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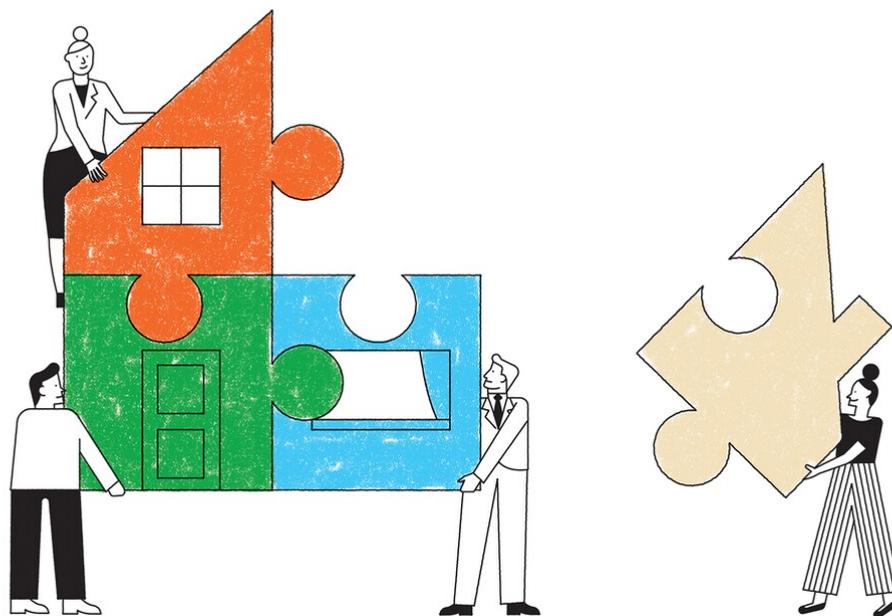
GRADUATION THESIS
AR4MBE100

Transformation of vacant buildings as a solution for affordable housing for the first-time buyers

How has the position of first time buyer changed in the Netherlands since 2015?

ANNEMIJN STEENBRINK | TU DELFT | 2025

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Abstract

The Dutch housing market has faced increasing challenges in balancing supply and demand, particularly for first-time buyers. Rising housing prices, stricter mortgage requirements, and growing student debt have significantly limited homeownership accessibility. This research examines how these financial and structural challenges impact first-time buyers and explores whether the transformation of vacant buildings can serve as a viable solution for affordable housing. Through a combination of literature review, and empirical research, the study analyzes the possibilities of transformation projects and their alignment with first-time buyers' housing preferences. This study provides developers and policymakers with insights into strategies that could enhance housing affordability and accessibility for first-time buyers in the Netherlands.

Contents

Part I
Relevance

The Dutch housing market has faced persistent challenges in balancing supply and demand, particularly affecting first-time buyers. This part introduces the relevance of the research by examining the financial and structural barriers that hinder home-ownership. The problem statement highlights the misalignment between housing supply and the preferences of first-time buyers, leading to the main research question. A summary of relevant literature is presented, addressing key themes such as housing aspirations, financial limitations, and the potential of building transformation in urban development. Finally, the chapter outlines the societal and academic significance of the research, the study's objectives, and the structure of the report.

1   Introduction

For decades, the Dutch housing market has struggled to balance housing demand and supply, and research consistently demonstrates the difficulty of. To achieve balance in the housing market, access to it for first-time buyers is needed and a cycle of movements is necessary to stay in balance. Population mobility is what drives changes in the housing market. When someone moves out, a house becomes available for a new owner, starting a movement in the housing market. This natural cycle is essential, but for first-time buyers to get a fair chance, they need access to affordable homes (Buys, 2005). Right now, that's not always the case, and making real improvements requires bigger structural changes.

Buying a home isn't just about having the money—it's also about stability. People with more financial security, often these people are couples, have an easier time buying their first house. Factors like age and income play a major role in shaping housing choices. Younger people or people with a lower income have different needs than wealthier households. This fits into the career/life cycle model, where housing needs shift as people move through different life stages. Despite the difficulties, many renters in the Netherlands still want to own a home, nearly half (46%) would prefer to buy rather than rent (ABF research, 2024).

Recent trends show the growing inaccessibility of housing for first-time buyers. In 2015, the average price was €235,000. Nowadays, the average home price in the Netherlands increased to €477,000, highlighting a dramatic increase over less than a decade. The is even further increased by student debt, as higher levels of debt reduce the mortgage amount one can obtain (Calcasa, 2024).

Transformed buildings in urban centers present a valuable addition to the existing housing stock. Such buildings often allow for the creation of apartments, which align with the preferences of specific target groups, including first-time buyers. This group often prefer centrally located housing with access to amenities. Their housing needs are less conventional, with variations in size and layout being acceptable. These groups typically seek mid-market housing, with purchase prices up to €450,000. This amount serves as a benchmark based on the National Mortgage Guarantee (NHG), as it falls within the established limit (NHG, 2024). The NHG aims to facilitate homeownership for low- and middle-income households (Boelhouwer and Schiffer, 2015).

However, transforming vacant buildings into housing is not without its challenges (Remøy et al., 2024). Owners of vacant properties and housing developers often face difficulties collaborating, as transformations require a different approach compared to new construction. Financial, legal, technical and policy-related challenges, such as uncertainties about financial feasibility and fears of lengthy procedures, further complicate these projects (Remøy et al., 2024). Also a lot of technical issues based on national regulations and regulations from the municipality play a key role in complicating these projects. While building transformations hold promise as a targeted solution to housing shortages, their success depends on addressing these challenges and fostering effective collaboration among stakeholders.

1.1   Problem statement

In recent years, the Dutch housing crisis has become a national concern, since 2023 it has been one of the most urgent issues in the political debates (Boelhouwer, 2023). This crisis is characterized by an imbalance between housing demand and supply, driven by insufficient new housing developments, fluctuating mortgage rates, and a severe lack of affordable options for first-time buyers (Rekenkamer, 2022). The situation is further intensified by historically low interest rates, which have made borrowing cheaper and more accessible. This increased affordability for buyers has driven up demand for housing, while the supply remains limited. As a result, housing prices have increased, making homeownership increasingly out of reach, especially for those who are newly entering the housing market(de Groot et al., 2021).

A fundamental issue within the housing crisis is the misalignment between the housing supply and the preferences of first-time buyers. Market data indicates that young adults predominantly seek affordable, well-located, and sustainable housing options, yet the current housing supply fails to meet these demands (Maaskant, 2024). The Dutch real estate market remains skewed toward large family homes and high-priced urban apartments, leaving a critical gap in mid-sized, entry-level housing that aligns with

first-time buyers' needs (Boelhouwer and Van der Heijden, 2018). This supply shortage forces young buyers to compromise on location, size, or affordability, reinforcing housing market inefficiencies.

Research further highlights a growing discrepancy between first-time buyers' stated housing aspirations and their actual revealed choices in the market. Many young adults express a strong preference for homeownership in centrally located areas, prioritizing proximity to jobs, amenities, and public transport (Maaskant, 2024). However, rising housing costs, strict mortgage regulations, and financial constraints force them to settle for less desirable housing options. This research differentiates between potential first-time buyers and recent first-time buyers, because potential buyers may hold on to their old stated preferences instead of recent buyers who already know which preferences succeeded and which did not, also called revealed preferences.

This phenomenon is evident in the increasing number of potential and recent first-time buyers engaging in financially risky decision-making, such as overbidding, purchasing properties in lower-quality locations, or accepting higher mortgage burdens than recommended (Viisi, 2021). As illustrated in Figure 1, 82% of potential and recent first-time buyers aged 22–29 take financial risks in purchasing a home, further highlighting the pressures of constrained market conditions.

Figure 1: Irresponsible choices first-time buyers (Viisi, 2021)

A subgroup particularly affected by this misalignment between supply and demand is first-time buyers with student debt. The Dutch loan-based student financing system (leenstelsel) introduced in 2015 has led to a significant rise in student debt levels, with the average graduate now carrying €23,000 in debt (CBS, 2023). Initially, these loans had a 0% interest rate, but recent policy changes have raised the rate to 2.57%, dramatically increasing repayment obligations and further reducing mortgage eligibility (DUO, 2025).

Mortgage lenders in the Netherlands factor in student debt when assessing loan eligibility, directly limiting how much potential and recent first-time buyers can borrow. This financial restriction exacerbates the existing affordability gap, making homeownership unattainable for many young professionals. 44% of highly educated young adults continue to live with their parents due to their inability to afford housing, delaying their transition to independent living and economic self-sufficiency (ABF research, 2024).

To bridge the mismatch between preferences and supply, housing transformations offer a potential solution. The conversion of vacant offices, churches, and industrial buildings into residential units can provide affordable housing while also addressing urban sustainability goals (Boelhouwer and Van der Heijden, 2018). Adaptive reuse projects capitalize on existing structures, reducing the financial and environmental

Reden thuis wonen

44%
22%
20%
10%

● Betaalbaarheid   ● Beschikbaarheid woonruimte
● Geen behoefte   ● Woon in de buurt van opleiding

Enquête | '23-'24
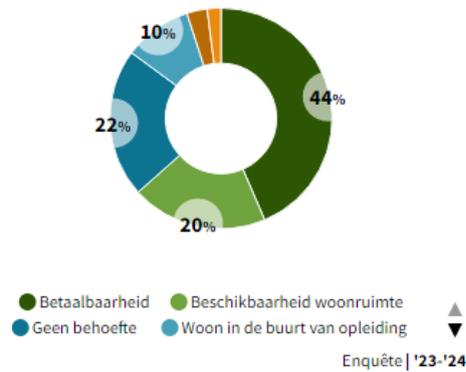
Figure 2: Reasons to stay at home of parents (ABF research, 2024)

costs associated with new developments, making them a cost-effective alternative for entry-level home-ownership (Remøy et al., 2024).

In urban centers such as Amsterdam, Rotterdam, and Utrecht, high demand has left limited space for new housing developments. However, many vacant buildings remain underutilized, despite their potential for residential conversion. Estimates suggest that housing transformations could contribute up to 10-15% of the housing supply, with some projections indicating this could rise to 30% by 2030 if implemented effectively (NRP, 2024). Despite their potential, housing transformations remain an underutilized strategy in current Dutch housing policy. Regulatory hurdles, zoning restrictions, and financing challenges often prevent adaptive reuse from being fully realized as a solution to the affordability crisis. Research is needed to examine the feasibility of transformations for first-time buyers, particularly those affected by financial constraints and student debt.

Previous research has analyzed A; the mismatch between stated and revealed preferences (Maaskant, 2024), B; Whether transforming vacant buildings is an option to create more homes and C; The affordability of first-time buyers, but the specific impact of student debt on the misalignment between demand and supply remains largely unexplored. Additionally, the role of housing transformations in closing the affordability and preferences gap has not been systematically assessed.
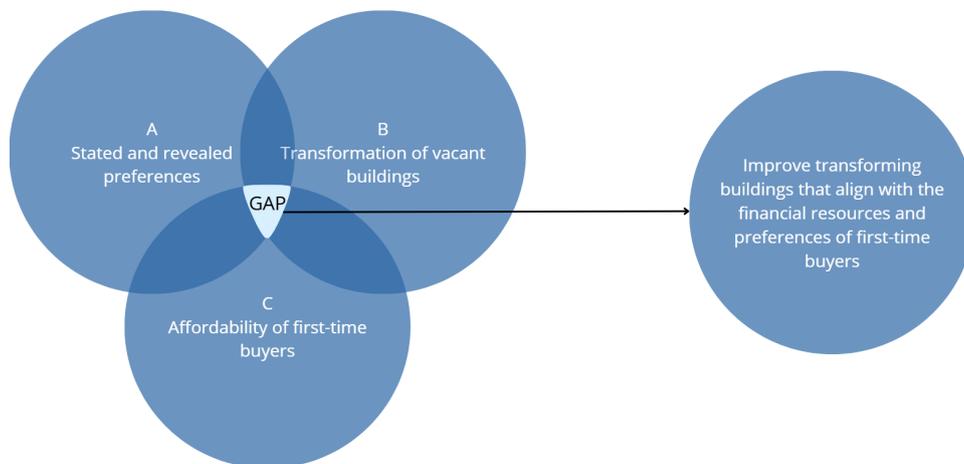
Figure 3: Gap in literature (own work)

So, the problem statement is that currently, the Dutch housing policy prioritizes new construction as

the primary response to the housing crisis, overlooking the potential of vacant building transformations as a cost-effective solution. This approach fails to address the mismatch between housing supply and first-time buyers' preferences, particularly for those burdened with student debt. The discrepancy between aspirations and market realities forces potential and recent buyers into suboptimal housing choices, increasing financial risk-taking. Understanding how transformations can improve affordability and accessibility for this group is essential for developing sustainable, inclusive housing strategies.

This study aims to address these research gaps by investigating: How student debt contributes to the gap between housing preferences and supply. Whether transformations of vacant buildings can provide an affordable solution to homeownership for first-time buyers and how adaptive reuse strategies can align with the financial realities of potential and recent first-time buyers.

1.2 Summary literature research

The literature research is structured into three chapters: life-course trajectories, resources and restrictions, and opportunities and constraints. These sections analyze how first-time buyers navigate the Dutch housing market, the financial and structural barriers they face, and the potential of housing transformations as a solution.

1.2.1 Life-course trajectories

Life course theory suggests that major life transitions play an important role in making housing choices (Mulder and Hooimeijer, 1999). Research shows that most first-time home buyers are young adults between 25 and 30 years old. However, many experience delays in buying a home due to financial and structural barriers (Boelhouwer, 2023). First of all, a significant factor is the Dutch student loan system, which was introduced in 2015 and has led to higher student debt. This affects mortgage eligibility and delays the moment of living independently (StudieschuldMeester, 2024).

Education level also plays a role in patterns of home ownership (CBS, 2023). According to Viisi (2021), people with higher education generally have higher earning potential, but they also have more student debt, which limits their borrowing capacity. On the other hand, people with a practical education tend to start working earlier, allowing them to start saving earlier, even if their initial income is lower. As a result, their path to homeownership often looks different, with academics having to wait longer before they can afford a house.

The number of incomes buying a house is another important factor. Single-income households tend to struggle more with affordability, while dual-income households are much more likely to get a mortgage. Research shows that 44% of highly educated people still live with their parents due to financial barriers and that is increasing over time (Boelhouwer and Van der Heijden, 2018).

The literature further suggests that generational shifts affect housing needs and preferences. Millennials and Generation Z have other preferences than generation X. They favour flexibility and small urban houses with close access to public transport and amenities (McKee et al., 2017). However, the Dutch housing market mainly develops large family homes and high-end apartments, resulting in a mismatch between available housing and the preferences of first-time buyers (Boelhouwer and Van der Heijden, 2018).

1.2.2 Resources and restrictions

The mismatch is also due to the financial resources of first-time buyers, preventing them from entering the housing market. The rising cost of housing has made homeownership increasingly inaccessible, particularly for those with student debt. Between 2015 and 2024, Dutch house prices nearly doubled (NHG, 2024). At the same time, the student loan system was introduced, which reduces mortgage eligibility (StudieschuldMeester, 2024). Research shows that for every additional €1,000 in student loans, borrowing capacity decreases (Mezza et al., 2020), making it difficult for young professionals to afford homes. This has led to an increasing reliance on parental financial support or prolonged renting. Studies show that 82% of first-time buyers aged 22-29 take financial risks (Viisi, 2021). This forces many young

adults to compromise on location, size, or housing quality. As a result, many first-time buyers move to suburban areas where properties are more affordable, despite a preference for centrally located, well-connected housing (Maaskant, 2024). While policies such as the National Mortgage Guarantee (NHG) aim to support first-time buyers, they have had limited impact in keeping housing affordable (Boelhouwer and Schiffer, 2015).

1.2.3 Preferences

Housing preferences have changed due to economic uncertainty and financial risks (Beck, 2000). First-time buyers face increasing barriers to home ownership, requiring them to adjust their preferences based on affordability and financial constraints.

An important differences in housing decisions is between stated and revealed preferences. Stated preferences are what buyers say they want, like living in the city with good transport links. But revealed preferences show what buyers actually buy, which is affected by how much they can afford and what's available (Louviere et al., 2000). Rising house prices and mortgage restrictions force many buyers to compromise on location, size or rent, leading to migration to suburbs, smaller flats or long-term rentals (Helderman and Mulder, 2007).

