

MASTER'S THESIS ACEX30

Better Construction Projects for Remaining Tenants

A Study on Social Sustainability and Disruption Minimization during Reconstruction

Master's Thesis in the Master's Programme Design and construction project management

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CHALMERS UNIVERSITY OF TECHNOLOGY

Göteborg, Sweden 2025

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and Disruption Minimization during Renovation

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Vertical extension on an inhabited residential building

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ABSTRACT

As cities densify to meet the growing demand for housing, construction in already inhabited areas is becoming an increasingly common strategy. This presents new challenges for social sustainability, as tenants' quality of life may be affected by noise, dust, interruptions to essential services, and a sense of intrusion into the home. This study explores how such disruptions can be minimized and how property owners can act to promote security and well-being for tenants who remain in place during construction.

The study is based on a qualitative case study of a planned remodelling project on Jungmansgatan in Gothenburg, where tenants are expected to remain in their homes throughout the entire construction period. Through thirteen semi-structured interviews with both tenants and professionals in property management and project planning, as well as a systematic literature review, the study analyses tenants' experiences, needs, and expectations ahead of a planned construction project, alongside professionals' reflections from similar past projects. The focus is particularly on communication and support measures during the planning phase.

The results show that everyday life is affected on multiple levels, especially for elderly tenants, families with children, and individuals with special needs. Noise, dust, and temporary shutdowns of water and electricity create stress and frustration. Poor communication often worsens the situation, while clear, accessible, and continuous information can strengthen trust and foster a sense of inclusion. The study also highlights the importance of tailored support, such as temporary relocation options, adapted hygiene facilities, and multilingual information.

The conclusion is that a person-centred and ethical approach, where tenants are not treated as a uniform group is essential for integrating social sustainability into construction projects where residents remain in place. The study offers concrete recommendations for property owners and project managers on how to improve both implementation and outcomes in this type of urban development project.

Key words: *Tenant satisfaction, residential renovation, building extension, vertical extension, inconveniences during construction, communication tenants renovation, housing redevelopment*

Bättre byggprojekt för kvarboende
En studie om störningsminimering och social hållbarhet vid ombyggnad
Examensarbete inom masterprogrammet Design and Construction Project
Management

Tilda Andersson & Emilia Evertsson

Institutionen för arkitektur och samhällsbyggnadsteknik
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SAMMANFATTNING

När städer förtätas för att möta en ökande efterfrågan på bostäder blir byggnation i redan bebodda områden en allt vanligare strategi. Detta medför nya utmaningar för social hållbarhet, då hyresgästers livskvalitet riskerar att påverkas av buller, damm, avbrott i viktiga funktioner och en känsla av intrång i det egna hemmet. Denna studie undersöker hur störningar kan minimeras under sådana projekt och hur fastighetsägare kan agera för att främja trygghet och välmående hos kvarboende hyresgäster.

Studien baseras på en kvalitativ fallstudie av ett planerat ombyggnadsprojekt på Jungmansgatan i Göteborg, där det planeras för att hyresgäster ska bo kvar under hela byggperioden. Genom tretton semistrukturerade intervjuer med både hyresgäster och yrkesverksamma inom fastighetsförvaltning och projektledning, samt en systematisk litteraturöversikt, analyseras hyresgästernas upplevelser, behov och förväntningar inför ett planerat byggprojekt, samt yrkesverksammarnas erfarenheter från tidigare liknande projekt, med särskilt fokus på kommunikation och stödåtgärder i planeringsfasen.

Resultaten visar att vardagen påverkas på flera nivåer, inte minst för äldre, barnfamiljer och personer med särskilda behov. Buller, damm och tillfälliga avbrott i vatten och el skapar stress och frustration. Bristfällig kommunikation förvärrar ofta situationen, medan tydlig, tillgänglig och kontinuerlig information kan bidra till att stärka förtroendet och känslan av delaktighet. Studien visar även vikten av individanpassat stöd, såsom evakueringslägenheter, särskilda hygienlösningar och information på flera språk.

Slutsatsen är att ett individanpassat och etiskt förhållningssätt, där hyresgäster inte ses som en enhetlig grupp är avgörande för att integrera social hållbarhet i byggprojekt där människor bor kvar. Studien ger konkreta förslag på hur fastighetsägare och projektledare kan förbättra både genomförande och resultat i den här typen av stadsutvecklingsprojekt.

Nyckelord: *påbyggnad, renovering, hyresgästernas upplevelser, byggprojekt i bebodda fastigheter, störningar vid byggnation, boendekvalitet vid ombyggnad*

Contents

ABSTRACT	I
SAMMANFATTNING	II
CONTENTS	III
PREFACE	V
1 INTRODUCTION	1
2 LITERATURE	3
2.1 Urban Densification and Its Impacts on Tenant's	3
2.2 Environmental Advantages of Renovation over New Construction	5
2.2.1 Economic Efficiency and Value Generation through Extensions	5
2.2.2 Social Sustainability and Tenant Well-being	6
2.3 Challenges in Renovating Inhabited Buildings	7
2.3.1 Psychological and Social Stressors during Construction	8
2.3.2 Contract Forms and Their Impact on Projects	9
2.4 Communication and Ethical Considerations	10
3 METHODOLOGY	13
3.1 Data Analysis	15
3.2 Limitations	15
3.3 Trustworthyness and ethical considerations	16
4 CASE STUDY: JUNGMANSGATAN	17
4.1 Tenant Communication	19
4.2 Tenant Involvement	19
4.3 Construction Planning and Practical Measures	19
4.4 Construction Technology and Climate-Smart Solutions	20
4.5 Project Goals and Future Vision	21
5 FINDINGS	22
5.1 Disturbance and Strains in Everyday Life	22
5.2 The Tenant's Different Circumstances	24
5.3 The Role of Communication	26
5.4 Supportive Measures and Solutions	28
5.5 Flexibility and Improvisations	31
6 DISCUSSION	33

6.1	Challenges and Concerns Experienced by Tenants	33
6.2	The Impact of Communication	34
6.3	Support to Tenants	36
6.4	Value Conflicts	36
7	CONCLUSION	38
8	REFERENCES	41

Preface

This master's thesis is part of the Master's Programme in Design and Construction Project Management at Chalmers University of Technology. The work was carried out during the spring of 2025 in collaboration with Familjebostäder in Gothenburg.

We would like to express our sincere gratitude to our supervisor and examiner Daniella Troje at Chalmers University of Technology for her valuable guidance, and to Sara Carlsson at Familjebostäder i Göteborg for her great commitment and insightful discussions. We would like to thank all the individuals we had the opportunity to interview for taking the time to share their experiences. Your participation was essential to the success of this study.

The process has been both challenging and rewarding. It has given us a deeper understanding of the complexities involved in combining technical construction solutions with social sustainability in practice.

Göteborg, June 2025

Tilda Andersson & Emilia Evertsson

1 Introduction

Due to increased urbanization and the climate crisis, urban infill and densification have become central strategies for sustainable city planning. Rather than expanding outward, municipalities are increasingly focusing on making more efficient use of existing infrastructure and land. One key method is the addition of new housing units through vertical extensions and conversions of existing buildings (Boverket, 2023).

However, construction in already inhabited residential environments often creates considerable challenges for tenants. These include exposure to disruptive noise, dust, restricted access to shared areas, and frequent presence of construction workers, factors that may contribute to a sense of intrusion or insecurity. The impact is often more severe for vulnerable groups such as elderly residents, individuals with chronic illnesses, or families with young children (Palm et al., 2020). Research has shown that these types of disturbances can affect both physical and psychological well-being, particularly when communication and support from property managers are lacking. In many cases, insufficient information and unclear expectations contribute to stress, dissatisfaction, and even tenant displacement (Baeten et al., 2016). This underscores the growing importance of integrating social sustainability into housing development, where values like inclusion, participation, and fairness play a central role (Turcu, 2012; Dempsey et al., 2011).

While densification and construction in inhabited housing areas offer important societal benefits, they often risk undermining the very sustainability goals they aim to support. For tenants, construction-related disruptions can lead to increased stress, health problems, reduced trust in housing companies, and, in some cases, displacement (Thörn et al., 2023). These negative effects are particularly concerning in publicly owned housing where tenants may have limited influence over decisions that affect their everyday lives. Without well-functioning communication, support structures, and ethical considerations, such projects may deepen social inequalities and contribute to long-term disconnection. Understanding how these challenges play out in practice is therefore crucial in order to develop strategies that ensure a fair and socially sustainable approach to urban densification.

Several studies emphasize the significance of participatory planning and open communication as strategies to strengthen trust between tenants and property owners during construction. Baeten et al., (2016) for instance, argue that dialogue becomes most effective when tenants are not only informed but genuinely involved in influencing outcomes. Despite these insights, there is still a notable gap in the research concerning how disturbances can be minimized in the context of densification projects in already occupied rental housing environments.

Therefore, this study aims to fill this research gap by exploring strategies for minimizing disruption to tenants during construction projects in already inhabited housing. The thesis builds on a case study of a planned building extension of a public housing property in central Gothenburg. By examining tenant dialogue, construction practices, and the concept of social sustainability, the study proposes actionable recommendations for minimizing disruption and improving outcomes for both residents

and housing companies during construction projects. To achieve the aim for the report three questions were created:

- *What are the primary challenges and concerns experienced by tenants during an extension project or a renovation?*

This question aimed to identify the main problems and challenges that tenants face during an ongoing remodelling project in their residential environment. The focus was to understand which specific factors are perceived as most disruptive or stressful and how these affect tenants' daily lives and well-being. Furthermore, there were a focus on understanding the different needs from different groups of tenants (e.g., families with children, elderly residents, individuals with disabilities).

- *How can effective communication between tenants and property managers mitigate negative experiences during construction?*

This question examined the importance of communication between tenants and property managers in the context of remodelling projects. The focus was on understanding which communication strategies are most effective in reducing uncertainty, dissatisfaction, and potential conflicts. The question also explored how information should be structured and presented to ensure it reaches all tenants, including those who may have difficulty accessing or understanding information. Additionally, the study investigated how poor communication can worsen the experience of disruptions and create distrust toward property managers.

- *How can property managers provide support to tenants during such projects?*

This question focused on measures and support initiatives that property managers can implement to assist tenants during ongoing construction projects. This included both practical measures, such as temporary alternative solutions for restricted accessibility, and long-term initiatives, such as compensation models and social support measures. The question also strived to identify how property managers can tailor their support based on the varying needs of tenants and which factors influence tenants' perceptions of security and fairness throughout the project.

These research questions are addressed through a case study of a planned vertical extension in Gothenburg. Through interviews with tenants and professionals in property management and housing development, the research explored experiences, communication, and expectations during the planning phase before construction began. Thirteen interviews were conducted, which enabled a range of perspectives from both residents and professionals. The data collection was complemented by a literature review to contextualize the findings and support the analysis. The collected material was analysed thematically with the aim of identifying patterns and proposing strategies to minimize disruptions in similar housing projects.

This study is delimited to a single case study of a planned remodelling project in public housing in Gothenburg. The focus is on the planning phase prior to construction, and no direct comparison with other housing projects is made. This allows for an in-depth understanding of tenant perspectives in a specific context but limits the study's scope in terms of generalizability across different types of housing or geographic areas.

2 Literature

In the following chapter, literature will be presented related to urban densification, renovation and vertical extensions, as well as the social and practical challenges that arise when construction takes place in buildings where people are already living. The aim of this chapter is to give a broad picture of what previous research says about how these types of projects can be carried out in a way that's both sustainable and socially responsible.

