The background of the entire page is a light gray surface covered with numerous 3D geometric shapes, primarily rectangular blocks of varying sizes and orientations. These shapes are arranged in a way that creates a sense of depth and perspective, with some shapes appearing to be stacked or nested. The lighting is soft, casting gentle shadows that emphasize the three-dimensional nature of the objects.

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EXAMINER: NILS BJÖRLING | SUPERVISOR: IDA RÖSTLUND

CHALMERS SCHOOL OF ARCHITECTURE | DEPARTMENT OF ARCHITECTURE & CIVIL ENGINEERING

FOCUS ON SUBURBIA

A DESIGN PROJECT WHERE THE VILLA
SUBURBIA AND ITS PEOPLE PLAY A
ROLE IN SUSTAINABLE CHANGE



FOCUS ON SUBURBIA: A DESIGN PROJECT WHERE THE VILLA SUBURBIA
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INTRODUCTION

ABSTRACT

Villa suburbs are common sight in the modern city, this is also true to the Swedish urban fabric. There is great demand for these areas, high standard of living with comforts of large space, calm neighborhoods, and high level of privacy. Yet these neighborhoods are seldom in focus in the discussion of urban change, a rhetoric that these neighborhoods are already good and don't need change. They do like many other places bring bad qualities. Issues like inefficient land use, high consumption lifestyles, car dependency, segregation of socio-economic groups, and weak communities. Focus on the villa suburb can in fact contribute to the discourse of more sustainable cities.

This thesis brings ways to see how the Swedish villa suburbia can inhabit sustainable change through design. To add to the current physical environment in such a way sustainable changes can occur. It requires an understanding of why the villa suburbs are still increasingly attractive, to understand not only the issues but also the qualities of the villa suburb so that elements are sustained while bringing further qualities. The case of this thesis is the neighborhood of Solängen in the city of Mölndal. A study of the site and interviews with inhabitants and organizations have been done so the design is one with an understanding of the area according to locals. Together with theory a process occurs where research through design reflects in three design concepts that is applied to a block in the center of Solängen. The design concepts being densifying with restructuring of floor plans in villas, densifying with additions of new building units on property, placemaking by creating space for local community to meet, interact and share resources.

The result is a proposal that could bring opportunity of solving larger issues of suburbia. It can combat urban sprawl, bringing efficient land and resource use with densification and more sharing economy. Also combatting segregation and isolation with tighter communities and a diversity of new people through a diverse housing stock. The result can contribute to the discourse of the suburbs role towards a sustainable future.

Keywords: Villa suburb, Densifying, Placemaking, Diversity, Community

INTRODUCTION

ABOUT THE AUTHOR

I've chosen to combine my bachelor's in urban planning and urban design with a master in sustainable architecture and planning at Chalmers to reach a greater understanding of the physical environment around us at different scales and how we can make an impact for a sustainable future. Discussing and realizing ways to confront the villa suburban issues is the way to reach a more sustainable environment. My previous courses have not in itself touched the subject of villa suburbs, though a great deal of million program suburbs, I still find the question interesting and want to understand how life in the Swedish villa suburbs functions. I believe this thesis will be a way for me to merge my urban planning background and my newfound role in architectural design, this will be realized by working on researching on a more urban and city block scale and design on architectural building scale.

I have had a great fascination in understanding people and what they perceive as comfortable, attractive, and better living environments. My bachelor's thesis touched upon the subject of understanding how people interact with design in the public space. In this project I hope to understand why the villa suburbs are increasingly attractive, what draws people to these areas, how can design improve living and the way we interact with it while bringing sustainable changes. Especially important as villa suburbs are crucial in the Swedish urban fabric but seldom in focus for major urban change.

The term "Rurban" was unknown to me before autumn 2020 when the word appeared in the course Planning and Design for Sustainable Development in a Local Context. The question of the rurban and the transformation of the rurban was only briefly be mentioned but played a vital role in the course and future projects as well. I realized rurban the sustainable ways to bring positive change in a larger scale, to understand not only the detail of a building, but its affect and opportunities for the people it's supposed to inhabit.

Fig. 2 People using public space London, UK



Fig. 3 Villa development in Toronto, Canada



INTRODUCTION

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INTRODUCTION

BACKGROUND

Suburbia

Villa suburbs are common in Sweden, they have changed and been adapted to different ideas of a better living environment throughout the century. Most of the suburban single family housing stock was made post war in a time when having a large house, a large plot and function separation with larger distances to work, commercial etc. was intended. The car was central to this environment and an individual lifestyle was growing, social circles could now be elsewhere than the neighborhood (Ståhle 2008). These qualities are attractive to many, especially young couples and families as villas are continuously in demand, and property prices are rising. In larger cities even resulting in migration of families to neighboring suburbs leaving the more central areas with population of lower economic groups (Göteborgsposten 2019).

Unsustainable effects

The isolating qualities of the villa suburbs have increased segregation of economic groups and polarization in society of ideas and politics. Less social interaction is happening between different groups as they now live further away from each other (Boverket 2010). Much focus in the urban and architectural debate today has been in million program suburbs and how to reduce segregation in these neighborhoods and bring greener qualities (Ståhle 2008). But less so about villa suburbs which are also by default segregated and entails a less climate sustainable lifestyle with larger ecological footprint. Suburbia results in increasing number of car commuters with emissions, noise levels and traffic accidents. It also spreads the urban fabric reducing the nearby nature and farmland (Kod arkitekter 2014) and favours commercial activity that create large scale big stores and malls in favor of small local stores (Kunstler 1994).

Opportunity to change

Villa suburbs have to an extent been the norm of the urban fabric and rarely in focus of discussion of places that could change. They could become places that are important in positive sustainable change (Kod arkitekter 2014). This built environment already exist and great opportunities can arise by working with these neighborhoods, not ignoring them. Design plays a role here and seeking ways to by the help of design guide the suburbs to sustainable change is crucial in breaking the status quo of change in the villa suburbs.

INTRODUCTION

Sustainable responsibility

The latest century of human development has been having a large impact on nature but respectively also brought big change in civilization, as we have realized the negative outcomes of continued development with disregard to nature global goals have been set and guidelines have been set on how sustainable development is done. Sustainable development is such change that brings improvements to the current generation without compromising the ability to develop for future generations. It's set to create a world where human needs are met fairly throughout the world. Sustainable development lays in the subject of preserving what we have but also moving forward and bring needed change. Everybody has a role in bringing positive change but we as professionals have a large responsibility in actively participating in decision making and investigating about the subject and the role of our professional work (Hedenus 2018).

The rurban

The rurban question is about focusing on what have previously not been in the spotlight, the urban and rural fabrics forgotten or outside the discussion. This includes the villa suburbia which has in many cases been accepted as a part of the fabric without ways to bring change to what is there. The villa suburbs often located in the outskirts of cities are at risk of increasing and continuing to claim rural land, villa suburbs rarely contain much quality more than being a place to reside in, a housing area. This thesis wants to see ways to sustain the size of these areas and rather work with what is there and how to bring qualities that make it unique, a built environment that is neither the rural countryside or the urban center. A new rurban environment.

Rurban is also about seeing opportunities to be more locally based and see the unique issues and solutions to a context. By focusing on the people of the villa suburbia, and with them discuss life and possibilities to create change that matters. Long are the days of large-scale planning and architecture without any context and relevance to the place and community the development occurs. The world is more complex and requires specific based development. The project intends to bring both urban and rural qualities to the suburban. Rural qualities by working with community and the environment with its localities. Urban qualities can be brought by masterplan and larger coherent structure of development, ways to see improvements on a larger scale.

INTRODUCTION

AIM AND QUESTIONS

AIM

The aim of this master thesis is to show ways to bring sustainable change to the villa suburb through design improvements. Sustainable change as in bringing possibilities to combat larger issues of suburbia in a local context with an understanding of its people and the qualities brought up. Changes will be done in terms to bring densification of buildings, people, functions, and places for social interaction. This will be a local design project in a Swedish villa suburb, specifically the area of Solängen in Mölndal. The villa suburb will be in forefront for sustainable change through understanding of local and larger premises.

RESEARCH QUESTIONS

What could design improvements in terms of densification and placemaking look like in the Swedish suburb of Solängen in Mölndal?

What sustainable effects would these changes bring considering the local and larger issues of suburbs?

INTRODUCTION

METHOD

Literature review

A method of collecting and summarizing research of certain topic. This includes reading web sources, book sources, scientific articles, previous design projects etc. (Martin & Hanington 2012). The sources used for this thesis are stated in the end of the booklet. The sources are from various origins, most being from Sweden but also a great number from North America. They all touch upon architecture and urban planning of suburbia. Mostly falling in the category of literature about theory and history of suburbia, the suburban issues, and opportunities, also some specifically about the studied case.

Research through design

A method where sketching and designing while researching is a key factor of creating new knowledge (Martin & Hanington 2012). The process of the design is crucial, resulting in understanding more when combined with investigated research. The design is shown and discussed upon later in the booklet and was simultaneously in the process with other methods.

INTRODUCTION

METHOD

Case study

A method where an investigation of a certain phenomenon or instances is researched. This includes the study physical and social context. It could be done through site visits, interviews, document reviews etc. (Martin & Hanington 2012). In this case a specific area has been chosen for the thesis. The case in this project being the villa suburb of Solängen, many of the methods of this thesis is connected to the case study.

It is important that the chosen villa suburb context is within Sweden as the thesis intends to bring positive change for the discussion of suburbia in Sweden, and ways to combat unique problems for Sweden. A place within Gothenburg metropolitan area simplifies the study for me as a researcher. Though results of the thesis can be very general and be applied to other suburbs in Sweden it is expected that most of the outcomes are unique to the specific site and study and can't be entirely replicated in other places.

Interviews

The method of talking with relevant people to the subject or place of interest. They can be conducted through phone, digital or in person. They can have script or a guiding topic (Martin & Hanington 2012). In this thesis interviews were done with 6 individuals with relations to the focus area or the subject of development in suburbia. Interview questions were prepared beforehand, but the conversation was encouraged to move more freely. Pictures and example sketches were brought to the discussion.

Five interviews were conducted in this thesis, all of them strangers to the researcher. Four of the interviewees live in Solängen and were chosen as their contact information were received from acquaintances and the municipality. One of the chosen interviewees is the president of Solängen egnahemsförening (Solängen home association). The interviewed people were of different age, ranging from early middle age to seniors, they were all families with children. The fifth interviewee is the president of Villaägarna Göteborg, a national association for villa owners, in this case the president in the regional division of Gothenburg.

INTRODUCTION

DEFINITIONS

Suburb

The thesis will on many occasions use the term suburb, the term is in this thesis defining villa suburbs i.e., single family housing and not what in Swedish context is also used for the million program and other multi-story housing areas. Reason for this differentiation is that villa suburbs and apartments suburbs area vastly different in terms of physical environment and inhabitants, this thesis is aiming to bring focus to the lesser discussed villa suburbs.

