

CHALMERS



Refurbishment effects in residential areas

The case of Högsbohöjd

Master of Science Thesis in the Master's Programme

Design and Construction Project Management

MARIA LIABÄCK
NIKLAS SKOGSÄTER

Department of Technology Management and Economics

Division of Service Management

CHALMERS UNIVERSITY OF TECHNOLOGY

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Department of Technology Management and Economics
Division of Service Management
Chalmers University of Technology
SE-412 96 Göteborg, Sweden
Telephone: + 46 (0)31-772 1000

Cover:

The cover picture is from a booklet printed in 1960 when the area of Växelmyntsgatan was developed. Reproduced with permission by Bostads AB Poseidon.

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ABSTRACT

This thesis work examined the effects of a large-scale refurbishment conducted between the years 1993 and 2001, in a Swedish residential area with about 800 multi-family apartments from the early 1960s. The report also examined how the tenants value components of the refurbishment. A case study approach was used to collect deep and narrow information within a limited timeframe, complemented with a questionnaire survey that yielded an unusually high response percentage. The economic and social aspects of refurbishments were studied in a literature review and used as frame of reference when analysing the refurbishment effects. The findings state that large-scale housing refurbishments and the subsequent rent increases do not necessarily foster a gentrification of tenants, as the case study indicate that no major demographic changes occurred.

Statistical analyses of questionnaire data revealed interactions between refurbishment variables and rent acceptance. The following refurbishment variables were found to be significant in their relation to the households' acceptance of rent increases:

- Quality of received information about refurbishment decisions
- Functionality of kitchens
- Comfort of apartments
- Apartment appreciation
- Number of children in household (reverse relation)

Though the quality of information was found to be of significance, the number of channels utilised to inform the tenants about the refurbishment did not interact with their acceptance of rent increases. None of the external features of the refurbishment were found to interact with tenants' acceptance of increased rents.

Key words: Gentrification, refurbishment effects, rent-increases.

Långsiktiga effekter vid renoveringar av bostadsbestånd
-En fallstudie av Högsbohöjd.

Examensarbete inom Design and Construction Project Management

MARIA LIABÄCK

NIKLAS SKOGSÄTER

Institutionen för teknikens ekonomi och organisation

Avdelningen för Service management

Chalmers tekniska högskola

SAMMANFATTNING

Detta examensarbete har studerat vilka effekter som uppstod vid en total upprustning av ett bostadsområde med flerbostadshus från tidigt 60-tal. Upprustningen ägde rum mellan åren 1993 och 2001 och omfattade ca 800 lägenheter. I arbetet studerades även hur hyresgästerna värderade olika delar av renoveringen gentemot hyreshöjningen de innebar. Som grund till resultaten ligger en fallstudie kring renoveringen och området samt en enkätundersökning riktad till de hyresgäster som upplevde renoveringen. De ekonomiska och sociala aspekterna av stora renoveringar tas upp i form av en litteraturstudie och används sedan som referenspunkter för analys av resultaten.

De huvudsakliga slutsatserna i rapporten är att större renoveringsåtgärder som svar på ett upprustningsbehov och de hyreshöjningar som följer, inte nödvändigtvis ger upphov till en gentrifiering av de boende. Resultaten visade på att områdets demografiska profil inte förändrades nämnvärt under renoveringstiden eller under efterföljande år.

Statistiska analyser av enkätdata indikerade flera samband mellan olika aspekter av renoveringen och hyresgästernas acceptering av hyreshöjningarna. Följande aspekter visade sig samvariera med hushållens acceptering av hyreshöjningarna:

- Kvalitén på informationen hyresgästerna fick rörande renoveringen
- Funktionaliteten hos köken
- Lägenhetskomforten
- Trivseln i lägenheten
- Antalet barn i hushållet (omvänd relation)

Trots att kvalitén på informationen till hyresgästerna visade sig interagera med hushållens acceptering av hyreshöjningar så visade resultaten att sambandet med antalet kanaler använda till att sprida informationen inte var signifikant. Ingen av de externa aspekterna av renoveringen visade sig interagera med accepterandet av hyreshöjningarna.

Nyckelord: Effekter av renoveringar, gentrifiering, hyreshöjningar, renoveringar.

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Preface

While conducting our research during the spring of 2013, we came across numerous interesting sub-topics and new scopes that lie outside the boundaries of this report. It remains apparent that further research is required in this field.

Throughout the spring of 2013, while writing our thesis, we have had both peers and senior researchers to thank for valuable insights and feedback:

Professor Jan Bröchner, for supervising our research, evaluating our methodology and providing hints of good literature from which we have developed interesting ideas. In addition, Jan's expertise in report writing has helped us in raising both the quality and layout of our report.

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Göteborg, June 2013

Maria Liabäck

Niklas Skogsäter

1 Introduction

This Master's thesis report was part of a larger study called "*Management in city development: What can we learn by previous experiences?*" carried out in the Department of Architecture at Chalmers University of Technology. The study is a cooperation between Chalmers, Bostads AB Poseidon and Stena Fastigheter Göteborg AB, with finance support from the Centre for Management of the Built Environment.

1.1 Research questions

The investigation originally started with a wide focus on sustainability aspects of refurbishments. Since then, the focus was successively narrowed down throughout the spring as the authors gained better insights from available data.

This thesis aimed to provide answers to following questions:

- What demographic effects follow a large-scale residential refurbishment?
- How do tenants perceive and rank the improved facilities from a refurbishment?
- For which aspects of their enhanced standard of living are the tenants willing to accept rent increases?

1.2 Purpose

The purpose of our thesis work was thus to study the effects that followed a large-scale refurbishment in a residential area. Both long-term and short-term effects have been considered. Additionally, the report aims to uncover how tenants perceived and value various changes associated with refurbishments.

The ultimate goal of this thesis work was to provide research that supports property owners in the development of future refurbishment strategies.

1.3 Limitations

The conducted research was limited to the results of a refurbishment project concerning 987 apartments in Göteborg, Sweden. The results could be context specific and therefore difficult to generalise. Further research needs to be conducted.

1.4 Structure of the report

This report studies the effects of refurbishment decisions in residential areas. Firstly, the necessary background information covering the developments of semi-public housing companies, Swedish legislation regarding rent control and the current state of the housing market have been presented. Secondly, specific information regarding Högsbohöjd is examined followed by a description of the refurbishment work that took place in the area. This was done in order to set the right context. Thirdly, the methodology of our research is stated. Fourthly, the effects of the refurbishments are analysed and discussed. Lastly, concluding remarks and suggestions of further research are presented.

2 Background

In this chapter we provide necessary background data for understanding the context of refurbishment projects in Sweden. As a semi-public housing company owns the studied property, this chapter starts with the history of how companies of this sort have developed. The second part aims to present how the living standard has developed in the country, followed by a description of the current state of the market. Lastly, Swedish legislation on rent control is presented.

2.1 Semi-public housing organisations

Semi-public housing organisations trace their origin back to mid 19th century but it was not until the 1930s that they appeared as they are known today. The definition of a semi-public housing company is today that it has to be owned by the municipality and be publicly accessible.

The role of the semi-public organisation became more significant after the Second World War when the large urbanisation movement began. The subsidies and generous state loans played an integral role in the survival of the semi-public organisations (Eriksson, 1994).

The generous privileges that semi-public organisations received in the 1940s remained in different forms until the beginning of the 1990s. These privileges had secured the organisations with guaranties from the state and protection from change in the housing market as well as in the financial market. The new situation forced the semi-public organisations to play with the same rules as the private actors; they had to compete on the market and survive independently (Ramberg, 2000). In connection with the passing of a new act in January of 2011, having a revenue goal became mandatory for the semi-public companies (Boverket, 2013).

2.2 New standards of living in Sweden

A state investigation from 1945 highlighted the low living standard and stated that everyone had the right to good and hygienic housing (Törnquist, 2001) (Eriksson, 1994). As the living standards increased, so did the need for larger apartments. In the 1950s standard, a one or two room apartment was considered a normal size for a family. During the early 1960s the same family demanded three rooms plus a kitchen and towards the end of the decade the standard had increased to four or more rooms (Hall & Vidén, 2005).

The architecture from the 1950s and early 1960s was a mix of the relatively closed neighbourhoods of the 1940s and the first step towards prefabrication and element buildings that were dominant in the late 1960s and 1970s. The multi-family houses that were built during the 1950s and 1960s were mainly constructed as slab blocks with two to three floors. The houses were either formed as single units around courtyards with an open feeling or shaped around courtyards that were closed. The main material used for the foundation and frame was concrete. The façade consisted of concrete, bricks, wooden panels or asbestos fibre cement boards. The construction of

roofs started to change in the late 1950s. The saddleback roof was replaced with more flat roofs with internal runoff (Björk, et al., 2002).

2.3 Housing situation in Sweden today

The housing situations in many Swedish regions are today turbulent. Some municipalities suffer from decreased population and the three main regions Stockholm, Göteborg and Malmö have a severe shortage of housing due to population growth (Göteborgs Stad, 2012a). The standard of the housing stock varies and large parts of the stock are in huge need of refurbishments.

2.3.1 Technical standard of property stock

Estimations from SABO (2009) show that with the municipal housing companies' current rate of investments, it would take about 30 years before the whole housing stock has been refurbished. The most pressing issues are the buildings' technical deficiencies, conforming with new requirements from society and the need to adjust the properties to the current market (SABO, 2009).

