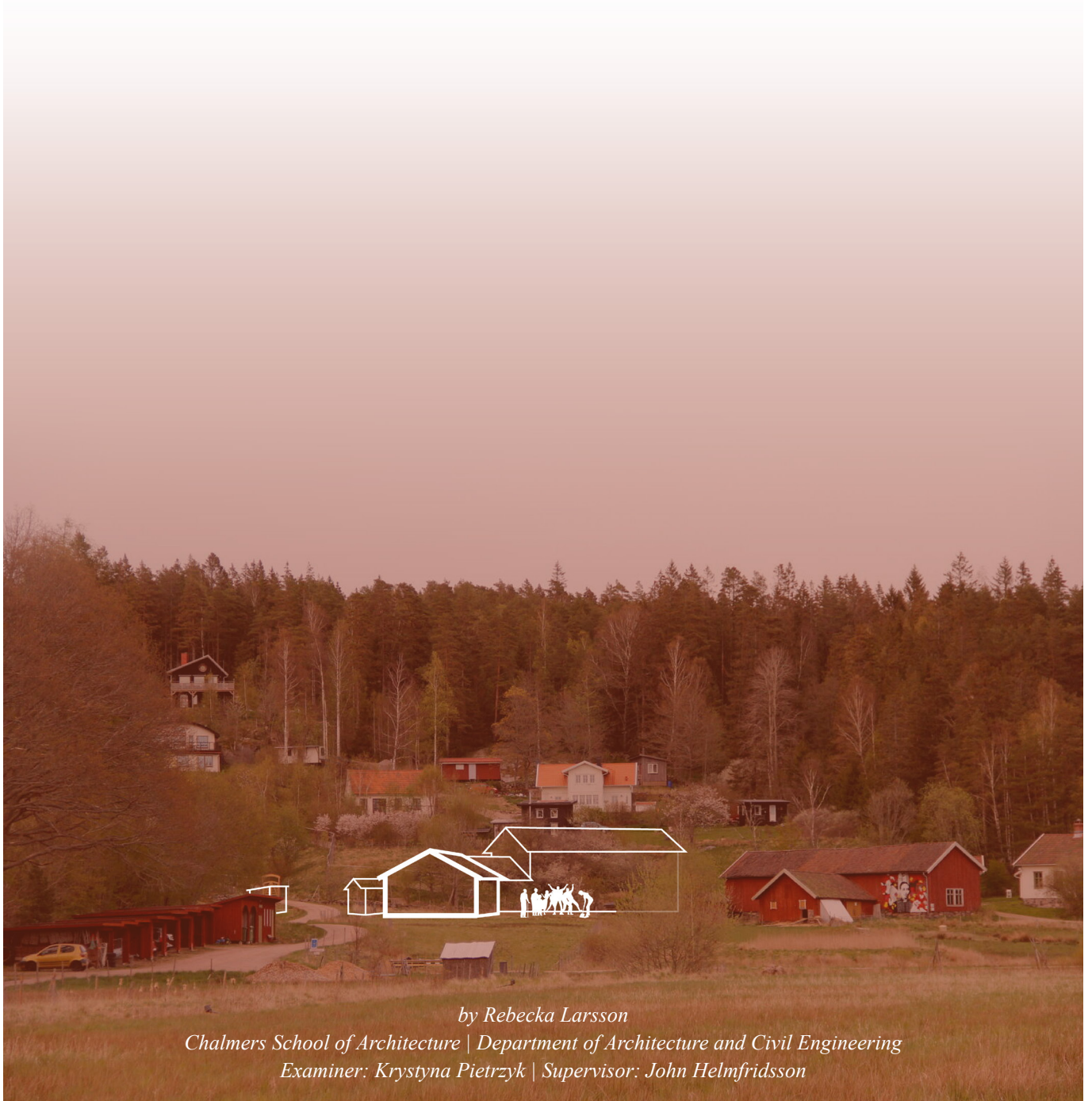


# Grow Together

*Exploring collaborative building & living in the countryside*



*by Rebecka Larsson*

*Chalmers School of Architecture | Department of Architecture and Civil Engineering*

*Examiner: Krystyna Pietrzyk | Supervisor: John Helmfridsson*



**CHALMERS**  
UNIVERSITY OF TECHNOLOGY

**GROW TOGETHER**

*Rebecka Larsson  
Master Thesis Spring 2021*

*Chalmers School of Architecture  
Department of Architecture and Civil Engineering  
Architecture and Planning Beyond Sustainability*

*Building Design for Sustainability  
Examiner: Krystyna Pietrzyk  
Supervisor: John Helmfridsson*

**Thank you!**

Erik & Tinna  
Utsikten ecovillage  
Per & Gunilla  
John  
Kerstin  
Krystyna  
Family & Friends



## STUDENT BACKGROUND



**Rebecka Larsson**

*rebecka.lager.larsson@gmail.com*

### **Education**

Master's degree in Structural Engineering and Building Technology (ongoing education)

*Chalmers University of Technology*

Master's degree in Architecture and Planning Beyond Sustainability

*Chalmers University of Technology*

Bachelor's degree in Architecture and Engineering

*Chalmers University of Technology*

### **Internship**

BSV arkitekter & ingenjörer

*Värnamo*

I grew up in the countryside in a small village with a strong community and a rich association life. It is in the countryside I want to live and work in the near future. I am passionate about rural questions and the strong social engagement that exists in the countryside. I believe rural development is an important key factor for a transition towards a sustainable future, and in many cases can show the way forward. The exhibition, En annan landsbygd (Another countryside) arranged in 2020 by the architect Angelica Åkerman, is a great source of inspiration for this master thesis. The exhibition highlighted projects, voices and issues that refine and develop rural areas today. The exhibition has also become a book, En annan landsbygd: Om gestaltad livsmiljö på landsbygden.

## ABSTRACT

With a century of urbanization, centralization, city focus, cutbacks and depopulation in the countryside, a collaborative building & living movement is emerging in the countryside. A user-driven, self-initiated and self-organized, housing construction where the society takes matters into their own hands, together.

The thesis explores collaborative building & living in theory and practice in an architectural and rural perspective. Concepts as collaborative housing, joint building ventures and ecovillages have been studied. Through literature, webinars and case studies the thesis collects knowledge from ongoing research. A collaboration with a growing ecovillage in the countryside and a house factory, specialized in collaborative building & living were implemented where practical experience has been explored. The thesis have studied how the ecovillage can grow in a co-creation process and how new multifamily dwellings can be designed for collaborative building & living.

Collaborative building & living is about people in social collaboration during the entire construction phase and the housing phase. It shows that the process is as important as the final design. The design is a result of a co-creation process which affects and changes the role of the architect and the architectural process, in relation to what it looks like today. There are some common factors to consider regarding a design of multifamily dwellings which enable a more inclusive and affordable design. These factors are a design based on a basic design, sharing architecture and self-building to varying degrees. Except from these factors there is no universal solution of a design, there need to be many solutions. The design of our living environments needs to be adapted based on the local context, its prerequisites and the people living there, always. It is also important to consider change and development over time. Co-creation design contributes to diverse and qualitative designed living environments and enrich both the role of the architect and the end-users. We need each other, we grow together.

### **Keywords**

Rural development, Collaborative building & living, Ecovillages, Collaborative housing, Joint building ventures, Co-creation design

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## Introduction

## BACKGROUND

### A century of the urban norm

In about one century, the urbanization in Sweden has accelerated from 25% of the population living in urban areas to today's 90%. Urbanization and centralization have strongly shaped our way of living. Cutbacks and depopulation in villages, coastal communities and old industrial communities have therefore increased over the years. The last decades have been about the urban norm where the focus has been on the problem and challenges in the cities. Media and research have set aside that there is also a housing shortage in the countryside. Surveys shows that more people want to live in the countryside but there is a lack of rental housing and the work opportunities are low which hinder the ongoing de-urbanisation. In step with urbanization has also the degree of self-sufficiency decreased in Sweden. For a long time the countryside has been described as stagnant but 2018 was the first year of increased population in rural areas (Åkerman, 2020).

### A new green wave

In the 2000s a new green wave, or de-urbanization has arisen. During the last years the movement has boomed. This can be due to a reaction against the housing crisis in the cities and the climate crisis (Emmerik, 2020). During a prevailing pandemic, this movement has further strengthened, there is a wish for a higher quality of life closer to nature. The accelerating digitalization has opened opportunities to work where we live instead of live where we work (PE Teknik & Arkitektur, 2021). The pandemic radically changed the lives of many people but in rural areas, where there is room for social distancing, life went on pretty much as usual. The biggest differences between how Swedes live and how they want to live are clear. 18% answer that they live in the countryside, but as many as 28% want to do so (Åkerman, 2020).

### The ecovillage movement

The ecovillage movement in Sweden is often associated with de-urbanization. In the 1970s there was a de-urbanization in Sweden. Many young families moved to the countryside with the aim of becoming self-sufficient and live in harmony with nature. The major causes of this were the radical, collectivist 68-movement and the oil crisis 1973. The biologist Rachel Carsons book, *Silent Spring*, released 1962 about chemical pesticides can be seen as a historical milestone. The book increased environmental awareness among people around the world. During these circumstances the first ecovillages were formed in Sweden. Over the years, several generations of ecovillages have emerged in the countryside or in the outskirts of the cities. All generations have arisen during global crises or discoveries concerning the environment with the aim to create sustainable communities (Atlestam et al., 2015). Many of these first generations of ecovillages tend to result in rather exclusive and isolated parts of society today. The reason for this depends mainly on the housing tenure. Ecovillages largely consist of privately owned villas, houses and tenant-ownerships (Åkerman, 2020). This results in expensive housing prices in attractive markets. Research shows that academic middle class is over-represented in ecovillages. Most ecovillages are significantly smaller than recommended to achieve a social sustainability (Atlestam et al., 2015). Public activities in ecovillages today are mainly about coming for a visit or for joining a course. This reduces flows and integration of people from outside (Åkerman, 2020).

### Housing supply in the countryside

The national organization *Hela Sverige ska leva* (All of Sweden shall live) estimate that there is a housing shortage of 50 000-70 000 dwellings in the countryside. The municipalities

prioritize the central localities and the smaller localities and the countryside's need is not seen. There is a notion that most people want to live in villas in the countryside but that is a misconception. The majority of elderly do not want to live in villas, they want to live in rental apartments. The same goes for young adults and newly arrived. The housing shortage in the countryside hinder rural development. The last decade has many new initiatives, like cooperatives, joint building ventures emerged in the countryside to cover the public interest of housing needs themselves. Rural development has always been driven by non-profit forces in the local community, by the so-called byalag (village communities). The strongest resource the countryside has is the social capital (Coompanion Sverige, 2020). A collaborative building & living movement is emerging in Sweden and especially in the countryside.

