthermore, the analysis suggests exploring the promotion of housing cooperatives, cost-effective innovative construction methods, and public-private partnerships as options to potentially increase the feasibility of such projects and to safeguard overall affordability.

This alinea will provide a final conclusion on research question 4:
The design demonstrates that to ensure successful implementation of the proposed guidelines, they need to be contextualized within neighborhood-specific characteristics. Generally, this can be achieved by responding to surrounding developments and incorporating broader municipal ambitions, such as those outlined in the Environmental Vision (2023). More specifically, the application of these guidelines requires careful adaptation based on local characteristics, such as desired density, the existing urban fabric, and structures valued by residents. The design shows how decisions across various guidelines interrelate and influence each other, resulting in a comprehensive final design. This process addresses the final research question by demonstrating how Rotterdam's new housing policy can integrate the proposed spatial guidelines to more effectively tackle the issue of displacement, making this approach relevant for the implementation of the guidelines in future similar redevelopment projects.

Discussion

Validity

The validity of this research is strengthened by its reliance on established theories of displacement that explore displacement within the context of neighborhood change. This foundation has facilitated a detailed understanding of the various types of displacement and their drivers. Moreover, the study analyzed existing research that evaluates Rotterdam's past housing policies in the context of displacement and social justice. This analysis contributed to a well-defined understanding of the types of neighborhood changes associated with displacement risks, specifically in Rotterdam. Thus, the framework of past displacement issues is well-supported by prior research, providing a solid base for evaluating future displacement risks under the new policy direction.

It is important to recognize that the identified risks of displacement are based on interpretive assessments. As discussed by Easton et al. (2020), the complex nature of displacement effects means that predictions of impact and intensity cannot be absolute. Nevertheless, the interpretive nature of these findings does not detract from their relevance; the research aims to raise awareness of potential displacement issues and provide policy advice to mitigate impacts in light of anticipated neighborhood changes.

In addition to the literature review, interviews were conducted with various stakeholders involved in and affected by Rotterdam's housing policy. These interviews aimed to gather a comprehensive view of the perspectives and objectives of different parties, enhancing the study's contextual understanding. Altough some interviews helped position the research in the broader context of housing market dynamics, there remains scope for further studies to expand this understanding.

The proposed guidelines are implemented in one case study, the Tweebosbuurt. This case study represents characteristics that are typical of NPRZ-areas, and, as it reflects a development strategy that the municipality typically applies to such neighborhoods, thereby validating the applicability of the guidelines in similar locations. Although these neighborhood changes were initially planned under the old Housing Vision, the continuation of similar objectives in the new Vision, coupled with the ongoing risk of displacement, ensures that these plans remain relevant for future redevelopment projects.

While these findings validate the applicability of the guidelines, the results of their implementation are not necessarily generalizable. The final design may vary based on location-specific contexts or decisions made by the designer, but this variability does not necessarily impact the effectiveness of the design.

Interpretation of results

The identification of potential displacement risks

The results of the initial segment of the thesis, which focuses on the development of guidelines (Sub-Questions 1-3), align well with the expected outcomes, and logically stem from the theoretical framework and research questions posited at the beginning of the thesis. This alignment is primarily due to the segment building upon existing theories of displacement, referencing scholars such as Grier & Grier (1978) and Marcuse (1985). Although applied within the new context of Rotterdam's housing policy, the research corresponds with an existing critical narrative on Rotterdam's earlier housing policies as detailed in works by Arkin & French (2023), Doucet et al. (2011), and Ouwehand & Doff (2013).

This research identifies policy directions within the new housing policy that pose risks of displacement. These identifications are interpretive; while they suggest potential displacement, the complex nature of displacement effects—as discussed by Easton et al. (2020)—means that predictions cannot be absolute in terms of impact or intensity. The theoretical framework established at the beginning of the thesis acknowledged the difficulty in quantifying displacement, but mentioned the feasibility of forecasting displacement risks given a solid understanding of the underlying theories and anticipated neighborhood dynamics.

Unexpectedly, the role of social mixing emerged as a more central theme than initially anticipated. While existing literature discusses policy directions integral to Rotterdam's mixing strategy—for example, Kleinhans (2022) outlines how Rotterdam's approach to achieving diversity challenges the right to the city, and Doucet et al. (2011) link the attraction and retention of affluent households to gentrification processes—no study has precisely dissected the relationship between changes in housing stock and demographic composition, and their interrelated but distinct impacts on various displacement issues. This thesis clarifies these connections, highlighting how direct and financial displacement are predominantly linked to housing stock changes, whereas social and cultural displacement mostly arise from shifts in the demographic composition. The emphasis on social mixing became more integral to the research as the understanding of Rotterdam's housing strategies and displacement issues progressed. Although displacement issues could have been assessed without such a strong adherence to this framework, it made the strategy of social mixing integral to the entire research, and facilitated an obvious integration of social mixing within the proposed solutions of the design strategy.

Comprehensive understanding of Rotterdam's policy direction

Initially, this research was guided by an activist approach, advocating for increased social housing to address social inequalities in the housing landscape and promote more equitable urban development. This approach was influenced by critiques of Rotterdam's previous housing policies, which focused primarily on social issues and were discussed in the context of social justice and displacement. By aligning with these themes, the research positioned Rotterdam's new housing policy against a historical socio-political backdrop characterized by past social inequalities, injustices, and systemic racism. Understanding how previous policies have been widely criticized for undermining the right to housing (United Nations, 2021) and

disproportionately disadvantaging ethnic minorities (Hochstenbach et al., 2015) informed a critical view of Rotterdam's persistent marginalization of lower-income groups. This analysis underscored the need for a fundamentally different policy direction.