The biggest concern for 41% of first-time buyers is affordability, followed by housing size (30%), while academics prioritise cost because of their student debt, and practical, educated buyers prefer larger living spaces. Some buyers get help from their parents, which lets them afford a better home, but this makes things more unfair, as 36% of recent buyers have received help and 65% expect to need it. While 34% prefer to live in city centres, affordability often forces them to move to suburbs, which makes commuting costs higher (Hypotheker, 2021). This is also illustrated in the FD (2024), which says that many first-time buyers want earlier concessions on the house than on the location.

A still under-explored solution to the housing crisis is the transformation of vacant buildings into residential units. Research shows that transforming offices, schools and industrial buildings into residential units can help bridge the affordability gap for first-time buyers (Boelhouwer and Van der Heijden, 2018). It can reduce construction costs by 20-30% compared to new construction, making it a viable option for first-time buyers (Remøy et al., 2024).

1.3 Societal and academic relevance

Societal relevance

The housing crisis has broad societal implications, particularly for younger generations seeking to establish themselves in the housing market. first-time buyers, in particular, are a group that faces huge challenges in achieving homeownership. Rising housing prices, combined with the financial burden of student debt, have pushed many young people into long-term renting, this already happened in the U.K. (McKee et al., 2017).

The availability of affordable housing, typically defined as housing that does not consume more than 30% of a household's gross income, is becoming less accessible for first-time buyers (Zairul et al., 2015).

Additionally, (McKee et al., 2017) emphasize that housing consumption is not just a practical issue but a marker of social status. It has a lot of influence on their lifestyle. Research shows that people without a home, feel less safe and secure about their life (Boelhouwer, 2023). A home is strongly connected with social security and has great impact on social circles, employment, number of children and health issues (Myers et al., 2021). Inadequate housing has been connected to less new born children. The Netherlands already has an aging population, but if there are also less children born, the Dutch population will become smaller and smaller. (CBS, 2022). As shown in figure 4 the number of children versus the housing prices since 2016 are almost the opposite direction (CBS, 2022).

This research not only delves into the housing demands of first-time buyers but also makes a contribution to the strategies of transforming of vacant buildings. According to Glumac (2016), the transformation of existing buildings offers several advantages. Firstly, it supports environmental sustainability, as reusing
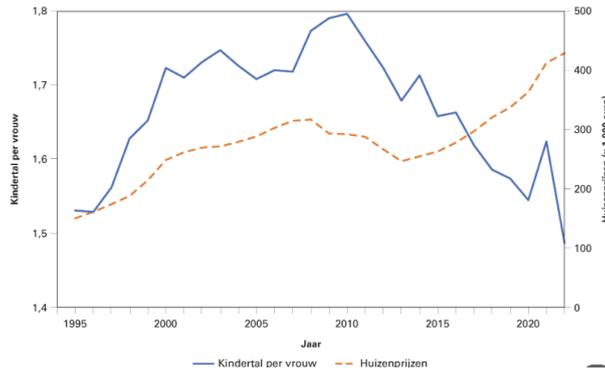
Figure 4: Number of children versus housing prices (CBS, 2022)

buildings reduces the demand for new materials and energy. Secondly, transformation is often more cost-effective compared to new construction, providing an economic benefit. Additionally, transformation helps mitigate urban sprawl by optimizing the use of inner-city resources, thereby preserving greenfield areas.

Socially, redevelopment addresses issues associated with vacant buildings, which can attract criminal activity and increase social insecurity in the area. Moreover, vacancy contributes to the decline of neighborhoods by negatively affecting the street view and overall aesthetic (Glumac, Vasilache, & Lowies, 2016). Consequently, redevelopment serves as a multifaceted solution to housing, economic, availability, and social challenges.

Academic relevance

By focusing on first-time buyers with student debt in the Netherlands and their housing preferences, this research expands the academic literature on housing inequality in the Dutch context. The current generation first-time buyers are particularly vulnerable to the intersection of financial instability and housing market pressures, which exacerbates their exclusion from the housing market. Much of the existing literature on the first-time buyers with student debt has focused on countries such as the United States and the United Kingdom (McKee et al., 2017) (Mezza et al., 2020). These studies have explored issues like housing affordability, the impact of student debt, and the shift from homeownership to renting among young adults. However, the specific dynamics of the Dutch housing market, including the effects of the student loan system, remain unexplored. Research on this generation will provide valuable insights into how social and economic policies can be adjusted to address these inequalities and promote greater housing accessibility.

The research is focused on building transformations as a solution to the Dutch housing crisis. While building transformation has been explored in the literature (Boelhouwer and Van der Heijden, 2018), there is a lack of research, in the Netherlands, on how successful transforming underutilized buildings into affordable housing for first-time buyers is, which also aligns whit their preferences.

By exploring the potential of building transformations, this research bridges the gap between theoretical research and real-world applications. As urbanization continues to drive demand for housing, the need for innovative solutions becomes increasingly urgent. Contributing to the development of such solutions, by providing a roadmap for developers, will help to transform more vacant buildings into affordable housing that matches the demand of the first-time buyers.

1.4 Goals and objectives

To address the Dutch housing problem, this research aims to help developers convert vacant buildings into affordable housing, with a special focus on first-time buyers burdened by student loan debt. These people face problems such as rising house prices, limited mortgage options and financial barriers such as the Dutch student loan system. Analysing the housing preferences of first-time buyers and investigating how regulations have widened the gap between housing supply and demand are the aims of the study. This project seeks to alleviate the housing shortage in a sustainable way while meeting starters' prefer-

ences by exploring innovative options such as transforming vacant buildings.

Eventually, the objective is to provide a roadmap for developers first-time buyers and policymakers offering actionable strategies to increase the share of housing stock derived from building transformations. This roadmap helps to bridge the supply-demand gap, promote an inclusive housing market, and facilitate affordable homeownership for first-time buyers.

1.5   Research questions

The Dutch housing market presents a growing challenge for first-time buyers, particularly those burdened by student debt and therefore limited financial capacity. Rising property prices and systemic barriers have restricted access to affordable housing. The ultimate goal is to provide a roadmap for developers and stakeholders to create affordable housing solutions within the Dutch housing market. The research focuses on exploring the strategies of transformations and aligning them with the specific demands of first-time buyers. The housing demands result from the interplay between the preferences of potential and recent first-time buyers and the supply on the market. There is a gap between stated and revealed preferences, because idealized housing aspirations but do not always translate into actual purchasing behavior due to financial limitations, market conditions, and regulatory constraints (Louviere et al., 2000).

The study is structured around the conceptual model, which outlines the progression from understanding first-time buyers' characteristics to achieving homeownership through targeted housing solutions. Figure 5 below visualizes this relationship, highlighting how building transformations can bridge the gap between stated and revealed preferences.
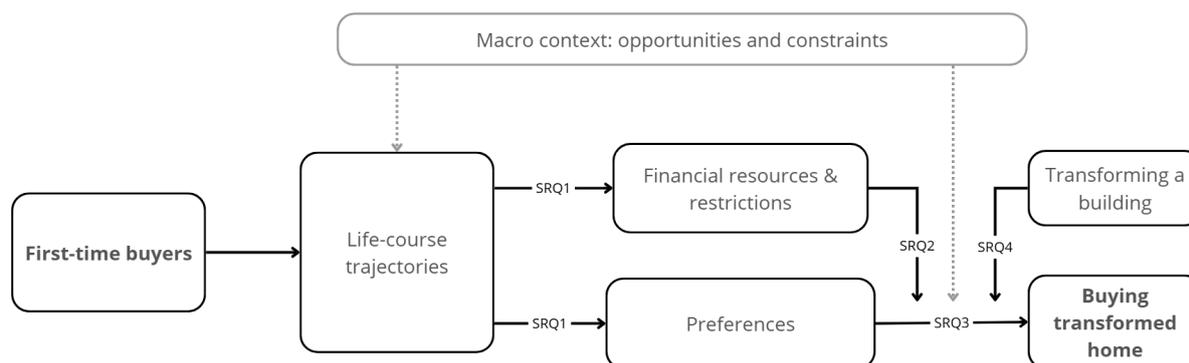
Figure 5: Conceptual model (based on Mulder and Hooijmeijer, 1999)

Following is the problem statement, the main research question is:

"How do life-course trajectories, financial constraints, and preferences shape the accessibility of homeownership for recent and potential first-time buyers, and can housing transformations provide an affordable entry into the Dutch housing market?"

To support the main research question, the following sub-questions have been addressed:

SRQ1 - *"How do life-course trajectories (education, labor market, and household formation) shape the housing aspirations and constraints of recent and potential first-time buyers?"*

This sub-question examines the sociodemographic characteristics of first-time buyers and how life-stage events influence their housing aspirations and constraints. According to Mulder and Hooimeijer (1999), transitions such as completing education, entering the labor market, and forming households are key triggers for housing decisions. However, these trajectories are increasingly delayed or disrupted, affecting first-time buyers' ability to enter the housing market.

This question aims to identify the group and economic characteristics of recent and potential first-time buyers and how their life-course stage influences their homeownership readiness. Understanding these

trajectories is crucial for assessing the challenges and adaptations needed to facilitate homeownership.

SRQ2 - "*How do financial resources, student debt, andhousing constraints affect recent and potential first-time buyers' ability to access homeownership?*"

Affordability is one of the greatest barriers for first-time buyers. This sub-question examines how financial capacity (income, savings, mortgage eligibility), student debt, and housing market constraints interact to influence access to homeownership. Additionally, mortgage regulations in the Netherlands limit borrowing capacity based on income-to-debt ratios, meaning that student debt restricts the amount first-time buyers can borrow. At the same time, structural housing constraints, such as rising property prices and low housing supply, exacerbate affordability issues (NHG, 2024). This sub-question seeks to identify how financial barriers and market conditions interact, shaping first-time buyers' ability to transition into homeownership.

SRQ3 - "*How do stated and revealed preferences influence recent and potential first-time buyers' decision-making in the Dutch housing market?*"

Housing preferences are often shaped by ideal aspirations but must be adjusted due to financial and structural constraints. This sub-question examines the gap between stated and revealed preferences, what buyers desire versus what they can realistically afford. Stated preferences reflect ideal home characteristics such as size, location, and price, while revealed preferences reflect actual purchasing behavior under economic limitations (Louviere et al., 2000).

SRQ4 - "*To what extent can housing transformation projects provide an affordable solution that aligns with the preferences of recent and potential first-time buyers in constrained urban markets?*"

Given the affordability constraints and shifting preferences identified in the previous sub-questions, this sub-question evaluates whether housing transformations can offer a viable pathway to homeownership for recent potential first-time buyers. Housing transformations, such as converting vacant office spaces into residential units, provide a potential solution by offering lower-cost housing alternatives (Boelhouwer and Van der Heijden, 2018). However, these transformations must also align with first-time buyers' preferences in terms of location, size, and flexibility. While transformations may provide affordable housing, they may not meet buyer expectations for location or design flexibility (Remøy et al., 2024). This sub-question explores whether these projects truly address affordability concerns while still offering desirable housing features.
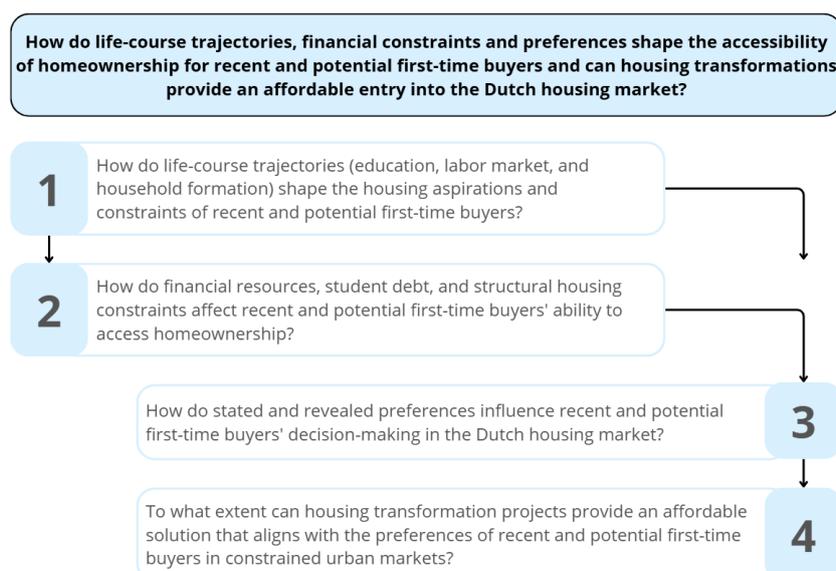
Figure 6: Relation between research questions (own work)

To effectively address the research question, the sub-questions must be structured in a way that allows for a step-by-step progression toward the intended goal. This ensures that all sub-questions are interconnected and mutually dependent, as shown in Figure 6.

1.6 Personal study targets

Through this graduation thesis, I aim to get a lot more knowledge of the Dutch housing market, particularly regarding the housing challenges faced by first-time buyers with student debt. I want to gain insights into how specific policies, like the Dutch student loan system and housing regulations, have shaped the housing opportunities and constraints for this generation. Additionally, I am interested in learning how transformations of vacant buildings could serve as a sustainable solution to the housing crisis, providing affordable options for young people. Eventually, the intention is to develop a road map for assessing the viability of building transformations as affordable housing solutions, taking into account factors such as economic feasibility, regulatory barriers, and the demands of first-time buyers. Engaging with case studies will help me understand the practical challenges and possibilities of implementing such solutions. Moreover, by conducting interviews with experts and stakeholders, I hope to gain a well-rounded perspective on the obstacles and collaborative efforts needed to make building transformations successful and sustainable. This learning process will not only enhance my understanding of the housing market but also equip me with practical skills in research and policy evaluation that will be valuable in my future career.

1.7 Structure of report

This research is structured to systematically explore how the transformation of existing buildings can address the housing demands of first-time buyers in the Netherlands. The structure of the report is explained in Table 1.

Part	Content
1. Introduction	The introduction begins by outlining the context, followed by an explanation of the problem statement. It also addresses the scientific and societal relevance of the research. Building on the problem statement and the literature summary, the research question and corresponding sub-questions are presented. Additionally, the research output is discussed, including the goals, objectives and my personal study targets.
2. Methodology	The research method section outlines the methodology of this study. It begins with an overview of the research design, followed by a detailed explanation of the theoretical and empirical research methods. Subsequently, the processes of data collection, data analysis, and the research plan are discussed. Finally, the section addresses ethical considerations in greater detail including dissemination strategy and target audiences.
3. Desk research	The literature study explores the challenges faced by first-time buyers in the Dutch housing market, emphasizing the impact of student debt and systemic barriers. It examines their housing preferences, focusing on affordability and location, and evaluates building transformations as an innovative solution. Additionally, the study identifies opportunities and challenges in transformation projects, highlighting their potential to address housing shortages while meeting the preferences of first-time buyers.
4. Research output	This part presents the results obtained from qualitative data collection through semi-structured interviews with first-time buyers. The interviews aim to capture the housing preferences, financial constraints, and decision-making processes of first-time buyers, particularly in relation to transformed housing projects. These findings are synthesized into a roadmap, which serves as a strategic guideline for improving the alignment between housing supply and first-time buyer demands. To ensure its applicability, the roadmap is validated through an expert panel consisting of professionals in real estate development. The panel evaluates the proposed framework, identifying potential bottlenecks and refining recommendations to enhance implementation, to ensure that the final roadmap offers a robust and actionable strategy for addressing the affordability challenges faced by first-time buyers in the Dutch housing market.
5. Discussion, conclusion, reflection	This chapter begins with a discussion of the research findings. Following the discussion, the main research question is addressed. The chapter concludes with a reflection on the research process and recommendations for further research.

Table 1: Structure of report

Part II
Methodology

This part II outlines the research design used to explore the alignment between first-time buyers' housing demands and building transformations. Given the complexity of the Dutch housing market and the evolving preferences of first-time buyers, a multimethod qualitative approach is adopted. The research integrates desk research, case studies, and semi-structured interviews to generate a structured road map for developers, aimed at enhancing the affordability and accessibility of transformed housing. The research provides a roadmap, focusing on how building transformations can be optimized to meet first-time buyers' needs.

