



TO KEEP or NOT TO KEEP **are these the only ways forward?**

*A study for future development in environment of national
cultural importance of Södra Änggården*

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ABSTRACT

Today sustainability is a big focus within construction and architecture. Simultaneously the preservation of older architecture is a great interest of the general public as well as an important topic in politics. These two subjects have been a main focus of many courses during my studies at Chalmers and I became interested in examining when sustainability and preservation work in symbiosis and when they don't. To study this topic I decided to conduct a case study of the renovation and innovation project of eighth slatted houses located in the southern parts of Änggården in Gothenburg. Familjebostäder is the owner of the houses and the apartments have been rented to different tenants since 1945. Since the houses have deteriorated over time they are in great need of renewal but the design options are however limited since the buildings are included Gothenburg conservation program from 2000 and the area is protected under the National Interest for Cultural Heritage Slottsskogen - Botanical Garden - Änggården (O 2:7). This case study will address the issue of conservation and design innovation of a building limited by the laws and regulations on preservation in PBL and BBR as well as the previous renovations conducted in the building .

In society today I can see that our built environment is treated in a dual manner with great contrast. There are buildings that have had the chance to stand for its entire projected life cycle where the goal is to preserve the built environment in more or less original condition against the passage of time. Or, the buildings are demolished halfway through their intended lifecycle to make way for a new, bigger, more efficient or a more "environmentally friendly" building.

In this work I will explore the possibility of combining these two ways of looking at our built environment. Is it possible to preserve while still developing our built environment? Is it possible to add new architecture to fulfil the needs of tomorrow's society while still honouring the original architecture and the cultural values of the area?

KEYWORDS: *Cultural preservation, Conservation, Transformation, National interest, Caution, Perversion, Reuse*



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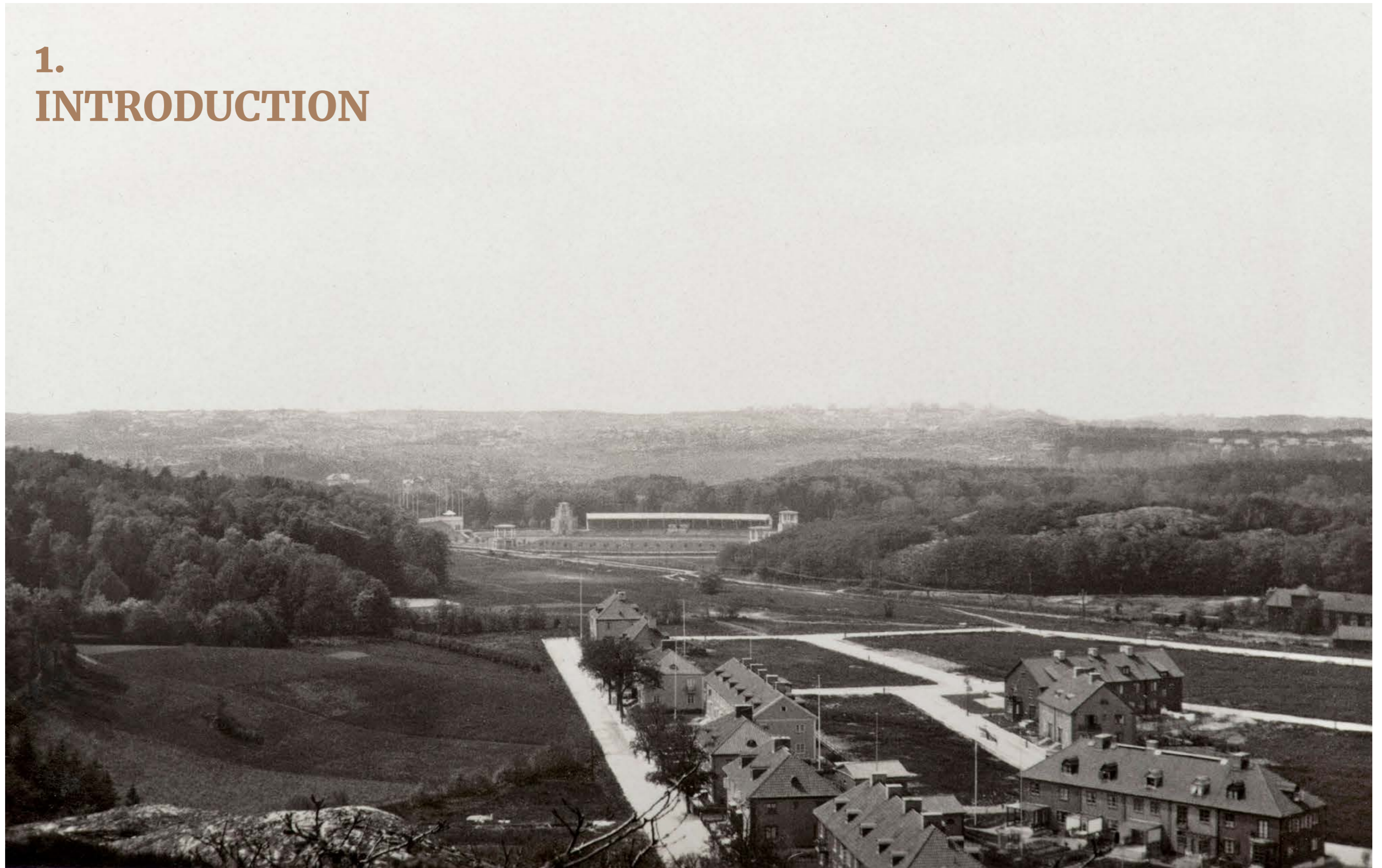
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1. INTRODUCTION



Photograph: Carl Whärner

Fig 1

INTRODUCTION

In today's society, there is a strong focus on sustainability. However, there is also much debate about the preservation of older architecture and how new architecture should or shouldn't look. This debate is most evident in social media and in local newspapers where the architectural profession is more or less in a perpetual conflict with the public and politics. The critique is mainly on aesthetics where the public craze the classical building style and aesthetic of architecture [SIFO 2023]. Alongside the public interest the politicians are setting goals and for adaptation requirements and tougher regulations for aesthetic adaptations [Enström 2021].

At the same time, the focus of the new digital master plan for Gothenburg's city developed by the office of city planning is on strongly promoting densification in the central city in the coming years. The plan is summarised using the values "close, integrated and robust city" [Lundgren 2022] and Anna Olssen, project manager for the master plan at the city planning office, described the plan in the following statement.

"In simple terms, this means that Gothenburg will primarily grow in the already built areas of the city through densification. It also means that Gothenburg will develop into a city where there are shorter distances to what you need in everyday life, to minimise the need for longer trips." [Lundgren 2022]

Furthermore, issues of the cultural environment have become more prominent and are increasingly debated in different parts of academia. Where cultural heritage highlights and argues the importance of our already existing environment for cultural heritage and the tools for cultural heritage that can help in the transition to a more sustainable society with a focus on circular flows, cultural heritage and our environment [Almevik 2021].

The approach of stricter conservation requirements could prevent a more organic development of a sustainable city and instead slow down and create a more backward-looking approach focused on the development of already existing environments. This could become a hindrance to the vision of a more cohesive and robust City for Gothenburg in accordance with the masterplan. However, some people in the architectural

profession are debating another possible way forward. A path that will allow both preservation and development at the same time. One of these architects is Daniel Ängmo, City Architect of Eskilstuna. In an article in the Swedish Architects' Journal Arkitekten he claims that "The present and the future must have a place in our built environments" [Ängmo 2022], he warns that too harsh adaptation requirements will mean that the present cannot have a place in the built environment and that future environments will not be shaped as a result [Ängmo 2022]. Ängmo describes Brf Messingen, which received the Södermanland Architecture Prize in 2019, as a good example of where new architecture is allowed to take its place in the city. The project is designed to link the blocks together but also to emphasise the already existing architecture on the site [Sveriges Arkitekter 2019].

AIM & PURPOSE

The aim of this report is to contribute with research and strategy of how Gothenburg can develop as a more sustainable city for today and future generations by architecture where innovation, preservation and renewal work in symbiosis.

This aim will be realised by examining the case of transformation and development of the Southern parts of Änggårde consisting of eight slatted houses situated on two neighbouring plots, 14:2 and 15:2, and investigate how today's conservation of the cultural heritage can contribute to the sustainable development of the city. The report will also explore how city development could be combined with the development of the already existing cityscape through renovation and densification in the built environment, where architecture takes advantage of yesterday's built environments and at the same time ensures that future environments can develop.

RESEARCH QUESTION

How could future housing in Änggården be designed with regards of its sensitive and high cultural values?

METHOD

The methodology of the work and this paper will be done through a two part approach. Where the first part will consist of Research for design. This part of the work will mainly consist of investigation through literature review in three major areas. These three topics will be renovation with focus on reuse, residential development in already existing buildings and heritage conservation. These will form the theoretical framework of the subject and act as a foundation for the case study.

Research for design approach will also include the site analysis of the area of Änggården. This will include a study of the city's master plan, a compilation of the area's protection regulations and current laws and recommendations on caution and distortion. The initiating research will also result in an inventory of materials that could be reused. During the spring I will also participate in Familjebostäders innovation meetings for the area and be part of the work for the development for the three houses that will come out to the public market through BoPlats.se

The final methodology of the work consists of Research by design. This part of the work focuses on designing by design methodology which will result in a proposal for development strategy for the area. The proposal will be generated through the analysis of the theory gathered in the research for design stage as well as through design iterations. Modelling with life cycle analysis and daylight simulations will be utilised to generate the design iterations in order to consider good daylight performance and lower energy and carbon footprint in the design process.

DELIMITATIONS

The work should be seen as a dialogue proposal on how to work with cultural heritage buildings in the central parts of Gothenburg. Familjebostäder has written binding contracts on five of the eight houses and a total renovation will take place of these according to the contract, my work will take as a starting point the standard increase that happens within the contract but will not take into account the direction Familjebostäder have chosen to develop the work. The aim is that the work can nevertheless be used as inspiration for the innovation work that will be carried out for the three houses within Familjebostäders own property portfolio.

During the course of the design work the scope changed from including both the building lot of 14:2 and 15:2 into focusing solely on 14:2. The building lot of 14:2 had several complicated factors that had to be solved, mainly how the houses and the area of slatted housing connect onto the future boulevard.

No engineering or geological survey has been used in the work other than the historical information obtained during the construction of the Änggården and proper review of the geological conditions needs to be done to determine the design.

The work also assumes that Dag Hammarskjöld boulevard will be redesigned according to the proposal submitted to the Gothenburg City Council and will be developed according to the timetable proposed for the boulevard.

2. BACKGROUND



Photograph: Carl Whärner

Fig 2

GENERAL PLAN FOR GOTHENBURG

In 2017, the City Council of Gothenburg commissioned the Building Committee to produce a new general plan for the city (Göteborgs Stad 2022). This new general plan for the City of Gothenburg states that the city will develop into a close, cohesive and resilient city. Gothenburg will continue to grow in the coming years where the general plan predicts a population growth of 250,000 new inhabitants and in order to be able to meet this expansion, the structure of the city needs to be developed into a multi-core structure with a strong central core, but where a better balance is needed between the different city districts.

Growth will mainly take place through the already connected urban area, with densification and additions. The city anticipates that 80% of the proposed additional housing and public services will be created within the inner city or in the near outskirts of the city centre. The new general plan shows how Gothenburg can continue to develop with a focus on sustainability, where the main development will take place in the areas around Dag Hammarskjölds led. The renewal and transformation of the traffic passage of Dag Hammarskjöld is a central part of the continuous development of the whole Gothenburg (Göteborgs Stad, 2022).

The general plan repeatedly emphasises the importance of providing a more environmentally sustainable city where citizens have the opportunity to live in a sustainable lifestyle with a limited climate impact. This through The City of Gothenburg's new environment and climate programme for 2021-2030, which aims to make the transition to an ecologically sustainable city. The programme is primarily based on Agenda 2030, Sweden's national environmental quality objectives and the Paris Agreement.

The housing shortage is also mentioned in the general plan. The city recognises that there is a lack of access to suitable and affordable housing. However, the general plan can be used as a tool for future urban development to reduce the housing shortage and be a piece of the puzzle to create the potential for more long-term utilisation of natural resources. This can be achieved by utilising resources in the already built environment, where the urban structure can support and enable a sustainable life for the city's inhabitants. This by reducing resources used as well as reducing energy use and drastically reducing fossil fuel transport by creating opportunities for the inhabitants to get around on foot, by public transport or by bicycle. Finally, the general plan also states that our consumption needs to be reduced in order to achieve the ambitious environmental goals.

This will create urban development dilemmas. Conflicting interests will need to be prioritised and trade-offs for a sustainable society will need to take the main focus in this prioritisation. Furthermore, to maintain the preservation of natural environments and the use of cultural environments the city will also have to find new solutions. At the same time, the general plan states that the city also needs to catch up with the existing housing shortage and partly neglected public services. All this has been summarised in three principles: "Close, Integrated and Resilient".

Close

The close city is about enabling the city centre to grow and providing places for services, meetings and work. In order to create proximity, a greater mix of functions is needed at local level. Both in new and existing areas. Among other things, by providing what is missing, which can attract more people with different preferences, conditions and different needs. At the same time, the city will continue to need to create more green spaces and parks that are close to nature and that can provide security, inclusion and good quality for the local area.

With densification, the city can also capitalise on investments already made in existing resources and structures while creating added value by introducing new functions and generating higher property values. Where dense development provides conditions for a greater variety of functions, which in turn creates a better basis for trade and local activities, as well as better conditions for getting around on foot or by bicycle.

However, densification also requires high attention and sensitivity. It is important to recognise the values that already exist on the site today as well as paying attention to how densification affects the quality of the future environment. For this, the knowledge of existing qualities is crucial, as well as the knowledge of how to create a healthy living environment with a good quality architecture of buildings and places.

Integrated

In order to enable a more cohesive city, barriers from traffic and inaccessible areas need to be managed so that the city can be connected through a better and more closely linked street network. Secondly a rich range of variety for housing is needed to meet the real need. Carefully shaped buildings and surroundings with different activities and natural environments can form the basis of a city that residents can be proud of, where great care is needed for squares, parks, playgrounds and all outdoor areas.

Resilient

In order to achieve a resilient city, natural resources need to be managed sustainably, the built environment needs to be utilised and a greater focus on reuse is essential. Where circular solutions in a dense and mixed city form the basis for a sustainable way of life. As well as more resource-efficient buildings and through densification with mixed content, the city also strengthens the region's growth and where eco-services create better opportunities for everyone(Göteborgs Stad 2022).

CONSERVATION FOR A SUSTAINABLE FUTURE

Cultural heritage and sustainability

Lars Amréus, National Heritage Director at the Swedish National Heritage Board, recognises how cultural heritage is present in today's environment(Riksantikvarieämbetet 2017). Cultural heritage highly influences the discussions within business development and tourism and how cultural heritage helps to shape attractive living environments. Based on these statements Amréus argues that cultural heritage is an important piece of the puzzle in the development of a society and that the cultural environment is integrated within the social, environmental and economic growth which together provide the way forward for more sustainable development.

Sustainability concerns within cultural heritage are also reflected in the idea of utilising what already exists and taking care of what we have created. Where our heritage and cultural environment work contributes to ecologically sustainable social development by reusing and conserving materials, resources and energy. Today with a growing population, we see a need for more housing but where the reuse of older buildings must be seen as a climate-smart usage and a complement to new development. Research has also been able to show that preserving properties can ultimately be more energy efficient than building new ones. One example is a study conducted in Norway where the renovation of a timber-framed house was compared to new construction of a zero-energy house. When comparing these two methods, the results showed that energy use is marginally less in the new construction while the use of materials has doubled the emissions for new construction (Riksantikvarieämbetet 2017).

Evolving of cultural heritage

What is cultural heritage and what is included in our cultural environment? The Swedish National Heritage Agency emphasises that cultural heritage and cultural environments are traces of people's lives and activities that for various reasons, are considered to be important carriers of stories.(Almevik 2021)

Sverker Jansson, author of the book *Kulturvård och samhällsbildning*, published in 1974 as part of the debate of culture heritage in Sweden. Jansson clarifies what needs to be included in the concept of environment. He argued that environment referred to material culture include all different spatial scales, from individual objects and artefacts to places, landscapes and buildings. Our entire material surroundings, sometimes described under the term 'material culture', which includes cultural care of all dimensions the environment. The past in which the cultural environment came into being, the following time during which the cultural environment was used, to the present where the environment is interpreted and managed, and the future in which the cultural environment can continue to exist. However, we must distinguish between culture care and memory care, where memory care only focuses on the object in a specific time and where cultural care includes the interpersonal relationships(Almevik 2021).