As the research advanced, further insights into the complexities of market dynamics and housing systems were gained through additional research, and discussions with housing experts and policy advisors. This led to a more nuanced understanding of Rotterdam's housing strategies, particularly highlighting the financial challenges of setting ambitious targets for social housing within the current context. The observations of housing policy advisor, I. de Bont, who noted the difficulty in making a strong business case for high targets in social housing ("We simply can't make the business case work," personal communication, 01/02/2024), underscore these challenges. Furthermore, discussions with Peter Boelhouwer outlined the difficulties governments face in responding to housing challenges amid factors like international housing crises, increased immigration, unfavorable investment climates, and a general decline in construction (Personal communication, 11/04/2024). This context has deepened the understanding of why Rotterdam's housing strategy may prioritize the construction of middle-segment housing over social housing.

Simultaneously, this understanding enhances the critical reflection on Rotterdam's approach to social mixing. The challenges in constructing new (affordable) housing underscore the need for a protective stance towards existing units. If new social housing construction is hardly viable, then existing units should not be demolished simply to achieve a more balanced city. Given the uncertainty in the current investment landscape, significant liberalizations and demolitions of existing stock, and relying on new construction in different areas to 'aim to maintain the size of the current stock', is too risky. The limited resources available to accelerate housing construction to meet increasing demand make it crucial to avoid wasting resources on redistributing existing housing units, particularly considering the ineffectiveness of Rotterdam's current mixing strategy.

In conclusion, gaining a deeper understanding of market dynamics and housing systems has provided a more nuanced perspective on Rotterdam's construction ambitions. It underscores the importance of considering the broader national economic context when evaluating housing policies, even though this aspect largely falls outside the scope of this thesis. While this nuanced understanding explains the challenges in constructing new social housing, it does not justify the ongoing social injustices inherent in the city's policy direction. The insights gained underscore the need for a protective stance towards existing housing units and a reevaluation of Rotterdam's social mixing strategy.

Lessons learned from implementation in design

The results of the second segment of the thesis, which focuses on the implementation of guidelines (Sub-Question 4), add complexity and provide additional insights by applying established theories in a practical scenario. The following text will discuss interpretations and conclusions derived from the design implementation.

Need for strategic approaches to managing urban space

In response to providing sufficient housing, the design explores various densification strategies. Beyond practical outcomes, these studies reveal an important insight: integrating a new target group does not need to significantly disrupt the existing urban fabric, nor does it require the displacement of current residents. For instance, the simple addition of one or two layers to existing buildings or a slight increase in the density on specific blocks like S (8) could accommodate all of the new residents efficiently. While these approaches require further research and careful urban planning to ensure successful integration, they challenge the previously held belief that major demolitions were necessary to achieve diversity, and dispels the myth that there is no room to accommodate everyone.

Moreover, the exploration of densification strategies highlights the importance of adopting more strategic approaches to managing urban space. Rather than defaulting to lower density solutions that compromise housing availability, the project showcases how design solutions can optimize the use of space while ensuring spatial quality. Unconventional floor plans, for example, can maximize density without sacrificing living standards. High-density areas, particularly blocks 5 and 7, benefit from thoughtful architectural elements such as stepped-back balconies, creating a sense of 'lightness', and a qualitative courtyard design that ensures pleasant use, sufficient greenery, and minimizes nuisance. Utilizing roof spaces in such cases increases the amount of private outdoor areas, improving livability. This approach not only increases housing opportunities but also significantly enhances the overall quality and experience of urban spaces, thus emphasizing the value of exploring similar strategic approaches in future development.

Designing a perfect mix, instead of a perfect balance

Through a revised mixing strategy, this research demonstrates that the municipal goal of integrating a new target group can be achieved without displacing existing residents, by incorporating both groups into one design. However, it should be noted that the municipal aim of achieving a 'balanced city' isn't perfectly met in terms of a precise 50-50 numerical distribution—with 525 social houses and 237 private sector houses in the project area. Instead, the design achieves a balanced mix by adhering to guidelines that effectively integrate both groups, regardless of their numerical ratio.

This strategy promotes a shift in municipal focus from achieving a perfect balance to designing a perfect mix. This approach proves to be more effective, especially considering that aiming for a specific balanced composition does not necessarily yield benefits unless it is thoughtfully designed. Furthermore, while the municipality seeks an improved balance, they have not mandated a strict 50-50 distribution, indicating a potential oversight in vision that allows for adjustment.

By illustrating how the municipality's mixing strategy can be revised, the design encourages policymakers and urban designers to reconsider their current approaches and critically reflect: *"What is the greater societal contribution of our current approach?"*. The design advocates for a refocused effort on creating a mix that enhances social cohesion and integrates both established and new residents, thus providing a more positive impact on society.

Assessing Local Values Amidst City-Wide Changes

This research supports an increased focus on inner-city densification while advocating for the preservation of existing urban structures and local identity. This juxtaposition carries potential conflict between new development and preservation, which emphasizes the need to balance the two. Although the design prioritizes local identity, it incorporates new housing types and increased building heights, thus modifying the area's original character. In making such design decisions, it is important to acknowledge that cities are dynamic entities that evolve in response to contemporary challenges. This calls for an approach that balances innovation and new development with the preservation of local values.

The study emphasizes the significance of maintaining key urban elements—such as architectural expressions, amenities, public spaces, and green areas— that carry value in how communities are rooted. Enhancing density without undermining these elements is vital for maintaining place attachment and mitigating displacement. Well-designed changes can ensure a sense of belonging among all residents, allowing social networks to evolve using familiar public structures and places.