2 Research design

2.1 Type of research

This research adopts a multimethod qualitative approach, integrating various research methods to address the complexity of the topic. The focus is on exploring the demands and barriers of first-time buyers and the impact of building transformations, primarily through qualitative research methods. This approach is particularly suited for producing detailed, argumentative road map for developers to transform vacant buildings more demand-driven.

The primary objective of this research is to propose a road map to improve the alignment of housing transformation projects with the needs of first-time buyers. This aligns with an operational research approach, as described by (Barendse et al., 2012), aimed at generating practical solutions. The prescriptive nature of the main research question, framed as a "How"-question, explains the goal of developing a new strategy for transforming buildings to address specific housing demands.

"How do life-course trajectories, financial constraints, and preferences shape the accessibility of homeownership for recent and potential first-time buyers, and can housing transformations provide an affordable entry into the Dutch housing market?"

The output of this research provides a road map to a more efficient way of transforming vacant buildings for first-time buyers. The research employs a combination of desk research and empirical research methods, as outlined in Figure 7.

The desk research phase gathers a basic knowledge about the housing demands of first-time buyers, their geographic preferences, and relevant transformation strategies. This involves analyzing literature to identify housing demands, which are consolidated into a framework of housing and geographic preferences and priorities. These findings are put in timelines for each target group to explore the differences in time and needs.
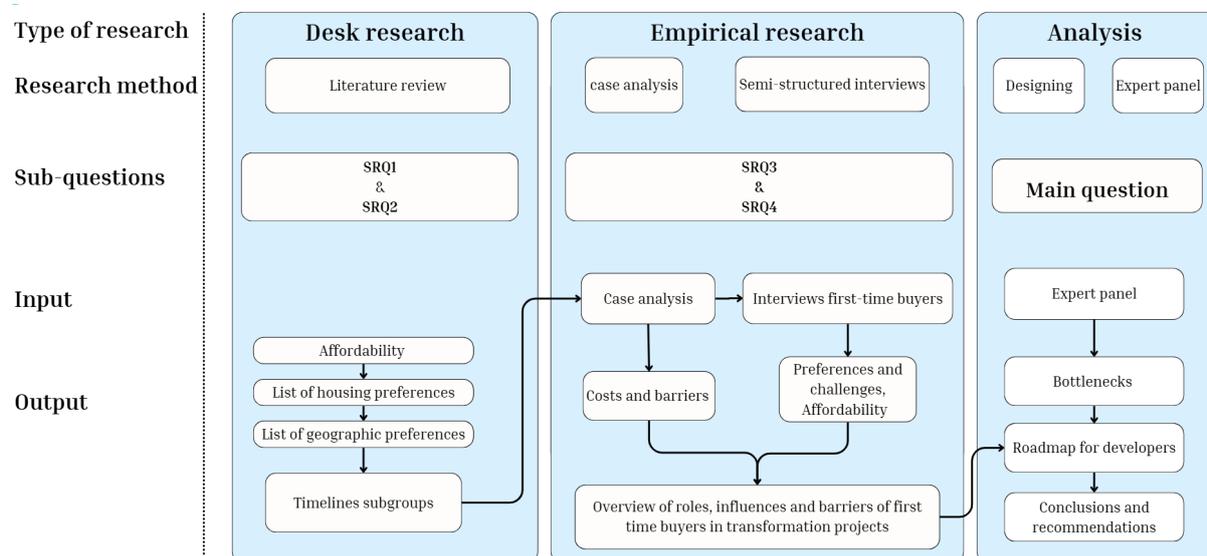
Figure 7: Methodology (own work)

The empirical research phase involves qualitative methods, such as semi-structured interviews with first-time buyers, to explore the practical barriers faced by first-time buyers. The findings are analyzed to identify improved timelines and geographic insights related to building transformations. This phase also involves analyzing case studies to identify in ways how developers currently involve the demands of first-time buyers in their projects.

The final phase integrates findings from the desk and empirical research to design a road map for developers. This is validated through expert panel discussions that help pinpoint bottlenecks and refine the proposed recommendations. This triangulation process ensures a robust and substantiated conclusion, enhancing confidence in the results (Heale and Forbes, 2013).

By combining desk research with empirical methods, the study provides a nuanced understanding of the challenges and opportunities in aligning housing transformations with the needs of first-time buyers, which lead to actionable solutions for developers.

2.1.1 Desk Research

The desk research serves as the base of this study, designed to collect the necessary background information and establish a theoretical framework with timelines of each target group. It primarily involves a literature review to ensure that accurate definitions and relevant concepts are used throughout the research. This approach is vital for understanding the current housing demands of first-time buyers, as well as the barriers they face and the strategies for transforming existing buildings. Desk research enables the identification of gaps in the literature and provides the basis for the empirical research. The literature review forms the backbone of the research, offering a comprehensive understanding of the needs of first-time buyers, housing and geographic preferences, and existing transformation strategies. The findings of the literature review are used to categorize housing preferences and geographic demands, which are critical for addressing the research sub-questions.

One of the key outputs of desk research is the creation of a first list of housing and geographic preferences. This list serves as a guideline for understanding the revealed and stated preferences for first-time buyers when buying a home. The criteria and preferences derived from the literature are tested and refined through interviews and case studies, creating a bridge between theoretical understanding and real-world application.

2.1.2 Empirical Research

The empirical research phase is designed to validate and enhance the findings from desk research by exploring real-world cases and stakeholder perspectives. This phase utilizes a multiple case study approach, semi-structured interviews, and a cross-case analysis to gather actionable insights and improve strategies for transforming vacant buildings and the possibilities for first-time buyers to find an affordable home. Empirical research is conducted entirely within the Dutch context, ensuring that the findings are highly relevant to the specific market.

Multiple case study
The multiple case study involves analyzing transformation projects that are affordable for first-time buyers. Two cases have been selected to enable both the in-depth exploration of individual projects and meaningful cross-case comparisons. These projects are Post, Apeldoorn and Urban Vista in Rijswijk. This approach enhances the validity and reliability of the literature research findings (Groat and Wang, 2013).

The selection of two cases is essential due to the significant variation in land prices across different regions in the Netherlands. Examining projects in different locations allows for a more comprehensive understanding of how regional factors influence affordability, preferences and transformation feasibility. Considering the six-month timeframe of this research, focusing on two cases allows for a detailed analysis and maximizes the information that can be extracted.

The cases are evaluated based on the following criteria:

1. Geographic location – to capture regional market differences.

2. Transformation - It has to be a transformed building that is now used for residential purposes

3. Owner-ocupied homes - houses have to be bought by first-time buyers

4. (Future) residents - the (future) residents have to be potential or recent first-time buyers.

5. Price of house must be under the maximum NHG (470,00) – to compare affordability for first-time buyers.

Post-office, Apeldoorn
The first case is a project of Steenvlinder in Apeldoorn. The transformation of the former post office in Apeldoorn was selected as a case study due to its strong alignment with the focus of this research: addressing the housing needs of first-time buyers through the adaptive reuse of existing buildings. This project, led by Steenvlinder, involves converting a historic municipal monument into 28 self-build homes, offering affordable and customizable housing solutions specifically designed for first-time buyers (Remøy et al., 2024).

The project's relevance lies in its innovative approach to affordable homeownership, where buyers are empowered to tailor their homes according to their personal preferences and financial capacities. This aligns directly with the research's focus on exploring how building transformations can overcome barriers related to affordability, housing preferences, and market accessibility. Its success in engaging future homeowners and integrating sustainable practices makes it a compelling example for understanding how similar transformations can contribute to easing the Dutch housing crisis(Remøy et al., 2024).

Urban Vista, Rijswijk
The Urban Vista project in Rijswijk exemplifies the adaptive reuse of existing structures to address housing needs, particularly for first-time buyers. This initiative involves transforming a former office building into 142 sustainable and modern apartments.

The project's relevance lies in its contribution to increasing the availability of affordable housing options suitable for young professionals and first-time buyers. By repurposing existing office space, the Urban Vista development aligns with broader urban planning objectives to provide a varied range of housing, including affordable and medium-priced homes. This approach not only addresses housing shortages but also promotes sustainable urban development by reducing the need for new construction and utilizing existing infrastructure.

Semi-structured interviews
To gain in-depth insights into the roles and barriers experienced in transformation projects, semi-structured interviews will be conducted with first-time buyers. This flexible yet structured interview format allows participants to freely express their perspectives while ensuring that the research objectives remain central (McIntosh and Morse, 2015). These interviews aim to uncover what the considerations are of first-time buyers during their search for a home and contribute to the development of the final roadmap. Around 6-8 interviews are held per case with a total of 20 interviews from three different locations in the Netherlands. These interviews together will give a well-defined perspective of the preferences and housing choices of first-time buyers. The first two interviews are test interviews, to interpret people's reactions to difficult questions and to check the duration of the interviews.

Participant Selection
To ensure a diverse selection of participants, this study employed purposive sampling, utilizing recruitment through real estate brokers and targeted outreach within personal networks. The selection criteria encompassed two primary groups:

1. Recent first-time buyers: Individuals who have successfully purchased their first owner-occupied home from 2020 onward. This category includes both those who moved directly into homeownership and those who transitioned from renting to owning.

2. Potential first-time buyers: Individuals who are actively engaged in the process of purchasing their first owner-occupied home. This includes participation in activities such as attending open houses or property viewings, consulting with mortgage advisors and real estate agents, and exploring financing options. These behaviors reflect a proactive effort to enter the housing market and demonstrate a genuine commitment to homeownership.

3. All participants need to be residents or future residents of one of the case studies.

For each case, five participants will be interviewed. Participants for the post-office case will be recruited through Steenvlinder, and participants for the Urban Vista project will be approached via DEV_Real Estate. Interviewing five participants per case gives information on the decision-making process, the motivations and the reasoning behind why certain choices are made. Given the limited timeframe of the research, this number is considered realistic.

Additionally, the small scale of the Apeldoorn project (17 homes) requires careful handling of participant privacy. Conducting more interviews could compromise anonymity, making five interviews both practical and ethically sound. All interviews will be conducted anonymously to protect participant identities.

The interviews will follow a semi-structured protocol to ensure consistency and depth in the data collected. The interview protocol is shown in appendix C, the key themes that will be discussed are: Housing Preferences, geographic preferences, housing type, perceptions of transformed buildings and affordability, this topic will be discussed carefully to avoid uncomfortable situations.

Cross-case analysis
The cross-case analysis synthesizes findings across the two cases and interviews to identify patterns, similarities, and differences. This comparative approach allows the researcher to generalize insights and extract lessons learned, which are essential for formulating a well-defined road map.

2.1.3 Design & Analysis

The analysis and design phase integrates findings from desk and empirical research to create an actionable road map for stakeholders involved in housing transformation projects. Firstly, the data of the interviews are analyzed and compared with the literature. After that the road map is designed. Lastly the road map is validated with an expert panel, tom make sure all recommendations are reasonable. This phase combines theoretical insights, empirical findings, and expert feedback to ensure the recommendations are both practical and evidence-based.

Design
The design process culminates into the development of a road map for developers and other stakeholders. This road map serves as a guide for developers and first-time buyers in their search for the ideal home. This home meets the criteria of housing preferences, location, and affordability.The road map is designed as a map that highlights various regions, with housing preferences represented in relation to price.

Validation
The road map and its findings are validated through an expert panel consisting of professionals with significant experience in building transformations. This qualitative method involves presenting the proposed road map and key findings to the panel for feedback and refinement (Döringer, 2021). As part of the expert panel, a lunch session with DEV_ Real Estate will be organized, bringing together professionals from various roles within the company. This diverse group of experts will participate in a discussion where key statements be presented to validate the identified challenges and core aspects of the research. This interactive session will help confirm the relevance of the research findings and provide valuable insights from different professional perspectives, ensuring that the study is both practically applicable and aligned with industry needs.

Ultimate, this phase ensures that this research delivers a well-rounded solution that bridges theoretical insights with practical implementation. The validated road map serves as a guideline for developers to address housing demands and align transformation projects with the needs of first-time buyers, ultimately contributing to the broader goal of improving affordability on the housing market for first-time buyers.

2.2 Research plan

In figure 8 the deliverables per phase of this research are shown. The research will be conducted in several phases, ensuring a logical progression from literature review to empirical analysis, synthesis, and final reporting.

Year weeks	3-feb	10-feb	17-feb	24-feb	3-mrt	10-mrt	17-mrt	24-mrt	31-mrt	7-apr	14-apr	21-apr	28-apr	5-mei	12-mei	19-mei	26-mei	2-jun	9-jun	16-jun	23-jun	30-jun
Education week	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	2.10	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	3.10	3.11
TASK																						
Desk research																						
Preference FTB	■																					
Barriers FTB	■	■																				
Conclusions		■																				
Empirical research																						
Making definitive interview protocol	■	■																				
Analyze cases		■	■																			
Plan and prepare interviews			■	■																		
Semi-structured interview 1					■	■																
Semi-structured interview 2						■	■															
Transcript interviews							■															
Analyzing interviews								■														
Cross-case analysis								■	■													
Answering subquestions 1-2-3									■													
Making protocol for validation road map								■														
Making road map									■													
Draft reflection								■														
										P3												
Synthesis																						
Making definitive protocol for validation road map										■												
Conduct expert panel											■											
Summary and analysis expert panel											■											
Improve road map												■										
Discussion													■									
Conclusion & Recommendations & Limitations													■									
Reflection													■									
Submit P4 report															Submit							
P4 presentation																P4						
Improve final report																	■	■				
Submit final report																					Submit	
Final presentation																						P5

Figure 8: Research plan (own work)

The first phase of the research is dedicated to finding an interesting topic and relevant problem. Then research questions are set up. After the p1 presentation, the research evolves in doing desk research, which will involve an extensive review of existing literature, market reports, and policy documents. This phase aims to identify key preferences among first-time buyers, including location, affordability, and mortgage considerations, while also highlighting the financial, social, and regulatory barriers they encounter. By synthesizing existing knowledge, this phase will form the theoretical foundation for the empirical research. The expected outcomes include a structured literature review and a preliminary understanding of the challenges that First-time buyers face, which will subsequently guide the development of the interview protocol for the empirical phase.

Following the completion of the desk research, the empirical phase involves qualitative data collection through semi-structured interviews. A definitive interview protocol will be developed based on the insights gathered from the literature review. The interviews will be conducted with first-time buyers to gain firsthand insights into their experiences, motivations, and challenges. The collected data will be transcribed and analyzed, employing a cross-case analysis approach to identify recurring patterns and discrepancies. This phase aims to provide answers to the key subquestions of the study, further refining the understanding of the first-time buyer demographic.

Building upon the empirical findings, the third phase focuses on the development of a validation roadmap. This roadmap will synthesize the key findings from both the desk and empirical research phases, presenting a structured framework that addresses the barriers and potential solutions for first-time buyers. To ensure its validity and applicability, an expert panel will be conducted, where industry professionals will evaluate the roadmap and provide critical feedback. The expert insights will be incorporated to refine the roadmap, making it a more robust and practical tool for stakeholders in the housing sector.

The last phase involves synthesizing the findings from the desk research, empirical research, and expert panel validation. A comprehensive analysis of the expert panel discussion will be conducted, leading to the finalization of conclusions, recommendations, and an evaluation of the study's limitations. Additionally, a reflection on the research process will be made. The research findings will be compiled into a final report, which will be submitted as part of the P4 assessment. The findings will also be presented in a formal research presentation, summarizing the key insights and implications of the study. After the p4 presentation, the feedback will be include in the research report. Any necessary improvements will be implemented to enhance the clarity and impact of the findings. The final research report will then be submitted for the P5 assessment, followed by the delivery of a final presentation, summarizing the entire research process and its key conclusions.

2.3 Data plan and ethical considerations

In this research, participant data is utilized to enhance practical insights, necessitating careful consideration of ethical issues. The data management plan can be found in Appendix I: Data Management Plan.
The following types of data are used throughout the study:

- Literature and document analysis

- Documentation from the multiple case studies and cross-case analysis

- Personal information of participants involved in case study interviews and the expert panel

- Notes, recordings, and transcripts from the semi-structured interviews

- Notes, recordings, and a summary from the expert panel

Due to the involvement of human participants during the interviews, all participants are required to sign a consent form before any notes or recordings are collected. The researcher retains full ownership of all interview data. The researcher is also fully responsible for the processing, storage, and sharing of the data during and after the research. To ensure security, the data will be safely stored on the drive provided by TU Delft. The final report will be made publicly accessible through the TU Delft repository.