2.1 Urban Densification and Its Impacts on Tenant's

Over recent decades, urbanization has increased significantly, putting substantial pressure on the housing market in cities worldwide. Cities such as Gothenburg have experienced challenges in accommodating growing populations, leading to densification becoming a central strategy in urban development policies (Boverket, 2023). By optimizing land use, new housing developments are increasingly integrated into existing urban fabrics, particularly in already built-up areas. This approach helps address housing shortages without expanding into undeveloped land.

Densification is not only a response to population growth but also a tool for reducing urban sprawl and minimizing the environmental impacts of new developments. By promoting compact cities, planners aim to create walkable neighbourhoods with access to public transport and local services, reducing dependence on cars and associated emissions (Boverket, 2023). Densification aligns with broader sustainability goals, making it a cornerstone of many national and local development strategies.

While densification offers solutions to the housing crisis, it also brings complex challenges. Building in already inhabited neighbourhoods demands careful planning to balance increased density with the quality of life for current residents (Gehl, 2010). Common issues include noise, limited accessibility, and disruptions to the local environment, which can affect residents' everyday lives and contribute to social tensions if not managed properly (Boverket, 2023). Research has shown that densification is influenced by zoning policies, land availability, and existing urban densities (Broitman & Koomen, 2015). In cities with restrictive planning policies, densification tends to be more intensive and may provoke resistance due to concerns over overcrowding and loss of green spaces.

Moreover, densification may unevenly affect certain populations. Low-income residents are often more vulnerable to the negative effects of construction, such as noise, dust, and limited mobility, particularly when projects lack proper communication and mitigation strategies (Femenias et al., 2023). If not carefully planned, densification can contribute to displacement and the weakening of established community networks.

One common method of densification is doing a vertical extension on an existing building, which increases housing capacity without requiring additional land. However, these projects often take place in occupied residential properties, leading to temporary disruptions for tenants. Effective management of these challenges is essential, as poor handling can lead to increased dissatisfaction, higher turnover, and tensions between residents and property managers. Studies emphasize that proactive engagement and

clear communication are critical to improving tenant acceptance and satisfaction (Palm et al., 2020; Femenias and Granth, 2023).

Vertical extensions also raise technical and regulatory considerations. Older buildings may need structural reinforcements to handle additional loads, and construction logistics in dense urban areas can be complex. These projects require close collaboration between architects, engineers, and planners to ensure safety, functionality, and minimal disruption. From a social sustainability perspective, urban development should benefit both current and future residents. Early, transparent communication with communities can help mitigate disruptions and foster trust (Gehl, 2010). Incorporating identity-driven approaches, such as preserving architectural character and local culture, can strengthen residents' attachment to their neighbourhoods and reduce resistance to change (Maghsoodi Tilaki & Farhad, 2024).

Participation processes that go beyond basic consultation and involve residents in meaningful decision-making can lead to more inclusive and accepted outcomes. Co-design workshops and neighbourhood planning forums allow residents to express concerns and contribute ideas, fostering a sense of ownership and collaboration. This not only improves the quality of the final development but also supports long-term community resilience (Thörn et al., 2023).

Renovation and reuse of buildings offer both economic and ecological benefits. While the environmental aspects are further elaborated in Section 2.1, it is worth noting here that renovating is generally more cost-effective than demolition and rebuilding. It extends the lifespan of buildings, increases usability, and enhances market value (Åslund, 2019; Tyréns, 2022). Additionally, it promotes job creation and supports the transition toward circular construction practices.

Disruptions during construction can affect vulnerable groups (Palm et al., 2020). Ethical considerations, including clear communication of timelines and available support, are essential for maintaining trust and minimizing harm. Additional accommodations may be needed for those most affected. Equity in the distribution of costs and benefits is another critical issue. If the gains from densification and renovation, such as increased property value and improved infrastructure, are not shared fairly, it can exacerbate socio-economic divides. Policies and safeguards are needed to ensure inclusive outcomes, especially in socially vulnerable neighbourhoods.

Urban densification through renovation and vertical extension represents a comprehensive strategy to meet housing needs sustainably. When carefully planned and implemented, these projects contribute to environmental goals, support social inclusion, and enhance economic resilience. As cities like Gothenburg continue to grow, leveraging existing assets through thoughtful development practices offers a powerful path toward a resilient and socially responsible urban future (Boverket, 2023.; Olsson et al., 2022; Thrysin et al., 2023).

To achieve this, cities must adopt integrated planning approaches that address technical, social, and economic dimensions of densification. Policy frameworks should encourage adaptive reuse, prioritize inclusive design, and support long-term community well-being (Olsson et al., 2022). With coordinated efforts between public authorities, private

developers, and residents, urban densification can be a catalyst for sustainable transformation.

2.2 Environmental Advantages of Renovation over New Construction

Renovating, remodelling, and adding extensions to existing buildings instead of demolishing and constructing new ones represents a more sustainable and climate-conscious approach to urban development. This strategy directly supports international sustainability frameworks such as the United Nations Sustainable Development Goals (SDGs). Rather than occupying new land or generating construction waste, renovation utilizes existing structures more efficiently, helping cities grow in a responsible and resilient manner (Thrysin et al., 2023). This aligns closely with SDG 11: Sustainable Cities and Communities and SDG 12: Responsible Consumption and Production. Renovation contributes to inclusive and resilient urban growth while promoting efficient use of natural resources.

One of the greatest environmental advantages is the significantly reduced climate impact. By retaining a building's structural framework, greenhouse gas emissions can be reduced by up to 60 percent compared to demolition and new construction (Svensk Byggtidning, 2025). This is primarily due to reduced demand for new material production and transportation. Renovation also significantly reduces waste volumes, up to 80 percent less compared to demolition, which supports circularity and decreases pressure on landfill systems. Additionally, renovation enables more efficient land use. Through vertical extensions or interior remodelling, more units can be added without developing new land. This preserves green areas and maintains historical urban values (Forskning & Framsteg, 2024).

2.2.1 Economic Efficiency and Value Generation through Extensions

Extensions are increasingly attractive in areas where land prices are high. By adding floors to existing buildings, property owners can generate new revenue and increase property value without purchasing new land. This is especially advantageous in dense urban areas, where land costs have risen sharply (Olsson et al., 2022).

Between 2002 and 2022, land costs rose substantially and accounted for around 20% of production costs for multi-dwelling buildings in 2022 (Byggföretagen, 2024). Condominium land costs were 250% higher than for rentals, partly due to their location (SCB, 2016). Extensions offer a cost-effective alternative to greenfield development, reinforcing their economic appeal.

In addition to providing financial benefits for property owners, extensions can generate long-term value for municipalities. Increasing housing capacity within existing neighbourhoods helps optimize the use of existing infrastructure and services such as public transport, water supply, and waste management (Olsson et al., 2022). This can result in more efficient municipal spending and reduce the need for infrastructure expansion in less connected peripheral areas. Furthermore, extensions and associated renovations can contribute to local economic development. By stimulating demand for

skilled labour, materials, and services within the construction sector, such projects can create job opportunities and support innovation in circular and low-carbon construction methods. This positions extension strategies as important drivers for economic recovery and resilience, particularly in urban areas facing pressure to expand sustainably.

However, while extensions benefit developers, they can impose financial burdens on tenants. Renovations and extensions often lead to rent increases, a phenomenon referred to as “renoviction” (Palm et al., 2020). Low-income households are especially vulnerable, as they may lack financial flexibility and legal protection, which can lead to involuntary displacement.

Additional financial stressors include rising utility bills, costs for mitigating construction dust, and temporary relocation expenses (Guo et al., 2024). These challenges highlight the need for stronger tenant protections, clearer guidelines, and support mechanisms.

Tenants often perceive rent hikes after basic renovations (e.g., pipe replacements) as unfair, especially when the upgrades simply restore acceptable standards (Thörn et al., 2023). The distinction between necessary maintenance and value-adding improvements must be clarified to ensure transparency and fairness. A predictable and participatory rent adjustment process is essential to protect tenants from economic vulnerability. To create long-term economic sustainability, extension projects must be embedded in frameworks that promote shared value. This includes incentives for property owners to maintain affordability, engage tenants in planning processes, and integrate broader public interests. Only through such measures can extensions serve as a catalyst for both urban growth and social equity.

2.2.2 Social Sustainability and Tenant Well-being

Ensuring social sustainability in construction projects is essential to preventing negative consequences such as social alienation and reduced trust in property owners. Projects that disregard tenant needs risk creating long-term tensions, dissatisfaction, and even displacement. According to Nachemson-Ekwall et al. (2023) social sustainability in the real estate sector involves fostering inclusive communities where residents’ health and well-being are prioritized. Achieving this requires integrating social considerations throughout all stages of the construction process.

Tenant concerns, particularly around noise, accessibility, and prolonged disruptions, are key drivers of dissatisfaction. A study by Femenias and Granath (2023) found that poor communication and lack of transparency from property managers often leave tenants feeling powerless and uninformed, increasing the risk of social conflict and tenant turnover. Proactive and honest communication is therefore crucial for maintaining trust and minimizing negative experiences.

Ethical considerations are equally important in projects that affect existing residents. Transparency about timelines, expected disruptions, and available support must be part of an ethical construction approach. Vulnerable groups such as the elderly, people with disabilities, and families with young children often face unequal impacts and should be given special attention. According to Fastighetsägarna (n.d.), social sustainability

requires real estate actors to actively support the communities in which they operate, emphasizing fairness, respect, and inclusion.

Implementing structured processes for social sustainability allows construction companies to build stronger relationships with tenants and local communities. Measures such as dedicated tenant coordinators, accessible information channels, and on-site support can help mitigate frustration. When well-managed, construction projects can strengthen, not weaken, tenant relations and community trust. Integrating these principles not only benefits residents but also enhances the social legitimacy of densification strategies. A socially inclusive approach improves the long-term viability of projects by reducing resistance and creating environments where people want to live and stay. In this way, social sustainability becomes both an ethical imperative and a practical strategy for successful urban development (Femenias et al., 2022).

2.3 Challenges in Renovating Inhabited Buildings

Construction projects are essential in addressing housing shortages and urban development needs. However, when these projects take place in already inhabited buildings, they often impose considerable burdens on tenants (Baeten et al., 2016). The challenges faced by residents extend beyond inconvenience and include significant environmental, psychological, economic, and social disruptions. These issues are well-documented in research on construction-related tenant experiences, highlighting how prolonged exposure to disturbances can lead to increased stress levels, reduced quality of life, and, in extreme cases, forced relocation. Although such projects are typically framed as long-term improvements, the short-term impacts on tenants must be addressed to ensure socially responsible urban planning.

Noise pollution is one of the most frequently cited complaints from tenants living in buildings undergoing renovation. Unlike more constant sources of urban noise like traffic, construction noise is often irregular, loud, and unpredictable, making it difficult to ignore or adapt to. Studies have demonstrated that this kind of noise can cause sleep disturbances, irritability, difficulty concentrating, and in more severe cases, increased risks of anxiety and cardiovascular conditions. Research by Ng (2000) found that tenants exposed to prolonged high-decibel noise reported heightened stress levels and disruption in their daily routines. Similarly, Ma et al. (2018) linked such exposure to elevated cortisol levels and long-term health effects like hypertension.

In addition to noise, construction dust represents a serious environmental and health concern, especially in densely populated residential areas. Fine particles and airborne pollutants released during renovation pose respiratory risks, particularly for children, the elderly, and individuals with pre-existing conditions such as asthma. Wang et al. (2023) found that exposure to such pollutants leads to inflammation, respiratory distress, and heightened risks of chronic respiratory illness. Guo et al. (2024) add that long-term exposure can contribute to cardiovascular disease via oxidative stress. Despite the availability of dust mitigation techniques, like filtration systems and sealed barriers, implementation is often inconsistent, leaving many tenants exposed.