Addressing the challenge of implementing a localized approach within broader urban transformations raises critical questions: *How do we determine what is valued locally versus what benefits the city at large?*

Gaining a deeper understanding of the municipal plans for the Tweebosbuurt reveals that most design decisions are influenced by external developments, necessitating a redesign of the neighborhood to integrate it with the newly built areas along the Laan van Zuid. This typically involves significant restructuring, such as the removal of trees and buildings along the Hilledijk to enhance connectivity between the Tweebosbuurt and Parkstad, which has led to persistent local resistance and numerous revisions to zoning plans, severely complicating the process. This situation prompts critical reflection on whose interests are being served by these neighborhood changes and how to balance broader city planning goals with local values and character.

The complexity of these issues underscores the absence of a one-size-fits-all solution. However, the proposed design demonstrates the feasibility of finding a middle ground in such challenges. In a general sense, the design finds middle ground by integrating both the original and new residents into a successful design. More specifically, for the Hilledijk, the design illustrates that connections across the barrier can be established in less disruptive ways through cross-barrier zoning, effective use of public space, and the creation of alternative pedestrian routes. This demonstrates that the objectives of both the municipality and established residents can be met without one necessarily conceding to the other. It encourages the municipality to maintain an open-minded stance towards these challenges and to allow for flexibility in design based on local needs.

Designing in response to Rotterdam's contemporary housing challenges

The research addresses Rotterdam's housing policy in several ways, particularly within the realm of displacement issues. It responds by 'introducing' new additions, 'implementing' existing guidelines, 'improving' suggested ambitions, and 'revising' elements that fundamentally require change, with the aim of mitigating displacement in future urban development. Beyond displacement, the design tackles additional challenges within Rotterdam's housing landscape. For example, the policy emphasizes the pressing issue of an aging population ('vergrijzing') and its impact on housing availability. In response, the design incorporates quality elderly housing to promote housing mobility for seniors seeking smaller, single-level homes, integrated into the mixing strategy through a special target group allocation system. Furthermore, the municipality focuses on enhancing general housing mobility, which the research supports by increasing lower middle-segment housing options within the neighborhood.

Additionally, the housing policy outlines further challenges. It highlights the need for a contextual understanding of the housing policy objectives based on neighborhood-specific characteristics, yet the municipality lacks the funding to achieve this— a gap this location-specific design addresses. The policy also urges external parties to contribute to innovative housing solutions, which this research supports by promoting high-density construction, housing cooperatives, and elderly care integrated within residential blocks.

The design directly engages with the policy's question: *"What impact does prioritizing affordability have on enhancing quality and livability?"*, by demonstrating how thoughtful urban design and a specific focus on a well-defined network of public spaces can significantly enhance neighborhood livability.

Lastly, the proposed guidelines are integrated into a future context that considers upcoming urban developments (such as Stadion Zuid and Parkstad), changing mobility systems, and an increased focus on green spaces and biodiversity. This approach, which addresses displacement issues while taking into account the broader context of ongoing developments, aids in framing the strategy for displacement within the larger contemporary challenges of Rotterdam.

Implications of the research

In this segment, the implications of the research are discussed, including the broader effects and potential consequences of the findings. It will briefly discuss how the outcomes can influence future policies and practices, and how they contribute to theoretical frameworks within the field.

Influence on policies and practices

Firstly, the research provides guidelines that can help mitigate the impact of displacement during the redevelopment of vulnerable neighborhoods under the new housing policy of Rotterdam. Policy makers can utilize the insights to revisit and adapt the new housing policy objectives, ensuring that they accurately consider the impacts of the anticipated neighborhood changes on vulnerable populations and adjust strategies to prevent further displacement.

Moreover, the design guidelines developed through this study can assist urban planners and architects in structuring developments in a way that minimizes displacement. They encourage designers to use a thoughtful design approach while adapting the guidelines to specific neighborhood characteristics. In this, the case-study design can be utilized as an example of how to integrate and harmonize different guidelines for displacement in one design, understanding their interrelations. Additionally, consulting this case-study design can create an impulse for designers to navigate design challenges as outlined in the discussion, such as the tension between increasing density and while respecting identity, and how to value the local needs within greater ambitions of city-wide change.

On a societal level, policymakers and urban designers that implement the proposed guidelines, can possibly contribute to creating more equitable urban environments that enable neighborhood change without displacing existing communities. For the residents of Rotterdam, this would mean a housing strategy with an increased resident-centric approach, highly valuing social cohesion among new and established residents, and an increased focus on policy adaptability based on local characteristics, identity, and residents' needs.

Contribution to theoretical frameworks

Regarding the theoretical implications, this research enhances the existing critical narrative surrounding social mixing strategies, which is reflected upon by for example Bond et al. (2011), including extensive research by Allen et al. (2005); Andrews & Reardon Smith (2005); Atkinson (2005); Beekman et al. (2001); Cole et al. (1997); Kleinhans (2004); Miltenburg (2017), etc. By extending this narrative to include the implications of Rotterdam's newly introduced Housing Vision, the research expands on earlier studies that detail the historical development of the social mixing strategy, such as by Bolt & van Kempen (2009). This further challenges the prevailing assumption that social mixing invariably results in positive social outcomes, based on a new, contemporary context.

The findings enhance the body of knowledge on general displacement theories, such as those proposed by Grier and Grier (1978) and Marcuse (1985), by providing a nuanced understanding of how various elements of a housing policy might inadvertently lead to both direct and indirect forms of displacement. More specifically, it provides an understanding of displacement risks within Rotterdam's new policy direction. While existing literature evaluates policy directions integral to Rotterdam's past mixing strategies —such as Kleinhans (2022), who discusses how Rotterdam's efforts to achieve diversity challenge the right to the city, and Doucet et al. (2011), who explore the link between the attraction and retention of affluent households and gentrification—no study has precisely dissected the relationship between changes in the housing stock and demographic composition and their interrelated but distinct impacts on various displacement issues.