2.3.2 Future of the property stock

The housing companies do not have adequate funds to refurbish their stock and it will therefore have to correspond to the tenants' ability to pay. In addition, almost four out of ten (38.6%) of the municipalities in Sweden are experiencing a negative growth in population, which further reduces the capability of housing companies to take action (Statistics Sweden, 2011). Therefore, only incremental refurbishment actions are to be expected, resulting in a housing stock that lags behind newly introduced societal requirements (SABO, 2009).

In Sweden, close to 40% of the population live in one of the three main regions: Stockholm, Göteborg or Malmö. The population growth of Sweden arises mainly in these three regions and occurs due to both births and immigration.

The share of apartments, both rental and housing cooperative, are larger in these three areas compared to the national average (Göteborgs Stad, 2012a). Göteborg has the largest number of apartments owned by semi-public housing companies. There is a pressing need for new apartments in all three regions. The number of newly built apartments is lower than the population growth. Therefore, the need for apartments is growing more severe (Boverket, 2010; Göteborgs Stad, 2012a).

In the aftermath of the 2008 recession, the construction of new apartments kept on growing steadily until 2011, when the recession finally hit, the number of new construction projects started to decrease. There are indications that the rate of new construction projects will increase throughout 2013 (Göteborgs Stad, 2012a).

There are close to 250,000 housing properties in Göteborg. The distribution is 54% rental apartments, 26% housing cooperative and 20% single-family houses (Göteborgs Stad, 2012a). The municipality of Göteborg has stated a goal of how many new apartments need to be built each year in their budget. The budget from 2012 specified a goal of 2,500 new apartments (Göteborgs Stad, 2012a). In total, 2,100 apartments were finished in 2012, which is 400 less than planned (Göteborgs Stad,

2012b). Even if there is a need of new apartments, it is possible to partly meet the need within the existing stock. New housing projects are needed to create a cycle of relocation allowing for people to move to the new apartments and thereby releasing their previous ones to the market.

There are strong indications that the lack of housing in the region of Göteborg will continue for several years. To reduce the shortage, both production of new and relocation within the existing stock is necessary (Göteborgs Stad, 2012a).

2.4 Legislation on rent control

The first regulations regarding rent for housing properties were introduced in Sweden in 1917. But this regulation was abolished as early as 1923. Due to political initiatives, it was possible to grant state loans and subsidies for production of new houses in the early 1930s. In 1935, the first specific rent subsidies was introduced. In 1942 the regulations regarding rent were reintroduced. Beginning from 1959, the rent regulation was phased out and replaced by a new rent act in 1968. This new act stated that the rent levels should be set based on comparisons between apartments with equal standards (Ramberg, 2000).

By 1969 a system of regulations had been developed which had been amended several times before reaching its current state (Boverket, 2007). In 1978, the rent negotiation act was introduced as a complement for the rent act (Ramberg, 2000). Today, the regulatory system for rent in housing properties rests upon three pillars: actual standard of living, comparable properties in the vicinity, and a collective rent negotiation system.

The rent agreement concerning housing properties in Sweden is negotiated between non-government organisations: the Swedish Union of Tenants and its counterpart the Swedish Property Federation. It is stated that the rent should be set so that it is corresponding to the rent of other comparable municipal apartments in the area. The current standard of the building is also factored into the negotiation. As an example, a building with neglected maintenance does not have the same level of rent as a comparable apartment without neglected maintenance. If the negotiating parties cannot reach an agreement, then the case is brought before a rent tribunal for a ruling (Boverket, 2007).

In January of 2011 the rent act was revised and new amendments were added (SFS 2010:810, SFS 2010:811). In addition to this, a new act that regulates the semi-public housing companies (2011:879) was introduced (Boverket, 2013). The changes in the rent act handle mainly the negotiation of rent levels and a protection against drastic increases of rent. The rent act states that rent levels could now be set in accordance to comparable apartments in the area, in contrast to previous legislation that only allowed comparison to semi-public housing properties. In addition, the act allowed for geographical location to have an impact on the rent. This shift in legislation meant that semi-public housing companies lost their benchmarking role and were now forced to compete as a regular business alongside their private counterparts (Boverket, 2013).

3 Högsbohöjd

Högsbohöjd has a history as a housing area stretching back to the beginning of the 20th century. It is located about five kilometres southwest of the city centre in Göteborg. The area lacks any clear social or economic challenges.



Figure 1: Location of Högsbohöjd. Source: Göteborgs Stadsledningskontor (2013)

The area is topographically located on a plateau; it has therefore clear borders to surrounding areas. Högsbohöjd is separated from the district of Majorna by a beltway, which also is the main entrance road to the area. Due to the geographical location of the area, it remains somewhat secluded from adjacent neighbourhoods. To get a sense of how Högsbohöjd differs from Göteborg's averages, some key-figures of the area are presented in table 1.

Högsbohöjd is connected to the public transportation network by two bus lines. It is also possible to travel by tram because of the close connection to the tram station Axel Dahlströms Torg, which is located within walking distance from Högsbohöjd. There is also a special bus connection for the elderly and for people with special needs that mostly travels to hospitals and healthcare centres.

A market square, Fyrktorget, is located in the middle of Högsbohöjd containing a grocery store and bus stop. There is also a smaller grocery store in Pennygången, north of the square. Axel Dahlströms Torg offers a larger variety of shops and services.

The first independent mosque in Sweden, the Nasir mosque, was built in the north of Högsbohöjd. It was inaugurated in 1976 (Göteborgs Stadsmuseum, 2007).

Table 1: Key-figures from 2012 of Högsbohöjd and Göteborg. Source: Göteborgs Stadsledningskontor (2012)

Key-figure	Högsbohöjd	Göteborg
Population	3,873	520,374
Mean income	205,900 SEK	246,200 SEK
Population growth, 2012	10.1%	5.9%
Housing built 1961-1970	94.8%	25.2%
Unemployment rate	5.6%	6.7%

3.1 History

The history of Högsbohöjd started in the beginning of the 20th century when the city expanded to the area. Göteborg had a shortage of housing at the time and crofts were built to lower the shortage. The land was at the time owned by the municipality.

The housing shortage had become severe after the Second World War and the crofts were demolished, making it possible for apartment blocks to be built. The area became characterised by the light grey asbestos-fibre cement façades that were used to withstand strong winds.

The semi-public housing organisation Göteborgs Bostadsföretag was the owner of two of areas in Högsbohöjd whereas Fastighets AB Göteborgsbostäder was the owner of the third area. Today, there are different owners of the different parts of the area. This will be further described in the next section of this chapter.

In the decades following the completion of the apartment blocks, there were many different businesses in the centre of the area. In 1961 when the area was completed, in total 16 businesses with different specialisation operated there (Göteborgs Stadsmuseum, 2007; Hultberg & Nygård, 1962).

3.2 Three areas

This part of the city district Högsbo is called Högsbohöjd and the assigned area code is 511. The area is divided into three parts (see figure 2):

- Pennygången (01)
- Växelmyntsgatan and the atrium townhouses (02)
- Townhouses (03)



Figure 2: The areas of Högsbohöjd. Source: Göteborgs Stadsledningskontor (2013)

3.2.1 Pennygången

Pennygången is an area with rental apartments and a few commercial premises. It is located in the northern part of Högsbohöjd. The housing complex was drawn by White Architects and completed in 1959. It was built with prefabricated elements, which was quite rare at the time. In total 761 apartments were constructed. The housing shortage was severe in Göteborg at the time and there was an immediate need for new housing. To speed up the production even further, Inge Hjertén, the CEO of the semi-public organisation Fastighets AB Göteborgsbostäder, suggested that the layout and size of apartments were to be uniform (Göteborgs Stadsmuseum, 2007; Falk, 1962).

Pennygången was originally owned by the semi-public housing organisation Fastighets AB Göteborgsbostäder, but was sold to a private property owner in the end of the 1980s. The property changed ownership again in the beginning of the 2000s to a company, which is still the owner¹.

Pennygången went through a minor refurbishment project in the beginning of the 1990s. The plan was to enact large-scale refurbishments but for varying reasons, these plans failed to come to fruition. The current property owner plans to initiate a major refurbishment endeavour in 2013.



Figure 3: Pennygången in the beginning of 1962. Photo: Jan Olsson

3.2.2 Växelmyntsgatan and the atrium townhouses

The following text is based on internal documents from Bostads AB Poseidon, if not stated otherwise.

The area is located in the southern part of Högsbohöjd. Like Pennygången, the area of Växelmyntsgatan was built by the same semi-public housing organisation, Göteborgs Bostadsföretag (Göteborgs Stadsmuseum, 2007). This company merged with two other semi-public housing organisations and became Göteborgshem in the end of the 1960s. The company was reconstructed in the mid-1980s and became Bostads AB Poseidon, which still is the owner of the area (Göteborgshem, 1986).

¹ Per Limdal. Property manager Stena Fastigheter GöteborgAB, Interview 2013-04-09

This area consists of two different types of houses: multi-family houses and townhouses. The multi-family houses drawn by the two architects Poul Hultberg and Arne Nygård were built between the years of 1960 and 1961. These houses went through large-scale refurbishments from 1993 to 2001. Prior to the refurbishments, the area consisted of 987 apartments which were reduced to 898 apartments.

The houses contained either two or three floors and some also featured apartments on the entrance floor. The houses were constructed as slab blocks. The foundation and frame consisted of on-site cast concrete. The façades were originally light grey asbestos-fibre cement boards and the roofs were covered with concrete tiles (Hultberg & Nygård, 1962). As a result of the major refurbishment in the 1990s, the façade and roof materials have been altered. Figure 4 illustrates a part of the area after the refurbishment.