Restricted access caused by construction activities is another major issue for residents. Temporary barriers, blocked pathways, scaffoldings, and elevator shutdowns can hinder mobility, especially for vulnerable groups. Construction also disrupts social

cohesion within residential environments. Shared spaces such as courtyards, hallways, and recreational areas often become inaccessible during renovation, reducing opportunities for social interaction. This decline in everyday community contact can weaken social ties and diminish residents' sense of belonging (Palm et al., 2020). Research indicates that prolonged isolation resulting from construction may increase dissatisfaction with the process and amplify resistance to future development. When disruptions stretch over months or years, they risk undermining the social fabric of entire communities.

To ensure more equitable and resilient urban development, these challenges must be acknowledged and integrated into renovation planning. Proactive risk assessment, targeted support for vulnerable groups, and enforceable standards for dust, noise, and accessibility are necessary steps toward minimizing harm in occupied buildings. In doing so, cities can balance physical improvements with the well-being of the people who inhabit them.

2.3.1 Psychological and Social Stressors during Construction

A major factor contributing to tenant dissatisfaction during construction projects is the lack of transparent and timely communication from property owners and developers. Studies have consistently demonstrated that uncertainty regarding construction timelines, access restrictions, and anticipated rent adjustments is one of the leading sources of stress for tenants. Research by Palm et al. (2020) found that when tenants were not adequately informed about upcoming construction phases, they experienced heightened anxiety due to their inability to plan for the disruptions. Uncertainty about noise levels, dust exposure, and temporary access limitations exacerbates stress, particularly when tenants do not have clear expectations regarding the duration and severity of construction-related disturbances.

The absence of proactive communication between property managers and tenants frequently leads to misunderstandings and mistrust. Koops-Van Hoffen et al. (2024) found that when property owners failed to provide regular updates, tenants reported significantly higher dissatisfaction with the renovation process. Research further suggests that tenants who receive structured, clear, and transparent communication about the expected disruptions and mitigation strategies are more likely to accept construction inconveniences as part of an overall improvement plan. Oresten (2014) emphasizes the importance of establishing clear channels for communication, including designated tenant liaison officers, multilingual informational materials, and regular public meetings to keep residents informed. Despite these recommendations, studies indicate that many property managers fail to implement such measures, leading to increased tensions and opposition to construction projects.

Several studies have explored the impact of renovations and construction work on tenants. Research by Palm et al. (2020) emphasizes that tenants experience a wide range of reactions to renovation projects, from resignation to active demands for participation. Their study identified six categories of tenant responses: the satisfied, the demanding, the conservative, the resigned, the sceptical, and the resistant. They argue that tenants' experiences are shaped not only by the physical disruptions of renovations but also by the degree of involvement they feel they have in the process. Their findings suggest

that many tenants feel excluded from decision-making, contributing to resistance and dissatisfaction.

Additionally, Femenias et al. (2022) highlight that vulnerable tenant groups, such as the elderly and individuals with disabilities, are particularly affected by renovation projects. Their study found that 43% of surveyed tenants identified the renovation as a primary or secondary motivation for permanent relocation, with key reasons including rent increases, disturbances, and temporary evacuations. These findings indicate that beyond economic factors, uncertainty about the renovation process and the psychological stress associated with relocation significantly contribute to tenants' decisions to move.

Furthermore, Šnīdere, Geipele, & Stāmure (2017) analyse tenant and property owner perceptions of building conditions and renovation needs in Latvia, showing that many tenants lack knowledge about renovation processes, leading to resistance. Their study found that only 20% of tenants believed their building was in good technical condition, yet many opposed renovations due to uncertainty about financial impacts and reluctance to change their living conditions. These findings emphasize the importance of transparent communication and involving tenants early in the renovation process to gain trust and cooperation.

Communication between property owners and tenants further highlights the importance of effective dialogue in renovation projects (Oresten, 2014). The study emphasizes that clear and proactive communication strategies can significantly reduce frustration and improve tenant relations during construction. It recommends structured information delivery, including the use of multiple communication channels, regular meetings, and digital platforms to provide tenants with continuous updates. Furthermore, the report stresses that understanding tenants' specific needs and expectations enables property managers to develop tailored communication strategies, ultimately fostering more trust and cooperation. A report by Fastighetsägarna (n.d.) discusses how tenant well-being should be a key factor in real estate development. The report argues that social sustainability measures, such as compensation models and tailored support for vulnerable tenant groups, can significantly reduce the negative effects of construction projects on residents.

2.3.2 Contract Forms and Their Impact on Projects

The choice of contract form plays a crucial role in how a conversion project is carried out and determines the roles and responsibilities assigned to the various actors involved. Two of the most common contract forms in Sweden are design-bid-build (utförandeentreprenad) and design-build (totalentreprenad). These forms differ in how responsibilities and tasks are distributed between the client and the contractor, and the selection can significantly influence project cost, timeline, and final quality (Boverket, 2024).

In a design-bid-build contract, the client is responsible for the design phase, including construction documents, drawings, and technical specifications. The contractor is then hired to execute the construction work based on these documents. This form of contracting offers the client greater control over the technical and aesthetic outcome

but also places greater responsibility on the client to ensure that the documentation is accurate and feasible in practice (Upphandlingsmyndigheten, 2024).

According to Upphandlingsmyndigheten (2024), a design-build contract places the responsibility for both design and execution on the contractor. In this case, the client defines only the functional requirements, while the contractor assumes full responsibility for delivering a complete solution, including design, drawings, and construction. This form shifts more responsibility to the contractor, which can be advantageous for clients with limited resources or technical expertise.

In conversion projects, particularly those involving existing housing stock, the choice of contract form can have a significant impact on the project's success. A design-bid-build contract may be suitable in cases where the property owner seeks detailed control over the technical solutions and execution, such as in culturally sensitive rebuilding efforts. On the other hand, a design-build approach may be more efficient when the project has clearly defined functional goals but less need for control over technical design. This form also reduces the client's responsibility during implementation, though it requires clear and well-defined requirements during the procurement phase (Upphandlingsmyndigheten, 2024).

One potential challenge, particularly in design-build projects or when multiple subcontractors are involved, is that the client or main contractor may have limited insight into or control over how workers from other companies behave in the residential environment. This can affect both comfort and perceived safety for tenants during the project. In such cases, it can be difficult to ensure that all personnel act in accordance with the desired standards for work environment, communication, and consideration toward tenants, especially when conversion takes place in occupied buildings (Boverkets, 2024). Therefore, the choice of contract form is not solely a technical or economic decision, but also a key factor in creating the best possible conditions for minimizing disruption and negative impacts on residents during conversion or vertical extension projects.

2.4 Communication and Ethical Considerations

Effective communication plays a crucial role in minimizing disruptions and ensuring tenant satisfaction during renovation projects. By implementing clear, transparent, and interactive communication strategies, project managers and property owners can mitigate uncertainties, reduce tenant dissatisfaction, and foster smoother project execution (Djajalaksanaa et al., 2017). Renovation projects in inhabited buildings present unique challenges, as they impact the daily lives of tenants, and therefore require a structured approach to information dissemination and engagement to prevent misunderstandings and unnecessary distress.

Timely and clear communication is essential to set expectations and reduce misunderstandings. Research indicates that early information-sharing about planned renovations helps tenants adjust to upcoming changes and reduces anxiety (Hällgren & Xygekogianni, 2015). This includes providing detailed schedules outlining key renovation milestones, clarifying potential disturbances such as noise, dust, and temporary utility disruptions, offering alternative solutions for affected tenants, and using multiple communication channels to ensure that all tenants receive and

understand the information (Djajalaksanaa et al., 2017). Additionally, establishing a predictable timeline and ensuring that information is updated in a consistent manner can further enhance trust between tenants and property managers. The unpredictability of construction work can be mitigated by communicating regularly about changes and delays, ensuring tenants feel informed rather than left in uncertainty.

A combination of digital and physical communication methods ensures that tenants remain informed before and throughout the renovation process. Best practices include face-to-face meetings, workshops, or individual consultations that help clarify concerns and offer direct responses to tenant inquiries. Digital platforms such as email updates, project websites, and dedicated mobile apps provide real-time updates. Physical notices in common areas such as building entrances and elevators ensure accessibility for all tenants, while SMS notifications offer instant updates on urgent matters such as water shut-offs or construction delays (Safapour et al., 2019). Moreover, communication should be tailored to the tenants' preferred methods of information consumption, as different demographics may have varying levels of digital literacy. Some tenants may require printed materials in multiple languages, while others prefer short, concise digital updates.

Studies have shown that tenant engagement in the renovation process leads to higher levels of acceptance and satisfaction (Pham, 2024). Strategies to enhance involvement include conducting surveys to gather tenant feedback on preferred renovation schedules and potential concerns, establishing a tenant advisory group that collaborates with project managers, and offering choices where feasible, such as selecting between different fixture options in renovated units. Actively involving tenants in discussions about noise levels, work hours, and anticipated inconveniences can lead to better cooperation and fewer complaints. Additionally, engaging tenants through community meetings or open forums provides an avenue for addressing grievances and improving the renovation experience overall. Proactive engagement helps create a sense of inclusion and allows tenants to feel that their concerns are acknowledged and valued rather than disregarded.

Ensuring that tenants feel heard and supported throughout the renovation process is critical to maintaining trust. Assigning a dedicated communication liaison to handle inquiries and complaints, implementing a feedback loop where tenant concerns are documented and addressed promptly, and providing regular progress reports to update tenants on project developments and any changes in the timeline all contribute to effective communication (Macek & Vitásek, 2024). Additionally, offering helplines or drop-in consultation hours ensures that tenants have accessible avenues for raising concerns and seeking clarifications. Furthermore, proactive engagement with tenant representatives or community organizations can strengthen the relationship between project managers and the tenant population, fostering a sense of collaboration and shared responsibility. When tenants perceive that their feedback leads to meaningful changes or adjustments, overall satisfaction and cooperation increase.

By integrating these communication strategies, renovation projects can significantly reduce disruptions, enhance tenant satisfaction, and improve the overall effectiveness of the process. Properly structured communication not only improves project outcomes but also contributes to long-term tenant retention and positive perceptions of the property management team. The implementation of comprehensive communication

plans, supported by continuous feedback mechanisms, ensures that tenants remain engaged and reassured throughout the renovation process. Establishing clear expectations from the start, continuously providing accurate information, and involving tenants as active participants rather than passive observers in the process can transform a disruptive renovation into a cooperative, well-managed experience.

Ethical aspects are vital in research and development related to construction, especially when projects impact people's homes. It is important to consider both what is being developed and how the process is carried out. In projects involving inhabited buildings, ethical responsibility includes minimizing harm to residents and ensuring that vulnerable groups, such as the elderly, families with children, and people with disabilities, are not disproportionately affected (Palm et al., 2020).

Transparent communication about disruptions, timelines, and support is essential. According to Femenias & Granath (2023), poor communication can leave tenants feeling powerless and increase the risk of dissatisfaction and social conflict. Engaging tenants early and incorporating their perspectives is therefore not just good practice, but an ethical necessity. By integrating social sustainability and respectful engagement throughout the process, construction projects can better align with values of fairness, accountability, and well-being.

3 Methodology

This chapter outlines the methodological approach used in the study. A qualitative case study was chosen to explore how tenants and professionals perceive a planned renovation and vertical extension project in an inhabited residential building. The focus is on capturing expectations, concerns, and communication practices before construction begins. The chapter presents the case context, data collection methods, and the analytical approach. It also includes a reflection on methodological limitations and the implications these may have for the study's findings. Research Design This study employs a qualitative case study approach, focusing on a planned vertical extension and renovation of a property located in central Gothenburg, in the neighbourhood Olivedal. The research method was qualitative, focusing on how property owners and managers understand and address tenant experiences, disruptions, and communication challenges during the planning phase of construction projects. By analyzing a case where construction has not yet begun, the study captured expectations and concerns before the physical changes take place. We chose a qualitative case study because we wanted to understand how both tenants and professionals think and feel about a planned construction project. Since the project has not started yet, we needed a method that could capture expectations, thoughts, and concerns rather than numbers. The case study also allowed us to focus in-depth on this specific project and context.