### Architecture in the countryside

Today, only 17 out of 1844 architectural offices are based in a rural municipality. This figure reflects both where the market and the construction industry are located and where expertise and skills tend to gather (Åkerman, 2020). Architects are experts at mapping the city's typologies and building patterns, but knowledge of rural typologies are lacking (ArkDes, 2021).

### A new architectural policy

In 2018, a new policy for architecture was formed, *Designed Living Environment*. This policy replaced the old one *Framtidsformer*, formed in 1998 (Boverket, 2020). One focus area in the policy is the growing gaps between the countryside and the city. The Academy of Architecture sees this as one of the most central challenges in Sweden (ArkDes, 2021). As well the national architect of Sweden highlights collaborative building & living as one enabler of this new policy and that collaborative building & living deals with all of the sustainable development goals (Socialt byggande, 2019).



Figure 1. Diagram illustrating the inequities between the city and the countryside. Redesigned diagram (*Hela Sverige ska leva*, 2020).



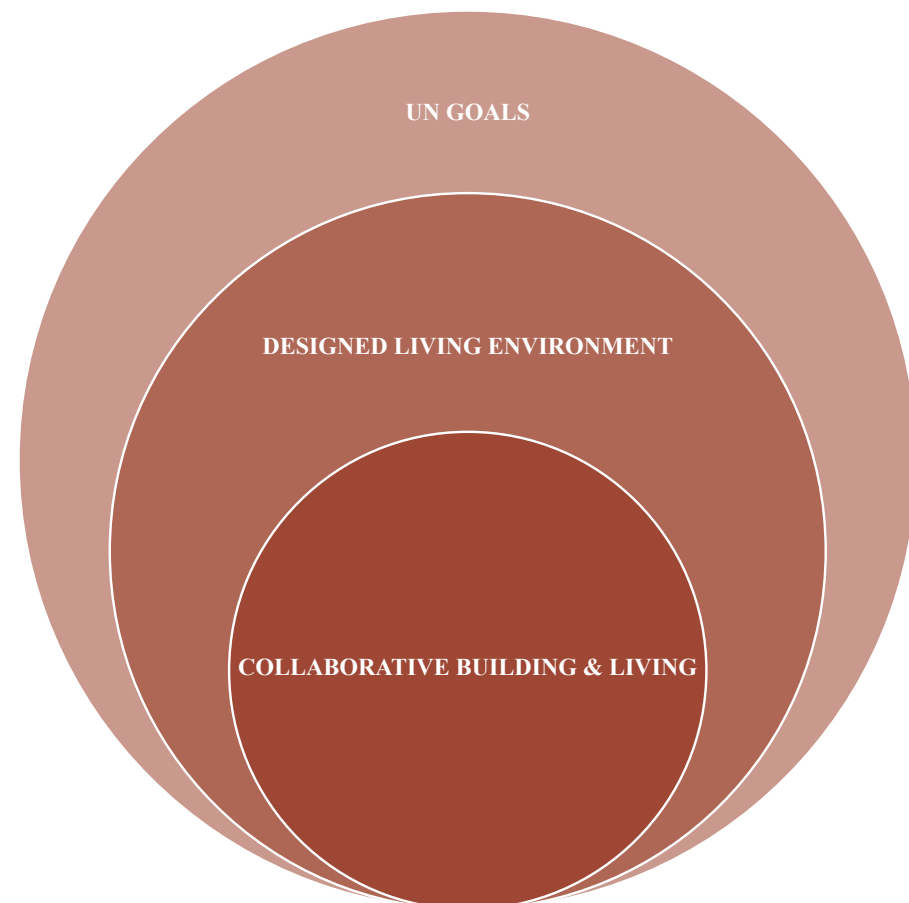
## AIM & OBJECTIVES

### Aim

The aim of this thesis is to explore *collaborative building & living in the countryside* from an architectural perspective in both theory and practice

### Objectives

- In theory and practice show how *collaborative building & living* and *rural development* can contribute to achieving the national goals for the new architectural policy Designed Living Environment
- Inspire architects to work with *collaborative building & living* and *rural development*
- Inspire ecovillages and smaller localities in the countryside to grow and develop



## RESEARCH QUESTIONS

**How can new multifamily dwellings be designed for collaborative building & living in a growing ecovillage in the countryside?**

### Sub-questions

How can an ecovillage in the countryside develop?

How do collaborative building & living affect the architectural process and the role of the architect?

## DELIMITATIONS

The thesis will focus mainly on the social sustainability. The multifamily dwelling project will also be treated in a thesis in civil engineering, which will begin after this thesis. The ecological and economical sustainability will then be treated in the civil engineering part where the main focus will be to optimize the energy use of the multifamily dwellings. Detail drawings will neither be treated in this thesis.

Collaborative building & living is a generic term for many different concepts. This thesis will focus mainly on the concepts collaborative housing, joint building ventures and ecovillages.

Another delimitation is the area working with and developing in the ecovillage. The whole village will be analysed but not developed. A design proposal of how the ecovillage can grow and develop will therefore be limited to the expansion area, in the center of the village.

A parallel design process with a community hall will happen in the ecovillage. The thesis will follow that process as well but without suggesting a design proposal of it.

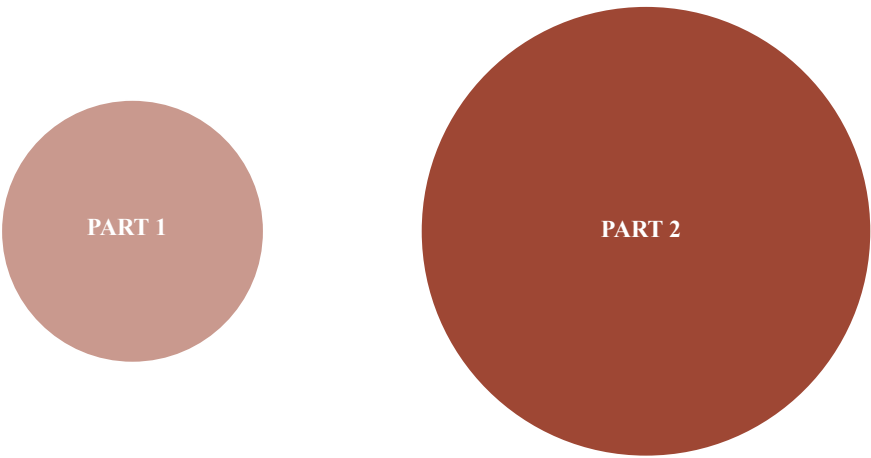
# METHODS & READING INSTRUCTIONS

The master thesis is divided in two main parts. Collaborative building & living in theory and Collaborative building & living in practice. Part 2 constitutes the major portion of the thesis.

- Part 1

**Collaborative building & living in theory**  
Part 1 is a theoretical part where research for design are practiced. Literature, webinars and case studies have been used methods to collect research about the subject, both contemporary and historical.
- Part 2

**Collaborative building & living in practice**  
Part 2 exercising collaborative building & living in practice with a real project in a ecovillage in the countryside. This is done in collaboration with a house factory, specialized in collaborative building & living.  
  
Part 2 consists of three phases.  
*Phase 1: A site analysis*  
*Phase 2: A site plan*  
*Phase 3: A design of dwellings*  
  
In part 2 research for design and research by design is practiced. Methods that is used is literature, inventories of site (site visits), interviews, sketching and co-creation processes as workshops and consultations between involved actors.



# DEFINITIONS

<i>Locality or Urban area (Tätort)</i>	A contiguous settlement with no more than 200 meters between houses and no less than 200 inhabitants (SCB, n.d).
<i>Smaller locality (Småort)</i>	A contiguous settlement with no more than 150 meters between houses and 50-199 inhabitants (SCB, n.d).
<i>Central locality (Centralort)</i>	Another name for an urban area, which primarily wants to emphasize the importance of the locality for the surrounding area's service supply. In most cases, the central locality is the largest town in a municipality (NE, n.d).
<i>Countryside or Rural area (Landsbygd)</i>	Statistics Sweden (SCB, 2018) describes the countryside as areas outside urban areas.

”

*“We need a new way of knowledge. The enforced academic knowledge of schools has alienated us from nature just as industrialisation by force has taken away the possibilities of our participating in satisfying our needs. We have only ready-made solutions, prefabricated ideas to be carried out. In the fields of life which need a high cash outlay, like housing, we have been cut off from solving our problems by using our own hands and own potential. We have been integrated into the cash economy.”*

*(Hassan Fathy, 1980)*

*Acceptance speech Right Livelihood Award*

## **Collaborative Building & Living in Theory**

This part explores collaborative building & living in theory. The policy for Designed Living Environment is presented. The concepts collaborative housing, joint building ventures and ecovillages are investigated. Case studies of projects in the field are done.

## DESIGNED LIVING ENVIRONMENT

The new architectural policy Designed Living Environment has a wider scope than the predecessor which include terms as architecture, form, design, art and cultural heritage. These terms should be seen as tools to meet the societal challenges with human being in focus and contribute to achieve the UN goals. The national objective for Designed Living Environment is: *"Architecture and design will help to create a sustainable, equitable and less segregated society with carefully designed living environments in which everyone is well placed to influence the development of their shared environment."* This will be achieved by ensuring that:

- Sustainability and quality are not made subservient to short-term financial considerations
- Knowledge in the fields of architecture and design is developed and disseminated
- The public sector acts as a role model
- Aesthetic, artistic and cultural assets are preserved and developed
- Environments are designed to be accessible for all
- Cooperation and collaboration are developed both nationally and internationally

The national goal clearly states that *all people must have good conditions to influence the design of the built environment*. This is an important issue and according to Swedish Public Health Agency, there is a clear link between health and perceived participation. The design professionals have a good ability to lead the process, an increased participation, if the objectives are there (ArkDes, 2020).

