

CULTURAL PRODUCTION IN URBAN ENVIRONMENTS

*An investigation of the possibilities to make space
for culture in coexistence with housing*

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Master thesis

Sustainable Urban Design I Lund University

Cultural production in urban environments

An investigation of the possibilities to make space for culture in coexistence with housing

Master thesis booklet
June 2021

ASBM01 Degree project in Sustainable urban design

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SUDes
Sustainable Urban Design

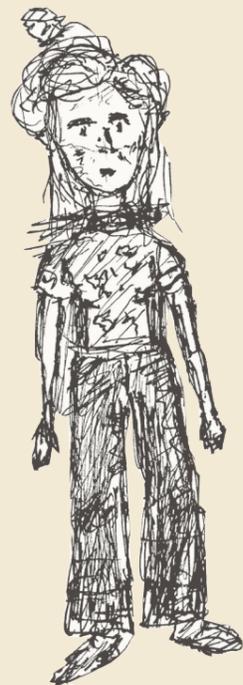


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My background and inspiration to this thesis

I began to dance before I could walk, I stood on a stage at the age of two performing dance and theatre, and I bought a locally designed fruit bowl for my first 500 bill in Swedish crowns. The interest in culture has always been a part of me. I have continued to dance my whole life and lived for a while in New York to experience dance every day. In New York I noticed how culture influenced the city with spontaneous performances in the public spaces and in the metro. The culture in New York was continuously present between the buildings and invited for social interaction.

At home in Sweden, my dance company struggled with finding practicing and performance studios. This is a problem I have noticed more during the last years and especially since my interest in ceramics and jewelry design grown. Interaction with other creative people, have confirmed my notion regarding the lack of spaces. This is a subject I have also become familiar with during my education in spatial planning and sustainable urban design. My background and experience from my education have therefore inspired me to investigate the possibilities to make space for culture in coexistence with housing, so spontaneous performances and social interaction can occur in the public spaces, between the buildings, just like in New York.



Drawing of me by Tommy Janram

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Acknowledgements

First, I want to give my thanks to the interviewees, I have really appreciated the time you put into answer my questions about city development and culture in coexistence with housing.

I want to give my many thanks to my supervisor Ida Sandström. Your endless energy and interest in my project have helped me to end up where I am today and for that I am very grateful. Culture in urban environments is a complex theme and I have walked many paths, but you have supported me and helped me back to the right track again when I have been lost.

I also want to give my thanks to the SUDes family, I am so glad I decided to start study my master in sustainable urban design in 2019, because all of you people have inspired me every day since we started, and I am thankful to have get to know you all.

To the Karlskrona-SUDes family, I am so glad we started in the same master. Thank you for all your support and lovely memories during those years.

To my family who have always been there for me and letting me go the paths in life I have wanted to. You have always been supporting in fulfilling my dreams, and for that I am forever grateful.

Last but not least, to my fantastic partner, Tommy Janram. Thank you for being by my side every day during this thesis and all years of study, your support has been extremely valuable. Words are not enough for the gratitude I feel, and I hope you know how much I have appreciated your help and all the discussions we have had about culture and art. Thank you for always being by my side!

Abstract

The Brundtland report envisioned three sustainable dimensions for development: economic growth, ecological balance, and social inclusion with the aim to incorporate these dimensions into local, national, and global plans for sustainable development. In recent years, discussions about our society's competitiveness and whether the three dimensions of sustainable development include all aspects of our global society, have resulted in the inclusion of culture as the fourth dimension of sustainable development. One of the aims with culture as a fourth sustainable development pillar is to ensure that culture is taken in consideration in public policies when developing urban environments. Some municipalities in Sweden have therefore developed a cultural strategy plan with the aim to include culture in city development which will contribute to an attractive and social sustainable city. When municipalities mention culture in their vision of urban development, it is often with the intention that culture will contribute to a vibrant city life by increasing activities and meetings through commercial cultural activities. In order for people to consume and experience culture, the culture need to be produced by the creative industry.

During the last years discussions about lack of production premises for the creative industry have been highlighted in media. The shortage of production premises is due to increased rents and force of movement due to development projects in urban environments. In order to offer culture for consumption in urban environments, it is important to also make space for cultural production in urban development.

This master thesis aims to investigate the possibility to include the cultural production in coexistence with housing in urban environments. The investigation is based on research through literature studies, reference case studies and interviews with people active in urban planning or cultural production. The knowledge is then implemented in a toolbox, possible to use in urban development projects. The thesis also explores how the toolbox can be used by applying it on a test bed in the industrial area of Sofielund, Malmö Sweden.

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01

Introduction

Many municipalities in Sweden aim to build a denser city in order to meet the demand for housing estates due to regional development. In line with the vision of a denser city, the aim is to create a city that is attractive to business, inhabitants, tourists and have a rich culture. When municipalities mention culture in their vision, it is often with the intention that culture and a vibrant city life will characterize the area and that the area will be a place for creativity. This is commonly discussed when developing former industrial areas where spaces have been adapted from industry business to premises for music, art workshops and dance, among other things. Lövhölm and the Meatpacking district Slakthuset, both in Stockholm, and Norra Sorgenfri in Malmö are examples of those kinds of development areas. In Stockholm, there is an ongoing debate between the municipality and creative industries, where some have been forced to relocate due to development projects. Several articles, including interviews with creative industries and articles written by cultural associations, highlights the critical development of forced movement for the creative industries due to lack of space in urban environments.

Another common method is to use the creative industries as an attraction and to establish regeneration in an area that later will be developed into a new residential area. Regeneration can occur spontaneously when artists relocate to

a specific neighborhood, or it can be planned by the municipality (BOP Consulting 2010: 31). An example of spontaneous regeneration is the urban transformation in Shoreditch, United Kingdom. The area is situated in east central London and was formerly a manufacturing area for textile and furniture producers, and has since the shutdown been populated with creative artists into a cultural hub (BOP Consulting 2010: 31). The more artists who settled in the neighborhood, the more popular it became, but as the area became more popular, more restaurants, hotels, and clubs moved in, leading rents to increase, and the artists were forced to relocate (BOP Consulting 2010: 31).

Planned regeneration occurs when municipalities or landlords want to attract people to a development area by providing space for creative people (BOP Consulting 2010: p. 32). Cultural activities will then be used to generate attraction and identity as a starting point to the neighborhood's popularity when it is completed with housing. This method was used in Stockholm, Sweden, in a neighborhood called Nobelberget. The landowner of Nobelberget commissioned artists and creative people to develop a hub for clubs, concerts, and markets in order to attract people (Källén 2018). When the plan has been approved and the new buildings are about to be constructed, the culture must move and find other places to exist in.

“ How is it possible to ensure space for the cultural production in the city and still ensure a mixed and sustainable city development including housing? ”

Project aim

The aim of this master thesis is to investigate the possibilities for creating space for cultural production and combining it with housing in urban environments. The findings of the investigation will be formulated into a toolbox which will be used as a guideline for creating space for cultural production and housing in coexistence. This master thesis also aims to apply the toolbox at a test bed in Sofielund, Malmö, in order to explore the possibilities of how the toolbox can be used in an urban design project.

Research question

How is it possible to ensure space for the cultural production in the city and still ensure a mixed and sustainable city development including housing?

Project framework

The first part of this master thesis was to collect knowledge through the research methods, literature studies, reference case studies and interviews regarding how to make space for cultural production and combining it with housing in urban environments.

The knowledge I collected in the research have been used to develop a toolbox, including development strategies and design principles, possible to use on development projects in order to make space for cultural production in coexistence with housing in urban environments.

The third part of this master thesis is the design proposal, where the toolbox has been investigated at the test bed of Kv. Intäkten in the industrial area of Sofielund, Malmö.

The thesis has been concluded with discussions relating to the research question and how it has been to work in an architectural design scale as an urban planner.

Cultural production



Housing



Urban environments



Key words

Definitions of the key words



Culture and cultural production

Culture is a term with a very broad definition. The word culture can be used for how we integrate with each other, how we express ourselves, what we eat and how we dress, as a few examples. It is a term which enrich and deepen human's life (Alwall 2019: 25). Jonas Alwall is dividing culture in two categories due to its broad definition: Anthropological and Esthetic (2019: 26). Anthropological culture can be described as the culture in which we live, such as language signs, traditions, how we interact, what kind of food we consume, how we celebrate traditions and how we dress (Alwall 2019: 26). The second category, Esthetic, refers to culture as creative people and creative industries that produces art forms possible to consume (Alwall 2019: 26). Those art forms could be music, theater, film, literature and dance as a few examples (Alwall 2019: 25-26). Culture which is produced can occur as consumption in several different ways depending on art form, background, aim, expression, knowledge etc. Nicklas Sörum, Ylva Berglund and Helene Brembeck, defines culture as a term with many different meanings (2017: 9). They demonstrate various meanings of culture, such as culture as a legacy, creativity, a supply, multiculturalism, a resource for wellbeing, a learning tool, cultural heritage values and people's unique common values (Sörum, Berglund & Brembeck 2017:9). Culture as creativity defined by Sörum, Berglund and Brembeck, fits into the Esthetic category identified by Alwall. These two definitions are similar to the term culture discussed in this thesis; culture produced as different art forms possible to consume and experience.

Creative industries

The term creative industry is a concept that originated in the late 1990s by the government of United Kingdom (UK) (BOP Consulting 2010:15). The concept is a way to define the creative industries impact in the job and welfare sector (BOP Consulting 2010:15). The government of UK have identified cultural industries as important businesses that has a positive impact on the economy in the country (BOP Consulting 2010:15).

The term creative industry is comparable with the explanation of the esthetic culture defined by Alwall. BOP Consulting defines the creative industry as creative artists producing different art forms such as music, theatre, film and service business which sells creative skills to other (2010:15). The report describes the following industries as creative: Advertising, Architecture, Art and Antique markets, Crafts, Design, Designer fashion, Film and Video, Interactive leisure software, Music, Performing Arts, Publishing, Software and Computer Services and Television and radio (BOP Consulting 2010:16-17). Those creative industries are producing different art forms which can be defined as creative production. When creative industries are mentioned in this thesis, I refer to the creative artists that produces different art forms.



Housing

Housing refers to the construction of buildings with the purpose of creating sheltered spaces for people and is a collective word for sheltered spaces for residential living spaces, facilities and other activities inside a building. Housing can occur as apartments, villas and rowhouses and can be either owned or rented.

environments for all people, it is also crucial to construct housing that do not expose residents for environmental pollution, noise pollution, chemical substances or safety risks (Boverket 2020).

When discussing housing in this thesis will I refer to housing as a sheltered space for people to live. If the housing includes active ground floors, it will be mentioned in the thesis.

Due to the eleventh global goal, Sustainable Cities and communities, it is of importance to construct housings with the three sustainable dimensions in mind; social, ecological and economical. The ecological aspect when constricting housing is to take the environmental influence of construction in consideration by designing housing resource effective and sustainable, according to the National Board of Housing, Building and Planning (further mentioned as Boverket) (2020). The economic aspects when constricting housing is to create possibilities for equal living costs and manage the environmental resources (Boverket 2020). The social aspect when constricting housing is to design for accessible and qualitative living



Urban environments

Our cities have grown since the humans started to build settlements next to their cultivation areas, this was the beginning of the differences between urban and rural areas (Wall & Waterman 2009:20). The urban settlements required development of transportation roads, food supply, security, shelter and meeting places in order to create qualitative living environments (Wall & Waterman 2009:20). Not different from the requirements in a city today, however, the shape and scale of the urban environments has changed during the history and the importance of qualitative living environments has remained. According to The Swedish Environmental Protection Agency (Naturvårdsverket), qualitative living environments are urban environment that is developed sustainable and meet people's needs (Naturvårdsverket 2021). The municipality of Stockholm defines qualitative living environment as environments that is vibrant, safe and attractive with good access to transportation, service, culture and green areas (Stockholm stad 2020)

When qualitative living environments are mentioned in this in this master thesis, I refer to sustainable environments that is safe and attractive with good access to transportation, service, culture and green structure.

The urban environments are growing due to a high amount of people moving to the cities from other countries and due to an overage of birth (Boverket 2019). In order to meet the demand of housing in the city it is critical to build more housing. A common planning strategy to meet the demand of housing is densification (Boverket 2016: 6). Porter & De Roo describes the dense city as a strategy to counteract urban sprawl, where the dense city is a way to reduce traffic and improve the accessibility, which results in a qualitative living environment for the citizens (2007:5). Boverket discusses the importance of densification of the cities with sustainable methods in mind, in order to create urban environments with qualitative living conditions, both in the private and public spaces (Boverket 2016: 5-6). To achieve qualitative living conditions and sustainable urban environments it is of importance to design cities which includes a diversity of functions, building heights and public spaces (Boverket 2016: 7-8).

When urban environments are mentioned in this master thesis, I refer to the dense city defined as the perceived density by Boverket and Porter de Roo, and the mixed city defined by a diversity of functions, housing and public spaces.

02

Research

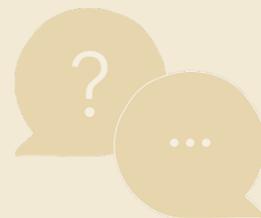
Literature studies



Reference case studies



interviews



Method

Literature studies, reference case studies and interviews has been used as methods to collect knowledge of how cultural production can coexist with housing in urban environments. The research material collected through those methods are presented in this chapter.

Literature study

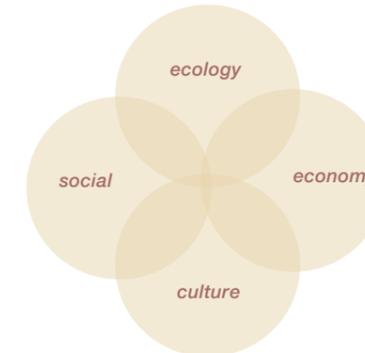
Sustainable Development



Picture 1: The 17 goals in Agenda 30



Picture 2: Sweden's 16 national environmental goals



The four dimensions of sustainable development



City of Malmö's cultural strategy (Kulturförvaltningen Malmö Stad 2015:1)

The global 2030 Agenda

Agenda 2030, the global development agenda with 17 goals for sustainable development, was adopted in 2015 by the world's heads of governments and states (FN w.y). The aim of Agenda 2030 is to create a global Sustainable Development which includes the three sustainable dimensions; Economical, Social and Ecological (Svenska FN-förbundet 2018: 6). In order to achieve the overall aim of Agenda 2030, 17 goals have been formulated to foster a sustainable, equal and better world for all people (Svenska FN-förbundet 2018: 4). The goals include, among other; quality education, decent work and economic growth, sustainable cities and communities, responsible consumption and production (FN w.y). The mentioned goals include a sustainable development of culture in urban environments, cultural production and consumption, housing in order to ensure a sustainable city development for current and future generations. Those mentioned goals are the primary focus of this master thesis.

Sweden's environmental goals

Sweden has developed national environmental goals based on Agenda 2030, with the aim of passing on to the next generation a society in which the major environmental problems have been solved without causing increased environmental and health problems (Sveriges miljömål 2020). One of the 16 goals is a qualitative built environment (God bebyggd miljö), with the aim of meeting people's needs, providing good living conditions, and contributing to sustainable development (Sveriges miljömål 2021). The goal is developed due to the growth of people in the Swedish urban environments (Sveriges miljömål 2021). The mentioned goal focuses on the importance to develop the city in consideration with qualitative environmental design in order to maximize the positive consequences in a urban environment and minimize the negative consequences, such as air pollution, noise pollution and minimized access to greenery (Sveriges miljömål 2021). The goal qualitative built environment (God bebyggd miljö) is the primary focus of this master thesis.

The fourth dimension of sustainable development: Culture

The Brundtland report envisioned three sustainable dimensions for development: economic growth, ecological balance, and social inclusion with the aim to incorporate these dimensions into local, national, and global plans for sustainable development (Agenda 21 for culture w.y: 2). In recent years, there has been discussions about our society's competitiveness and whether the three dimensions of sustainable development include all aspects of our global society (Agenda 21 for culture w.y: 2). As a result, the inclusion of culture as a fourth dimension in the vision of sustainable development was approved in 2010 at the UCLG (Global Network of Cities, Local and Regional Governments) World Congress (Agenda 21 for culture w.y: 4). The fourth dimension addresses the connection between culture and sustainable development in two ways; the development of the cultural sector (for example creative industry and cultural production) and ensuring that culture is taken into consideration in public policies when developing urban environments (Agenda 21 for culture w.y: 2). Agenda 21 for culture is now a primary resource for municipalities when working with sustainable development (Alwall 2019: 7).

Culture in city planning today

Municipalities in Sweden has the financial resources to support a vibrant cultural life for all of its citizens (Sveriges kommuner och regioner 2020). Furthermore, the majority of Swedish municipalities have a policy plan for integrating culture into the urban environments. In this thesis, the City of Malmö's cultural strategy has been studied. The strategy is developed in order to strengthen the sustainable urban environment as a whole with the help of culture (Kulturförvaltningen Malmö Stad 2015: 4). The goal is to become a more democratic, permissive, and welcoming municipality through culture (Kulturförvaltningen Malmö Stad 2015: 3). In order to achieve the goal, the municipality emphasizes the importance of communication and collaboration with the creative industry and civil servants (Kulturförvaltningen Malmö Stad 2015: 6-7). The City of Malmö defines culture as cultural heritage, creative industries and art that people practice, express, and experiences (Kulturförvaltningen Malmö Stad 2015: 4).

Literature study

Culture in urban environments

When culture is discussed in relation to sustainable development it is often related to the social dimension. The city of Malmö describes the importance of including culture in the development process to strengthen the sustainability in urban environments. This will increase the equality and inclusion of groups of people and balance the sustainable dimensions (Kulturförvaltningen Malmö Stad 2015: 4). Similar to the City of Malmö, Boverket is describing the importance of increasing the cultural and social dimensions together with the economical and environmental to develop a sustainable city (2021). Urban environments are not only about the housing, but also about the public spaces, where people move and interact. Among other environments, culture and social sustainability occurs in the public spaces. When urban environments become denser, public spaces and the transportation to different places becomes denser as well. Boverket argues that municipalities develop urban environments with the goal to be attractive, one strategy being to develop an area with a higher accessibility to service and culture in order to reach the aforementioned goal (Boverket 2016: 7). This relates to the City of Malmö's cultural strategy plan, where they argue that it is important to plan for culture in dialogue with cultural industries,

to offer residents cultural activities in urban environments (Kulturförvaltningen Malmö Stad 2015: 6-7).