The study was conducted at Jungmansgatan, a central residential street in Gothenburg, where an extension is planned but not yet implemented. The property, which consists of 103 apartments, has been owned and managed by Familjebostäder since 2016 (personal communication, Familjebostäder, 2025). This setting provided a unique opportunity to examine tenant expectations, concerns, and communication before construction begins, an aspect often overlooked in housing research, where tenant experiences are typically studied during or after the construction phase (Thörn et al., 2023). By studying the process at this early stage, the research highlighted how tenants perceive the planning phase and how information is communicated between stakeholders.

To explore these aspects, semi-structured interviews were conducted with tenants and professionals in property management and housing development see *Table 3.1*. The interviews were:

Table 3.1 Information and anonymous name of the interviews

Role	No. of interviewees	Anonymous Name
Communicator	2	Communicator - A, B
Project Leader	2	Project Leader - A, B
Project Manager	1	Project Manager - A
Property Management Coordinator	1	Property Management Coordinator - A
Renovation Coordinator	5	Renovation Coordinator - A,B,C,D,E
Tenant	2	Tenant - A, B

Thirteen semi-structured interviews were conducted with individuals involved in renovation and extension projects in different ways, particularly in inhabited buildings. Participants were selected through purposive sampling, primarily via email outreach to relevant actors, including housing companies (Palinkas et al., 2015). Some participants also referred us to additional interviewees. Semi-structured interviews were chosen because they gave us the chance to ask similar questions to everyone, while also allowing for follow-up questions and more open answers (Ruslin et al., 2022). This worked well because we wanted to hear personal stories from tenants and practical viewpoints from professionals. The method helped us gather more detailed and nuanced information.

This diversity of interviews allowed us to capture perspectives from both organizational and resident viewpoints. No one declined participation, although a few did not respond to our initial contact. Some also referred us to others. This mix of roles gave us a broad picture of the topic, even if the results cannot be generalized to all situations. However, we would have wanted to interview more tenants to get a broader perspective from people living in a reconstruction.

The interviews took time during March 2025 and were around 45-60 minutes long. The different subject that was investigated were:

- Background/ experience
- Early investigations in a construction process
- Communication and tenant dialogue
- Distributions and taken measures to minimize impacts
- Financial and social aspects
- Future improvements

To ensure the data processing, a combination of audio recordings and transcription was done. All interviews were recorded with participant consent, transcribed using AI-assisted tools, and manually reviewed for accuracy. The transcribed data was analysed using thematic coding, identifying recurring patterns in tenants' and experts' responses. We chose thematic analysis because it helps identify patterns and themes in the interviews. It was a good fit for our goal to explore experiences, expectations, and perspectives in a structured way, while also staying close to what the participants said.

The tenant interviews provided insights into subjective experiences, expectations, and concerns, while expert interviews offered perspectives on managing similar projects

and addressing tenant needs. In addition to the conducted interviews, a literature review was done to understand the subject and contextualize the findings. To identify relevant literature for our thesis, we conducted a systematic search using different academic databases, such as Scopus, Web of Science, Google Scholar, and the Chalmers Library Search (LibSearch).

We used a combination of English and Swedish keywords related to our research topic. Examples of keywords and search phrases included:

- *tenant satisfaction, residential renovation, building extension, vertical extension, inconveniences during construction, communication tenants renovation, housing redevelopment*
- *påbyggnad, renovering, hyresgästers upplevelser, byggprojekt i bebodda fastigheter, störningar vid byggnation, boendekvalitet vid ombyggnad*

By analyzing previous research, reports, and relevant theories, we were able to strengthen the theoretical basis of our analysis and identify patterns and perspectives that complement the empirical insights from the interviews.

The study follows an interpretivist philosophy, aiming to understand how tenants experience and perceive building extensions (Pham, 2018). However, elements of constructivism are also present, as the study not only analyses tenant satisfaction but also seeks to propose strategies for minimizing disruptions and improving engagement.

3.1 Data Analysis

The interview material was analysed using thematic analysis. This approach was chosen for its suitability in identifying patterns within qualitative data and for its flexibility in exploring perceptions, expectations, and experiences.

The analysis began with a thorough familiarisation phase, where all transcripts were read multiple times to gain an overall understanding of the content. Initial codes were then generated manually in a spreadsheet by highlighting relevant excerpts and assigning short descriptive labels. Both inductive and deductive coding approaches were used, some codes emerged directly from the material, while others were guided by the research questions and themes identified in the literature review.

Once all interviews were coded, the codes were reviewed and organised into potential themes. This process involved comparing codes, identifying patterns across interviews, and grouping similar meanings together. The themes were then refined and adjusted to ensure internal consistency and to accurately reflect the content of the data. Each theme was clearly defined and named based on its relevance to the study's aim and focus areas. Throughout the process, reflective notes were taken to document analytical decisions and support transparency. The resulting themes were later used to structure the presentation of the empirical findings in the results chapter.

3.2 Limitations

While the research offered valuable insights, certain limitations must be acknowledged. Since the case-study is on a single-case study, findings are context-specific and may

not be fully generalizable to other real estate projects or locations. The study does not include extensive comparisons with other extension projects, which limits its broader applicability. While expert interviews provide some contextualization, a comparative study across multiple sites have offered a more generalizable understanding of tenant experiences in similar housing developments.

One of the most notable limitations is the limited number of tenant interviews. The sample may not be representative of the entire tenant population, particularly if the participants belong to the same age group, household type, or live in the same section of the building. This means that certain perspectives, such as those of more vulnerable groups, may not have been captured, which affects the generalizability of the study.

Since interviews are based on subjective experiences, the responses are influenced by current mood, personality, memory, and past experiences. As a result, an individual's answers may not necessarily reflect an objective reality but rather a momentary overview shaped by their interpretation and emotions at the time of the interview. The fact that the interviews were conducted by us as researchers may have impacted how open or honest the respondents felt they could be. Some participants might have perceived us as being affiliated with the property owner, which could have led to more careful or restrained descriptions of experienced problems.

All the interviews were performed in Swedish. Due to this there might be a difference in the translations to English. There is especially a change of losing nuances in language. Small differences in phrasing may influence the interpretation of the interview responses

3.3 Trustworthiness and ethical considerations

To ensure the trustworthiness of the study, we followed several steps to make the process as transparent and reliable as possible. First, all interviews were recorded with the participants' consent and carefully transcribed. We reviewed the transcripts manually to check for accuracy. During the analysis, we kept notes to reflect on our interpretations and decisions. We also used both inductive and deductive coding to make sure that we stayed open to new ideas while still being guided by our research questions and previous literature. The variety of interviewees helped us include different viewpoints, which strengthens the credibility of the findings. Furthermore, we have clearly explained our research process, including how participants were selected and how the data was analysed. This allows others to understand and possibly repeat the study in a similar setting, which adds to the study's dependability. Although the study cannot be generalized to all situations, we believe the findings give valuable insights that can be useful in similar contexts.

Throughout the work, we have used AI, specifically Open AI's software ChatGPT and Chalmers AI portal, as support tools. AI has primarily been used to assist with text formulation, structuring content, and suggesting improvements in language. It has also been used to explore concepts and test different wordings. However, the use of AI has not replaced any part of the analytical process but rather served as a complementary aid in writing and critical thinking.

4 Case Study: Jungmansgatan

Jungmansgatan is a multi-residential area in the district of Olivedal in Gothenburg, managed by the municipal housing company Familjebostäder. The area is the subject of a large-scale redevelopment project that includes both the renovation of existing buildings and a vertical extension with new apartments. A significant proportion of the residents are elderly, many of whom have lived in the building for a long time, which places additional demands on communication and consideration during the planning and construction phases (personal communication, Familjebostäder, 2025). The aim of the project is to meet Gothenburg's growing housing needs by making more efficient use of available land, thereby creating new homes without encroaching on green spaces. A map showing the location of Jungmansgatan within Gothenburg is provided to illustrate the context of the project (see *Figure 4.1*).

The project began with a feasibility study in 2021, during which the need for renovation was mapped out and the possibilities for an extension were analyzed. During the program planning phase (2022–2023), the project examined impact goals, functional requirements, and technical solutions. The focus was on housing distribution, rental income, as well as analyses of the structural load-bearing capacity and the necessary adaptations to meet fire safety and accessibility requirements. An architectural illustration has also been developed to show how the new floor will be integrated with the existing building structure (see *Figure 4.2*).

The planned extension involves the addition of one new floor with modern apartments. The project is being carried out with tenants remaining in their homes, which places particular demands on communication, scheduling, and disruption minimization.

At present, the project is temporarily on hold. According to Familjebostäder, this is due to several factors, including difficulties in realizing the extension in accordance with the company's quality standards, as well as technical and administrative challenges encountered during the planning process. The pause has led to further delays for tenants and requires continued communication to manage the resulting uncertainty (personal communication, Familjebostäder, 2025).



Figure 4.1 Map showing the geographical location of Jungmansgatan in Gothenburg. The area is situated in the southwestern part of the city, near Slottsskogen and Olivedal. The marked area shows the exact location of the redevelopment project. From Google Maps. (u.å). Retrieved 16 April 2025

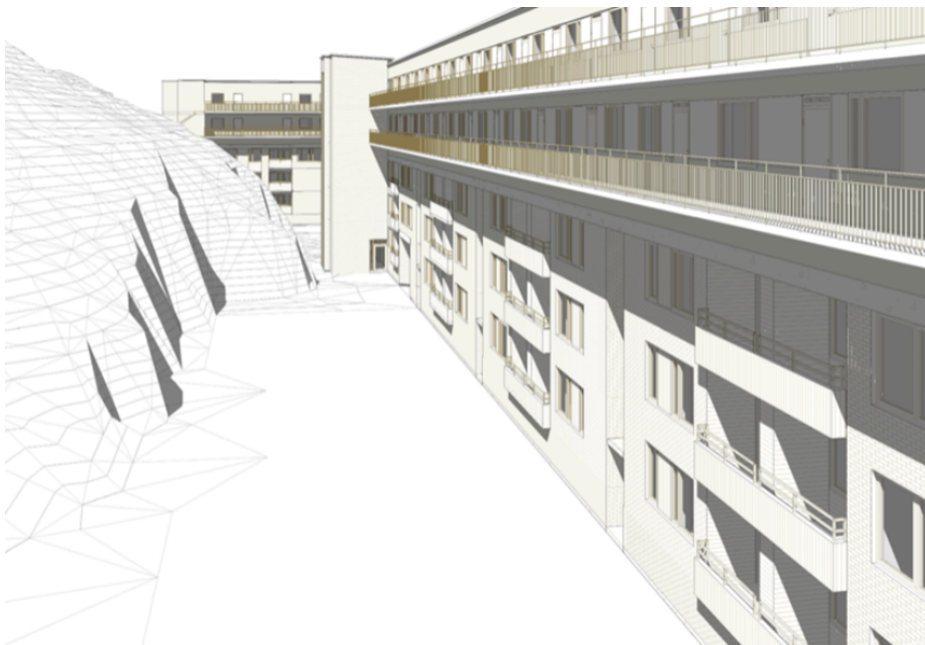


Figure 4.2 Illustration showing how the new floor will be integrated with the existing building. From: Familjebostäder. Retrieved April 2025

4.1 Tenant Communication

The Jungmansgatan project has a clear communication strategy aimed at promoting understanding and predictability for tenants during the construction period. According to Familjebostäder, the information campaign began early with large-scale information meetings, followed by regular updates across several communication channels (personal communication, Familjebostäder, 2025).