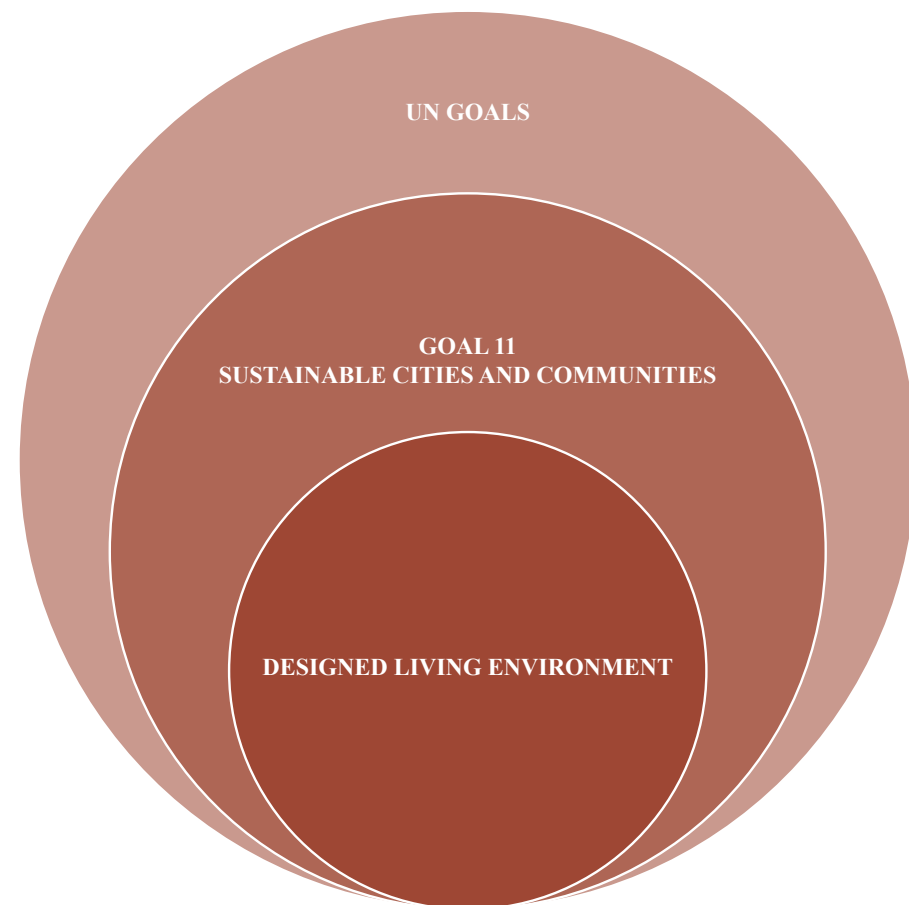


Figure 2. Diagram illustrating the objective of the policy Designed Living Environment. Redesigned diagram (ArkDes, 2020)

Have you as a citizen ever acted in order to influence the design of your local environment / urban area / district?

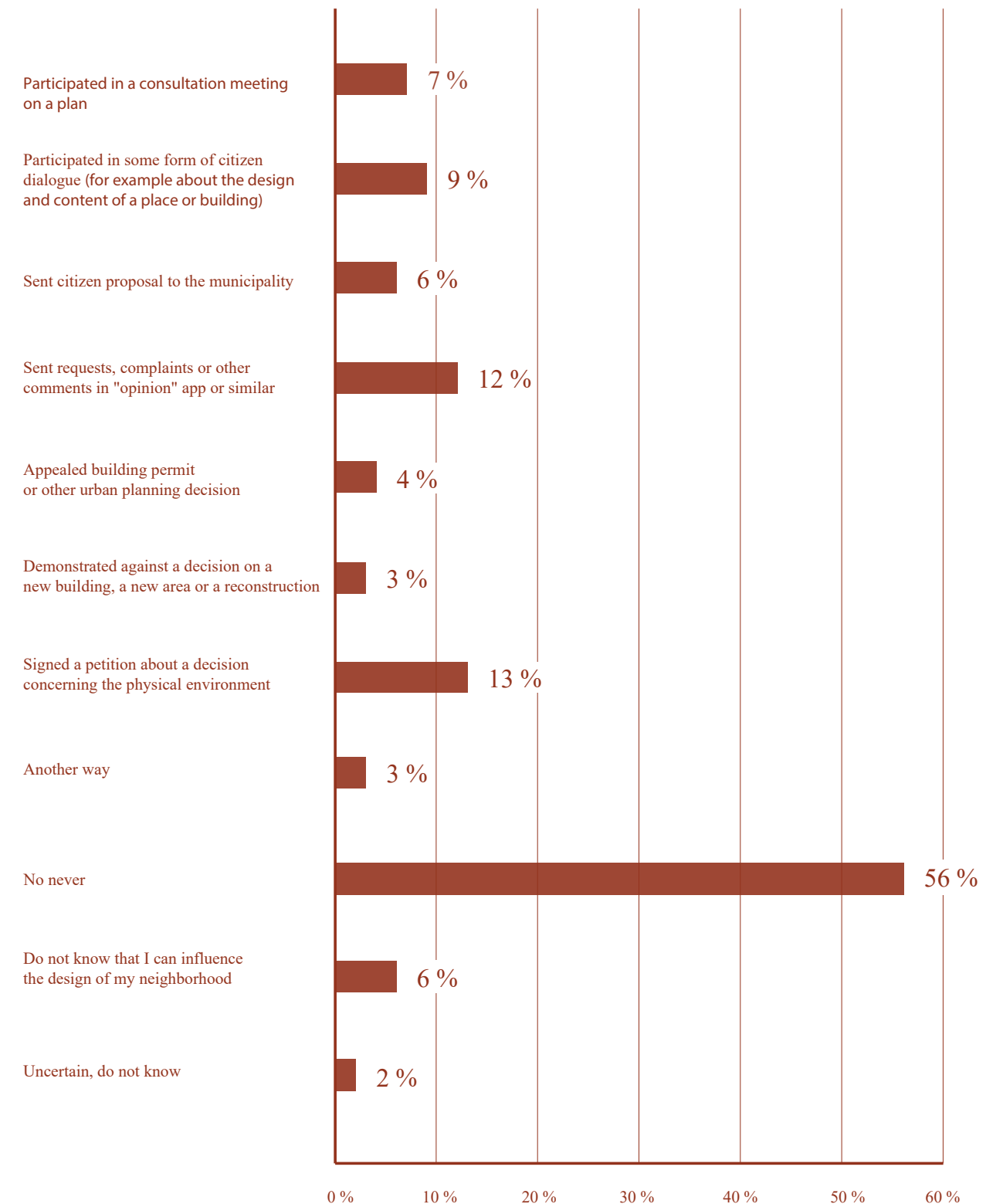


Figure 3. Diagram showing the citizens impact on our designed living environment. Redesigned diagram (ArkDes, 2021).



## COLLABORATIVE BUILDING & LIVING

Since the late 1900s a third sector with a locally led housing development has emerged in Europe. This popular movement is growing and has today several European names as Collaborative housing, Community-led housing, Selbstorganisiertes and gemeinschaftliches Wohnen. A well defined Swedish name is missing. Bygg- och bostadsmenskap is one term used today (Kärnekull, 2021). Socialt byggande (och boende) is another term used.

### Collaborative building & living in Sweden

Locally led initiatives for housing construction and local development indicates a greater development among countries in Europe than in Sweden and are therefore more common there today. Locally initiated and driven projects that have been implemented in Sweden are among the exceptions. Approximately 99.9% of all housing is planned and built in a conventional way, either through the municipalities or the commercial sector, while the non-speculative sector contributes with 50-100 apartments per year. A major problem is that the conventional methods of housing supply in the state and municipality do not promote local involvement (Kärnekull, 2021).

### A Swedish platform

In 2019 a conference about collaborative building & living was arranged and can be seen as the start of a wider movement in Sweden. Here gathered, the civil society, researchers, policy makers and officials. Thanks to the mix and new contacts a lot has happened in the area since (Åkerman, 2020). Another conference is now awaiting the autumn of 2021.

A Swedish platform has begun to be developed by Föreningen för byggemenskaper (The association for joint building ventures) as follow (J. Helmfridsson, personal communication, 5 may 2021)

#### *The collaborative building & living movement*

Complements the construction and real estate sector by:

- to meet construction needs that are not offered by the market or the public sector.
- to promote growth of cooperative construction projects
- to support and organize small-scale construction and self-building

Realizes sustainable living environments, through:

- to drive a transition towards a society in harmony with nature.
- to develop places with a focus on those who live there and their relationships.
- to create resilient communities with a good ability to meet challenges.

Conducts local community planning through:

- to create participation, inclusion and increased empowerment.
- to develop long-term values with the support of local needs and resources.
- to engage residents in the design and implementation of construction

### Driving forces

There are plenty driving forces why people choose to shape their own homes together outside the housing market. Some have been around for a long time, such as the desire for a larger community. Others have gained renewed strength through the need for climate change. Some are newer, such as that the accommodation must be affordable and socially inclusive. Common is that the market is not able to satisfy people's different housing needs for various reasons (Kärnekull, 2021). These groups of people, who come together to meet their own needs, tend to become some form of collaborative housing in the use phase.

### Implementation

A group of people can choose different ways to implement their ideas. One way is to work as a joint building venture and become their own developer. Another way is to find collaborative solutions with a public or private housing company. The group of people coming together in the idea stage are usually called starting group until project form and form of housing is chosen. Today the choice of project form usually depends on the geographical conditions and the size of project. Many groups cannot become a joint building venture due to lack of capital or not getting a loan. Some groups do not want to take full responsibility and instead want to find collaborative solutions (K. Kärnekull, personal communication, 20 May 2021). So far joint building ventures are a more common project form in the countryside because the public and private housing companies do not prioritize or find the countryside profitable enough (Westholm, 2019). What these project forms have in common are that they have all or great influence of the design and content of the dwellings. Even if not working as a joint building venture the group still have high influence on the design and how the dwellings and the community should be managed in the use phase. (K. Kärnekull, personal communication, 20 may, 2021).