The Swedish National Heritage Agency also clarifies that cultural heritage does not only consist of statistical objects(Riksantikvarieämbetet 2017). Rather, cultural heritage is something that is constantly changing and something that is constantly being reformulated(Almevik 2021). Where each era forms its own conception of what our cultural heritage consists of and what this means, both for its own time and what these cultural heritages will mean for the future.

Moreover The Swedish National Heritage Agency also states the importance of people being able to create, use and reinterpret their surroundings, this is the driving force for creating a broader diversity in our cultural heritage. Likewise Amréus says that we can see cultural heritage as a tree, where every year new rings are added that together create new layers for the future, but also where we can read cultural heritage by looking at previous rings in history. It is the new growth that define our present and will hereafter create and shape our common future (Almevik 2021)

However, the term 'cultural care' is often used in the Swedish language as a way to emphasise that the culture also needs care and not always only cultivate. The Department of Conservation at the University of Gothenburg explains the concept as follows.

“Kulturvård”- is the art to preserve, develop and in a sustainable way use material and immaterial “objects” from the past”. (RED19 2018)

This can also be reflected in Ola Wetterberg’s description of cultural care as a conscious goal, where the goal is to take something from the past and consciously bring it into the future (Almevik 2021) and where cultural care is used as an umbrella term for our cultural heritage and cultural environment.

Lastly Amareus proclaim that the interest of preserving our common cultural heritage is to the benefit of all of us, but the most important thing is how we then use and develop it together and it is through doing this that we can shape a way forward with a sustainable society development (Almevik 2021).

Cultural heritage within Culture 3.0

Christer Gustafsson is a professor in cultural care at Uppsalas university. He was part of one of the first generations graduating the building antiquarian program at the University of Gothenburg in 1984 (Almevik 2021).

In the book Kulturvården (2021) Gustafsson describes how he has seen a shift in focus within the work of conservation. To support his claim Gustafsson used Jack Janssons research at the University of Wageningen in the Netherlands. The research is divided into three headlines, ”Preservation”, ”Conservation” and ”Heritage”. Jansson describes that at first preservation was the focus and the job of an antiquarian was to distinguish which buildings and environment was valuable to preserve and describe that value. The aim was to preserve the intrinsically historical and cultural values. Thereafter a new working method within conservation is formed. Instead of solely focusing on preservation, the conservation and the method used in order to preserve including the opportunity of reusing the cultural environment. Conservation opened up for more opportunities for change and development. Within this area of conservation the decision makers in the public sector got more power to work with the preservation and cultural care work together with the antiquarians.

Conservation work has in turn developed into a broader scope which is today described as ”Heritage”. The work of an antiquarian has broadened to include the experience of cultural heritage, how the heritage is presented and how the environment is used. The user of the environment and of the buildings has received a greater focus and the citizens have received a greater importance in this new strategy of determining which buildings and environment are worth preserving and how they should be used and conserved in the future.

Gustafsson (2021) also claims that this way of looking at the development in cultural preservation with “Preservation”, “Conservation” and “Heritage” also could be distinguished from the archaeologist Dean Sully who works at the University of College London. Sully describes a clear development from theory to practice for the work within conservation. Sully declares that the materialized cultural preservation, with its clear focus on the objects and with the least possible interventions has instead developed into a cultural preservation that with active participation focuses on welfare, where the cultural values do not stand in the way of society’s development. In this way of working, cultural heritage becomes an asset instead of a burden on society.

Lastly Gustafsson uses Pier Luigi Saccos research to describe how there has been a shift in focus within conservation. Sacco describes the development of culture and his studies had a major impact on EU cultural policy among others. Sacco is a cultural economist and in his study he has divided the development of culture into three phases. He sees these phases as occurring at different stages in history, however, Sacco believes that these phases can also exist alongside each other.

The three phases are named in the study as Culture 1.0, Culture 2.0 and Culture 3.0. In the first phase, the culture does not create economic value and takes place in a pre-industrial economy. The second phase can be seen at the beginning of the twentieth century in Europe, where cultural and political relations, as well as new technology have made it possible for culture to be created and spread. Culture can create economic values and be distributed to the general public and no longer solely be limited for the wealthy elite. Distribution takes place primarily through newspapers, magazines, books, film, radio and television. The latest phase which Sacco describes as Culture 3.0 is not fully developed yet but where we can see tendencies towards a new economic development for culture. It is through the digital media that this new development can take shape. This phase is not about greater and faster distribution, but primarily the possibility of artistic expansion where it is no longer obvious who is the creator or viewer of a work. This Sacco believes will create new economic opportunities for everyone to be able to participate in the creation and distribution of the culture.

LAWS FOR CONSERVATION

This possible development, Gustafsson believes, can be reflected in cultural preservation. Cultural preservation 1.0 was about the preservation of buildings and environments through legal requirements, protection and knowledge gathering. During cultural preservation 2.0, the work and focus developed and new financial means were created. When cultural preservation began to focus on also the techniques of preserving older buildings a new demand was created for the market for cultural preservation which has also been a major focus for municipalities and counties in Sweden. Gustafsson sees how the focus went from protecting to conserving our cultural environment and the next step is about starting to use the cultural environment. He describes that cultural preservation 3.0 is about shifting the focus to the users of our cultural environment where we need to adapt the environment to enable continued use of our buildings.

This shift in focus will, according to Gustafsson, be a leading factor for our transition to a circular economy where resources are taken care of and reused which also is necessary in the sustainable transition. In Kulturvård 3.0, the work goes from being a cost to instead being an investment, where we invest in our already built environment and make use of the resources we already have and where the return is distributed in socially, environmentally and economically sustainable community use. Gustafsson also points out that this work to develop Cultural Conservation from 2.0 to 3.0 is also recognized by the Government. In 2015 the goals of a new cultural environment for regional and municipal level was formed. The first goal is to create "a sustainable society with a diversity of cultural environments that are preserved, used and developed" (Government proposal 2012/13:96 found in Almevik 2021).

The work will be based on our laws for managing sites and buildings. These laws are included in PBL and have clarifying texts in BBR. The first regulations on sustainable development are already in the first paragraph. This is called the declaratory function and shall clarify the direction of all future laws.

PBL (2010:900) 1 chap. 1§

This Law contains regulations on the planning of land and water and on buildings. The purpose of the regulations is to promote, with due regard for individual freedom, the development of a society with equal and good social living conditions and a good and longterm sustainable living environment for the people of today and for future generations.

The first time Conservation is mentioned in PBL is in the second chapter, sixth paragraph, point number one. This law concerns the planning of new construction in an already existing area and the requirements for this type of construction.

PBL (2010:900) 2 chap. 6§

When planning, in cases of building permits and in measures regarding buildings that do not require a permit according to this law, buildings and constructions must be designed and placed on the intended land in a way that is suitable with regard to

- 1. the urban and landscape image, the natural and cultural values of the place and the interest in a good overall effect*

What is concerned as cultural values and valuable cultural environments is described in chapter 8. Chap. 8 17§ and 8 13§ in PBL are also the most important laws in regards to protection for the already built environment.

PBL (2010:900) 8 chap. 17§

Any alteration of a building or relocation of a building shall be carried out with caution, taking into account the characteristics of the building and the technical, historical, cultural, environmental and artistic values of the building.

BBR (2011:6) 1:2211 CAUTION**General guidance**

In order for a measure to be considered as cautious, it should respect the character of the building in terms of

- proportions, form and volume,*
- choice of materials and workmanship,*
- colour scheme, and*
- attention to detail and level of detailing.*

It should also take into account details that are essential to the character of the building. (BFS 2016:6).

PBL (2010:900) 8 chap. 13§

A building that is particularly valuable from a historical, cultural, environmental or artistic point of view may not be distorted.

BBR(2011:6)**1:2212 Prohibition of distortion****General guidance**

In determining whether a measure causes distortion, it should be clarified whether the measure alters damages the character of the building or any of its underlying features, cultural value of the building or the area. (BFS 2016:6).

It is on the basis of these letters that the assessment of heritage buildings is determined. It should be clarified that it is not only the high architectural values that make a building worthy of protection, or only historical events. But also buildings that show how society has developed over time and where these buildings then become clear signs of the social development that has taken place during different time periods.

REFERENCES

The following references are examples of where either a complimentary building or the redevelopment and extensions of an old building with cultural heritage has been awarded or acclaimed.

Rådhuset Göteborg

The City Hall in Gothenburg is today considered one of the city's best additions and has been a constant feature since Asplund completed his addition in 1936. However, the building has not entirely escaped criticism; after completion, Gothenburgers were horrified by the functionalist expression of the façade (Higab 2022). But today, both the exterior and interior are praised for their high architectural qualities. The older parts of the building were listed in 1968 and Asplund's extension was declared a listed building in 1982.

Domkyrkeforum Lund

This addition to Lund's cityscape was awarded by the Kasper Salin Price as Building of the Year 2012 with the nomination "The building has a clear architectural identity of its own and at the same time manages to subordinate itself to the cathedral. The entrance to Stora Södergatan is strongly and independently shaped as never before in Sweden" (Sveriges arkitekter 2012).

These two buildings show how development can be approached through either stand-alone additions or integrated additions. This shows the many possibilities that can be created, but both references are also clear that it is possible to create good architecture, without following the original style. However, this is something that is often criticised at the time of the construction of the additions, but with the passage of time is seen in a different perspective. Where instead the contrast of style adds a more complex whole and creates a more nuanced architectural landscape

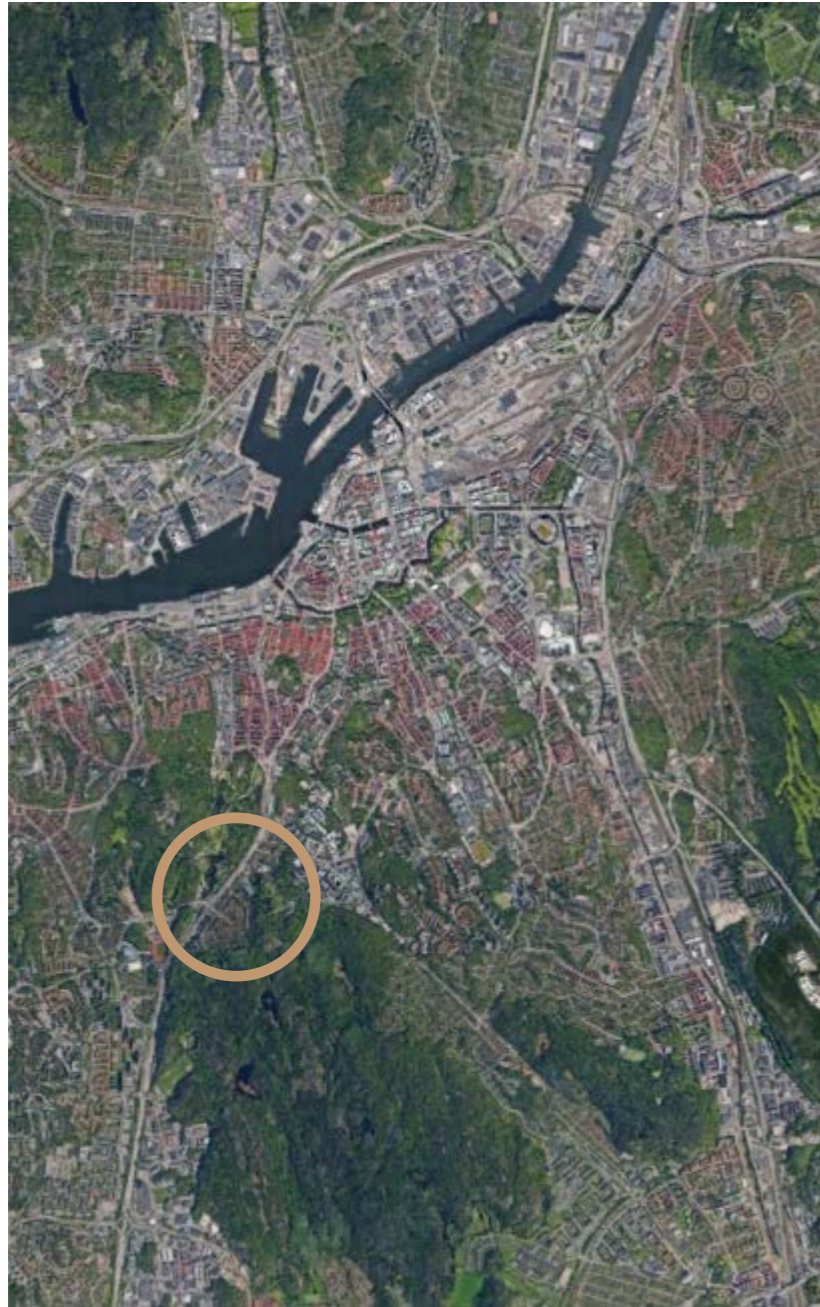
3. SITE



Photograph: Carl Whärner

Fig 1

GOTHENBURG



Satellite Photo: Google Earth 2023

Fig 4

○ ÄNGGÅRDEN

ÄNGGÅRDEN



Orthophoto: Göteborgs Stad 2010/2011
Scale 1:8000

Fig 5

■ BORTRE ÄNGGÅRDEN

HISTORY OF ÄNGGÅRDEN

Änggården is located southwest of Gothenburg's city centre and was incorporated into the city after being bought out in 1892. In 1906 and 1918, neighbouring plots were also purchased (Stadsbyggnadskontoret 2000). The main purpose of the purchase was both to fulfil the need of the city to grow and to have land to build the new city hospital Sahlgrenska.

Änggården was central to the expansion of the city in the end of 20th century and still is today. The site became the object of Albert Lilienberg's first detailed planning work for Gothenburg, when he took over as chief of city engineer in 1907 (Bjur, H 2018). He revised the former acting chief city engineer Ludvig Simon's plan for Änggården. Simon's plan had been prepared the previous year and had already been approved by the city architect and the building committee in the spring of 1907. Lilienberg considered that the proposal that had been adopted did not fulfil the economical, practical and aesthetic requirements for the area. The new proposal was completed in 1909 where the new neighbourhood was proposed to be built with four and five floors. However, the plans for the southern parts were not fully developed and the area was commented on with the text "the scope of the buildings is left undetermined for the time being". In this proposal only the houses in the northern parts of Änggården were given a detailed form. Moreover, the 1909 plan would undergo major changes over the next 30 years. The plan first changed drastically when the decision was made to build a botanical garden in the area, which divided the neighbourhood into two, Främre Änggården and Bortre Änggården.

The next detailed plan for the area appeared in 1917, where great similarities can be seen with how the area looks today, although it was still the idea that the buildings should be four and five storeys respectively. The distant parts of Änggården were still outside the plan program but red lines suggest the continued extent of the neighbourhood. However, the plan was changed again already in 1922 where the floor heights for the area dropped to a maximum of two floors. This after the conclusion that it would not be economically justifiable to construct the land reinforcement that would be needed for larger buildings. In this proposal the far parts of Änggården (Bjur, H 2018) were entered with two-storey houses which meet the entrance to the city through Frölundavägen (Dag Hammarskjölds led), with a park in the foreground.

Next to this, the land is planned to be developed with freestanding sheared-buildings of no more than two storeys, helping to frame the proposed park. In the illustration plan for the area, a statue is placed in the middle of the park and the neighbourhoods around the park are numbered 14 and 15.

In 1942, a new detailed plan for Änggården 14:2 and Änggården 15:2 was drawn. Albert Lilienberg no longer works in Gothenburg and we find ourselves in a new era of urban planning where the interconnected neighbourhoods are replaced by eight shallow houses in plaster. These houses will also continue the modern community planning in the southern parts of Änggården. The plaster architecture was kept in the 50s plan with three-storey houses along the hill, and during the 1960s, a smaller area with one level houses in brick was built at the top of Änggården's north-eastern part.

Over the years, traffic solutions for the area have undergone several major changes. Where Säröbanan (former train railway) and Frölundavägen provided the central connections along Änggården, this changed drastically in the late 50s with the construction of the Annedalsmotet and in the mid-60s Dag hammarskjölds väg has widened (formerly Frölundavägen) to Dag hammarskjölds led. This expansion also meant the cancellation of the Säröbanan and the tracks were instead converted to tram traffic. As a result of the widening, a new road also had to be built to several of the houses located on the old Frölundavägen where it was not possible to connect the exit to the houses' in direct proximity to the road. This meant that a new road Lillängsgatan had to be extended through the park adjacent to lots 14 and 15. The burial of the road and the noise barrier that has been constructed to dampen the sound pollution have led to Änggården being cut off from its surroundings and created greater distance from the nearby areas of the city.