Literature study

Coexistence of cultural production and housing in the urban environment



When an urban environment is facing densification, it is of importance to design qualitative living environments for inhabitants, workers and tourists (Boverket 2016: 5). Qualitative living environments shall be developed in order to achieve the global sustainable development goals, to ensure healthy and attractive environments. Densifying urban environments can contribute to both positive and negative consequences. To increase the positive consequences of densification, it is important to think long-term (Boverket 2016: 8). Development in urban environments today are often in-fills in city districts or blocks, transformation of industrial or harbor areas. There is a challenge to develop with housing in those areas, due to noise pollution, lack of communications and daylight access (Boverket 2016: 24). Therefore, the existing qualities and the future needs to be mapped and analyzed early in the development process, in order to ensure qualitative environments for housing and workers, contribute to meetings and greenery that strengthen social interaction, economic growth and ecological qualities (Boverket 2016: 8). The existing qualities shall be strengthened in sustainable city development (Boverket 2016: 8). To ensure equal rents and minimize the environmental impact it is also important to

keep existing structures as much as possible. In order for cultural production and housing to coexist in urban environments, it is of importance to map and analyze the existing qualities, functions and future needs on the site and in the surroundings, in order to ensure a qualitative living environment.

3 ways to lower the sound

-  Sheilding (the sound is reflected)
-  Absorption (sound is absorbed in soft surfaces)
-  Diffusion (sound is spread from irregular surfaces)

Diagram of 3 ways to lower the sound (Stockholm Stad w.y: 125).



Diagram of different type of roof strutures and its ability to sheilding (Stockholm Stad w.y: 125).

Acoustic design

Densification contributes to more life and movement which leads to increased sound levels (Boverket 2016: 24). Culture and cultural production can also contribute to increased sound levels but also more life and movement in the neighborhood. Björn Hellström mentions, in an interview with Boverket, to think of sound as a quality in urban development (Boverket 2016: 24). By increasing the qualities of sound, it is possible to design urban environments in accordance with the intended functions in the area (Boverket 2016: 24). Therefore, one solution is to work with acoustic design when cultural production and housing is combined in urban environments. To ensure a qualitative sound environment, urban designers should increase the pleasant sounds in order to decrease the noise pollution. When combining housing and cultural production, it is required to work with acoustic design both in private and public spaces. Therefore, it is suitable to define the location for culture, cultural production and housing in an early stage, in order to localize the required tools of acoustic design. Through the literature study in this master thesis, acoustic design tools have been identified.

Acoustic design in the indoor environment

It is important to design the facilities with acoustic design to reduce unpleasant sound in the indoor environment. The acoustic design in a room can vary depending on its function; for example, the acoustics of a rehearsal room where music and theater rehearsals take place may differ from ateliers. It is important to work with suspended ceilings that can reduce sound to spread from spaces where music and theater are practiced, or machines are used (Rockfon 2020). As a result, the various functions in the building must be considered in the design process.

Sound insulation and absorption

Sound levels are reduced when the sound is absorbed, but sound levels are increased when the sound is reflected. It is important to work with sound insulation to reduce the amount of sound that reaches floors, ceilings, and walls (Rockfon w.y). The housing or premises will achieve the best possible sound quality if the architecture incorporates a mix of sound insulation and sound absorption (Rockfon w.y). Sound absorption is the amount of sound absorbed by a material; the amount absorbed and reflected depends on the surface (Ljudskolan w.y). Depending on the purpose of the space, a certain amount of sound absorption is needed (Ljudskolan w.y).

Acoustic design in the outdoor environment

According to the Swedish Planning and Building act (further mentioned as PBL), in order to build housing in noise polluted areas, it is critical to reduce sound exposure in the outdoor environment. According to Boverkets definition of PBL, it is possible to adapt buildings to the surrounding sound situation if the lowest acceptable sound quality is achieved and new buildings are designed with the best possible sound environment (Boverket 2020). To reduce exposure, it is possible to design with compensatory measures, such as having at least one façade side of the housing where the sound level is reduced (Boverket 2020). An example is to design the courtyard as a side where the sound level is reduced.

Greenery in the urban environment

Plant-covered solutions can have a synergistic effect that helps to reduce sound levels since greenery has the ability to both spread and absorb sound (Stockholm Stad w.y: 19). Working with green elements in combination with acoustic design solutions to create a better sound experience can open up for new possibilities in the urban environment, for example positive sounds such as bird chirping and the sound of falling leaves (Stockholm Stad w.y: 63).

Roof design

The building's roof will influence how the sound is perceived due to the fact that the roof angle influences how sound travels. The greater the

inclination, the greater the absorption and shielding (Boverket 2020). A gable roof is not as effective as a flat roof if it is not designed with a green coating, but if it is designed with a green coating, the gable roof has a higher sound-absorbing effect (Stockholm Stad w.y: 125). A sawtooth or rounded roof design is the most efficient for sound attenuation since the sound has to travel over more absorbing surfaces and the sound is attenuated more for every contact (Stockholm Stad w.y: 125).

Design of the facade

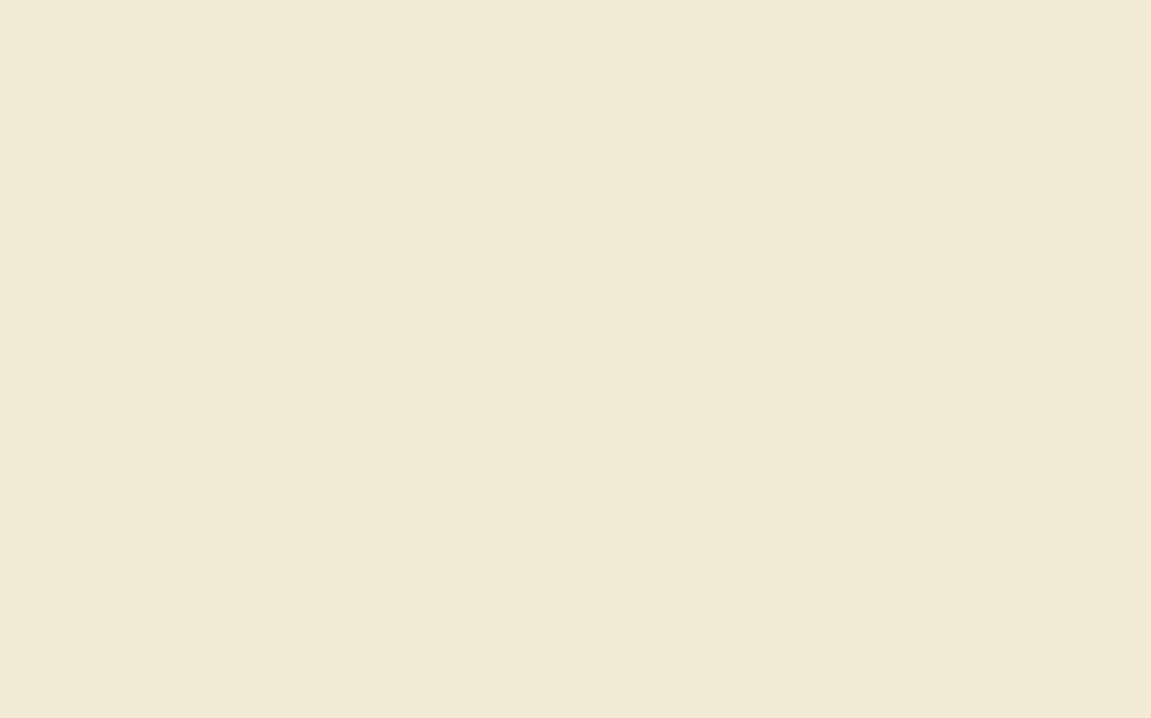
It is important to design the façade so sound reflects, absorbs and diffuses. Since the sound bounces between hard and smooth surfaces, it is advantageous to design the façade with a mix of hard and soft materials and with a variation in the façade structure (Stockholm Stad w.y: 128).

The courtyard

Densification of urban environments can contribute to narrower courtyards (Stockholm Stad w.y: 127). It is common that sound bounces easier in narrow courtyards, therefore, a solution is to design the courtyard, so the sound level is reduced. A well-designed courtyard has green façades, green surfaces on the ground and green roofs on exterior buildings that reduce sound levels. (Stockholm Stad w.y: 127). To further reduce bounced sound, courtyards should be designed in variation of topography in, such as hills (Stockholm Stad w.y: 128).

Literature study

Reflection



To ensure sustainable urban environments according to Agenda 2030 and to achieve the four goals this master thesis focuses most on, it is important to be close to the challenges and possibilities in urban environments, especially when developing housing in coexistence with cultural production. Knowledge about the valuable qualities to ensure qualitative living environment for all people is important in densification of urban environments. Therefore, it is important to early in the planning process, identify what kind of area that will be developed, if there is any development and environmental challenges and if the area is suitable for housing. Those are examples of analysis questions which have to be taken into consideration to ensure a qualitative living environment but also to reach the goals of Agenda 2030.

When combining housing and cultural production in urban development, it is of importance to analyze the existing sound level, to understand where and how the sound will increase. This makes it possible to design the development area with a sound environment that contributes to pleasant sounds. The knowledge collected about acoustic design in outdoor environments, will help to ensure a pleasant sound environment. It is important to

use the knowledge of acoustic design early in the design process, as a suggestion, already in the analyze phase of the existing area, in order to always be close to the sound source.

Acoustic design in indoor environments is a further step in the design process to ensure qualitative living environments in the housing. Since my architectural background is in spatial planning and urban design, have I chosen to delimit the acoustic design to the outdoor environment at the test bed of Kv. Intäkten.

Housing and cultural production in coexistence contributes to a social sustainability both in the neighborhood and as an attraction for people living or visiting the city. The city of Malmö municipality argued in their cultural strategy plan, that culture is an important pillar in the sustainable urban environment to include people and be an equal city (Kulturförvaltningen Malmö Stad 2015: 4). Housing and cultural production in coexistence increases social interaction in the building and in the public spaces, offer varied activities and increases the cultural education among all ages.

Reference Case study

Learning from Gothenburg and Stockholm

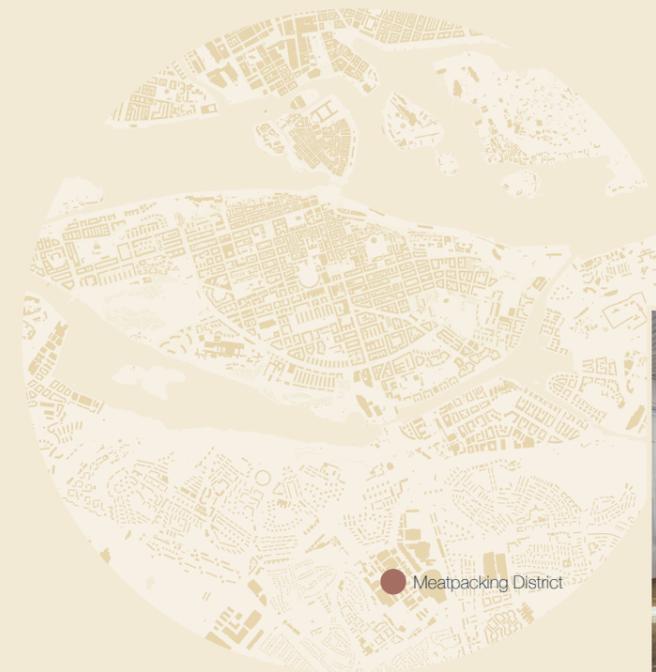
The two reference case studies are projects that have investigated cultural life in development areas in the Swedish municipalities of Gothenburg and Stockholm. The reference case study *Platsar kulturen i den nya staden?* (*Is there room for culture in the sustainable city?*), focuses on two industrial areas located outside the city center of Gothenburg. The reference case study in Stockholm is a *cultural life survey of the development area in the Meatpacking district (Slakthusområdet)*, which is an industrial area situated outside Stockholm city center. The ongoing urban transformation projects at the sites, from industrial areas to urban environments, are the similarities between the two reference case studies. Today, the sites are workplaces for the creative industry. The answers from dialogues the creative industry that the authors present in their studies have been the objective of this research.



Karlavagnsgatan & Sockerbruket in Gothenburg



Front page of Nicklas Sörum, Ylva Berglund, and Helene Brembeck research (w.y: 1)



Meat packing district Slakthuset in Stockholm



Front page of Stockholm stads cultural life survey (2015: 1)

Reference Case study 1: Gothenburg, Sweden



Karlavagnsgatan & Sockerbruket in Gothenburg

Front page of Nicklas Sörum, Ylva Berglund, and Helene Brembeck research (w.y: 1)

Gothenburg was established in 1621 and became Sweden's western trading city, with connections to the Kattegat and Göta Älv (Gothenburg w.y). Shipping and trade developed in industrial areas in the city of Gothenburg, Klippan and Lindholmen are two of those industrial areas (Gothenburg w.y).

Klippan industrial area is situated on the west side of Gothenburg city center. Various industrial activities have alternated here, and there are housings in the area which interacts with existing cultural and industrial activities (Göteborg Stadsmuseum w.y: 266). The Sugar factory in Klippan (Göteborg Stadsmuseum w.y: 266, Gothenburg w.y) has contributed to the cityscape of Gothenburg. The sugar factory remained in operation until 1957, with creative industries occupying the space after the shutdown of the factory (Higab w.y).

Lindholmen was one of the world's leading shipyards, situated northwest of Gothenburg's city center (Lindholmen w.y). During the twentieth century, housing districts were developed around Lindholmen's industrial area, and when the shipyard closed in 1977, many creative industries were established in the old premises (Gothenburg w.y). Lindholmen is one of the development areas taking place in

city of Gothenburg's development plan "Vision Älvstaden", where the area will be developed as an urban environment (Gothenburg w.y).

The researchers Nicklas Sörum, Ylva Berglund, and Helene Brembeck at the Center for Sustainable Urban Futures (then known as Mistra) have identified and conceptualized the role of culture in Klippan and Lindholmen's industrial areas in Gothenburg. The findings are documented in the report *Platsar kulturen i den nya staden? (Is there room for culture in the new city?)*.

The history of Gothenburg and of the sites Lindholmen and Klippan are important for the creative industries located at the sites today (Sörum, Berglund, & Brembeck w.y: 56). Culture is often expressed by the understanding of identity of the site, and the understanding of the sites' history. An environment which has existed for another purpose than today is helpful for the creative process (Sörum, Berglund, & Brembeck w.y: 55). Both Lindholmen and Klippan are some of those places suitable for an inspiring and creative environment. Sörum, Berglund, and Brembeck highlights that the cultural history of an area can be visualized in two ways; the historical relation to the site, mentioned above, and the relation and meeting between creative



The sugar fabric at Klippan (Sörum, Berglund, & Brembeck w.y: 5)



A street in Lindholmen (Sörum, Berglund, & Brembeck w.y: 1)



A cultural production studio at Klippan (Sörum, Berglund, & Brembeck w.y: 64)

people in different ages situated in the same area (w.y: 56). The interaction between cultural artists, in order to spread knowledge through generations, are important in the creative industry. This is a sustainable method to transfer cultural knowledge and experience through different generations (Sörum, Berglund, & Brembeck w.y: 56). The interviewees argue that the knowledge about the city's cultural value, transferred between generations in the creative industry, are valuable for the development of the city (Sörum, Berglund, & Brembeck w.y: 56).

The interviewers argue for the possibility to plan for cultural production in the detail development plan when the city develops. The creative industry argues that it is not possible to plan for culture, but if the urban planners create conditions for the culture to exist in the city, it is possible to develop the culture together with other functions in the city such as housing, business and activities (Sörum, Berglund, & Brembeck w.y: 57). In order to do that it is important to have dialogues with the creative industry early in the planning process and analyze the structure, in order to understand the future needs in the development area (Sörum, Berglund, & Brembeck w.y: 57).

Reference Case study 2: Stockholm, Sweden



Meat packing district Slakthuset in Stockholm

Front page of Stockholm stads cultural life survey (2015: 1)

The Meatpacking district is located in Johanneshov, south of Stockholm's city center, was established in 1921 with the goal of distributing all meat sold in Stockholm from here (Stockholm city 2021). Smaller businesses, restaurants, nightclubs and creative industries have moved into the old industry buildings since 1991 (Stockholms Stad 2015: 16, Svenska industriminnesföreningen w.y). The Meatpacking district has transitioned from a hub for the meat industry to an area for culture, and it is now developed to become an urban district for housing, offices, and commercial activities. The cultural administration of the municipality of Stockholm commissioned a cultural life survey to ensure that awareness of the Meatpacking district's cultural life is included in the planning process (Stockholm City 2015: 7).

Interviews with creative industries who have studios in the district were used as a method for the cultural life survey to get an understanding of the cultural life in the area today and what is necessary to concentrate on in the development process (Stockholms Stad 2015: 7). The interview study was conducted in collaboration with creative industries active in different fields (Stockholms Stad 2015: 38). Another approach has been to map all creative industries in order

to get a spatial understanding of the density of cultural activities in the district (Stockholm City 2015: 7). According to Statistics Sweden, there are approximately 30 registered cultural activities in the meatpacking district, but there are over 1000 registered creative businesses and industries in the nearby surroundings (Stockholms Stad 2015: 7).