Information is conveyed through a combination of digital platforms, such as an app and website, and physical formats like notice boards, information desks, and recurring mailings. In addition, direct communication occurs via phone calls or personal meetings with tenant coordinators.

Communication methods are tailored to different tenant groups. For residents without digital access, printed letters and physical notices are used, while older residents and families with children are often offered separate information meetings or individual contact to ensure the messages are received and understood. The strategy is based on the understanding that clear and accessible communication reduces anxiety and fosters a sense of security before and during the construction process.

4.2 Tenant Involvement

Tenant involvement in the planning phase has been a central element of the project. Through consultation meetings, information sessions, and opportunities to provide feedback, residents have had the chance to remain informed and participate in the process. In some cases, tenants have been offered choices regarding renovation details, such as interior fixtures, which can contribute to a greater sense of influence.

At the same time, there is widespread dissatisfaction among tenants, which, according to Familjebostäder, largely stems from the prolonged nature of the project. The work has been paused several times, and tenants have received multiple versions and directives over the years. This ongoing uncertainty has contributed to growing frustration, with many residents feeling stuck in a state of waiting without clear information. In some cases, earlier consultation efforts have lost their effectiveness as information has quickly become outdated (personal communication, Familjebostäder, 2025).

To rebuild trust, the project team has emphasized the importance of transparency, a clear timeline, and consistent follow-up communication, even during periods when no visible progress is taking place.

4.3 Construction Planning and Practical Measures

The construction project is being planned with special consideration for the fact that tenants will remain in their homes throughout the implementation. To minimize the impact on daily life, the most disruptive activities will be scheduled for times when the majority of tenants are expected to be away from home, primarily during weekday daytime hours. Particularly noisy tasks, such as demolition and heavy installations, will be carefully coordinated with contractors to minimize disturbance.

Tenants who are especially affected by the construction work will be offered temporary solutions. These may include evacuation apartments if needed, or so-called "day apartments" where residents can stay temporarily during more intense construction phases. In addition, a dedicated communications officer will be available throughout the project to serve as a direct contact for tenants. This role is intended to facilitate dialogue and ensure that any issues or concerns are addressed quickly and effectively.

The planning is based on lessons learned from previous projects and will be continuously adapted to the conditions and needs that arise during the construction process (personal communication, Familjebostäder, 2025).

4.4 Construction Technology and Climate-Smart Solutions

The extension is designed using prefabricated apartment modules made of CLT (cross-laminated timber), a construction method selected for its environmental, technical, and economic benefits. CLT has a significantly lower climate impact than traditional materials such as concrete and steel, and it stores carbon dioxide throughout its lifecycle.

The modular construction method enables efficient production, as the new apartments are manufactured off-site in a factory while renovation work is carried out on the existing building (See *Figure 4.3*). This parallel process reduces construction time, limits waste and minimizes disturbances for current residents. Previous indicates that this method also offers a competitive cost per square meter.



Figure 4.3 Illustration of the module method. From: Familjebostäder. Retrieved April 2025

The planned extension consists of two floors, with recessed terraces facing Jungmansgatan and an access balcony on the courtyard side. To improve accessibility, two new elevators and associated stairwells will be installed on the courtyard side. Structurally, the extension is supported by a steel substructure, which creates a service layer between the existing roof and the new construction. This layer will be used to manage load distribution and integrate key installations.

Ventilation will be managed via a modern FTX system, with air handling units placed in the new part of the building. Water and sewage pipes will be routed through the service layer and connected to the building's existing shafts. To comply with fire safety regulations, load-bearing walls within fire compartments will be reinforced with fire-resistant cladding and materials.

4.5 Project Goals and Future Vision

The goal of the extension is to create more modern and energy-efficient homes while increasing the property's operating surplus. Through innovative construction solutions and careful renovation, the project aims to contribute to long-term sustainable urban development. The focus is on creating a pleasant and safe living environment where tenants feel proud of their homes, while keeping the climate footprint as close to zero as possible.

As part of their standard project practice, Familjebostäder develops a comprehensive communication plan to support these ambitions (personal communication, Familjebostäder, 2025). This plan includes an analysis and strategy for communicating key aspects such as the project's scope, timeline, and environmental and residential impacts. It also outlines the specific communication needs of tenants, how the purpose and objectives of the project affect them, and identifies target groups for communication. Furthermore, the plan sets clear communication goals and defines the activities to be implemented in order to ensure timely, accessible, and transparent dialogue throughout the project.

5 Findings

This chapter presents the results of the interview study, focusing on strategies and challenges related to minimizing disruption for tenants who remain in their homes during remodeling projects. The results are organized thematically based on recurring patterns identified in the interview material and are presented in relation to the study's overall aim and research questions. By including quotes from both housing professionals and tenants, the chapter highlights diverse perspectives on how remodeling affect the living environment and everyday life. The findings illuminate not only practical challenges but also psychosocial aspects and organizational considerations that influence the tenants' experience of the remodeling process.

5.1 Disturbance and Strains in Everyday Life

The first theme that emerged from the interviews was that everyday life is affected on multiple levels when tenants remain in their homes during ongoing construction projects. Whether it concerns noise, construction dust, or temporary shutdowns of water and electricity, the experiences are described as stressful and often difficult to manage. Many express a sense that their home loses its function as a safe space, and that the boundary between private life and construction site becomes blurred.

A particularly recurring experience is a sense of powerlessness, not being able to plan one's day, not knowing when the noise will start, or the water will be shut off and not being heard when concerns are raised. At the same time, the consequences vary greatly between individuals. Families with children, elderly people, those with illnesses, or those working from home are often more affected than others.

The analysis identified three central themes that occurred in all interviews:

Construction noise and Disturbance – High noise levels and vibrations affect tenants' daily lives, causing anxiety and stress.

Dust, Dirt, and Mess – Construction dust and disorder in and around the property are perceived as intrusions into tenants' private lives.

Temporary Shutdowns of Water/Electricity – Interruptions in access to essential utilities such as water, electricity, elevators, and entrances complicate daily life and cause concern.

Construction noise is one of the most noticeable and recurring sources of frustration from the tenants during a construction phase. The interviews show that high noise levels cause both stress and practical issues in the tenants' everyday life. Tenant B described how the noise made it *"almost impossible to concentrate"* and pointed out that it affected their ability to work from home, which Tenant B said that several other tenants in their building also had problems with. Especially the ones who were working from home or that were home during the daytime.

Project Leader A explained that construction noise often occurs during chiselling and drilling in existing structures, which leads to high noises and intense vibrations:"

Construction noise might be the distribution that the most tenants complain about because it creates intense vibrations and high noise levels". Project Leader B points out that the problem gets even bigger when the tenant works during nights: *"It was almost impossible for some tenants to sleep while they were renovating in the building"*.

The noise is not only a physical disturbance, but it also affects the tenants' sense of safety and control. Renovation coordinator D mentioned that noise from work in other stairwells often occurs as being nearby, due to the way it resonates throughout the building: *"It's really loud... the sound spreads, and it feels like it's happening right outside the door."* Several interviewees pointed out that it is not only about noise levels, but also about the unpredictability. Renovation coordinator D said that tenants expressed that they never knew when the work would start or end, which made it hard to plan their day. Renovation Coordinator B expressed: *"You never know when the noise will get very loud. It creates a constant stress"*.

Property managers have in some cases tried to minimize the noise distributions by implementing times where it must be quiet during the afternoons, offering day apartments or trying to communicate the working hours better. However, it is clear that the initiatives have not been enough. *"We had a relaxation room in a premises which we rented in the neighbourhood, it helped some but far from all"*, explained Project Leader B.

A repeated wish from the tenants is clearer information about when the construction noise will happen, as well as the possibility to influence the scheduling: *"If only you knew exactly when the drilling would happen, you could have planned differently."* The construction therefore does not only perceive as a physical disruption but also as a psychological disruption. It creates a sense of powerlessness and reduces the quality of life in one's own home.

In addition to construction noise several interviews pointed out that dust, dirt and general disorder as other major sources of irritation. Many experienced that dust entered their homes despite closed windows and doors, which led to tenants feeling that their own home was not a safe and protected space anymore. Tenant A expressed: *"It feels like something is always dusty in my apartment nowadays, it doesn't matter how much we clean"*.

Project Leader A confirmed the problem and mentioned that complaints about dust on balconies and ventilation systems is quite common. On project protections for the ventilation systems were forgotten about, which led to tenants waking up to dust inside of their apartments. Project Leader B told us: *"We learnt the hard way; tenants woke up to a layer of construction dust covering all of their furniture"*.

Several of the tenants described dirt and mess were not only restricted to the apartment undergoing renovation. Courtyards, stairwells, and walkways occurred as messy and disorganized. One of the tenants said that *"I got a flat tire on my bike several times due to the screws laying all over the place"*. This type of disruption reinforces the loss of power over the physical environments.

Social consequences also occurred. Renovation coordinator D described how residents felt cornered when construction workers looked in through the windows or moved close

to their homes. It created a sense of intrusion into one's privacy: *"You want to be able to be left alone in your own home, however while having construction workers around you need to be at your toes all the time"*.

Several project managers have attempted to address the problems by installing dust traps, improving sealing, and increasing the frequency of cleaning. However, according to the tenants it is still not enough. They are asking for more professional cleaning after heavy work tasks and better communication when construction dust can be expected. Dust, dirt, and mess does not only affect everyday life, it also affects the feeling of having a safe home. This is something some interviews said is a very common feeling from elderly people and families with children.

Access to water and electricity was another issue that affect tenants' everyday life. When these functions temporarily disappear during a construction project problems arise for the tenants, especially for families with children, elderly and people with diseases. Project Leader A expressed: *"The biggest challenge is often that tenants are left without essential facilities, such as bathrooms."* Renovation coordinator E described an example where an additional measure required the entire water supply to be shut off for a week. Even though information was sent out, it caused a lot of frustration. *"We sent out the information a month before, however, if someone missed it you stand there without preparing for it in advance"*, she mentioned. *"Problems often arise even when shutdowns are planned."* Project Leader B shared an incident where an elderly woman had missed the information and became distressed: *"She was standing there without water and didn't know what to do."*

To manage these challenges, some property managers have implemented temporary solutions, such as temporary toilets, mobile showers, and access to hygiene facilities. Property Management Coordinator A explained: *"We bring in temporary toilets for those who really want to stay at home, but who can't always make it out to the hygiene unit in the middle of the night"*. However, tenants often perceived these solutions as inadequate. Tenant A stated: *"It's unreasonable that I, being pregnant, should have to walk down several flights of stairs in the middle of the night just to use the toilet."*

Several property managers emphasized the importance of tailoring solutions to tenants' individual needs. Project Manager A said they offer daytime apartments for particularly vulnerable tenants: *"If there are tenants with special needs... we make sure they have access to alternative housing."* The psychological impact of being without electricity or water is significant. Tenant B said: *"You feel powerless. It's like you no longer have control over your own home."* This sense of powerlessness is reinforced when communication breaks down, something that is often mentioned as a key issue during shutdowns.

5.2 The Tenant's Different Circumstances

A central theme that emerged during the interviews is that tenants' experiences of remaining in their homes during construction projects differ significantly depending on their individual life situations. Throughout the interviews, whether with property managers or tenants themselves, the importance of not viewing tenants as a homogeneous group was consistently emphasized. Instead, the data highlights the need

for differentiated measures and a person-centered approach in order to ensure a safe and secure living environment during extensive construction work.

The analysis identified four central themes that occurred in all interviews:

Vulnerable Groups – Elderly residents, families with children, and individuals with health conditions are especially affected by disruptions, requiring targeted support measures such as temporary housing or mobility assistance.

Varying Experiences of Living Through Construction – While some tenants view the renovations positively, others feel stressed or invaded, underscoring the importance of personalized communication and flexibility.