The atrium townhouses located in the southern part of Växelmyntsgatan were built during the period 1960-1961 and drawn by the architects Jarle Osnes and Nils Sunnerholm (Osnes & Sunnerholm, 1962). They were built with L-shaped house sections, which provided an area for secluded gardens. In the beginning, the rental houses were owned by the semi-public housing organisation Göteborgs Bostadsföretag. The housing company Bostads AB Poseidon owned the houses when the tenants were asked to purchase their houses in 1994. In conjunction to this initiative, a community association was founded under the name Klyvtegets samfällighetsförening. The tenants who did not want to buy their houses were still considered tenants but under a landlord other than the original. The townhouses consist of 76 houses, 19 of which were owned by a private property owner (Klyvtegets samfällighetsförening, 2012). Figure 5 shows a view of the entrances to the area.

The second area of townhouses, located in the west part of Högsbohöjd, consists of townhouses placed in alignment. They were built during the period 1960-1961 by the semi-public organisation Göteborgs Bostadsföretag and drawn by John Snis. Similarly to the atrium townhouses, these houses were rental apartments initially but the tenants received the opportunity to purchase their houses in 1994 and those who choose



Figure 4: Façade of a refurbished part of Växelmyntsgatan

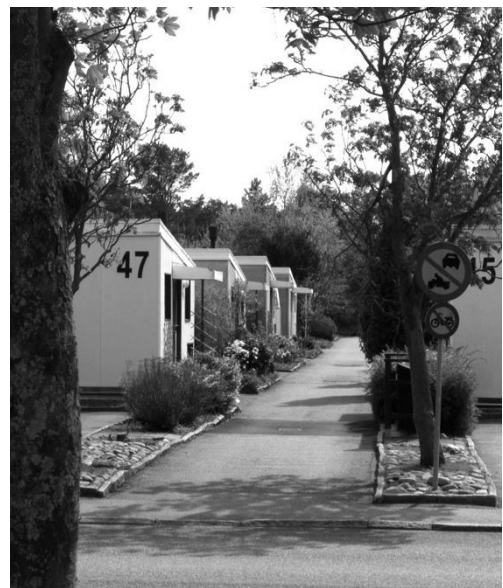


Figure 5: View of the entrance to some of the atrium townhouses

otherwise continued to rent their houses. The area consists of 95 houses in total, 15 of which remain as rental housings, owned by a private property owner (Lätteglets samfällighetsförening, 2013).

3.3 The refurbishment of Växelmyntsgatan

The following text is based on internal documents from Bostads AB Poseidon.

The multi-family houses at Växelmyntsgatan went through a turn-around refurbishment between the years of 1993 and 2001. To get a view of the extent of the refurbishment project, some facts and pictures will be presented.

The properties were refurbished to three different levels of standard: level one was the basic standard and level three the most advanced, table 2 shows the difference between the standard levels.

Table 2: Levels of standard in the refurbishment of Växelmyntsgatan

Refurbishment features	Standard level		
	1	2	3
Lift		x	x
Redesign of layout		x	x
New roof	x	x	x
New windows	x	x	x
New facade	x	x	x
New installation	x	x	x
New fixtures	x	x	x
New interior finishes	x	x	x
New entrances	x	x	x
Redesign of outdoor environment	x	x	x
Additional quality of materials and layout			x

Analyses before the refurbishment stated that standard level two and three were suitable for the properties in the outskirts of the area, whereas level one was applicable in the central properties. The properties with level one standard were aimed primarily at the tenants who relocated within the area and for families with children. These properties, with inner courtyards, were also more suitable for children due to the far distance of streets and parking lot. The analyses stated that apartments in buildings with standard level two or three should be placed close to parking lots and garages.

The area had three different types of stairwells before the refurbishment. All three types had four apartments at each floor but with different distribution of apartments sizes. The different configurations were more or less suitable for the different standard levels. Two of the configurations did not offer enough space to support lift

installations. The third stairwell type was the most suitable for the higher levels of standard. It was also on these properties where floors were added. All newly built apartments aimed to reach standard level two or three. Apartments of standard level one or two could be placed in the same building whereas apartments offering level three standard required homogeneous buildings.

Originally, the area had several business premises of which many were empty prior to the refurbishment. The property owner chose not to search for new tenants for these premises as the competition from adjacent businesses had changed customers purchase patterns. A total of 16 businesses were operating alongside each other in 1961. What at the time were specialized stores have since then been reduced into a single grocery store which is still operating today. The empty premises were converted into apartments, laundry rooms, storage units and a gym during the refurbishments.

To open up the courtyards, some sections of the buildings were demolished; figure 7 shows the disposition before and after the refurbishment. Selected buildings that gained one or two additional floors affected the impressions of the courtyards. All buildings except four were equipped with lifts, pictured as black in figure 6 (Göteborgs Stad Stadsbyggnadskontoret, 2004). An analysis from the property owner stated that it was important to keep the green areas, matured trees and to get rid of the unnecessary asphalt surfaces; therefore was the outdoor environment included in the refurbishment.

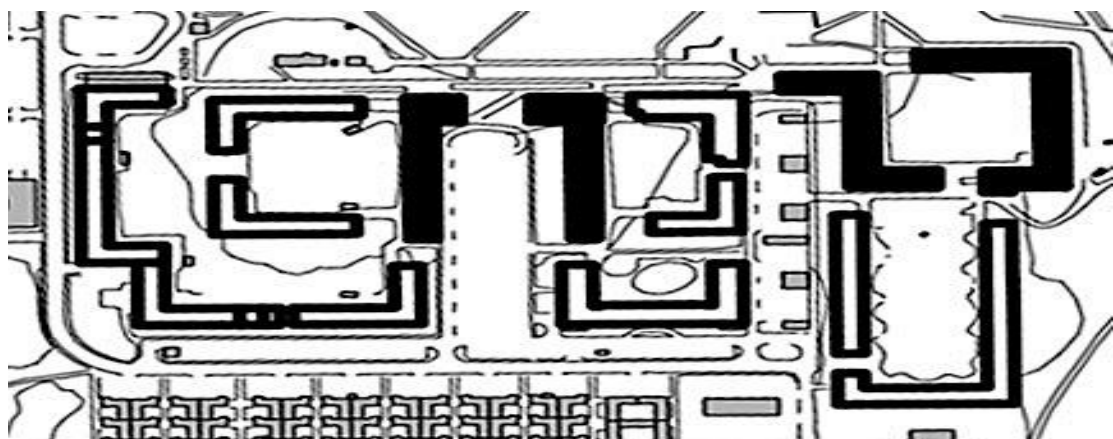


Figure 6: Properties with and without lifts (Göteborgs Stad Stadsbyggnadskontoret, 2004)

Due to the installation of lifts and demolition of selected building sections, the internal layout of the buildings changed. Some new apartments were built and some disappeared as a result of the demolitions. The distribution of apartment sizes prior to and after the refurbishment is shown in table 3.

Table 3: Apartments in Våxelmyntsgatan according to size, prior to and after the refurbishment project

Size	Before	After	Change
1 room & kitchen	52	123	71
2 room & kitchen	517	390	-127
3 room & kitchen	336	290	-46
4 room & kitchen	70	82	12
5 room & kitchen	11	13	2
6 room & kitchen	1	0	-1
Total	987	898	-89

The change of apartment sizes could partly be a consequence of the changing demography in the area. According to analyses made prior to the refurbishment, the area consisted mostly of people between 20-30 years old and people over 65 years old. The number of families with children was lower than the average of Göteborg. The area had 149 student apartments before the refurbishment, which was reduced to 95 after the refurbishment. An analysis of Högsbohöjd's demographic situation before the refurbishment identified three target groups that were given special attention in the planning of the refurbishment project:

- People 60 years and older
- People with great purchasing power
- People that are interesting and want to affect their own housing.

The analysis concluded that inhabitants of Göteborg tend to stay in the city district where they once have moved. Therefore, it was important to adapt the apartments in a way that fulfilled the tenants' needs in the long-term. Våxelmyntsgatan did not offer any customised homes for the elderly tenants prior to the refurbishment. After the refurbishment, 96 apartments in one of the central buildings were adapted to suit the needs of those tenants.