The authors argue that a new understanding of the identity of the Meatpacking district has been developed through knowledge collected in dialogue with the creative industry (Stockholms Stad 2015: 34). The creative industry, that is active in the area, values the history of the Meatpacking district and the architecture of the industrial buildings (Stockholms Stad 2015: 16) The Meatpacking district is an attractive location for the creative industry; however, the interviewees emphasize the lack of production spaces (Stockholms Stad 2015: 16). The interviewees describe how they spend their time moving around their artistry between demolition contracts, public spaces, and private homes (Stockholms Stad 2015: 16). The shortage of premises for production affects not only creative industries, but also the participation of children and teenagers in cultural activities. Due to a lack of cultural



The meatpcking district in 1931 (Stockholms Stad 2015: 9)



A night club in the meatpcking district (Stockholms Stad 2015: 29)



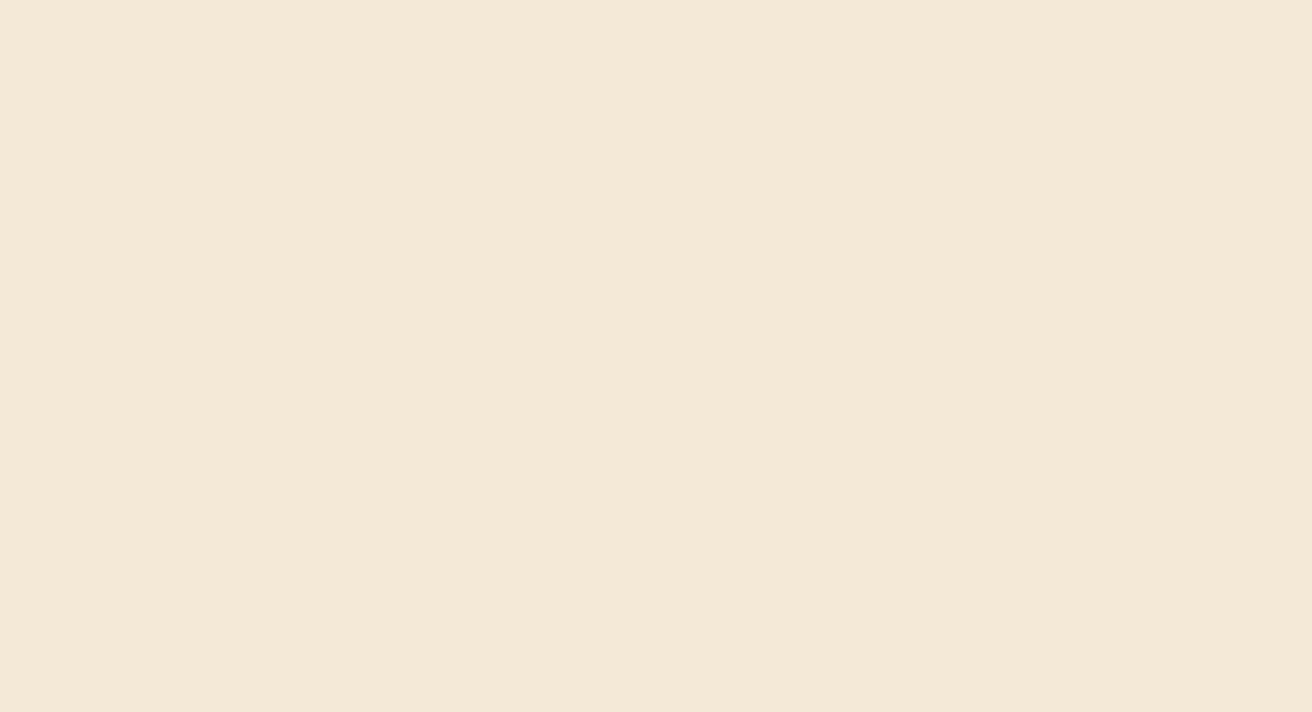
Architecture in the meatpcking district (Stockholms Stad 2015: 23)

production spaces, there is a greater demand for cultural knowledge among young people than cultural associations can meet (Stockholms Stad 2015, p. 16).

The Cultural Life Survey mentions the importance of including premises for production in the detailed development plan, which is similar to the description in Sörum, Berglund, and Brembeck's study. In the urban development it is common to make space for cultural commercial premises, but in order to offer products, the creative industry need space to produce the products for the customers (Stockholms Stad 2015: 16).

Reference Case study

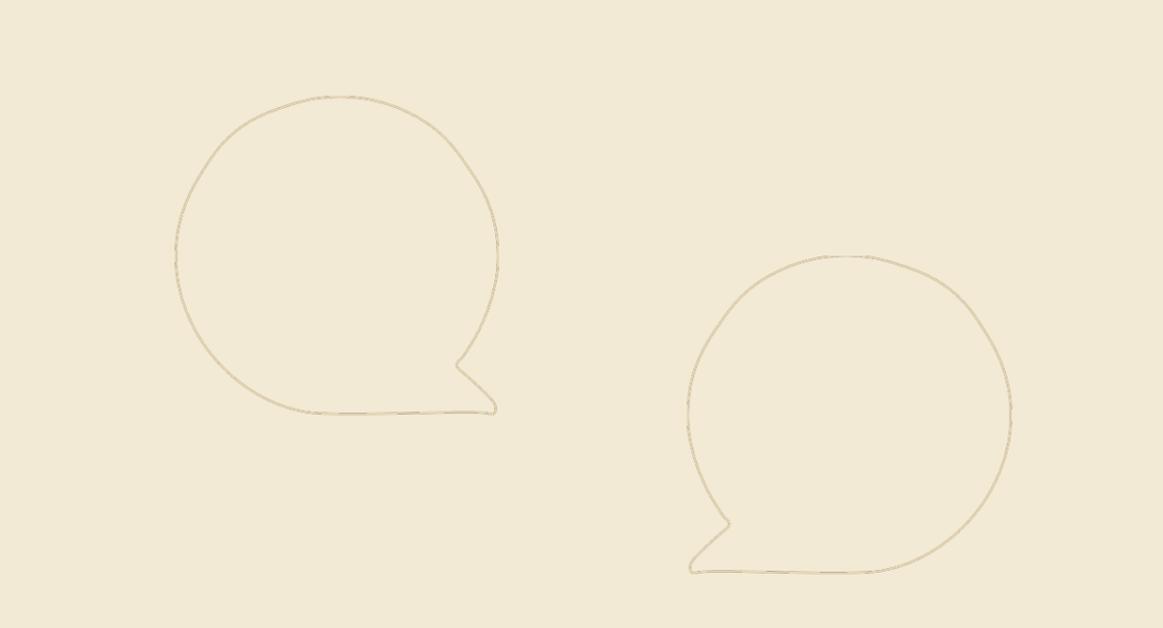
Reflection



The two reference case studies are both connected sites which is in a process of urban development. Those development areas are in a similar process as Sofielund, which is the field study area for this master thesis. Similar to the Meatpacking district in Stockholm, the industrial area of Sofielund is an area where existing industrial business coexist with cultural production and activities. Both areas, the Meatpacking district and Sofielund industrial area, are surrounded with housing and the districts are becoming more integrated into the city centers by densification as a development strategy. The reference case studies stress the importance of keeping the existing identity and buildings in industrial areas when developing the areas with housing.

The interviewees, in the cultural life survey of the Meatpacking district, highlights the lack of production as a critical aspect since it contributes to a decrease in cultural knowledge. Sörum, Berglund, and Brembeck discusses the importance of social interaction among creative artists in all ages in order to transfer knowledge between generations. This is an important aspect to consider for the social sustainability pillar when the city develops to reach the goal *Quality education* in Agenda 2030.

Interviews



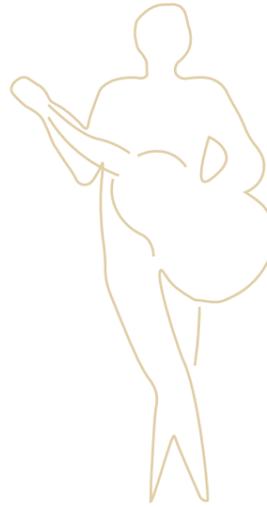
The interview process

Denscombe defines the interview process as a method of inducing people's information in response to the researcher's questions (2016: 263). During the interview process for this master's thesis, I held individual interviews with people who could provide me with useful information about how to make space for culture in coexistence with housing in urban environments. All interviewees have a connection to the test bed of Kv. Intäkten in Sofielund, Malmö, and some questions were therefore asked in relation to the test bed. I prepared a set of questions for each interview that are directly related to my research question and correspond to the interviewee's background or work. The information that the interviewees communicate to me is the data I gather from the interviews. According to Denscombe, this means that the knowledge communicated by the interviewees through my questions is a sort of self-report, in which they express what they do, what they think, and what opinions they have (2016: 263). As a result, I have sorted the related data using my expert knowledge in spatial planning and architecture.

The interviewees will be kept anonymous in this master's thesis. When I refer to an interviewee, I will refer to the person as the interviewee followed by a number, for example, interviewee 1.

"Important to have meeting places"

"The studio shall be strategically located for it to be efficient and safe to get there"



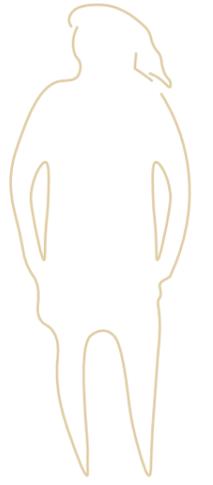
Creative artist

"It is important to look at the existing premises on the site in development projects and be careful in how these premises are taken care of."



Regular contact with landlords whom owns properties in culturally dense areas.

"You have to look at cultural production from several point of views and not just as one isolated entity, because all cultural productions look different and have different needs."



Regular dialogues with the creative industry and has a influence in urban development projects

The interviewees each play a unique role in the context. Interviewee 1 practice creative expression and is familiar with the use of production spaces. Interviewee 2 has regular conversations with property owners and landowners, some of whom own properties in culturally dense areas. Interviewee 3 has interacted with artists and small businesses in a city district analysis, as well as having an influence in urban development projects.

Similar to the findings in the reference case study, interviewee 2 considered the importance of studying the existing premises on the site in development projects and be careful in how these premises are taken care of, in order to increase security and ensure well-being for the creative industry. If they are to be renovated, it should be with an awareness to minimize the risks for significantly increased rents, and that the rough character is maintained in industrial areas, according to interviewee 2.

Interviewee 3 mentions the importance of flexibility in the development plan. When designing urban environments, it is important to understand the creative industry and their needs, cultural production need space and flexibility in order to produce but also because of the different needs cultural industries have,

according to interviewee 3. Interviewee 3 also stresses the consideration of the things one cannot see in order to plan for uncertain changes in the future.

In order for the creative industry to collect a broader understanding of the urban planning process, it is necessary that knowledge is strengthened and that the conditions for sharing knowledge about the planning process are made possible on an equal level between stakeholders and officials. Interviewee 2 also emphasizes how important it is to have good and transparent communication between property owners and the creative industries.

Common questions that the interviewees received during the interviews included how they view the relationship between cultural production, industry and housing and whether they can interact with each other and how they can interact. An Interesting outcome was that every one of the interviewees answered with a certainty that there exist possibilities to create interaction between the aforementioned functions. On the other hand, everyone answered differently on how it is possible to create the interaction, a factor that could be rooted in their own individual experiences and professional roles. Interviewee 1 had experienced that rehearsal rooms, located

centrally in the city, tend to be in the basement of houses. The rehearsal rooms were then soundproofed so the sound from the basement was not heard on the ground floor. Interviewee 1 is a trained architect and also considered the possibility of creating conditions for common premises for production or workshops in housings. These premises would then allow for meetings and interactions with those who live in the neighborhood. Interviewee 2 answered that it should be possible to interact cultural production with housing if the housing is located in places with a low impact of sound, for example alongside paths that meet existing housings and streets with an urban character. Interviewee 3, having an extensive experience of the planning process, answered that the interaction between culture and housing requires broad knowledge and good finances from the client, and that it can and has the opportunity to be expanded on in complex locations such as industrial areas with networks of small businesses and creative industries. Interviewee 3 also emphasized that it is important to look at the financial framework and think long-term and not short-term as many builders tend to do in current times. Similar to Interviewee 2, interviewee 3 also mentioned the possibility of building housing in places with lower sound levels and using design elements that further reduces the noise pollution.

Interviewee 1 was asked questions in relation to the need for premises for production and which design elements are important for carrying out the production. In response to what characteristics a studio should have in order for it to be attractive to use, the interviewee 1 answered that it is required that the studio is strategically located for it to be efficient and safe to get there. It must also be safe to stay on site. Interviewee 1 was also asked what an optimal size was, regarding the premises, for the type of production they are performing. The first thing they expressed was the importance of having meeting places, such as common areas with an associated café. The space that Interviewee 1 uses for production is limited and contributes to the members being required to share instruments and equipment with other actors, that also rent the premises. Something that is positive is the ability to store equipment in on site. While, sharing premises with others was experienced as a common thing and enables the rent to be split, it also was experienced as an issue regarding overcrowding or inflexible use of the spaces. Interviewee 1 also mentions the possibility of using production studios for creative industries as a way to create accessibility and security in an area.

Interviews

Reflection

The method to interview persons with different backgrounds made it possible to achieve different aspects on the same questions. The information by the interviewees have aided me to better understand how to combine housing with cultural production in urban development. Each interviewee has also given me a broader understanding of how urban environments should and can be designed based on the needs of the residents, culture, small businesses and landlords.

The common questions to the interviewees gave different answers. It was interesting to hear that all interviewees find it possible to combine housing with cultural production in urban environments, but all had different approaches to it. Interviewee 1 highlighted the possibility of having common spaces for production and housing, which is similar to the discussion of social interaction in the reference case studies. Interviewees 2 and 3 both highlighted the importance to locate housing in areas with a lower sound level, especially if the housing are integrated in an active industrial area, due to sound levels and human welfare, similar to the literature study in this thesis. This stresses the importance to be aware of the sound source when combining housing with cultural production.

03

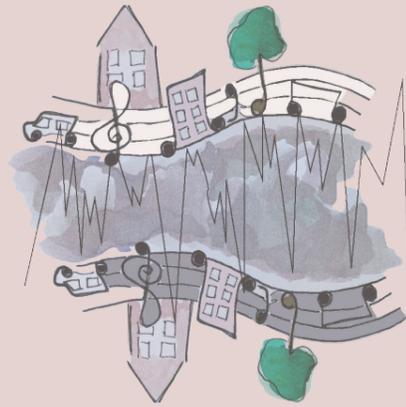
The toolbox

Introduction of the toolbox

The knowledge collected from the research through interviews, reference case studies, and literature studies is applied to the toolbox. The toolbox is intended to ensure sustainable urban environments where it is possible to make space for cultural production in coexistence with housing. The toolbox includes two development strategies, and to achieve those several design principles have been formulated to each development strategy.

The toolbox is intended to be used in urban planning projects. When using the toolbox, keep in mind that the conditions are not the same on every design site, and some design principles may work better than others. The outcome of the toolbox will vary depending on the site conditions.

Development strategies



SOUND

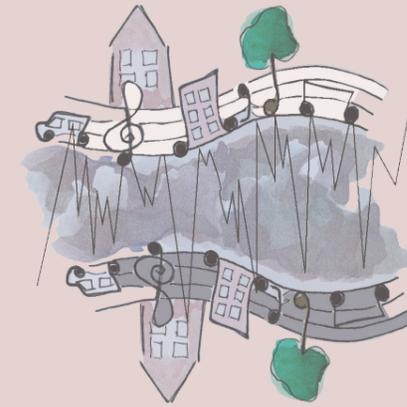
Develop the site in consideration of the sound, increase the pleasant sounds and decrease the noise pollution.



COOPERATION

Develop for a collaboration of spaces for housing, cultural production and commercial premises. Increase the possibilities for meetings between residents, the creative industry and visitors.

Design principles



SOUND



Building structure

How the building structure is designed is of importance to increase pleasant sounds and decrease noise pollution. The roofs of the building structure must be designed to reduce sound levels. There must also be a variation in the design and material of the facade. Building functions must be localized with the sound environment in mind.



Noise compensation

If the housing is built in a noise polluted environment, there must be a sound compensation where at least one side of the housing has a reduced sound level.



Green structure

To increase pleasant sounds and decrease noise pollution, green infrastructure must be integrated into the spatial spaces, on facades and roofs.



Exposure VS Calmness

When combining housing and cultural production, it is important to have a variety of spaces, where some have lower sound levels. Therefore, it is of important to design for spaces that is calm, with pleasant sounds, and for spaces where it is possible to contribute to higher sound levels.



COOPERATION



Active ground floors

To ensure social interaction between creative industries and visitors, the ground floors should face the public realm and be designed for cultural production premises and commercial premises. This contributes to movement, vibrancy and safety in the public spaces.



Diversity of spaces

There should be a diversity of spaces indoors and outdoors to ensure a qualitative living environment. This contributes to a diversity of activities, increases the social interaction and offers the possibility for a variety of functions depending on people's needs.

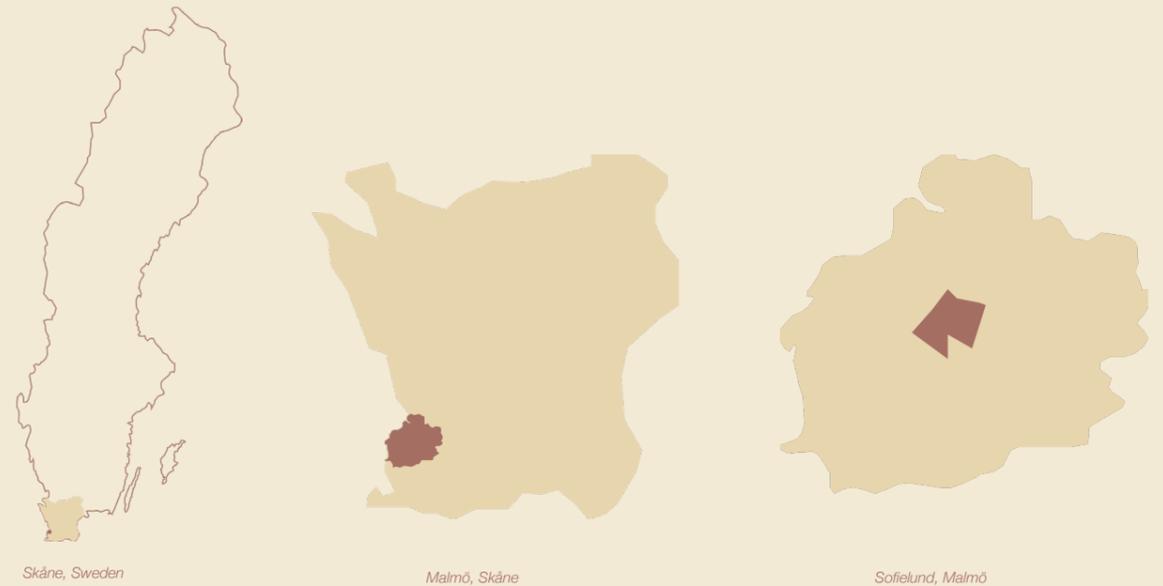


Common spaces

The common areas in the houses and public spaces shall be designed to enable social interaction between the residents and the creative industry. This contributes to a coexistence of people's different backgrounds and interests in the public, semi-public and semi-private spaces.