Design improvements

Design improvements in this thesis is seen as physical design alterations, something that can occur on many scales, in the house, on the property and urban block but also in a larger area scale. They're considered to be improvements if they contribute in some matter to issues in the area or in society or nature at large.

Sustainable effect

Sustainable effect in entails the three dimensions of ecological, social, and ecological. The ecological involves not using more of nature's renewable resources than its possibility to produce. The economical involves efficiently managing the finite resources in our capital and natural environment that they can exist and be used also in the long term. The social dimension involves sustaining a humanitarian and institutional system that can create trust, wellbeing, and equality many other social improvements to all humans (Hedenus 2018).

INTRODUCTION

DELIMITATIONS

Esthetical emphasis

Changes in this thesis is not going to be focused on technical systems such as for example solar power but mainly design focused on changes in the physical space. Nonphysical change such as legislative and administrative change is briefly mentioned but not in focus for the work as the thesis is intended to be a design project with architecture as a tool.

Sustainable emphasis

In this thesis less focus is set on economical, its mainly going to be seen as a separate tool to reach ecological and social outcomes, the economy can't function without people and the nature it exists in. The social issue mainly emphasized in the thesis is socio-economic segregation, meaning people of different economic groups also live very differently and inhabit different cultures, i.e., car ownership, recreational choices etc. The ecological issue mainly emphasizes in the ineffective land use and lack of resource efficiency in regards living in large homes with large gardens in a spread-out city and extensive consumption patterns.

Local and larger issues

This thesis is aiming to only to present and try some overall issues that suburbs can create, both dependent on the context of the site but likewise larger issues in the city. A mapping of issues and opportunities can become very complex and only a selected few are chosen to be presented. The thesis is mostly avoiding discussing national and global issues that can very much be affecting and be affected by projects of this small scale.

INTRODUCTION

CASE & THEORY

Introduction to case and theory

In the following chapter the case of Solängen will be shown where the area and its qualities will be presented, looking at the urban structure, geography, qualities on street levels and likewise background information like history. Much of the content are from personal observations on the site visit but also from interviews with locals. The end of the chapter will summarize the interviews with locals and they're perception of the qualities, disadvantages, and opinions about change in regards of Solängen and villa life in general.

The continuing chapter after the case of Solängen will present theory and references of suburbia. Through literature research the thesis will present the history of suburbia, the issues of suburbia and lastly look at reference projects and literature in how to see solutions and ways to move forward for a more sustainable suburbia. The opportunity of change is referencing theory from sources such as architectural offices like Kod arkitekter (2014, 2016, 2018), Paradiso arkitekter (2015), But also sources from municipalities and governments Boverket (2010), City of Vancouver (2021), Stockholms stad (2021). The case and theory then conclude in a summary at the end resulting in a design concept in the following design chapter.

CASE SOLÄNGEN

SITE ANALYSIS
INTERVIEWS
SUMMARY

CASE SOLÄNGEN

SITE ANALYSIS

Choice of site

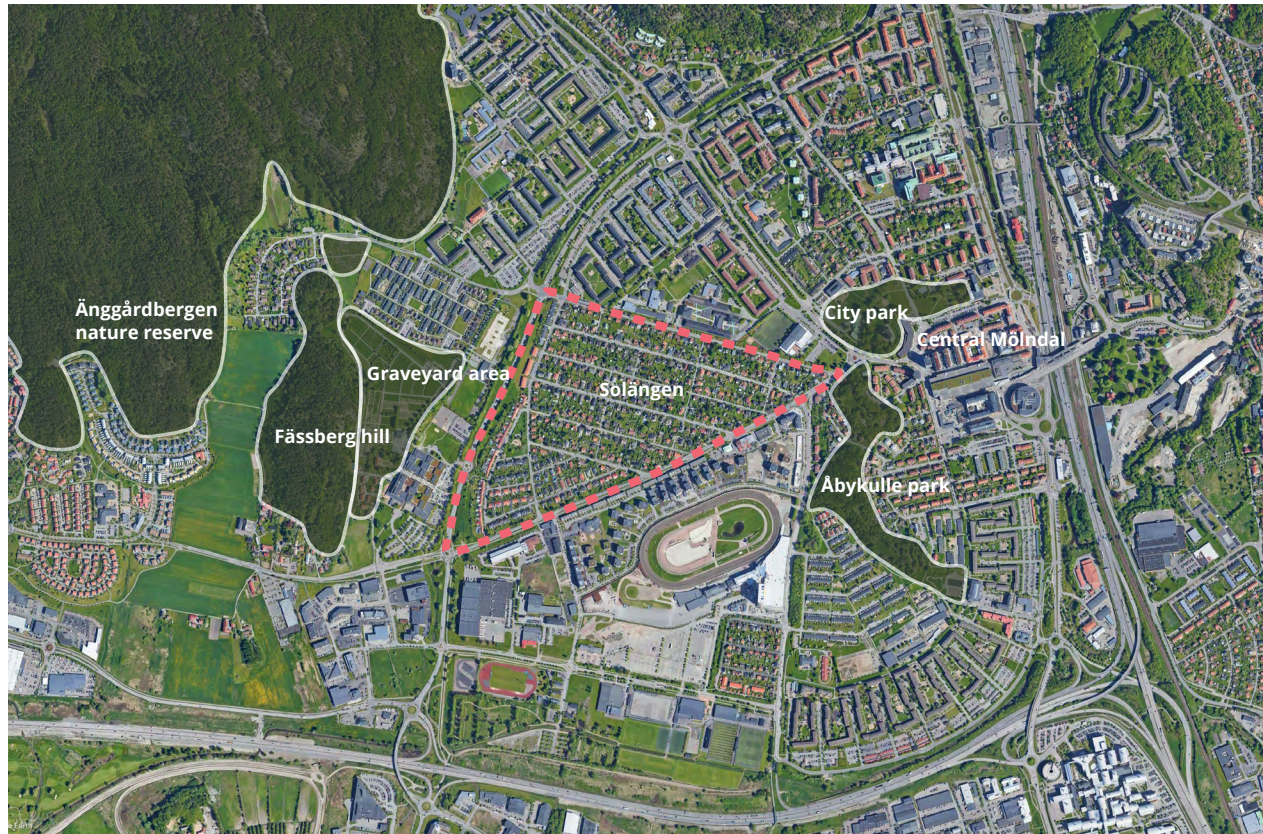
A thesis like this requires a case study with an investigation of a site and interviews with locals, finding a local organization is way to reach a greater community as a whole. The chosen site for this study is thereby the villa suburb of Solängen in the near the central part of the city of Mölndal as contacts with local villa owners and the local villa organization were found.

Fig. 4 Solängen located in the Gothenburg region



CASE SOLÄNGEN

Fig. 5 Solängen located in Mölndal city with selected larger green areas



CASE SOLÄNGEN

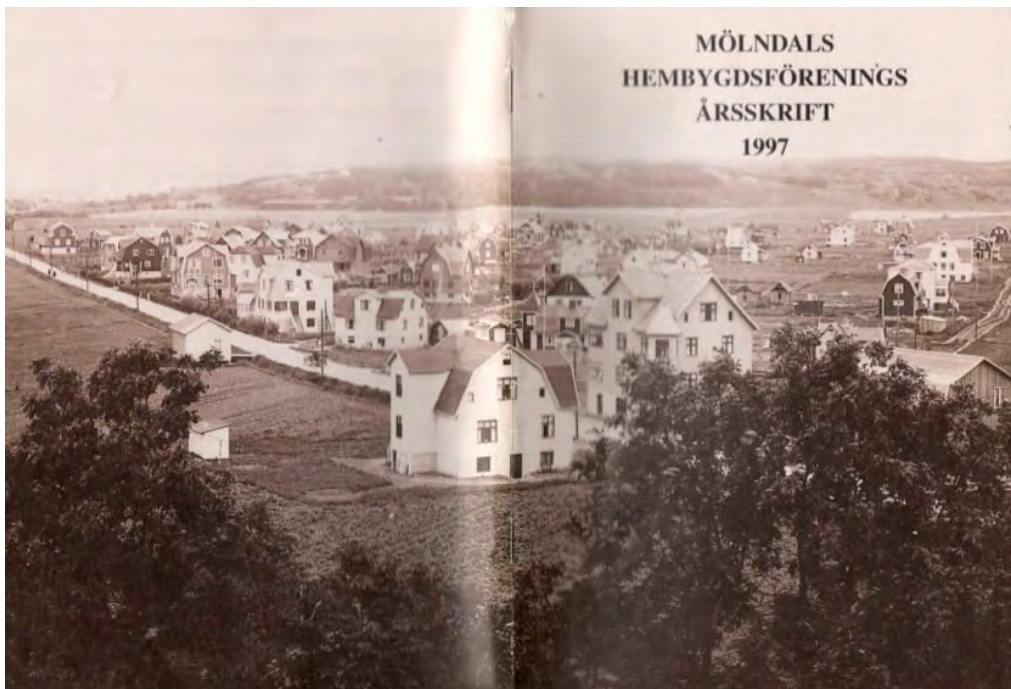
History

Solängen received its current name during the 30s when the first property divisions were made, before that the area was poor farmland where the heavy mud only made it in use for cattle. When the property divisions were made the properties were too expensive and hard to sell to workers which was the main group the area was meant for. The remaining houses from this era are usually large consisting of several units on different floors, some even housing commercial space. During the 50s a zoning plan was made, and a big construction boom came with it, most of the current housing is from this era and later (Solängen interviews).

Zoning

The latest detail plan from 1951 describes that the properties are for housing, the buildings are to be maximum two floors and cannot be placed closer than 4.5 meter from the street. In the garden varying between 4.5 meter and 20 meters from the neighboring property line. 1997 a revision of the zoning in Solängen allowed to increase building area to 180sqm and for extra garage/cottage 50sqm, this coming from 120sqm and 30sqm. New properties can now be down to 800sqm. Cottage/garages can now be placed up to 1.5 from neighboring property if approval from neighbor is received. Height of house up to 8.5 meter and cottage up to 3 meters. Smaller additions such as terraces are free from building permit (Mölndal Stad 1997).

Fig. 6 Early 30s Solängen



CASE SOLÄNGEN

Demography

A rough estimation is that Solängen consists of 400 households. The population is currently undergoing a major generational shift in property ownership, one of three that have happened through the history of the area. The properties are expensive due to the proximity to central Mölndal and high demand for villa properties. Due to the housing crisis, the newcomers that can afford the area have high capital and often do big changes to the property when they move in, there are instances where they demolish the previous building altogether. It's also common for the next generation of the family to take over the house while the seniors move into attractive condominiums and rentals in nearby areas. This makes a population consisting of mainly higher income families with children as well as senior couples. To summarize the current trend is that many young families with high capital move in to the area or take over the property from their parents. With these trends demand for schools, recreational and sports facilities as well as renovation is increasing (Solängen interviews).