### Build & Live Together portal

Build & Live Together is a newly started portal with a main purpose to facilitate the implementation of joint building ventures and collaborative housing and other socially driven construction projects in Sweden. This includes making it easier for everyone to find each other (matchmaking), making visible ongoing initiatives and projects, facilitating project documentation and collecting and transferring experiences between projects (Bygg & Bo Ihop, n.d)

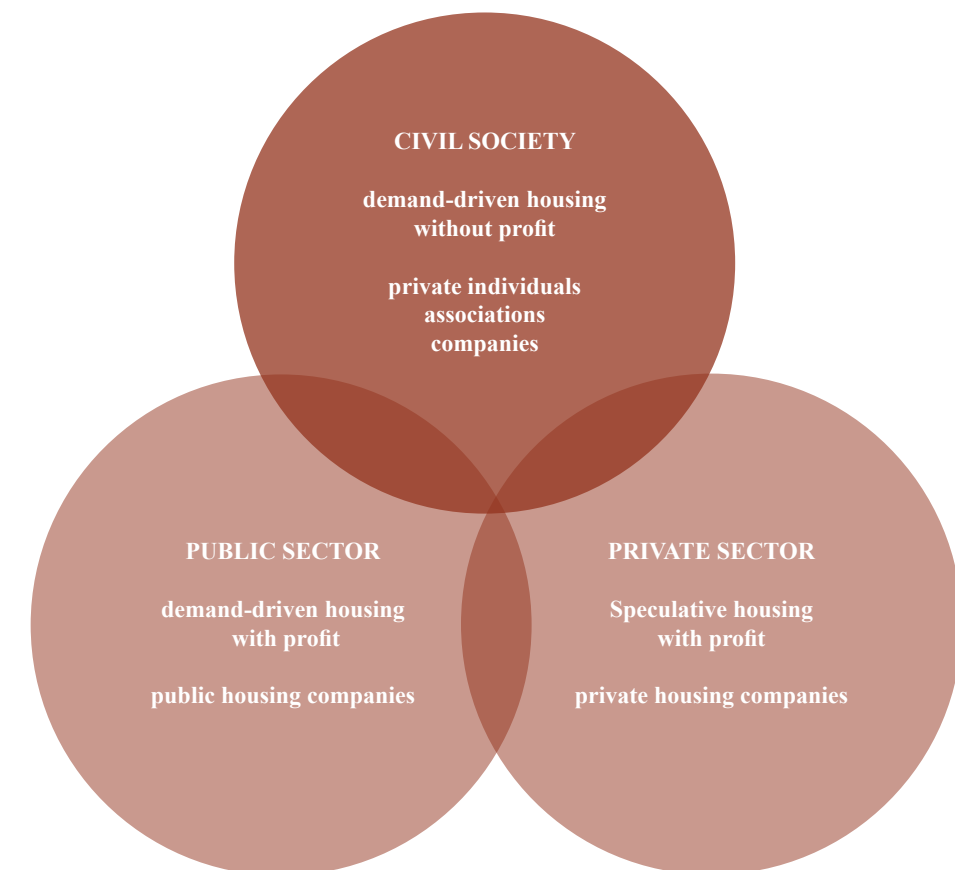


Figure 4. Diagram illustrating the three sectors orientation in the housing supply. Redesigned diagram (Theory into Practice, n.d).

# COLLABORATIVE HOUSING

Collaborative housing, is a generic term for housing which is characterized by increased opportunities for socializing and community in everyday life between neighbours (Boverket, 2021). Collaborative housing can be categorized in three different levels and types, coliving, cohousing, and ecovillages where you either share dwelling, share residential building but have your own dwelling or several residential buildings share and collaborate with each other.

<i>Coliving</i> ( <i>bostadskollektiv</i> )	Coliving is a shared dwelling where the private sphere is an own room, possibly with a toilet. Living room, kitchen and maybe even a bathroom are shared with other residents (Boverket, 2021).
<i>Cohousing</i> ( <i>kollektivhus</i> )	Cohousing is an ordinary residential house with normal apartments. In addition, there are common areas where the residents can cook and eat together, cultivate their hobby and socialize. The common kitchen and dining room are usually the core of the cohousing. All adults are often a part of a cooking team that takes turns cooking (Kollektivhus NU, n.d).
<i>Ecovillages</i>	Ecovillages consists of several buildings where great emphasis has been placed on ecological sustainability. Here it is not certain that the focus is on shared cooking as in cohousing. Instead, collaboration and community can be created, for example, around organic farming, self-produced electricity or other environmental activities. (Companion, 2019)

## The value for the residents

The interest in collaborative housing is great. What an individual person wish for is to live together with other people, not alone. This wish includes to do things together, such as cooking, eating and socializing, to share things with others, get more for less expenses, to reduce your ecological footprint by sharing, to learn from others, to make new friends, to feel safe among friends and to be able to stay in your home even if you get old and sick (Westholm, 2019).

## The value for the environment

Collaborative housing tends to push environmental issues further than the conventional ones. They share spaces and gadgets and they live on small private areas. They focus on shared cooking and a healthy diet. The buildings have often been better from an energy and environmental point of view than the average. Great choices have been made in materials (Westholm, 2019).

## Sharing architecture

Sharing of space, gadgets, services and community can take place and get support from the built environment. Sharing architecture can be described as rooms and built solutions that are designed for an extended sharing; architecture for sharing (Theory into Practice, 2019) Common spaces to share can be kitchen, dining hall, living room, laundry, workshop, atelier, library, sauna, playroom etc.

## The BiG model

The research group Bo i Gemenskap, BiG (Live in Community) has developed a model, the BiG model, which means that if all households reduce the apartment size with ten percent, the common space would be sufficient for communal activities for the same costs (Vestbro, 2014).

## Kollektivhus NU

The construction of collaborative housing accelerated during the 1980s in Sweden. The association Kollektivhus NU (Cohousing NOW) was formed 1981 as a membership association to promote more cohousing (Kärnekull, 2021). Kollektivhus NU is a nationally active association based on existing cohousing and independent starter and umbrella associations. It aims to improve the choices in the Swedish housing market with regard to various forms of collaborative housing. The association supports existing cohousing as well as groups that work to create new cohousing (Kollektivhus NU, n.d).



Figure 5. Diagram illustrating the BiG model. Redesigned diagram (Bo i Gemenskap, n.d).

## JOINT BUILDING VENTURES

The association for joint building ventures defines a joint building venture as *"a group of people who, based on their own ambitions, plan together, have a building built and use a building"* (Föreningen för Byggemenskaper, 2021). A joint building venture always has the formal developer responsibility. This means that the joint building venture is responsible for financing the project, with its own or on loan capital, and that the group is free to enter into agreements with any consultants and entrepreneurs. A joint building venture can choose any housing tenure but the definition does not have to apply only to housing (Boverket, 2018).

### Driving forces

The driving forces for wanting to be part of a joint building venture can vary. It can be about wanting to live together, about the design of the home, about ecological construction, about how you want to live as an elderly person or about wanting to keep the profits from building in attractive locations. It can also be about being able to build new homes in local housing markets where other developers shine with their absence (Föreningen för Byggemenskaper, 2021).

### Development

Joint building ventures, Baugemeinschaften, are very common in parts of Germany, especially the cities Freiburg, Tübingen, Hamburg and Berlin. There are joint building ventures an important strategy for the urban development (Föreningen för Byggemenskaper, 2021). In Germany there is two types of joint building ventures, "real" joint building ventures, initiated by a group of people and architect initiated joint building ventures (Kärnekull 2021).

In Sweden only a limited number of those 50-100 dwellings the non-speculative sector contributes with per year have been created as joint building ventures. The completed projects are thus still few, but interest and projects are increasing around Sweden (Kärnekull, 2021). Over the past years, the development of joint building ventures has taken decisive steps forward, largely thanks to the collaborative project Divercity (Föreningen för Byggemenskaper, 2021).

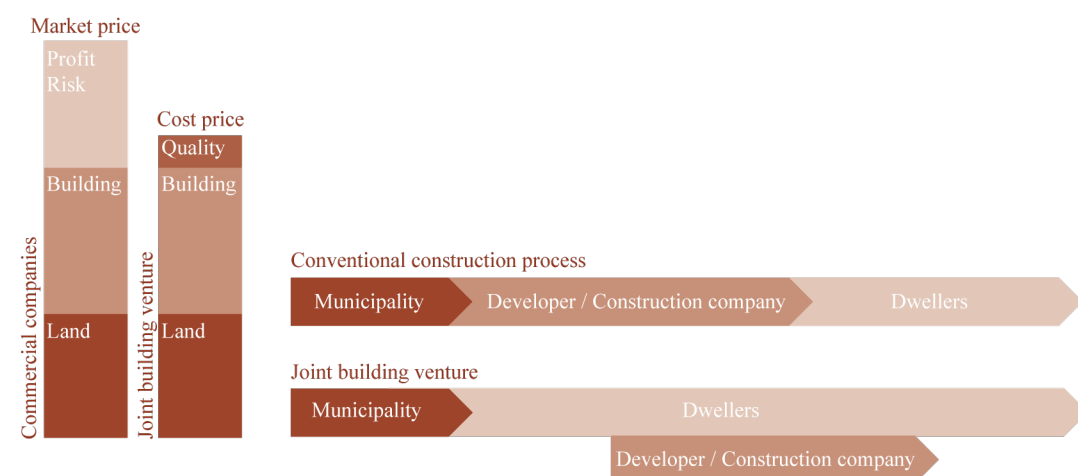


Figure 6. Diagram illustrating the difference between a traditional developer and a joint building venture. Redesigned diagram (Coompanion, 2019).

### Divercity - joint building ventures for diversity in urban development

In the Divercity project, 20 organizations have collaborated to pave the way for more joint building ventures in Sweden. The objective of the project has been to improve the conditions for joint building ventures through the development of policies and services/tools, primarily aimed for joint building ventures and municipalities (Divercity, n.d).

### Knowledge support

A state aid for joint building venture has been introduced. The aid aims to be used for initial project costs as knowledge support, mainly project guides but also architects and other expertise (Boverket, 2021). A project guide (projektlots) is a person with special skills to guide joint building ventures from idea, design, production to moving in (Theory into Practice, n.d).

### Process

The process of a joint building venture can be described in four phases, idea phase, design phase, production phase and accommodation/management phase (Föreningen för Byggemenskaper, 2021). Own physical work, self-building, during the production phase is common among joint building ventures to reduce costs.

### The association for joint building ventures

The non-profit association of joint building ventures was founded in Stockholm in 2011. The association gathers, develops and disseminates knowledge about joint building ventures and constitutes a common platform for everyone who has an interest in the idea of the joint building venture. The association now operates to a significant extent through a network consisting of several actors from the Divercity project. The association can give advice on the formation of projects with joint building ventures, it can also take place through collaboration with organizations that provide knowledge support and advice on financing; Coompanion, Ekobanken and Mikrofonden are important partners (Föreningen för Byggemenskaper, 2021).

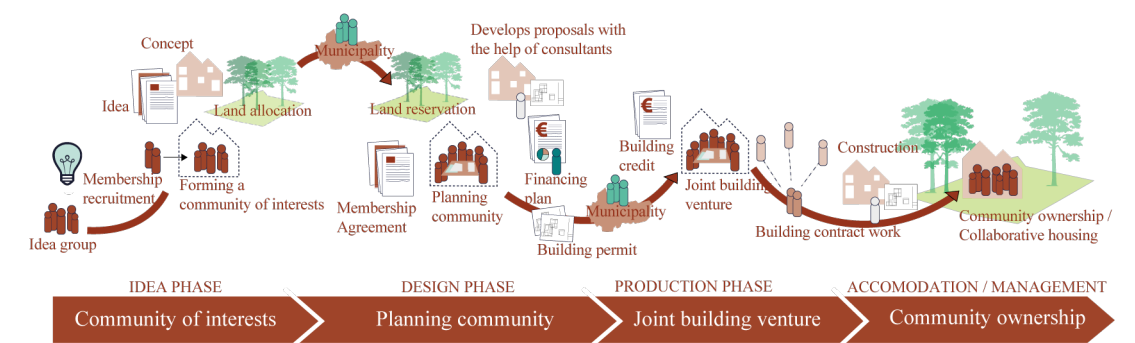


Figure 7. Diagram illustrating the process in four phases for joint building ventures. Redesigned diagram (Coompanion, 2019).