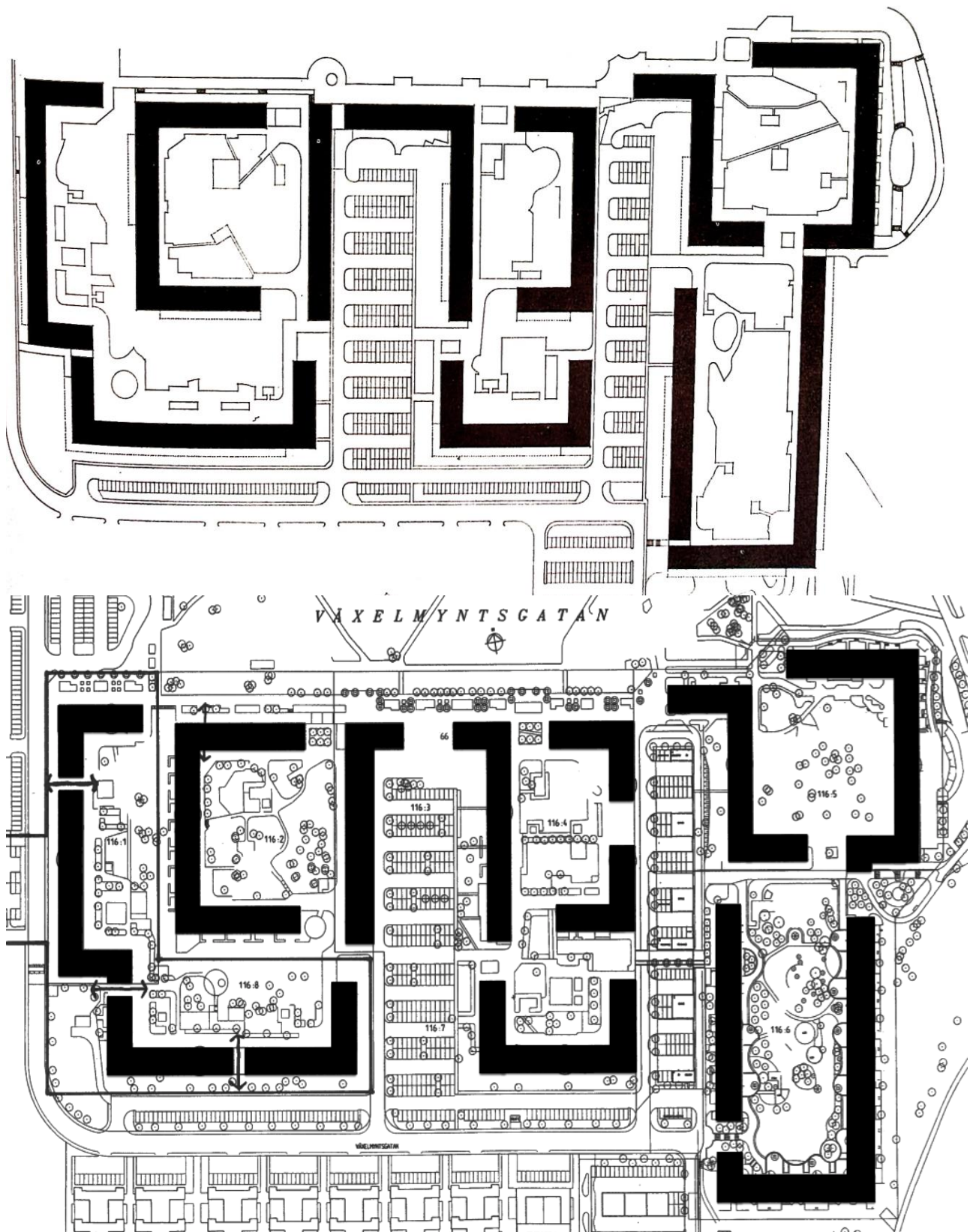


Figure 7: The houses of Växelmyntsgatan. The plan (top) shows the buildings before the refurbishment while the lower plan shows the buildings afterwards

Before the refurbishment, the whole area of Växelmynstgatan had the same expression with the same building height and light grey façades. To get a more aesthetically rich area, different architects were each assigned a building to redesign. This was clearly stated in the analyses done before the refurbishment. This resulted in the use of different façade materials and colours. The addition of floors on some buildings reinforced the changed expression. It was also of importance to open up the courtyards but in the same time have defined blocks. To highlight this aspect the new courtyards were renamed after women that lived in the crofts that was located in the area before it was built in the beginning of the 1960s.

Figure 8 below show parts of Växelmynstgatan before and after the refurbishments.



Figure 8: A view of Växelmynstgatan before and after the refurbishment. Top photo: Jan Olsson



Figure 9: From the top: Voxelmyntsgatan just after completion. Photo Jan Olsson. The second picture shows a similar façade after the refurbishment. The third picture shows the variety of the façades after the refurbishment

3.4 Future plans for Högsbohöjd

There are plans for some changes in the area. While Väckelmyntsgatan was being refurbished, Bostads AB Poseidon erected barrack homes for the tenants to live in temporarily. These barracks were left intact after the completion of the refurbishment in 2003 and remained partly in operation as recently as 2012. The area is currently being levelled to support the foundation of a new construction project with a total of 100 new apartments, starting in 2013².

The municipal building and planning office have compiled a new plan for the area next to the atrium town houses. It allows for the construction of additional townhouses in the area, although no projects have been registered to date³.

The apartments at Pennygången will undergo refurbishments with a planned start in 2013. There have been some problems with the planning and the start is already delayed⁴. The zoning plan for the properties contained in Pennygången is currently being revised and there are early plans for a multi-family house on the parking lot in north east of the area².



Figure 10: View of the western façade of Pennygången

² Anders Söderman. CEO Bostads AB Poseidon, interviewed 26 February 2013.

³ Hanna C. Kaplan. Architect in urban planning. City planning office Göteborg, interviewed 25 March 2013.

⁴ Per Limdal. Property manager Stena Fastigheter Göteborg AB, interviewed 9 March 2013.

4 Methodology

The report, its purpose and concluding remarks are based on data gathered through different methods. The investigation consists of both qualitative and quantitative research and the conclusions have all originated from findings within a case study.

4.1 Setting the theoretical framework

A literature review was made to provide insights and understanding about the Swedish housing market as well as to support a generalisation of case study results. The literature studies enabled the authors to acquire a broader view so that everything is put in an appropriate context. The used literature consisted mainly of published research papers and/or articles with an international outlook, but also materials published by Swedish governmental and non-governmental organisations, which were studied for additional insight. A critical view towards the non-academic literature was developed early as it might have contained biased or unconfirmed data.

The theoretical chapters will be divided into two fields:

1. Economic aspects of refurbishments.
2. Social aspects of refurbishments.

4.2 Case study

The results of this report originate from a case study of the area of Högsbohöjd, with focus on the properties of Våxelmyntsgatan. The results from a case study are typically deep but narrow (Fellows & Liu, 2003), and might only provide a modest basis for further generalisation of the results.

The authors chose this approach to enable extensive research into the effects of a refurbishment project in a reasonable timeframe. Case studies also provide the researcher with the means of adaptability if adequate data is missing or more interesting scopes of research are found (Yin, 2009).

4.2.1 Document analysis

The case study was compiled with information and data from a variety of company publications, such as internal pre-studies of upcoming refurbishments, situation analysis and the future plans for the area. Furthermore, the municipal planning office of Göteborg has provided additional input and plans for the area.

Statistical data concerning key-features of the Högsbohöjd area and its residents were collected through Statistics Sweden and complemented by input from the City Planning Office, in the City of Göteborg. Sought data relate to the development of the area during the period of 1991-2013.

4.2.2 Questionnaire survey

In order to examine the situation from the tenants' perspective, a questionnaire was compiled with quantitative questions concerning their experience of the refurbishment of Växelmyntsgatan. The questionnaire also allowed for comments at the end. These comments were used to validate the received answers and provided for clarifications as to how tenants had interpreted ambiguous questions. All participants were offered a food coupon à 25 SEK if their name and current address were added to the questionnaire, 46 individuals accepted this offer.

Stored contract data from Bostads AB Poseidon provided us with a list of names of the tenants who signed a contract between 1 January 1995 and 1 March 2013. The names appeared in chronological order sorted by date and contained 900 names in total. The first 150 names on the list that could accurately be matched with an address were selected as a sample. An internet-based address look-up service was used to determine the tenants' current address of residence since the list only contained a date when the tenants had signed contracts with the property owner.

Questionnaire surveys are a suitable method for conducting statistical samplings when time and financial means are limited (Fellows & Liu, 2003), as in the case of this thesis work. The questionnaire was sent out in two batches: a primary batch of 150 questionnaires (10-day deadline) and a secondary batch of 122 questionnaires (7-day deadline) containing a reminder for those who chose not to answer the first one or chose to be anonymous. The questionnaire of the second batch contained a message instructing the respondents to disregard the second message in case they had already responded. The first batch of questionnaires was sent out 12 March 2013 and the second batch followed 26 March 2013. The batches have been kept separated to support additional analysis of the results. They were categorised as either the primary or the secondary batch of questionnaires, regardless of when the answers were received.

Our questionnaire resulted in a total of 99 responses of which 96 were considered valid for further processing. Out of the 96 accepted responses, 78 tenants stated that they experienced the effects of the refurbishments. These tenants had resided in the area both prior and post the refurbishment period.

There is room for error with this approach since the statistical sample gathered might not satisfy the mean opinion of the residents who were targeted. A high response rate or a large sample group would suggest that the answers received are representative. Prior to the refurbishment, Växelmyntsgatan had 987 apartments with several vacancies. The number of apartments decreased to 898 after the refurbishment and it remains unclear how many tenants stayed throughout the refurbishment project, due to inadequate data. Therefore, it is not possible to accurately determine the number of tenants that actually experienced the effects of the refurbishment. The survey resulted in 96 responses. Consequently, our sample group represents at least 9.7% of the statistical population. Furthermore, there is a risk of bias since some of the tenants who received the questionnaire might have chosen not to respond due to insufficient knowledge of Swedish.

The questionnaire (in Swedish) is attached to this report as Appendix.

4.2.3 Statistical analyses

The statistical analyses of this report have been made using IBM SPSS Statistics software.

Analyses using Pearson's chi-square (bivariate cross-tabulation) responses provided results relating to the importance of facilities and environmental aspects of living and their effect on tenants' rent acceptance. Frequency analyses of the questionnaire data gave insights in how the tenants appreciated the changes caused by the refurbishment project.