Character

Solängen is surrounded by high traffic roads but the area itself is relatively calm with low amount of traffic as many streets in the area are one way or dead-end streets. The area is flat and doesn't have any major green areas other than two smaller playground parks. Minor hills from neighboring areas can be seen in the horizon, one being the Mölndal church looking down on to the area. A variation of buildings of different age and size contribute together with the variation of property sizes in creating a relatively varied environment.



Fig. 7 Variation in buildings

CASE SOLÄNGEN



Fig. 8 Oneway street



Fig. 9 Older large villa



Fig. 10 Large land plot

CASE SOLÄNGEN

Fig. 11 Road structure, red being larger roads, yellow being high traffic streets, green being bike paths, dots being busstops

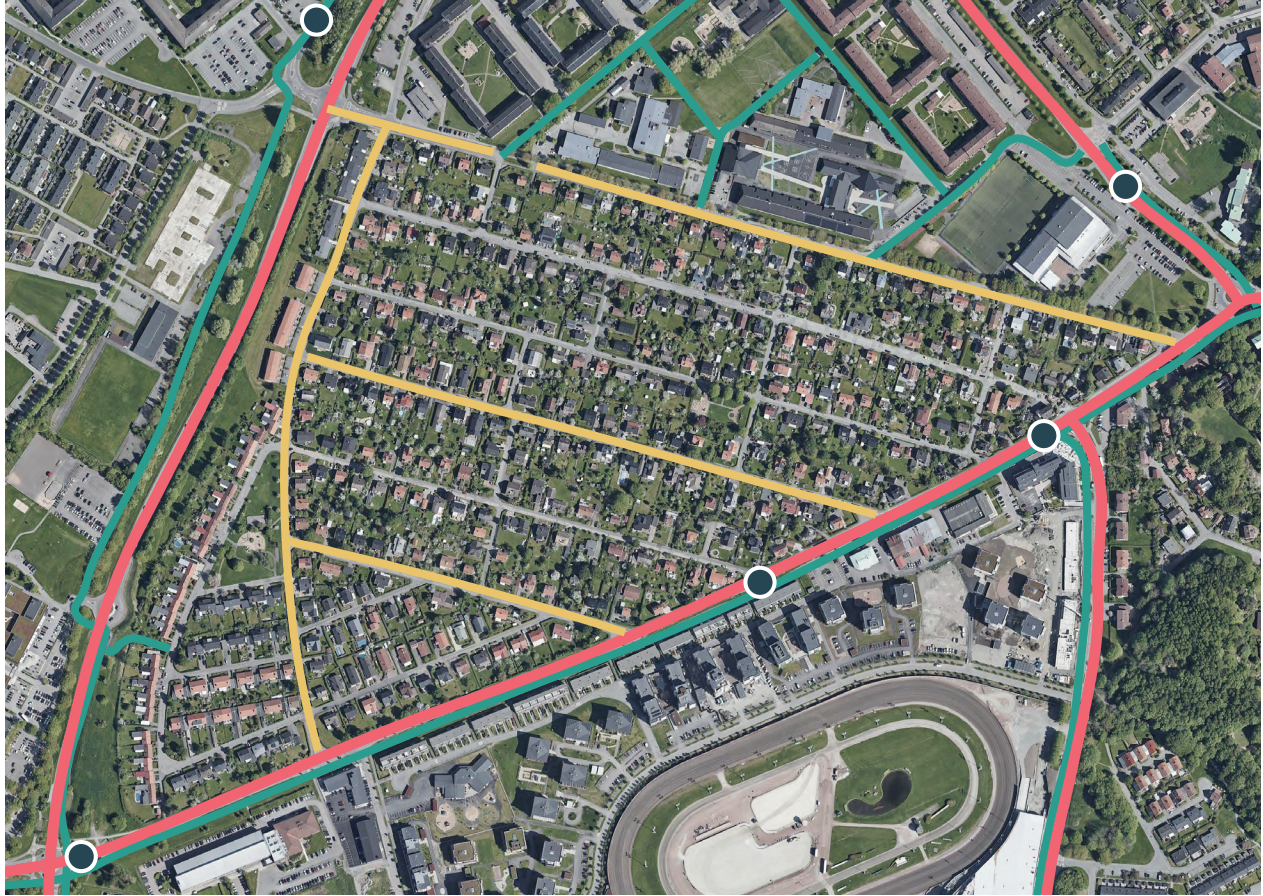
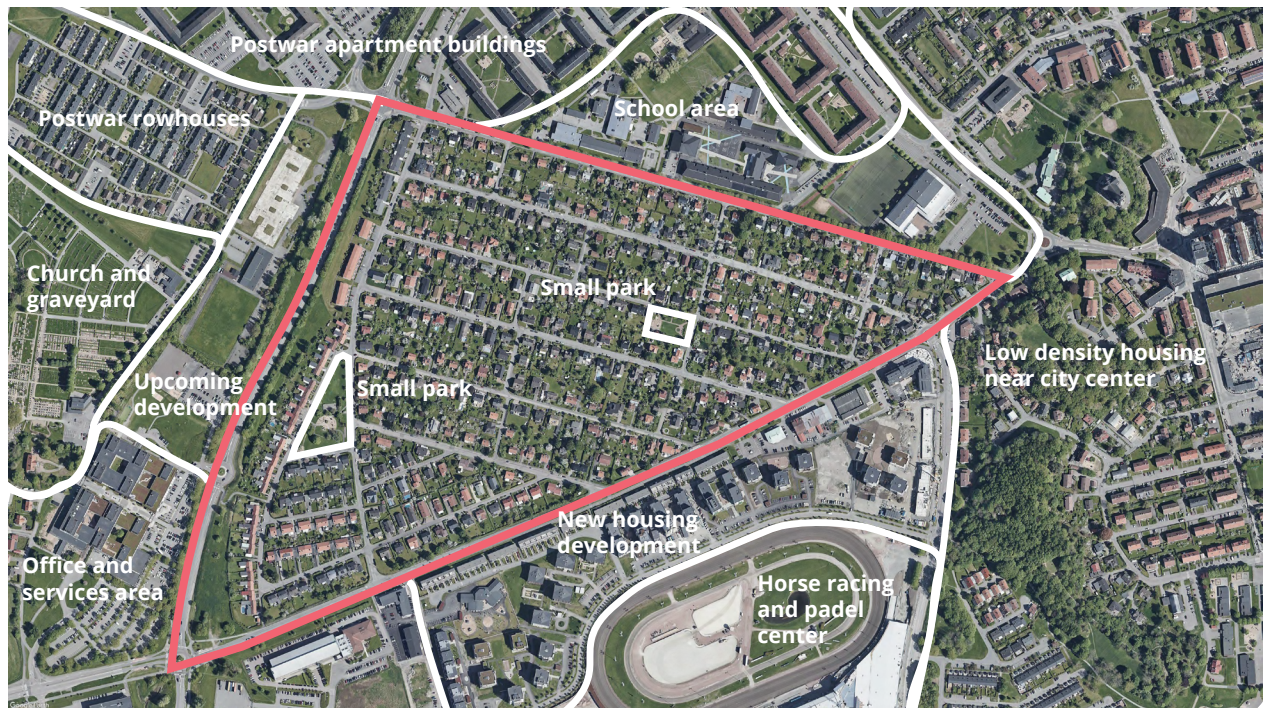


Fig. 12 Map showing functions and types of development around and inside Solängen



CASE SOLÄNGEN

INTERVIEWS

Villaägarna Göteborg

The interview with the president of the Villaägarna Göteborg resulted in an understanding of what villa owners see as important qualities in any area. Qualities of spaciousness, your own garden, greenery, calmness and the safe schools are lifted. Majority of villa owners are content with their environment, they often like things to remain the same as they have invested money to live in the area. The association would like to see more people being able to live in the suburb with a villa and garden. New villas should vary in size and design, variation of the area is more attractive. Other factors of interest would be to have better amenities in the community, places where members could meet and arrange events. The issue is how to encourage homeowners to invest and maintain facilities, easier for condominiums to arrange amenities.

Solängen Egnahemsförening

An interview with the president of Solängen egnahemsförening showed that the association lack a building to arrange meetings in as the previous one was demolished, they currently rent a space in a cafe. They want to be seen and heard more often, being able to arrange Christmas parties, BBQ etc. A meeting place for activities and a place to store tools in the shared item pool. Only 150 of the areas 400 households is a member of the association, needs to change.

Locals

Interviews with the inhabitant showed that people are happy living in Solängen. The area is close to the city center and other service and amenities such as sports and recreation. Families with children are the ideal group as school and other activity for children is nearby and the area is calm with rarely any traffic and sense of privacy is high. The houses and gardens are large, resulting in ideal environment for families in need of space. Development in neighboring areas is good as it boost's property prices, more value for the owners. The local association is good but isn't appearing too much, would like them to have a location where events and activity is marketed and held.