# ECOVILLAGES

The international organization Global Ecovillage Network (GEN, n.d) defines an ecovillage as: *"An ecovillage is an intentional, traditional or urban community that is consciously designed through locally owned participatory processes in all four dimensions of sustainability (social, culture, ecology and economy) to regenerate social and natural environments."* According to GEN (n.d) there is no one way of being an ecovillage but there are three core practices shared by all:

- *Being rooted in local participatory processes*
- *Integrating social, cultural, economic and ecological dimensions in a whole systems approach to sustainability*
- *Actively restoring and regenerating their social and natural environments*

## Ecovillages in Sweden

For 40 years, ecovillages have emerged in Sweden. Today there is about 70 ecovillages and more ecovillages are in start-ups. The desire to live in an ecovillage is about two dreams of freedom according to professor Per Berg. One dream is to live environmentally friendly, healthy and resource-efficient and the other dream is to live in community. Aesthetically ecovillages can look like any row house or apartment area, or the architecture can vary greatly within the village. Ecovillages are characterized to be innovative and experimental and have therefore shown the way for ecological housing construction. Many ecovillages have though experienced that it is about so much more than ecological housing as to take into account biological, economic, organizational, social, historical, cultural and aesthetic resources on site. The ecovillages main concepts as cultivation, community, resilience is nowadays starting to move into the city (Atlestam et al., 2015).

## Implementation and organization

The majority of all ecovillages arise as a joint building venture and the groups' participation and commitment in the planning process is great. Self-building is a common practice in the construction process. Most villages are organized as an economic association or a tenant-owner association with a board and working groups. Joint facilities are managed together in the village, usually on working days or in work groups (Atlestam et al., 2015).

## The community

Activities in an ecovillage contributes to a strengthened community. Common activities are working days, joint projects, joint celebrations on holidays, meetings, cultivation, work groups and cooking team. A community hall in an ecovillage plays an important role for both social and organizational activities. In some ecovillages have land and/or money been needed for necessities and a community hall have been prioritized away. This turns out to have a negative impact on the community (Atlestam et al., 2015).

## Size

The size of the village will also affect the social sustainability. An optimal size will be 100-250 adults. Smaller units within the village of about 4-6 households is preferable. Smaller units will create safety and togetherness with the neighbours. Today there is only a few ecovillages in Sweden of that size (Atlestam et al., 2015).

## Zones

Ecovillages need different zones of different degree of privacy and public to function in the long run.

*The private zone:* A single household with no insight

*The semi-private zone:* A common outdoor and indoor space for the residents, with insight.

*The semi-public zone:* Roads, small squares, green areas where visitors and guests are welcome for a limited time.

*The public zone:* Roads, squares, parks and public buildings open for everyone, both villagers and visitors.

A lack of private and semi-private places will create stress and fatigue. Recovery from socializing is important. A lack of public and semi-public places will exclude the society from the village and the village will act as a gated community, with or without fence (Atlestam et al., 2015).

## An ongoing process

The author Diana Leaf Christian, who have studied ecovillages for 25 years, emphasizes that an ecovillage will never be fully completed, as the development of ecologically and socially sustainable environments and infrastructures is an ongoing learning process (Atlestam et al., 2015). GEN (n.d) also points out that *"An Ecovillage is not a particular outcome, but an ongoing process. Each ecovillage is a living and learning centre for a regenerative future, a place of continuous exploration"* and *"Ecovillages are not islands for the rich and middle class"*. These statements counteract with many Swedish ecovillages today, that rather have stagnated and describes to be exclusive and isolated parts of society.

## The ecovillages national organization

The ecovillages national organization (Ekobyarnas Riksorganisation) works to provide ecovillages and other forms of communities with a striving for a sustainable lifestyle and development, opportunities to network and find collaborations both nationally and internationally. ERO is the Swedish branch of GEN, Global Ecovillage Network (Ekobyarnas Riksorganisation, 2021).



## CASE STUDIES

Four case studies about collaborative building & living have specifically been studied. Two cases are examples of growing ecovillages, one large village located in a small urban area and one small village in the countryside, Andelssamfundet and Baskemölla & Baskedal. The other two cases are examples of successful & high-profiled small-scale multifamily dwellings (collaborative housing at various levels) in the countryside, Hogslätts Vänboende and Lagnö Bo.

### Growing ecovillages

The two ecovillages show that they grow continuously in stages with various types of housing and housing tenures. Both ecovillages expand in the outskirts of the villages and new housing groups have had their hands free to develop the areas. They do also create a center in the village in a prominent and accessible location for the rest of society with public service, or opportunity for it.

### Multifamily dwellings

The multifamily dwellings Hogslätts Vänboende, Lagnö Bo and the new multifamily dwellings in the ecovillage Baskedal are all self-initiated and implemented as joint building ventures with the housing tenure cooperative tenancy (kooperativ hyresrätt). In order for these projects to be carried out the only option was to implement the projects as joint building ventures. The cooperative tenancy is chosen to avoid speculation on attractive housing markets, in this case coastal areas, and to achieve affordable housing for everyone. All three projects have had an architect involved. What the projects also have in common are that the users have had great influence in the design of the dwellings and that self-building or own work have been performed at various levels to keep costs down. It also shows that it has strengthen the community within the groups. Hogslätts Vänboende and Langö Bo are two examples of collaborative housing with varying degrees of sharing architecture.



1. Andelssamfundet
2. Baskemölla & Baskedal ecovillage
3. Hogslätts Vänboende
4. Lagnö Bo



Figure 8. Dwellings in Andelssamfundet (Andelssamfundet, 2019).



Figure 9. New rental apartment buildings in Baskedal ecovillage (Baskedal kooperativa hyresrättsförening, 2020).



Figure 10. The collaborative housing Hogslätts Vänboende (Hogslätts Vänboende, n.d).



Figure 11. The collaborative housing Lagnö Bo (Kollektivhus NU, 2018).



Andelssamfundet

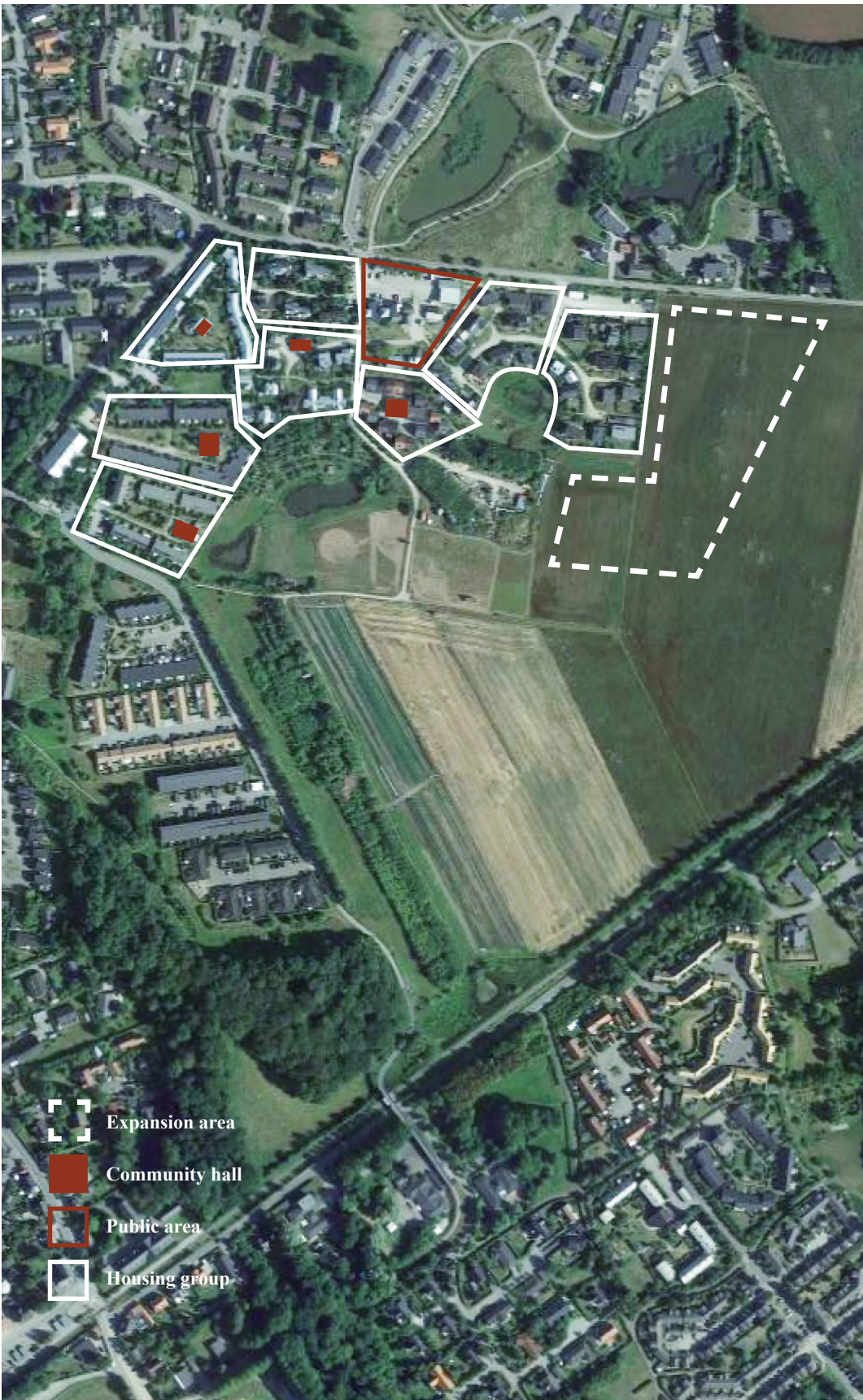
The ecovillage Andelssamfundet is located in the locality Hjortshøj, 15 km northeast of the central locality Aarhus in Denmark. The ecovillage was founded 1986 and the first villagers moved in 1992. Today, 300 residents are living there of all ages within 120 households. There is a great mix of housing tenures to include many people. The initial goal is to reach about 500 residents with an agricultural zone that allows a relative food self-sufficiency.