Änggården came to be seen as a very good example of the qualities that the garden city creates. This, combined with the proximity to the Slottsskogen, the Botanical Garden and Änggårdsbergen, has made the area one of the most sought-after and expensive areas in Gothenburg. The area was incorporated into the National Interest for Cultural Environment in 1987 through Slottsskogen - Botaniska Trädgården - Änggården (O 2:7). Minor additions have been made over the years in the neighbourhood, including densification with a day care centre in 1988, subdivisions where more properties could be built, and various additions to the buildings. The extension for Änggården 12:26 in 2005 is a good example on how to adapt new development to the old buildings according to the city planning office.



The houses in the district of Änggård are described as a clear example of the development that took place between 1910 and 1940 (RAÄ, 1997). However, this can be considered as a simplification of the development in the area as the district has continued to develop during the 1950s and 1960s. This development took place mainly in the eastern parts of the district and are therefore not as visible to the public. These buildings are often missed when describing Änggård. Änggård is a great diversity of different house types and styles that were built and developed over half a century. There are also modern additions to the area as picture no.12 shows. A building permit for a garage in the 1990s was remade into a building permit for expansion in the 2010s. The extension is in harmony with the original house but it is clear that the parts come from two different times.

HISTORY OF THE HOUSES

This case study consists of the one of two plots with slatted houses located on the plots Änggård 14:2. The houses were built in two blocks as senior citizens' homes in the mid-1940s, Kv 14 Törnrosen and Kv 15 Stockrosen. The neighbourhoods each include four shallow houses and together these constituted 273 apartments. The majority of the apartments was one room with a kitchenette, where the toilet was shared between the apartments in the stairwell and shared bathroom located in the basement. The first house in block 15 Törnrosen had a boiler centre for the area. This house also had a loading area and a coke storage room, where the chimney distinguishes the house from the others.

The buildings' placement in the landscape differs significantly from the plans created by Alber Liljenberg in the 1920s and is instead a clear example of 1940s urban planning and the development from houses in gardens to placing houses in the space of infinite. Göran Sidenbladh describes the 1940s as a time when architecture needed to accept the possibilities of communication and building technology that had been developed in the preceding decades, with a clear focus of how to develop the building of our society until today with increasing demands on efficiency and economic requirements. However a big focus was also given to figure out how the orientation of the houses' structures should be based in order to create equal distribution of sunlight as well as having well thought out floor plans for each type of apartment. This created a new and concrete basis for modern Swedish housing policy.

This can also be seen in the choice of slatted houses. Sidenbladh points out that small apartments were particularly difficult to solve in inward-facing corners and that slatted houses were preferred to enclosed blocks. Axel Grape has also commented on the construction of the 1940s in his text "Den bostadspolitiska bakgrunden till de statliga normerna för leilighetprojektering.", where he points out the importance of the housing shortage that prevailed during the interwar period created around the First World War, where the solution was considered to be building many small flats. The housing policy of the 1930s had also led to a broader view of who needed to be designed and built for. The ideas of the Swedish people's home had taken root in society and where people started to design and build flats for less well-off families with children and elderly citizens.

Moreover, a greater focus on efficiency and economy is already evident in the planning of multi-storey houses where the first detailed plans for buildings were revised three years after their approval in 1942. The 1942 plan included an extra floor and two years later in 1944 the orientation changed and the house types got split into two different.

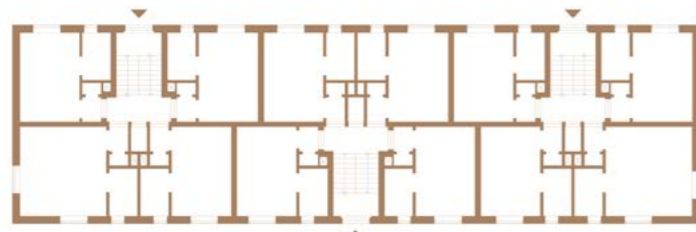


Figure X - Floorplan Scale 1:400

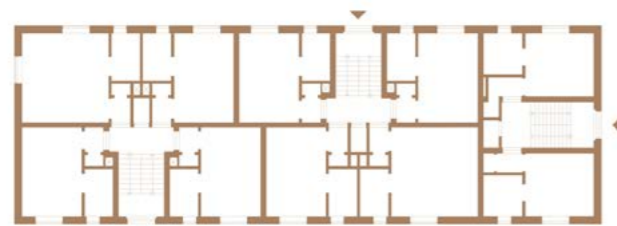
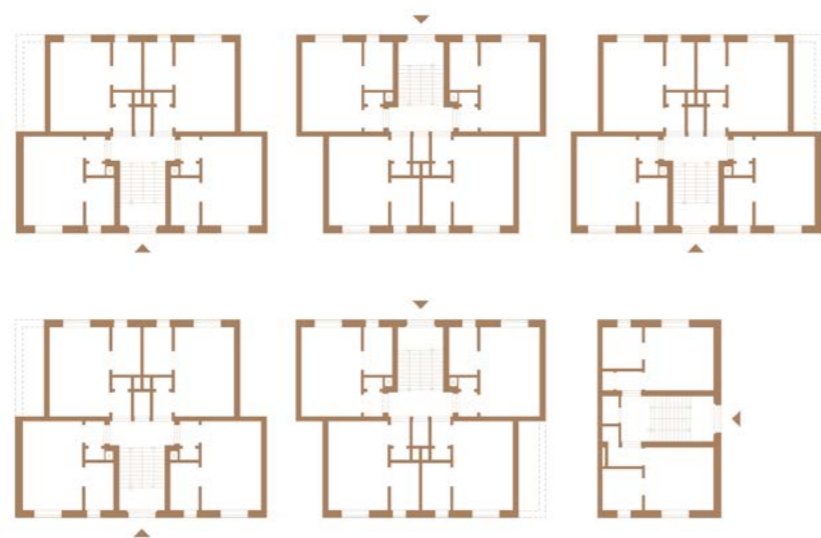


Figure Y - Floorplan Scale 1:400

Both types of houses had three staircases as illustrated on figure X and Y. The two houses on the far end of the block were shorter and had one of the staircases placed on the short side. The six longer houses had the staircases placed on the long side.



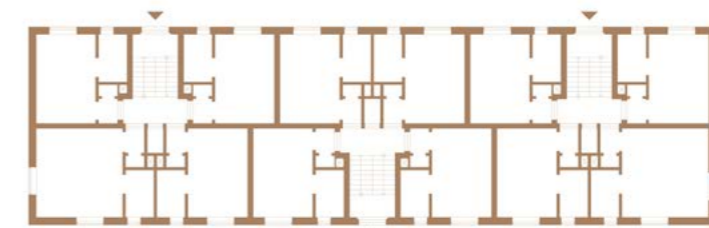
Deconstructed floorplane Scale 1:400

The main staircase located on the long side had four apartments on every floor but the staircases on the short side only have two apartments for every floor. The flats were staggered to reduce the building's footprint, making it possible to have 36 flats in each building. As a consequence the buildings had one entrance to the staircases located at the backside of the buildings.

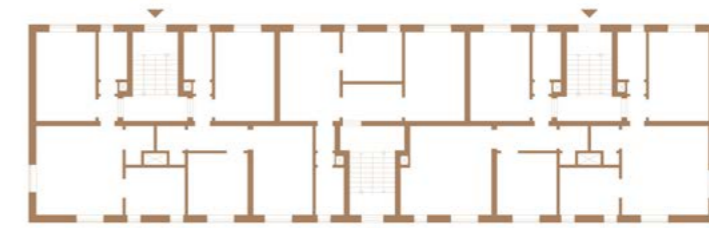
In 1946, a new plan was adopted for Änggården 14:2, allowing a single-storey commercial extension in the northern parts of the area, however these were never built. Although it is still allowed by the detailed plan to add commercial extension in the northernmost wing of the site. Moreover, photos from 1947 show how the houses had a small square/park in the foreground. This square is much smaller and tightly squeezed between the hill and the buildings than Lilienberg's vision of the site.

Conditions for the area changed drastically in 1964 with the widening of the traffic network with the construction of the Dag Hammarskjöld led. This new route necessitated the construction of a noise barrier, which changed the orientation of the houses to their surroundings and created a more secluded entrance for the stairwell on the rear facade.

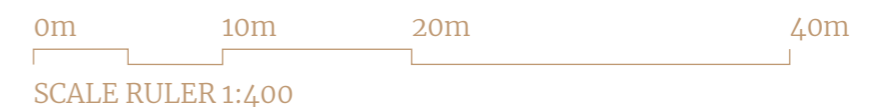
Today, the houses are owned by Familjebostäder, which in 1975 renovated all eight buildings and converted them into 110 two-roomed apartments with their own WC and added a care centre in house no. 1 in quarter 15 Törnorsen.



Floorplan 1944 Scale 1:400



Floorplan 1975 Scale 1:400



The work was carried out by K-Konsult Ingenjörer och Arkitekter, which at the time was part of the Swedish Association of Local Authorities[10]. The houses have been rented out to the municipality and their agency that provide accommodation for people with special needs, where various vulnerable groups have been able to get a central residence for an affordable rent. The buildings have been under very favourable contracts and this has meant that the public sector has not seen any benefit in renegotiating the lease with Familjebostäder. Consequently the buildings have indirectly not undergone any major changes other than minimal maintenance and are today in poor condition.

A kindergarten was built for Änggården on plot 15:2 in 1986. The building is wedged next to the four shallow houses and climbs up the hill behind the plot, to Änggårdsberget. The block was divided into two plots and today consists of Änggården 15:2 and Änggården 15:3. The kindergarten was owned and maintained for a time by Familjebostäder but is now part of the municipal organisation.

2022 was a turning point for the houses and the area. The contracts were renegotiated and a new contract was signed for the rental of five houses to the public service. These five houses will be renovated with new windows and doors, new ftx ventilation system, additional insulation of max 150 mm and core renewal. The remaining three will be transferred back to Familjebostäder's own organisation and undergo an innovation process and will after the renovation is completed be available at the housing queue Boplats. During the renovation of the first five houses, the remaining three will be used as evacuation apartments.

CONSERVATION REQUIREMENTS

There are two texts that cover the acts that protect the houses and the area, these are Slottskoken- Botanical Garden - Änggården which is part of Sweden's National interest of Heritage. This is through the regulation "Slottsskogen - Botaniska Trädgården - Änggården (O 2:7)" in addition to this, the houses are also included in the City of Gothenburg's conservation programme from 2000 "Kulturhistoriska värdefulla byggnader i Göteborg"

In addition to these, an antiquarian review has also been made for the facades of the houses before the upcoming renovations that the owners are planning within the coming year.

Slottsskogen - Botaniska Trädgården - Änggården (O 2:7)

"The Änggården block of terraced houses and villas, reflecting the development of planning and architecture from the 1910s to the 1940s (residential area).

The regular plan pattern by A. Lilienberg on flat ground near Änggårdsberget.

The settlement with a row of stone houses and large wooden villas in connection with the hospital area above. The main part of the area south of the Botanical Garden with mainly wooden terraced houses in typical house lengths, but also stone villas - from national romanticism to 20th century classicism and functionalism, all with fenced plantings towards the street. At the southern edge of the projecting mountain range, three-storey functionalist shallow houses from the 1940s with lawns, boundary hedges and an avenue. Layout, street character and greenery, design of the buildings."

CULTURALLY VALUABLE BUILDINGS IN GOTHENBURG

”G Sundbärg drew up a new urban plan for the southernmost neighbourhood in 1944. It comprises eight shallow buildings, all positioned in a north-south direction. The houses built in 1944-45 included retirement homes and were designed by Göteborgs Drätselkammarens arkitektbyrå.

Particularly valuable are those parts of the area where the buildings and the street or site have been deliberately composed to form an overall environment.

The shallow house group is an example of the simple plaster architecture of the 1940s.”

Antiqarurian Statment

Johanna Roos through Antiquum AB has written an antiquarian statement for Familjebostäder for the upcoming renovation, retrofitting and development of the shallow houses by Hejderidaregatan/Lillängatan. Roos clarifies that the statement should clarify the cultural values of the buildings and help describe the consequences of the building's changes affecting both the individual buildings, the surrounding and its culturalhistorical character. (Roos 2022)

The statement should help to provide a knowledge base for the building committee in future positions for the house's renovation. Roos clarifies in the statement that there is no cultural-historical protection for the buildings in the respective town plans for the houses that are in use. However, the houses are designated as *”particularly culturally and historically valuable in the preservation programme and are included in the national interest for cultural heritage conservation”* These designations mean that Roos believes that the buildings are included in PBL Chapter 8 §13 as well as PBL Chapter 8 §17 and PBL Chapter 8 §14, which require particularly valuable buildings for historical, cultural or environmental reasons to be maintained in a way which preserves their special values.

The report also includes the original colors of the houses, which differ depending on which lot the houses are located on. Roos also clarifies that the houses are designed in accordance to what is typical for their time, although the lack of balconies is unusual for this type of house from the 40s (Roos 2022).

DAG HAMMARSKJÖLD HIGHWAY AND BUILDINGS

When Dag Hammarskjöld's street was widened into a traffic lane, a noise board was put up between the houses on block 14 Törnrosen and the traffic lane. This created a better soundscape for the residents of the area but also had other consequences. Among other things, a more unsafe entrance was created on the front of the house, which had now indirectly become the back of the house. When the noise board created a barrier to reach the houses the residents instead had to go through Lillängsgatan to reach the entrance. The plank also blocked the open sight lines that existed before as well the visibility between the entrance and the street. During the renovations in the 70s, this privacy was also strengthened when the stairwell which previously housed 12 apartments instead only housed 3 apartments. This drastically reduced the number of people walking by the back of the house.

The consequences of this barrier are clearly illustrated when walking or cycling past the area. The Änggården has a clear entrance in both Främre and Bortre Änggården where you transport yourself on the inside of the barrier, between the plank and the townhouses. At the entrance of Botre Änggården, pedestrians have first transported themselves on the outside, between the plank and Dag Hammarskjöld's road to be let into Änggården and transport themselves in the avenue between the barrier and the terraced house, however, this is first after passing the quarter Törnrosen. This prevents the Törnrosen neighborhood from creating a clear and shared cityscape with the remaining parts of Änggården.

Coming to Änggården from Högsbo



The walking and cycling path runs along a rock wall that ends in the small, forgotten city park.



The city park is overgrown and feels like an overgrown thicket. A large sound barrier is set up along the road and the park.



The sound barrier turns into a board along the entire block of Törnrosen and separates the houses from the traffic route, as well as



The sound barrier ends after Kv Törnrosen and opens up as an entrance into Änggården in the opening between the noise board.

Going from Änggården to Högsbo



Carl Skottsbergs gata is divided by pedestrian walkways between the terraced houses and the avenue of trees with parking along the avenue



Car traffic is one-way along the entire street, while bicycle traffic goes in both directions.