CASE SOLÄNGEN

SUMMARY

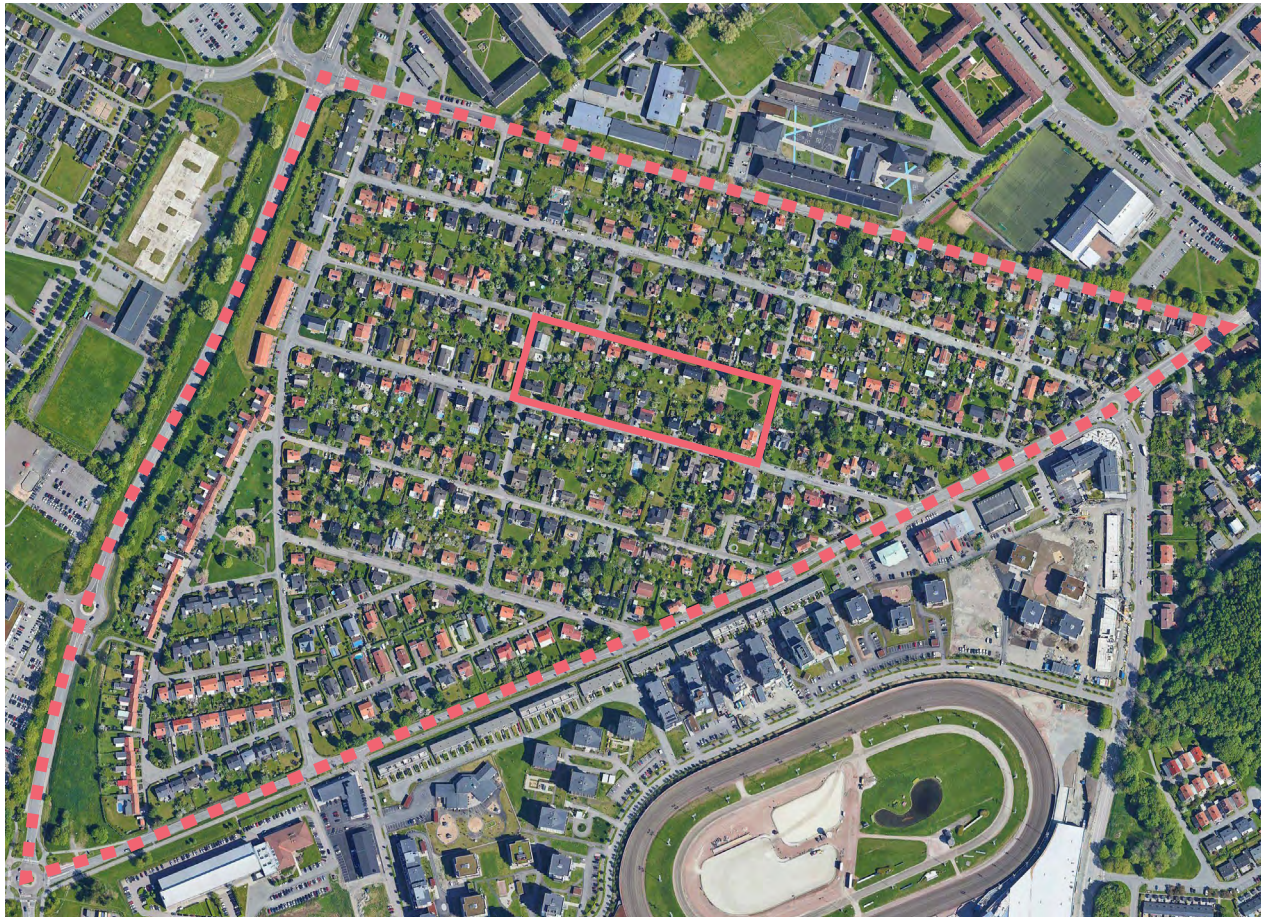


CASE SOLÄNGEN

Relevant site

Solängen is typical in many ways of how most Swedish suburb are, a variation of houses, a majority demographic of families and a structured grid layout. The area has its unique qualities in its proximity to services and a city center, as well its relatively active local community. Potential for change can occur on many places, but to pick one area for the thesis a central location consisting of a typical block would be ideal. The central block with a public park in Solängen is good choice in those terms.

Fig. 13 Map showing the area of interest for the project in the center of Solängen.



Theory

HISTORICAL CONTEXT
THE SUBURBAN QUESTION
SUSTAINABLE WAY FORWARD
SUMMARY

HISTORICAL CONTEXT

History of suburbia

People have even in ancient times settled in the fringes of towns and cities, this could be outside defense walls and in connection to the immediate cattle-and farmland, a way to escape congestion and disease, examples such as roman country villas (Kunstler 1994, 41). The more recent idea of low-density self-sufficient settlements in the outer parts of the city grew as a concept by Ebenezer Howard in the late 1800s, community and greenery were important factors, the concept influenced early suburbs in the UK and other countries. Up until the 1900s early villas outside the cities required a large amount of workforce for cooking, maintaining etc., these villas were exclusive for the rich and had to be large to accommodate the factory of services found in the villa (Gregory et al. 2009).

Howard emphasized that nature and the countryside was god's work, and we could only reach happiness, wealth, and power if we reached to the countryside and leave the crowded urban areas. In later times some common factor for moving away from the urban cores have rather been space and privacy, anxieties about safety and the quality of the schools (Owen 2009). In its latest form suburbia has become a large part of the urban landscape in the postwar period, it has grown with the ideas of modernism and healthier and higher standard of living. Modernism brought cheaper and more efficient housing that could be built fast (Stähle 2008).

Swedish suburbia

In Sweden the earlier forms of suburbs took form in the early 1900s taking inspiration from the garden city idea in England and smaller towns in Sweden, one of the earlier examples being Enskede in Stockholm. The idea was to combine the lifestyle in the city with the countryside, farming on the garden was important, also being well connected to the city walking or with tramline. The houses were usually closer to the street and there was a diversity of buildings, also common to find street tree lines and vegetation in greater extent (Stockholm stad 2021). Early on a national Swedish welfare and loan system was given to people that wanted to build their own house, this contributed to a boost of private home building (Kod arkitekter 2018). The development of Swedish suburbia further on to the mid-1900s and postwar period continued to become more rational as large developers and the municipalities came in, the idea was to build housing for the masses in a faster pace, rising the standards of living of Sweden. They built with straight streets, less diversity of buildings and fixed placements of the house further away from the street, row houses were also introduced in greater numbers (Stockholm stad 2021).

THEORY

Fig. 14 Structure of the villa suburb of Levittown, USA



THE SUBURBAN ISSUE

Urban sprawl

The modern suburb is commonly a phenomenon where low density housing, retail, workspace, and other urban functions are spread out in a larger landscape outside the city center (Gregory et al. 2009, 732). This started with intentions of removing traffic, fumes, and congestion from the housing areas as well create calm areas for kids to walk around. The result has been that more people use cars as distances have increased, often resulting in the previously mentioned problems becoming more prominent. The car being central to movement in the suburbs results in fewer pedestrians, empty streets where many consume more time in their car. Also resulting in cities sprawling outwards and claiming rural land with resources such as forest and farmland (Kunstler 1994).

Segregation

As people in the suburbs live on separate properties it has led to an increased separation within people in the neighborhood. Less social interaction is happening between inhabitants in the neighborhood as they now live further away from each other (Boverket 2010). The social segregation is boosted by the force in larger Swedish cities of many families moving to the suburban neighboring municipalities as the prices for larger villa housing is cheaper, what's left of the central municipalities excluding the few villa areas is a fairly young, ethnically diverse and of lower income population (Göteborgsposten 2019). The high cost of villa properties does result in homogeneity of areas as only certain socio-economic groups can afford it. As populations are less in presence of each other, less understanding and respect can occur, a polarization of society (Kunstler 1994).

THEORY

Lack of places

The result of the large distances between services and housing has in the case of retail resulted in large commerce, they exist to accommodate for the needs of a larger area and adapted for cars through connecting highway networks and large parking lots. Large commercial facilities often have higher rents resulting in a lack of local stores with big chain stores being more common, these often don't contribute much to the local economy as profits are sent elsewhere rather than in local circulation. Many of the suburban commercial areas also lack spaces for lingering and outdoor services and there are few public realms in the parking lots, the stores become place for meeting, making areas of consumerism one of the few meeting places (Kunstler 1994).

Issue of zoning

Contemporary zoning is mostly to blame that building and function diversity are rare in suburbs. The regulation favor's function separation in the suburbs. There is rarely mixed size units with cottages, villas, apartments and stores in the same block. This boost car dependency as services is further away. Regulations can say that only properties above a certain size is allowed whilst not allowing house extensions and extra units on the property, resulting in expensive properties that only certain groups can afford. Strict regulation can create homogenic environments where social diversity does not exist, there is no space for odd people to live their odd lives (Kunstler 1994).

SUSTAINABLE WAY FORWARD

Attraction to suburbia

Even as suburbs come with its set of issues it is important to understand that the suburbs are increasingly attractive for large portions of the population. Qualities such as for example a garden for recreation and privacy (Kod arkitekter 2018). Privacy as in clear separation between the public street and the private property and house creates a sense of freedom and integrity, an environment fit for a more individual society. Other factors of attraction is the more natural and human scale of buildings, spaciousness, greenery and traditional architecture (Ståhle 2008). As there are strong qualities that attract so many to the villa suburb, a respect and understanding needs exist in the discussion of change in these areas. It is possible to build new and preserve the old, a form of regeneration that can be positive for everybody (Kod arkitekter 2016).

Architecture's role

Urban planning and architecture have an important role in creating possibilities for sustainable change. Such as in the issue of socio-economic segregation where those that can afford it move to more human scale neighborhoods with larger housing units for the family and lots of green spaces. It creates a structure where the spatial distance between the poor and rich increase. In this regard some solutions can be a diverse housing stock and a mix of condos and rentals, resulting in a mix of people with different economic possibilities can afford to live in the area (Boverket 2010). Flexibility in the housing market is thereby the key to a more socially and economically sustainable neighborhood (Kod arkitekter 2014). The average living space per person in Sweden is 42 sqm, in big cities it can go as low as 33 sqm (SCB 2020), to use this as a guideline but also be flexible in the numbers can create a variation of efficient and sustainable living.

Placemaking

In USA, the suburbs have been noted to lack “third places” i.e., places that are not work or home, crucial place for social interaction and community building, especially across social and economic barriers. In greater pace abandoned lots and buildings, for example strip malls are being retrofitted to become places such as sport facilities, religious facilities, gardens, café etc. (Dunham-Jones 2011). In addition to introduction of meeting places other actions would be improved connections with removal of barriers between areas and improved mobility with public transport and walkways. Postwar period planning with the rational design didn't think of how the urban sphere inhabits a community, that's partly what's been missing, meeting spaces, culture, services, and workplaces can create a community (Boverket 2010).

THEORY

Fig. 15 Small housing unit the backyard in Vancouver, Canada



Potential of deregulation

Zoning as it is today in Sweden only allows one extra housing unit of 30 sqm, only adequate for teenagers and students. An increase to at least 50 sqm or more and the possibility for several units on the property would create units attractive for couples and seniors. Other potential changes would be to allow buildings to be constructed closer than 4.5m to the property line and removing approval requirement from neighbors. This allows for less loss of the backyard as buildings don't need to be centered on the property. It also distances the extra unit from the main house and creates a wall to the neighbors, bringing a house that doesn't compromise privacy for the neighboring properties and only minor reduction of privacy towards the main house (Kod arkitekter 2014).

Municipal intervention

One option of improvement would be that regulations become more relaxed, allowing more building permits to be approved. In Norway the term "Hybel" occurs, tax incentive has been applied which makes it profitable and easier to rent parts of your house. Home ownership is high, and many living in relatively large sized villas, this initiative results in housing for more people, especially young adults. (Kod Arkitekter 2016). It can thereby be optimal to give governmental incentives to inhabitants that want to renovate and build, this is something the Swedish government did in the early 1900s when villa construction initiated (Kod arkitekter 2016). In Canada the term "Laneway housing" has been used for new initiative by the cities to engage homeowners in bringing in smaller housing units on the backside of the villa property, the result is more space to rent out, bringing in whole families to the same property (City of Vancouver 2021). This is another way for municipalities and other organizations to encourage sustainable change and educate in how to do so.

Densify by restructuring

Different examples of how a villa can fit more people is for example to separate the building on different floors, install the essentials such as kitchen, bathroom, bedroom, living room on each floor, connecting to this is either separate entrances or a common staircase and entrance. Other ways in regard to larger one floor houses is to divide the villa in two with a center wall with all the above mentioned essentials in two separate parts of the house. A third way of working is to simply have a common living environment where rooms or floors are separately rented out, but many functions can be shared, such as a common kitchen and living room on bottom floor. Depending on space, laundry room and storage is often shared in the building (Kod arkitekter 2018).