04

Analysis of Sofielund



Malmö, Sweden

Malmö is the largest municipality in the Skåne region and is situated in southern Sweden. In terms of population, Malmö is Sweden's third largest city, after Stockholm and Gothenburg. Malmö was established in the 1200s and was then a small town centered in Malmö's old town. Since then, the city has grown (Länsstyrelsen w.y). During the industrial revolution, Malmö began to develop working-class neighborhoods on the outskirts of the city, including Sofielund. Malmö was expanding south with the area that is now known as Möllevången. According to Länsstyrelsen, it is possible to see how Malmö city has developed from a fortress city to a shipping city to an industrial city to the city that it is today, an expansive city with high education possibilities (Länsstyrelsen w.y).

Malmö's connection to Copenhagen, Denmark through Oresunds bridge (Öresundsbron) puts the municipality into a global context. The city of Malmö municipality is developing with housing in order to meet the high flow of people to the city (Malmö stad 2018: 2). The city of Malmö is both surrounded by the Baltic Sea and by agricultural land, this implies the importance of developing inwards and not outwards on rural land (Malmö stad 2018: 6). Developing inwards implies the strategy of a dense city. The city of

Malmö's general objective is *an appealing city that is socially, environmentally and economically sustainable* (Malmö stad 2018: 4). To achieve the general objective, the municipality have established developing priorities which is: *a mixed-function dense, green and close city, a regional generator of green growth and employment and the city as a cultural and democratic arena* (Malmö stad 2018: 6-7).

Sofielund, Malmö



Rolfsgränd



Norra Grängesbergsgatan

A collection of different environments in Sofielund



An restaurant at Ystadsgatan



- cultural noise zone
- 100 m buffer zone

Sofielund is located south-east of Möllevången. The walking distance between Sofielund and Malmö C is 37 minutes, and the bike distance is 11 minutes. The district Sofielund, is a mixed used area with housing, business and culture. The area was once known for criminality, drugs and black business, but due to the efforts of BID Malmö, the police, landlords, and residents, the area has become safer and more connected to the rest of Malmö's city center (Interviewee 2). There have been development plans for the industrial area since 2014 (Interviewee 2), where the municipality intend to connect the district with Malmö C and Rosengård. Landlords have identified Sofielund as an attractive location for housing, and in 2015, the public housing company, MKB, bought the blocks Kampen and Intäkten in Sofielund (Interviewee 2). Today, those blocks have a high density of cultural associations and creative industries. The municipality's goal has been to continue the development of this area by providing a creative environment while also allowing for development of housing and businesses. Smaller businesses, creative industries, and cultural associations have moved to Sofielund industrial area since many industrial companies have moved from Sofielund. Sofielund has therefore grown as

Malmö's cultural and creative hub which attracts citizens. As a result, the existing land in Sofielund has increased in value and the future of cultural associations and creative industries has become uncertain.

On January 21st, 2021, the municipality decided on a cultural noise zone in order to preserve the existing culture in the area. This is a new method in Sweden, but it has been used in other countries to ensure that the current culture in the area will continue. The aim is that current cultural industries can continue with sound levels up to 85 decibels and new residential buildings are not permitted inside the zone and within a 100-meter buffer zone. This decision is positive for the creative industry, but it is also challenging because it implies that either the area expands with housing and the cultural industries must move, or the area preserves its cultural industries but cannot develop with housing. As a result, I intend to apply the toolbox on a test bed in Sofielund to investigate the possibility of combine cultural production with housing in the urban environment. I will not design the testbed based on the planning program Sofielunds industrial business area 2040 (Sofielunds verksamhetsområde 2040).



Sofielund in relation to Malmö C

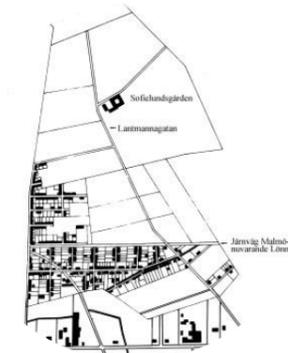
The history of Sofielund



Picture 3. Tage Thott (Unknown 1904)



Picture 4. Sofielundsgården (Unknown w.y)



Picture 5. Sofielund in 1900 (Malmö stad w.y)



Picture 6. Rolfsgatan in Sofielund (Unknown w.y)

1609

1786

1792

1850

1874

1900

1930

1953

1980

2000 -

Tage Thott constructed a farm on land that had belonged to Västra Skrävlinge and Västra Kattarps. Sofielund was a farming community at the time.

Thott introduced the first Enskifte in Skåne

The property was sold in 1792 to Hans Bauert, who named it Sofielund after his wife Sophia Charlotta af Trolle. Hans Bauert named the main farm building to Sofielundsgården.

To meet the growing population and housing demand in Malmö, Sofielund's property was subdivided into housing plots

A new railway between Malmö and Ystad were built and divided Sofielund into northern Sofielund and Southern Sofielund.

The district was known for its poverty, drainage issues, and poor sanitation.

A city plan for Sofielund was drawn by Nils Appelgren which included a new church and a covered market.

Sofielund's industry and new housing were established.

The main building, Sofielundsgården, was demolished to leave space for the church St Matteus, which is the existing church in Sofielund today.

Several larger businesses relocated. As a result, Pågen began to expand their lodges, and smaller businesses moved into the area.

The unique character of Sofielund has remained and Sofielund is an environment where industry, culture, and housing coexist.

The area was known for criminality, drugs and black business.

Building structure



Because of the various construction periods and mixed functions, there is a variety of typologies in Sofielund.

The industrial area of Sofielund has developed since the early twentieth century. Industrial brick buildings with pitched roofs characterizes the identity of Sofielund industrial area. The housing blocks are framing the core of Sofielund, which is the industrial area.

Housing in an open block structure built in the 1950s are located on the north and south sides of the Sofielund industrial area.

Rowhouses and smaller villas built in the middle of the 20th century can be found west of the industrial area. The rowhouses are framed by houses in a closed block structure, which connects to the typologies present in Sofielund's nearby neighborhoods.



multi-dwellings 4 floors



industrial buildings



row houses

Green structure

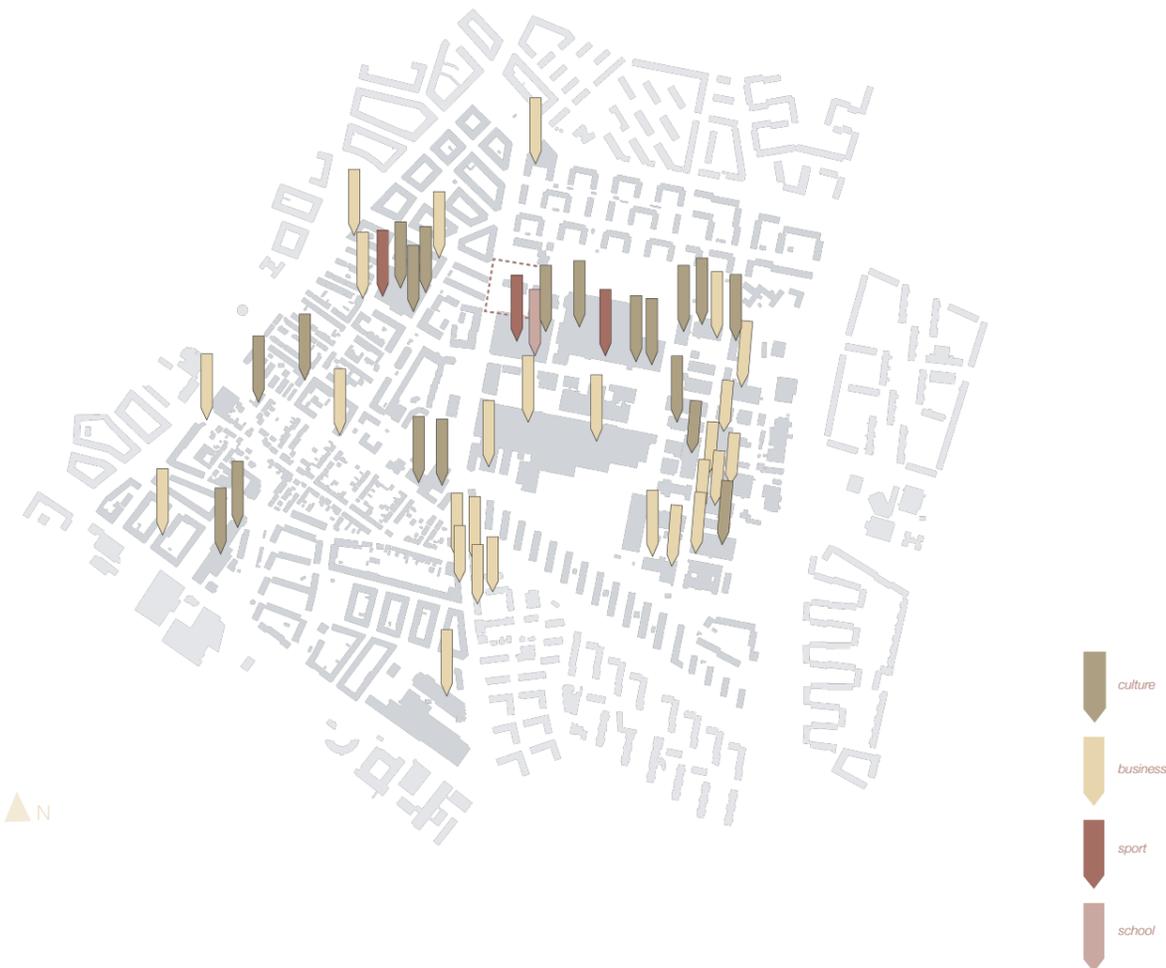


A collection of pictures of the park Gullängen in Sofielund

Sofielund has two parks that are popular for recreational activities and social interactions. These parks are Enskiftesparken on the north side of the Sofielund Industrial area and Gullängsparken on the south side. Those parks are the biggest meeting places in the district and includes activities such as playgrounds, dog parks, allotments and a basket court.

Considering the size of Sofielund and the quantity of parks, there is a shortage of green recreational areas (Sofielunds verksamhetsområde 2040).

Density of culture



To understand where there are clusters of culture, sport, business and schools in Sofielund, a mapping of the density of culture and business in Sofielund has been made.

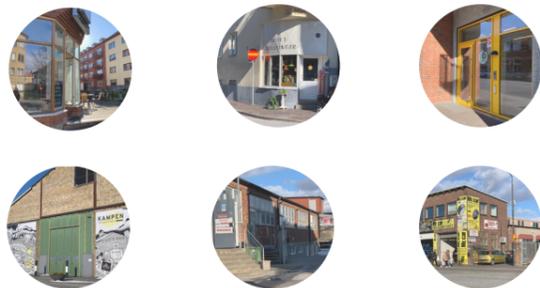
Site visits and data from Google Maps are being used for the mapping. More info can be collected through statistics from Malmö Municipality and The Swedish Companies Registration Office, but the mapping in this thesis is limited due to time limits of the master thesis period. As a result, this mapping provides a general understanding of the density of culture and business in Sofielund.

The mapping revealed that culture, business and activities are concentrated in Sofielund's industrial areas, but some culture and business are located in the ground floors or basements of houses, facing the public spaces.



A collection of some cultural industries and business in Sofielund

Density of entries



A collection of some entries in Sofielund

A mapping of the density of entries to commercial premises and cultural production premises in Sofielund has been made to get an understanding of the movement of people, where there are active ground floors and meeting places. The mapping provides an understanding of where the majority of activities are and where there is potential to develop Sofielund with housing and cultural production.

Flow of people



The density of entries provides an understanding of where there is the most activity of people, movement of transportation and commercial premises. The diagram above visualizes the streets where there is the most activity. The most active street in Sofielund is Norra Grängesbergsgatan, here there is a high density of entries to business and cultural industries, facing the public space. Kopparbergsgatan also have a high density of entries, some entries are to cultural associations and business but there are mostly entries for transportation connected to the industrial businesses. Kopparbergsgatan is a connection street between Norra Grängesbergsgatan and Lantmannagatan. At Lantmannagatan there are some active ground floors facing the public space, but the most flow of people is due to transportation to different places in Sofielund or to other districts in Malmö.

Car traffic network



Sofielund is framed by three busy roads: Nobelvägen, Amiralsgatan, and Lönngatan. These roads link Malmö's various districts in south, north, east and west.

The main roads in Sofielund are Lantmannagatan and Norra Grängesbergsgatan which connects in a south - north direction, and Lönngatan, that connects in an East-West direction. At Lantmannagatan there is a bus station, located north of the test bed area for this thesis. Several bus stations are located at the busy roads around Sofielund which connects to Malmö in a broader city scale.

The railway in east, between Sofielund and Rosengård connects to Malmö C, Hyllie, Ystad, and Copenhagen. The railway station connects Sofielund with Rosengård, the railway is otherwise a barrier between those two districts.

Bike network



The bike paths in Sofielund connect to the nodes Malmö City, Rosengård, Värnhem, and Mobilia. The bike network varies between bike paths and shared streets with cars.

The test bed of Kv. Intäkten, located at the intersection of Lantmannagatan and Ystadgatan, serves as a node for bikes heading south-north and east-west.

Noise pollution from car and train traffic



To get an understanding of the existing sound environment has an analysis of the sound from the traffic been made. The main source for the analysis is Malmö municipalities mapping of surrounding noise pollution from the car and train traffic (Malmö Stad 2017). There is a high degree of noise pollution from the railway and the busy traffic roads which surrounds Sofielund district. Most of the noise pollution in Sofielund originates from Lantmannagatan and Norra Grängesbergsgatan. The noise pollution on Lantmannagatan contributes to an unpleasant sound environment for existing and new residents in the area.

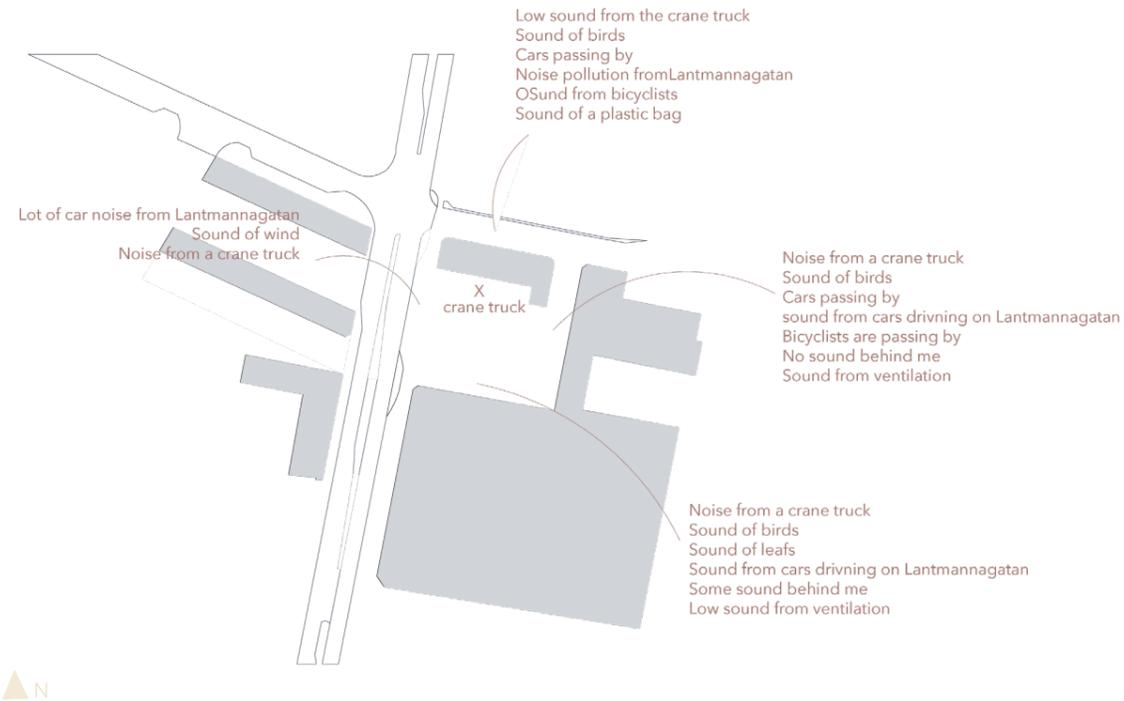
Noise pollution from industries



During the site visits in Sofielund, the sound from the industries in Sofielund industrial area has been analyzed. The most noise pollution in the area appears from Pågen's distribution center. Pågen's distribution center is located along Kopparbergsgatan, where the logistic flow occurs during day and night (Interviewee 3). As a result, the nearby housings, along Lantmannagatan, are exposed to noise pollution.

Noise pollution from the business at Norra Grängesbergsgatan are identified as well. The sound is most substantial when one is moving along the street. During the summer season it is common with outdoor events and activities at Norra Grängesbergsgatan, those cultural activities can increase the sound levels, which can be experienced as noise pollution for the residents.

Sound analysis of Kv. Intäkten



Map of the sound analysis at Kv. Intäkten

To be able to localize the key sound sources in Kv. Intäkten, a sound analysis was needed. On a rainy Thursday in May, I went to the test bed of Kv. Intäkten at 8:30 a.m. I observed a crane truck changing rainwater pipes when I arrived. Other sounds on the site are drowned out by the sound of the crane truck. I also see cars and bicyclists heading into Fagersgatan from the south as a shortcut to Ystadsgatan.

When I returned to the testbed at 9:00 a.m., the workers with the crane truck had left. I became more aware of the ventilation from the buildings to the east, as well as the increased traffic on Lantmannagatan.

January



Culture, housing & public spaces

In January, the focus was on including culture in urban environments and create integration between creative artists and inhabitants in the city.



Connect the culture in Sofielund

Cultural production vs consumption

As the research continued, the knowledge of the importance to include cultural production in urban environments grew.

Possible development areas in Sofielund were identified



Sketching on development strategies and design principles.