The opening in the sound barrier is right at the beginning of Kv Törnrosen. Here you meet the short sides of the slats, which are separated by a



The hedge runs along the plot up to the sound barrier and the sound barrier separates the houses and the pedestrian and cycle traffic all



PARKS AND GREEN AREAS



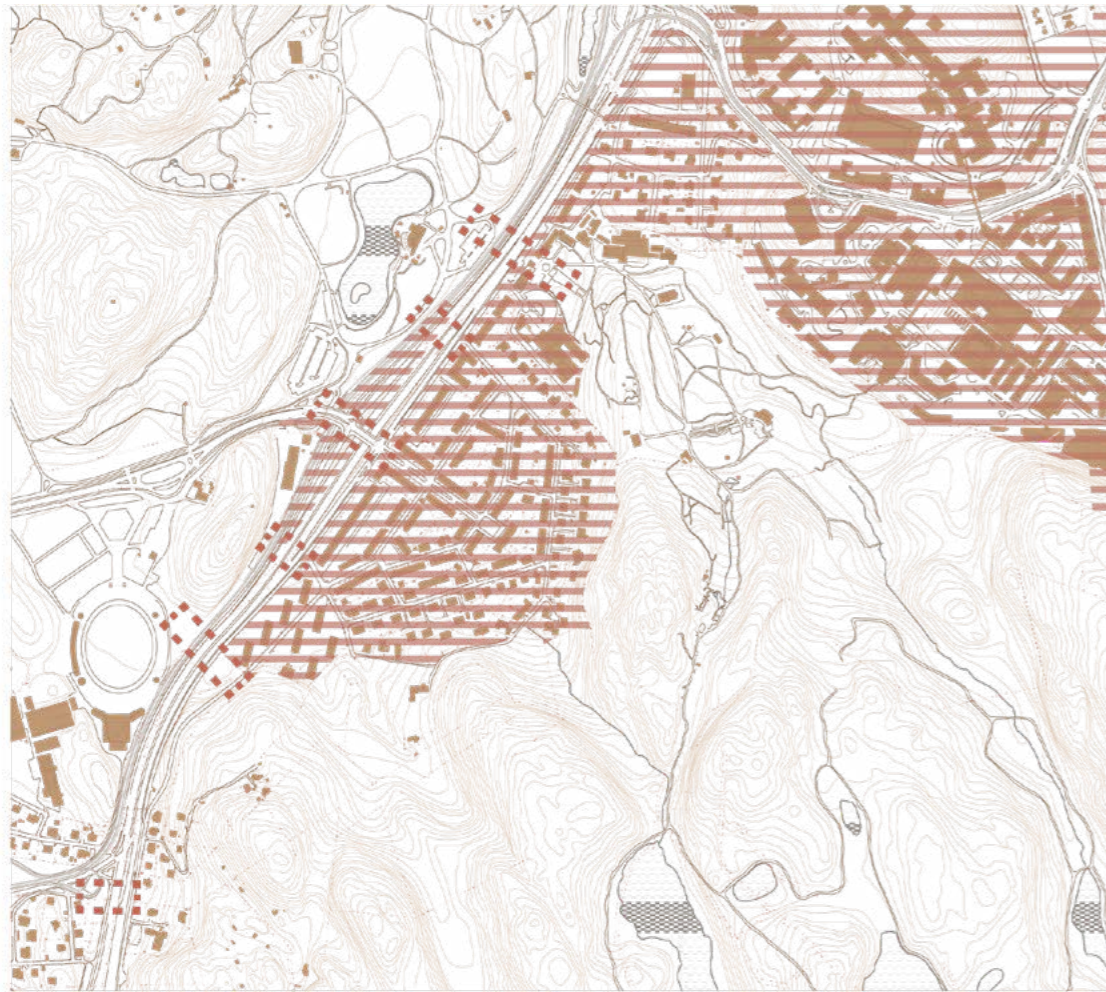
-  Residential parks and nature area
-  Urban park
-  National interest in nature conservation
-  The forgotten park
-  Nature reserve

AREAS WITH HIGH CULTURAL VALUES



-  National interest in cultural heritage
-  Valuable cultural landscape and environment

EXPANDED CITY CENTER



-  Expanded city center
-  Potential connections

In the new general plan of Gothenburg the use possibilities for several areas are updated. Central to the new general plan is that the inner city expands to enable a more dense and mixed city. This means that Änggården is once again in a border zone. During the beginning of the 20th century, the district was the outermost within Gothenburg, today the district is instead at the outer edge of the expanded city center.

Through this new transformation from outer city to inner city, the city points to the need for the area to develop and the possibility of creating a denser district that can accommodate both housing and businesses. The program also shows upcoming connections over the new boulevard which can strengthen the connections between Änggården, Slottskogen and Högsbo.

4. PROPOSAL



Photograph: Carl Whärner

Fig 6

URBAN PLANNING OF ÄNGGÅRDEN

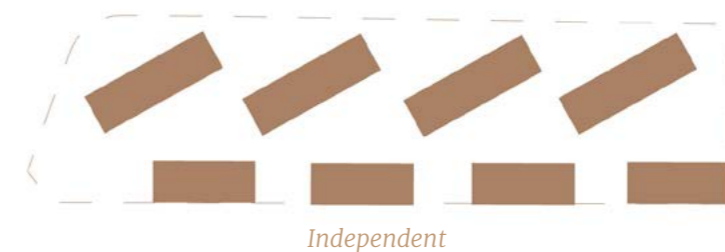
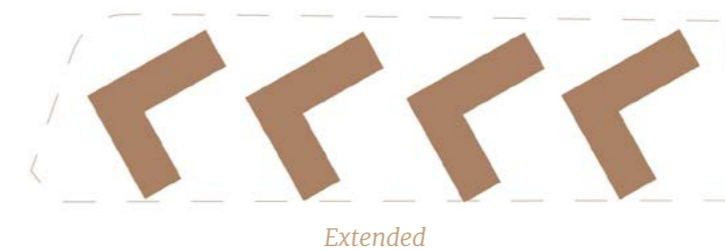
Over the years, Änggården has undergone several plan types during the planning and construction of the district. From the beginning, the area was to be a closed and dense neighborhood. This can be seen in Liljenberg's detailed plan from 1917, but which was then changed to an open but still clear block structure seen in the plan from 1922 and which was largely built. Sundbärg's plan from the 1940s departs from the block division and instead the houses are placed in the open space.



The shattered houses enables three different design strategies for future densification. First design strategies is to intertwine one or more of the buildings into one or several building structures, where this strategy is inspired by what Albert Linjenberg's closed plans for the area looked like. Second design strategies is to extend the buildings, which more reflects the typology that was built in the area. and lastly, the third design strategie that was developpt consisted of new independent buildings on the free lot and is more similar to the idea of placing buildings in the open space. This design methodology can at the same time separate the already built environment, where Albert Linjenberg created places through the placement of buildings in between each other and where gaps and openings were used to create a coherent design..

These three different design strategies resulted in a "black map" sketch study that can be seen on the next spread

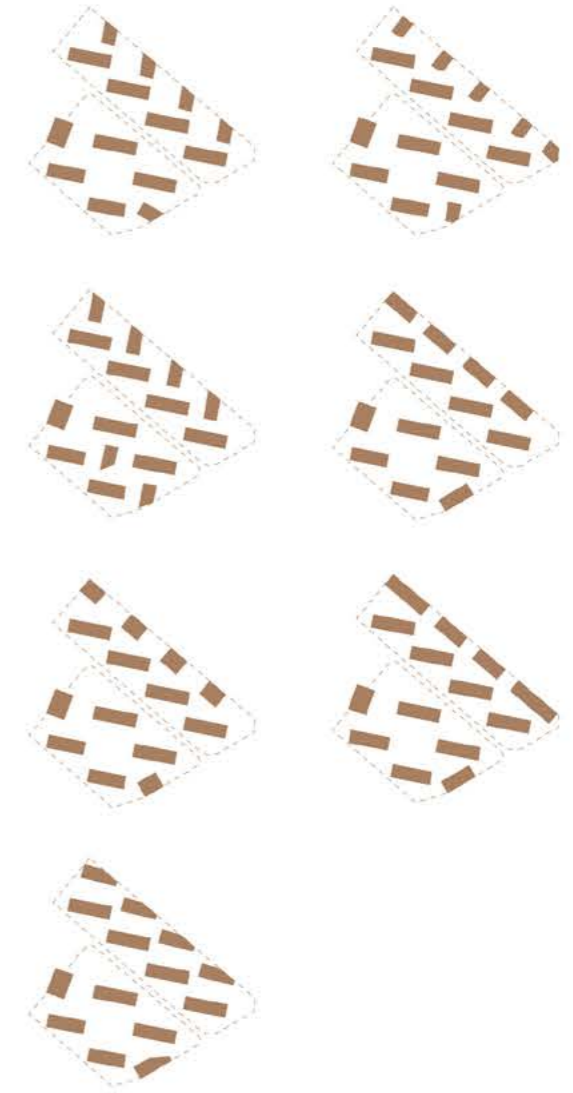
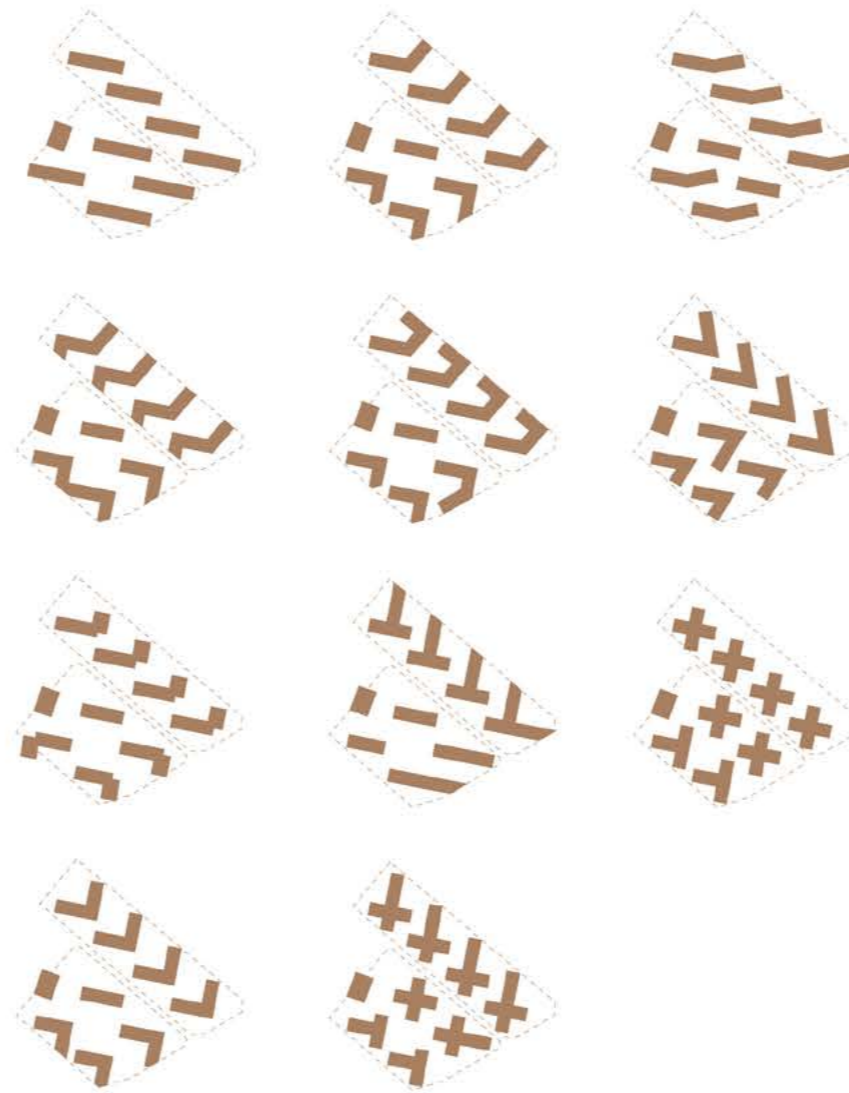
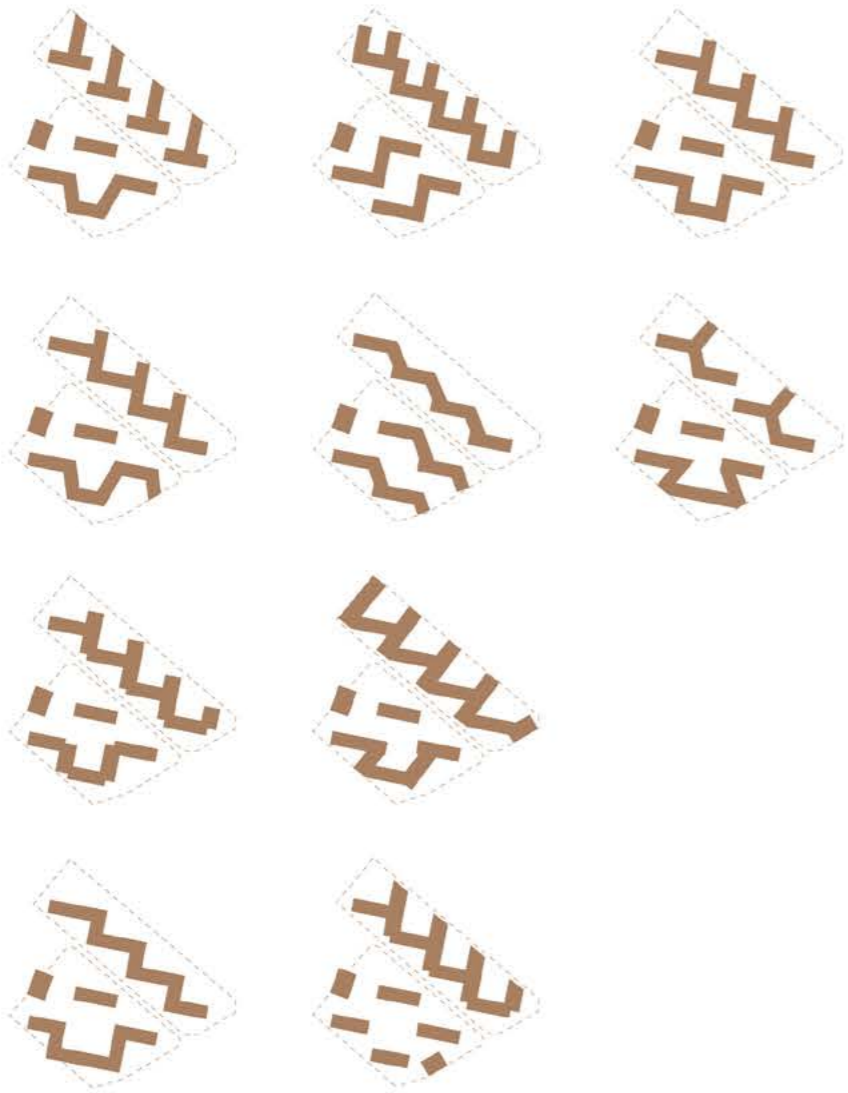
DENSIFICATION METHODS



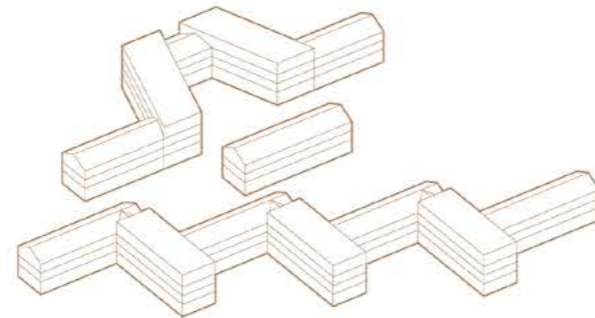
INTERTWINED

EXTENDED

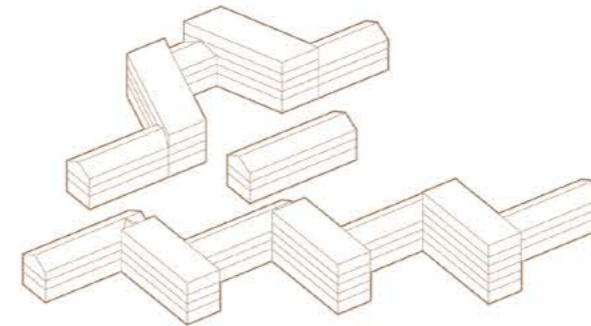
INDEPENDENT



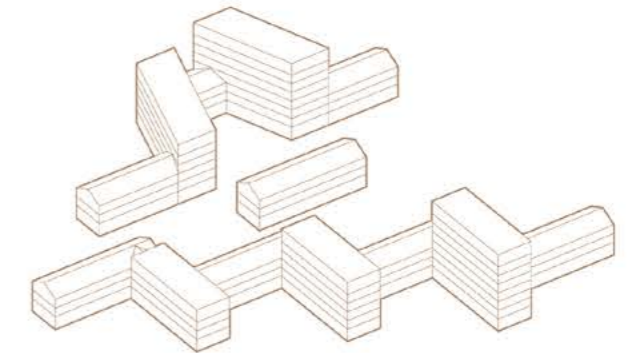
ORIGINAL



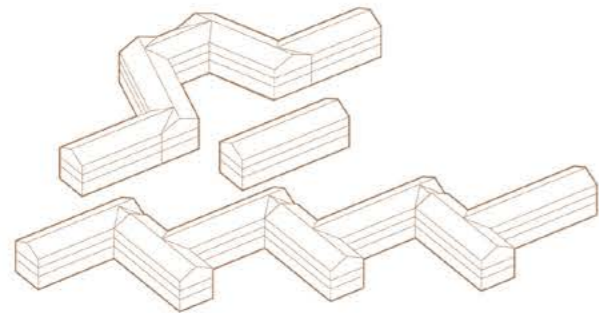
◆ BTA Shop/office	675 m2
◆ BTA Housing	3 250 + 2 700 m2
BTA Housing	- 370 m2
<hr/>	
BTA tot	14 980 m2