In collaboration with the municipality of Aarhus they found the site for the ecovillage and developed a plan that allowed the ecovillage to grow in the future. The first group moved in 1992 in 10 row houses built by an own construction firm, Ekotech and the residents. The construction firm was created during an experiment house construction by the residents. After the first group entered a second group was formed. They built rental housing and moved in 1996. Then the groups continuously have increased to 8 housing groups. Each housing group have about 10-24 dwellings. Each group has its own rules regarding the construction of houses and the organization of its common space. Housing groups of larger size have their own community hall. Common facilities, services and self-sufficient farming have grown in step with the housing groups. Vimby foundation is a social enterprise that works to create jobs for disadvantaged groups, particularly people with learning disabilities. Vimby runs green businesses and shops as bakery, cafe, organic grocery store, second hand shop, workshops and is centrally located in the village and accessible for everyone in Hjortshøj. The sixth housing group was a collaboration with the municipality on initiatives from the residents to build housing for disables. Today, the ecovillage is planning to expand with even more housing groups of about 50 dwellings east of the current settlements.

Andelssamfundet believe that the cooperative village of Hjortshøj, since its creation in 1992, has been and remains a living laboratory for a sustainable way of life, and therefore a source of inspiration for society as a whole for a sustainable future (Andelssamfundet, n.d).

Location:	Hjortshøj, Aarhus
Start:	1992
Dwellings:	120
Residents:	300
Type of housing:	All
Housing tenure :	All

Stage	9 (in planning phase)
Start & Finish:	2017 -
Dwellings:	About 50





*Baskemölla & Baskedal ecovillage*

Baskemölla & Baskedal ecovillage is located in Baskemölla, 5 km from the central locality Simrishamn in Österlen. The village was formed during the 90s. From the beginning, there were four families with children who built their own houses. The village has then expanded in three stages up to 25 villas and a Waldorf’s preschool. Since 2017 the ecovillage is in its fourth construction stage. The new expansion area is located across the country road and is its own association, a sister association to Baskemölla, called Baskedal. 4 small-scale apartment buildings in two floors have been built with 4 apartments in each. 4 villas and 3 bokaler, villas with combined accommodation and occupation, is also under construction. A community hall is planned for, which today is missing in the village. The community hall will be a meeting place for the two associations with assembly hall, dining room, large kitchen, laundry room, sauna, flexible rooms and restaurant with shop (Karnehed 2017).

The plans to expand had existed for ten years and the villagers themselves had worked out a detailed development plan for the new expansion area, but the price for the land was too high to afford during that period (Karnehed 2017).

The intention has been to grow both bigger and wider. The ecovillage is located in an attractive housing market where many have sea views. The new rental apartments have made it possible for anyone to afford to live in Österlen (Larsson, 2017). The sizes of the apartments vary between 1, 2 and 3 RoK up to 85 m². Both families with children and elderly live in the apartments (Frederiksen, n.d).

<i>Location:</i>	Baskemölla, Simrishamn
<i>Start:</i>	1995
<i>Dwellings:</i>	25
<i>Type of housing:</i>	Villas
<i>Housing tenure :</i>	Privately owned

<i>Stage</i>	4 (in construction and accommodation phase)
<i>Start &amp; Finish:</i>	2017-
<i>Type of housing:</i>	4 Smallscale multifamily dwellings 4 Villas 3 Bokaler 1 Community hall
<i>Housing tenure</i>	Cooperative tenancy Privately owned





*Hogslätts Vänboende*

Hogslätts Vänboende is located in the smaller locality Gerlesborg, 5 km from the locality Bovallstrand. The residential building is an elongated row house in one floor and with 12 smaller apartments and a community room.

The initiative to the collaborative housing emerged from a group of female friends in the neighbourhood who talked about how to live when getting older. Instead of moving to a nursing home, they wanted to stay in the area and live together and support each other (Westholm, 2019). Gerlesborg is a small coastal area with high demand for housing but with a limited supply and high housing prices. The housing tenure cooperative tenancy was chosen to make the housing affordable and to avoid the dwellings becoming summer residences (Åkerman, 2020). The people living there are mostly elderly but they also want younger people to move here. Today there is great interest to move there with a long queue, so a similar project is currently being planned in the neighbourhood, Andreastorpet (Westholm, 2019).

The financing of the project would not have been possible without a government investment support which can be applied for rental housing. Simpler physical work, as painting and construction cleaning, was also performed by the members to reduce the costs (Åkerman, 2020).

There are three sizes of dwellings, 1-2 RoK. Each apartment has a loft that provide extra space and spaciousness to the small apartments. Each apartment also has a private patio towards the backyard. At the front of the house there is space for common cultivation. Centrally located along the row house is a community room of about 50 m<sup>2</sup> which serves as an extra living room for the residents. The community room housing a small kitchen, dining area, a small office, a small atelier and a toilet (Westholm, 2019). There was initially plans for a separate larger atelier but that could not fit on the plot (Åkerman, 2020).

<i>Location:</i>	Gerlesborg, Tanum
<i>Finished:</i>	2018
<i>Type of housing:</i>	Collaborative housing, Apartment building
<i>Housing tenure :</i>	Cooperative tenancy
<i>Project form:</i>	Joint building venture
<i>Dwellings:</i>	12
<i>Apartment sizes:</i>	35-55 m <sup>2</sup> (1-2 RoK)

<i>Sharing architecture</i>	Living room/Dining hall
	Kitchen
	Atelier
	Office
	Garden



Figure 12. Floor plans and section 1:200 of Hogslätts Vänboende. Redesigned drawings (Hogslätts Vänboende, 2016).



Lagnö Bo

Lagnö Bo is located in the smaller locality Lagnöviken, 6 km from the central locality Trosa. The residential house consist of two apartment blocks in one and two floors with 19 dwellings.

The apartments blocks is shaped as a horseshoe around a large common conservatory with sea view. There are three sizes of dwellings, 1-3 RoK. Each apartment has a patio or balcony (with direct access to the garden by stairs) towards the backyard. The dwellings are entered from the common conservatory. The conservatory function as a large living room for the residents with a dining hall, stage, a stove, children’s playroom and cultivation. A large kitchen, laundry room, overnight stay apartments/offices and toilets could be accessed from the conservatory. There is also plans for a workshop or atelier in a separate building when affording it.

The initiative about an environmentally friendly collaborative housing came from a couple living on the farm Lagnö Bo. They had received EU funding for starting a rural development project. They found inspiration in ecovillages, cohousing projects and the concept bovieras. The land built on was cut off from the farm. The housing tenure is cooperative tenancy to counter speculation in this coastal location.

Physical work was done to decrease the costs. All exterior painting, construction cleaning and the clay walls between the apartments and the conservatory was done by the members. The community is based on the physical work during the construction and now in cultivation, cooking team, events, working groups and working days. Some neighbours are also part of the cooking team and some may consider moving in when they get too old for their villas. Neighbours and the public are often invited to special events. People of all ages and families with children live here today (Westholm, 2019).

Location:	Lagnöviken, Trosa
Finished:	2018
Type of housing:	Collaborative housing, Apartment building
Housing tenure :	Cooperative tenancy
Project form:	Joint building venture
Dwellings:	19
Apartment sizes:	35-69 m²
Sharing architecture:	Conservatory Dining hall Kitchen Laundry Children’s playroom Stage Overnight stay apartments/offices Workshop/Atelier Garden



Figure 13. Floor plan 1:200 of Lagnö Bo. Redesigned drawings (Lagnö Bo Kooperativ hyresrättsförening, 2015).

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*“One person cannot build a house, but ten persons can build ten houses very easily, even a hundred houses. We need a system that allows the traditional way of co-operation to work in our society. I cannot co-operate in a city if the moment I get out of the door I am launched into the anonymity of millions. We must create new neighbourhoods where I build for you and you build for me.”*

*(Hassan Fathy, 1980)*

*Acceptance speech Right Livelihood Award*

## **Collaborative Building & Living** *in Practice*

This part explores collaborative building & living in practice. This is done in a real project in the ecovillage Utsikten at Orust. Investigations of how the ecovillage can grow and develop with new dwellings in a co-creation process and how the dwellings can be designed are made.



# CONTEXT

## Utsikten ecovillage

In 2001, a group of garden enthusiasts from Gothenburg bought an old farm with associated land of 12 hectares, Lilla Krossekärr in Orust, to build an ecovillage. Lilla Krossekärr is located northeast of the island Orust next to the largest lake Grindsbyvattnet and 10 km from the central locality Henån. The farm has its origins from the 1500s consisting of forest, agricultural land and a water area in Grindsbyvattnet. The farmhouse, brewhouse and barn standing today were built in the 1800s (Utsikten Ekoby, n.d).

### Construction of the village

A detailed development plan was developed during 2002-2004 in collaboration with the economic association Utsikten. Then they started to build roads, water and sewage and 2006 were the first villas built. 17 plots were available including the original farm and one more existing plot. Most villas were built continuously by the villa owners during a five-year period up until 2011. The land, except the individual villa plots, is owned by the association Utsikten and complement buildings and joint facilities were built by the villagers. A common sauna and bathing jetty were built by the lake and a forest garden has been developed in the village. There are about thirty permanent villagers and about ten villagers living part-time (Utsikten Ekoby, n.d).

### Initial intentions

The original farm, with its farmhouse, brewhouse and barn, was initially planned to be the village center. The buildings were supposed to fit activities, service and a community hall but the farmhouse and the brewhouse were sold off to a member in the association. The money was needed to finance water, sewage and roads. The years have passed without a village center and a community hall due to lack of money but the wish and need for a community hall has grown stronger. An intention from the start has been to integrate work, leisure and residence to the highest degree but many in the village have ordinary jobs requiring commuting. To achieve some village service as a farm shop and day nursery about 50-100 households would be needed. There were also initially plans to build multifamily dwellings in form of cohousing but the groups did not manage it for various reasons. The plots were then sold off for villa owners (R. Karlsson, personal communication, 19 February 2021).

### An attractive ecovillage

Ever since the start up there has been a great interest in the village. Lack of plots have made the ecovillage grow outside the borders. In the immediate area have several ecohouses been built and the households are a part of the community by cooking team, the sauna and other activities in the ecovillage. The popular Waldorf school, a primary school, in Slussen attracts people to move to Orust and the area around Slussen. The school has recently grown to 130 students but there is a lack of dwellings around Slussen. In recent times, many have contacted the ecovillage for housing. The stakeholders are mainly young single mothers who wants to move to the countryside and live more simple in a community but also elderly women (R. Karlsson, personal communication, 19 February 2021).