The well-being of research participants is a priority, and every effort has been made to ensure that participation in the study does not result in any harm. Before their involvement, participants were provided with clear and detailed information about the objectives of the specific research activities they were contributing to. Participants were given the right to decline answering any questions that made them uncomfortable or conflicted with their privacy or ethical principles. To uphold ethical standards, all participant statements and descriptions have been anonymized to prevent identification in the final documents. Participants will also be informed about how their contributions are reflected in the final report.

2.4 Audience of the Research

Developers
Developers are the main audience for this research. The insights and strategies provided can help them evaluate and improve their projects to better meet the demands of first-time buyers. By integrating the action plan into their development process, they can prioritize affordability, align with buyer preferences, and select suitable locations. This not only attracts first-time buyers but also increases the chances of successful sales and maximizes returns on investment. Given their influence in shaping housing supply, developers play a critical role in addressing the housing needs explored in this research.

First-Time Buyers
While first-time buyers can benefit significantly from this research, they are not the primary audience. The road map and action plan offer them guidance in finding homes that match their financial capacity, preferences, and desired locations. The research also enhances their understanding of housing market dynamics, equipping them to make informed decisions. However, the focus remains on encouraging developers to create suitable housing solutions for this group.

Municipalities

Municipalities can apply the principles from this research to inform their housing policies and urban planning strategies. The action plan helps municipalities recognize their role in providing affordable housing solutions for first-time buyers by collaborating with developers and steering projects towards inclusivity, sustainability, and accessibility within their regions.

Part III
Desk research

Part III explains the characteristics of the first-time buyers and their challenges in accessing affordable housing. The analysis is structured around three key aspects: affordability, preferences, and location. Additionally, it examines the role of housing transformations as a potential solution to improve access to affordable homeownership.

3 Life-course trajectories

The Dutch housing market presents significant challenges for first-time buyers, a group that is highly diverse and under immense pressure from economic and social forces. First time buyers are primarily young adults navigating critical life transitions, such as completing their education, starting a career, or forming new households. Understanding the characteristics, preferences, and demands of these buyers is essential for addressing housing market disparities and providing effective support. To structure this chapter 3 and 4, it is based on the theoretical framework of Mulder and Hooimeijer (1999).

3.1 Understanding first-time buyers

The group for this research consists of potential first-time buyers and recent first-time buyers. They are defined as "someone entering the housing market who has purchased a home for the first time or transitioned from renting" (WoON, 2021) but within these two groups different subgroups are made, to specify the different variables. The group is divided into multiple subgroups depending on educational level and number of buyers, all subgroups have a student loan debt, this division is also made by (Mulder and Hooimeijer, 1999), who made the variables, education, labour market, household and housing. It is not yet proven that possession of student loan debt does by itself affect the likelihood of homeownership but individuals who have no (or not anymore) student debt are more probable to be homeowners (Rootliep, 2024). The division between potential and recent first-time buyers is made because they probably have different preferences.
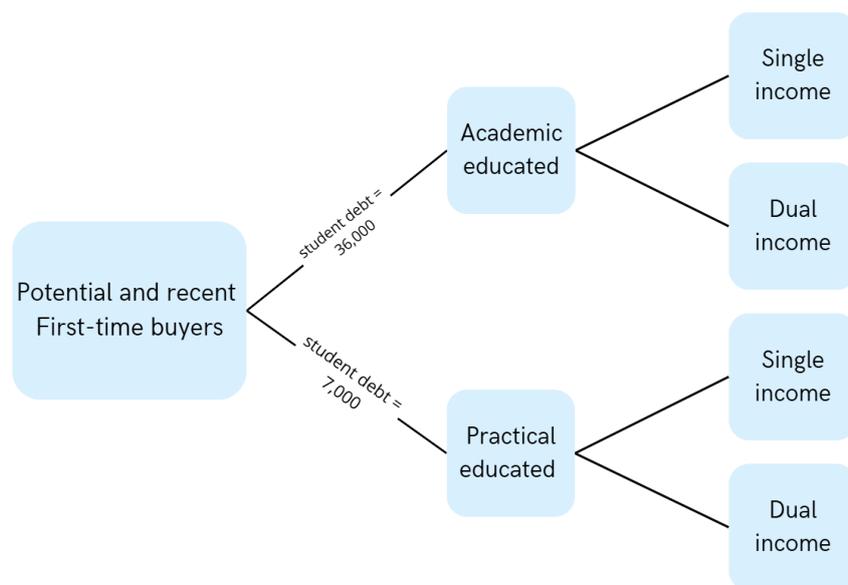

Figure 9: Target groups (own work)

In Figure 9, a distinction is made between four subgroups based on age, education level, and household composition. This research focuses on individuals aged 25-30 who started their studies after 2015, ensuring that participants are part of the same student loan system (leenstelsel) and have faced similar financial conditions when entering the housing market. But also a distinction is made between potential first-time buyers and recent first-time buyers:

- Potential first-time buyers are individuals who are actively searching for a home but have not yet made a purchase. These individuals are still navigating financial barriers, market conditions, and mortgage eligibility constraints.

- Recent first-time buyers are individuals who have successfully purchased a home. This group provides insights into revealed preferences, as their actual home-buying choices may differ from their initial expectations.

Additionally, education level and household composition further divide these subgroups. In the Netherlands, post-secondary education is classified into three main categories:

1. MBO (Middelbaar Beroepsonderwijs) – Secondary vocational education

2. HBO (Hoger Beroepsonderwijs) – Higher professional education

3. WO (Wetenschappelijk Onderwijs) – University-level education

For this research, MBO is classified as practical education, while HBO and WO are categorized as academic education. Within these education levels, a further distinction is made between one-person and two-person households, as household composition significantly influences affordability, mortgage capacity, and housing preferences.

This classification provides a structured framework to compare stated and revealed housing preferences across different groups, ensuring that the findings reflect both aspirations and real market behaviour. The division between academic and practical education is made because research shows that there is a difference in possibilities in the housing market between academic and practical education, as shown in figure 10 (Viisi, 2020). At this moment 74% of the persons with a practical education background think it is impossible to buy a house on their own. However, for persons with an academically educated background, this percentage is 58% (Viisi, 2020). But also because educational background influences current earnings and shapes long-term career prospects, which is critical for securing mortgage approval (Mulder and Hooimeijer, 1999).
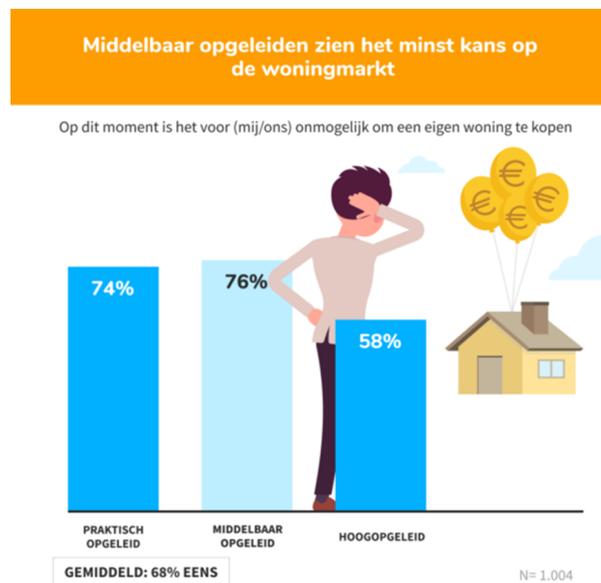

Figure 10: Possibilities first time-buyers based on education level (Viisi, 2020)

3.2 Educational background

Higher education levels generally correlate with better job prospects and higher income potential, allowing graduates to offset student debt burdens over time. Despite this long-term financial advantage, highly educated individuals face initial economic constraints, shaping their early housing choices. Data from Heerink-Martin (2021) indicate that the average starting salary for university graduates is €35,000 per year, depending on industry and sector. This income level significantly impacts mortgage eligibility, with an individual earning €35,000 per year and carrying a student debt of €36,000 being able to borrow a maximum of €132,927, compared to €165,568 without debt (StudieschuldMeester, 2024). For dual-income households, the borrowing capacity increases significantly, reaching €304,355 in cases where neither buyer has student debt (Figure 11).

Conversely, practically educated individuals (MBO graduates) typically earn lower starting salaries, averaging €24,000 per year (Heerink-Martin, 2021). Since MBO graduates complete their studies at a younger age and accumulate less student debt, their borrowing capacity is affected to a lesser extent. On average, MBO graduates carry a student debt of €7,170, leading to a maximum mortgage of €93,000,
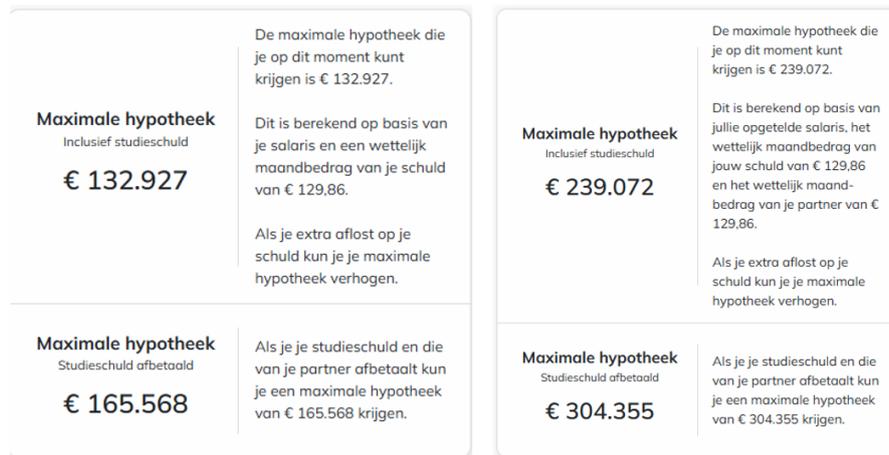
Figure 11: Mortgages 1 or 2 incomes with academic education (StudieschuldMeester, 2024)

compared to €99,501 without debt (StudieschuldMeester, 2024). Similar to academically educated buyers, dual-income households significantly increase mortgage capacity, reaching €201,894 in cases where neither buyer has student debt (Figure 12).
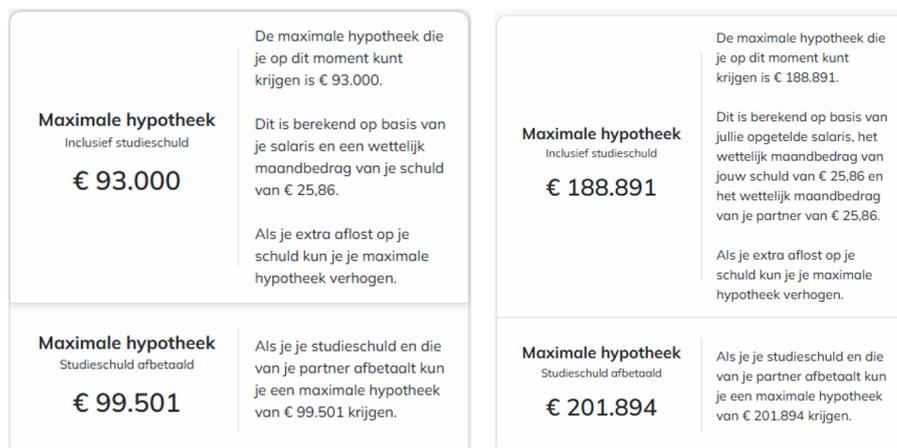

Figure 12: Mortgages 1 or 2 incomes with practical education (StudieschuldMeester, 2024)

These figures highlight that student debt has a greater impact on mortgage capacity for higher-educated individuals, as their borrowing amounts are larger. However, the most decisive factor in purchasing power remains whether a buyer is purchasing alone or with a partner.

3.3 Generational shifts

The transition to homeownership presents significant challenges for young adults, particularly those with student debt. High levels of indebtedness have been shown to delay key life milestones, including marriage, parenthood, and the acquisition of a home (AFM, 2021). Consequently, many young adults extend their tenure in rental accommodations or continue residing with family members to manage financial obligations effectively. The study of first-time buyers' lifestyles is essential for designing residential properties that align with their current and future needs. Prior research has demonstrated that lifestyle values significantly influence housing preferences, with individuals making housing choices based on their personal and socio-economic conditions (Jansen, 2013). However, housing is inherently a long-term asset and must accommodate the evolving preferences of successive generations over time. Given that teenagers currently residing with their parents are likely to become first-time buyers within the next five to ten years, understanding generational trends in housing demand is imperative.

Housing location preferences are strongly influenced by life course stages. The Life Course Theory posits that housing choices are dynamic and evolve in response to critical life transitions, including leaving the parental home, career advancement, marriage, and child-rearing (Mulder and Hooimeijer, 1999). Empirical research suggests that young adults in the early stages of their careers prioritize affordability and proximity to employment centers, resulting in a preference for urban apartments with flexible lease agreements. As individuals progress in their careers and form households, their housing priorities shift toward stability, increased living space, and proximity to educational institutions, leading to suburban or peri-urban relocation (Clark and Dieleman, 1996).

Life Style First-Time Buyers		
Generations	**Characteristics**	**Preferences**
Baby boomers	Homeownership > renting When children leave home → renting	Later in life near amenities and recreational facilities
Gen X	Difficulties saving for homeownership renting > homeownership	Flexibility and fast-paced lifestyle Freedom to move for job opportunities
Millennials	Steepest decline in homeownership Most educated generation	Spending on experiences/travel
Gen Z	Still entering the housing market, shares same values as Millennials	Favor shared economics, goods, spaces Flexibility and sustainability

Table 2: Life style characteristics and preferences of first-time buyers by generation (NAR®, 2024).

Furthermore, studies show a strong connection between life-stage course and housing preferences. Beer and Faulkner (2011) concluded that young, single first-time buyers emphasize accessibility and proximity to lifestyle amenities. In contrast, families place a higher priority on safety, educational facilities, and the long-term investment potential of housing. (Helderman and Mulder, 2007) indicates that increasing home prices and restricted mortgage accessibility have prolonged the duration of rental tenure among young adults and thereby delaying transitions to homeownership. This has resulted in a trend where Millennials and Generation Z members remain in rental apartments in urban areas for extended periods compared to previous generations due to financial constraints.

Generational analysis provides a useful framework for examining variations in housing preferences across different ages (NAR®, 2024). This approach helps to understand changing values and behaviors that shape housing demand over time. Within this framework, four primary generational groups have been identified: the Baby Boomers (1945–1960), Generation X (1961–1980), the Millennials (1981–2000), and Generation Z (2001–2010) (NAR®, 2024). Each generation has its own housing preferences. These preferences have been shaped by the unique economic, social, and technological conditions they experienced while growing up (Jansen, 2013). By analyzing these, developers and policymakers can anticipate shifts in housing demand and align future housing developments with the preferences of future buyers, particularly first-time buyers.

3.4 Single and dual-income households

Single-income buyers, on the other hand, have greater financial difficulties. Their limited financing ability due to having only one source of income frequently limits them to smaller residences or less suitable areas. Because they only have one source of income, they do receive a €15,000 benefit on their mortgage eligibility. However, this group of people is still more vulnerable to rising housing costs and can find it difficult to compete in places with strong competition. Single-income and dual-income households differ significantly within the first-time buyer group. Two-income couples experience financial advantage that enables them to purchase an increased number of houses, including homes in more desired areas. Dual-income households often qualify for higher mortgages due to their combined salaries, which gives them more options in the housing market.

4 Financial resources and restrictions

Housing affordability is a crucial factor of homeownership accessibility, particularly for first-time buyers. Beyond merely having sufficient income, financial stability is essential, especially when purchasing a home with a mortgage. In addition to income levels, personal savings play a significant role in determining a buyer's financial readiness (Mulder and Hooimeijer, 1999). In the case of first-time buyers, affordability for first-time buyers shaped by structural market conditions, such as increasing housing prices, stricter mortgage regulations, and declining real purchasing power. But it changed over generations. Nowadays people want to spend more money on experiences, which lead to less savings (NAR®, 2024).