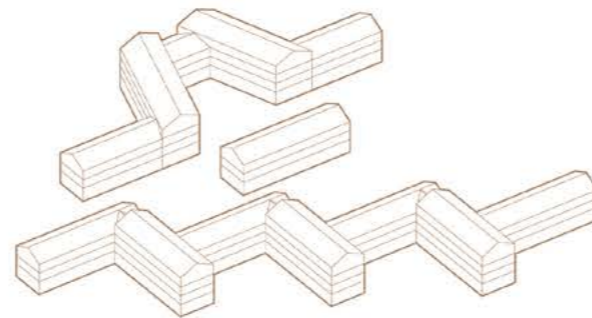
◆ BTA Shop/office	675 m2
◆ BTA Housing	4 350 + 3 750 m2
BTA Housing	- 370 m2
<hr/>	
BTA tot	17 130 m2



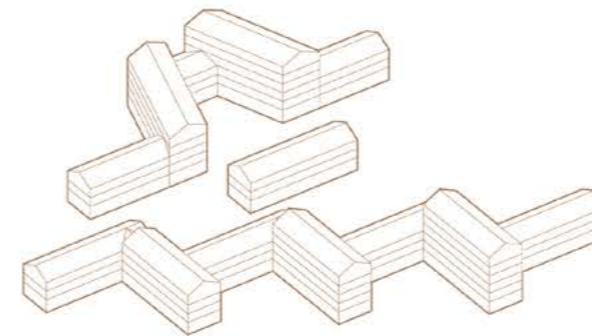
◆ BTA Shop/office	675 m2
◆ BTA Housing	5 450 + 4 750 m2
BTA Housing	- 370 m2
<hr/>	
BTA tot	19 230 m2



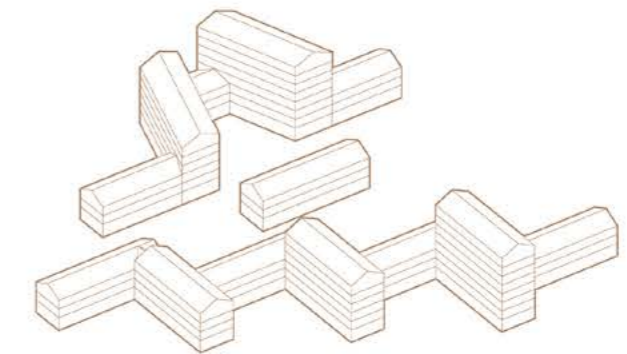
◆ BTA Shop/office	675 m2
◆ BTA Housing	2 150 + 2 050 m2
BTA Housing	- 370 m2
<hr/>	
BTA tot	13 250 m2



◆ BTA Shop/office	675 m2
◆ BTA Housing	3 250 + 2 700 m2
BTA Housing	- 370 m2
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BTA tot	14 980 m2



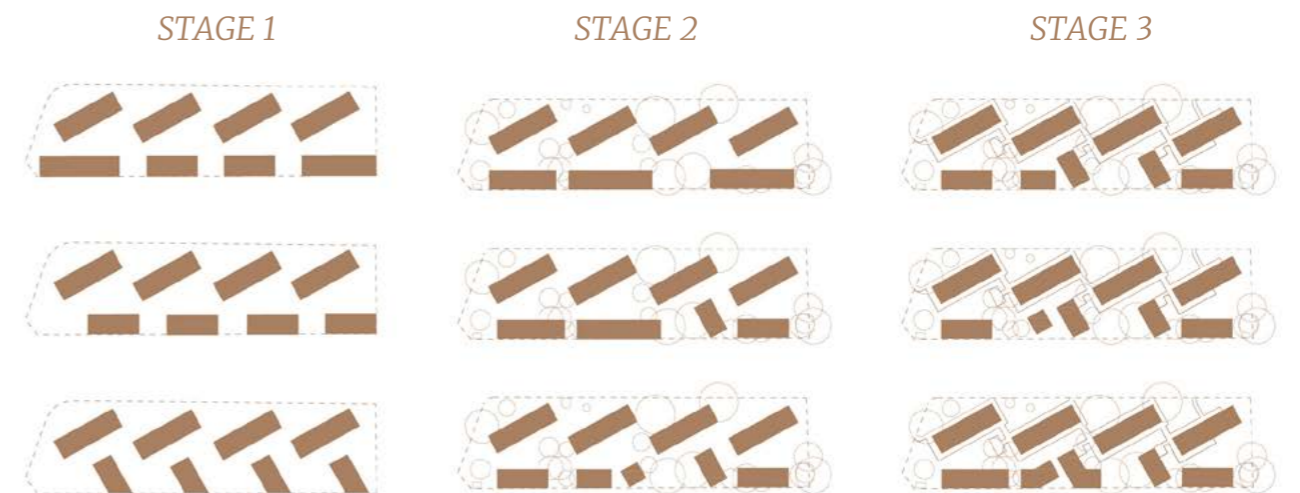
◆ BTA Shop/office	675 m2
◆ BTA Housing	4 350 + 3 750 m2
BTA Housing	- 370 m2
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BTA tot	17 130 m2

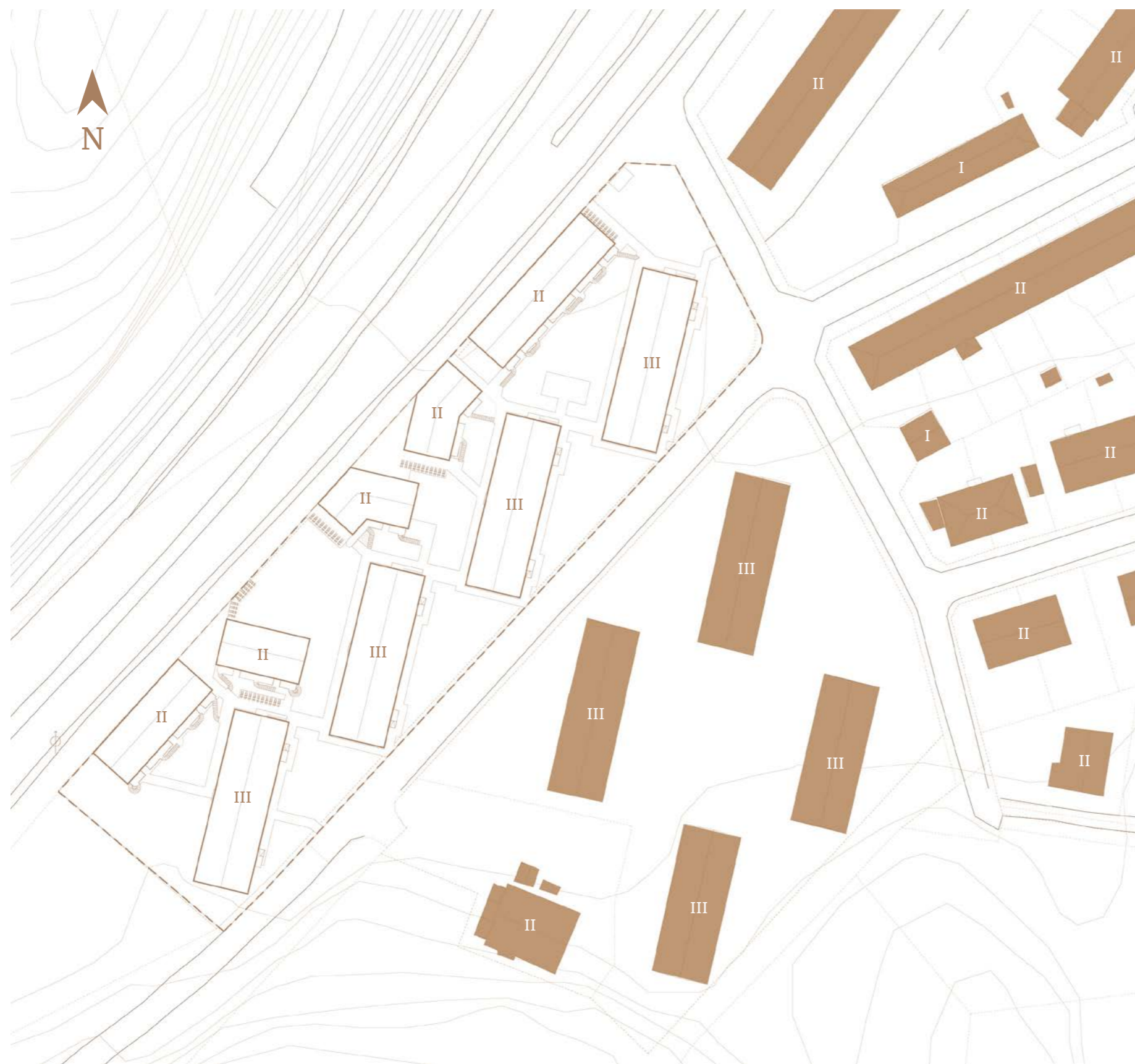


◆ BTA Shop/office	675 m2
◆ BTA Housing	5 450 + 4 750 m2
BTA Housing	- 370 m2
<hr/>	
BTA tot	19 230 m2

Firstly this design work focused on intertwined buildings. This type of densification had the advantages of high exploitation rates and the possibility of creating framed pockets along the traffic route. During the design process however, it turned out that much of the quality of the slatted houses was lost. The entrance to the basement and the larger apartments with windows in two directions could not be preserved with this densification option. The second option extension has the advantage of still preserving the space between the houses which made it possible to preserve the quality of windows in two directions for the big apartments. It also made it possible to enable access to the basement level, however, in discussion with the supervisor, this type of construction with extension and intertwining was found difficult to implement. Mainly due to complex meetings between new and old structures and also concerning the ground foundation. Since the buildings already have subsidence the city has chosen not to build tall or heavy houses in the area (Bjur 2018). This meant that the final solution instead landed in densifying with independent house bodies and within the existing houses.

DEVELOPMENT PROCESS





SCALE 1:1000

The final proposal for the Törnrosen quarter ended up in preserving all four slatted houses and densifying with detached narrow houses along Dag Hammarskjöld's boulevard.

The houses along the boulevard are positioned in the same direction as the street and meet the north-west corner of the slatted houses on the gables. This is to connect the walkways and at the same time be able to preserve some of the trees that are there today and also preserve large parts of the patios situated between the houses.

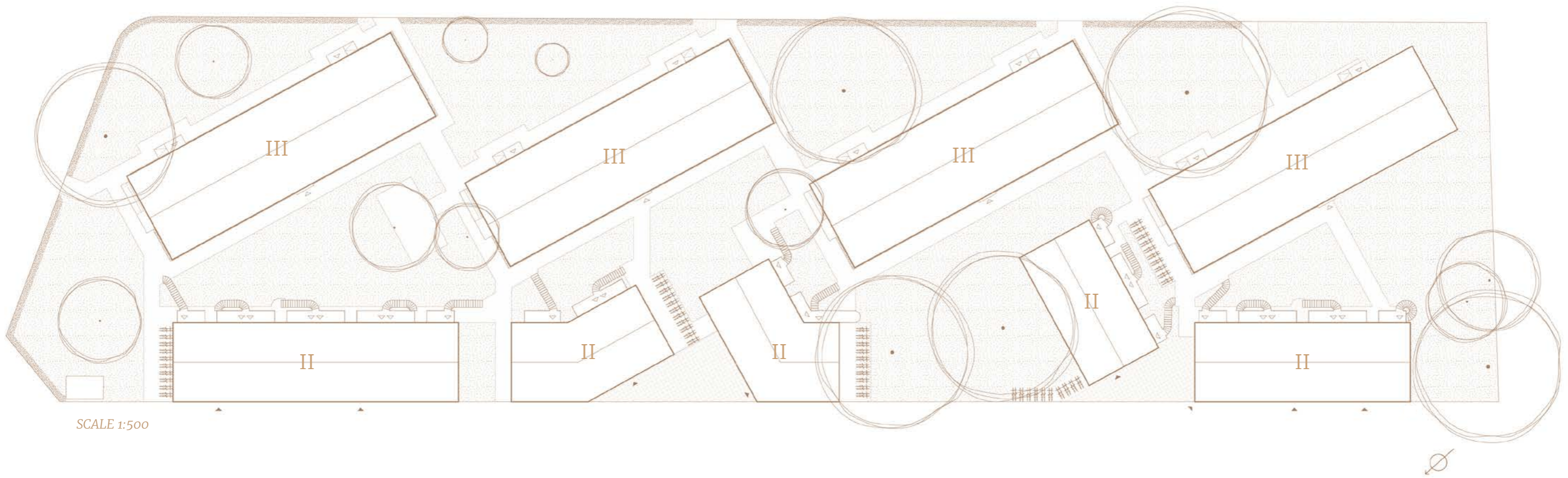
The new independent houses have a larger clearance between houses three and four, this clearance creates a smaller semi-private park and enables the preservation of the largest trees growing today on the plot.

The new building bodies are on two floors, this to follow the other floor heights found in Änggården, this also enables the requirement for an elevator to be waived but where the entrances are designed so that there is the possibility of connecting with an elevator for future needs.

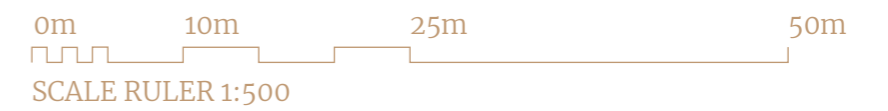
The ground floors mostly consist of smaller premises for commercial business of varying sizes, where the location and design of the buildings create two smaller squares with space for outdoor dining in the north-west position. The ground floors also house a common laundry room, garbage room and storage room for the apartments.



SCALE 1:500



SCALE 1:500





TRANSFORMATION OF THE EXISTING HOUSES

The slattered hoses are preserved in their entirety, where a minor renovation is proposed for the exterior and with upgrading of the plaster and ground covering around the house. For the inside of the houses a more radical renovation is suggested, where great consideration is given to recreating the qualities that were lost during the renovation in the 70s while still trying to meet today's requirements and standard for the majority of the apartments.

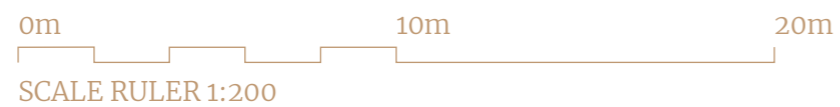
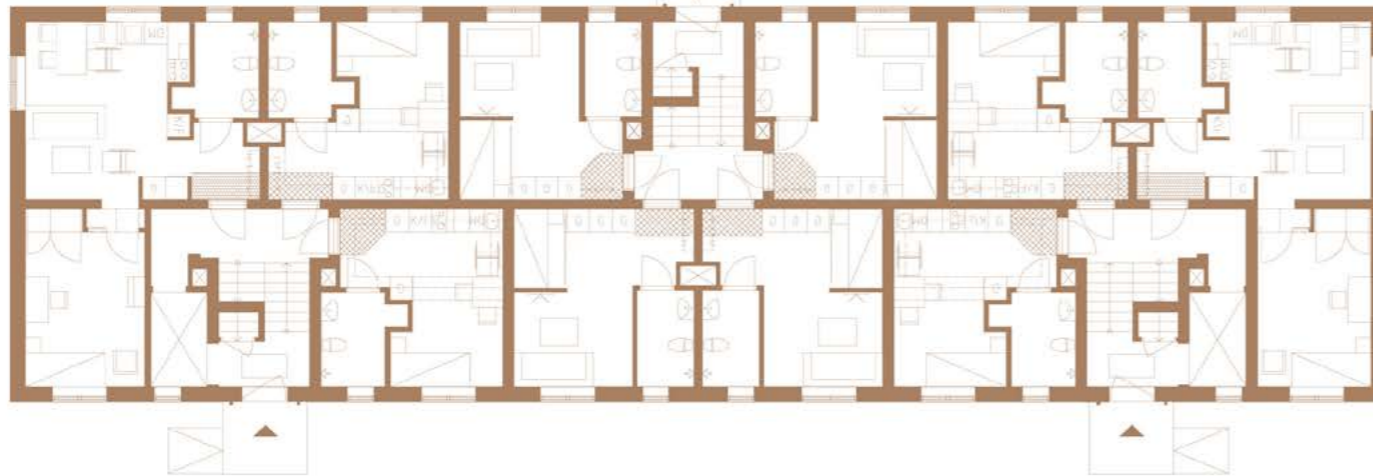
FLOOR 3 SCALE 1:200



FLOOR 2 SCALE 1:200



FLOOR 1 SCALE 1:200

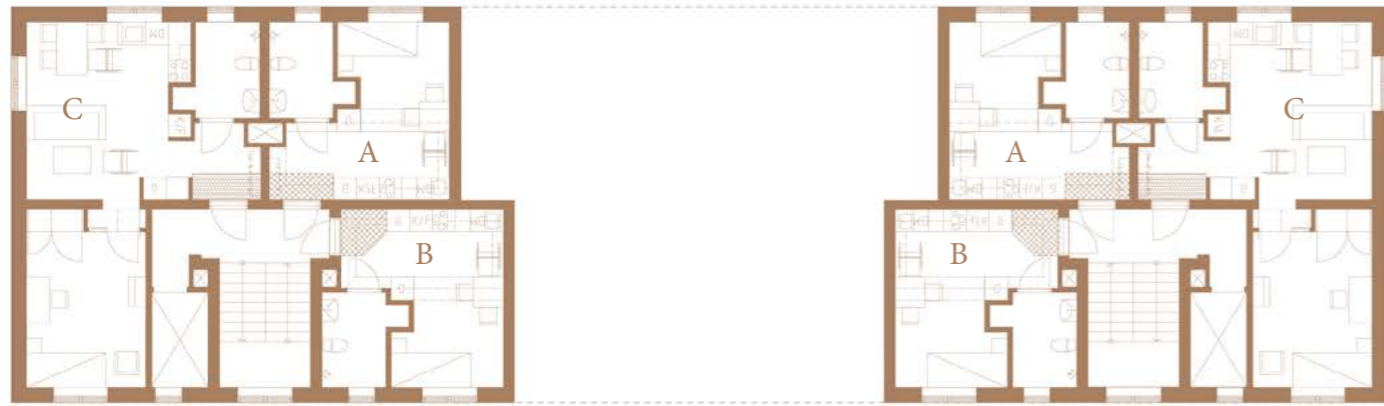


The goal was to try to recreate efficient stairwells and smaller apartments due to several objectives.