**A growing ecovillage**

In 2017 the ecovillage decided to sell of land for new multifamily dwellings on requests from stakeholders. By selling land for new dwellings the ecovillage can finally afford to build the community hall. Development rights for a community hall already exist in the current detail development plan but there is a need for a change in the plan regarding new dwellings (Letter of intent between Utsikten ecovillage and the stakeholders, 19 January 2021). Today there is only one stakeholder left from the beginning and in 2019 did Egnahemsfabriken, a house factory specialized in collaborative building & living, decide to develop one of the plots for small-scale multifamily dwellings on request from the ecovillage.

**Egnahemsfabriken**

Egnahemsfabriken is an innovation project in collaboration between civil society, business and the municipality of Tjörn with the goal of creating alternative ways to own homes for more people and establishing a cross-border meeting place around construction and design on Tjörn. Through a professional construction organization with both architects, carpenters and project leaders, they do supervise self-builders and co-builders, manufacture their own house models and undertake construction projects and organize construction brigades (Egnahemsfabriken Tjörn, n.d).

**Plot 1, multifamily dwellings**

Egnahemsfabriken has planned to implement small-scale multifamily dwellings, with some sharing architecture, as a joint building venture. They did search for a joint building venture in the autumn 2020 but of various reasons the group dropped out. From this and previous experience has Egnahemsfabriken identified a need to present a realistic design proposal based on the prerequisites of the local context before searching for a joint building venture. The design proposal will then form the basis for further processing of the proposal together with the joint building venture. This will according to Egnahemsfabriken lead to a better joint building venture process, with a more united group (E. Berg, personal communication, 10 February 2021).

**Plot 2, a villa with an integrated rental apartment**

Per and Gunilla, a middle-aged couple from Gothenburg have since 2017 planned to build a villa and move to the ecovillage. They have been a driving force in the development of new dwellings and the community hall and have actively sketched on proposals of new dwellings, including their own villa, and the community hall. Their villa will have an integrated rental apartment of 1 RoK (P. Gyllenspetz, personal communication, 4 March 2021).

**The new community hall**

In a parallel process will the ecovillage plan for the community hall which will replace the old barn. The ecovillage has formed a group, the barn group, of three villagers who are responsible for the development of the new community hall.

*Timeline of the development of stage 2*

2017	Stakeholders and the ecovillage decides to build small-scale multifamily dwellings and a community hall in the ecovillage
2018	A group of 3 stakeholders and a responsible group for the community hall are formed. An expansion area in the ecovillage is planned for 3-4 residential buildings with 5-7 dwellings where at least half of all dwellings will be rental apartments. Sketch proposals among the stakeholders are introduced.
2019	One stakeholder drops out. Egnahemsfabriken decides to develop one plot of three on requests from the ecovillage. The two other plots will be developed by a local contractor and the stakeholder who are left, a middle aged couple from Gothenburg.
2020	The local contractor drops out. Egnahemsfabriken will have 2/3 of the expansion area. Egnahemsfabriken is searching for a starting group to form a joint building venture but the starting group drops out.
2021	A site plan with all involved actors (Utsikten ecovillage, Egnahemsfabriken, Per & Gunilla) is developed with help from the architect student Rebecka in this master thesis. A change in the detailed development plan begins. Egnahemsfabriken is searching for a starting group by market sketches and concepts of a preliminary design of new dwellings made by Rebecka. Utsikten developing a design proposal of the new community hall to move on with.

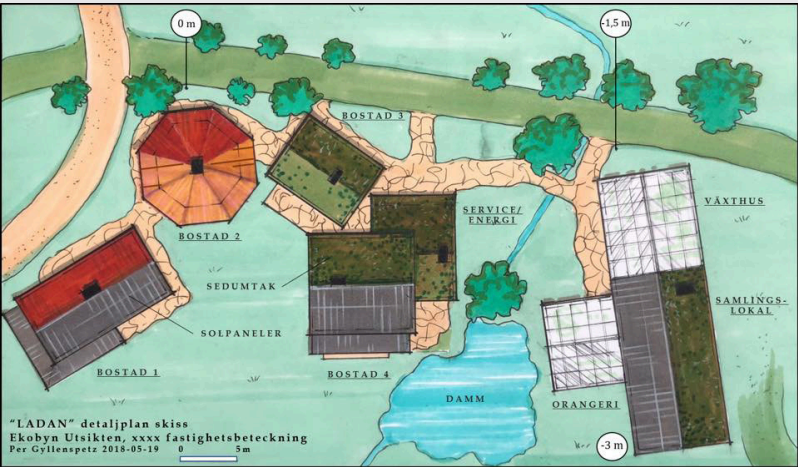


Figure 14. Early sketch proposal of new dwellings and community hall made by Per (Gyllenspetz, 2018).



### Letter of intent

The expansion area chosen by Utsikten ecovillage is a small area of 1200 m<sup>2</sup> where Egnahemsfabriken will have 2/3 of the area, 800 m<sup>2</sup>. The area is centrally located in the village next to the old barn that will be transformed to a community hall. In the current detail development plan is the expansion area intended for cultivation. The municipality of Orust and AL Studio will in collaboration with the stakeholders, Egnahemsfabriken and Per & Gunilla make a change in the current plan that make the area intended for housing. The plot division of the area is made in consultation between Per & Gunilla, Egnahemsfabriken and the ecovillage. A change in the plan will also enable about 5 parking lots, for the new dwelling area, next to the existing parking lots in the village. The letter of intent says that the design of the new dwellings and the community hall will happen in collaboration between the stakeholders and the ecovillage during the planning process. The buildings are to be built in ecological materials and construction technology. The change of the detail development plan is expected to be adopted by 2022 (Letter of intent between Utsikten ecovillage and the stakeholders, 19 January 2021).

### A collaboration

A collaboration between this master thesis and Egnahemsfabriken was established in order to develop a preliminary design proposal of the new dwellings for Egnahemsfabriken. The design proposal is used to seek stakeholders to form a joint building venture. Consultations with the architects Erik Berg and Tinna Harling, the two initiators of Egnahemsfabriken and the conference of collaborative building & living, was done continuously during the project.

### Reflection on the project

In this project, the joint building venture is architect initiated when the joint building venture will enter in a later stage.

The project includes two levels of joint building ventures. The ecovillage itself can in this case be seen as a joint building venture which is superior to the dwellings joint building venture. The central and prominent location of the new residential area, next to the community hall, will be the face of the ecovillage. The development of the new area will therefore be a public interest in the ecovillage. The villagers might have opinions about the design and placements and want to have influence. An open dialogue and a co-creation process with the ecovillage becomes important in the development of the area.

The location next to the new community hall will affect the new area. What will happen with the barn both by design and content will have an impact on the design of the new area. Will there be any synergies? It will therefore be important to follow the development of the community hall and to have consultations with the barn group during the project. It will ultimately create a better wholeness in the ecovillage.





# PROCESS

The process is divided in three overlapping phases

- Phase 1 - A site analysis
- Phase 2 - A site plan
- Phase 3 - A design of new dwellings

In phase 1 a thorough site analysis is made of the Ecovillage.

In phase 2 a site plan is developed in a co-creation process between the involved actors. A workshop about the new community hall was attended in to get a picture of what will happen with it. Another workshop was arranged for the villagers to brainstorm how the village can grow and develop. Several consultations between involved actors have occurred. All meetings have been held digital through zoom due to the ongoing pandemic. The co-creation process gives the prerequisites for a design of new dwellings.

In phase 3 a preliminary design concept of the new dwellings is done. The preliminary design is based on the theory part, the case studies and the co-creation process. The design proposal is used to seek for a joint building venture and form the basis for further processing of the design with the joint building venture. The detailed development plan will be adapted based on the design proposal and the site plan developed in phase 2.

## Timeline of the co-creation process



## SITE ANALYSIS

### *The design of the ecovillage*

#### **An old cultural landscape**

People have lived in Lilla Krossekärr for thousands of years. This is evidenced by ancient monuments on-site. The location has favourable conditions as warm and protected southern slopes, fertile soil, the lake and the nearby sea. These conditions reflects what people through the ages have fed on, agriculture, fishing, crafts and for most young men, shipping. Within the area, there are several well-preserved dry stone fences and cultivated plants which testifies to an older cultural landscape. Most of the area has previously been used for cultivation and pasture. The old country road, Häradsvägen, which in 1890 was replaced by the current country road along Grindsbyvattnet, also runs through the area. Häradsvägen is still used by pedestrians (Utsikten Ekoby, n.d).

#### **The original detail development plan**

The ecovillage is designed based on several design criteria. An important design strategy has been to preserve the older cultural landscape and the landscape image by do as little harm as possible with the new settlement. In the plan description (Karlsson, 2003) it states that:

- The buildings are located in dry, warm, sunny wind protected south facing hillsides in the zoning between forest and agricultural land.
- The Buildings are to the highest degree located to get a view of the lake.
- Valuable cultivated land and natural land are maintained.
- Cultivated land is avoided as far as possible to be built on.
- Buildings and roads are adapted by the topography to minimize earthwork.
- Dry stone fences are maintained and used as natural plot boundaries
- The buildings sizes are regulated by building area and total building height depending on the location in the landscape. The most prominent building plots allows a smaller building area and building height to minimize the impact of the landscape image. Multifamily dwellings in two floors of 200 m<sup>2</sup> are allowed in more hidden plots.



*Utsikten ecovillage seen from the country road. The settlement blends into the landscape.*



*Aerial photos showing the development of the area*



## Typology and surroundings

The typology consists of the old farm from the 1800s and villas with great individuality. Building construction, materials and the expressions differs among the villas. Some built entirely according to self-building and others not. What they have in common is that the villas are built based on ecological principles and harmonize in colour scale based on the traditional context of Orust. There is a mural on one side of the barn which is one of several murals at eastern Orust. The murals retell hidden and forgotten images and stories about women at eastern Orust (Orust Kommun, n.d). Häradsvägen runs through the hilly terrain along old dry stone fences and original older buildings. The path is partly gravelled and partly grassed.



*Häradsvägen along the expansion area*



*Figure 15. The forest garden (Utsikten Ekoby, n.d).*



*Figure 16. The mural on the barn (Utsikten Ekoby, n.d).*



*The bathing jetty and the sauna*



*The original farm with farmhouse, brewhouse and barn*



*Figure 17. A selection of villas in the ecovillage (Utsikten Ekoby, n.d).*



### *The situation today*

The village is fragmented in three settlements with low connection to each other

- The southwest villa area
- The northeast villa area
- The original farm in east

The two villa areas acting blind alleys with low interaction with the surroundings and the locals. The original design strategies makes the villa areas blend into the landscape and become hidden from the country road. The original farm is what define the village today and acting landmark.

Häradsvägen, is today a part of the 90 km long pilgrim's way in Orust and act an important walkway for recreation in the neighbourhood and from outside. People are happy to stop by the forest garden, located along the pathway.