4.1 Financial resources of first-time buyers

Income remains the primary factor of homeownership eligibility, but it also serves as a major restriction for first-time buyers. Unlike repeat buyers, first-time buyers often lack accumulated equity from a previous home sale and therefore rely heavily on mortgage financing. The concept of affordability has been widely debated in housing research. Stone (2006) introduces the residual income approach, which considers a home affordable if a household can meet essential non-housing expenses after paying for housing costs. Hulchanski (1995) further emphasizes that affordability is not a fixed percentage of income but a dynamic measure, influenced by economic conditions, personal debt levels, and policy regulations.

Family support, such as parental financial assistance, also plays a critical role in homeownership accessibility. However, intergenerational wealth transfer is not available to all households, reinforcing socioeconomic inequalities in the housing market. The Dutch government has sought to limit the impact of financial gifts on homeownership accessibility by eliminating the 'so called' jubelton, a tax-free parental contribution previously used to help children purchase homes.

4.2 Restrictions

First-time buyers are particularly affected by structural market conditions, including rising housing prices, stricter mortgage regulations, and decreasing real purchasing power. The affordability crisis has intensified over the past two decades, forcing young adults to delay homeownership, extend rental tenure, or continue living with family members (AFM, 2021). These market conditions are part of the macro context but in this research, they are included in the restrictions, as they are also restrictions for first-time buyers to enter the market. Next to the market conditions, student loan debt is also forming a restriction, this is not part of the macro context because it depends on own choices, but it is part of the restrictions, so that is why it is important to include this in the financial restrictions of first-time buyers.

4.2.1 Housing shortages

The structural shortage of housing in the Netherlands has been one of the primary restrictions for first-time buyers, exacerbating affordability challenges and limiting access to homeownership. The supply of newly built homes has failed to keep pace with demand, leading to increased competition, rising prices, and prolonged waiting times. According to ABF research (2024), the estimated housing shortage in the Netherlands stood at 390,000 units in 2024 and is expected to persist until at least 2030 unless construction rates significantly increase. The imbalance between supply and demand has resulted in overbidding practices, making it even more difficult for first-time buyers to purchase a home within their financial means (Boelhouwer, 2023).

Urban centers are particularly affected due to high population density, restrictive zoning policies, and limited land availability. According to **?**, 70% of the housing shortage is concentrated in high-demand regions, including the Randstad, where municipalities face delays in permitting and land-use restrictions.

4.2.2 Rising house prices

Over the past decade, rising housing prices have significantly eroded affordability, creating substantial barriers for first-time buyers seeking to enter the housing market. In 2015, the average home price in the Netherlands was €235,000, but by Q2 2024, this figure had surged to €477,000 (NHG, 2024). This

dramatic increase in property values has far outpaced income growth, thereby reducing the purchasing power of young buyers. Additionally, the NHG (2024) defines an affordable home as one priced up to €405,000, yet this threshold remains out of reach for many first-time buyers due to tightened lending requirements, high deposit expectations and their student debt. In effect, what was once considered an attainable price range for middle-income households has now become a financial challenge for many prospective buyers.

A crucial factor exacerbating affordability constraints is the impact of student debt on mortgage eligibility. Research by Mezza et al. (2020) highlights that for every additional €1,000 in student loans, the probability of homeownership decreases by 1-2 percentage points. Given that the average student debt in the Netherlands is approximately €23,000 (CBS, 2023), many young adults face substantial reductions in their borrowing capacity, effectively delaying or even preventing homeownership. This issue is particularly pronounced in urban areas, where high demand and limited housing supply drive prices even further beyond the reach of first-time buyers.

The affordability crisis for first-time buyers is thus characterized by rising home prices, increasing debt burdens, and shifting housing preferences. While affordability is traditionally measured through financial capacity and income-to-price ratios, contemporary housing dynamics suggest that a more nuanced approach is needed, one that incorporates economic constraints, policy interventions, and spatial considerations. Addressing these challenges requires targeted financial support mechanisms, innovative housing solutions, and a recalibration of affordability metrics to align with the realities faced by first-time buyers in today's market.
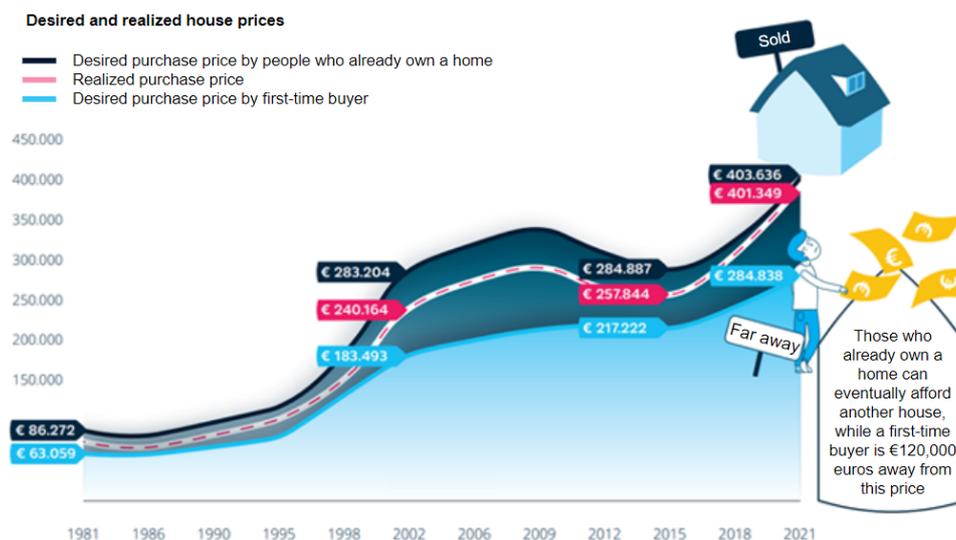

Figure 13: Disparity between desired and actual home purchase prices for first-time homebuyers and movers from 1981 to 2021 (BGL-Wonen, 2023)

To further illustrate the widening affordability gap, Figure 13 visualizes the disparity between desired and actual home purchase prices for first-time buyers and movers from 1981 to 2021 (BGL-Wonen, 2023). The graph clearly demonstrates how actual home prices have consistently outpaced the purchasing power of first-time buyers, particularly in recent years. While movers, who have already built equity, can more easily afford higher-priced homes, first-time buyers face increasing challenges in securing a property within their budget.

The data shows that desired purchase prices of first-time buyers have remained significantly below realized purchase prices, emphasizing the growing mismatch between housing aspirations and market realities. This reinforces the argument that rising housing prices, coupled with tighter lending regulations and increasing student debt, have severely constrained homeownership accessibility for new entrants into the housing market.

Additionally, the graph highlights how price growth has accelerated rapidly since the early 2000s, particularly after 2015, when home values began to rise steeply (BGL-Wonen, 2023). This trend reflects the

broader affordability crisis, necessitating targeted policy interventions, financial support mechanisms, and innovative housing solutions to bridge the affordability gap for first-time buyers.

4.2.3 Impact of student loan debt

In the Netherlands, student loan debt plays a significant role in shaping the financial position of first-time homebuyers, often limiting their ability to secure a mortgage and afford suitable housing. Under Dutch financial regulations, mortgage lenders take student debt into account when calculating borrowing capacity. This means that young adults burdened with loans face tighter restrictions on the amount they can borrow, narrowing their housing options and often excluding them from more desirable or centrally located properties (StudieschuldMeester, 2024). The long-term repayment of student loans reduces disposable income, making it harder to accumulate savings for a down payment and increasing financial stress during the home-buying process.

For many first-time buyers, particularly those with student debt, substantial savings are essential to cover down payments, closing costs, and additional fees. Recent estimates suggest that the average amount needed to purchase a first home is around €46,000 in savings, with dual-income households being better positioned to meet this requirement compared to single-income earners (Jacobs, 2024). However, even dual-income households are feeling the strain, as student debt reduces their joint borrowing capacity and forces compromises in location, property size, or overall quality, this is also shown in Figure 11 and 12. An analysis of homeownership costs in 2021 further illustrates the financial challenges faced by young buyers. Average gross housing expenditures in the Netherlands amounted to €840 per month, with net costs after tax deductions around €700 per month. When compared to an average net household income of €57,300 annually, this results in a homeownership affordability ratio (draagkracht) of 16.5%. However, additional costs such as property taxes, insurance, and utilities increase monthly housing expenses to approximately €925, pushing the affordability ratio to 22.4%.

The interplay between student debt, limited borrowing capacity, and rising housing costs presents a significant challenge for young adults seeking homeownership. Without targeted policy interventions, such as adjusted lending criteria or financial assistance programs, student loan debt will continue to be a barrier for many first-time buyers, impacting not only their ability to purchase homes but also their long-term financial stability and wealth accumulation.

4.3 Conclusion

One potential strategy to improve housing affordability for first-time buyers is the transformation of vacant buildings, such as offices, schools, and industrial sites—into residential housing. Douglas (2006) suggests that adaptive reuse significantly reduces costs compared to new construction, making it a viable affordability solution. Studies indicate that transformed housing units are 20–30% cheaper than newly built properties (Boelhouwer and Van der Heijden, 2018). However, zoning regulations, financing restrictions, and municipal planning barriers continue to limit the potential of housing transformations. Encouraging urban regeneration and repurposing vacant spaces could provide first-time buyers with accessible and affordable homeownership options in high-demand areas.

5 Preferences

5.1 Revealed and stated preferences

The transformation of economic and social structures has fundamentally reshaped housing preferences, shifting away from the certainties of the Fordist industrial society toward an era characterized by individualization and heightened financial risk. This shift, as conceptualized by Beck (2000) in his theory of the risk society, argues that individuals must increasingly navigate uncertain economic and social landscapes without the robust institutional safety nets that characterized earlier periods. The housing market reflects this transformation, as first-time buyers are confronted with an environment where employment precarity, rising housing costs, and declining state support place greater responsibility on individuals to secure stable housing (Giddens, 1991). While this increased autonomy presents opportunities for lifestyle diversification and financial mobility, it simultaneously exposes individuals to greater economic vulnerability, particularly in securing homeownership (Beck, 2000).

For first-time buyers, housing preferences are shaped by a period of profound life-course transitions, including entry into the labor market, the formation of long-term partnerships, and family planning. These life events significantly influence housing choices, as individuals seek dwellings that align with their evolving personal and financial needs (Beer and Faulkner, 2011). Housing preferences during this stage are inherently fluid, shifting in response to income stability, job security, and household composition. Consequently, preferences cannot be viewed as static but must instead be understood as dynamic and subject to external constraints.

A critical framework for analyzing these preferences is the distinction between stated and revealed preferences, which provides insight into the divergence between aspirational housing choices and actual market behavior. Stated preferences refer to the housing characteristics individuals claim to prioritize, often collected through surveys and interviews. These preferences reflect idealized housing aspirations but do not always translate into actual purchasing behavior due to financial limitations, market conditions, and regulatory constraints (Louviere et al., 2000). In contrast, revealed preferences are based on observable decisions made under real-world constraints, providing a more accurate representation of consumer behavior (McFadden, 1974).

Research consistently highlights the discrepancies between stated and revealed preferences in the housing market. First-time buyers often express a desire for urban homeownership, citing proximity to employment hubs, access to public transportation, and neighborhood quality as key priorities. However, rising housing prices and constrained mortgage accessibility force many to make compromises, opting for smaller properties, suburban locations, or prolonged rental tenure (Helderman and Mulder, 2007).

The risk society framework, combined with the stated vs. revealed preference distinction, underscores the complexity of first-time buyers' housing decisions. While aspirations provide valuable insight into market expectations, actual choices are shaped by economic constraints, policy interventions, and structural market conditions. Recognizing these discrepancies is essential for urban planners, policymakers, and developers, ensuring that housing strategies are not only aspirational but also aligned with the financial realities faced by first-time buyers in an increasingly uncertain economic period.

5.2 Housing preferences

The specific housing preferences of first-time buyers vary significantly depending on their age, household composition, and financial capacity, as shown in figure 18. For single buyers under the age of 35, apartments emerge as the preferred choice. Approximately 20% of this group prioritizes apartments, which offer the affordability and compact size they require (WoON, 2021).

The parallel life course trajectory leads to a mismatch between an actual and a preferred residential location or housing situation. The trigger is associated with a preference for a certain new location or type of residence. Such a preference might be anything from very precise to rather vague.
On average, single buyers in this category seek housing that provides 72 square meters of living space. This preference aligns with their limited borrowing capacity and the practicality of apartment living in
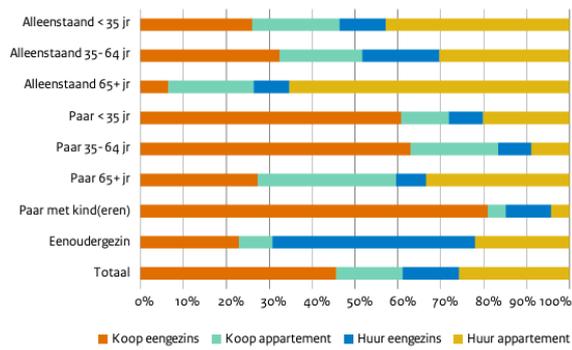
Figure 14: housing preferences (WoON, 2021)

urban areas. For couples under 35, the situation differs markedly. This group generally favors larger homes, with an average requirement of 100 square meters. Their dual-income status significantly increases their borrowing capacity, enabling them to consider properties in higher price brackets. Notably, couples are more likely to pursue homeownership, with 72% indicating a preference for buying rather than renting. This contrasts with single buyers, of whom only 46% express a similar preference(WoON, 2021).

Budget constraints play an important role in shaping these preferences. Single buyers frequently target properties priced between €180,000 and €250,000, with this range accommodating 45% of the group. In contrast, couples exhibit a broader range of interests, with their budgets extending up to €400,000 (ABF research, 2024). This difference underscores the significant financial advantage conferred by dual incomes.
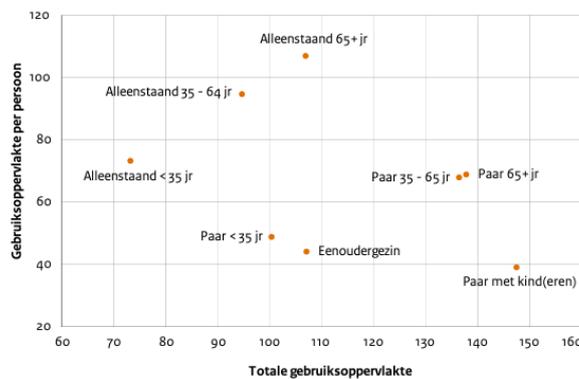
Figure 15: Housing surface (WoON, 2021)

5.3   Location challenges

The high housing prices in major Dutch cities, such as Amsterdam, Rotterdam, and Utrecht, place substantial financial pressure on first-time buyers. Many relocate to suburban areas in search of more affordable housing, yet increased commuting times and transportation costs can erode potential financial benefits. Research indicates that while 34% of first-time buyers initially aspire to live in urban centers, they ultimately settle in less central neighborhoods due to affordability constraints. An additional 13% move to suburban or rural areas where housing is more affordable (Hypotheker, 2021).

Despite these financial barriers, first-time buyers remain willing to pay a premium to secure housing in their preferred locations. Many buyers spend an additional €150 per month to reside in a second-choice

location (e.g., city outskirts), while those seeking prime urban locations are willing to pay an extra €65 per month, shown in Figure 16 (ABF research, 2024).

Figure 16: Willingness to pay more (ABF research, 2024)

The decision to relocate is not solely based on affordability but is also influenced by life course trajectories related to education, employment, and household formation. According to Mulder and Hooimeijer (1999), residential mobility is often triggered by changes in daily activity s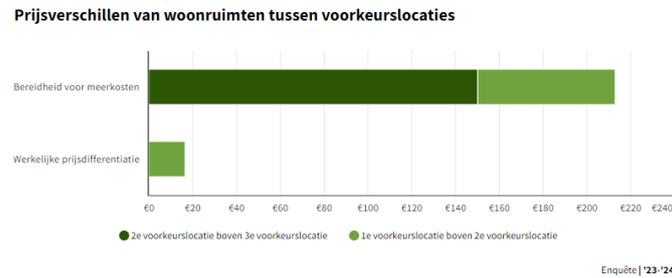pace, such as job relocation or household expansion. Highly educated individuals, particularly those at the beginning of their careers, are more geographically mobile as they pursue specialized employment opportunities.

Research from Fielding (1992) and Lelievre & Bonvalet (1994) supports the concept of "escalator regions", where cities such as London and Paris serve as economic mobility hubs, accelerating career progression for young professionals. This pattern is also observed in the Netherlands, where highly educated first-time buyers prioritize central locations with access to universities, research institutions, and specialized job markets.