THEORY

Fig. 16 Retrofitting of a warehouse in a villa suburb to a community church, USA



Densification

Densification is an efficient land use where already existing infrastructure can be used in contrast to new sprawl development in the city outskirts. This is especially true to suburban structures with central locations where they are more common as cities are sprawling, the demand for land and housing in these areas are high (Paradiso arkitekter 2015). A compact city with mixed use development can reduce emissions as people drive less and contribute to improvements in the public transport as there is a higher number of inhabitants (Sharmin 2011). One way to bring diversity to the villa suburbs would be to bring more housing units to the current suburb with mini-infill, for example building a cottage on the backyard. Though this will require more flexible regulation from authorities and educating the current inhabitants in their possibilities to bring this change (Adelfio 2014). The initiative is mostly from the citizens itself as they are building on their property. A great way to give power and freedom to the inhabitants while making the area more dynamic with a mix of new services and functions (Paradiso arkitekter 2015). Independent construction is also a way to create simpler and thereby also cheaper housing units (Kod arkitekter 2016).

Social potential

Many of the inhabitants in the suburb live large but are smaller households, only a third of the villa households are families with children. Two thirds of the households in the suburbs are either couples or singles, many of them seniors. A portion of the suburban owners may thereby have space in their building or on the plot to bring in new inhabitants. This can bring social improvements, especially for elderly that can now let the new neighbors maintain the garden, children can also bring generational social connections (Kod arkitekter 2018). With more people in the neighborhood sharing societies can be created in the neighborhood, they can share space, tools and exchanging items, contributing to a less consumerism focused life and strengthen community (Kod arkitekter 2018).

Generational shift

The most common reason to share the house or the property is to share it with relatives, common where generational change is happening. For example, seniors renting out an extra unit on the property to their kids and their families. Or the example of a family letting their parents move into part of the house to aid them and give company. Flexibility is thereby a key factor in these scenarios as the family situation often only last for a few years and then they can continue to rent out to strangers. Often attracting young singles and couples, often students and new workers (Kod arkitekter 2014).

THEORY

Fig. 17 A larger multi-household villa in Skien, Norway



Densify by additions

Change in the suburban properties need to be in respect to the current. Building can't be demolished as they're part of the history in the area, as well should most of the green area of the property be preserved, for example no development that reduces the property more than half. Housing and greenery should be prioritized over parking, preferably removing the legislative requirements of parking for housing, instead solve it by carpools, commercial parking lots etc. Can only be implemented in area with good public transport also bike and pedestrian connections (Paradiso arkitekter 2015).

New development should be placed with consideration of not reducing daylight and views drastically. Different heights, shapes and architectural design to the new development can bring physical diversity to the area, the design doesn't always need to be adapted to the current. Putting new development in the corners of the property on the backyard is a way to bring new units without taking too much space and resulting in insight and shadows on the current buildings. When building along the property lines windows should not be facing the neighboring property for respect to neighbors and fire safety. Other solution is to put new units on the front yard along the street, creating lively and denser street environment, also bringing potential of services and commercial activity in the unit (Paradiso arkitekter 2015).

THEORY

SUMMARY

Theory

The case and theory conclude in ways this thesis can move forward into a design proposal that can show the effects of change in suburbia. As theory shows, suburbia entails larger problems that needs to be solved, segregation, isolation, urban sprawl inefficient landuse and unsustainable consumption etc. are just to name a few. Theory shows that great potential can be found in suburbia, primarily in ideas of densification with new additional units and place-making with meeting and activity spaces.

Densification can bring freedom and opportunity to do more one's own property and do more together in the local community. This brings diversity of different units to the housing stock in more attractive areas, important for people that can't afford or see their needs met in the current market. Likewise, it creates less individual lives, with more proximity to others.

Sharing space and resources with a diversity of people can create respect, understanding and local cohesion. Proximity to each other also create opportunity to share and exchange items, leading to less consumption and a more shared economy. This combats urban sprawl as more can fit in the current space and infrastructure, a more resource efficient way to develop cities.

Creating places to further tie the community together will contribute to a stronger and more cohesive community with new places for social interaction, especially important as more diverse groups live closer together and share more together. These changes can occur on many levels, much of it comes from the people itself but also from higher powers with deregulation, incentives, and education of how people's role in this change are contributing factors.

Case of Solängen

The case of Solängen showed various qualities that were found by site visits and mentioned by locals. Spaciousness, privacy, greenery and proximity to functions were lifted as reasons to move to the suburb, locals often pointed out they had no reason to see change, but the potential was still understood. Theory shows that these neighborhoods are very much areas of higher socio-economic groups that have invested to live there, change can play out to be hard to create. The interviews concluded a need for community places and the opportunities of doing more on one's own property is appreciated. What the interviews also added was that optimization of floor plans in the villa can allow for more units in the current. All of this results in a project that allows for more people to live in the same neighborhood.

DESIGN

DESIGN CONCEPT
DENSIFYING
-RESTRUCTURING
-ADDITION

PLACE-MAKING

THEORY

DESIGN CONCEPT

Fig. 18 The chosen villa block for the project in Solängen



DENSIFICATION

- RESTRUCTURING

Locals mention that floor plans in the current housing stock houses are mostly not suitable for multifamily. Restructuring is an opportunity that can be implemented in the current building stock to bring new inhabitants without new buildings, it will make it possible to share and connect more together. Three examples from an old villa, a modern villa and lastly a retrofitted villa can show

- ADDITION

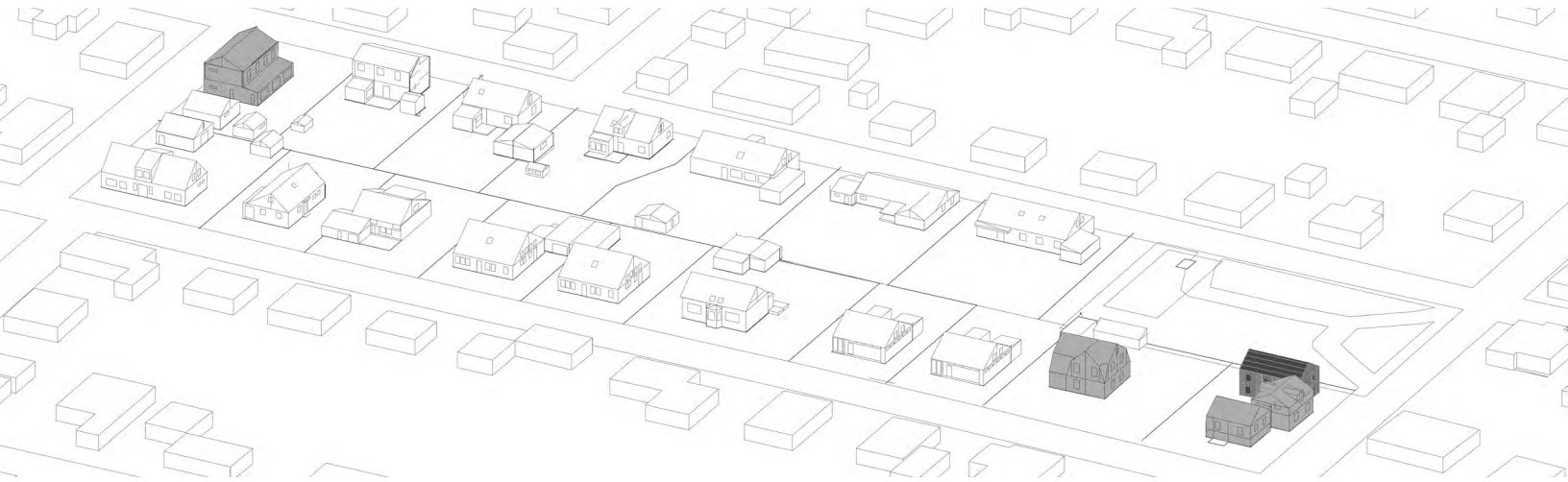
The ability for more people to have a house and a garden is an attraction pointed out by the local villa organization. Spacious properties that are mostly unused can more effectively be used for greater purposes of densifying with new and more diverse additions of housing. A way to bring new people and diversify the housing stock. As more people share the property opportunities of sharing and actively using gardens can bring neighbors together.

PLACE-MAKING

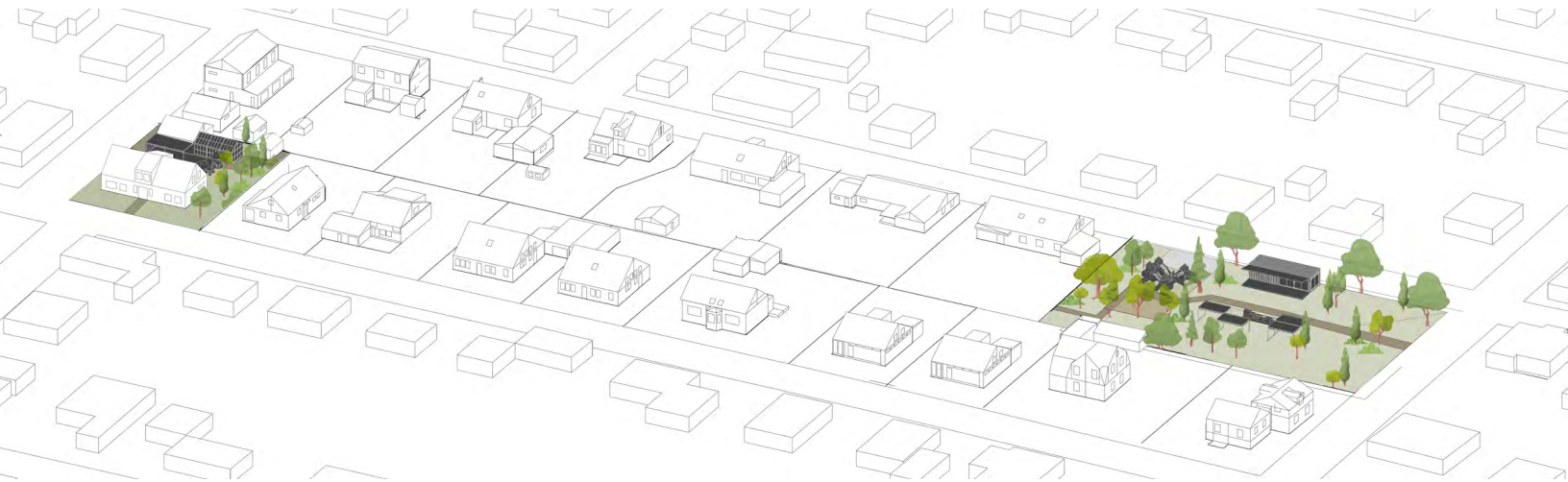
A community that doesn't have a central place to meet and house events and co-sharing functions was mentioned as issues by the local organization. Places to meet and interact in the community will be important for meeting and understanding amongst diverse groups. A local community center in the park, new park functions as well as co-shared greenhouse and cafe are some ways to face the issue.