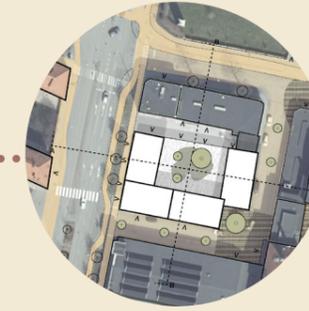
The toolbox has been developed in parallel with knowledge from the research.



Development of housing, culture and public spaces in Sofielund
Working with the flexibility of spaces

The first design proposal was a development plan over the whole Sofielund district.

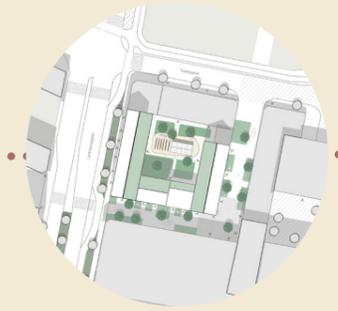
The main focus was on the flexibility of production premises and how housing can be integrated into the industrial area of Sofielund.



Development of housing, culture and public spaces in Sofielund

The possibility to combine housing with cultural production in Sofielund was investigated.

Housing was proposed in areas with lower sound levels and studios for cultural production was proposed in noise polluted areas.



Cultural production, housing & sound

Testbed Kv. Intäkten

In order to investigate how to make space for cultural production in combination with housing, the site for the field study was limited to Kv. Intäkten in the industrial area of Sofielund.

May

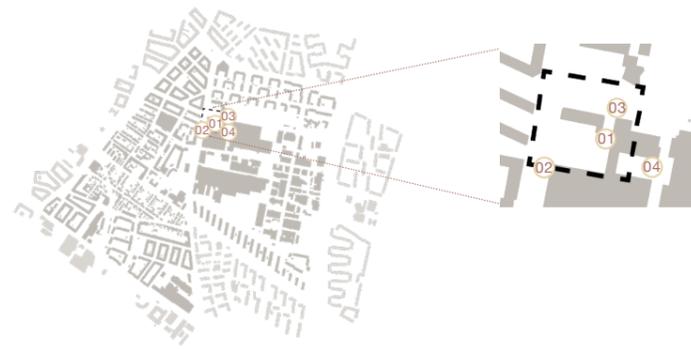
05

Test bed
Kv. Intäkten

Design process

The result of the design process is presented in this chapter. The toolbox is investigated at the test bed Kv. Intäkten. The design proposal presented in this thesis is an example of how it is possible to use the toolbox.

The test bed Kv. Intäkten, Sofielund



01

Existing view from west. The building called Saturnus, on the right-hand side, has a historical cultural value. It is a former Soda fabric and are today unused. The buildings backside is facing a car parking.



03

In the corner Ystadgatan and Fagersgatan, a pool bar with outdoor seating is located. This increases the social interaction in the existing public space



02

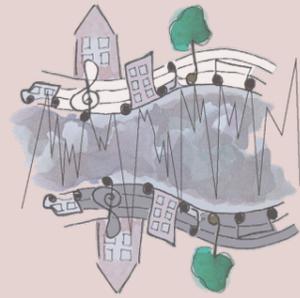
Existing view from south. The Saturnus building and the car park are now in the front. Lantmannagatan is on the left-hand side and Fagersgatan to the right. The brick buildings framing the car park are facilitated with a Sports club, School and medical center.



04

This public space is in Kv. Kampen, the block located next to Kv. Intäkten. The space has a potential to be developed into a square for social interaction. The space is today framed by buildings which facilities small business, a cultural association, book club, school and a medical center.

Design interventions according to the toolbox



SOUND



Building structure

The roofs of the building structure are designed in consideration of the sound analysis. The façade has a variation of material, and the ground floors has green walls to increase pleasant sound and decrease noise pollution. The functions in the building are placed with the sound environment in mind.



Green structure

Green structures are integrated into the spatial spaces. Where the existing hard surface is not needed it is replaced with a soft surface.



Noise compensation

To compensate for the noisy side of Lantmannagatan and Fagersgatan, the courtyard is designed to reduce the sound levels.



Exposure vs Calmness

The public space is exposed to higher sound than the courtyard, which is designed as a calm space.



COOPERATION



Active ground floors

The two first floors of the block structure are designed for cultural activities and social integration. On the ground floor are premises for cultural production and commercial activities combined. The second floor are integrated with premises for cultural production.



Common spaces

The common spaces are designed for social interaction. The entries, the courtyard and other semiprivate spaces in the house are shared by residents and creative industries.



Diversity of spaces

A diversity of spaces in the housing and in the public space are proposed. Those spaces are programmed with different functions in order to offer a variety of activities for residents, the creative industry and visitors.



Infrastructure

The infrastructure network surrounding Kv. Intäkten are redesigned in order to lower the existing noise pollution from Lantmannagatan. Fagersgatan, which surrounds the block on the east and south sides, is redesigned from a street with priority for cars to a shared street of pedestrian priority. The parking space which is existing on the test bed today has been removed in order to develop the housing. The design proposal encourages residents, visitors and cultural industries to use more sustainable transportation alternatives.

Ystadsgatan will continue to serve as a connection between Sofielund industrial area to Malmö city center for cars and as a connection between Rosengård and Malmö C for bicycles and pedestrians. Lantmannagatan is the main traffic node that links to Nobeltorget in the north and Mobilia in the south and stays the same. The bus stop is 50 meters away from Kv. Intäkten.

Green structure

The green structure in Kv. Intäkten's public spaces is incorporated into the existing surrounding green structure. This contributes to a green network, which increases pleasant sound, such as the sound of leaves and birds in the trees. The soft surface of greenery in the street and greenery on façades and roofs decreases the noise pollution and contributes to an interesting and varied environment for people. Designing with green structure contributes to an ecological sustainability and lower sound levels, which increases the qualitative living environment.



Building height

The building heights in Kv. Intäkten are set in relation to the existing heights in the surrounding area. In order to ensure a good sun access in the courtyard, the height of the buildings in the block structure varies. The existing building, Saturnus, which is incorporated into the proposed block structure remain with the existing 1-2 floors. The building along Lantmannagatan is the highest, with 5 floors. To ensure sun access at Fagersgatan and create a relation to the existing buildings, the structure is varying with 2-4 floors.

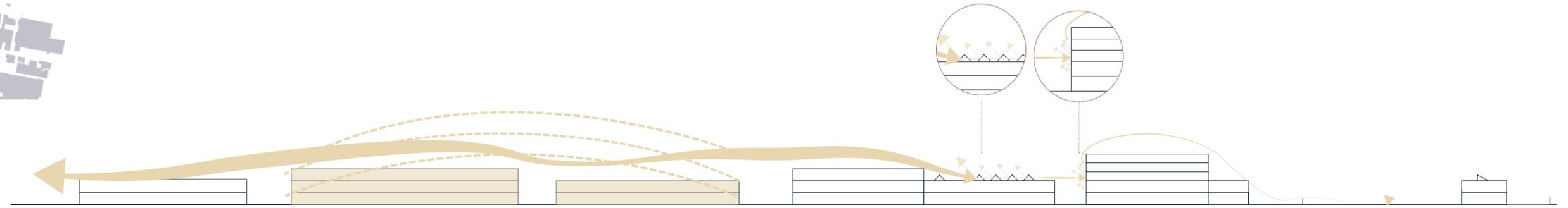


Culture

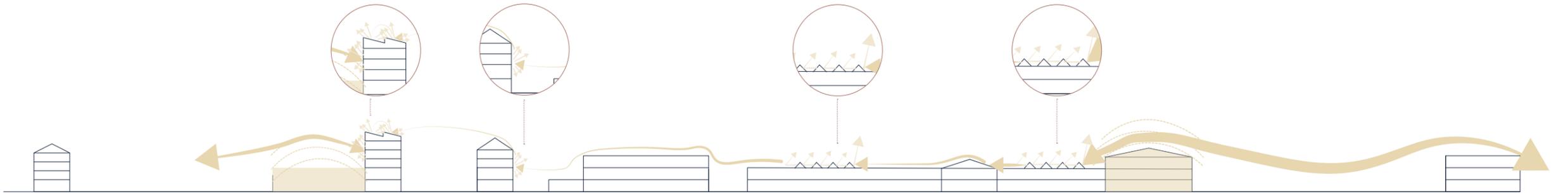
In order to connect to existing cultural activities in the surrounding neighborhood, premises for cultural production and commercial activities are developed in Kv. Intäkten. This development contributes to the growth of the cultural hub in Sofielund. The public and semipublic spaces in Kv. Intäkten increases social interaction between creative industries, residents, and visitors. The cultural activities and the creative industry in Kv. Intäkten and in the surrounded neighborhood also contributes to an economical sustainability since the ongoing cultural activities attracts people.



section A-A



section B-B



Sound

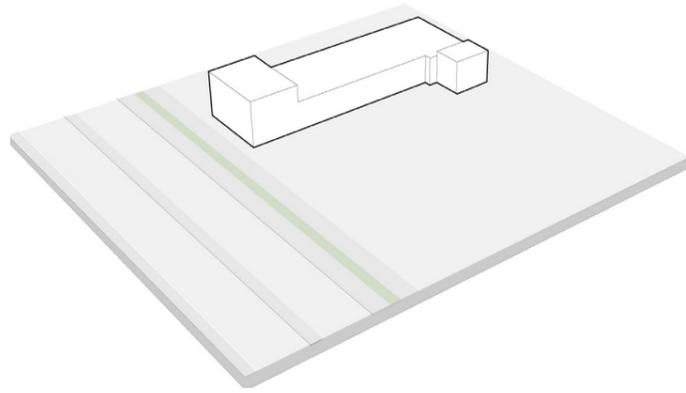
The main sound sources in section A-A are from the Pågens industry and communication infrastructure in the south. Buildings with flat roofs and smooth surfaces are located between Pågen and Kv. Intäkten. As a result, the new building facing Pågen in Kv. Intäkten is designed with sawtoothed roofs with green beds and variations in the facade structure to reflect and absorb sound energy.

The main sound sources in section B-B are from Lantmannagatan in the west and industries in the east. Existing buildings with sawtooth roofs, which reflects a large amount of sound energy, are located between Kv. Intäkten and the

industries. This implies that the sound is low on the east side of Kv. Intäkten. Unpleasant sound from the car traffic is not reflected or shielded at Lantmannagatan. As a result, the new building in Kv. Intäkten facing west is designed with sawtooth roofs with green beds and a variation in the facade structure and material with green walls.

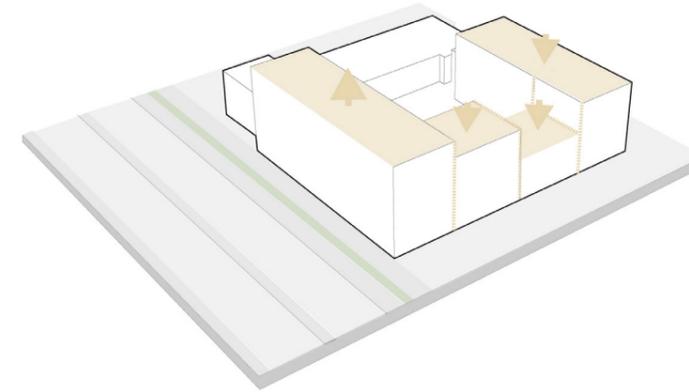
The acoustic design in the outdoor environment contributes to a qualitative living environment for residents living in the housing and for people frequent in the public spaces.

The typology



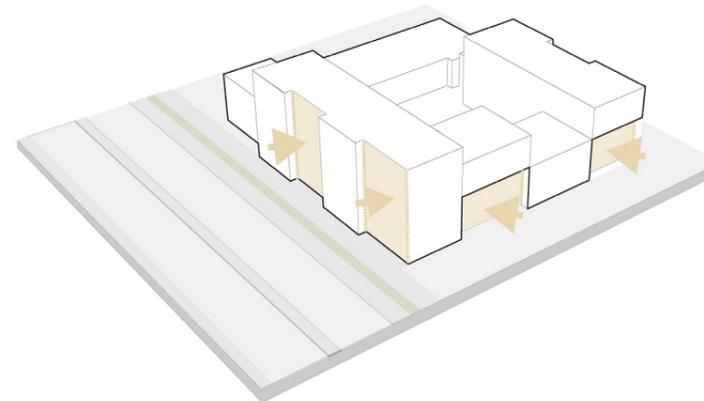
Existing ground layer

The existing structure at the test bed is a former industrial building constructed in 1940. The building has a historical cultural significance. The existing building is preserved, being incorporated into the proposed block structure. The reason for this is the building's ability to provide a cultural space for a lower rent and to preserve the identity of the area.



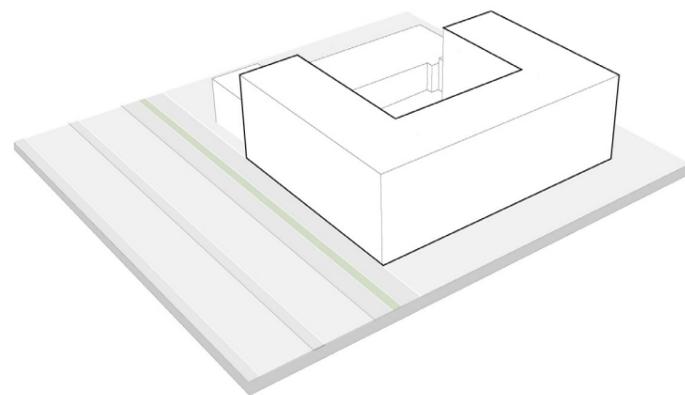
Variation in height

To create a qualitative living environment for the residents and the cultural industries working in the area, the housing is designed with a variation in height to ensure good sun access at the courtyard.



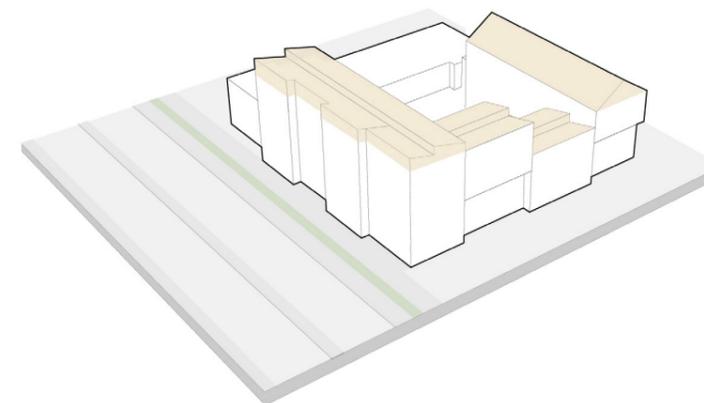
variation in the façade

To create a diversity in the public spaces and to reflect the high amount of sound from the public spaces, there is a variation in the façade design. The surfaces which are pushed inwards creates intimate spaces, where seating can be added in order to increase social interaction. It also contributes to shelter during rainy days.



Closed block structure

closed block structure
To reduce the existing noise pollution from Lantmannagatan and Pågens industries, and to ensure the possibility to allow a higher amount of sound at Fagersgatan the block is designed with a closed structure. The closed block structure contributes to reduced sound levels in the courtyard.



Roof design

The roofs on the west and south buildings in the block are designed with sawtooth roofs to reduce noise pollution from Lantmannagatan and Pågens industry. On the east side of the block structure, the roof is designed with a pitched roof, since there is a lower sound level on this side of Fagersgatan.



Diagram showing the green structure and variation of façade material

Design with green structure

In line with the design principle, green structure, the greenery has been integrated both horizontal and vertical in the design. The ground surface at Fagersgatan is redesigned with a variation of asphalt and greenery. The street is narrowed down by integrating green spaces on the sides of the street. On a vertical level, greenery is integrated by green walls, to lower the sound levels. This contributes to a qualitative living environment, increases biodiversity and creates a diversity of spaces. The green walls continue on the second floor of the housing as well. Continuing on the vertical level of greenery, the roofs are designed with greenery to lower the noise pollution and to increase biodiversity.

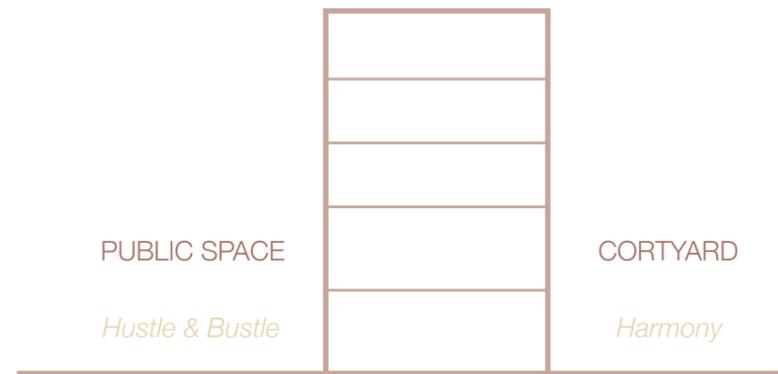
The green structure in Kv. Intäkten contributes to a sustainable and qualitative living environment for the residents in the neighborhood.

Material variation on the façade

The sensibility of façade material contributes to a pleasant sound environment and a spatial variation in the urban environment. The variation of brick colors defines the different housing in the block, making it easier to orientate in the urban environment.

The identity of façade design in the neighborhood are brick buildings. Therefore, the facades in the new block, facing Fagergatan and Lantmannagatan, are designed with bricks to associate to the identity of the industrial area of Sofielund. Since brick walls are hard surfaces, some brick blocks are extended from the façade to reflect sound from the public space. Façades facing the courtyard, are designed with wood, which is a softer material that can absorb and reflect sound.