4.2.4 Interview sessions

Interviews with individuals and organisations remain one of a case study's most important sources of information (Yin, 2009). The case study research included five interview sessions in total. Bostads AB Poseidon was interviewed on two separate occasions Stena Fastigheter Göteborg AB was also interviewed twice. In addition, an interview session with the municipal city planning office was conducted as well.

The interviews were all semi-structured so that the interviewers could acquire relevant information from them without plausibly missing spontaneous discussions between the interviewees. The interview sessions were all recorded and later transcribed verbatim so that accurate references and citations could be included in the report. Prior to each interview session, questions were developed and reviewed to ensure their appropriateness and to prevent unintentional exclusions. No questions were provided prior to the interview sessions, with the single exception of the second interview with the property owner of Växelmyntsgatan. Due to the technical character of this study, the questions were provided in written form to the interviewees before the interview could commence.

5 Literature review

This chapter is provided as a theoretical frame of reference and contains research mainly focused on the economic and social effects of refurbishments.

5.1 Economic aspects

Researchers such as Allen (1993) and Flourentzou & Roulet (2002) make distinctions between refurbishments and retrofitting. However, in this report we choose to use the general term of refurbishment for actions that bring a building back to its intended purpose and/or adjust into complying with new standards in society. We use the term ‘maintenance’ to refer to the frequent actions undertaken to preserve a building to its initial standard.

Real estate acquisitions are characterised as long-term investments, since these objects in general have a low transaction frequency. Likewise, investments in these objects also require long-term sustainability (Institutet för värdering av fastigheter och Samfundet för fastighetsekonomi, 2005). Put in basic terms, an investment can be characterised as a number of inbound positive cash flows that follow a previously made capital expenditure, such as purchasing a property for letting (Bejrums & Lundström, 1990). Aside from the initial capital expenditure, further spending could be needed such as maintenance-related costs or sought upgrades from the tenants.

Deferred maintenance is desirable to avoid. Yet, the level of deferred maintenance is contingent on the strategies of each specific property owner (Bejrums, 1987). Decisions whether to go ahead or not with an investment must be carefully considered and planned. Owners of residential areas will have to undertake refurbishment actions to different degrees, since some properties’ ability to increase profitability is greater than others. A refurbishment project in a property has positive effects on all the adjacent properties as it indicates that the area is worth investing in (Power, 2010).

It is common for the semi-public housing companies to own and operate their property stock during its whole economic lifecycle (Bejrums & Lundström, 1990). Some property owners may want to allocate their purchases of properties so that their property stock can be distinguished in terms of technical and economical life, thus spreading their refurbishment projects over time.

The ability to refurbish properties depends on the tenants’ ability to meet an increasing level of rent. According to SABO (2009) the housing companies are experiencing difficulties in refurbishing their housing stock to meet new social requirements of accessibility and sustainability. The refurbishment projects can only go as far as the tenants can afford, which significantly limits the housing companies’ abilities to invest in their properties. It is hard to justify refurbishment actions in housing properties in weak markets with no significant signs of future improvement. Property owners who do not have the financial resources to refurbish their property have the option to demolish their buildings. This approach comes with numerous drawbacks: the process of demolition is slow, costly, unpopular and often opposed by those who are supposed to benefit in the long run (Power, 2008).

A declaration of average costs associated with refurbishments of residential apartments of varying levels has been compiled by SABO.

Table 4: Refurbishment costs. Compiled from SABO (2009)

Cost [SEK/m ²]	Action
12,000	<i>Large-scale refurbishment:</i> technical installations are swapped, kitchens, bathrooms and building exterior are refurbished. In addition, the buildings are refurbished to conform to new regulations and requirements. The final product is similar to the standard of a newly produced building and significant rent increases might follow. Such an extensive refurbishment might entail a totally new image to the area.
6,000	<i>Refurbishment of the technical systems:</i> necessary refurbishments of specific parts of the building and its technical installations are being carried out.
2,000	<i>Urgent repairs:</i> technical defects that are unacceptable for the health and safety of the tenants are remedied. Other actions are put on hold. This strategy is not suitable for a property owner with a long-term perspective, since it might be very costly in the long run.
1,000-3,000	<i>Demolition:</i> entire buildings or parts of a building are demolished. As an example, the number of floors could be reduced. Demolished buildings may in some cases be replaced with new buildings.

In table 4, the average cost (per square meter) has been compiled by SABO (2009). As a reference point, Statistics Sweden reports an average cost for newly produced apartments for the year 2009 of about 30,000 SEK/m² (Statistics Sweden, 2013a). The current market and its future outlook have a significant impact on the property owners choice of measure. What once again becomes central is that the tenants' capability to cope with an increased rent will have to be the starting point for further enquiries into what is possible, although it is not necessarily the same tenants who are to live in the properties following the refurbishment. However, research conducted in Switzerland indicates willingness amongst tenants in favour of paying a premium for energy saving measures (Banfi, et al., 2008).

5.2 Social aspects

This section highlights two important aspects of refurbishments: the gentrification phenomenon and area crime rates.

Gentrification

Gentrification can be described as the change of the social structure in a neighbourhood succeeding major refurbishments. It mainly focuses on change from lower to middle class neighbourhood. As a concept, gentrification originates from Marxism and was introduced in the 1960s (Atkinson, 2002).

The discussions about gentrification are mainly divided into two parts; one part supports revitalisation of the built environment and the other part has its focus on the negative aspects such as huge social costs and movement of poor tenants (Atkinson, 2002). The negative effects are highlighted and more often mentioned than the positive effects. Examples of positive effects are stabilisation of vulnerable areas, increased property values, reduced vacancies, decreased crime rates and better conditions for business in the gentrified areas. A negative effect that occurs is that some tenants can be forced to move due to increased rent. Gentrification can also cause higher rates of vacancies and displacement of businesses.

The effects that are described as positive can also be negative and vice versa. Therefore, careful planning is needed before major refurbishments and transformations are done in an area (Atkinson, 2002).

Gentrification does mainly occur in the USA, Western Europe and Australia. Since the introduction of the gentrification phenomenon in the 1960s, researchers have distinguished three major waves of gentrification in the housing market. The first gentrification wave was strongly state driven and occurred in the north-eastern US and Western Europe during the late 60s. The gentrification was isolated to smaller neighbourhoods and was primarily caused by public sector funding. The second wave occurred during the 1980s and was less influenced by the state and the public sector; voices against gentrification and relocation of the poor were subsequently raised. This wave ended with the recession that began in the late 1980s and the gentrification resided. When the third wave came in the mid 1990s gentrification returned strongly. There was a more intense focus on larger neighbourhoods and the refurbishments were once again supported by the state (Jason & Neil, 2001).

In the middle of 20th century, massive urban renewal projects were executed in Sweden. One of these projects took place in Göteborg in the area of Stigberget. Almost all buildings in the area were demolished and new ones were built. Stigberget has a diverse history and has been both a run-down suburb as well as a thriving, popular area. Most of the houses in the area were built between 1880 and 1910. Close to 90% of the apartments were one-room apartments with a kitchen. It was common that toilets were located at the courtyard and shared between the tenants. The buildings were constructed in a style that still is typical of Göteborg with the ground floor consisting of stone and the remaining two floors made out of wood. This was due to the fire regulations at the time which limited wooden houses to contain a maximum of two floors.

Stigberget was popular during the first half of the 20th century but from the 1940s, the population decreased dramatically in the area and the houses had deteriorated badly. The population fell with almost 50% and the tenants that were left were either old and retired or lower class citizens. Crime rates began to rise and large families were living in very confined apartments. Something drastic had to be done and the municipality started to investigate the opportunity to demolish and rebuild the entire area. The result of the investigation was to rebuild the area. The property owner Riksbyggen began to purchase housing estates from the current owners in 1963 and cancel the contracts with the previous tenants (de Laval, et al., 1965). This persisted until 1967 and the last of the newly built houses were completed in 1972. Most tenants lived in the area before the rebuilding could not move back due to mainly economic reasons (Brf. Masthugget, 2013). This can be interpreted as a gentrification process.

The effect of urban planning in preventing crime

Newman's study "Defensible Space" (1973) has affected the theories that handle the effect of urban planning and criminality. Newman states that defensible space means that the residential environment is rebuilt so that the community of people in a given area have the control, not the police. According to Newman (1973), the design of the built environment affects the rate of criminality and the causes underlying it. Crime Prevention through Environmental Design (CPTED) has redefined what Newman wrote in "Defensible Space" and four key strategies have been identified; territoriality, natural surveillance, activity support and access control. The first one, territoriality, can be defined as the fact that people defend and protect space that they see as their own. Since criminals do not like to be observed, natural surveillance serves as an effective way to reduce crime. By designing landscape and street lighting, this strategy can be promoted. Activity support refers to the areas usability in regards to arranging and supporting activities in public places. Football, basketball and other activities that easily can be placed in public areas are all examples of this. The last strategy is access control and can include things such as the location of entrances, fencing, landscaping and/or street lighting (Cozens, 2002).

When Blomé (2012) investigated the effects of refurbishment in two different residential areas in Sweden, he found that the criminal activity was reduced after the refurbishments had taken place. Investments had been made to revitalise both the inside of residential buildings and apartments as well as the outdoor environment. The police and fire department could see a significant decrease of alarms from the areas that were studied following the refurbishments.