Previous efforts, such as those by Atkinson (2000), who measured displacement and gentrification within central London, have aimed to identify displacement within the context of a specific city, using a quantitative approach and applying general displacement theories. Building upon such work, this research introduces an alternative framework to analyze displacement in Rotterdam, employing qualitative research to assess the effects of policies on various displacement types. This offers a new methodological approach that can guide future research on displacement in specific cities facing changing dynamics.

Research limitations

The research uses existing theories on displacement and past displacement issues as a framework to asses future displacement risks under Rotterdam's new housing policy. While this approach provides valuable insights for raising awareness and informing policy debates, it fundamentally relies on interpretive assessments of displacement risks and impacts. These assessments are inherently subjective and may be shaped by the researchers' perspectives and biases.

Although this method of employing existing research and theories provides a structured approach to understanding potential displacement, it is primarily qualitative. While the research incorporates some quantitative elements, such as statistical data on changes in the housing stock, these are not the primary focus. Consequently, the findings could benefit from being more multi-faceted.

The study aims to situate Rotterdam's housing policy within its broader social, political, economic, and spatial contexts. However, given the research's primary engagement with social studies and urban design, there is a pronounced emphasis on the social and spatial aspects. This focus results in only a brief consideration of the economic aspects related to housing strategies and market dynamics. While this limitation might not significantly affect the assessment of displacement risks, it restricts the depth of contextualization regarding Rotterdam's housing ambitions and hinders a precise evaluation of the financial viability of the Tweebosbuurt project.

These limitations indicate that while the research contributes to valuable perspectives on displacement risks associated with Rotterdam's housing policy and potential guidelines to mitigate these effects, its conclusions should be interpreted with an awareness of its methodological scope and the subjective nature of its analysis. Further studies could enrich these findings by incorporating a more balanced consideration of political and economic factors and employing a mixed-methods approach to diminish the influence of subjective interpretations. Further discussion on these points will follow in the following section.

Suggestions for further research

The research recognizes that guidelines for social mixing must be tailored to local contexts to effectively guide decisions on design, scale, and layout. This implies that, despite a well-supported argument for the guidelines' applicability in similar neighborhoods, variabilities in the final design remain. Consequently, it is relevant for future research to test the implementation of these guidelines in different neighborhoods facing comparable challenges. Additionally, future studies could more precisely evaluate the implemented guidelines in real-time settings by incorporating mechanisms that gather resident feedback to inform further iterations. This approach allows for the refinement of the guidelines and enhances understanding of how local contexts impact their application.

Furthermore, the study points to the potential for innovative housing solutions that increase density while positively responding to other design objectives that mitigate displacement. For example, new urban and architectural configurations and living forms can be explored that increase density without compromising local identity and/or while providing possibilities for increased social cohesion. This could contribute to new design standards that optimize space without compromising living quality or causing displacement.

Currently, the research offers a qualitative assessment of displacement, offering possibilities for more data-driven analyses. As the effects of the newly proposed Housing Vision become apparent, employing a mix of quantitative and qualitative methods could provide a more comprehensive assessment of the real-life impacts of displacement. Surveys, housing data analysis, and demographic studies could provide insights into the actual effects of the new housing policy, potentially leading to a reevaluation of the policy direction.

Lastly, the research briefly touches on economic factors influencing housing policies, suggesting that a deeper exploration could enhance the understanding and application of the guidelines. Further research on market dynamics and housing systems that influence housing policies can help ground the advice on providing sufficient (social) housing within a better understanding of what is realistic in the current context. This would involve both the policy advice proposing new construction ambitions to mitigate displacement, and a more accurate assessment of the financial viability of the proposed Tweebosbuurt project. It would also consider the roles that housing cooperatives, innovative construction methods, and public-private partnerships play in enhancing this viability.

08. APPENDIX



Fig. 73. Buurtbewoners protesteren tegen de sloop van sociale huurwoningen in de Tweebosbuurt in Rotterdam (Herfst, 2021)

Reflection

The research – positioned within the Master Programme

For this research, I have composed a set of spatial guidelines that should be implemented into Rotterdam's new housing policy to address the issue of displacement more effectively in future redevelopment of vulnerable neighborhoods. By incorporating these guidelines into a location-specific design, primarily focusing on the spatial implementation but also exploring its relation to finance, I illustrate their potential integration and the interconnectedness between different guidelines in design. This approach helps bridge the gap between regulatory objectives and their spatial implications. Integrality comes forward in addressing a broad range of (national) housing related issues, while responding to a more local context of future developments in the South district in Rotterdam. Ultimately, the research aims to contribute to a more equitable and spatially just resolution of Rotterdam's housing challenges. The following text will provide answer to the question: What is the relation between your graduation project topic, your master track, and your master programme?

In relation to the TU Delft AUBS Master Programme, my thesis reflects the multidisciplinary values of the program by integrating insights from various disciplines to address complex urban challenges. While the primary focus lies on the intersection of social sciences and spatial design, the research also touches upon architectural and engineering aspects, such as innovations in increasing density, and an increased focus on maintaining and renovating existing buildings. Moreover, it extends its relevance to areas like management in the built environment (MBE) by addressing governance structures, housing market dynamics, and financial incentives. Such an approach has contributed to an understanding of how these fields intersect and influence one another, increasing awareness of the importance of collaborative approaches between disciplines in addressing contemporary urban challenges, such as displacement in Rotterdam's housing policies.