The courtyard & the public space

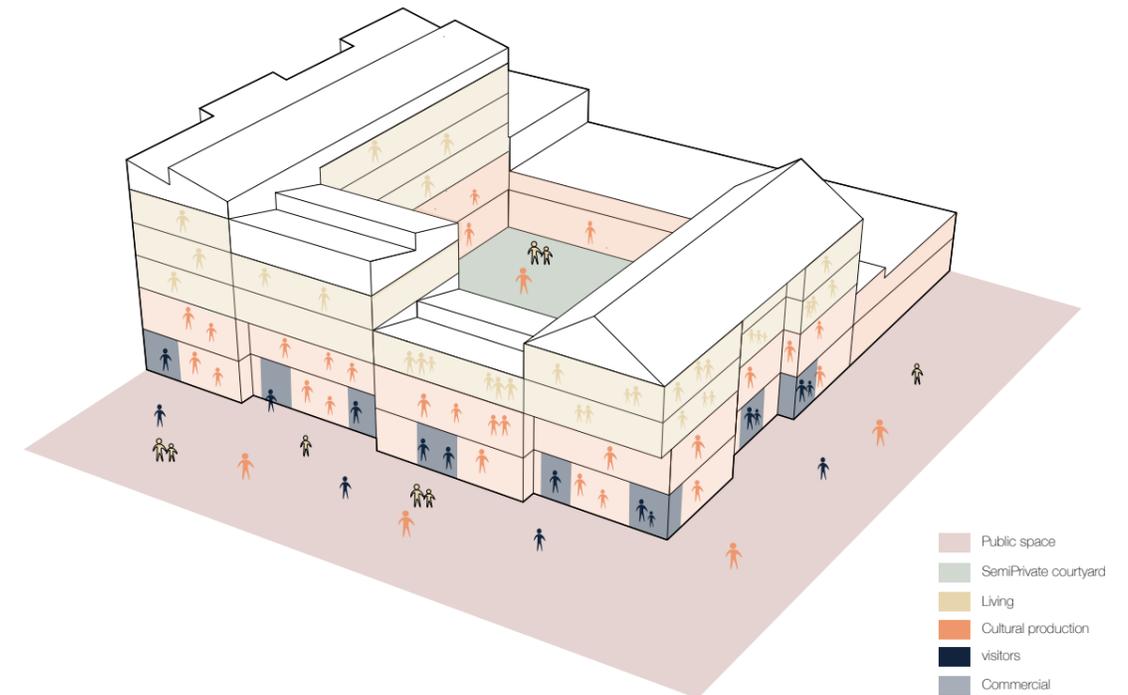


The sound differences between courtyard & public space

In line with the design principle, Exposure vs calm, the relation between the public space and the courtyard have been programed by a design concept, Hustle and bustle vs harmony. The concept implies that the public space is allowing more activities which can contribute to higher sound levels, and the courtyard is a semi-private space with a lower sound level, where it is possible to relax.

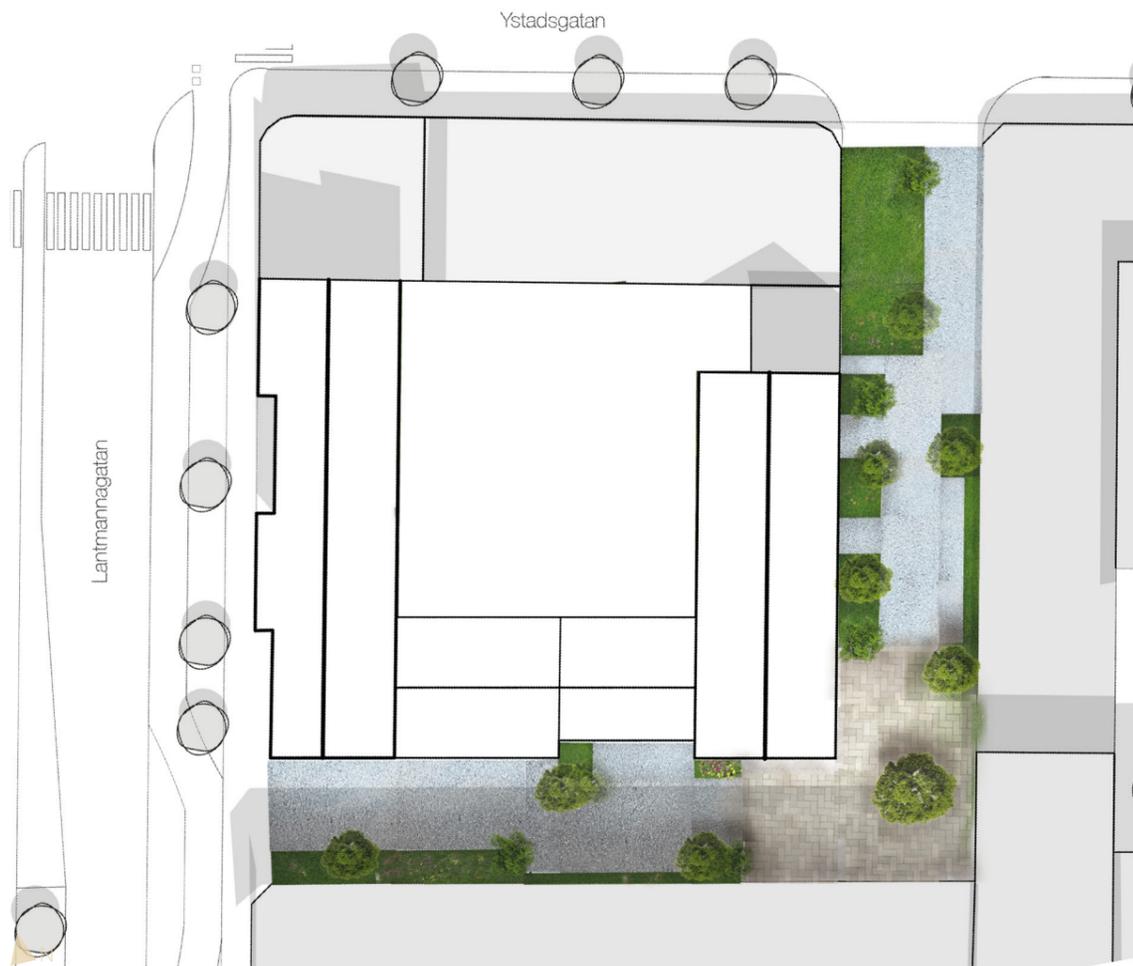
Functions in the housing are places strategically to ensure a courtyard which is calm. The ground floor, facing Lantmannagatan and Fagersgatan, is designed with premises for both cultural production and businesses. The commercial premises are facing the public space in order to attract and create an interaction between visitors and creative industries. Cultural activities can happen in the commercial premises or in the public space at Fagersgatan. Residents and creative artists access the common entry from

the ground floor level. From the common entry, it is also possible to access the courtyard, available for the residents and artists who have their studios in Kv. Intäkten. Premises for production are located on the second floor as well, those premises are suitable for creative production with to low sound levels, since the roof of those premises are the resident's floor on the third level. The third floor and up, depending on how many floors the housing has, is designed with private apartments for residents. The different functions in the block structure aim to create common spaces, ensure social interaction and to attract visitors to consume culture.



Functions of the outdoor and indoor spaces

The public space

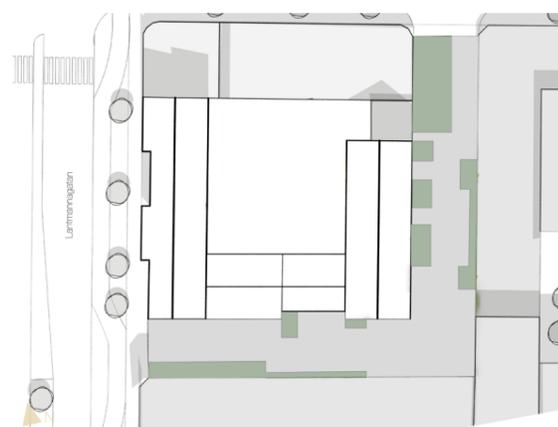


The public space - top view plan

The public space is designed to offer space where cultural activities can take place and where social interaction among visitors, cultural industries and residents can happen.

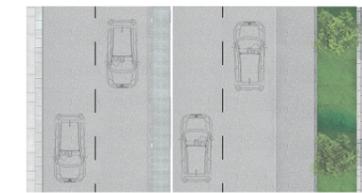
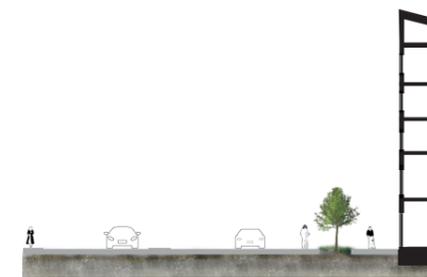
To include existing functions in the buildings surrounding the new block, a square is located between the existing and the new building structure. This creates a relation with the identity of the area and enables for interaction with the people moving through the entry to the existing school and sport club. The green spaces in the public space are possible to use for picnics or when there are cultural events in the street. The asphalt, which is a hard surface, are kept where it is needed to create access for cars and emergency vehicles.

The street sections on next pages are showing how the different street functions in Kv.Intäkten. Lantmannagatan and Ystadsgata are remaining as they exist today, while Fagersgatan are redesigned to a shared street with pedestrian priority and where cultural activities can occur.

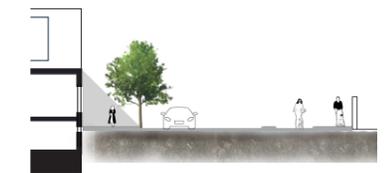


The different material and surfaces in the public spaces

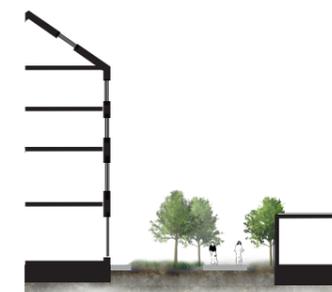
- green structure
- hard surface



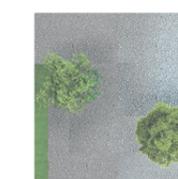
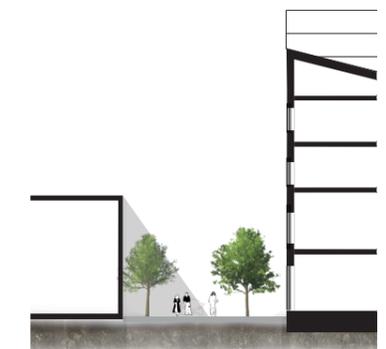
Lantmannagatan - communication road



Ystadsgatan - communication street



Fagersgatan East side - Shared street with pedestrian priority

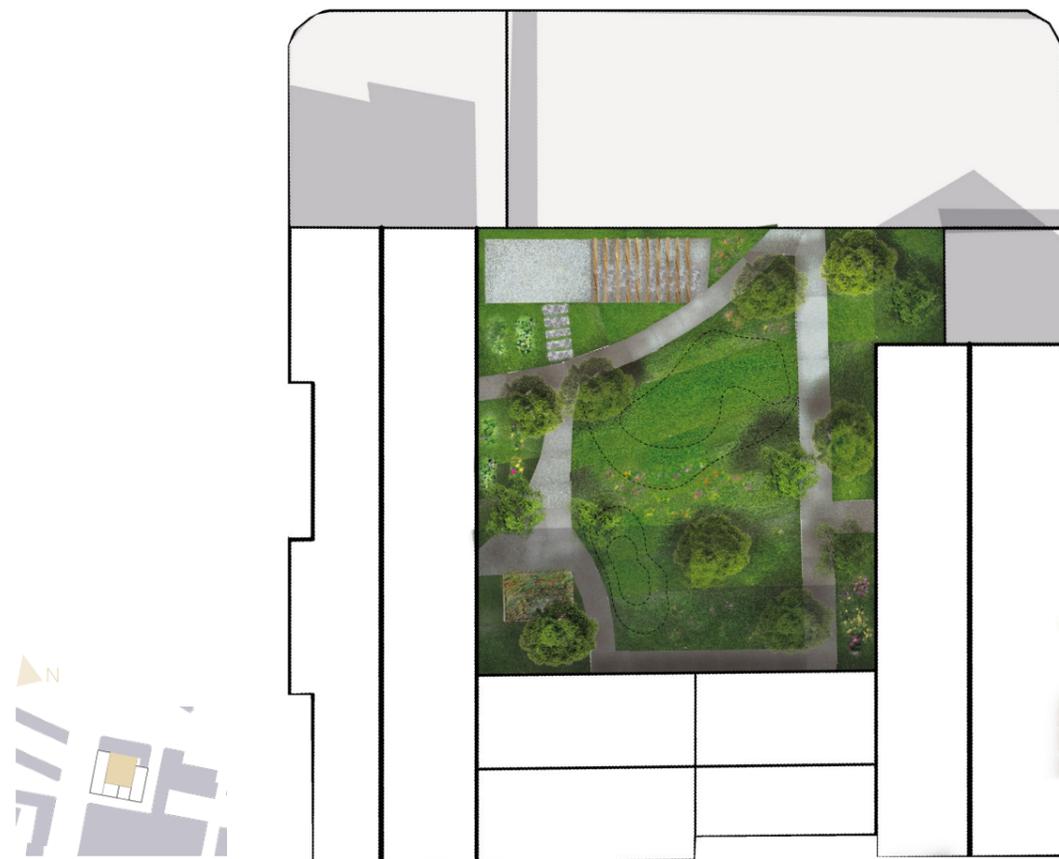


Fagersgatan South side - combined Shared street & square with pedestrian priority





The courtyard



The courtyard - top view plan

The courtyard is designed to offer a calm space for residents and cultural artists. The courtyard offers a diversity of spaces to have the possibility to relax, integrate with friends, play on the small hills, to grow their own food and have barbeques. There is a diversity of greenery as well, to enable for seasonal changes, high biodiversity and create a pleasant sound environment.

The surfaces in the courtyard are mostly designed with soft materials, being green elements or wood. The hard surface is the gravel on the paths linking to the entries and the existing building.

The sections on the next page, are showing the relation between the buildings and courtyard. Some apartments have balconies facing the courtyard, in order to have private outdoor spaces which is calm. The hills are dividing the courtyard into different spaces and are an accessible area for children to play safely. The hills are also lowering the sound coming from the surrounding environment.

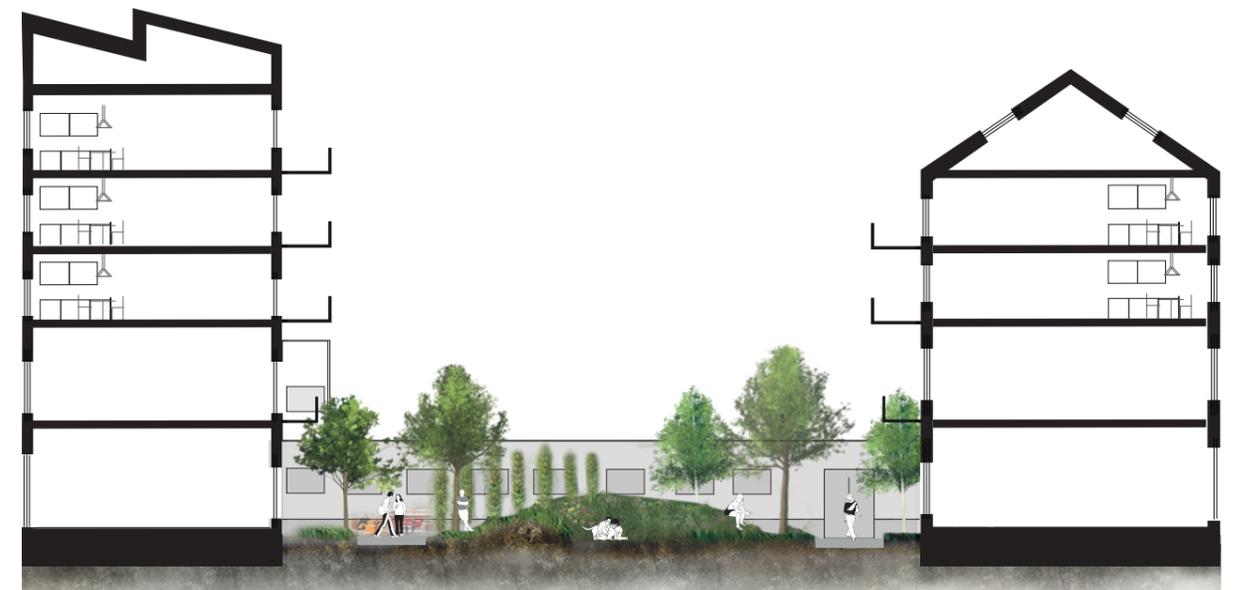


The different material and surfaces in the courtyard

- building
- green structure
- hard surface
- soft surface



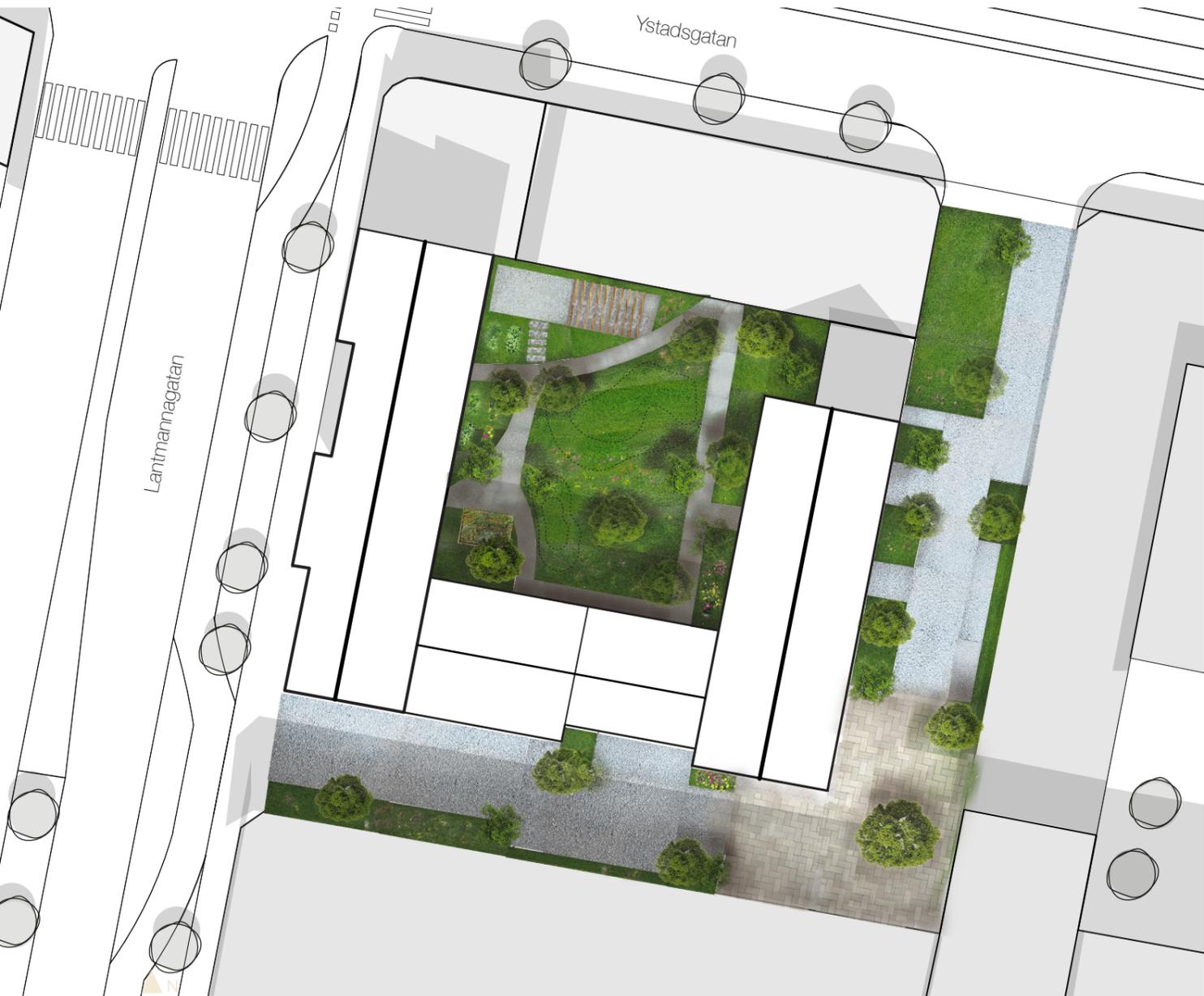
section A-A



section B-B



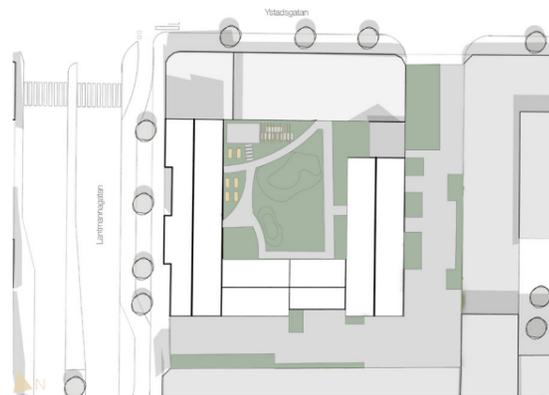
Summary of the top view plan



The public space & courtyard - top view plan

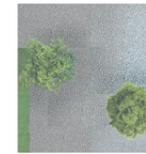
The top view plan is showing the relation between the public space and the courtyard of Kv. Intäkten.