6 The refurbishment effects on Växelmyntsgatan

The results of this thesis work are divided into two chapters. This chapter focuses on the demographic changes that occurred in the area after the refurbishment, followed by the tenants' comments on the refurbishment, while chapter 7 presents statistical analyses of the questionnaire survey.

6.1 Migration patterns

Throughout the studied period of 1994-2007, Högsbohöjd has had an average population of 3,604 people. In figure 11, the migration percentage for each year's population figures have been calculated.

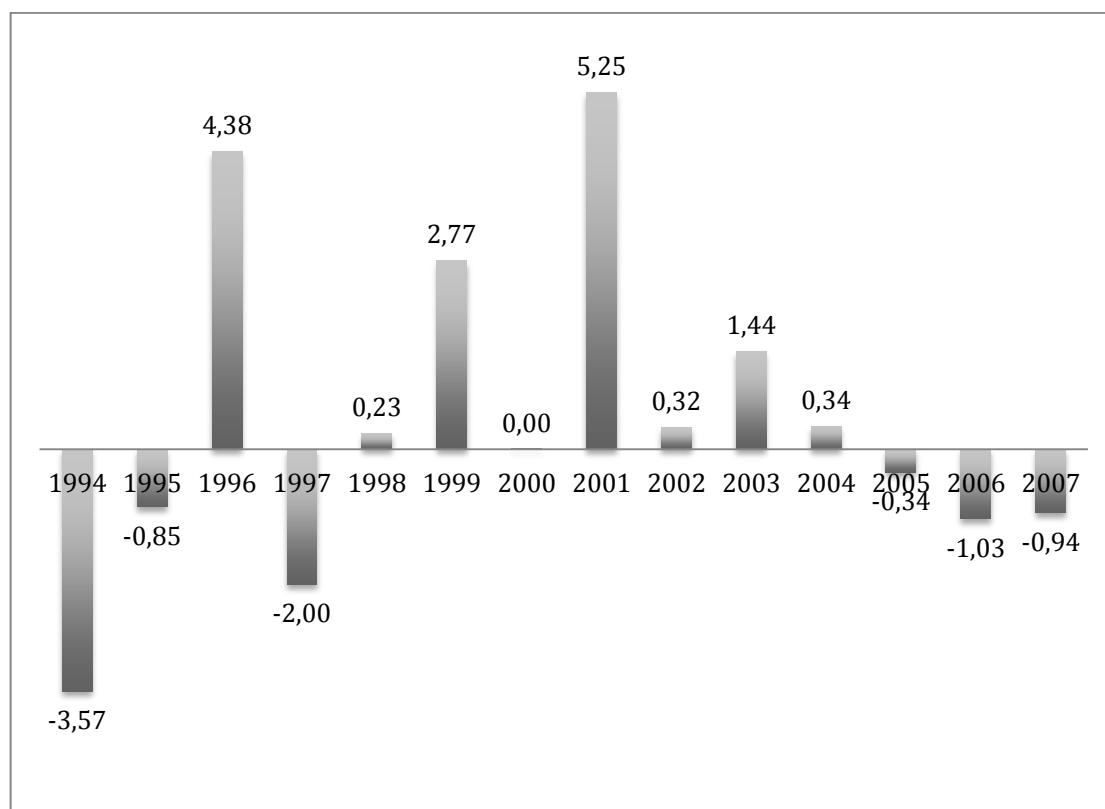


Figure 11: Högsbohöjds migration as a percentage of respective years' population. Source: Göteborgs Stadsledningskontor (2013)

A total of 9,849 people immigrated to the area of Högsbohöjd, while 9,654 emigrated from the area in the studied period of 1994-2007. In table 5, figures of migration are presented for each of the studied years. Annual statistics prior to 1994 cover a district-level and are therefore not suitable as a reference.

Table 5: Migration patterns of Högsbohöjd 1994-2007. Source: Göteborgs Stadsledningskontor (2013)

Year	Immigration	Emigration	+/- of migration	Internal relocation
1994	678	795	-117	215
1995	680	708	-28	283
1996	777	626	151	221
1997	713	781	-68	322
1998	729	721	8	266
1999	785	687	98	227
2000	625	624	1	230
2001	750	553	197	194
2002	617	605	12	109
2003	661	606	55	165
2004	672	659	13	144
2005	753	766	-13	120
2006	663	702	-39	141
2007	746	821	-35	101

6.2 Age distribution

The refurbishment project on Växelmyntsgatan might have had an effect on the age distribution of the tenants. Figure 12 presents the age distribution of tenants on Växelmyntsgatan two years prior to the refurbishment project and two years after the completion of the project. The tenants' age distribution for the area of Högsbohöjd as a whole has been included as a point of reference.

The financially strong age group of 45-64 year old has decreased their share by 5% in Växelmyntsgatan during the period. Simultaneously, tenants younger than 45 increased their share by 9%. The average tenants' age has decreased on both Växelmyntsgatan and Högsbohöjd.

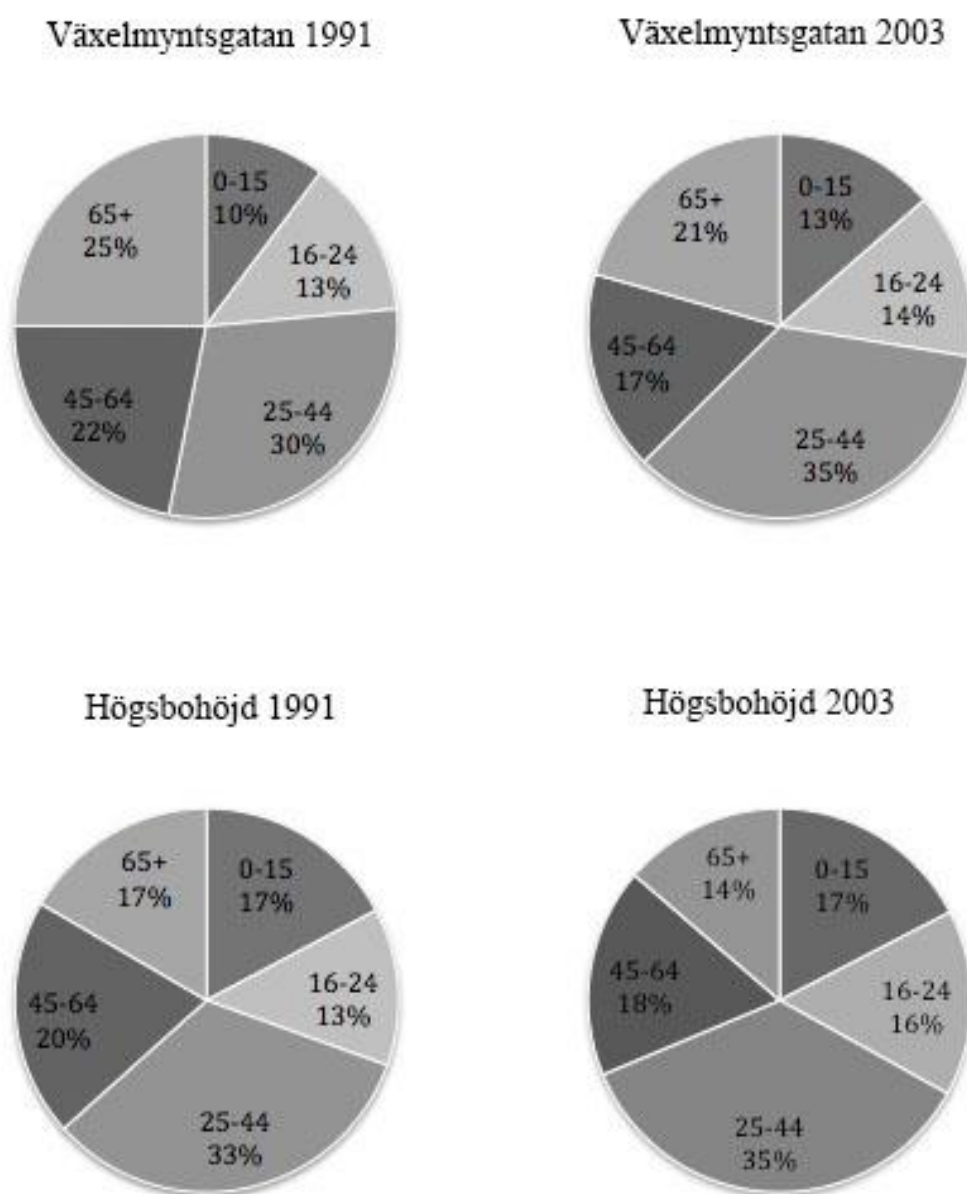


Figure 12: Age distribution of tenants 1991 and 2003. Source: Göteborgs Stad (2013c)

6.3 Income development of Högsbohöjd

Sought income statistics concerning the residents at Væxelmÿntsgatan cannot be separated from the area statistics of Högsbohöjd. In figure 13, the development of income (1992-2003) is presented for the entire area of Högsbohöjd.