As my awareness of the importance of interdisciplinary collaboration among the various disciplines within the Master's Programme has grown, I have recognized the dependency of designers on other sections to propose realistic designs, especially in terms of project financing, which is primarily covered in the MBE section. Previously, my academic curriculum had not emphasized the significance of this aspect in developing realistic designs, and I found it challenging to obtain relevant guidance within the faculty. This issue is commonly discussed among students, jokingly noting that urban planners tend to design projects that developers find impractical, with similar dynamics between architects and technical (construction) specialists.

Despite these obstacles, I committed to gaining a better understanding of the dynamics between finance, market systems, and the proposed design. By extensively researching online and in books, using AI as a feedback mechanism to review my interpretation of the financial models that were offered, I believe I managed to develop a fairly accurate final model. This model improved as I learned to distinguish between uncertain costs that are likely to fluctuate, such as construction or interest costs, and applied various scenarios to these costs in the model. Although the final conclusions on feasibility may not be significant, I have developed a clearer understanding of how different costs interact, highlighting the crucial role of construction costs

and their impact on the viability of housing construction projects. Additionally, I have become more aware of how strongly financing, and potentially alternative financing structures, will determine which housing segments can be realized. Nonetheless, I feel that the curriculum could have offered more guidance in this area.

Moving from a broader relationship with the AUBS Master Programme to the specific context of the Urbanism track, I find that my thesis aligns well with the core themes and objectives of the track by illustrating the role of design-oriented solutions in shaping policy-making and urban planning processes, and by demonstrating their socio-spatial implications. The core objectives of Urbanism are evident in combining social, cultural, economic, and political perspectives into spatial design and aiming to contribute to more equitable and inclusive urban environments. While the primary focus of this research is on social sustainability—emphasizing social justice, community engagement, cultural diversity, and social cohesion—it also addresses environmental sustainability. This is achieved by promoting renovation, optimizing the use of the existing building stock, maintaining the green space ratio despite increased density, and enhancing micro-climate management on street-level through the implementation of fine-grained green spaces.

Additionally, the research operates across various scales typically explored in projects throughout the curriculum, from the scale of regional strategic visions to neighborhood designs. This includes the national context of housing scarcity and (re)development approaches, regional agreements within South-Holland concerning housing distribution, local housing strategies and trends within Rotterdam, and a neighborhood-specific implementation of guidelines, resulting in the smallest scale of street designs.

However, although neighborhood designs are typical in the Urbanism curriculum, I have not previously been confronted with redevelopment projects for existing housing. I believe that, given the significant future challenges in redeveloping older pre-war developments and providing quality impulses for modernist (1960s) neighborhoods, the curriculum could better prepare students for such assignments and the social challenges they pose.

The PCC studio within the Urbanism track has served as a valuable platform to explore the institutional elements of urban governance and their spatial relevance. The studio's objectives are reflected in my thesis by advocating for equitable and sustainable socio-spatial outcomes, grounded in new policy perspectives. Despite its institutional focus, my research maintains a human-centered approach, reflecting the studio's emphasis on "planning as a critical engaged practice." By prioritizing human experience and civic engagement, my thesis seeks to support the studio's goal of generating meaningful urban interventions to address pressing societal issues.

Reflection on process and results

The following text reflects on the research process and its outcomes, including an evaluation of the value of my approach, methods, and methodology. This also includes moments when certain aspects did not yield valuable findings and required reassessment. The text highlights instances where steps in the research significantly influenced my design recommendations, and where design recommendations shaped the research.

A qualitative approach to identifying past displacement issues

Between P1 and 2, my research began with defining and categorizing displacement pressures through a thematic analysis of academic literature, focusing on how displacement is conceptualized in the context of neighborhood changes. This analysis was essential for assessing the impact of Rotterdam's housing policies from 2000-2023. The approach delivered effective and clear results, as past research had already established a comprehensive and critical narrative on Rotterdam's housing policies.

Although no other academic sources had evaluated past policy directions using this specific framework of displacement definitions, the widespread discussion of these policies within the theme of social (in)justice made it relatively straightforward to categorize measures and processes of change as displacement issues.

The primary focus on qualitative research was complemented by some quantitative data, such as targets for demolishing housing, the success rate of social housing seekers, and the changes in income and housing distributions in Rotterdam from 2015 to 2020.

I considered placing greater emphasis on quantitative research but found it to be complex, as the experience of displacement is inherently suggestive. For example, prior to P2, I worked on a Python model to map and compare changes in income levels and property values, aiming to quantify financial pressures. However, external factors such as inflation and the inability of property values to account for residents with regulated rents made this approach too complex and time-intensive relative to the results it provided. Additionally, it remained impossible to determine whether any increased pressure was a result of the Municipality's policy direction or natural (inter)national economic fluctuations. While I believe that with the right analytical model, some statistics could aid in identifying displacement, this would necessitate extensive quantitative research methods to accurately establish cause-and-effect relationships among variables, which were not included in the research plan and require additional education outside the Urbanism curriculum.

This confirmed findings by Easton et al. (2020), highlighting the difficulty of quantifying displacement. It reinforced that qualitative research is more effective in identifying displacement risks, provided there is a solid understanding of underlying theories and neighborhood dynamics. Existing literature, deeply rooted in these theories and often directly addressing displacement through interviews with residents, proved most effective in answering the first sub-question: how Rotterdam's policy directions from 2000 to 2023 contributed to displacement issues. This qualitative approach directly influenced my design by providing a clear framework to address displacement issues.

Using past displacement issues as a framework to assess future risks

These results have been used to assess potential future displacement risks within the new policy direction. This method, as mentioned under research limitations, involves an interpretative approach, and since it is an assessment of future risks, the occurrence of displacement is not definitive. Nevertheless, I found that using past displacement issues as a framework to assess future risks was effective in providing meaningful insights.