THEORY

RESTRUCTURING



PLACE-MAKING



ADDITION



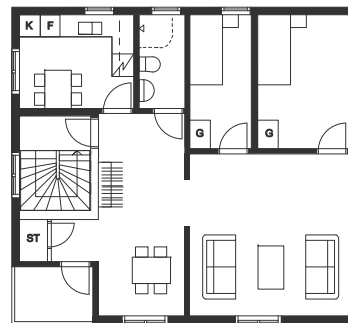
DESIGN

DENSIFYING -RESTRUCTURING

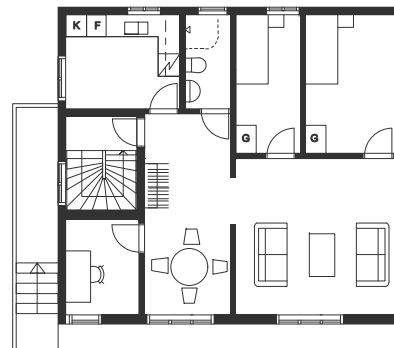
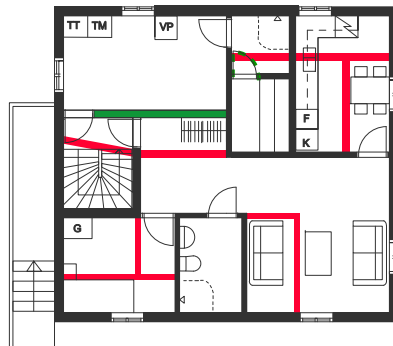
Restructuring small change

This is one example of a villa to be found in the selected block in Solängen. The example is an early 1900s villa of 2 floors and a basement. The villa has kitchen and bathroom on both ground and upper floor, most likely the house was built for a very large family or several households. There is opportunity to restructure the basement as most of it was laundry room and storage. A common laundry room and sauna with shower is now found, while the rest of the basement can become an apartment, making a building of three households.

Upper floor
3 room apt. 120 sqm



Basement
2 room apt. 45 sqm



Ground floor
4 room apt. 65 sqm

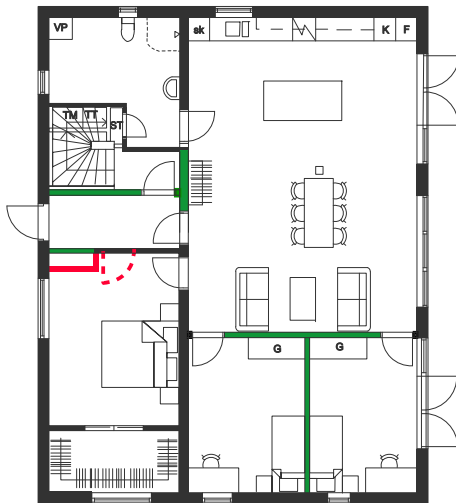
- Removed walls
- New walls

DESIGN

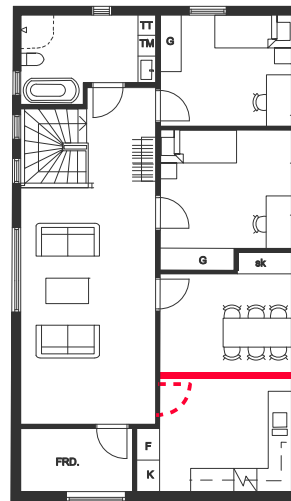
Restructuring medium change



A modern villa of two floors, first floor consisting of a large living room and kitchen can be partially cut up to include 2 bedrooms. Also removing doors from entrance area and isolate staircase as well as installing a kitchen on upper floor creates the opportunity to have two households in the building.

Ground floor
4 room apt. 120 sqm



Upper floor
3 room apt. 100sqm



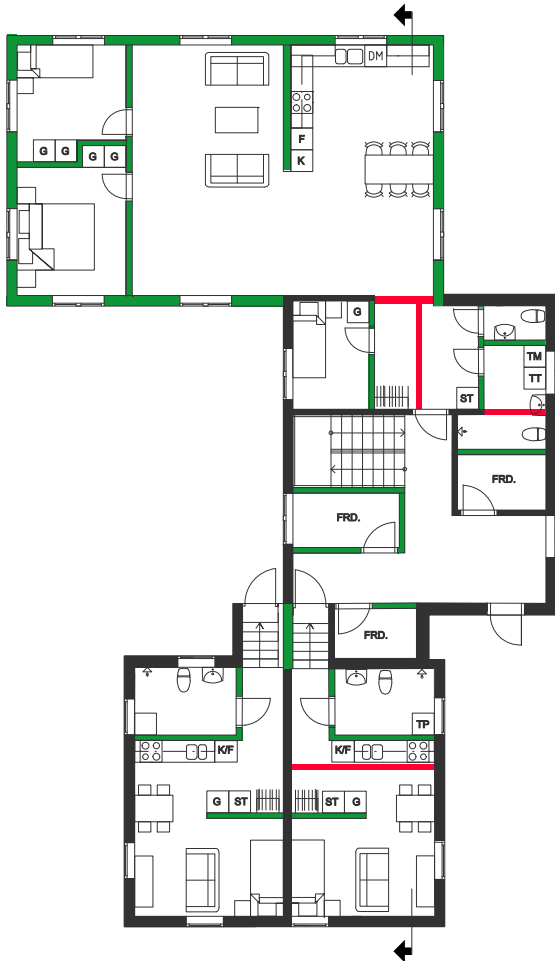
-  Removed walls
-  New walls

DESIGN

Restructuring large change

This is an older villa that has previously been retrofitted with a new addition, by also adding one more addition to that you can create an apartment building of 5 households. 3 on bottom floor and 2 on the upper floor. The center unit will function as the common entrance and staircase. The oldest part of the villa has a lower height than the rest resulting in the unit being half a floor lower and needing an additional staircase.

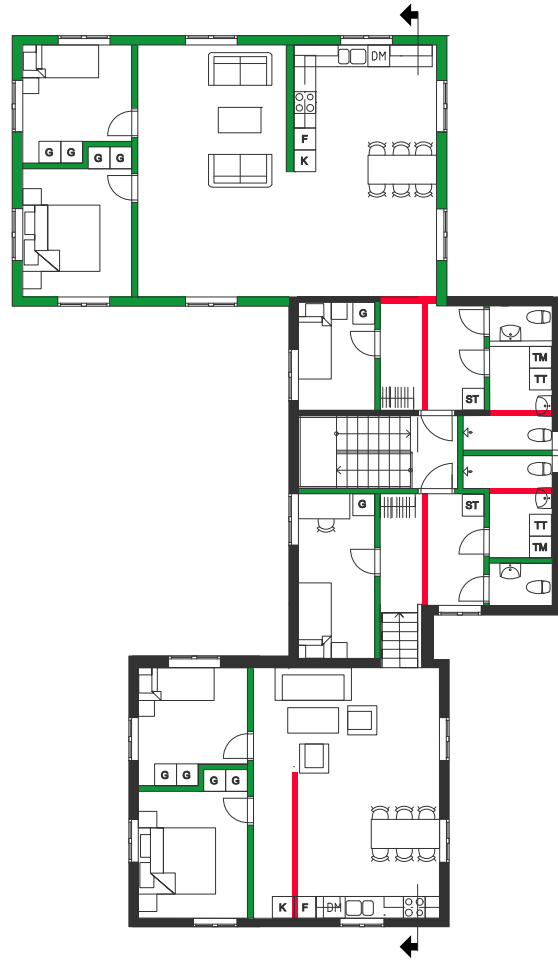
Ground floor
3 room apt. 100sqm



Studio apt. 2x 30sqm

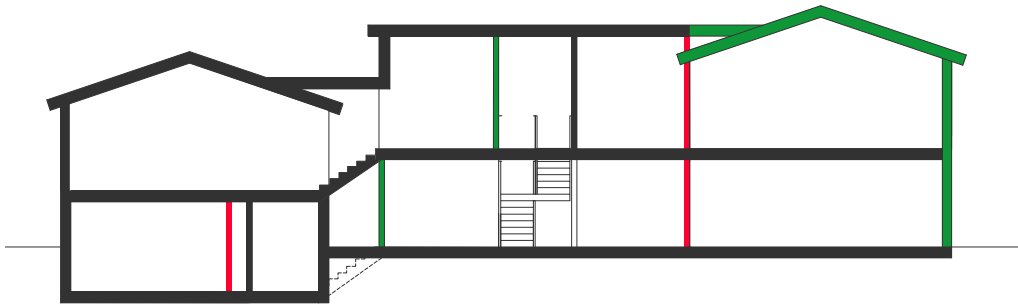
— Removed walls
— New walls

Upper floor
4 room apt. 100sqm



4 room apt. 85sqm

DESIGN



Property layout

The garden can be split in pieces regarding common or private space. If the building is only one floor direct access to the private garden from the apartment is possible, each unit can then have their own private corner, alternatively everything is common. The example here gives the original household on entrance floor a smaller private garden while the rest of the property can be for common use as units on other floors don't have direct access to the garden.



DESIGN

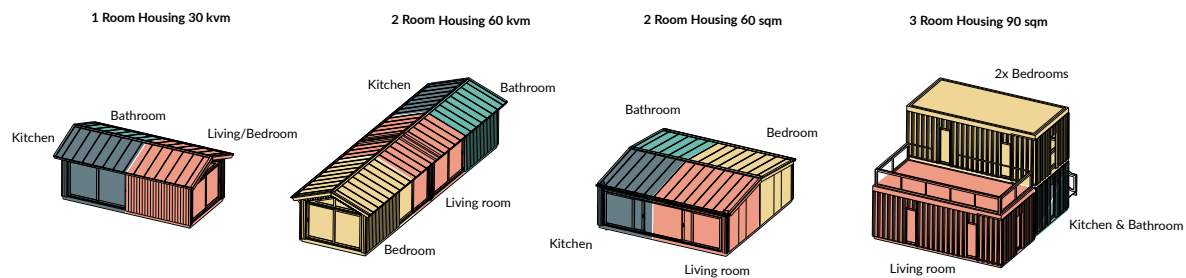
DENSIFYING -ADDITION

Types of additions

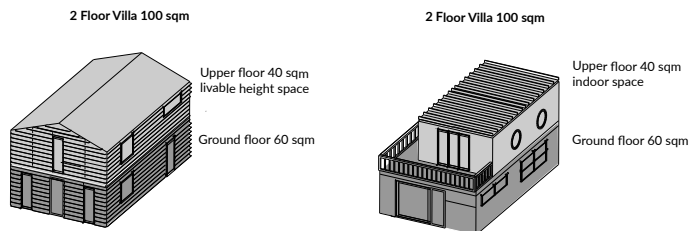
Throughout the area new additions can be added. The additional units could be categorized in single and couple households, single family households and multifamily households. The units can be of various sizes as to fit the different needs of new inhabitants, this way a variety of people can move into the area, seniors, students, couples and families. Many of the units are estimated to meet the average Swedish size of housing in big cities per person of 33 sqm.