Language Barriers and Communication Challenges – Limited digital access and language differences hinder effective communication, making it harder for some tenants to understand the process and feel involved.

Invisible Barriers – Mental health issues, fear, and social isolation add another layer of complexity, reinforcing the need for trust-building and ongoing, empathetic engagement from property managers.

Many interviewees pointed out that certain groups, such as elderly residents, families with young children, and individuals with health conditions, are especially vulnerable during construction. These groups are more negatively affected by factors such as noise, limited access, and reduced hygiene facilities. Property Management Coordinator A described the situation as follows: *“It’s a challenging process to work with tenants who remain in place. There might be health issues. There might be small children. There might be elderly residents. There are no guarantees until we actually meet our tenants.”* Similarly, Renovation Coordinator B highlighted the importance of identifying individual needs early in the process: *“It becomes a major issue for elderly people and those with mobility challenges. We try to address this by offering assistance with carrying groceries and making sure at least one elevator is always in service.”* For these groups, temporary housing, evacuation apartments, or specific hygiene solutions, such as access to a mobile toilet or shower unit, can be essential.

A recurring pattern in the interviews is that tenants’ reactions and experiences vary greatly. While some perceive renovations and extensions as a positive development, others experience them as an invasion of privacy. A tenant communication expert involved in an ongoing vertical extension project described it this way: *“Some think it’s really tough, and others are more like: ‘This is not a problem.’ So the reactions vary a lot.”* Several tenants expressed frustration over long-term disturbances: *“It feels like we always have dust in the apartment, no matter how much we clean.”*

Several tenants expressed frustration over the impact of ongoing construction on their daily lives. One tenant, who works from home, described the experience: *“Machines running from early morning to late afternoon make it impossible to concentrate and be productive.”* However, such negative experiences were not universal. Other respondents noted that clear communication and inclusive planning could mitigate much of the disruption. One interviewee shared: *“We made sure all meetings were well-organized, and tenants felt included in the changes, which made them more*

understanding and patient.” This highlights how tenant involvement can influence attitudes during disruptive processes.

Despite best efforts, several property managers emphasized that communication barriers remain a persistent challenge. Language differences, lack of digital access, and varying levels of literacy often limit the effectiveness of outreach. As one property management coordinator put it: *“There are still people who do not have SMS, a smartphone, or a computer. In those cases, we have to go there and leave a note or call them.”* Similarly, another renovation coordinator raised the issue of translation: *“You’d need to have everything in multiple languages... but where do you draw the line? There are just so many different languages.”* Beyond translation, ensuring actual understanding was described as equally important: *“If they do not understand, we have to make sure that they do, so they know what they’re signing.”*

These communication gaps can hinder tenants’ ability to grasp the scope and timeline of the renovation, affecting not only their engagement but also their sense of security and control. Psychosocial factors, such as stress, uncertainty, and mental health concerns, also surfaced during the interviews. Renovation coordinator E pointed out that many tenants, contrary to assumptions, are at home during the day, which intensifies the impact of construction noise and disruption: *“You assume most people are out during the day, but that’s not the case. For them, it becomes much more difficult.”*

In navigating these challenges, several coordinators stressed the value of building personal relationships with tenants. As one noted: *“The ones who may seem the most difficult can turn out to be the most helpful, because they are the ones who spread the word afterward.”* This underlines the importance of trust-building, presence, and responsiveness in maintaining good tenant relations during renovation projects.

5.3 The Role of Communication

The importance of communication cannot be overstated in construction projects where tenants remain in their homes during the process. Throughout our interviews, communication has been identified as one of the most crucial tools for reducing anxiety, building trust, and facilitating collaboration between tenants, property managers, and contractors. The interviewees consistently emphasized a clear connection between effective communication and a smoother construction process, while inadequate or unclear information tends to generate dissatisfaction, confusion, and frustration.

The analysis identified four central themes that occurred in all interviews:

Information Meetings – Physical meetings provide tenants with a platform to ask questions and receive clarification, which reduces uncertainty and increases transparency.

Digital Channels and Hallway Notices – A combination of communication tools, from apps to printed notices, is necessary to reach different tenant groups and accommodate varying levels of digital literacy.

Clarity and Timing – Clear, well-timed information, delivered repeatedly, builds trust and prevents misunderstandings.

Communication as Relationship-Building – Ongoing, responsive communication fosters trust and inclusion, turning information-sharing into a foundation for long-term cooperation.

A recurring theme in the interviews is the importance of physical information meetings, where tenants are given the opportunity to ask questions and view examples of how their living environment will be affected. These meetings play a key role in easing concern, particularly among residents who are sceptical or anxious about the scope of the project.

Property Management Coordinator A emphasized the value of these meetings: *“We usually invite the residents from the building where we are about to begin. They can come down and share their thoughts. There are many people from the company present at these meetings, and we can respond to all types of questions.”* Renovation Coordinator B similarly highlighted the need for face-to-face interactions: *“We’ve held several meetings where tenants were invited to ask questions and share their views. It’s important that tenants feel they have a place in the process.”* Renovation Coordinator C confirmed the importance of starting communication early: *“We’ve learned that it’s crucial to begin the dialogue before the project even reaches the drawing board. If you wait too long, it’s harder to get tenants onboard. That’s why we start with an early physical meeting.”* It also became clear that information is distributed through mailings, including letters, emails, and printed notices, to reach tenants who cannot attend meetings or who prefer to absorb information at their own pace.

The interviews reveal that tenants vary widely in their preferred ways of receiving information, which has led property managers to adopt a combination of communication channels. Several coordinators described strategies that blend physical notices, digital platforms, and personal contact in order to reach as many residents as possible. Renovation Coordinator B explained that *“we use a combination of channels. We send letters to all tenants and also use digital platforms like apps. But we’ve seen that digital methods do not always reach all groups, especially older tenants.”* This sentiment was echoed by Property Management Coordinator A, who emphasized that *“If the information is really important, we always put a note in the postbox, depending on what we want to say. We also communicate digitally in ‘My Pages’. But we know that not everyone logs in, so we send emails, text messages, or we call them.”*

While physical methods like letters and hallway notices remain useful, their limitations are also clear. Renovation Coordinator C noted that such notices are often removed or overlooked, and therefore *“we always supplement them with SMS and email when the information is critical.”* One tenant also pointed out the risk of information overload: *“There are so many notes that you eventually stop reading them.”* This highlights a central challenge: simply providing information is not enough, it must also be clear, timely, and delivered through channels that tenants actually engage with.

Opinions diverge on the effectiveness of digital communication. While some view digital tools as efficient and accessible, others point out that they can unintentionally exclude groups with lower digital literacy, particularly elderly residents. As such,

communication strategies must be flexible and sensitive to tenants' varied needs and capacities.

In addition to the channel of communication, its timing and clarity play a crucial role. Property managers emphasized that consistent and well-timed messaging builds trust and reduces confusion. Renovation Coordinator E explained that while planning is essential, *“information shouldn't come too early, or people will forget it.”* Similarly, Coordinator A described a phased approach: *“We start informing tenants about one and a half years before we begin any major work. But we also provide new updates before each specific action. Timing is key.”*

Mistimed or unclear communication can have serious consequences. Communicator A recalled an incident where incorrect scheduling led to mistrust: *“We announced that the drainage system would be shut off in two weeks, but the contractor broke it already the following week. We had to apologize and send out a correction immediately. That kind of thing affects trust.”* Another noted that some households had missed the start date entirely, prompting their team to implement follow-ups via printed material and in-person visits. There was no consensus among respondents regarding how far in advance information should be shared. Some organizations consider one to three months sufficient, while others follow a detailed communication plan extending over several years. These variations reflect both the scale of the renovation projects and the internal practices of different housing companies.

Crucially, communication was described not just as a tool for information-sharing, but as a means to foster relationships, trust, and a sense of security. Renovation Coordinator B emphasized the importance of listening and responsiveness: *“There's been a lot of discussion about the extension, and many tenants have expressed concerns. That's why we've focused particularly on listening to their worries.”* Coordinator E highlighted their mediating role between contractors and tenants, explaining that their task is to *“translate technical language into something understandable and manageable for the people who actually live there.”* Finally, Communicator A pointed to the importance of personal continuity: *“It matters that the same person remains involved throughout the project. That way, you build a relationship, and tenants are more likely to ask questions—even about sensitive issues.”* In sum, effective communication is more than just a logistical necessity, it is a critical aspect of tenant inclusion, trust-building, and social sustainability. By respecting tenants' diverse needs and ensuring they are kept informed and involved, housing companies can greatly improve the renovation experience for all parties.

5.4 Supportive Measures and Solutions

The fourth central theme that was discovered during the interviews was the importance of supportive measures that can mitigate the impact of construction projects on tenants' daily lives. However, while some tenants choose to evacuate during the disturbances, many stayed in their homes and experiences a large number of disturbances. Therefore, it often requires support in the form of alternative housing solutions, practical aids, or access to quiet environments. The measures vary in design, but a common denominator is that they are seen as a sign of care and flexibility, something that, in, turn, strengthens tenants' sense of security and perception of understanding from the property owner's side.

At the same time, it was discovered that these supportive measures are connected to costs and organizational challenges. Property owners are forced to do trade-offs between investments in temporary solutions and a focus on efficient production. Several Project Managers emphasized that proactive planning and early identification of tenants' needs increases the likelihood that the measures offered actually address the tenants' real challenges.

Three key forms of support were identified in the interview material:

Day apartments and quiet spaces – Alternative environments outside the noisy home are perceived as important for regaining a sense of control and being able to work or rest undisturbed.

Aids and temporary solutions – Practical measures such as temporary toilet, ear protection, or portable showers facilitate remaining in the home but require individual adaptation to be perceived as sufficient.

Furnished relocation apartments – When disturbances become too extensive, temporary housing is seen as necessary, especially for the elderly or particularly vulnerable groups.

In addition to their functional aspects, day apartments and quiet spaces also carry symbolic significance. Several interviews described those measures as a demonstration of care, and a desire to improve the situation. Renovation coordinator D mentioned that it is sometimes enough to rent a space where: *“you can go down and chill for a while”*, while others such as Property Management Coordinator A pointed out it is very important that those spaces are equipped with working spaces and technology that is needed for remote work. *“In some cases we have set up a space equipped with two desks and two screens where people can go and work from home even though there is a renovation going on”* she said.

Tenants confirmed the need: one person who works from home described how it was *“almost impossible to concentrate”* while the machines were going from early morning until late afternoon. In another case of tenant suggested that the construction with loud noises during the hours where the most people are not home, something that highlights the importance of flexibility in scheduling. Project Leader A explains that they introduced “quiet periods” as an attempt to respond to this need.

Communicator A described how the loudest activities, such as chiselling and drilling, are scheduled for the most time at specific times to make the living environment more bearable. *“For instance, we usually schedule the loudest work between 08:30 and 15:30 to avoid disturbing the tenants.”*

Even though these solutions are not always perfect, they are often seen as better than nothing. As Project Manager B puts it: *“It wasn't a luxury hotel, but it gave them a change to get a few hours of sleep in peace and quiet.”* This suggests that access to alternative spaces can create opportunities for recovery, even when resources are limited. A common setup includes rooms with desks and monitors where tenants can go to concentrate. *“Many people have Teams meetings at home these days... so it's*

important to have somewhere to go when the noise is at its worst,” explains Communicator B.

Beyond spaces for relaxation and focus, tenants are sometimes offered practical tools to help manage the effects of the renovation. These can include hearing protection, dust traps, temporary toilets, or portable showers, often customized to individual needs. Project Manager A described how portable toilets are sometimes provided, although she admitted that they are not always ideal, especially for elderly tenants. Renovation coordinator D explained that temporary toilets are used to assist those who cannot or do not want to go outside to a hygiene unit at night, while Property Management Coordinator A noted that these toilets can also be rented for longer use at home.