It is explicitly stated that the identified issues represent potential future displacement risks rather than definitive facts. The aim is to raise awareness and inform policy debates, enabling a more effective response to displacement issues in the future. The urgency to adapt policy is underscored by the fact that these risks are rooted in past injustices within previous policy directions, highlighting the municipality's responsibility to enact change. Given the focus on future risks and the lack of current data on actual displacement resulting from the new housing policy, alternative methods for identifying displacement were limited.

As the research progressed, the thematic focus on displacement risks evolved. Studies of Rotterdam's housing policies, such as those by Arkins & French (2023), Dol & Kleinhans (2012), Doucet et al. (2011), and Ouwehand & Doff (2013), underscored the relation between Rotterdam's mixing strategies and spatial injustices. This insight helped link displacement issues directly to the strategy of social mixing, leading to the realization that theories of social mixing needed to be well contextualized within the research. This understanding later shaped my recommendations, ensuring they offered enhanced solutions to social mixing.

Therefore, after P3, I adopted a more systematic approach to researching housing policies, with an increased focus on social mixing. I organized identified past displacement issues within a framework of social mixing, considering changes in the housing stock and demographic composition as forces behind the four categories of displacement. This clear organization allowed for a more precise identification of potential future displacement issues under the new policy direction. Recurring themes, such as the decrease in social housing, inconsistent data usage, an undefined mixing strategy, and the disruptive nature of the policy direction, strongly guided and structured the analysis of potential future displacement risks. I believe this significantly added to the academic value of the results.

Towards solutions and the final design

The formulation of design guidelines began early in the process. By P2, draft guidelines were already composed, though not yet fully integrated into the systematic approach and thematic focus that was developed later. Once past and future displacement issues were clearly structured, the proposed solutions could also be developed more systematically. This clear structure provided strong guidance on which issues needed to be addressed, allowing me to apply the appropriate knowledge to find suitable solutions, drawing from literature on social mixing, revisions of existing guidelines, and data on housing needs. In this way, the research clearly influenced the design recommendations.

Originally, I intended to implement the guidelines in multiple design scenarios. However, this goal shifted as I critically reassessed my desired contribution. This will be elaborated on in the following text.

During my research, I found that when I explained the direction of my work to peers, acquaintances, friends, or family, many questioned the feasibility of my proposed solutions, particularly my focus on more affordable and social housing. Some suggested that assigning the government to construct social housing for lower-income groups to solve their housing issues was an unrealistic "easy way out," raising concerns about who would bear the costs. My design tutor's suggestion of lowering renovation standards for social housing or constructing fixer-upper homes to increase affordability further fuelled my ambition to explore the financial feasibility of my measures and to understand the level of responsibility that can be expected from the government.

Initially, I intended to design a scenario called "minimal change," focusing on full preservation and renovation. However, I realized I was more interested in the actual feasibility of such a scenario than in its spatial implications. Ultimately, there is no design challenge if things hardly change, and it's not beneficial if I can't assess whether such a scenario is realistic within the current context. This realization led to a shift in focus: instead of developing this design scenario, I decided to explore the financial feasibility of such solutions.

Additionally, feedback from external people made me more aware of my research's position within discussions of spatial justice and the distribution of housing and resources across different groups. People in my surroundings with more individualistic, right-wing ideals were often critical of maintaining or reconstructing social housing in 'prime locations', suggesting that as the city center naturally expands, public sector housing should perhaps shift more to the periphery. Some with diverse political backgrounds, particularly those who had experienced housing market pressures themselves, expressed concerns that advocating for more social housing could further limit the availability of other housing segments in the city. This highlighted the tension of limited space and suggested concerns that there might not be enough room for everyone.

Therefore, while I initially intended to design a scenario with extreme density, I realized that my interests lay not in the final design of high-density development itself but in engaging in the broader discussion about spatial limitations and the distribution of urban resources. This shift in focus led to the development of a new product: density studies.

The 'middle ground' scenario proved to be perfectly complementary to this, allowing me to showcase the full integration of my design guidelines into a single cohesive design. This approach effectively demonstrated how to both preserve existing buildings and increase density without the need to fully design the other two scenarios. Additionally, the combination of target groups facilitated a thoughtful integration of the proposed mixing strategy. The findings from the financial exploration and the density studies informed this design, helping me to position the final design scenario within the possibilities and limitations of space (density) and finance.

Integrating these guidelines into the 'middle ground' scenario has effectively bridged the gap between policy objectives and their spatial implications. New design challenges emerged, such as the tension between increased density while maintaining community identity, and balancing broader urban transformation with resident's values and needs. By addressing these challenges, the design informed and refined the research and final recommendations.

Additionally, I believe the final design effectively bridges the gap between policy objectives and spatial implications by illustrating the interrelations among various guidelines in the design, and by contextualizing the implementation within real-life dynamics, including surrounding future development projects, environmental sustainability objectives, and the transition of mobility systems.

Feedback from mentors and the implementation

Research

Reflecting on the feedback provided by Reinout, I can conclude that his supportive stance has enhanced my independent, explorative approach to the topics of this thesis. I believe it is valuable to offer such open-minded guidance, especially considering Reinout's deep affinity with the subject and his academic contributions. The feedback primarily involved subtle guidance, such as recommending additional literature, which helped me refine my direction without necessitating significant changes to the discourse of my research.

This enabled me to develop my own research framework on mixing strategies and displacement issues, which I tailored to effectively articulate my findings. Additionally, Reinout's suggestions for further sources, such as those on mixing strategies or Rotterdam's development strategies, proved valuable for deepening my research.