The first objective was to preserve the authenticity of the houses. The apartments were originally planned, designed and built for small and resource-efficient senior households. However, our standard has increased significantly over the past 80 years, although this is not perceived as a great obstacle in the objective of recreating good and resource-efficient apartments.

Secondly an objective was to create a better economy to support the financial justification of adding elevators. The corner stairwells have enough space and the opportunity of accommodating an elevator. To make this economically viable, more apartments are also needed to accommodate such an investment. The middle stairway however did not have enough room to enable a new elevator. However it opened up the possibility to explore a mixture of different housing options in the same house which resulted in the suggestion of redesigning the middle staircase as a collective staircase.

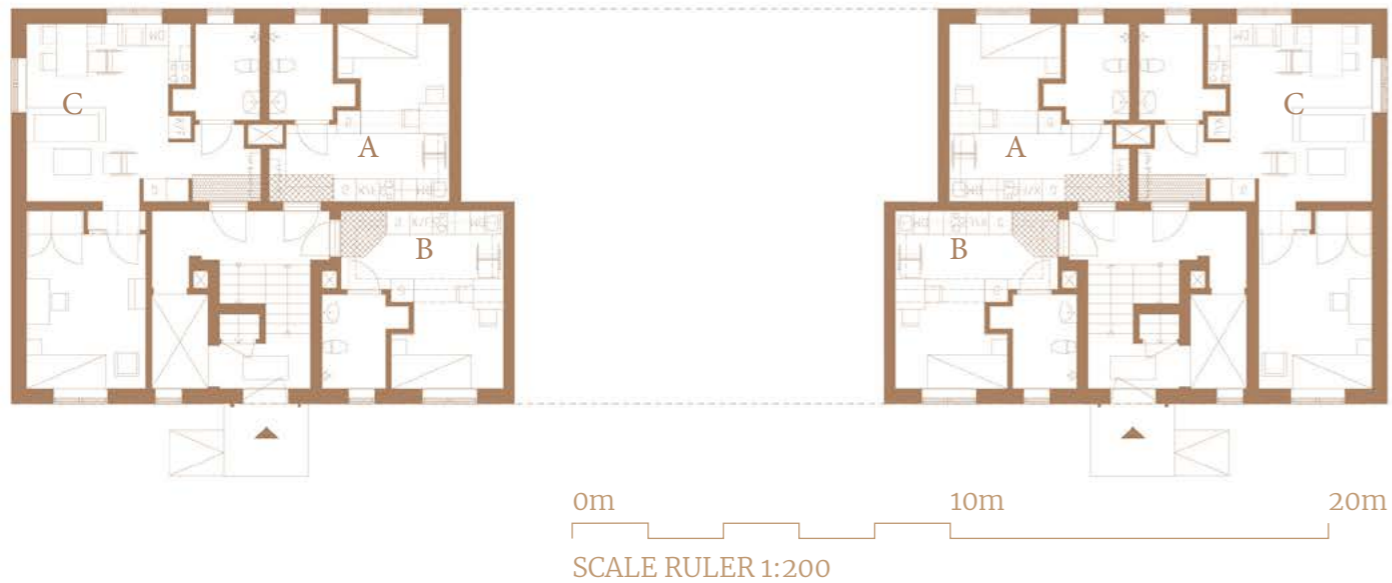
FLOOR 3 SCALE 1:200



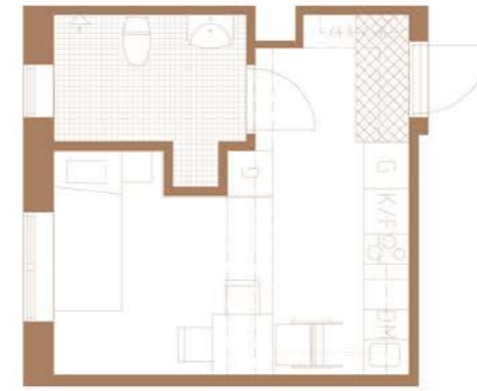
FLOOR 2 SCALE 1:200



FLOOR 1 SCALE 1:200

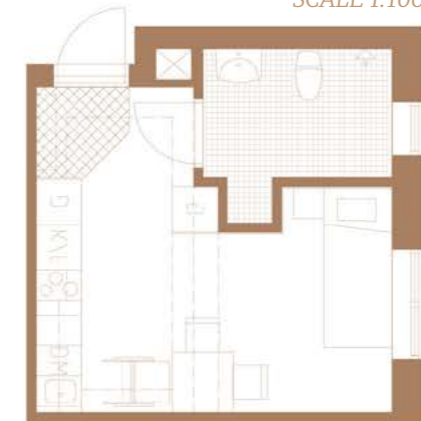


SCALE 1:100



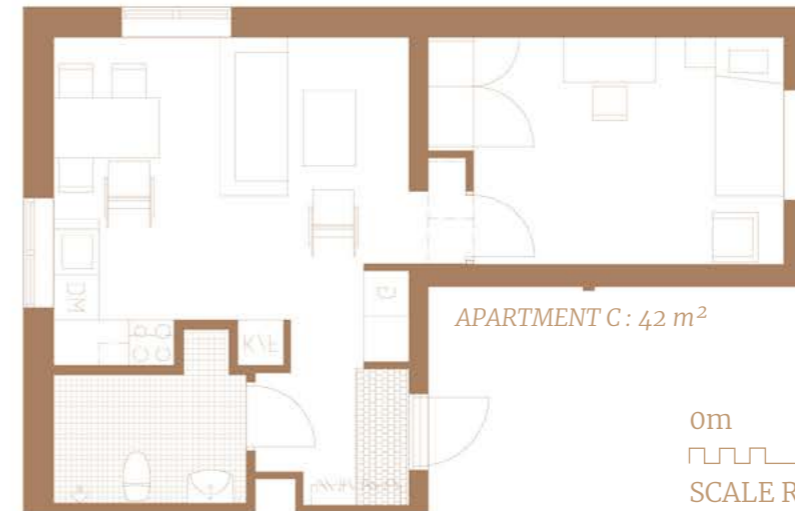
APARTMENT A : 21 m²

SCALE 1:100



APARTMENT B : 21,5 m²

SCALE 1:100



APARTMENT C : 42 m²

0m 2,5m 5m
SCALE RULER 1:100

The corner stairwells adjoin larger apartments. These larger apartments had the possibility of being divided to make room for the elevator. However, the stairwell layout only made it possible to serve 3 apartments per floor, but in this case it is on the other hand an increase of approx. 50% more apartments per stairwell.

The apartments will be approx. 21m² for the two smaller apartments and a larger and more spacious apartment of 42m². The laundry room is shared in the basement, but there is still room however for installation in the bathroom for its own laundry stack in the future. The elevator does not go down to the basement, as this design would require that the engine room, which is currently located in the basement, would have to be moved to the roof and consequently break the shape of the roof. If the apartments need to be adapted for accessibility in the future, there is the possibility to supplement with laundry in the individual apartment.

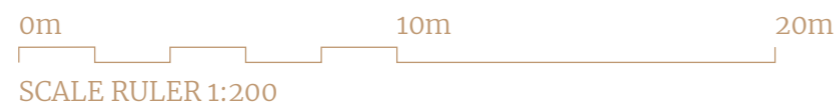
Plan 3 SCALE 1:200



Plan 2 SCALE 1:200



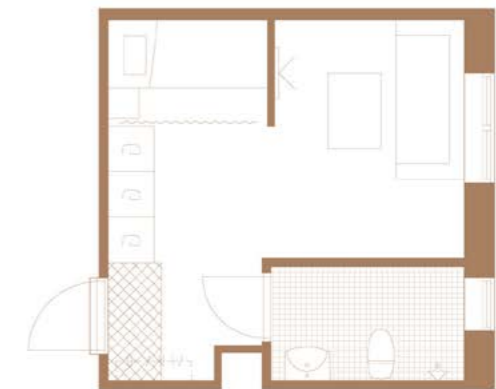
Plan 1 SCALE 1:200



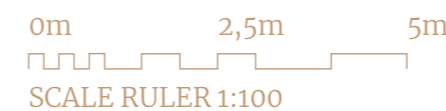
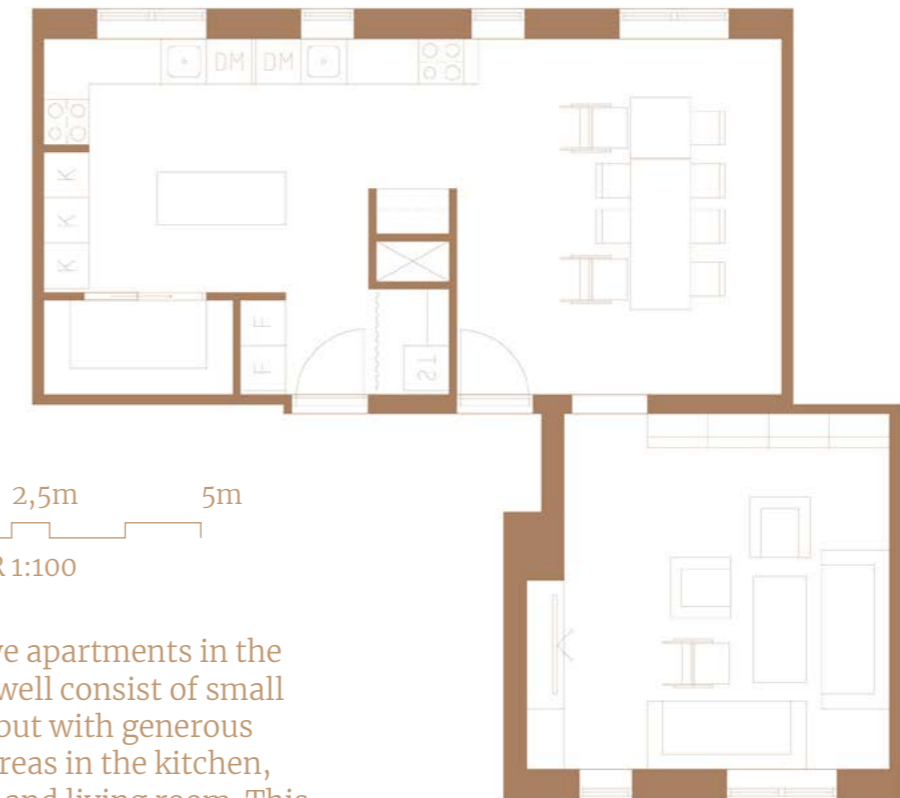
Bedroom B: 21,5 m² SCALE 1:100



Bedroom A: 21 m² SCALE 1:100



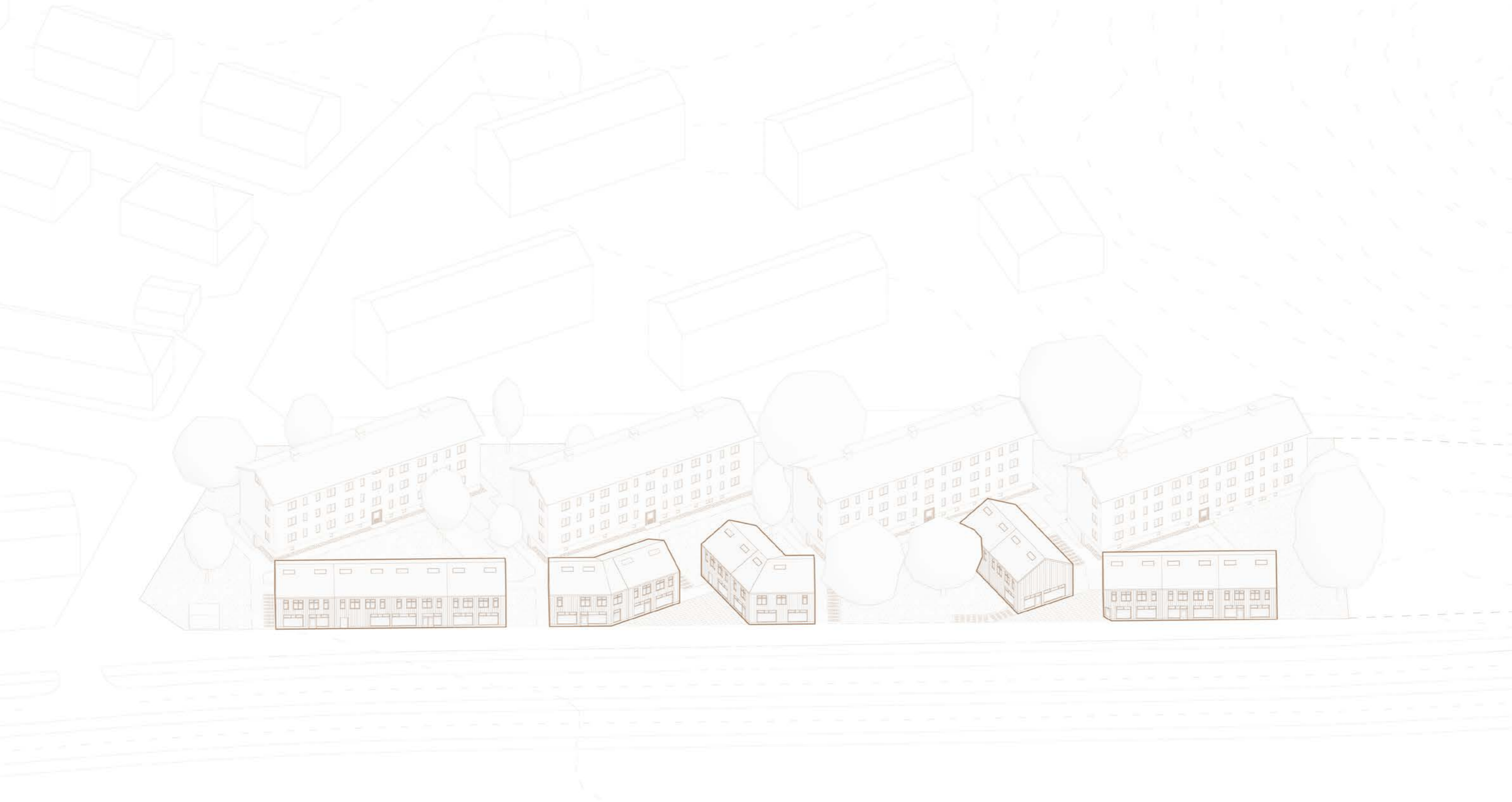
Collective kitchen and living room : 66m² SCALE 1:100



The collective apartments in the middle stairwell consist of small apartments but with generous communal areas in the kitchen, dining room and living room. This makes it possible to gather in larger groups, both within the collective, but also on occasions such as parties where this can take place in the common area.