Example of different housing units

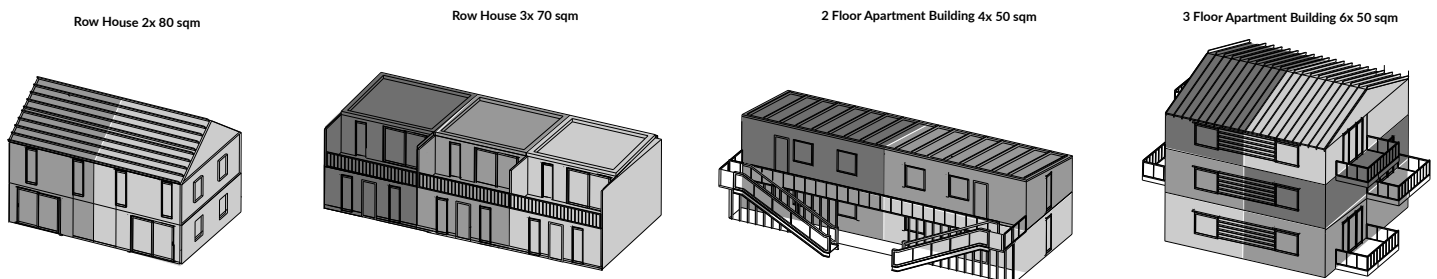
Single and couple households



Single-family Housing



Multi-family Housing



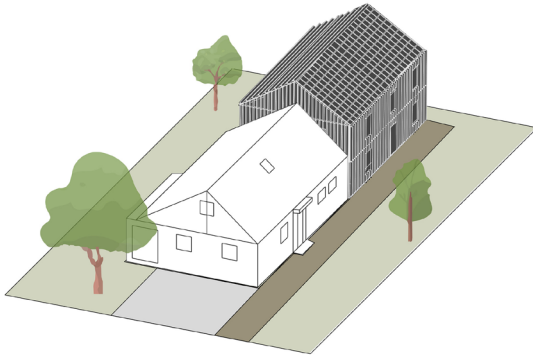
Urban structure

The additions can be allocated throughout the area, some larger units can be placed along streets or in the front yards, other smaller units can be on the backyard. A placement all the way to the property line is fitting in terms of creating some distance for privacy and partially preserving gardens. In most cases properties are hard borders but in others neighbors can cooperate to create new units trespassing over many properties. Pathways will be used to reach the units on the gardens, and many of these can be connected between properties to create a common walkway throughout the block for a more connected community and a safe way between the park and the area.

Fig. 19 The proposed additions marked in black. A common pathway marked in red.

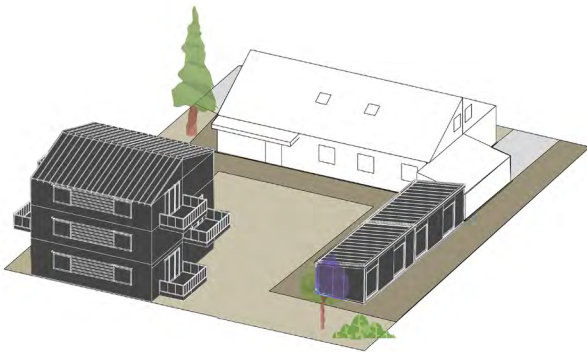


DESIGN



Simple addition

An example of a simple addition, in this case adding a single-family house of two floor to the property, private gardens be allocated left of the buildings and more common areas to the right, a shared car area along the street in grey and a common footpath to the doors in brown.



Apartment in the suburb

An example showing how an apartment building of 3 floors can be placed in the backyard, the backyard is shared amongst all. Also, smaller units can be aligned to the current garage of the main villa. Cars are to be parked in slots on the property along the streets.



Merging properties

An example of additions that trespass over two properties. A multi family unit along the street as well as several single and couple units on the yard will create many diverse housing units. A common yard in the center can be for communal activity.

DESIGN

Fig. 20 Multifamily units in coexistence with current villas



DESIGN

Fig. 21 Common courtyards with variety of housing and large green spaces



PLACE-MAKING

Community center

A community center consisting of a retrofitted container with common toolshed and indoor meeting area for members. The outdoor areas have a terrace with a roof that can work as a scene for larger outdoor meetings. The park has roof covers, sitting areas, a larger playground and more open space than previously. All this for a central part of solängen that will attract for events and play.



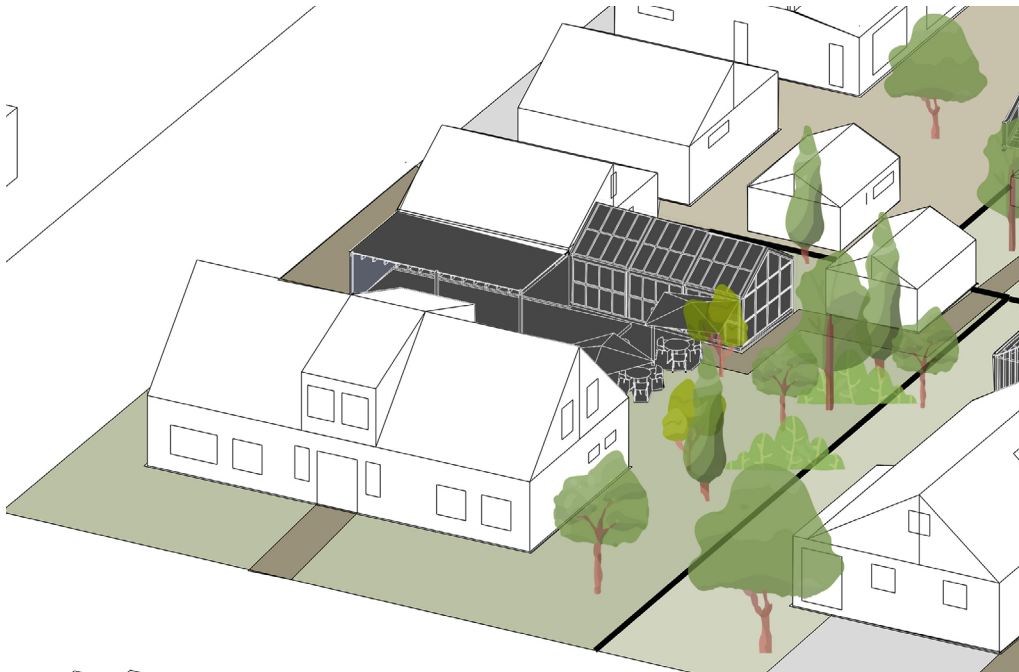
DESIGN

Fig. 22 Visualization of community center



Co-shared greenhouse and café

A larger greenhouse with connecting area for cafe and outdoor serving can be allocated in a property with more space and proximity to the street. This can be co-shared between neighbors to make maintenance easier and be a commercial function open for the public. Alternatively, it's an initiative of an individual property owner that wants to create a service and recreational space for the community and public.