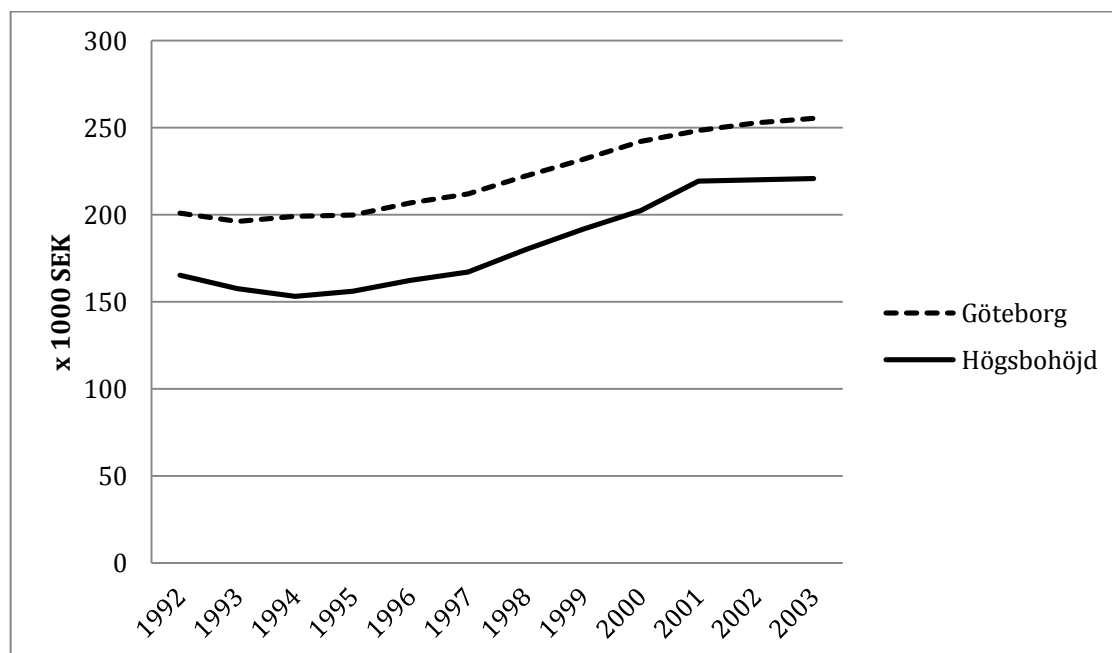


Figure 13: Income development age 16+. Sources: Statistics Sweden (2013b); Göteborgs Stad (2013)

The mean income of residents (over the age of 16) in Högsbohöjd remains below the city average during the period (1992-2003). As the figure 13 shows, no significant change in the gap between the income curves appears in the studied period.

7 Analyses of questionnaire data

This chapter presents the results of the questionnaire survey directed at the tenants of Våxelmyntsgatan. First, the background information of our sample group is presented. Secondly, the frequencies concerning how the tenants who experienced the refurbishment have perceived the changes are stated. Lastly, the results of cross-tabulations of refurbishment variables against tenants' rent acceptance are presented.

7.1 Background

This section includes details concerning the background of the respondents in the survey. Tenants' reasons for relocating to the area of Våxelmyntsgatan (regardless of date) have been presented in table 6:

Table 6: Tenants' reason for moving to the area

Reason for relocating	n	%
Economic reasons	0	0
Area characteristics and location	34	35.4
Change in family structure	18	18.8
Multiple reasons selected (no specific)	12	12.5
Reason for move not stated	32	33.3

n: number of responses

The most common reason behind the decision of moving to the area was found to be the areas characteristics and location. No tenants stated that they moved there specifically due to economic reasons.

The respondents' age distributions give an indication of the demographic profile on Våxelmyntsgatan. In table 7, the age distribution of our questionnaire sample is presented as age intervals.

Table 7: Tenants' age at the time of the refurbishment

Age interval	n	%
20-30 years old	2	2.6
31-64 years old	61	78.2
65+ years old	15	19.2

n: number of responses

Tenants' statements of how information concerning the refurbishment project was forwarded to them indicate how well the property owner utilized the means they had available. Table 8 present how the tenants on Våxelmyntsgatan were informed about the refurbishment.

Table 8: Tenants' receiving of refurbishment information

Channels used to inform	n	%
Letters	12	20.0
Information meeting	13	21.7
Area personnel/property supervisor	9	15.0
Multiple channels selected	22	36.7
No information received	4	6.7

n: number of responses

Table 8 indicates that about a third of the tenants received information through more than one channel; while 4 tenants state that they did not receive any information at all.

Another concern of the property owner is how the tenants perceived the quality of the information that was forwarded to them. Table 9 present the tenants' view of received information.

Table 9: Tenants' perception of the quality of received information

Quality of information	n	%
Insufficient	11	19.0
Acceptable	31	53.4
Adequate	16	27.6

n: number of responses

A majority of the sample (81.0%) state that the information was acceptable or adequate. On the other hand, 19.0% believed that the information was insufficient.

7.2 Tenants' perception of refurbishment features

The refurbishment project on Våxelmyntsgatan included both internal and external components. Following the large-scale refurbishments, a variety of features related to the tenants' living was changed. Table 10 present how the tenants perceived the changes.

Table 10: Frequency table showing distribution of questionnaire answers.

Feature	n	No [%]	Improved Uncertain [%]	Yes [%]
<i>External</i>				
Area safety	69	14.5	23.2	62.3
Building aesthetics	76	3.9	5.3	90.8
Courtyards	77	9.1	7.8	83.1
Area services	76	44.7	14.5	40.8
Neighbour community	75	37.3	29.3	33.3
<i>Internal</i>				
External noise reduction	76	38.2	10.5	51.3
Kitchen	76	25.0	15.8	59.2
Bathroom	76	18.4	18.4	63.2
Comfort of apartment	75	10.7	10.7	78.7
Appreciation of apartment	77	14.3	14.2	71.4

n: number of responses

The survey indicates that the tenants believed the refurbishment project resulted in an improved environment. The exception is the community feeling between neighbours, which seem to have decreased.

7.3 Comments from questionnaires

The tenants who received the questionnaire were also able to add comments regarding the refurbishment. The received comments relating to the refurbishment have been translated into English and stated below.

General comments on the refurbishment

“I swapped apartments during the refurbishment into one of the already refurbished.”

“I was born in the same area as I am currently living so I have lived here my entire life”

“I changed to a smaller apartment after the refurbishment.”

“I moved to a smaller apartment at the time of the refurbishment since I could not afford the new rent. Now I do not have a kitchen.”

Comment referring to standard prior to refurbishment

“The kitchen lacked comfort during winter time...”

“The apartments were much colder before and the facades looked terrible...”

“We sold our villa and moved to Växelmyntsgatan prior to the refurbishment to prepare for our retirement. The rent was acceptable at the time but the maintenance (especially facades) were neglected in the later years.”

“I moved into Växelmyntsgatan in 1990. The rent did not correspond to the standard of the apartments. I did not have a dishwasher, laundry machine, drying cabinet or a self defrosting freezer.”

Comment referring to standard after refurbishment

“I can hear my neighbours through the walls of the apartment making it difficult to sleep at night”

“The water pressure in the bathroom is not sufficient. It takes a long time to fill the bathtub.”

“The deferred maintenance of facades has led to cracks where to balconies connects to the walls. Also, the flowerbeds of the garden are not being properly maintained...”

“The new level of rent is way too high!”

“The building maintenance is decreasing once again and they no longer clean the staircases and entrances to the buildings, still the rent keeps increasing.”

“We moved into our apartment in 2008. We are satisfied but think that the rent is too high!”

7.4 Tenants' rent acceptance

The sample data includes 74 questionnaire responses concerning the acceptance of rent increases. Out of the 74 responses, 32 households (43.2%) stated that the rent increase that followed the refurbishment corresponded to the increased standard of living.

The sample have been analysed using IBM SPSS-Statistics software. Only responses indicating that the tenant experienced the refurbishment, thus lived in the area both prior to and after the refurbishment, have been accepted in the cross-tabulation.

The default hypothesis of the authors' is that no relationship between any variables exists (null-hypothesis). The cross-tabulations will either prove or reject this belief with a certainty explained by the probability-value. The P-value indicates the probability of the null-hypothesis existence. Similarly, the P-value also indicates the probability of a relationship (interaction) between two variables. As an academic standard, results are seen as conclusive first when the probability of a relationship between variables is within a 95% confidence interval ($P \leq 0.05$).

In table 11 and 12, data concerning the tenants' valuation of specific variables of the refurbishment and their impact on tenants' rent acceptance are stated according to Pearson's Chi-square (asymptotic, 2-sided).

Table 11: Probability of interaction between tenants' background variables and tenants' rent acceptance.

Background variable	n	χ^2	df	P-value
<i>Information</i>				
Perceived quality of information	56	13.200	2	0.001*
Number of channels used to inform	57	0.632	3	0.889
<i>Household characteristics</i>				
Respondents' age	74	2.176	2	0.337
Number of adults in household	70	2.747	2	0.253
Number of children in household	71	8.582	3	0.035*

* $P \leq 0.05$: (statistically significant), n: valid responses

The number of children in households and the perceived quality of information were both found to individually interact with the households' acceptance of rent increases.

Household with more children tended to be less willing to accept rent increases. The Households who perceived the quality of information to be high were more willing to accept rent increases.