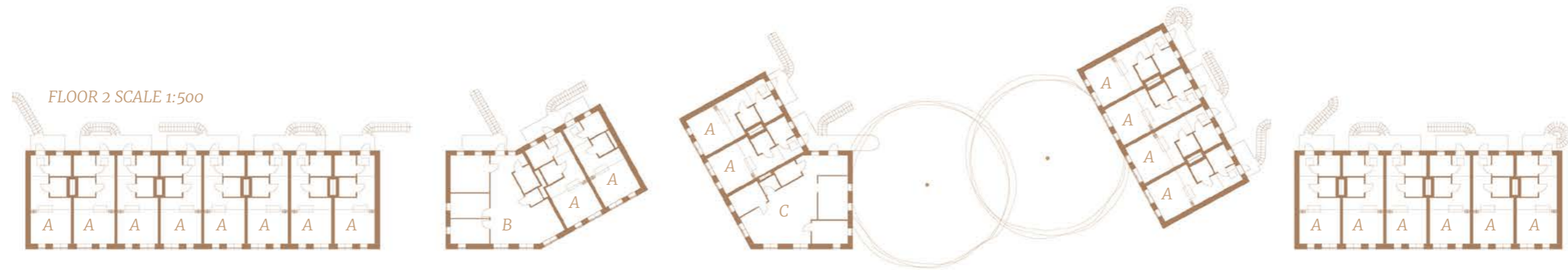
All the small apartments still have a private bathroom, this is something that differs from the original plan of the house, which had shared toilets and bathrooms. This is a cultural change that happened over time where today we can imagine

to a greater extent sharing the kitchen and living room but not the toilet and shower. The layout of this stairwell solution makes it possible to room 9 apartments per stairwell, which is three times as many apartments as today

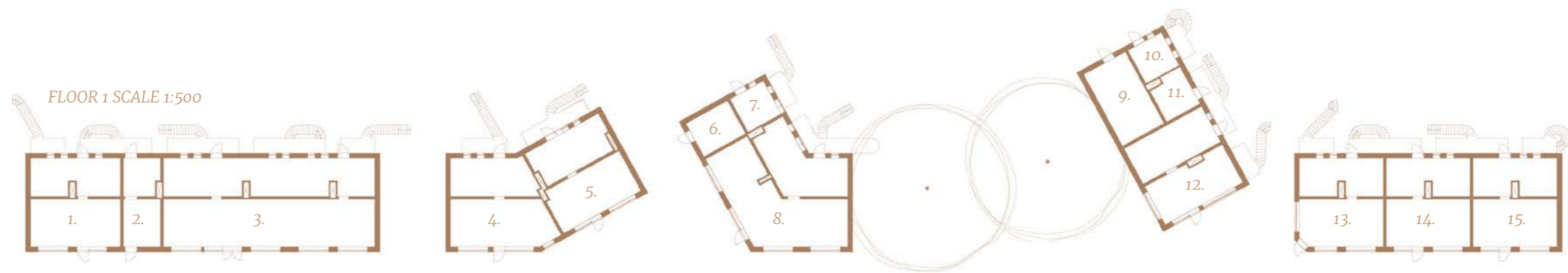


THE NEW ADDITIONS

The five narrow houses are designed to create movement and life along Bortre Änggården and Dag Hammarskjölds Boulevard. This by adding commercial premises on the ground floor and also by creating movement along the existing houses. The homes for the narrow houses have entrances at the back of the houses, which in turn creates greater movement with people and also provides sight lines between all entrances in the area.



- A. 1ROK - 35m²
- B. 4ROK - 81,5m²
- C. 4ROK - 82m²

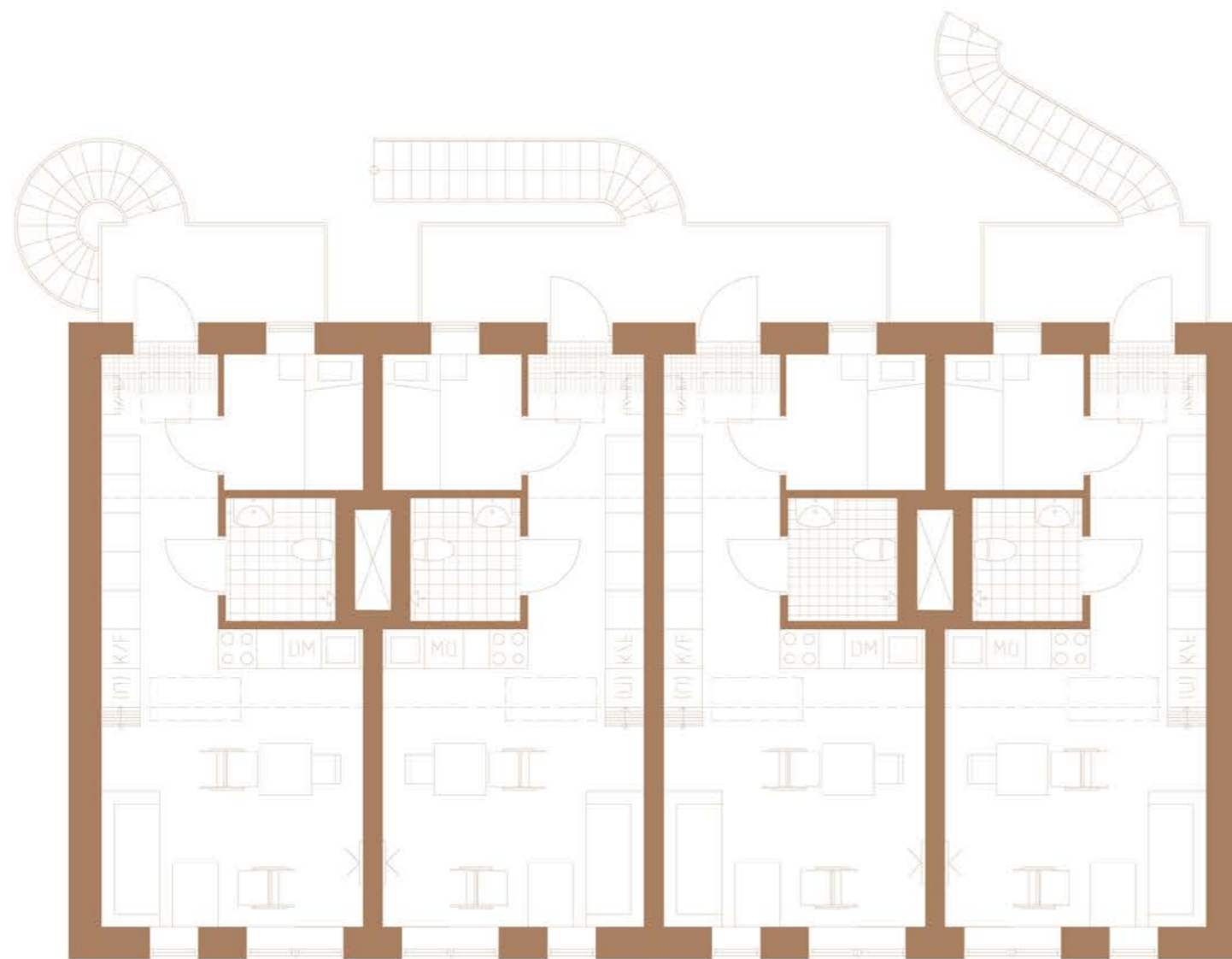


PROGRAM

- | | | |
|-------------------------------------|--------------------------------------|--------------------------------------|
| 1. Premises - 79,5 m ² | 6. Garbage room - 18 m ² | 11. Garbage room - 15 m ² |
| 2. Garbage room - 32 m ² | 7. Laundry room - 15 m ² | 12. Premises - 75 m ² |
| 3. Premises - 85 m ² | 8. Premises - 124 m ² | 13. Premises - 72 m ² |
| 4. Premises - 80 m ² | 9. Storage - 38,5 m ² | 14. Premises - 73 m ² |
| 5. Premises - 73 m ² | 10. Laundry room - 15 m ² | 15. Premises - 73 m ² |

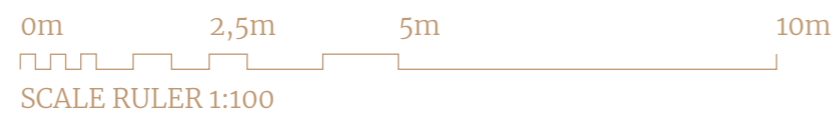


The five new buildings consists of 24 apartments, all located on the second floor, 22 one-bedroom apartments and 2 four-bedroom apartments. The ground floor is divided into 15 different premises, with commercial activities planned for nine of the premises and service functions planned for the rest, such as storage, laundry and garbage rooms. The garbage room will serve both the commercial activities and the needs of all the houses on plot 14:2 and 15:2. These service premises are therefore primarily located in positions that extend towards the property and the existing houses. The commercial premises are planned to be built in different sizes between 185m² and 72m², in order to provide space for many different types of activities, ranging from restaurants, offices or association premises. The plan is also designed to be modular, where one or more premises can be merged or divided according to the future needs of the site and the space requirements of different accommodations.



RESIDENTIAL MODULE 35m²+12m² LOFT

SCALE 1:100



The five houses are shaped after an efficient 35m² floor plan with a 12m² loft at the roof ridge. This floorplan makes it possible for two people to live with a bed on the loft and still have room for a home office. The floorplan is also designed to create as large living space as possible to support different types of furnishing.

The apartments have an entrance via the loft passage where the passage is either private or shared with the neighboring apartment. In both cases, an area is created in the loft corridor that becomes private for each apartment and can be used as a balcony. The bedroom window is also located towards this private area, which provides either a safer bedroom or an undisturbed study if you choose to locate the bed up on the loft.

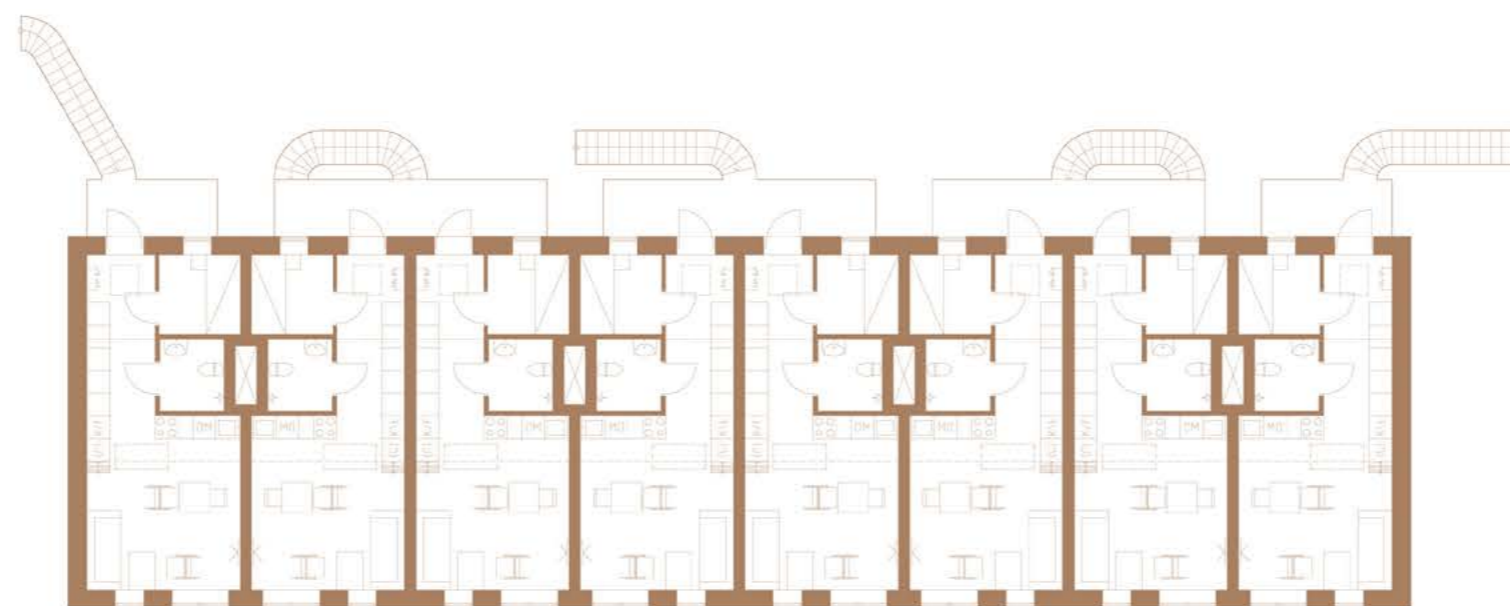


NEW SHALLOW HOUSES NR.1

SCALE 1:200

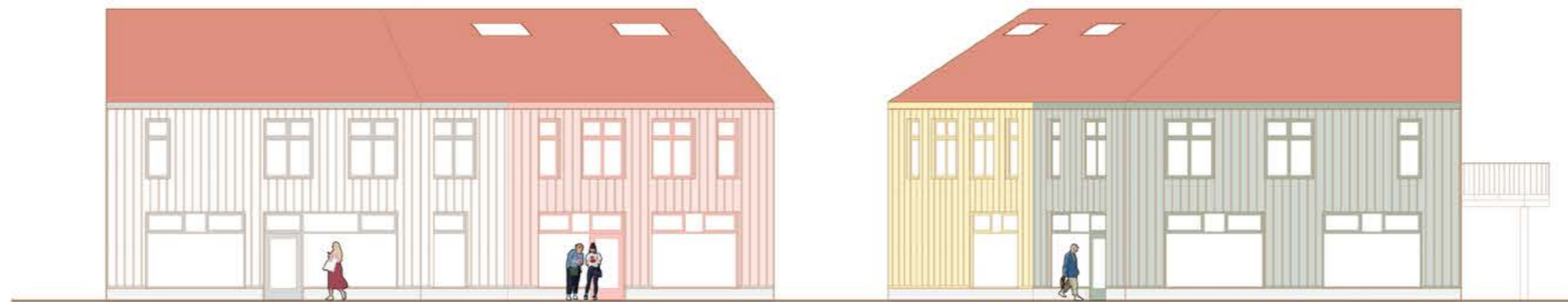
0m 10m 20m

SCALE RULER 1:200



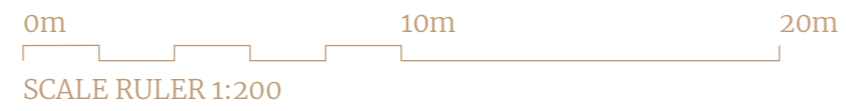
RESIDENTIAL FLOOR NEW SHALLOW HOUSES NR.1