Several project leaders mentioned technical methods to reduce the impact. Project Leader A described the use of machines with vacuum systems and sound-dampening screens, while Project Leader B noted the use of vibration-dampening materials in some projects. These technical adaptations aim to reduce both noise and dust, which can otherwise make indoor environments uninhabitable.

Renovation Coordinator B emphasized the importance of planning to avoid electricity and water outages. Renovation coordinator E explained how they supported tenants with tips like filling bottles with water in advance, helping them prepare for upcoming shutoffs. Despite these efforts, it's clear that these tools are not universal solutions. One tenant described frequent problems with elevator access and a lack of timely information that made matters worse. Another said that shared facilities like laundry rooms were difficult to reach, suggesting that even temporary features require careful planning.

When the impact becomes too great, or when individual circumstances make it impossible to stay, some tenants are offered furnished temporary apartments. These are described as essential tools, particularly for the elderly, the sick, or families with children. Project Manager A explained that the option of relocation helps tenants feel more secure throughout the process. *“In larger renovations, sometimes relocation is necessary,”* she said, noting that decisions must be based on the scope of the work.

Project Manager A described how, in large-scale projects several furnished temporary apartments are in constant use. *“We try to turn over every stone to help,”* she said, though she acknowledged the logistical challenges related to moving companies and limited availability. Renovation Coordinator A emphasized the importance of flexibility: *“sometimes plans must change, even if the initial idea was for everyone to stay in place.”*

Renovation coordinator E discussed the difficulties caused by housing shortages. In some cases, construction had to be delayed simply because no alternative housing was available. *“You have to have a backup plan. There needs to be a plan B for those cases where it simply doesn't work,”* she said, highlighting the need for long-term planning. Project Leader B described how alternative housing options are sometimes found in nearby buildings, especially for the most vulnerable.

Tenant A and B also expressed the need for such support. One person said that their mental health was seriously affected by staying during renovations: *“It affected both*

my work efficiency and my mental well-being.” Another felt that the planning had prioritized fast completion over consideration for their life situation. These accounts show that temporary housing is not just a practical solution, it is a way to show respect for tenants’ health and dignity.

Renovation Coordinator B, who has coordinated evacuations, stated that ensuring no one is negatively affected is one of the biggest challenges. *“Trust is a form of support in itself,”* he said, emphasizing that promises about temporary solutions must be reliable. In projects where entire building stocks are affected, it is crucial to have a relocation strategy in place from the beginning. When this works well, it can reduce stress and lead to higher tenant satisfaction once the project is complete.

5.5 Flexibility and Improvisations

A recurring theme in our interviews concerns how unforeseen situations arise despite planning, and how property managers and project leaders must be prepared to adapt. Flexibility and improvisation emerge as essential skills in order to handle situations that cannot be foreseen during the design phase. This theme includes everything from quickly finding alternative housing solutions to improvising communication strategies or rescheduling construction phases.

The analysis identified three central themes that occurred in all interviews:

Managing Unforeseen Cases – Unexpected situations such as health issues, denial of access, or urgent noise complaints require immediate action from property managers.

Alternative Planning – Technical obstacles, blocked stairwells, or lost access keys often necessitate rescheduling and real-time adjustments in project planning.

Quick Solutions – To minimize the impact on tenants' daily lives, quick and sometimes unconventional solutions are implemented to maintain trust and keep the project moving.

Several of our interviewees describe how construction projects often encounter situations that cannot be predicted, such as tenants who suddenly become unable to remain in their apartments or unexpected demands for evacuation. In such cases, immediate flexibility and the ability to act quickly are required, sometimes even before the entire organization has been informed. Property Management Coordinator A recalls a particularly challenging moment: *“The worst is probably when you show up in a tenant’s apartment and there’s a family with kids there, or someone seriously ill. But haven’t contacted us. It’s incredibly difficult to resolve that situation in just a few days.”* Despite careful preparations and backup plans, such situations are not always possible to resolve immediately. As Renovation Coordinator E explains: *“We’ve had to skip over certain apartments because we didn’t have a solution available.”*

The interviews suggest that property managers must always be prepared for the unexpected. Renovation Coordinator C notes: *“We always need to have some sort of backup solution, because you never know when someone might refuse access or panic.”* Communicator A shares a similar experience, describing a Friday afternoon

when a tenant suddenly reported being unable to cope with the noise: *“We got a call at 4:30 p.m. on a Friday from a tenant who couldn’t handle the noise level. We had to solve it immediately, without warning.”*

These examples demonstrate that even well-planned projects are often met with unpredictable situations requiring rapid intervention. A tenant’s health, family circumstances, or lack of information may trigger the need for immediate response. Property managers must therefore embed flexibility into the process and maintain the ability to make quick, informed decisions as situations evolve on the ground.

When obstacles such as access issues or technical limitations arise, the project must be adapted in real time. Several interviewees emphasized the need to reorganize, reprioritize, or pause specific tasks. Renovation Coordinator C describes how they’ve had to delay certain phases: *“We’ve had to postpone parts of the renovation when access wasn’t possible. Then we move on to other stairwells in the meantime.”* In other cases, temporary technical solutions were necessary. Renovation Coordinator B explains: *“There was no access to the fourth floor because the stairwell was blocked. So, we had to adjust the installations for the time being.”* Similarly, issues with lost or misplaced access cards sometimes required rescheduling: *“We’ve had cases where too many people had keys, or someone lost their access card. Then we have to pause that section and return later,”* says Renovation Coordinator E.

The interviews clearly show that alternative planning and real-time problem-solving are essential in renovation projects where tenants remain in place. Workflows must remain flexible enough to adapt without causing delays for the overall project. This requires both a readiness to adjust scheduling and the capacity to resolve emerging issues quickly.

In addition to long-term planning, the interviews highlight the importance of fast, practical solutions when unexpected events occur. Property managers and project leaders are often required to act immediately, sometimes using unconventional methods. Property Management Coordinator A gives one example: *“I find a vacant apartment, we call the moving company, we get keys, and everything sorted in three days. You just must go.”* Similarly, Communicator A describes a creative approach: *“We’ve sometimes improvised by using our office spaces as temporary lounges for tenants who needed to escape the everyday noise.”*

6 Discussion

The purpose of this chapter is to discuss how the study's findings relate to previous research on renovation and vertical extension in inhabited residential buildings. The discussion is structured around the thesis's three research questions and aims to identify recurring patterns, key challenges, implemented solutions, and new insights that emerge at the intersection of theory and practice.

6.1 Challenges and Concerns Experienced by Tenants

This section addresses the question: what are the main challenges and concerns for tenants living in buildings undergoing renovation or vertical extensions? Drawing from our interview material, we identify how physical disruptions, such as noise and limited access to services, intersect with psychological and social concerns. These insights are then discussed in relation to established research on urban living, densification, and tenant wellbeing.

Tenants living in residential buildings undergoing renovation or vertical extensions often face a range of disruptions that affect their daily routines, sense of stability, and overall well-being. These disruptions include noise, dust, vibrations, and limited access to water, electricity, and sanitation facilities. Ng (2000), Ma et al. (2018), and Wang et al. (2023) consistently highlight how these factors cause stress, sleep disturbances, and physical health issues. These findings are supported by our interviews, where a recurring narrative is that the home loses its function as a safe and controllable space. Several respondents used terms like "chaos," "powerlessness," and "an unstable daily life" to describe their situation.

Our study supports these previous findings but also reveals an additional dimension: the psychological effect of uncertainty and lack of control. Koops-Van Hoffen et al. (2024) emphasize that psychological stress, triggered by unpredictability and lack of information, can be as disruptive as the physical disturbances themselves. This aligns with our interviews, where tenants described increased anxiety and frustration linked to vague or last-minute communication. One respondent stated: "You never know when the drilling will start. You can't plan your day." This highlights a need for more structured routines and reliable communication.

These disturbances are not only physical but deeply emotional and social. Broitman and Koomen (2015) argue that the transformation of everyday urban environments, especially through densification, can disrupt people's spatial attachment and psychological balance. Similarly, tenants in our study reported disrupted routines, family tensions, and a general sense of displacement. One parent expressed concern about their child's sleep being constantly interrupted, while others mentioned the strain on household relations due to stress and fatigue.

Gehl (2010) argues that densification can erode a neighbourhood's identity and sense of place if not planned with the human scale in mind. Our findings support this: when construction zones replace common areas, tenants feel they have lost control over their environment. Several stopped using balconies or allowing their children to play outside. In some cases, this permanently altered their emotional connection to their home. For

some, this shift meant a reduced sense of belonging and emotional disconnection from what was once a familiar space.

Palm et al. (2020) and Femenias et al. (2022) show that vulnerable groups are hit hardest. Guo et al. (2024) add that socioeconomic status, language skills, and digital literacy significantly shape tenants' ability to cope with disruptive changes in housing environments. We observed similar patterns: one tenant missed a water shutoff notice and could not cook or shower, while another described panic when the elevator stopped working without prior notice. The challenges were often magnified for those without support networks or clear communication channels.

Technical fixes are not enough. Our study confirms that support and communication need to be adapted to real-life situations. Šnīdere, Geipele, and Stāmure (2017) note that lack of understanding breeds resistance. We observed this too: unclear messaging reduced trust and made people withdraw from shared spaces and community life. Many studies focus on physical effects, but our findings show that relational and environmental stressors are just as critical. As Åslund (2019) point out, construction-related disturbances have cumulative effects over time, especially when they affect perceived comfort and autonomy. Tenants described how being personally acknowledged, through direct contact or simple, respectful gestures—helped restore a degree of dignity and control. Recognition builds trust, which in turn shapes how people experience disruption.

If these challenges are overlooked, tenant wellbeing and trust may be permanently affected. Our findings show that even small disruptions can have long-lasting consequences when tenants feel unheard or uninformed. At the same time, many negative experiences could be mitigated through clear routines, proactive communication, and attention to social dynamics. Koops-Van Hoffen et al. (2024), Guo et al. (2024), Åslund (2019) all emphasize that comfort, control, and predictability are key for maintaining stability in daily life. Our study strengthens this view and adds tenant voices to the picture, voices that call for transparency, respect, and meaningful engagement.

6.2 The Impact of Communication

The literature clearly emphasizes that effective communication is crucial for reducing uncertainty and stress during construction projects in inhabited residential environments (Oresten, 2014; Djajalaksana et al., 2017; Hällgren & Xyggogianni, 2015). Our interviews confirm this but also show that it is not enough to simply communicate. It is more about how communication is carried out significantly influences how it is perceived.

A recurring theme in our interviews is that tenants request clear, repeated, and audience-specific information. Despite the fact that property owners often use multiple communication channels, such as mobile apps, stairwell notices, emails, text messages, and physical meetings, the information does not always reach its intended audience. As one tenant expressed: *“There are so many notes that you eventually stop reading them.”* This illustrates one of the most common pitfalls: communication that becomes too extensive or unclear, resulting in reduced effectiveness. This is also supported by interviews with property managers, who describe how stairwell notices are sometimes

taken down or ignored, necessitating complementary SMS messages or personal outreach.

Several interviewees, both tenants and professionals, highlight the importance of physical informational meetings at the beginning of the project. These meetings provide opportunities for dialogue and questions and serve as a first step in building relationships between managers and tenants. This aligns with Gehl (2010), who emphasizes that communication should not be a one-way flow of information, but a participatory and listening process. At the same time, our interview findings show that such meetings can lose their value when the information quickly becomes outdated, for instance, if the project is paused or if the timeline changes without new updates being communicated. This may lead to confusion and distrust, even when the original intention was to create transparency. However, Thörn et al. (2023) note that perceived exclusion from decision-making can occur even when formal meetings are held, a finding echoed in our study. Several tenants expressed frustration at not feeling included in the process, despite having received information. There is thus a clear difference between being informed and having actual influence.