The discourse of my research underwent minor modifications based on Reinout's feedback, particularly when he helped me acknowledge that I had ventured into areas beyond the intended scope of my thesis, such as finance. This guidance has helped me refocus my efforts into a focused yet explorative approach to my thesis topics.

Design

Regarding the feedback on the design, Rients has placed specific emphasis on - aside from implementing the proposed guidelines - developing a comprehensive, high-quality urban plan that is relies on a clear, integral vision for public space design.

In response to this feedback, I have incorporated the guidelines into a vision on achieving a new, high-density, green environment, that utilizes environmentally positive solutions to create a pleasant neighborhood for children and families.

This vision includes 'inverting' and dispersing the green qualities and social potential of the internal courtyards throughout the streetscape, thereby creating a more fine-grained, external green streetscape that facilitates layered opportunities for social interaction. Beyond enhancing social connectivity, this intricate network also distributes water runoff more evenly across a broader area and improves micro-climate control between the blocks. Ultimately, this leads to the formation of a welcoming network of external spaces and pathways among the blocks, which are embedded into the final mixing strategy. To achieve this, the design prioritizes pedestrian traffic, shifts away from the focus on parking along the streets, and preserves the green space ratio despite increased density by weaving green spaces into the streetscape - enabling pleasant spaces for social interactions.

As I integrated the design guidelines into the final design, I used my objectives for public space design as a foundation to incorporate practical elements, ensuring a well-considered design approach. For instance, the design of parking facilities in the inner courtyards aligns with the overarching vision to create more pedestrian-friendly streets. Subsequently, the specific layout of the parking facilities is adjusted to complement the intended use and quality of the space. For example, the implementation of half-deep parking spaces is designed to clearly delineate private and public areas within a densely populated block.

Additionally, Rients has emphasized the importance of making the final design strategy for public space actionable for designers. To address this, I have concluded the design process with a detailed 'design checklist' that specifies design parameters more precisely, such as grain sizes and building heights, and lists amenities that I consider essential for integration.

Lastly, it was suggested to complete the final design strategy by clearly disclosing the overall quality I envisioned for public spaces. In response, I included a final vision statement alongside the checklist to recite the overarching vision for the area, and provide definitive guidance on designing the desired public spaces. In this statement, on pages 178-179, I emphasized the importance of adapting the final public space design based on resident engagement, ensuring it meets the varied needs of different target groups, with special consideration given to cultural diversity.

Reflecting on this design process, I believe Rients has effectively guided me towards a more comprehensive and qualitative design strategy. I think adopting such an integrated vision has notably enhanced the value of this research for the Municipality of Rotterdam, which typically seeks to align its development strategies with similar visions concerning sustainability and mobility systems. Although the received feedback has been primarily distinct from the theme of my thesis, thematic elements, such as an enhanced social mixing strategy, could be integrated using insights gained from research.

What I have learned

Throughout my thesis, I have gained a deeper awareness of the integrality of themes involved within my thesis scope, encompassing social, cultural, economic, and political perspectives. This awareness has deepened my understanding of how these themes interrelate and influence dynamics in the built environment, such as housing issues and the evolution of development strategies. Additionally, this experience has helped me recognize the limitations of the field of Urbanism in fully capturing all the complexities involved in such layered issues.

In this process, I have focused more intensely on policies than ever before to ground my design approach. This deep dive into policy analysis has greatly informed my understanding of why policies are structured as they are, and how they can significantly influence the spatial realm. Engaging with the various, sometimes conflicting, voices within these policies has enhanced my understanding of the beliefs and intentions of different people and stakeholders involved, and has made me increasingly aware of how different political stances shape such beliefs. I believe this has strengthened my position in discussions related to these themes.

Developing such an integral urban design— involving research, establishing design guidelines, and implementing these within an overarching development vision that addresses contemporary design challenges—has been a while for me, particularly as I have been involved in the architecture master track in the past year. Although I have developed such designs multiple times during my academic career, revisiting such an integral neighborhood design at the end of my education has enhanced my ability to autonomously tackle complex issues through urban design, and I feel it has facilitated a smooth transition from my academic career to working professionally in the field.

The final mandatory elements in my reflection cover the academic and societal value, implications, transferability of results, and relevant ethical aspects of this thesis. While these segments overlap with parts of my research plan and discussion, they are reintegrated here for the completeness of my reflection. The original text on academic and societal value can be found in my research plan. The ethical reflection is also included there. Information on the implications and validity can also be found in the discussion section. For any residual reflections that relate to the content of my thesis, I would like to refer to the discussion section, specifically 'interpretation of results'.

Academic Value & Implications

Regarding the academic implications, this research enhances the existing critical narrative surrounding social mixing strategies, which is reflected upon by for example Bond et al. (2011), including extensive research by Allen et al. (2005); Andrews & Reardon Smith (2005); Atkinson (2005); Beekman et al. (2001); Cole et al. (1997); Kleinhans (2004); Miltenburg (2017), etc. By extending this narrative to include the implications of Rotterdam's newly introduced Housing Vision, the research expands on earlier studies that detail the historical development of the social mixing strategy, such as by Bolt & van Kempen (2009). This further challenges the prevailing assumption that social mixing invariably results in positive social outcomes, based on a new, contemporary context.

Previous efforts, such as those by Atkinson (2000), who measured displacement and gentrification within central London, have aimed to identify displacement within the context of a specific city, using a quantitative approach and applying general displacement theories. Building upon such work, this research introduces an alternative framework to analyze displacement in an urban context, Rotterdam, employing qualitative research to assess the relation between local policies and various displacement types. This offers a new methodological approach that can guide future research on displacement in specific cities facing changing dynamics.