SCALE 1:200



NEW SHALLOW HOUSES NR.2 & NR.3

SCALE 1:200

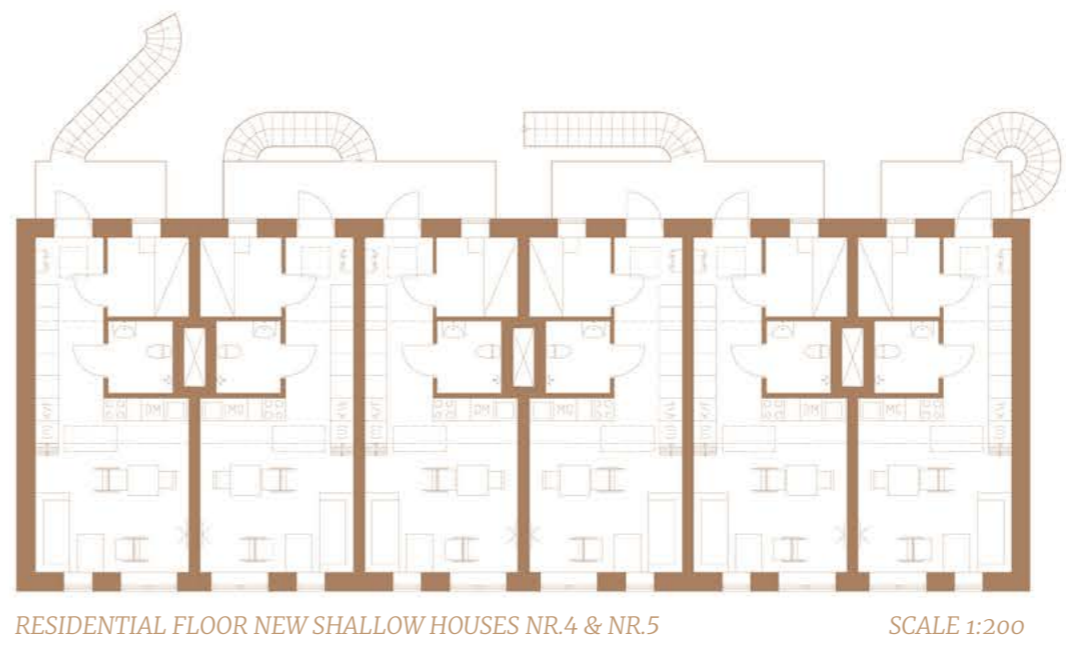
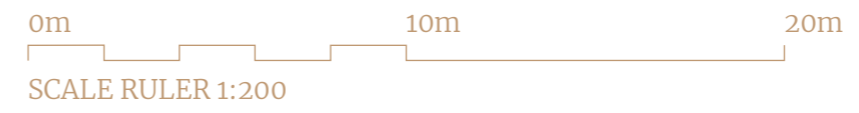
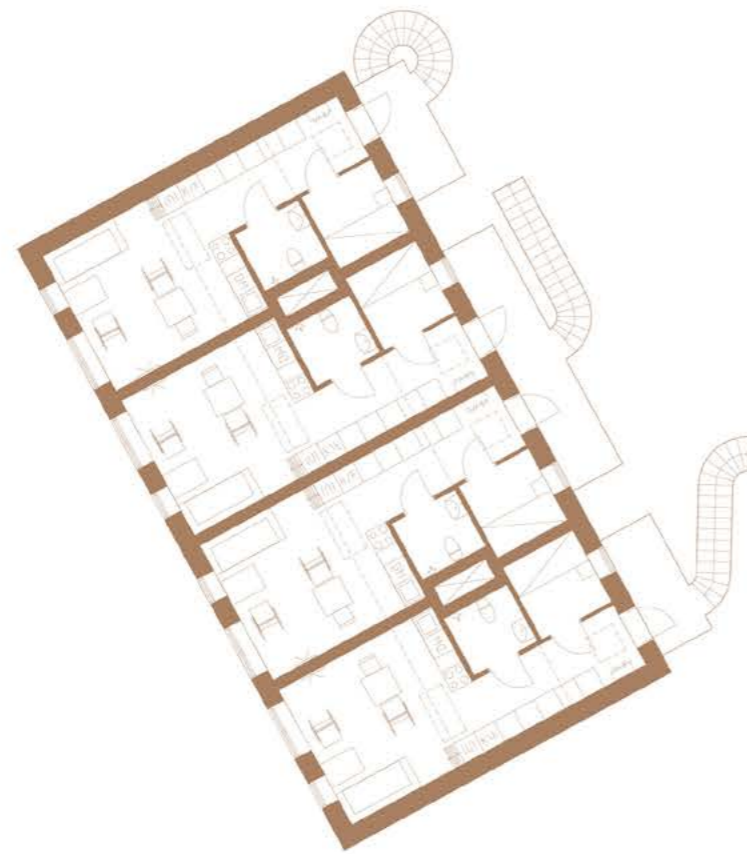


SCALE RULER 1:200



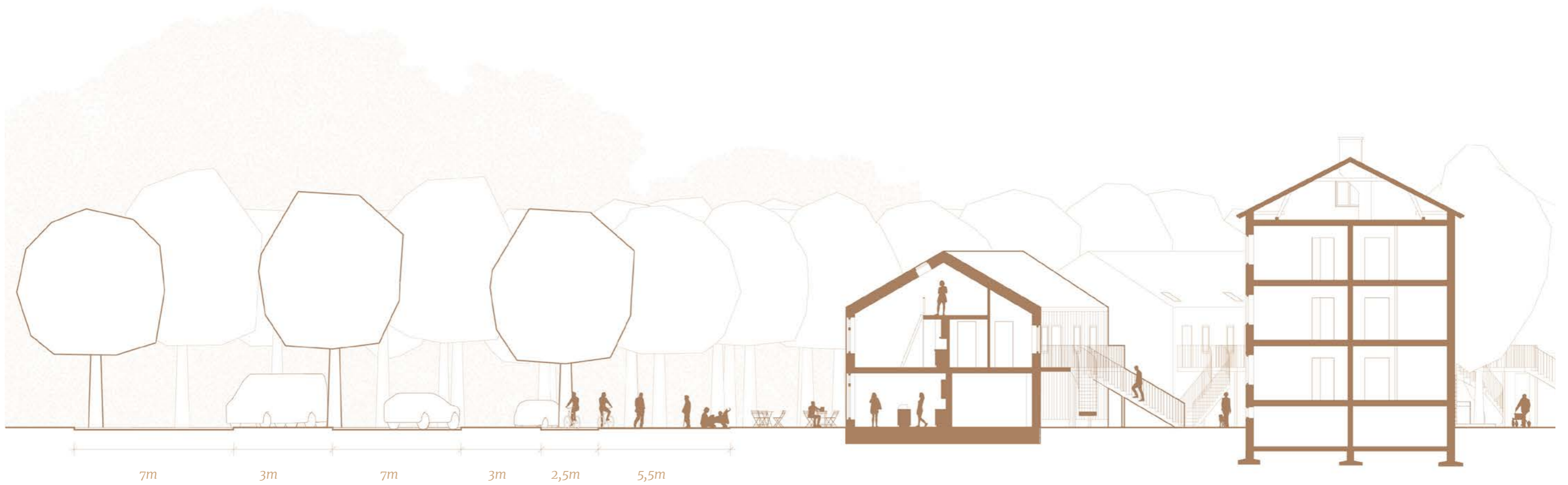
RESIDENTIAL FLOOR NEW SHALLOW HOUSES NR.2 & NR.3

SCALE 1:200

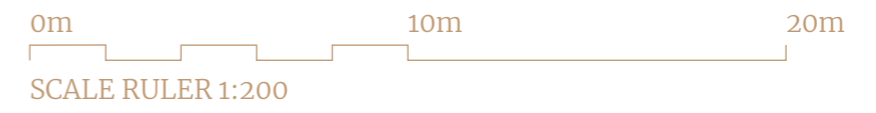
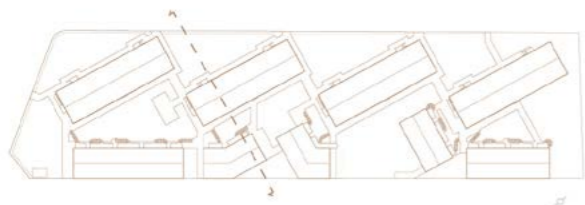


RESIDENTIAL FLOOR NEW SHALLOW HOUSES NR.4 & NR.5

SCALE 1:200



SECTION SCALE 1:200



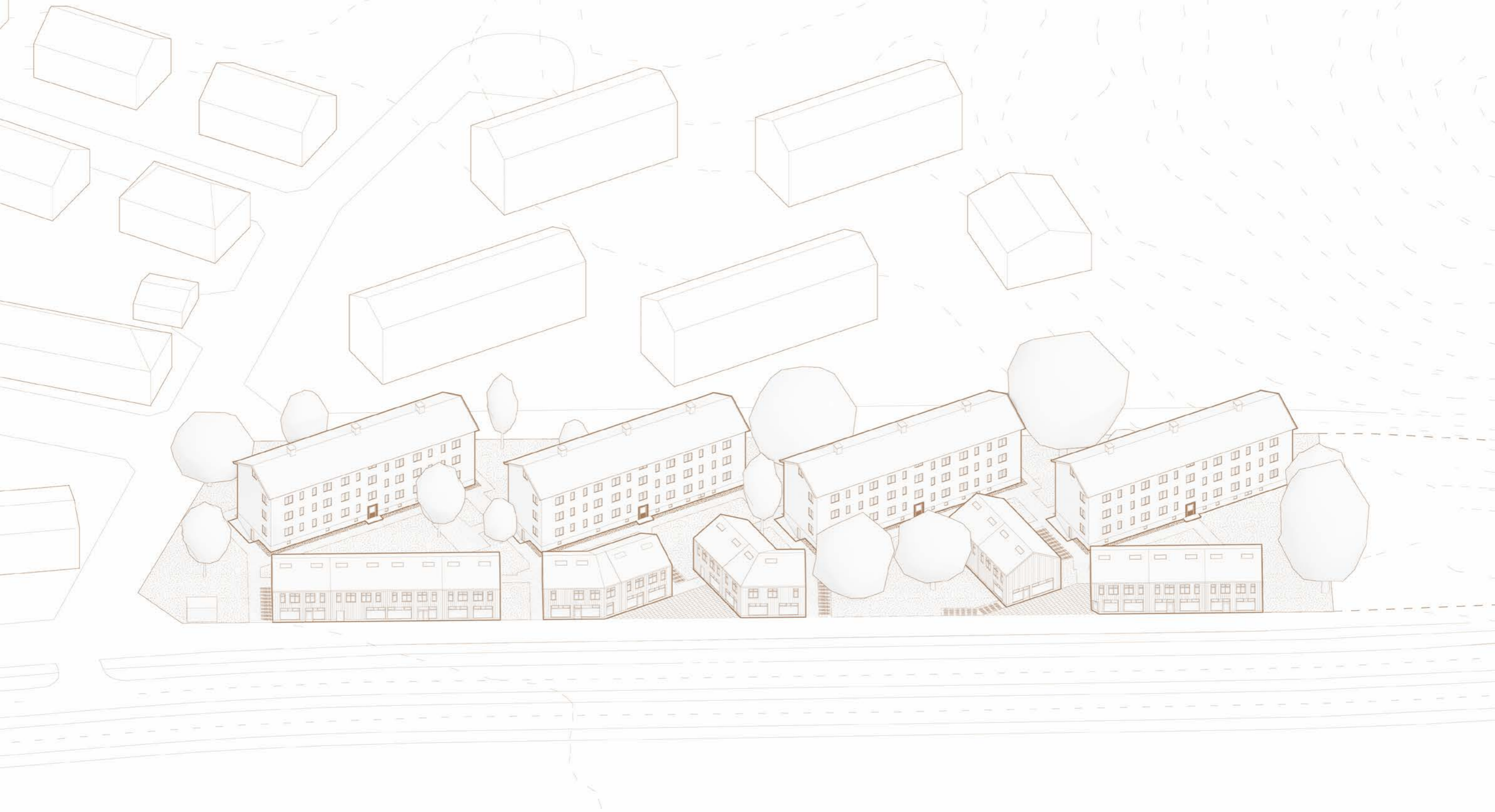


The many staircase helps to create a more playful courtyard and entrance area for the residents. Where the stairs can be utilised as a possible seating area in the open courtyard. Or it can be used as a terrace or an area for meetings on a warm summer evening during a hangout that has spread out from the small apartments.



The boulevard creates a better traffic solution for the residents of Änggården, but also provides the opportunity to create a more active place below the Änggård mountains. The neighborhood's proximity to nature and recreation also creates greater opportunities for a more lively urban space.

The recessed squares create places of stillness and the opportunity to stay for a longer period of time.



The result was a densification that is well adapted to the typology of the already existing garden city and which at the same time protects the slatted houses and Änggården's built history. Simultaneously it enables densification according to the general plan for the city of Gothenburg and helps to create a livelier boulevard.

Total new BTA 1820m²

The plot goes from housing 60 apartments to 132 apartments
24 new and 48 extra apartments in the existing houses.

5. EPILOGUE



Photograph: Carl Whärner

Fig 7

DISCUSSION

The aim of this thesis was to create an architecture that develops the housing in Ängården that is in line with the society's needs of today and tomorrow while still taking into consideration the sensitive and high cultural values of Ängården. In the beginning of the project the two alternatives were in opposition to each other, to preserve the architecture or to not preserve in order to enable development on the site. The work later showed that the question of preservation was more complex than simply to keep or not to keep.

The theory of this thesis created the framework of what conservation means, how the work of conservation has changed in history as well as different ways of taking conservation and cultural heritage into account in architecture. When using this framework to analyze the site it became clear that the question of conservation of the cultural heritage does not solely regards the physical but also the primary aims and goals of the site which never was realized. The city plan of Albert Linjenberg aimed for a cohesive Änggård. In regards to the physical, Änggård is marked by half a century of development and the different developments strongly reflect the different breaking points of modern styles in architecture which has made Änggård a national interest however, this should however not be seen as an excuse to stop development. As Gustafsson (2021) and his fellow archaeologist describes, preservation of cultural values could work in symbiosis with societies development.

The theory also explained the future needs of society both in regards to Gothenburg's plans of the city center and society's needs in regards to housing but also how conservation plays a part in the needs of a sustainable future. These future needs formed the result of the design proposal.

The result became a work divided into two parts, densification of the narrow houses and the addition of two-story buildings where both parts are adapted to the existing houses and their qualities. The new two-story buildings are placed along the street to create the conditions of a lively boulevard and provide places for services, meetings and work. However the densification and the choice of apartment types are chosen according to the historical context where the site was supposed to be able to provide good but smaller housing in an attractive location. This is also what formed the conclusion of the research question of how future housing in Änggård could be designed with regards to its sensitive and high cultural values. This project showed that it is possible to both preserve their cultural value and at the same time develop to meet the future needs. Ultimately the question was never what should be preserved, but how we should preserve and at the same time enable development.

REFLECTION

This thesis has been challenging in many ways, where often the individual tasks had easy answers, but when viewed as a holistic solution, the task becomes exponentially more difficult. Where my work has tried to find simple solutions that could be implemented for the best results. Which in the end could be seen as a coherent result.

Where the solutions were by preserving, rebuilding and expanding. This applies both to the existing four houses in the Törnrosen neighborhood. There, Familjebostäder wants to improve the climate shell through major interventions and create a building that consumes less energy, with the goal of trying to achieve a reduction of 50% in operation. Instead, I try to create space for more people with smaller interventions on the climate shell, which means that emissions can instead be reduced by calculating the number of carbon dioxide equivalents per resident and can achieve the same result with smaller additions, while also creating accommodation for more people and at the same time stay true to the cultural values of the site.

The same applies to the new houses, where the issue of accessibility and lift economics makes it difficult to create good and affordable housing. However, this can be solved by implementing the house typology that already exists in the area with narrow two-story houses. This also means that the requirement for the lift is instead set for a lift to be installed in the future. Which also leads to the fact that the loft walkway can be avoided and instead create private balconies for all apartments and bedrooms where no one passes outside the window.

The work has also undergone discussions about how we see our construction today and how this has developed over the last century. Whereas in the 1940s, windows in bathrooms were seen as a good quality that could be made possible by narrow buildings and continuous apartments, one of the qualities added to the existing buildings was that all apartments had access to a private bathroom with daylight. This is a quality with daylight that I have not encountered during my education.

The same applies to the issue of shared spaces in a residential building. Where the lamellas originally shared both toilet and bath between the apartments and where a social change has led to us not sharing spaces with others. However, we have also seen a changed approach to which rooms we can be willing to share with others, where today we prefer to share areas such as kitchens and living rooms rather than bathrooms. But where the work is still based on the benefits, we can create by looking at sharing as an asset instead of a burden. In the same way that work in cultural conservation today has gone from seeing cultural heritage sites as an obstacle rather than the asset they provide for the future.

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DRAWINGS, ILLUSTRATIONS & IMAGES

The illustrations are produced and owned by Adam Bäck Thorén.

Drawings (plans, facades, sections and details) are based on materials retrieved by Stadsbyggnadskontoret Göteborg

GIS data (basemap, elevations and ortophotos) are based on materials derived from Chalmers Geoportal retrieved, 2022 November 28 from <https://geodata.chalmers.se/>

- Fig 1: Carl Whärner, retrieved at <http://anggardenskommunalforening.se>
- Fig 2: Carl Whärner, retrieved at <http://anggardenskommunalforening.se>
- Fig 3: Carl Whärner, retrieved at <http://anggardenskommunalforening.se>
- Fig 4: Google Earth, retrieved at <https://earth.google.com/>
- Fig 5: Göteborgs stad, retrieved at <https://geodata.chalmers.se/>
- Fig 6: Carl Whärner, retrieved at <http://anggardenskommunalforening.se>
- Fig 7: Carl Whärner, retrieved at <http://anggardenskommunalforening.se>

STUDENT BACKGROUND - EDUCATION

Bachelor's Degree (TARK): Chalmers Tekniska Högskola 2016–2020
Master Program (MPDSD): Chalmers Tekniska Högskola 2021–2023

[ARK650]	Hållbar utveckling och designprofessionerna
[ARK174]	Planering och gestaltning för hållbar utveckling i lokalsamhället
[ARK620]	Intensivkurs: Hållbar framtid
[ARK626]	Omvandlingsprojekt och miljöomsorg
[ARK590]	Historia, teori och metod 1
[ARK350]	Hållbart byggande: Tävlings
[ARK415]	Design- och prestandaoptimering för byggnader
[ARK435]	Hållbar utveckling: Samtida utmaningar
[AFT107]	Från idé till färdig byggnad

PREVIOUS STUDIES

Bachelor's Program (ID): Lund University, School of Industrial Design 2013–2016
Exchange semester (Vancouver BC): Emily Carr University of Art and Design 2015