Table 12: Features of the refurbishment and the tenants' acceptance of rent increases

Feature	Improved n	Rent acceptance [%]		Difference Δ	Worsened n	Rent acceptance [%]		Difference Δ	Total diff. Δ	
		No	Yes			No	Yes			
<i>External</i>										
Area safety	41	53.7	46.3	7.0	9	66.7	33.3	33.3	40.3 ^a	
Building aesthetics	64	54.7	45.3	9.4	3	100.0	0	100	109.4 ^a	
Courtyards	59	59.3	40.7	18.6	7	42.9	57.1	14.2	32.8	
Area services	29	55.2	44.8	10.4	32	62.5	37.5	25.0	35.4	
Neighbour community	24	50.0	50.0	0	25	64.0	46.0	20.0	20.0	
<i>Internal</i>										
External noise reduction	38	50.0	50.0	0	26	69.2	30.8	38.4	38.4	
Kitchen	44	45.5	54.5	10	17	76.5	23.5	53.0	63.0*	
Bathroom	45	51.1	48.9	2.2	14	71.4	28.6	42.8	45.0	
Comfort of apartment	56	50.0	50.0	0	8	100.0	0	100	100.0*	
Appreciation of apartment	53	47.2	52.8	5.4	10	100.0	0	100	105.4*	

* $P < 0.05$ (statistically significant), n = number of responses, a = insufficient cell count

8 Discussion

The discussion has been structured as follows: first the social and technical aspects of refurbishments are brought up. Secondly, the impact large-scale refurbishments have on an area's demographic profile is examined. Lastly, tenants' perception of the value of refurbishment features and their interaction with their rent acceptance concludes this chapter.

Social aspects

A social aspect of large-scale refurbishments that does not affect the rent level is the crime rate in the area. Research indicates that people are less engaged in criminality in areas that are planned with this aspect in mind. Newman's study "Defensible Space" (1973) lists natural surveillance as one of the main components. Another component of the research is access control, referring to the placement of entrances, fencing, landscaping and lightning of the area. Thus, urban planning will have an impact on feeling of safety in an area. As the refurbishment of Växelmyntsgatan included demolitions that opened up additional entrances to the inner courtyards, it is interesting to see whether this has had any effect on the feeling of safety in the area.

Out of the 78 respondents who experienced the effects of the refurbishment, 54.4% stated that the feeling of safety had improved while 12.7% disagreed. 32.9% in the same group of the respondents stated that the feeling had neither improved nor worsen, or answered blank. Put in different terms, 81.1% of the valid responses (who had either a positive or negative view on the development of the areas feeling of safety) indicated that it has improved. The results indicate that the investments made in the close environment of the buildings have yielded benefit to the area.

The tenants also appreciated the redesign of the facades and buildings; 95.8% stated that the buildings have become more aesthetically pleasing after the refurbishment. In addition, 90.1% answered that the courtyards have become more inviting or pleasing. Yet, the community between neighbours remained at about the same level as before.

Following the refurbishment project, the number of businesses and service shops in the area dropped significantly, as the premises were developed into apartments. The questionnaire responses indicate what impact these changes had on the overall perception of services in the area. In the questionnaire, close to half of the tenants (53.2%) state that the range of services was better prior to the refurbishment and 46.8% state the opposite. Thus, the redevelopment of these premises can be seen as a successful move for the area.

Technical aspects

The refurbishment project included upgrades of the apartments' technical components. A large majority of tenants agreed that the technical components had improved after the refurbishment. The comfort of the apartments seems to be the most substantial technical improvement, indicated by 88.1% of the tenants. The bathrooms (77.4%) and kitchens (70.3%) were also perceived by a majority of tenants as being improved after the refurbishment. The disturbance from external noises remained at about the same level as prior to the refurbishment.

Demographic changes

It's interesting to examine whether refurbishments in this scale and their inevitable rent increases means change of tenants. By analysing the migration patterns in the area, we noticed that the volume of immigration and emigration from Högsbohöjd was at about the same rate after the refurbishment as during the refurbishment years. In addition, the mean income of the area developed at the same rate as city average. This contradicts plausible gentrification patterns. Comments in the questionnaire indicate that tenants relocated within the area of Växelmyntsgatan at the time of the refurbishment. Some tenants stated that they moved to smaller apartments for economic reasons.

Tenants' acceptance of an increased rent

Statistical analyses of questionnaire responses have yielded interesting results indicating how tenants valued the different aspects of the refurbishment. A frequency analysis show that nearly half of the tenants (43.2%) agreed that the rent increases corresponded to the improved standard that followed.

One of the statistically significant variables of the questionnaire concerned the quality of received information about the refurbishment. The perceived quality of received information was found to interact with whether tenants' accepted the increased rent as correspondent to their living standard. It must be noted that though the perceived quality of information mattered, the number of channels utilized for informing the tenants was not found to be significant in relation to rent acceptance.

The number of children in the households also proved to be of significance in its relation to tenants' rent acceptance. A plausible explanation of this interaction could be related to the households' disposable income decreases with each child.

As to the technical aspects of the refurbishment, the perceived comfort of the apartment and functionality of kitchens proved to be of significance in their relation to tenants' rent acceptance.

None of the environmental enhancements following the refurbishment had any proven significance to whether the tenants' accepted the rent increase as corresponding to the increase in living standard.

9 Conclusions

The aim of this thesis was to examine what effects follow a large-scale residential refurbishment and how the tenants perceived the value of its components. In addition the aim was to research for what components of the refurbishment they were more willing to accept an increase in rent.

Findings of this report indicate that close to half of the tenants (43.2%) at Växelmyntsgatan believed that the rent increase corresponded to the increased living standard.

The refurbishment did not seem to have had any major demographic effects in the area. The age distribution of tenants on Växelmyntsgatan only changed slightly throughout the refurbishment years and the mean income development was in line with city average. In addition, the immigration and emigration pace of the Högsbohöjd area remained at the same level even after the refurbishment years.

A majority of the tenants who responded and experienced the refurbishments believed that the feeling of safety in the area had increased. Likewise, they also believed that the buildings and courtyards had become more pleasing.

Our findings suggests that the quality of the information channelled to tenants prior to the refurbishment has a significant impact on whether the tenants believed that the rent increase corresponded to the increase in living standard. As an implication, a potential for improvement exists within the property owners' reach of governance. Yet, the number of channels utilized for information purposes was not found to be significant.

The number of children living in a household was found to be a significant variable in predicting whether the tenants' accepted the rent increase. The found direction of association between the variables is that the households' acceptance of increased rents decreases with each child in the household. Age of respondents and number of adults living in the household was not found to interact with the household's acceptance of rent increases.

In the technical aspects of the refurbishment project, the findings indicate that the perceived comfort of the apartments and functionality of kitchens both were significant in determining tenants' rent acceptance. Not a single environmental component of the refurbishment was found to be of significance in predicting if the tenants' perceived the rent increase as being in line with the increase in living standard.

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Appendix: Questionnaire layout

CHALMERS

2(2)

Enkät

1. När flyttade du in på Växelmyntsgatan?

- 1960-1980 1981-1993 1994-2013

2. Hur gammal var du när renoveringen ägde rum?

- 20-30 år 31-64 år 65 år eller äldre

3. Hur många vuxna bodde i hushållet när renoveringen ägde rum?

- En Två Tre eller fler

4. Hur många barn bodde i hushållet när renoveringen ägde rum?

- Inget Ett Två Tre eller fler

5. Varför valde ni att flytta till Växelmyntsgatan?

(ett eller flera kryss!)

- Ändrade familjeförhållanden Ekonomiska skäl Områdets karaktär och läge
 Annan anledning

6. Var lägenheten renoverad när du flyttade in?

- Ja Nej

7. Om svaret på fråga 6 var nej, hur upplevde du informationen kring den kommande renoveringen?

- Bristfällig Acceptabel Fullgod

8. Om svaret på fråga 6 var nej, på vilket sätt fick du information kring den kommande renoveringen?

(ett eller flera kryss!)

- Via brev Via informationsmöten Genom husvärd/bovärd Fick ej information

9. Anser du att hyreshöjningen efter renoveringen motsvarade standardhöjningen på bostaden?

- Ja Nej

10. Hur upplevde du resultatet av renoveringen?

- | | | | |
|--|-----------------------------|------------------------------|---------------------------------|
| Området kändes tryggare | <input type="checkbox"/> Ja | <input type="checkbox"/> Nej | <input type="checkbox"/> Vet ej |
| Husen blev vackrare | <input type="checkbox"/> Ja | <input type="checkbox"/> Nej | <input type="checkbox"/> Vet ej |
| Service i området blev bättre | <input type="checkbox"/> Ja | <input type="checkbox"/> Nej | <input type="checkbox"/> Vet ej |
| Gårdarna blev mer inbjudande | <input type="checkbox"/> Ja | <input type="checkbox"/> Nej | <input type="checkbox"/> Vet ej |
| Gemenskapen med grannarna blev bättre | <input type="checkbox"/> Ja | <input type="checkbox"/> Nej | <input type="checkbox"/> Vet ej |
| Trivseln ökade i bostaden | <input type="checkbox"/> Ja | <input type="checkbox"/> Nej | <input type="checkbox"/> Vet ej |
| Jag blev mindre störd av ljud utifrån eller från grannar | <input type="checkbox"/> Ja | <input type="checkbox"/> Nej | <input type="checkbox"/> Vet ej |
| Köket blev mer funktionellt efter renoveringen | <input type="checkbox"/> Ja | <input type="checkbox"/> Nej | <input type="checkbox"/> Vet ej |
| Badrummet blev mer funktionellt efter renoveringen | <input type="checkbox"/> Ja | <input type="checkbox"/> Nej | <input type="checkbox"/> Vet ej |
| Jag tycker bättre om min bostad efter renoveringen | <input type="checkbox"/> Ja | <input type="checkbox"/> Nej | <input type="checkbox"/> Vet ej |

11. Övriga kommentarer:

(Som tack för hjälpen kan du få en matchcheck à 25 kr. Ange i så fall ditt namn och nuvarande adress nedan:)