The findings enhance the body of knowledge on general displacement theories, such as those proposed by Grier and Grier (1978) and Marcuse (1985), by providing a nuanced understanding of how various elements of a housing policy might inadvertently lead to both direct and indirect forms of displacement. More specifically, it provides an understanding of displacement risks within Rotterdam's new policy direction. While existing literature evaluates policy directions integral to Rotterdam's past mixing strategies —such as Kleinhans (2022), who discusses how Rotterdam's efforts to achieve diversity challenge the right to the city, and Doucet et al. (2011), who explore the link between the attraction and retention of affluent households and gentrification—no study has precisely dissected the relationship between changes in the housing stock and demographic composition and their interrelated but distinct impacts on various displacement issues. This could inspire and inform future research in housing policy analysis.

Societal Value & Implications

The societal value of my research is underscored by its aim to address issues posed by the housing crisis, which affects both lower and middle-income groups, impacting a substantial portion of society. By emphasizing the principles of social justice and prioritizing a resident-centric approach in housing policies, my research aligns with the goals of housing rights organizations and contributes to advocacy efforts promoting more equitable urban development.

My research highlights the critical role of governance in enacting change, making it highly relevant to municipal authorities responsible for policy implementation. Policymakers can utilize the insights on displacement to revisit and adapt the new housing policy objectives, ensuring they accurately consider the impacts of anticipated neighborhood changes and making the policy more responsive to the needs of vulnerable groups.

Moreover, the design guidelines developed through this study can assist urban planners and architects in structuring developments in a way that minimizes displacement. They encourage designers to use a thoughtful design approach while adapting the guidelines to specific neighborhood characteristics. In this, the case-study design can be utilized as an example of how to integrate and harmonize different guidelines for displacement in one design, understanding their interrelations. Additionally, consulting this case-study design can create an impulse for designers to navigate design challenges as outlined in the discussion, such as the tension between increasing density and while respecting identity, and how to value the local needs within greater ambitions of city-wide change.

On a societal level, policymakers and urban designers that implement the proposed guidelines, can possibly contribute to creating more equitable urban environments that enable neighborhood change without displacing existing communities. For the residents of Rotterdam, this would mean a housing strategy with an increased resident-centric approach, highly valuing social cohesion among new and established residents, and an increased focus on policy adaptability based on local characteristics, identity, and residents' needs.

Transferability of the results

The transferability of the results is strengthened by the research's reliance on established theories of displacement and social justice, providing a well-founded framework applicable to various contexts beyond the original study. This foundation facilitates the adaptation of findings to other cities and neighborhoods facing similar displacement challenges.

Although this study is specific to Rotterdam, the underlying methodologies used to assess displacement risks within future policy directions can be adapted to evaluate displacement under the policy directions of different cities. While this thesis focuses on social mixing, the framework of changes in the housing stock and demographic composition, and their interrelations with displacement pressures, can be adapted to different housing policies. This is because most housing policies influence the housing stock and demographic composition, even if they do not directly encourage social mixing. However, the relevance of this research for other cities would be significantly increased if their housing policies were based on social mixing, as the proposed guidelines for an enhanced social mix would be more directly applicable.

Within Rotterdam, the transferability of the results is quite strong, as the Tweebosbuurt case study embodies characteristics typical of NPRZ-areas and reflects a development strategy that the municipality frequently applies to such neighborhoods. This validates the applicability of the guidelines in similar locations. Although these neighborhood changes were initially planned under the old housing policy, the continuation of similar objectives in the new policy, coupled with the ongoing risk of displacement, ensures that these plans remain relevant for future redevelopment projects.

While these findings support the applicability of the guidelines, the results of their implementation are not necessarily generalizable. The final design may vary based on location-specific contexts or decisions made by the designer, but this variability does not diminish the overall effectiveness of the design.

Ethical reflection

This research adheres to TU Delft's guidelines to ensure the ethical integrity of the interviews conducted. Informed consent will be obtained from all participants, clearly outlining their voluntary involvement, the scope of the research, and the use of their contributions. Official consent is secured in cases where quotes from interviews are associated with the personal names of the interviewees. Given that the interviews involve experts in authoritative positions, the focus is predominantly on professional insights rather than personal experiences, thereby minimizing the risk of emotional or psychological harm to participants. A disclaimer is provided that disadvantaged individuals reading this thesis, especially those from the Tweebosbuurt, might experience discomfort through revisiting past injustices mentioned in this research.

While the study primarily addresses issues prevalent within minority groups, any proposed enhancements to Rotterdam's housing policy are intended to benefit society at large. The research recognizes and respects the contrasting objectives in urban redevelopment among different stakeholders. By conducting interviews with diverse groups and developing a design that finds middle ground in conflicting objectives, this research adopts a nuanced approach. Awareness of the different political stances relevant to this thesis will be further elaborated in the reflection.

Given my background in urban design and architecture and my affiliation with the right-to-housing movement, I acknowledge an inherent personal bias towards issues surrounding social housing and urban redevelopment. This bias could potentially influence the interpretation of data and the formulation of guidelines. To counteract this, the methodology incorporates interviews with diverse groups to mitigate the risk of overemphasizing a single perspective. Furthermore, the research employs a systematic approach in analyzing interview data and reviewing literature to minimize subjective interpretations. Throughout the research process, regular feedback sessions with tutors and peer students provide external checks on potential biases, ensuring a balanced and comprehensive analysis.

Lastly, it is relevant to acknowledge the use of AI in enhancing the quality of writing in this thesis in a way that aligns with the principles of academic integrity. Besides improving the grammar and readability of written sections, AI has not facilitated the generation of information or execution of analyses. This ensures that the originality and integrity of my research remain intact, as the core content and interpretations are entirely my own. Additionally, the theories used in this research are fully supported by sources referenced according to APA standards.

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