As shown in Figure 17, Delft and Nijmegen are particularly popular among first-time buyers, with 60% of transactions involving this group. Other major cities, such as Utrecht and Leiden, also attract significant numbers of first-time buyers. However, in Amsterdam and The Hague, only around 50% of buyers are first-time homeowners, reflecting the affordability challenges in these markets (NVM, 2023).

Figure 17: Most popular cities for first time buyers (NVM, 2023)

Given the high demand for centrally located housing, housing transformations have emerged as a potential affordability solution. Remøy et al. (2024) suggest that repurposing vacant office buildings and commercial spaces into residential housing can provide cost-effective solutions for urban accessibility.

However, the widespread implementation of housing transformations is hindered by restrictive zoning laws and financing challenges. Many municipal regulations do not yet support adaptive reuse policies, slowing down the transition from commercial to residential spaces. Addressing these legal and financial barriers could significantly increase urban housing availability for first-time buyers, reducing reliance on suburban migration and long commutes.

5.4 Adaptation of preferences among first-time buyers

First-time buyers in the Netherlands are heavily influenced by the cost of housing, which they consider the most significant factor in their decision-making process. Surveys, such as in Figure 18 indicate that 41% of respondents rank affordability as their primary concern. This emphasis on cost reflects the economic pressures faced by young adults, many of whom are burdened by student debt and limited earning capacities early in their careers. Housing size, while also important, ranks as a secondary factor, with 30% of buyers prioritizing it. Shared amenities, often highlighted in urban housing developments, hold even less significance for this group, suggesting that practical considerations outweigh communal features (WoON, 2021).
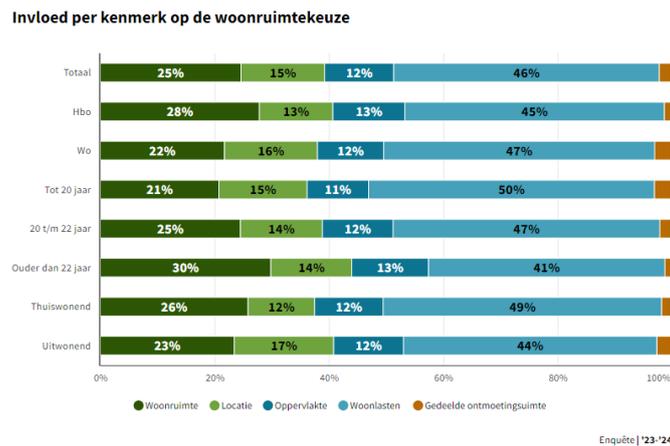

Figure 18: Influence on preferences (ABF research, 2024)

Differences emerge when comparing individuals with WO (academic) education and HBO (higher professional) education. WO graduates tend to place an even greater emphasis on affordability, likely due to the higher levels of student debt typically associated with academic education. Conversely, HBO graduates show a slightly stronger preference for larger housing sizes, reflecting their more immediate focus on practical living needs rather than long-term financial constraints (WoON, 2021). This suggests that there is also a distinction between academic and practical education backgrounds in housing preferences.

A crucial factor influencing first-time buyers' ability to adapt their housing preferences is financial assistance from parents. Research indicates that parental financial support plays a significant role in facilitating homeownership, allowing young buyers to opt for larger properties, better locations, or earlier homeownership than they might otherwise afford. In the Netherlands, 36% of first-time buyers who purchased a home in the past five years required financial assistance, with two-thirds of them receiving support from their parents (Viisi, 2020). Among those planning to buy a home, 65% expect to need additional financial support, and 59% anticipate seeking this assistance from their parents. The extent of financial assistance varies considerably. Research from Viisi (2020) indicates that 22% of first-time buyers receiving parental assistance expect a maximum of €10,000, while 16% anticipate gifts exceeding €30,000.

Parental financial support significantly reduces affordability constraints, enabling some buyers to bypass financial limitations that would otherwise dictate their housing choices. This assistance allows buyers to maintain their initial preferences for location and housing size rather than making the compromises often required by affordability constraints. However, not all families have the financial means to provide such support, leading to widening socioeconomic inequalities in homeownership opportunities.

5.5 Conclusion

First-time buyers in the Netherlands face growing challenges due to rising housing prices, financial constraints, and shifting life-course dynamics. Factors such as education, labor market position, and

household composition significantly influence their housing opportunities, but affordability remains the most pressing issue. With increasing property prices and student debt reducing mortgage eligibility, homeownership has become increasingly unattainable (Mulder and Hooimeijer, 1999).

The distinction between stated and revealed preferences highlights the gap between buyers' aspirational housing choices and market realities. While many prefer urban homeownership and proximity to employment hubs, financial barriers often force them into smaller properties, suburban locations, or prolonged rental tenure (Helderman and Mulder, 2007). Single buyers are particularly disadvantaged, as dual-income households have greater borrowing capacity and access to larger homes (WoON, 2021).

Parental financial support is a key factor in bridging the affordability gap, with 36% of first-time buyers receiving assistance in recent years. While this enables some to secure larger homes or better locations, it also reinforces socioeconomic inequalities, as not all families can provide such support (Viisi, 2020). The Dutch government's elimination of the jubelton aims to reduce these disparities.

Despite financial constraints, location remains a dominant factor in housing decisions. Many first-time buyers are willing to pay a premium to remain in preferred areas, even if it means stretching their budgets (ABF research, 2024). Highly educated professionals tend to be more geographically mobile, as career advancement often depends on proximity to employment hubs (Mulder and Hooimeijer, 1999). Housing transformations, such as repurposing vacant office spaces into residential units, present a potential affordability solution (Remøy et al., 2024). However, restrictive zoning laws and financing challenges continue to limit their effectiveness.

In an increasingly constrained housing market, affordability, financial assistance, and location accessibility shape the opportunities available to first-time buyers. Policy innovations and housing adaptations will be essential to bridging the gap between aspirations and market realities, ensuring that homeownership remains an attainable goal in the evolving Dutch housing landscape.

Literature insights	Interview input	Expected output
1. First-time buyers experience a lot of difficulties on the current housing market	Ask about their experiences in buying their first house	Understanding the challenges faced by first-time buyers in the housing market
2. Affordability is not fixed but shaped by economic and policy constraints	Ask how affordability constraints influenced their final housing decision	Confirmation that affordability is dynamic and depends on multiple factors
3. Rising house prices and mortgage restrictions delay homeownership (life-course trajectories)	Ask about how house prices and mortgage conditions influenced their buying timeline	Understanding of how rising prices impact decision-making and timing
4. Student debt reduces mortgage eligibility and delays first-time buyer entry	Ask interviewee their study background and if student debt impacted their mortgage amount or delayed their search	Evidence of student debt limiting borrowing capacity and delaying homeownership
5. There is a gap between stated and revealed preferences	Ask about adaptions of preferences based on affordability issues	Revealed vs stated preferences differs
6. Location preferences evolve based on life course stages	Ask how life stage (career, family planning) shaped their location preferences	Insight into how career stage and family planning influence housing choice

Figure 19: Literature insights

Part IV
Empirical research

Part IV presents an in-depth analysis of two case studies: Post Apeldoorn and Urban Vista in Rijswijk. These projects have been selected for their relevance to first-time buyers and their focus on transforming vacant buildings into affordable housing solutions. Following the case study analysis, semi-structured interviews will be conducted with first-time buyers from both projects. These interviews aim to uncover the underlying motivations and decision-making processes that influenced their housing choices. By integrating these insights with the case study findings, this research seeks to identify key factors that impact housing preferences and transformation feasibility.

The collected data will serve as the foundation for developing a road map that provides practical guidelines for developers looking to align future building transformations with the needs of first-time buyers.

6 Case study

6.1 Case study overview

For this case study, projects have been selected based on specific criteria to ensure relevance and comparability. Given that this research focuses on housing transformations for first-time buyers, it is essential to analyze Dutch transformation projects that align with the study's objectives. The selection criteria include:

Selection Criteria	The Post (Apeldoorn)	Urban Vista (Rijswijk)
Geographic Location	Apeldoorn	Rijswijk
Transformation	Yes	Yes
Owner-ocupied home	Yes (already bought)	Yes (but still in reservation phase)
(Future) Residents	First-time buyers	Frist-time buyers
Price under NHG (€470,000)	Yes	Yes

Table 3: Case Selection criteria

The selected cases are Post Apeldoorn and Urban Vista Rijswijk, both of which demonstrate adaptive reuse strategies to address the growing demand for affordable housing.

01 | Post, Apeldoorn
The Post serves as an example of customizable homeownership, allowing buyers to design and tailor their homes to their financial and personal needs. This project provides valuable insights into how self-build models can enhance affordability while maintaining architectural and historical integrity.

- **Location:** Apeldoorn

- **Transformation:** Conversion of an old post office into 28 self-build homes.

- **Average price:** €200,000

- **Developer:** Steenvlinder

- **Surface:** 30 tot 70 m2

02 | Urban Vista, Rijswijk
Urban Vista represents a large-scale transformation project, emphasizing sustainability and efficient urban reuse. It shows how vacant office spaces can be repurposed into high-density residential housing, making it a key case study for understanding market-driven transformation feasibility and sustainable housing models.

- **Location:** Rijswijk

- **Transformation:** Conversion of a former office building into 122 sustainable apartments.

- **Price:** €281,000

- **Developer:** Elfi

- **Surface:** 33 tot 83 m2

These case studies provide a comparative perspective on different approaches to housing transformations,one focusing on small-scale, self-build customization (Post Apeldoorn) and the other on large-scale, transformation (Urban Vista Rijswijk). Analyzing these projects will offer valuable insights into the effectiveness of various strategies in making housing transformations more accessible to first-time buyers.

6.2   01 | Post, Apeldoorn

6.2.1   Introduction

The transformation of Post Apeldoorn, a former post office located in the city center of Apeldoorn, represents an important case study in the context of housing affordability, adaptive reuse, and self-build housing models. The building has undergone multiple functional shifts, serving as a post office before being repurposed for office spaces and later as a mixed-use development (Remøy et al., 2024). The transition of this municipal monument into 28 self-build apartments aligns with broader urban development trends in the Netherlands, where office and industrial buildings are increasingly converted into residential spaces to address housing shortages (Boelhouwer and Schiffer, 2015). This case study provides an opportunity to examine the financial, architectural, and social dynamics of transformation projects, offering insights into the challenges and opportunities faced by first-time buyers in the housing market.

The Post Apeldoorn project is developed by Steenvlinder, a company specializing in self-build and transformation projects. Their approach emphasizes allowing future residents to control the customization of their homes, ensuring a high degree of personalization and financial flexibility (Steenvlinder, 2024). The architectural design is managed by MN Architecten, who provide guidance on layout configurations and optimization of historic building characteristics.

The Municipality of Apeldoorn plays a critical role in supporting this transformation by facilitating adaptive reuse policies and ensuring that the project aligns with broader urban planning goals. The involvement of local contractors experienced in heritage renovation further ensures that the building's architectural integrity is preserved while adapting it to modern living standards (Gemeente Apeldoorn, 2024). This case provides an opportunity to examine the collaboration in housing transformations, focusing on the roles of municipalities, private developers, and architects in facilitating affordable self-build housing.

6.2.2   Future residents

The target group for Post Apeldoorn consists primarily of first-time buyers, young professionals, and individuals interested in self-build housing. The project's flexibility in housing design and affordability makes it attractive to a diverse group of buyers, including those with limited financial resources who can reduce costs by completing part of the construction themselves. The research will examine buyer profiles to determine how motivations, financial strategies, and housing preferences influence the decision to purchase a self-build transformation instead of a pre-finished home.

Understanding these buyers' decision-making processes will provide insight into how self-build transformations meet the needs of first-time buyers compared to conventional housing models. Furthermore, the participatory nature of the project, where residents and surrounded beighbourhood are involved in decisions, raises questions about the role of buyer engagement in shaping housing satisfaction and affordability. According to Marnix Norder (2024), before the project starts with construction, Steenvlinder follows a participation trajectory, where they are surrounded by neighbors about their housing preferences and the opportunities and constraints of the area. Based on those opinions they start designing and constructing the project. This not only contributes to more houses that match the demand of future residents but also helps find the future residents, which is good for the finances of the developer (Norder, 2024).

6.2.3   Housing characteristics

The Post Apeldoorn project consists of 28 self-build apartments, with unit sizes ranging from 30 to 70 square meters. Initially, the development plan aimed to create larger apartments, but due to rising interest rates and shifting market conditions, the project was adjusted to smaller, more affordable units, making homeownership more accessible for first-time buyers (Remøy et al., 2024).

The project follows a casco (shell) delivery model, where buyers receive a structurally complete but unfinished home, allowing them to customize their interiors based on financial capacity and personal

preferences. This model provides future homeowners with flexibility in design and affordability, as buyers can minimize costs by opting for a basic finish or invest in high-end materials and layout modifications. The concept of self-build housing introduces an opportunity to explore how affordability constraints influence customization decisions, and whether self-build options offer financial advantages compared to traditional housing developments.
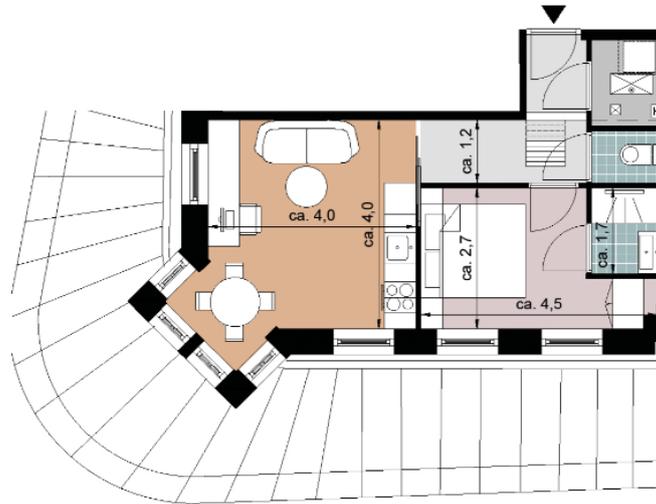

Figure 20: Floor map the Post

6.2.4 Affordability

Affordability remains a central theme in this case study, as the project aims to provide housing solutions for first-time buyers within a challenging economic climate. The shift from larger to smaller units reflects a strategic response to high financing costs, demonstrating how real estate developers adjust to market conditions to ensure project feasibility (Mulder and Hooimeijer, 1999). The apartments are priced within the ranged of € 195,000.- and 275,000.- Additionally, Steenvlinder offers a rent-to-own model, allowing residents to rent a unit with the option to purchase it later, further increasing accessibility for buyers with limited financial means.

The financial structure of this transformation aligns with broader discussions on affordable housing solutions, particularly in the context of rising mortgage rates and stricter lending policies. This case provides an opportunity to examine how self-build transformations compare to traditional already-finished projects in terms of cost-effectiveness and whether alternative financing mechanisms (e.g., rent-to-own models) contribute to greater homeownership accessibility for first-time buyers.

6.2.5 Location

Post Apeldoorn is situated in the city center of Apeldoorn, offering immediate access to shops, restaurants, and public transportation. The central location enhances the project's appeal to young professionals, who often prioritize accessibility over housing size (FD, 2024). However, high urban housing demand and affordability challenges create barriers for first-time buyers.

This research will examine how location preferences influence housing choices and whether buyers are willing to prioritize proximity to amenities over affordability and customization flexibility. The case study aligns with life-course housing preferences, as young professionals tend to favor central locations with strong employment and social infrastructure links (Mulder and Hooimeijer, 1999)

6.2.6 Conclusion

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6.3   02 | The Urban Vista, Rijswijk

6.3.1   Introduction

The Urban Vista project in Rijswijk is a large-scale transformation project, turning three former office buildings into modern residential towers. This project exemplifies the increasing trend of repurposing commercial real estate to meet the growing demand for affordable housing, particularly for first-time buyers and young professionals. The transformation includes 122 owner-occupied apartments located in the "New York" residential tower, while the other two towers, "Rio de Janeiro" and "Sydney," consist of rental units.

The development aligns with contemporary urban housing strategies that prioritize accessibility, affordability, and sustainability. The project is strategically located between The Hague and Delft, with excellent public transport connections and local amenities. The adaptive reuse of these office spaces into housing aligns with municipal goals to revitalize underutilized urban areas and increase housing stock without requiring large-scale new construction.