The diagram to the right, shows the density of soft and hard surfaces in the site. The courtyard is integrated with a higher density of soft surfaces compared to the public space, because of the concept hustle & bustle vs harmony.

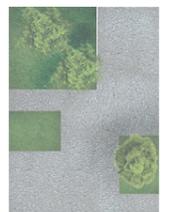
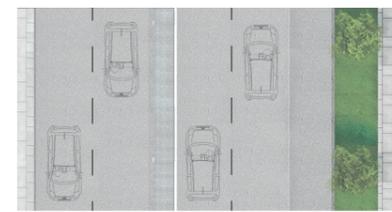
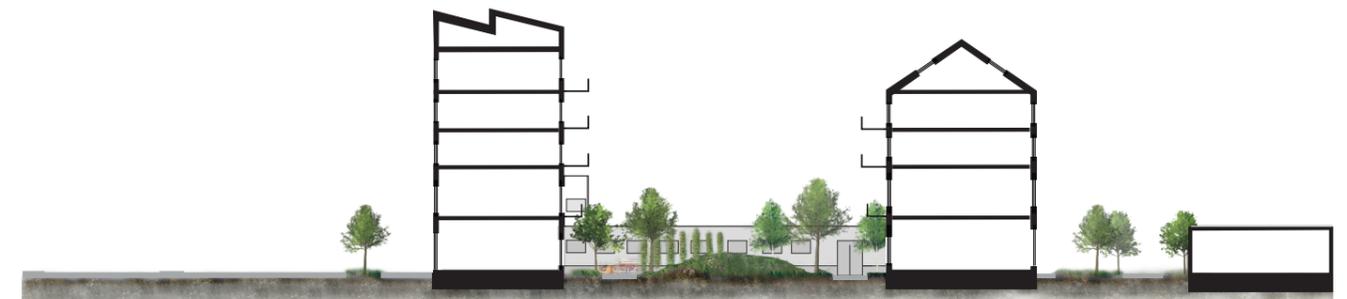


The different material and surfaces in the public space and courtyard

- building
- green structure
- hard surface
- soft surface



section A-A



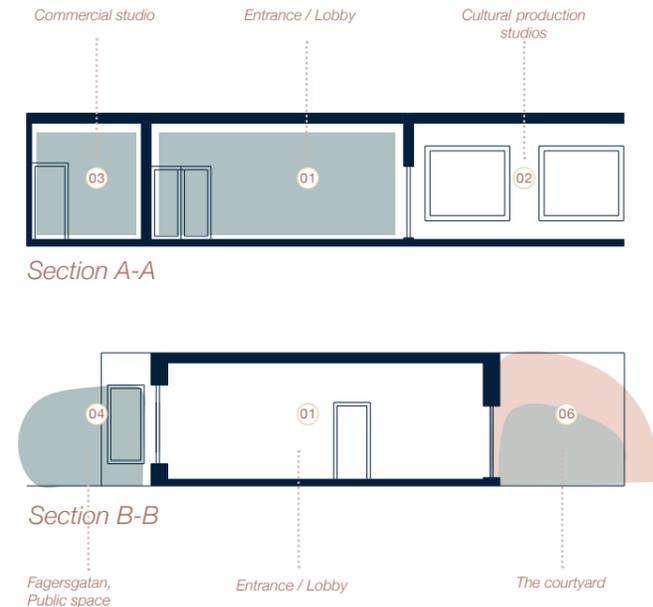
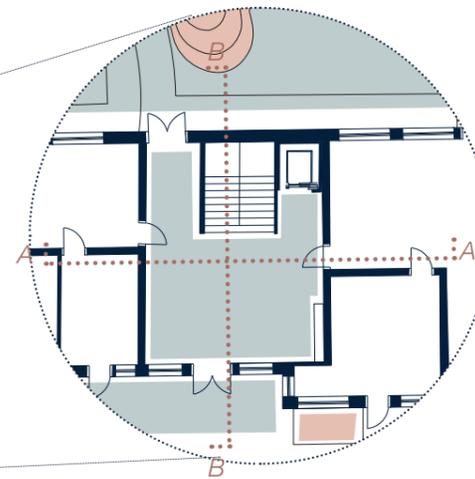
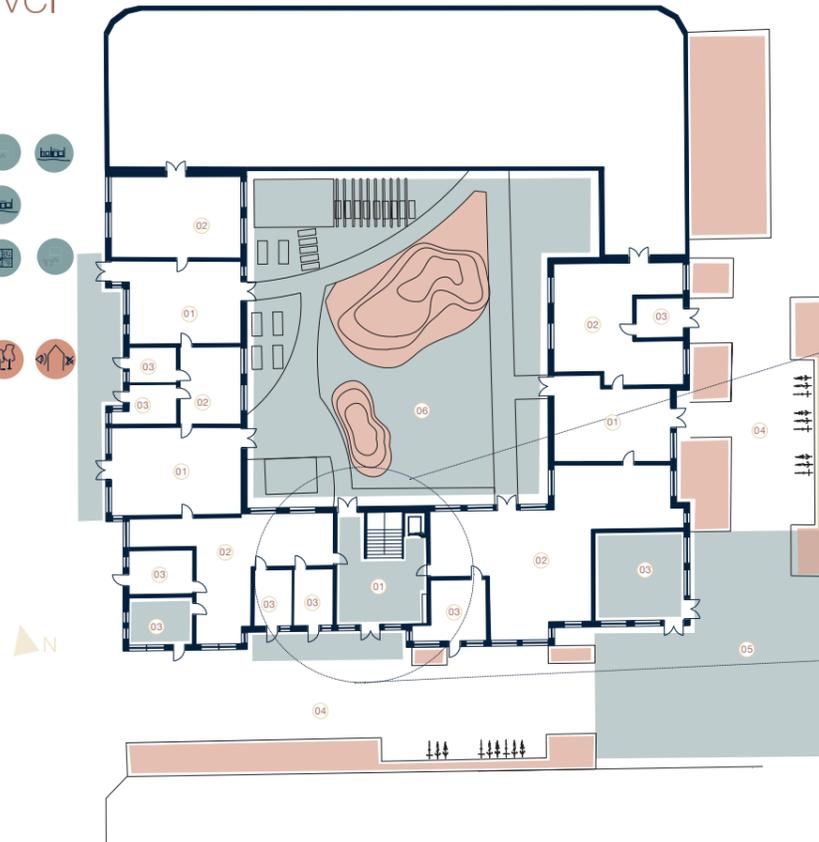
section B-B



Spatial investigation of the design principles

Ground floor level

- 01 Entrance/ lobby
- 02 Premises for cultural production
- 03 Commercial premises
- 04 Public space
- 05 Square
- 06 Courtyard



Entrance/ lobby

- Common spaces

The lobby at the ground floor has the main entrance facing the public space at Fagersgatan or Lantmannagatan. This entrance is for the residents living in the housing and for the creative industry having their production studios, on the first or second floor, in the house. From the lobby it is possible to reach the cultural production premises, the apartments and the courtyard. The lobby is the *common space* in the housing and are mainly for the people situating in the house, either for living or production. The lobby, as a *common space*, enables for social interaction between the people since they are sharing entrance, stairs and elevator to other floors.

Premises for cultural production

- Common spaces
- Active ground floors

The cultural production situating at ground floor level is possible to reach through the Lobby. The premises for cultural production are *common*

spaces for all creative industries. The production spaces are facing both the public space and the courtyard, which contributes to an *active ground floor*. The activity on the ground floor at Lantmannagatan and Fagersgatan contribute to meetings among people and safety. It also invites the people in the public space to observe what is happening in the production spaces.

Commercial premises

- Common spaces
- Active ground floors

If the people in the public space becomes interested in the products the creative industry produces, it is possible to consume the culture in commercial premises located on ground floor level at Fagersgatan and Lantmannagatan. The location of the commercial premises contributes to the *active ground floor*. It is in the commercial premises where the creative industry can present their cultural products for the consumers. The commercial premises are *common spaces* for visitors and the creative industry, contributing to social interaction.

Public space

- Green structure
- Diversity of spaces
- Exposure vs Calmness
- Common spaces

Fagersgatan is redesigned into a *common space* for residents, creative industry, visitors, pedestrians, bicyclists and cars. It is here the experiences, interactions and movement happen which contributes to *exposure* of higher sound levels. To increase the pleasant sound, the street is integrated with *green structure*. The greenery also contributes to a *diversity of spaces* due to the trees, green lawns on the ground surface and the green walls on the building façade.

Square

- Common spaces
- Exposure vs Calmness

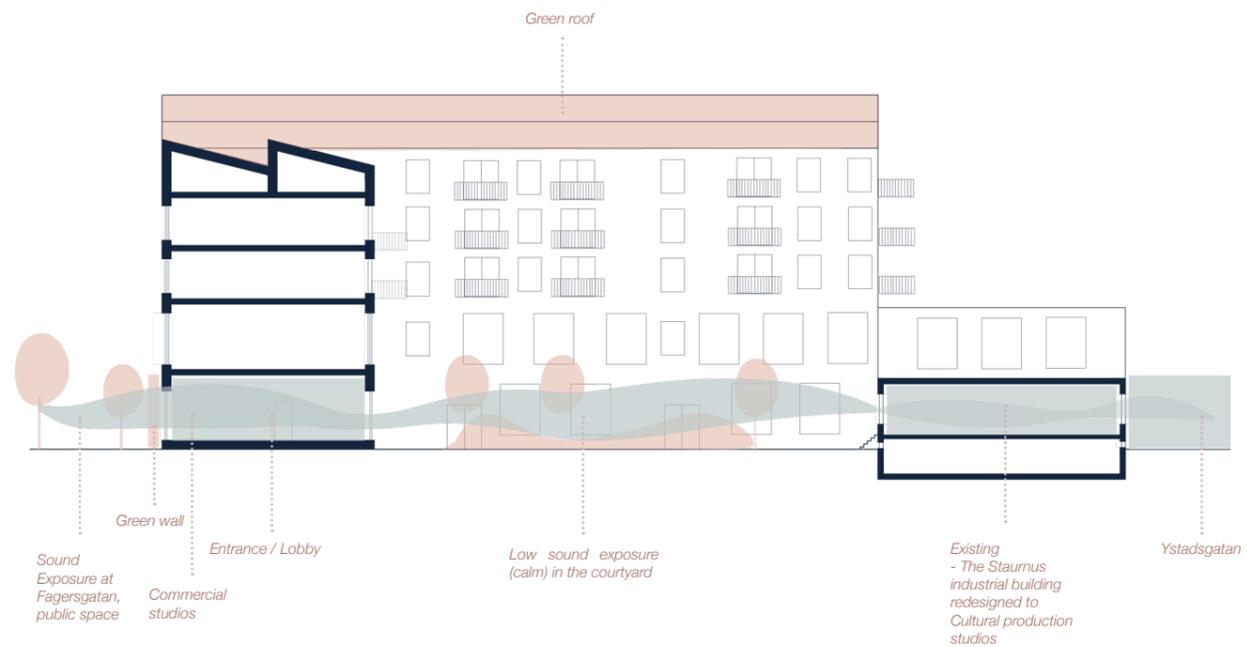
The square is connecting the existing buildings and facilities with the new facilities in Kv.Intäkten into a *common space*. The entries on the new and existing buildings are facing the square and creates social interaction among people who are moving between the square and the entries. The square is also possible to use for cultural activities.

Courtyard

- Exposure vs Calmness
- Common spaces
- Green structure
- Diversity of spaces
- Noise compensation

It is possible to reach the courtyard from the lobby. The courtyard is a *common space* for the residents and creative industries. Difference from the shared street is the courtyard a *calm* space. The courtyard is designed with *green structure* to reduce the noise pollution. The variation of greenery and the programming of the courtyard contributes to a *diversity of spaces*, possible to choose if one want to interact with people or be by oneself. The closed courtyard contributes to reduced sound, to compensate for the higher amount of sound on Lantmannagatan and Fagersgatan.

Ground floor level



Horizontal movement through the block at ground floor level

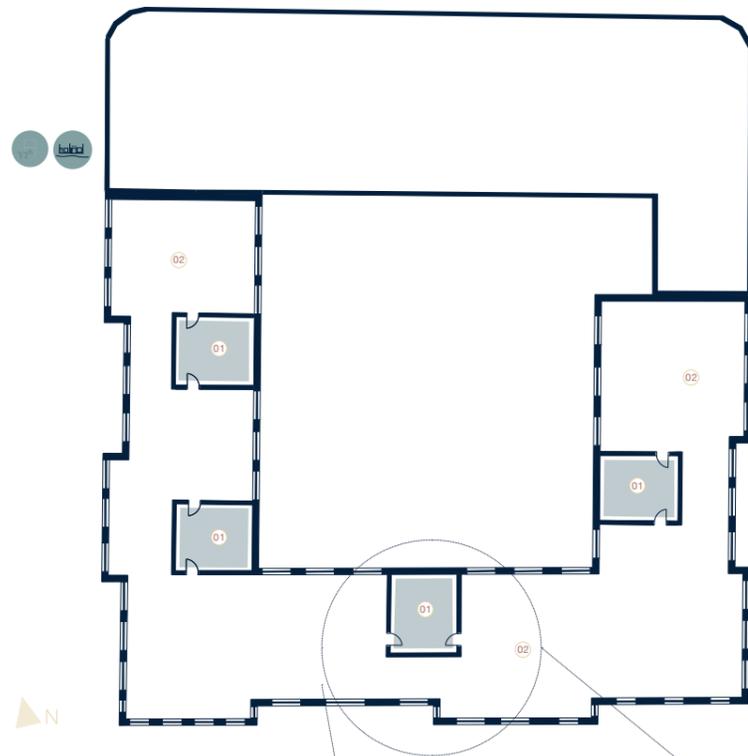


In the public space at Fagersgatan it is possible for all people to experience and express culture. Fagersgatan is shared by pedestrians, cars and bicyclists. Visitors can move between the public space and the commercial premises on the ground floor of the housing.

Residents and creative artists enter the lobby of the housing from the public space. From the lobby at the ground floor, it is possible to access the semi-private courtyard. From the courtyard, creative artists can access production premises in the existing building, Saturnus. It is also possible to access those premises from Ystadsgatan.

2nd floor

- 01 Entrance/ lobby
- 02 Premises for cultural production



Entrance/ lobby

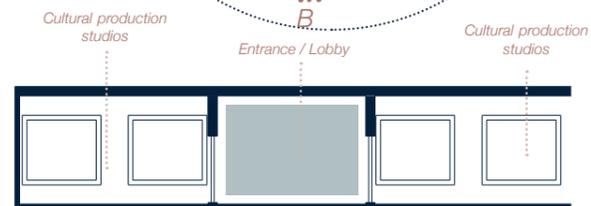
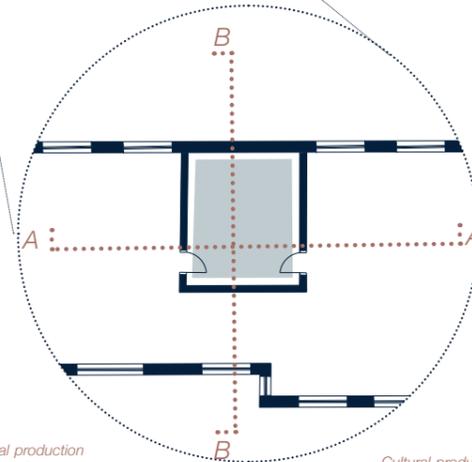
- Common spaces

The entrances on the second floor leads to the cultural production premises. The entrances are reachable from the lobby. The lobby are a *common space* for residents and creative industries who are having their studios in the premises for production on the second floor.