DESIGN

Fig. 23 Visualization of the co-owned cafe and greenhouse

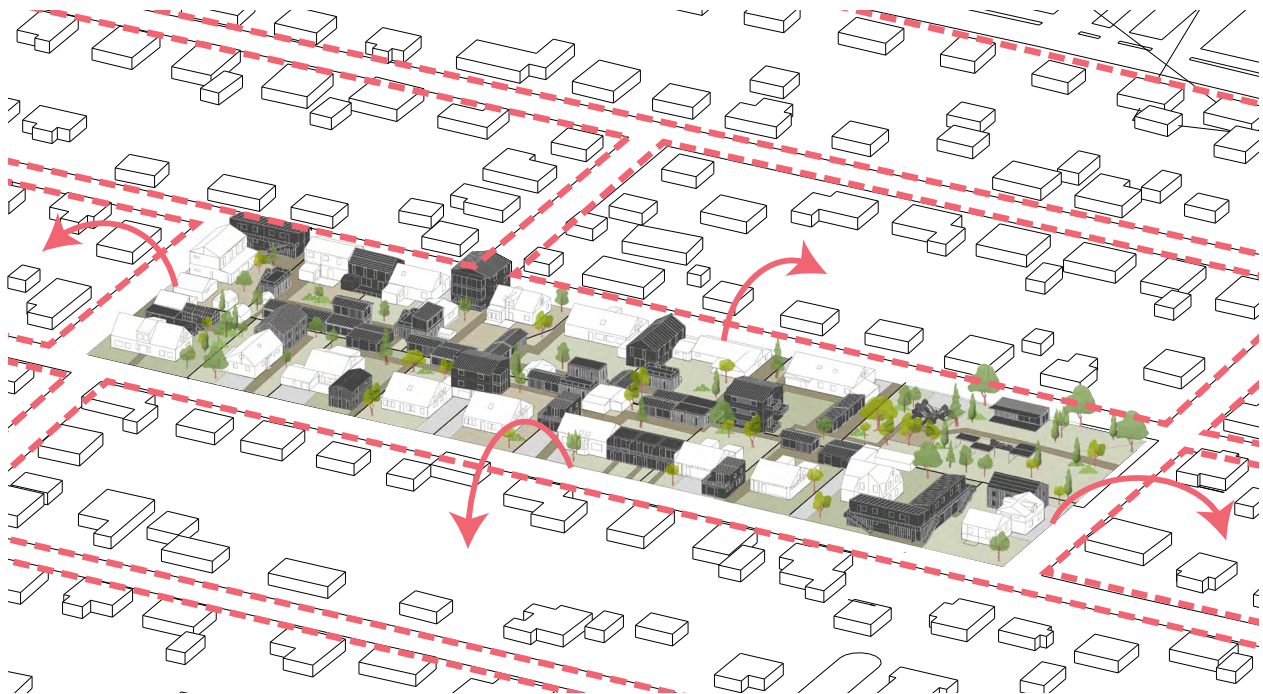


DESIGN EFFECTS

The effect of expansion

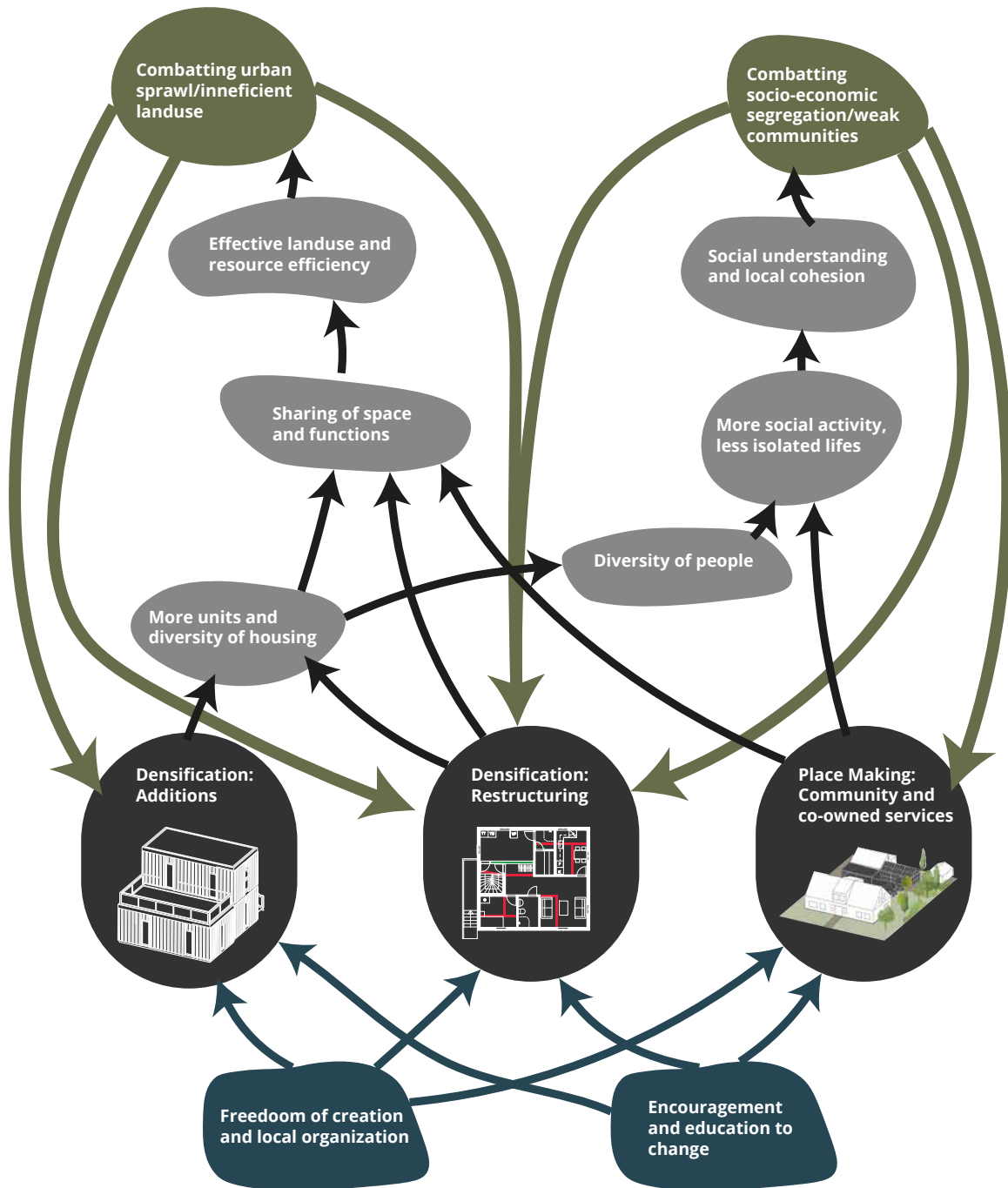
With new additions excluding restructuring 60 new households can move into the project block that is 1.7 hectare. If a rough estimation is that 2 people live in each household as most of the additions are close to or under the average sqm for 2 people, the result would be a population increase of 120 people. If this would cover the other 13 rectangular villa blocks in Solängen you could estimate that all of Solängen will have 840 new households with a population increase of 1680 people.

If estimated that the current 400 households mostly consisting of families have 4 people each the population as it is right now 1600 inhabitants. The new additions would thereby increase the population of Solängen with over 100 percent, at least. This excludes the population increase through restructuring of current villas and likewise that some of the current inhabitants especially seniors are only couples or single households which reduces the current population estimates.



DISCUSSION & REFLECTIONS

Fig. 24 A mapping of the issues the project is intending to solve in green, the design in black, the power needed in blue, and the results in grey.



DISCUSSION & REFLECTIONS

REFLECTING THOUGHTS
METHOD DISCUSSION

DISCUSSION & REFLECTIONS

REFLECTING THOUGHTS

Combatting suburban sprawl

As the design proposals can show it's possible to reach greater level of densification and placemaking in a typical Swedish suburb, and the outcome can have noticeable sustainable effects. In this thesis I've chosen to focus primarily on the social and ecological outcomes of the design. The first issue of suburbia that I early on chose to present and emphasize on was the issue of suburban sprawl in terms of unsustainable growth of cities. By using the already urban areas and the infrastructure that exist there we can fit many more units and more people in the same neighborhoods, this is especially interesting in the suburb as the thesis shows it's possible to work on a low scale and low density while still bringing more people to the area.

Combatting inefficient land and resource use

Also included was the ineffective land and resource usage with large housing units and gardens, as well as the high consumption lifestyles suburbia entailed. How we can see an option of sharing and exchanging items and space within the community instead of everyone for themselves owning and consuming. The design proposal of shared gardens, community services such as greenhouse, café and a common toolshed brought ways to be more co-dependent and space effective. Space transformed to common use is technically not a loss of space, and it brings new people to also use these spaces.

Combatting segregation and isolation

Other issues lifted early was the socio-economic segregation and isolation that came with suburban lifestyle. By living closer to each other and bringing new people to the neighborhood with a variety of housing units we could share more with each other as well as strengthening the community with local meeting places and venues. Segregation could be reduced, and it will be much easier to break out from isolated bubbles of lifestyle.

DISCUSSION & REFLECTIONS

Regard of the local

The area has even through big changes sustained values that inhabitants have pointed out to be attractive to life in suburbia and more specifically in Solängen. Optimized floor plans keep a relatively spacious and functional living environment with smarter room layout, and shared spaces. The issue of loss of green space and privacy wasn't entirely possible to be met in the new changes as some sacrifices were to be made. The densification of the properties and the urban landscape at large brings a more effective landuse with backyards that fulfill more purposes than only for views and recreation. This was sometimes possible to do in such a way that privacy and the perception of spacious yards is sustained, often with smart placement of units on the backyard. Direction of windows not facing the main unit or each other, sometimes helped with fences and hedges as well as well as introduction of shared green space.

The issue lifted by locals about the community not being as active and apparent in arranging activities will be solved through creating spaces for community meeting centrally in the neighborhood. There will also be opportunities for informal meeting spaces on properties with the introduction of common backyards with shared functions and introduction of local services, spaces created, maintained, and used by the locals, either by single owners or by several neighbors.

Regarding the aim

The larger problems that come with suburbia with urban sprawl, inefficient resource use and segregation and isolation can be combatted. This example shows a suburb that can with intervention achieve a more sustainable position for the future. Densification and place-making can do many things, and likewise be implemented on larger scales where whole cities can create these changes and feel the effects of it. Local needs in the area can be understood and included to bring change that is more fitting to the area. A solution that sees the communities needs but also try achieving the greater aims in society regarding sustainable suburbia, the bigger and smaller interests in correlation. The result is a new setting in the outskirts of the cities, a new rurban environment as it brings qualities of community and low scale initiative from rural qualities in a urban setting not very far from the urban city centers.

DISCUSSION & REFLECTIONS

Realistic conclusion

It is important to point out that is mainly a individual choice, the proposal I showcased is an extreme version where everybody is included in favor of change. Real circumstances would be different as not everyone is likely to be involved in creating such big changes. Interviews showed that people living in suburbia are content with setting of the villa suburb, they did after all invest money to buy a property in this setting. The spaciousness, privacy and greenery and other factors were mentioned as basics in choosing to live in a villa suburb. This thesis is challenging this by creating a denser and busier environment, not too different from the more urban areas that many inhabitants in the villa suburbs chose to leave. The disinterest in change is not exclusive to the villa suburb, when you choose to move to a certain area it most likely have qualities you seek, change is thereby not appreciated.

But to reach a more sustainable suburbia losses will need to happen. To reach greater purposes of combatting larger issues that suburbs can create. Segregation, weak communities inefficient landuse and urban sprawl can be combatted through decisive changes. Basic changes that need to occur for this thesis to be realized is looser legislation so you can build more and larger units and closer to property lines. Also helping would be education from municipality or other organizations to locals in how the individual can create change. Other contributing factors could be incentives to build and renovate for the purpose of creating new housing units. The final push after previous changes is thereon from the locals themselves, if they want change, they will now be able to put additions on their property or together with neighbors. Organizations or individuals will now be able to create places on public and private properties.

These changes can become hard to realize, deregulation of municipality and government deregulation is not an easy task and needs support from politicians. The thesis is only exploring the ideas of extreme sustainable change and the potential effects of it, hopefully contributing to the discourse of architecture and urban planning and bring new ideas to architects, other stakeholders, and the citizens of suburbia in ways to explore suburban change. Ideas are crucial to meet solutions to the future of urban environment and ways to meet greater challenges.

DISCUSSION & REFLECTIONS

METHOD DISCUSSION

Literature

The chosen methods for this thesis were well chosen, but likewise there were opportunities to improve. More sources from literature may have helped in the thesis, some great sources were found, both theoretical but also practical examples of how suburbia can change, many of whom were in Swedish context. But likewise, as the thesis went on, I realized the subject is sparsely discussed in the discourse. This emphasizes further the importance of this thesis and further studies in the topic of sustainable change in suburbia.

Interviews

The interviews that were conducted were very helpful, improvement to the thesis would have been to include municipality in the discussion as they have a role in this thesis to encourage, educate and bring incentive to suburban changes. Because of poor planning and a time limit this was not possible to do, something to include if conducted another time. Other option of method could have been to include the locals in workshops to make sure the design was something more adapted to local needs and not just lightly included as in this thesis.

Case

The case was perfect in many ways to show a typical suburb in Sweden. An option to have made the thesis more exciting and extreme could have been to choose a more failed case, a suburb that were facing extreme issues such as nonexistent community, very far from services, and where the area was more homogenous in terms of architecture, people and mentality. Resulting in a design that was in even greater contrast from the current.

Research through design

In terms of research through design, sketching was an early process in the thesis, but this could have been extended further, sketching did come fairly late and it was not as extensive as I would have liked it to be, the final design came very soon after sketching as time planning was not ideal.

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LITTERATURE REFERENCES

Figures

Fig. 1 Front page and back page of this thesis is from
Stähle, A. (2008). Compact sprawl - Exploring public open space and contradictions in urban density

Fig. 2 London, UK
https://globaldesigningcities.org/wp-content/uploads/2018/03/GDCI-Webinar_Gehl-Institute-compressed.pdf

Fig. 3 Toronto, Canada
<https://m.imdb.com/title/tt0832937/mediaviewer/rm2500318977/>

Fig. 4 Self made map

Fig. 5 Self made map, satellite images from Google Earth 2022

Fig. 6 Mölndals hembygd förenings årskrift 1997, Facebook page Solängen Egnahemsförening.

Fig. 7- 10 Self taken pictures

Fig. 5, 11 - 13, 18 Self made map, satellite images from Google Earth 2022

Fig. 14 Self made illustration, Inspiration from Levittown aerial image
<https://en.wikipedia.org/wiki/Levittown>

Fig. 15 Vancouver, Canada
City of Vancouver. (2021). Laneway Housing How-To Guide.

Fig. 16 USA
Dunham-Jones, E., Williamson, J., (2011), Retrofitting Suburbia

Fig. 17 Skie, Norway
<https://www.finn.no/realestate/lettings/ad.html?finnkode=185435981>

Fig. 19 - 24 Self-made illustration

POUYA KHEZRI | RURBAN TRANSFORMATIONS 2022
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