6.3.2   Future residents

Urban Vista mainly developed for small households, such as first-time buyers and young professionals. The development offers two- and three-room apartments, providing suitable options for singles and couples who just started working. The affordability of the units, combined with financial benefits such as eligibility for the National Mortgage Guarantee (NHG), makes it an attractive choice for first-time buyers. The target group for this development consists of individuals who prioritize urban living, connectivity, and modern amenities.

Its proximity to public transport and commercial areas caters to professionals working in The Hague, Delft, and Rotterdam. However, at this stage, residents' housing preferences remain partially aspirational (stated preferences), as they have not yet moved into their homes, at the moment of interviewing them. So the buyers have not yet fully committed, meaning they could still withdraw from their purchase if financial constraints arise. This leaves room for adjustments in their final housing choices, making their current preferences subject to change.

6.3.3   Housing characteristics

The Urban Vista project offers different kind of apartment types, ranging in size from approximately 33 m to 83 m. The units are designed to maximize space efficiency, featuring modern kitchens, private storage areas, and access to shared amenities such as a rooftop terrace. The majority of the units are two-room apartments, with a limited number of three-room options available. In Figure 21 is a two-room apartment shown, which would be perfect for a one or two person household.

One of the biggest advantages of this project is that the apartments are delivered move-in ready, which eliminates the extra costs associated with construction or extensive renovations, what is the case in Apeldoorn. This aspect lowers the financial burden on first-time buyers.

6.3.4   Affordability

Urban Vista positions itself as a financially accessible housing project, with prices starting at approximately €210,000 and remaining below €385,000. This makes all owner-occupied units eligible for NHG, providing an additional layer of financial security for buyers. The project also offers energy-efficient homes with A+ and A++ energy labels, potentially leading to lower mortgage rates due to sustainability incentives.

A significant affordability advantage of this project is the immediate availability of units. Unlike new construction projects where buyers often face prolonged waiting periods and interim housing costs, buyers at Urban Vista can move in immediately upon purchase, avoiding double monthly expenses.

Figure 21: Floor map, apartment Urban Vista

6.3.5 Location

Urban Vista is situated in Rijswijk, a strategically located city between The Hague and Delft. The development benefits from direct access to Rijswijk train station, providing fast connections to The Hague, Rotterdam, Amsterdam, and Leiden. Additionally, major highways (A4, A12, and A13) ensure easy accessibility for car owners.

The project is located near Oud Rijswijk, a lively neighborhood with shops, restaurants, and cafes, creating an appealing environment for urban dwellers. Furthermore, it is near green spaces such as Park Overvoorde and Rijswijkse Bos, offering residents a balance between urban convenience and outdoor recreation.

Urban Vista contributes to the broader redevelopment of the Plaspoelpolder district, where approximately 1,900 new homes are planned, with a focus on housing for students, young professionals, and small households. The project is thus positioned within a long-term urban regeneration strategy aimed at revitalizing underutilized areas.

6.3.6 Conclusion

Urban Vista represents a modern and financially accessible transformation project tailored to the needs of first-time buyers. By repurposing former office buildings into residential apartments, the development contributes to sustainable urban growth while addressing housing shortages. Its affordability, strategic location, and direct availability position it as a valuable case study for examining how adaptive reuse can enhance housing accessibility for first-time buyers in the Netherlands.

6.4   03 | Vredeskerk, Venray

7 Reflection

1. Topic
During my research on housing transformations for first-time buyers, I aimed to explore how vacant buildings can be repurposed to create affordable and accessible housing solutions. My interest in this topic stemmed from the growing housing crisis in the Netherlands, where young professionals face increasing difficulties in finding a suitable home. Throughout the research, I focused on how life-course trajectories, financial constraints, and housing preferences shape first-time buyers' accessibility to homeownership.

2. Relevance
The Dutch housing market is undergoing significant shifts, with affordability challenges becoming a critical issue for first-time buyers. While many studies have examined the housing crisis, most focus on new housing developments rather than the potential of adaptive reuse. My research bridges this gap by investigating how transformations of existing buildings can provide an alternative possibility to homeownership.

One of the challenges was navigating the complexity of first-time buyers' preferences. Preferences are not static; they evolve over time due to financial circumstances, job stability, and household composition. The distinction between stated and revealed preferences was particularly insightful, as it highlighted the discrepancy between what buyers want and what they can actually afford. At times, I struggled to narrow down the scope of my research, as there were many interconnected factors influencing the housing market.

3. Product
Initially, I thought i could do a lot more than was realistic within in my research scope. However, as I progressed, I realized that defining all aspects in detail would require a much broader study.

4. Method
The research design was multi-method qualitative, combining desk research, case studies, and semi-structured interviews. Initially, I faced challenges in structuring my research process, particularly in balancing the methodology. One of the biggest lessons was to first work out a structured plan before starting the research.

5. Process
I faced difficulties in managing time effectively, particularly when balancing literature review, interviews, and case study analysis. Learning to prioritize tasks and set realistic goals was essential in ensuring the research remained focused and achievable. The individual nature of the research process was sometimes challenging, but the guidance from my mentors and discussions with fellow students helped me stay on track.

A   Data management plan

Plan Overview

A Data Management Plan created using DMPonline

Title: Master's thesis - Annemijn Steenbrink - Transformation of vacant buildings as a solution for affordable housing for the first time buyers

Creator: Annemijn Steenbrink

Affiliation: Delft University of Technology

Funder: Delft University of Technology

Template: TU Delft Data Management Plan template (2021)

Project abstract:

This thesis explores the Dutch housing crisis with a focus on first time buyers, burdened by student debt, who face growing barriers to homeownership. Since the introduction of the student loan system in 2015, this group has experienced increased financial strain, making affordable housing largely inaccessible. The imbalance between housing supply and demand, driven by rising prices and policy changes, further exacerbates these challenges. This research examines whether transforming vacant buildings into affordable housing can be a viable solution. Through a mixed-methods approach, including a literature review and case studies, this study investigates the housing demands of starters, the impact of policy on accessibility, and the viability of building transformations. By understanding the preferences and constraints of first time buyers, this study aims to inform policies and strategies that support affordable housing solutions. Ultimately, the findings provide actionable insights into using building transformations to bridge the housing gap, stimulate a more inclusive housing market for first time buyers in the Netherlands.

ID: 166009

Start date: 01-09-2024

End date: 04-07-2025

Last modified: 14-01-2025

Master's thesis - Annemijn Steenbrink - Transformation of vacant buildings as a solution for affordable housing for the first time buyers

0. Administrative questions

1. Name of data management support staff consulted during the preparation of this plan.

My faculty data steward, Janine Strandberg, has reviewed this DMP on [date].

2. Date of consultation with support staff.

2024-12-05

I. Data description and collection or re-use of existing data

3. Provide a general description of the type of data you will be working with, including any re-used data:

Type of data	File format(s)	How will data be collected (for re-used data: source and terms of use)?	Purpose of processing	Storage location	Who will have access to the data
Anonymised data on Age, occupation, housing preferences of first time buyers in the 2 municipalities of case studies	.mxf files	Audiorecording the interviews with an iphone Semi-structured interviews with first-time homebuyers	To understand the differences in housing preferenes between different types of first-time buyers answer SRQ 1 and 2	temporarily saved on my iphone. After that the transcript will be added to the thesis.	Annemijn Steenbrink (Researcher) M.E.A. Haffner (1e supervisor) G.A. van Bortel (2e supervisor)
affordability and housing preferences	.csv files	Online survey	To collect the affordability of the respondents and their occupation to make appropriate correlations answers SRQ 1, 2, 3	Personal laopt	Annemijn Steenbrink (Researcher) M.E.A. Haffner (1e supervisor) G.A. van Bortel (2e supervisor)
Documentation from transformation projects.	.csv files	Case Studies Post, Apeldoorn (via Steenvlinder) and Zoudtmanstraat, The Hague (via DEV_ real estate)	SRQ3 ,4	Personal laptop	DEV_ real estate Annemijn Steenbrink (Researcher) M.E.A. Haffner (1e supervisor) G.A. van Bortel (2e supervisor)
Feedback from experts in housing transformation and urban planning.	.csv files	Expert Panels	Main question	Personal laptop	DEV_ real estate Annemijn Steenbrink (Researcher) M.E.A. Haffner (1e supervisor) G.A. van Bortel (2e supervisor)

4. How much data storage will you require during the project lifetime?

- < 250 GB

II. Documentation and data quality

5. What documentation will accompany data?

- Other - explain below
- Data dictionary explaining the variables used
- README file or other documentation explaining how data is organised
- Methodology of data collection

The dataset will not be shared in a data repository, but the methodology of data collection will be explained in the MSc thesis, which is made available in the TU Delft Education repository

III. Storage and backup during research process

6. Where will the data (and code, if applicable) be stored and backed-up during the project lifetime?

- OneDrive
- Another storage system - please explain below, including provided security measures

Personal laptop. The retention period will be one year.

Interview data will be stored in separate folders, and within the interview folder, there are separate folders for audio-recordings. Informed consent forms and contact information are encrypted separately from research data to minimise risk of re-identification.

External recording device: Used as a temporary storage location for recorded on-site interviews. Interviews will be deleted from device as soon as they are moved to OneDrive.

IV. Legal and ethical requirements, codes of conduct

7. Does your research involve human subjects or 3rd party datasets collected from human participants?

- Yes

8A. Will you work with personal data? (information about an identified or identifiable natural person)

If you are not sure which option to select, first ask your Faculty Data Steward for advice. You can also check with the privacy website . If you would like to contact the privacy team: privacy-tud@tudelft.nl, please bring your DMP.

- Yes

8B. Will you work with any other types of confidential or classified data or code as listed below? (tick all that apply)

If you are not sure which option to select, ask your Faculty Data Steward for advice.

- No, I will not work with any confidential or classified data/code

9. How will ownership of the data and intellectual property rights to the data be managed?

For projects involving commercially-sensitive research or research involving third parties, seek advice of your Faculty Contract Manager when answering this question. If this is not the case, you can use the example below.

If no confidential information:
The datasets underlying the published papers will be publicly released following the TU Delft Research Data Framework Policy. During the active phase of research, the project leader from TU Delft will oversee the access rights to data (and other outputs), as well as any requests for access from external parties. They will be released publicly no later than at the time of publication of corresponding research papers.

10. Which personal data will you process? Tick all that apply

- Photographs, video materials, performance appraisals or student results
- Names and addresses
- Data collected in Informed Consent form (names and email addresses)
- Signed consent forms
- Gender, date of birth and/or age
- Email addresses and/or other addresses for digital communication

11. Please list the categories of data subjects

first time buyers in Apeldoorn and The Hague, who already bought a home.
expert panel: different experts within the company of DEV_ real estate

12. Will you be sharing personal data with individuals/organisations outside of the EEA (European Economic Area)?

- No

15. What is the legal ground for personal data processing?

- Informed consent

16. Please describe the informed consent procedure you will follow:

The HREC informed consent guide and template will be used to create the informed consent forms for the interviewees (template 2 in the HREC guide). For the anonymous surveys, an Opening Statement (template 1 in the HREC guide) will be used in place of the explicit Informed Consent form.

17. Where will you store the signed consent forms?

- Same storage solutions as explained in question 6

18. Does the processing of the personal data result in a high risk to the data subjects?

If the processing of the personal data results in a high risk to the data subjects, it is required to perform a [Data Protection Impact Assessment (DPIA).](#) In order to determine if there is a high risk for the data subjects, please check if any of the options below that are applicable to the processing of the personal data during your research (check all that apply).
If two or more of the options listed below apply, you will have to [complete the DPIA](#). Please get in touch with the privacy team: privacy-tud@tudelft.nl to receive support with DPIA.
If only one of the options listed below applies, your project might need a DPIA. Please get in touch with the privacy team: privacy-tud@tudelft.nl to get advice as to whether DPIA is necessary.
If you have any additional comments, please add them in the box below.

- Sensitive personal data
- None of the above applies

I want to ask about their affordability, if they agree with it. I am also going to get information about affordability via a survey but it could contain sensitive personal data.

22. What will happen with personal research data after the end of the research project?

- Anonymised or aggregated data will be shared with others
- Personal research data will be destroyed after the end of the research project

V. Data sharing and long-term preservation

27. Apart from personal data mentioned in question 22, will any other data be publicly shared?

- I do not work with any data other than personal data

29. How will you share research data (and code), including the one mentioned in question 22?

- My data will be shared in a different way - please explain below

Anonymised data collected during the project will be included in the body and appendix of the MSc thesis, made available in the TU Delft Educational repository.

30. How much of your data will be shared in a research data repository?

- < 100 GB

31. When will the data (or code) be shared?

- At the end of the research project

The thesis is made available in the TU Delft Education repository at the end of the graduation project. Research data are only shared within the thesis.

32. Under what licence will be the data/code released?

- Other - Please explain

Research data are only shared within the MSc thesis, which is automatically placed under copyright in the Education repository.

VI. Data management responsibilities and resources

33. Is TU Delft the lead institution for this project?

- Yes, the only institution involved

34. If you leave TU Delft (or are unavailable), who is going to be responsible for the data resulting from this project?

Thesis supervisor, Marietta Haffner, of Management in the Built Environmentl

35. What resources (for example financial and time) will be dedicated to data management and ensuring that data will be FAIR (Findable, Accessible, Interoperable, Re-usable)?

Research data are only shared within the MSc thesis: no additional resources are required.

B Human research ethics checklist for human research

Delft University of Technology
HUMAN RESEARCH ETHICS
CHECKLIST FOR HUMAN RESEARCH
(Version January 2022)

IMPORTANT NOTES ON PREPARING THIS CHECKLIST

1. An HREC application should be submitted for every research study that involves human participants (as Research Subjects) carried out by TU Delft researchers
2. Your HREC application should be submitted and approved **before** potential participants are approached to take part in your study
3. All submissions from Master's Students for their research thesis need approval from the relevant Responsible Researcher
4. The Responsible Researcher must indicate their approval of the completeness and quality of the submission by signing and dating this form OR by providing approval to the corresponding researcher via email (included as a PDF with the full HREC submission)
5. There are various aspects of human research compliance which fall outside of the remit of the HREC, but which must be in place to obtain HREC approval. These often require input from internal or external experts such as Faculty Data Stewards, Faculty HSE advisors, the TU Delft Privacy Team or external Medical research partners.
6. You can find detailed guidance on completing your HREC application here
7. Please note that incomplete submissions (whether in terms of documentation or the information provided therein) will be returned for completion **prior to any assessment**
8. If you have any feedback on any aspect of the HREC approval tools and/or process you can leave your comments here

I.   Applicant Information

PROJECT TITLE:	**Transformation of vacant buildings as a solution for affordable housing for the first time buyers**
Research period: *Over what period of time will this specific part of the research take place*	**Sept 2024 – juli 2025**
Faculty:	**Architecture, Urbanism and Building Sciences**
Department:	**Management in the Built Environment**
Type of the research project: *(Bachelor's, Master's, DreamTeam, PhD, PostDoc, Senior Researcher, Organisational etc.)*	**Master's thesis**
Funder of research: *(EU, NWO, TUD, other – in which case please elaborate)*	**TUD**
Name of Corresponding Researcher: *(If different from the Responsible Researcher)*	**Annemijn Steenbrink**
E-mail Corresponding Researcher: *(If different from the Responsible Researcher)*	**a.j.steenbrink@student.tudelft.nl**
Position of Corresponding Researcher: *(Masters, DreamTeam, PhD, PostDoc, Assistant/ Associate/ Full Professor)*	**Masters**
Name of Responsible Researcher: ***Note:*** *all student work must have a named Responsible Researcher to approve, sign and submit this application*	**Marietta Haffner**
E-mail of Responsible Researcher: *Please ensure that an institutional email address (**no Gmail, Yahoo, etc.**) is used for all project documentation/ communications including Informed Consent materials*	**M.E.A.Haffner@tudelft.nl**
Position of Responsible Researcher : *(PhD, PostDoc, Associate/ Assistant/ Full Professor)*	**Professor**

II.   Research Overview

NOTE: *You can find more guidance on completing this checklist here*

a)   Please summarise your research very briefly (100-200 words)

What are you looking into, who is involved, how many participants there will be, how they will be recruited and what are they expected to do?