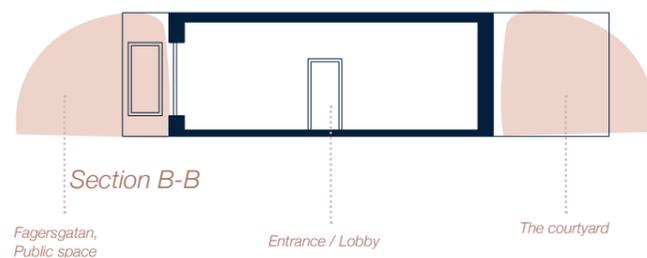
Premises for cultural production

- Common spaces
- Active ground floors

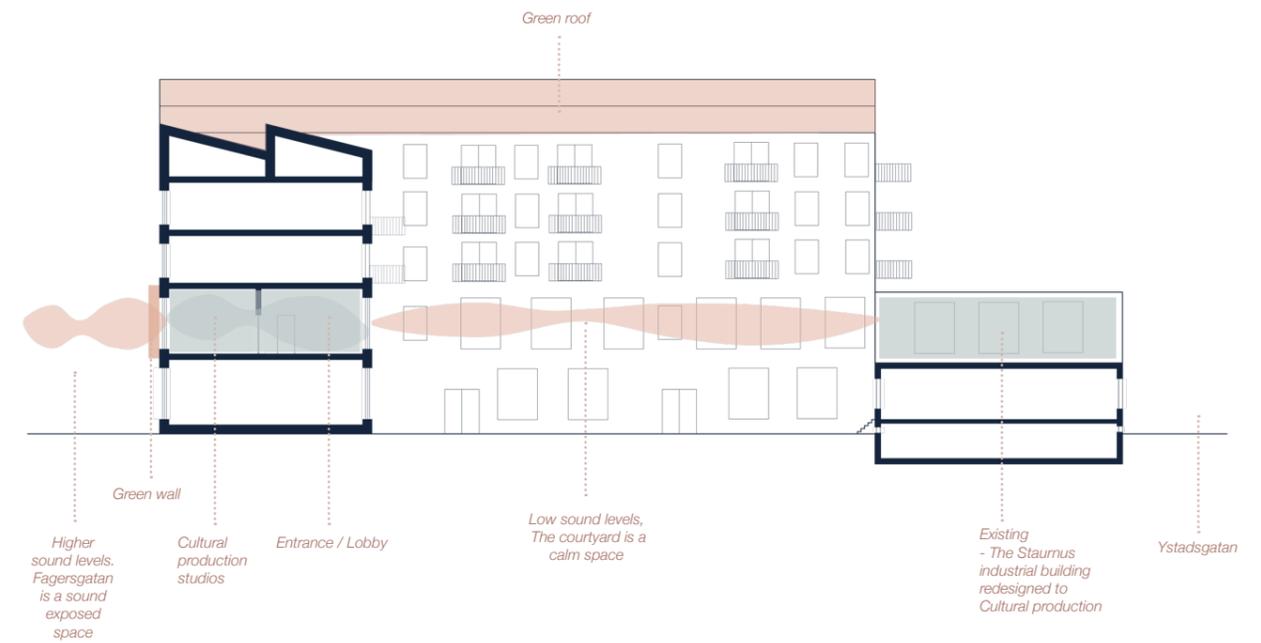
Additional premises for cultural production are located on the second floor to contribute *activity* in the public space, it also contributes to curiosity in the cityscape when *activities* are happening above the ground floor.



Section A-A



Section B-B



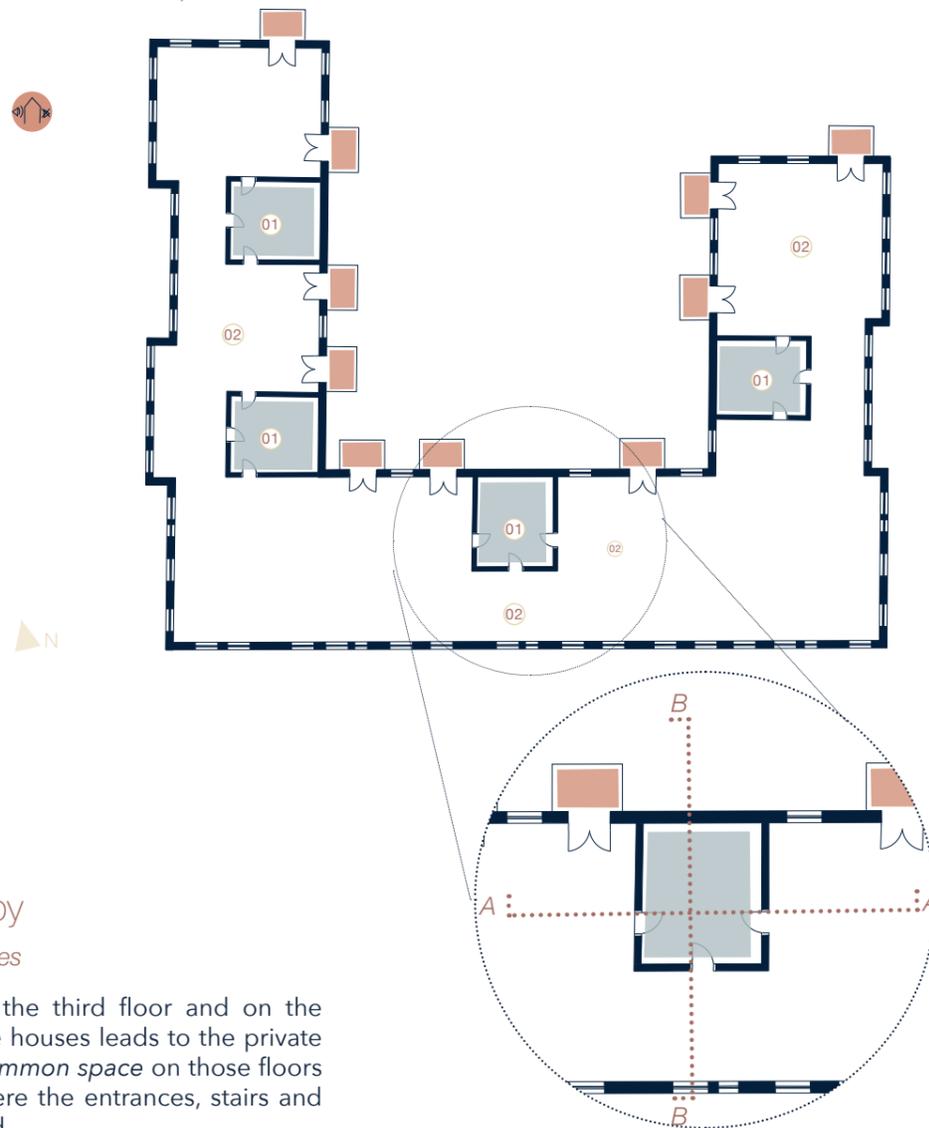
Horizontal movement through the block at 2nd floor

- Building structure

On the 2nd floor are premises for cultural production located. In the public space, the façade on the 2nd floor is designed with green walls. The social interaction, on the 2nd floor, occurs inside the building between creative artists and residents. In the building can creative industries reaches the 2nd floor through the stairs or elevator, located in the lobby shared with residents. The creative artists can observe the activities in the public space or in the courtyard through the large windows. The space on the 2nd floor is designed only for cultural production. This makes it possible for cultural artists to share experience and knowledge between each other.

3rd floor & further up

- 01 Entrance/ lobby
- 02 Apartments



Entrance/ lobby

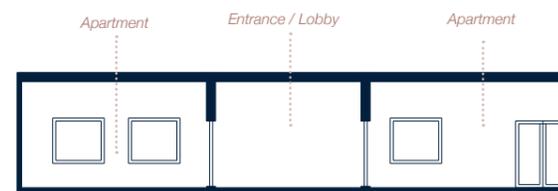
- Common spaces

The entrances on the third floor and on the further floors in the houses leads to the private apartments. The *common space* on those floors is in the lobby where the entrances, stairs and elevator are located.

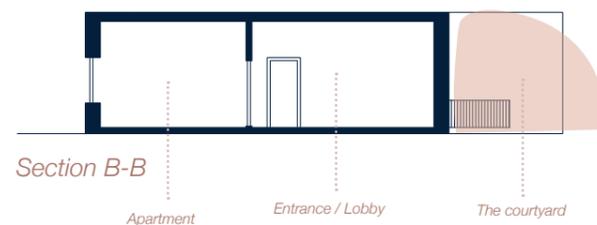
Apartments

- Exposure vs Calmness
- Noise compensation

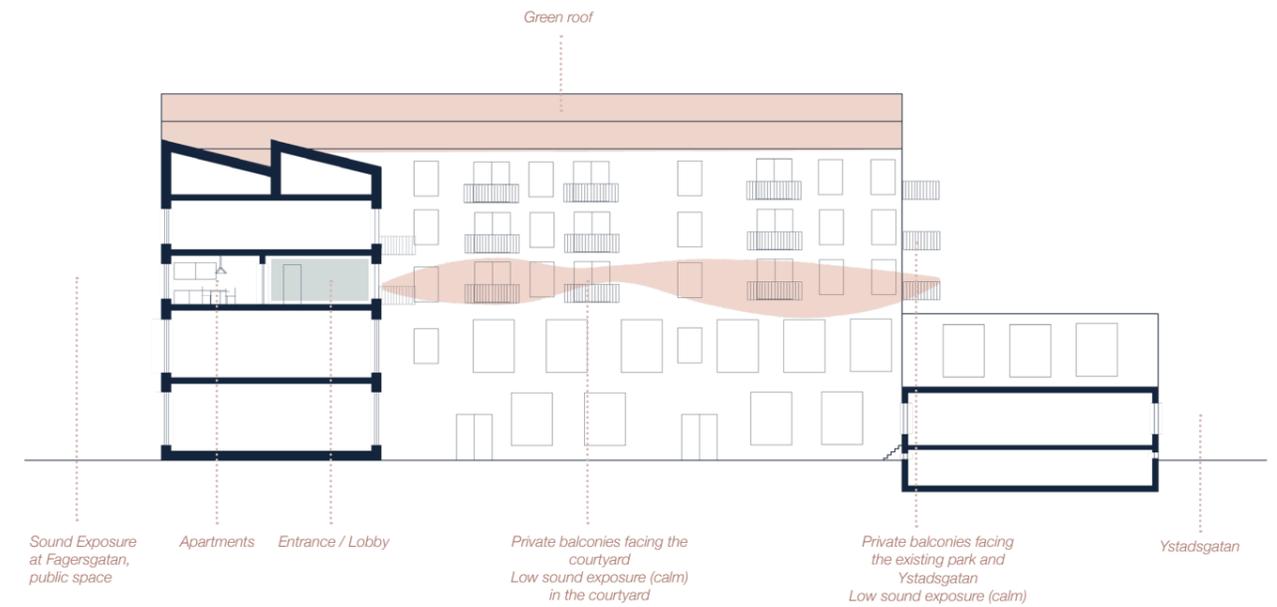
The apartments are located on the third floor and on further floors in the housing. Some apartments have balconies facing the courtyard, this contributes to *calm* private outdoor spaces.



Section A-A



Section B-B



Horizontal movement through the block at 3rd floor

- Building structure

The 3rd floor is possible to reach with the stairs or the elevator in the lobby. Main entries to the apartments are located at Lantmannagatan and Fagersgatan. In the lobby at the 3rd floor and further up it is possible to interact with residents in the housing. Private front doors to the apartments are reached from the lobby. Some apartments have private balconies facing the courtyard, from there it is possible to observe the activity in the courtyard.

06

Concluding discussion

Is it possible to combine housing with cultural production?

To respond to the research question, how it is possible to ensure space for cultural production and still ensure a mixed and sustainable city development including housing, I argue that it is possible to combine cultural production with housing when developing urban environments. However, it is a complex task and how cultural production will be combined with housing will vary depending on the context at the development site. The toolbox is a collection of the most important factors to consider when combining cultural production and housing in urban environments. Since the toolbox is intended to be used in different contexts, it is critical to consider the existing conditions of the site and its surroundings. The context influences how cultural production and housing can be combined. The context at the test bed of Kv. Intäkten in Sofielund is limited to one block and it has been a challenge to integrate the block with housing and cultural production in the same building. Therefore, it has been important to map the existing sound source that is contributing to increased sound levels in Sofielund and to know where the sound levels will increase when Kv. Intäkten are completed and creative industries and residents have moved in. A further working step in this thesis can be to note the sound level and the kind of sound generated by the

production when combining cultural production with housing in urban development. By analyzing the expected cultural activity and engage in dialogues with creative industries early in the planning process, it is possible to get an understanding of their needs and requirements for a sustainable workspace. Depending on the different kind of workspace the creative industry requires, the production contributes to different sound levels. Therefore, a further working step can be to define what type of acoustic sound the production requires, as well as the decibel level the production emits, and allocate spaces respectively.

It is also required to be aware about who one is planning for when combining cultural production with housing in urban environments. To ensure space for cultural production combined with housing it is important to understand the needs for a qualitative living environment for both residents and creative industries. At Kv. Intäkten, residents and creative industries are sharing spaces in the housing, and it is difficult to block all sound coming from the production, even if strategies for a pleasant sound environment are implemented in the design. The aim has been to design an environment where all residents enjoy living in Kv. Intäkten, but I argue that

some groups of people will enjoy living in this environment more than others. My reflection is that the housing in Kv. Intäkten are most suitable for students, younger grownups who want to live in urban environments or creative people who want to live close to production spaces and in inspiring environments. If the toolbox is used in a bigger development area compared to Kv. Intäkten, I think it is possible to include a bigger diversity of people living in the area. In a development site of a bigger scale, it is easier to make space for cultural production by create a diversity of spaces where housing is combined with cultural production in the urban environment. Housing and cultural production can for example be situated in separate building structures where the social interaction happens in public or semi-public spaces instead.

I did not consider the economic perspective during the design process in Kv. Intäkten, since the emphasis has been on the potential to make space for cultural production and combine it with housing in urban environments. However, I have reflected over the economic perspective after finalizing the design proposal. Designing Kv. Intäkten in the context of current and elevated noise pollution requires a variety of sound strategies. The most effective strategies

for reducing sound in the outdoor environment are green elements, irregular surfaces, and reflecting shields, which can be accomplished by thoughtful design and material choices in the architectural design process. The economic aspect for elements that reduces sound in the indoor environment are outside my knowledge, but to ensure a qualitative living environment indoors it is important to work with different kind of materials that absorbs and reduces the sound.

Since the design context in this thesis requires several functions in a smaller area, it is important to work with the sound source on a continuous basis to ensure a qualitative living environment. The sound design elements appear to enhance the project's economic cost, resulting in high rents for cultural production. Long term, where culture is given production space in a urban environment, cultural consumption can be increased, and creative industries can create, exhibit, and sell their cultural artworks. In this scenario, the creative industry's economic condition will potentially improve, and more creative industries will be able to open studios in newly built production premises. Kv. Intäkten's architecture incorporates commercial premises alongside premises for production, allowing the creative industry to exhibit and sell their work.

The spatial investigation of the design principles

The spatial investigation of the design principles increased my understanding of how people will move in the different spaces of Kv. Intäkten. The public space contributes to social interaction between inhabitants living in Malmö municipality, residents, tourists and creative industries. The public space will increase the safety and attractivity in Sofielund district through the cultural activities happening in Kv. Intäkten. The contribution to a qualitative living environment is also because of the design principle, *active ground floor*, that contributes to accessibility to consumption premises and cultural production premises.

The spatial investigation of the 2nd floor contributed to the understanding of the importance of flexible premises. Some common spaces on the 2nd floor could be developed with an accessibility for both residents and creative industries, in order to increase the social interaction further. An alternative would be to add coworking spaces for residents to rent. If there are students living in the apartments, some premises on the 2nd floor can be available for study.

To work with an architectural scale as an urban planner

Since my bachelor's degree is in spatial planning and my master's degree is in sustainable urban design, designing housing architecture at a detailed level has been a challenge. Working with housing architecture has inspired me, and it has been an enjoyable experience with it. Throughout the process, I learned a lot about acoustic architecture, the importance of culture in the city, how the design of the roof scape affects the sound environment, and how important it is to work with landscape architecture to improve the positive sound qualities. I will also emphasize the importance of including cultural operators in the dialogue process in order to understand their needs and the neighborhood's identity. The experience I gained at the housing architectural level has and will continue to help me understand all scales in the planning process.

During my master's thesis, I realized how many aspects can be taken into consideration when investigating how to make space for culture in a mixed and dense city. Throughout the process, I took several different paths, and the end result is one way to investigate how to make space for culture in a mixed and dense city.



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Interviews

Interviewee 1, Physical interview, 2021-02-12

Interviewee 2, Interview over phone call 2021-02-15

Interviewee 3, Interview over zoom, 2021-03-09

Pictures

Pictures where no source is mentioned is taken by the author, Matilda Alsterberg. Date 2021-02-12, 2021-03-16 & 2021-05-05.

Picture 1: The global goals for sustainable development (w.y). UN Sustainable Development Goals [illustration]. <https://www.sustainability.lu.se/research/what-sustainability> [2021-05-28]

Picture 2: Tobias Flygar (w.y). Sveriges miljömål [illustration]. <https://www.naturvardsverket.se/Miljoarbete-i-samhallet/Sveriges-miljomal/> [2021-05-28]

Picture 3: Unknown (1904). Grev Tage Thott (1852-1921), förste hovjägmästare [photography]. In Norsk Jæger- og Fisker-Forenings Tidsskrift. https://commons.wikimedia.org/wiki/File:Tage_Thott.png [2021-05-16]

Picture 4: Unknown (w.y) Sofielundsgården, södra fasaden, hörnan Lantmannagatan och Ystadsgatan [photography]. In Malmö Blickar. <https://www.malmblickar.se/wp-content/uploads/2017/04/Sofielundsgården-exteriör-Södra-fasaden-hörnan-Lantmannagatan-Ystadsgatan.-1953.jpg> [2021-05-16]

Picture 5: Malmö Stad (w.y). Bebyggelsen i Sofielund cirka 1900 [photography]. Sofielund <https://malmo.se/Uppleva-och-gora/Arkitektur-och-kulturarv/Malms-historia/Platser-och-byggnader/Stadsdelar-och-omraden/Sofielund.html> [2021-05-16]

Picture 6: Unknown (w.y) Rolfsgatan [photography]. In Sten Grönberg http://stengronberg.se/rolfs_gatan [2021-05-16]

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Maps

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