Olsson et al. (2022) stress that communication should be considered an integrated part of the social infrastructure in housing management, particularly within publicly owned housing. This perspective is reflected in our interviews, where successful examples include the same contact person being involved throughout the project, and the adaptation of meeting formats to different tenant groups, for instance through individualized contact with elderly residents or families with children. Nachemson-Ekwall et al. (2023) highlights that proactive and structured communication contributes to a sense of security, which becomes particularly important in complex renovation and densification projects. Our study shows that even during periods when no visible progress occurs, ongoing contact serves as a vital reassurance, signaling that the project is not forgotten, and that tenants' situations remain a priority.

A common need highlighted in our interviews is that written information alone is not sufficient. Tenants also request verbal communication, personal contact, and opportunities for feedback. Several respondents emphasized the importance of having someone to talk to, particularly in situations where uncertainty or misunderstandings arise. This combination of communication methods contributes to increased participation and clearer information dissemination. This is also supported by the literature, showing that ongoing dialogue and varied communication formats reduce the risk of misinterpretation, especially among so-called secondary stakeholders, such as tenants (Safapour et al., 2019)

Designing communication not only to inform but also to engage the recipient is considered particularly important in complex urban development projects. Research indicates that more interactive communication tends to foster greater acceptance among affected groups, especially when the communication is adapted to the audience's specific needs and circumstances (Pham, 2024). This is also evident in our study, where, for example, individualized contact with elderly tenants or families with children was perceived as particularly positive.

6.3 Support to Tenants

Supporting tenants during renovation or vertical extension projects requires more than standard compensation or temporary solutions. As highlighted by Femenias and Granath (2023), effective support is a balance between structured services, like temporary relocation, silent rooms, and sanitation alternatives, and an adaptive, human-centered approach. This is reinforced by our findings, where tenants appreciated not only what was offered but how it was offered. In many cases, the awareness of available support was low. Several tenants stated they were unaware of temporary solutions. According to the 2025 report by *Svensk Byggtidning*, this is a widespread issue: while many housing companies develop detailed support strategies, these often fail to reach those most in need. The report emphasizes the importance of early and ongoing contact, ideally through dedicated tenant coordinators present on-site. In addition, Baeten et al. (2016) highlight that interventions are often designed around technical feasibility rather than the everyday lives of residents. Our interviews confirm this disconnect. For example, a tenant explained that the offered temporary apartment was located too far away, making it incompatible with childcare and work schedules. Others reported that available solutions lacked privacy or cleanliness, leading them to decline support despite significant personal disruption.

Interestingly, our study also uncovers the emotional power of symbolic gestures. Even small signs of attentiveness, like checking in with elderly tenants or offering extra support, were described as impactful. Macek and Vitásek (2024) argue that such symbolic actions can generate a sense of mutual respect and recognition, which in turn fosters higher acceptance of the inconvenience. Another key insight is the importance of flexibility to sudden tenant needs. One housing manager described how they had to arrange an emergency relocation within hours due to an unforeseen medical situation. These cases underscore the limits of rigid protocols. Tenants' needs can shift rapidly, and responsive management is essential for both trust and well-being.

Therefore, we argue that successful tenant support must include both a well-planned structure, such as needs assessments and clear process steps, and space for improvisation. This dual approach can bridge the gap between policy and lived experience. As both our findings and the literature suggest, meaningful support is not about checking boxes, but about relational care.

6.4 Value Conflicts

Renovation and vertical extension in already inhabited residential areas involve not only technical and practical challenges, but also deep-rooted value conflicts between different stakeholders. Our study shows that many of the tensions arising during such projects, such as those related to communication, disturbances, rent increases, or support measures, are fundamentally driven by conflicting perceptions of what is considered valuable, by whom, and over what time frame.

For property owners, value often lies in long-term profitability and management efficiency. Vertical extensions can increase rental income, improve energy performance, and reduce future maintenance needs. It is also a way to contribute to the city's housing supply, aligning with several strategic goals highlighted in the literature (Tyréns, 2022; Olsson et al., 2022). However, as both our empirical findings and

previous research show (Palm et al., 2020; Thörn et al., 2023), these interventions may worsen the living conditions of existing tenants, particularly when the cost of improvements is effectively passed on to them through higher rents or reduced quality of life during the construction period.

Tenants, on the other hand, often define value in different terms: security, reasonable rent levels, continuity in daily life, and the feeling of control over one's home. Our study demonstrates that even minor disruptions can have significant impact when communication is lacking or when tenants feel excluded from decisions. This creates a gap between the property owner's financial rationale and the tenant's lived social experience, one that is further exacerbated when compensation or support measures are perceived as inadequate. This is particularly evident in cases where renovation leads to so-called "renoviction," with rising rents pushing vulnerable groups out of their homes (Femenias et al., 2022; Fastighetsägarna, n.d.).

From a societal perspective, the picture is similarly complex. On one hand, there are strong incentives for energy efficiency, densification, and preservation of existing building stock, objectives that Boverket (2023) and Thrysin et al. (2023) emphasize as essential for achieving climate targets. On the other hand, society also bears responsibility for reducing housing segregation, protecting tenancy as a form of tenure, and ensuring access to affordable housing in desirable areas. In other words, there are built-in tensions even within public policy goals between ecological, economic, and social sustainability. As Boverket (2024) points out, these dimensions must be balanced rather than pursued in isolation. In our case study, these contradictions are manifested in small but telling details: when the property owner seeks to streamline the flow of information while tenants call for more presence and dialogue; when technical execution is prioritized but no space is allocated for recovery; or when a project is designed to increase property value, yet tenants report feeling unsafe or alienated in their own home.

If social sustainability is not taken seriously in renovation and densification projects, the consequences can be far-reaching for both tenants and property owners. For tenants, ongoing stress, exclusion from decision-making, and a perceived lack of respect can lead to a breakdown in trust, increased vulnerability, and, in some cases, forced relocation. Over time, this can contribute to social fragmentation, declining mental health, and weakened ties to the local community. Particularly in public housing, where many residents already face structural disadvantages, failure to account for social aspects risks reinforcing existing inequalities.

For housing companies and public landlords, neglecting the social dimension may result in reputational damage, strained tenant relations, and increased resistance to future projects. Dissatisfied tenants are more likely to contest decisions, delay processes, and disengage from shared responsibilities. This in turn can increase project costs, reduce operational efficiency, and ultimately undermine the broader goals of sustainable urban development. As the literature suggests (Turcu, 2012; Dempsey et al., 2011), sustainable transformation is not only a technical or economic challenge, it also requires cultivating legitimacy, inclusion, and long-term social resilience. When these aspects are overlooked, sustainability risks becoming fragmented and short-sighted.

7 Conclusion

The purpose of this study was to investigate how renovation and vertical extension projects in inhabited multi-family housing affect tenants, and to explore strategies for minimizing disruptions through communication and supportive measures. Through a literature review and a qualitative case study of Jungmansgatan in Gothenburg, key patterns were identified in tenants' experiences and property managers' approaches. The main conclusions of the study are summarized below in relation to the three research questions.

What are the primary challenges and concerns experienced by tenants during an extension project or a renovation?

Tenants who live during construction experiences many different disturbances in their everyday life such as noise, dust, and temporary interruptions in access to water, electricity, and other essential services. These disturbances effect both the physical and physiological everyday life, especially för more vulnerable groups for example elderly, families with young children and people with health issues. A recurring theme was the feeling of powerlessness and unpredictability, which amplified the experience of stress and anxiety. The results show that tenants' well-being is influenced not only by technical conditions, but to a large extent by their sense of security, influence, and control over their living environment.

How can effective communication between tenants and property managers mitigate negative experiences during construction?

The results showed that effective communication was a crucial factor to minimize insecurity and stress, during the time of the project. It is not only about what is being communicated, but also how, when and which channels are being used. Tenants' request clear, repeated, and targeted information, especially through a combination of physical meeting, digital tools, notices in stairwells, and direct contact. Insufficient or unclear information often leads to distrust and irritation. It is also important that communication is not only informative, but it should also be inclusive, providing tenants with opportunities for dialogue and influence. Continuity in contact persons and personal presence proved to be particularly valuable.

How can property managers provide support to tenants during such projects?

Support measures are central to reducing negative impact on tenants' daily lives. Examples of this is evacuation apartments, access to quiet workspaces, temporary toilet and shower facilities, and individually tailored support. Even though these support measures can be demanding in terms of resources, are they often being perceived as a sign of care and understanding, especially when they are being tailored to the tenants needs. The study shows that flexibility, quick response, and the ability to manage unforeseen situations are crucial for maintaining trust and well-being throughout the project.

The case study of Jungmansgatan highlights the complexity involved in renovation and vertical extension projects in inhabited residential buildings. Despite an ambitious

communication strategy and planned support measures, delays and uncertainties have led to frustration and a decline in tenant trust. At the same time, the project provides positive examples of how communication can be tailored to different groups and how climate-smart construction methods can be used to reduce environmental impact.

A key takeaway is that even well-planned projects risk losing legitimacy if expectations are not clearly and continuously managed. Jungmansgatan demonstrates that communication must be ongoing and responsive to the project's development, not limited to the initial stages. It also shows that flexibility, attentiveness, and long-term presence are crucial for maintaining tenant trust and ensuring that densification efforts remain socially sustainable.

To strengthen the project's social anchoring and rebuild trust among tenants, we recommend the following actions:

- Reestablish a clear schedule and communicate it honestly. Create a realistic, updated project plan, even if the timeframes are tentative. Explain the reasons for the delays and clearly outline the next steps. Clarity reduces speculation and frustration.
- Reopen the dialogue through targeted information meetings. Invite smaller, personalized meetings with different groups of tenants (e.g. elderly, families with children, people with disabilities). Also offer digital options. The dialogue should be two-way, let tenants ask questions and make suggestions.
- Strengthen local presence in the area. Consider having a permanent contact person on site for part of the week, a kind of “resident dialogue coordinator”, who can address concerns in real time and create continuity.
- Update and broaden communication channels. Ensure that important information is sent out both digitally, via text messages and in physical form (letters, stairwells). Follow up to verify that the information actually reaches the intended recipients. Provide translations into multiple languages to ensure accessibility for all tenants.
- Introduce new routines for follow-up and feedback. Document recurring questions, problems and comments and provide feedback on how they are being taken forward. This signals responsiveness and responsibility.
- Expand support for vulnerable tenant groups. Establish clear guidelines for temporary solutions such as “day apartments,” access to quiet workspaces, and relocation options when necessary, preferably in collaboration with social services or local community organizations.
- Involve tenants in the design of certain elements. Even small choices such as colors, storage solutions or interior details. It can increase tenants' sense of involvement and reduce resistance to changes.

By implementing these measures, Familjebostäder has the opportunity to rebuild trust and create a more stable foundation for the continued development of the

Jungmansgatan project. Addressing the social dimension of the renovation is not only a matter of tenant satisfaction, it is a prerequisite for long-term project success. Through proactive communication, presence on site, and tailored support, the project can shift from being a source of uncertainty to becoming an example of socially responsible urban development. With continued responsiveness and transparency, property owners can strengthen their relationship with tenants and ensure that future densification efforts are both sustainable and inclusive.

This study highlights the importance of communication and support in renovation projects with remaining tenants, but further research is needed to expand knowledge. Future studies could compare different types of housing providers, such as municipal and private landlords or explore how tenants experience different phases of a renovation project. It may also be useful to examine how digital tools can improve communication without excluding those with limited digital access. Continued research can help identify effective methods for creating socially sustainable housing projects.

8 References

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