Add your text here – (please avoid jargon and abbrevations)
This research consists of desk research and interviews. The desk research will follow a literature study, which will be used to figure out why the housing market has become what it is today. The findings will be used as a foundation for the following phases of the research and to put conclusions of the research in a scientific context. Interviews will be carried out to gain a better understanding about the current housing market and about the decision process for first-time buyers to get more knowledge about their living preferences. Conducting these three interviews with professionals in the field will increase the knowledge I have and can support the research.

b)   **If your application is an additional project** related to an existing approved HREC submission, please provide a brief explanation including the existing relevant HREC submission number/s.

c) **If your application is a simple extension of, or amendment to,** an existing approved HREC submission, you can simply submit an HREC Amendment Form as a submission through LabServant.

III. Risk Assessment and Mitigation Plan

NOTE: You can find more guidance on completing this checklist here

Please complete the following table in full for all points to which your answer is "yes". Bear in mind that the vast majority of projects involving human participants as Research Subjects also involve the collection of **Personally Identifiable Information (PII)** and/or **Personally Identifiable Research Data (PIRD)** which may pose potential risks to participants as detailed in Section G: Data Processing and Privacy below.

To ensure alignment between your risk assessment, data management and what you agree with your Research Subjects you can use the last two columns in the table below to refer to specific points in your Data Management Plan (DMP) and Informed Consent Form (ICF) – **but this is not compulsory**.

It's worth noting that **you're much more likely to need to resubmit your application if you neglect to identify potential risks**, than if you identify a potential risk and demonstrate how you will mitigate it. If necessary, the HREC will always work with you and colleagues in the Privacy Team and Data Management Services to see how, if at all possible, your research can be conducted.

ISSUE	Yes	No	RISK ASSESSMENT – what risks could arise? *Please ensure that you list ALL of the actual risks that could potentially arise – do not simply state whether you consider any such risks are important!*	MITIGATION PLAN – what mitigating steps will you take? *Please ensure that you summarise what actual mitigation measures you will take for each potential risk identified – do not simply state that you will e.g. comply with regulations.*	DMP	ICF
			If YES please complete the Risk Assessment and Mitigation Plan columns below.		*Please provide the relevant reference #*	
A: Partners and collaboration						
1. Will the research be carried out in collaboration with additional organisational partners such as: • One or more collaborating research and/or commercial organisations • Either a research, or a work experience internship provider[1] *[1] If yes, please include the graduation agreement in this application*	x		**In collaboration with DEV_ real estate**		x	
2. Is this research dependent on a Data Transfer or Processing Agreement with a collaborating partner or third party supplier? *If yes please provide a copy of the signed DTA/DPA*		x			x	
3. Has this research been approved by another (external) research ethics committee (e.g.: HREC and/or MREC/METC)? *If yes, please provide a copy of the approval (if possible) and summarise any key points in your Risk Management section below*		x			x	
B: Location						
4. Will the research take place in a country or countries, other than the Netherlands, within the EU?		x			x	

ISSUE	Yes	No	RISK ASSESSMENT – what risks could arise? *Please ensure that you list ALL of the actual risks that could potentially arise – do not simply state whether you consider any such risks are important!*	MITIGATION PLAN – what mitigating steps will you take? *Please ensure that you summarise what actual mitigation measures you will take for each potential risk identified – do not simply state that you will e.g. comply with regulations.*	DMP	ICF
If YES please complete the Risk Assessment and Mitigation Plan columns below.					*Please provide the relevant reference #*	
5. Will the research take place in a country or countries outside the EU?		x			x	
6. Will the research take place in a place/region or of higher risk – including known dangerous locations (in any country) or locations with non-democratic regimes?		x			x	
C: Participants						
7. Will the study involve participants who **may** be vulnerable and possibly (legally) unable to give informed consent? (e.g., children below the legal age for giving consent, people with learning difficulties, people living in care or nursing homes,).		x				
8. Will the study involve participants who **may** be vulnerable under specific circumstances and in specific contexts, such as victims and witnesses of violence, including domestic violence; sex workers; members of minority groups, refugees, irregular migrants or dissidents?		x				
9. Are the participants, outside the context of the research, in a dependent or subordinate position to the investigator (such as own children, own students or employees of either TU Delft and/or a collaborating partner organisation)? *It is essential that you safeguard against possible adverse consequences of this situation (such as allowing a student's failure to participate to your satisfaction to affect your evaluation of their coursework).*		x				
10. Is there a high possibility of re-identification for your participants? (e.g., do they have a very specialist job of which there are only a small number in a given country, are they members of a small community, or employees from a partner company collaborating in the research? Or are they one of only a handful of (expert) participants in the study?		x				
D: Recruiting Participants						
11. Will your participants be recruited through your own, professional, channels such as conference attendance lists, or through specific network/s such as self-help groups		x				
12. Will the participants be recruited or accessed in the longer term by a (legal or customary) gatekeeper? (e.g., an adult professional working with children; a community leader or family member who has this customary role – within or outside the EU; the data producer of a long-term cohort study)		x				
13. Will you be recruiting your participants through a crowd-sourcing service and/or involve a third party data-gathering service, such as a survey platform?		x				

ISSUE	Yes	No	RISK ASSESSMENT – what risks could arise? *Please ensure that you list ALL of the actual risks that could potentially arise – do not simply state whether you consider any such risks are important!*	MITIGATION PLAN – what mitigating steps will you take? *Please ensure that you summarise what actual mitigation measures you will take for each potential risk identified – do not simply state that you will e.g. comply with regulations.*	DMP	ICF
If YES please complete the Risk Assessment and Mitigation Plan columns below.					*Please provide the relevant reference #*	
14. Will you be offering any financial, or other, remuneration to participants, and might this induce or bias participation?		x			x	
E: Subject Matter *Research related to medical questions/health may require special attention. See also the website of the CCMO before contacting the HREC.*						
15. Will your research involve any of the following: • Medical research and/or clinical trials • Invasive sampling and/or medical imaging • Medical and *In Vitro Diagnostic Medical* Devices Research		x			x	
16. Will drugs, placebos, or other substances (e.g., drinks, foods, food or drink constituents, dietary supplements) be administered to the study participants? *If yes see here to determine whether medical ethical approval is required*		x			x	
17. Will blood or tissue samples be obtained from participants? *If yes see here to determine whether medical ethical approval is required*		x			x	
18. Does the study risk causing psychological stress or anxiety beyond that normally encountered by the participants in their life outside research?		x			x	x
19. Will the study involve discussion of personal sensitive data which could put participants at increased legal, financial, reputational, security or other risk? (e.g., financial data, location data, data relating to children or other vulnerable groups) *Definitions of sensitive personal data, and special cases are provided on the TUD Privacy Team website.*	x		I will collect data about their financial status and their living area and household composition		x	x
20. Will the study involve disclosing commercially or professionally sensitive, or confidential information? (e.g., relating to decision-making processes or business strategies which might, for example, be of interest to competitors)		x			x	
21. Has your study been identified by the TU Delft Privacy Team as requiring a Data Processing Impact Assessment (DPIA)? *If yes please attach the advice/ approval from the Privacy Team to this application*		x			x	
22. Does your research investigate causes or areas of conflict? *If yes please confirm that your fieldwork has been discussed with the appropriate safety/security advisors and approved by your Department/Faculty.*		x			x	
23. Does your research involve observing illegal activities or data processed or provided by authorities responsible for preventing, investigating, detecting or prosecuting criminal offences *If so please confirm that your work has been discussed with the appropriate legal advisors and approved by your Department/Faculty.*		x			x	

ISSUE	Yes	No	RISK ASSESSMENT – what risks could arise? *Please ensure that you list ALL of the actual risks that could potentially arise – do not simply state whether you consider any such risks are important!*	MITIGATION PLAN – what mitigating steps will you take? *Please ensure that you summarise what actual mitigation measures you will take for each potential risk identified – do not simply state that you will e.g. comply with regulations.*	DMP	ICF
			If YES please complete the Risk Assessment and Mitigation Plan columns below.		*Please provide the relevant reference #*	
F: Research Methods						
24. Will it be necessary for participants to take part in the study without their knowledge and consent at the time? (e.g., covert observation of people in non-public places).		x			x	x
25. Will the study involve actively deceiving the participants? (For example, will participants be deliberately falsely informed, will information be withheld from them or will they be misled in such a way that they are likely to object or show unease when debriefed about the study).		x			xx	
26. Is pain or more than mild discomfort likely to result from the study? And/or could your research activity cause an accident involving (non-) participants?		x			x	
27. Will the experiment involve the use of devices that are not 'CE' certified? *Only, if 'yes': continue with the following questions:*		x			x	
• Was the device built in-house?						
• Was it inspected by a safety expert at TU Delft? *If yes, please provide a signed device report*						
• If it was not built in-house and not CE-certified, was it inspected by some other, qualified authority in safety and approved? *If yes, please provide records of the inspection*						
28. Will your research involve face-to-face encounters with your participants and if so how will you assess and address Covid considerations?	x		Not relevant anymore, but always take a normal distance			x
29. Will your research involve **either:** a) "big data", combined datasets, new data-gathering or new data-merging techniques which might lead to re-identification of your participants **and/or** b) artificial intelligence or algorithm training where, for example biased datasets could lead to biased outcomes?		x			x	
G: Data Processing and Privacy						
30. Will the research involve collecting, processing and/or storing any directly identifiable PII (Personally Identifiable Information) including name or email address that will be used for administrative purposes only? (eg: obtaining Informed Consent or disbursing remuneration)		x			x	x
31. Will the research involve collecting, processing and/or storing any directly or indirectly identifiable PIRD (Personally Identifiable Research Data) including videos, pictures, IP address, gender, age etc and **what other Personal Research Data** (including personal or professional views) will you be collecting?	x		I will collect their age in categoriesI will collect data about their living environment but not specific addresses that are tracable to a person.		x	

ISSUE	Yes	No	RISK ASSESSMENT – what risks could arise? *Please ensure that you list ALL of the actual risks that could potentially arise – do not simply state whether you consider any such risks are important!*	MITIGATION PLAN – what mitigating steps will you take? *Please ensure that you summarise what actual mitigation measures you will take for each potential risk identified – do not simply state that you will e.g. comply with regulations.*	DMP	ICF
			If YES please complete the Risk Assessment and Mitigation Plan columns below.		*Please provide the relevant reference #*	
32. Will this research involve collecting data from the internet, social media and/or publicly available datasets which have been originally contributed by human participants	x				x	
33. Will your research findings be published in one or more forms in the public domain, as e.g., Masters thesis, journal publication, conference presentation or wider public dissemination?	x		My thesis will be uploaded on the TU Delft repository		x	x
34. Will your research data be archived for re-use and/or teaching in an open, private or semi-open archive?	x		My research will be saved to the private internship company storage drive.		x	

H: More on Informed Consent and Data Management
NOTE: You can find guidance and templates for preparing your Informed Consent materials) here

Your research involves human participants as Research Subjects if you are recruiting them or actively involving or influencing, manipulating or directing them in any way in your research activities. This means you must seek informed consent and agree/ implement appropriate safeguards regardless of whether you are collecting any PIRD.

Where you are also collecting PIRD, and using Informed Consent as the legal basis for your research, you need to also make sure that your IC materials are clear on any related risks and the mitigating measures you will take – including through responsible data management.

Got a comment on this checklist or the HREC process? You can leave your comments here

IV.   Signature/s

> *Please note that by signing this checklist list as the sole, or Responsible, researcher you are providing approval of the completeness and quality of the submission, as well as confirming alignment between GDPR, Data Management and Informed Consent requirements.*

Name of Corresponding Researcher (if different from the Responsible Researcher) (print)

Signature of Corresponding Researcher:

Date: 21-01-2025

Name of Responsible Researcher (print)
M.E.A. Haffner

Signature (or upload consent by mail) Responsible Researcher:

Date: 27 January 2025

V.   Completing your HREC application
Please use the following list to check that you have provided all relevant documentation

Required:
- o **Always:** This completed HREC checklist
- o **Always:** A data management plan (reviewed, where necessary, by a data-steward)
- o **Usually:** A complete Informed Consent form (including Participant Information) and/or Opening Statement (for online consent)

Please also attach any of the following, if relevant to your research:

Document or approval	Contact/s
Full Research Ethics Application	After the assessment of your initial application **HREC will let you know if and when you need to submit additional information**
Signed, valid Device Report	Your Faculty HSE advisor
Ethics approval from an external Medical Committee	TU Delft Policy Advisor, Medical (Devices) Research
Ethics approval from an external Research Ethics Committee	Please append, if possible, with your submission
Approved Data Transfer or Data Processing Agreement	Your Faculty Data Steward and/or TU Delft Privacy Team
Approved Graduation Agreement	Your Master's thesis supervisor
Data Processing Impact Assessment (DPIA)	TU Delft Privacy Team
Other specific requirement	Please reference/explain in your checklist and append with your submission

C   Interview protocol

Interview protocol Nederlands

Introductie:
Bedankt voor uw deelname aan dit interview. Dit gesprek zal ongeveer 30-45 minuten duren en richt zich op uw ervaring met het kopen van uw eerste woning. We zullen praten over uw woonwensen, locatievoorkeuren, en hoe betaalbaarheid een rol heeft gespeeld bij uw keuze. Daarnaast hoor ik graag uw mening over wonen in een getransformeerd gebouw. Uw antwoorden worden anoniem verwerkt, en u bent vrij om vragen over te slaan als u zich daar niet prettig bij voelt. → uitdelen informed consent form en vragen opnemen

Thema 1: Ervaring eerste koophuis

1. Kunt u vertellen hoe uw zoektocht naar een eerste koopwoning is verlopen?
2. Wat waren de grootste uitdagingen bij het vinden van een woning?
3. Welke factoren speelden de grootste rol in uw beslissing om juist deze woning te kopen?
4. Welke problemen kwam je tegen die je misschien niet had voorzien?

Thema 2: studieschuld en betaalbaarheid

5. Op welke leeftijd bent u begonnen met het zoeken van uw eerste huis? Was dit direct na studie? Waarom ben je toen gaan zoeken naar een koopwoning
6. Welke studie achtergrond heeft u?
7. Heeft u ook studieschuld opgelopen daarbij?
    a. heeft uw studieschuld er een bepaalde druk gezorgd tijdens het zoeken, heeft het uw mogelijkheden beperkt bij het kopen van een woning?
    b. Zou ik mogen vragen hoeveel dat ongeveer was toen je klaar was met studeren
    c. Nee? → dat een range tussen hoeveel
    d. Geholpen door familie?

Thema 3: Woonwensen en woningtype

8. Wat waren uw belangrijkste eisen en wensen bij het zoeken naar een woning?
9. Had u een specifieke voorkeur voor een appartement of eengezinswoning? Waarom?
10. Zou je zeggen wat je je woonwensen hebt aangepast naar realistischere wensen of waren de oorspronkelijke wensen haalbaar?

11. Wat voor concessies heb je moeten doen t.o.v. uw oorspronkelijke woonwensen vanwege betaalbaarheid?
    a. Zo ja, op welke aspecten heeft u moeten inleveren (locatie, grootte, type woning)?
12. Heeft u rekening gehouden met uw toekomstige woonbehoeften (zoals gezinsuitbreiding of thuiswerken)?

Thema 4: Locatievoorkeuren

13. Waarom heeft u gekozen voor deze locatie (bijv. Rijswijk/Apeldoorn)?
14. Waren er alternatieve locaties die u heeft overwogen? Waarom zijn deze afgevallen?
15. Hoe belangrijk waren nabijheid van werk, openbaar vervoer, winkels, en sociale voorzieningen in uw keuze?
16. Heeft de beschikbaarheid van betaalbare woningen in deze regio uw keuze beïnvloed?

Thema 4: Beleving van wonen in een getransformeerd gebouw

17. Waarom heeft u gekozen voor dit specifieke gebouw?
18. Wat vindt u de grootste voordelen van wonen in een getransformeerd gebouw?

Casco

19. Waarom heeft u gekozen voor een casco woning?
    a. Heeft u handige mensen binnen de familie
    b. Betaalbaarheid?

Afsluiting:

Bedankt voor uw tijd en waardevolle inzichten! Is er nog iets dat u wilt toevoegen over uw ervaring met het kopen van uw eerste woning? Als u vragen heeft over dit onderzoek, kunt u altijd contact opnemen.

References

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