There is a homogeneous and aging population with less number of inhabitants that is recommended according to the research of 100-250 adults.

There are homogeneous housing types and housing tenures with only privately owned villas.

The village lacks public zones. There is a vague village center and less natural meeting places outdoors and no indoors. The natural hub and center in the village can be defined as the crossing in between Häradsvägen and the village road where spontaneous meetings with the locals may occur. Other meeting places outdoors is

- The bathing place with the bathing jetty and the sauna
- The forest garden
- The common parking lots and post boxes
- On the "roads"

During spontaneous conversations with the residents, it has become clear that many lack community in the village that initially was searched for by many villager. The big reason for this is the lack of a meeting place indoor, in this case the community hall. What unite the villagers today are working days. Cooking team is not happening anymore.

#### **Establish a village center**

The new community hall and the new dwellings creates good opportunities for establish a village center. The location is central along Häradssvägen, next to the forest garden and the crossing "the village hub", where the flows of people and locals are great. More zones along Häradsvägen could be activated to strengthen the center even more.





## Potential zones along Häradsvägen

Three zones including the assigned plot have been identified as potential zones to activate and settle along Häradsvägen.



### *The assigned plot*

The assigned plot is the most prominent spot in the village. To settle the area therefore speaks against the original detailed development plans design strategies. The area is also classified as agricultural land, which to the greatest extent should be avoided to settle. In this case it is considered more valuable to settle the area. Settlement will connect the northeast villa area and the original farm and become the core of the center and the face outside.



### *The narrow plot*

This narrow plot, in between Häradsvägen and the village road, is an unused grass field. People are in movement on both sides of the zone. Activating this zone with small-scale settlement could create an entrance and a village street in to the center both from the village road and Häradvägen, together with buildings across the two roads. It will also strengthen the village hub in the crossing.



### *The former sheep pasture*

This hillside has been used as pasture for sheep. This zone was never built on because of the steep slope and by not disturbing the views for the villas behind. Today this is not the case anymore due the villa next behind is placed on the western side. This zone could therefore be settled.



Overview of the area



Overview of the area



# SITE PLAN

## Workshop - The new community hall

A workshop about the transformation or replacement of the old barn to a community hall was arranged by the Barn group in the ecovillage for the villager. The aim with the workshop was for all villager to share their visions about the new community hall. 15 villagers participated.

### Content

Following three questions were answered by each participant in three rounds:

- *What will happen in the barn? Content and functions?*
- *Design of the barn? What will the barn look like?*
- *To what extent do we want to let others into the barn outside the village? Ownership?*

### Workshop outcome

The participated villagers agreed on a lot about the transformation of the barn. Below is a summary of what the majority answered on the three questions.

#### Content and functions

- Kitchen
- Conservatory or greenhouse
- Large flexible hall for meetings, parties, culture, courses etc.
- Overnight accommodations (Apartment or sleeping loft)
- Workshop/Atelier
- Laundry facilities (All households do not have a washing machine)
- Enable for café events
- Fireplace
- Toilet/Toilets

#### Design of the barn

- Preserve the mural
- Straw bale house but with falu red wood cladding to preserve the barn expression
- Beautiful paned windows
- Reuse the stone foundation in some way
- Maintaining the footprint of the old barn to preserve courtyard image
- Accessibility
- The long side, facing the courtyard, will become the backside to not interfere the household in the farmhouse
- Preserve the barn expression

#### Do we want to let others outside the village into the barn?

The majority of the villagers are positive about letting others in and sees it as an advantage for the ecovillage to be part of a larger context. But the majority also point out that the barn is primarily for the villagers themselves.

## Workshop - A growing ecovillage

A workshop about the development of Utsikten ecovillage was planned and realized. The workshop was held for the members in the association Utsikten. The aim and goal was to inspire each other and brainstorm freely about how the ecovillage can grow and develop in the near future, and in the long run. 6 villagers, Per & Gunilla and Erik from Egnahemsfabriken participated.

### Content

An invitation was sent out by email to the villagers with an agenda to prepare the participants. The workshop consisted of following two parts.

#### Workshop part 1: How do we want our ecovillage to grow and develop?

#### Workshop part 2: Where in the ecovillage do we want new dwellings?

Before each workshop a short presentation about the subject was held to inspire the participants. The presentation for part 1 reflected on the importance to grow and develop and showed examples of other ecovillages growth or not growth and the consequences. The presentation for part 2 presented the site analysis made of the ecovillage in this thesis. After the presentations the group was divided in two groups where Erik and I joined a group each. The sessions were about 30 minutes and then the answers were presented in the whole group afterwards. It was the same two groups both workshops.

In part 1, following questions were answered:

- *Who do we think wants to move to the ecovillage and who do we want to move to the ecovillage? Do we want to move ourself within the ecovillage?*
- *What types of housing and housing tenure will be needed?*
- *How much can/will/should we grow? How many new dwellings? What can the development look like in 5, 10 and 20 years?*

In part 2, the participants had to place houses on a map where they want new dwellings, or other functions in the village. Each group got access to a miro board, a digital workshop platform, and 12 modules to put out on a map. The amount of modules were more than what could fit in the planned area and they were therefore forced to put out modules in other locations as well.



### Workshop outcome part 1

*Who do we think wants to move to the ecovillage and who do we want to move into the ecovillage? Do we want to move ourselves within the ecovillage?*

The answer of who do we think wants to move and who do we want to move to the ecovillage are similar, people who want rental housing, families with kids in the Waldorf school, families with children in general and young adults. If the villagers wants to move themselves within the ecovillage the majority of the villagers answer that they do not want to leave their villas even if they getting old, but a few villager might consider to move when not capable of taken care of their villa.

*What types of housing and housing tenure will be needed?*

They all agree upon some kind of rental apartments but there are also some request of co-housing and tiny houses. Housing that you do not live in all your life but in the first stage of adulthood and at the end of life.

*How much can/will/should we grow? How many new dwellings? What can the development look like in 5, 10 and 20 years?*

Many villagers argue that practicalities put a stop to expansion. There is not enough land, water and sewage are limited and the area need to be a growth area in the comprehensive plan. Maybe an option is to acquire more land in the future and summer cottages in the area. It is also clarified that the intention was not to become too many in the village.

### Workshop outcome part 2

The placements of new housing between the two groups for the planned plot are the same. A multifamily dwelling are placed along Häradsvägen and Per & Gunillas villa next to the village road just underneath. Below are villagers thoughts of the different zones presented.

*The planned area:*

- One volume for the multifamily dwelling (a calm and an uniform expression)
- Break down the scale of the multifamily dwelling (not a large apartment complex)
- The planned area is to small, could be bigger
- Do not build houses in front of each other to hinder the view of the lake
- Important to consider public, semi-public and private spaces (the meeting between the multifamily dwellings and the community hall is important)

*The narrow plot (small plot between the village road and Häradsvägen):*

- Some villagers can think of placing a building there but some not.
- Many think/believe that the plot is to small

*The former sheep pasture:*

- Very sloped for buildings but might work.
- How to get there? Do not want to get there by Häradsvägen (Häradsvägen is not gravelled today and they want to have it that way).
- An earth cellar in the slope have been discussed before.

*The southwest villa area:*

- Some might consider a cohousing there.



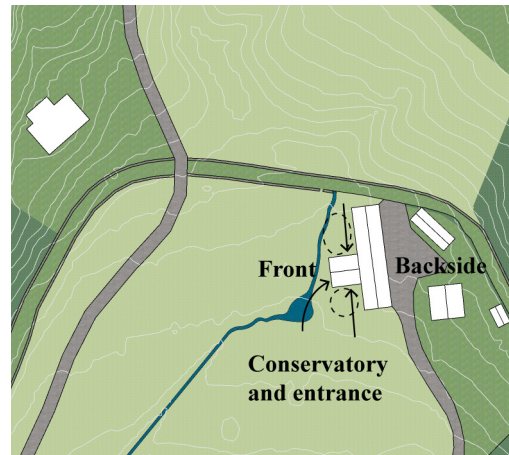
The two maps show each group's proposal of placements of buildings



## Co-creation process of the site plan

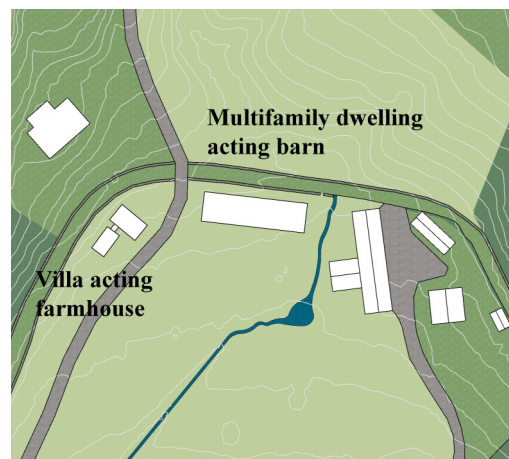
### The development of the site plan

Based on the site analysis, workshops and consultations with the actors a site plan for the new area has been developed. A 3D model with volumes was used as discussion material during the consultations where placements, volumes and functions were discussed.



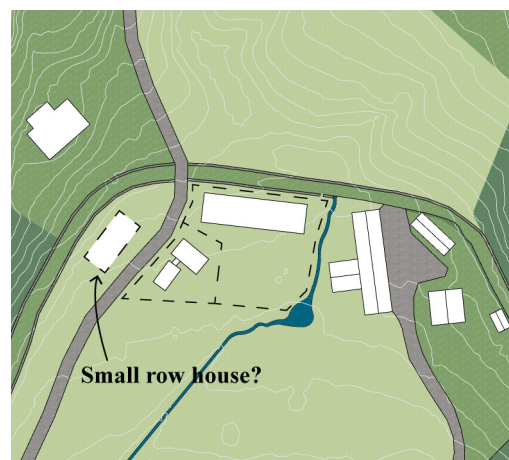
#### Input from workshop about the barn

The starting point has been the transformation of the barn to a community hall based on the workshop. The old courtyard, enclosed by the eastern long side of the barn will act backside and the opposite long side will become the new front and entrance. The spaces created between the barn and the new dwellings are therefore important. The small extension of the barn can be turned into a conservatory and become the entrance. It is valued to keep the footprint of the barn to preserve the courtyard and the image.



#### Input from site analysis

By placing a multifamily dwelling in similar scale as the community hall along Häradsvägen and close to the community hall will create a public square and a village street along Häradsvägen of block character. A proposal is also to place the villa across the village road to follow the existing villa structure according the original development plan. Also to activate that zone in a similar way as the existing farm.



#### Consultation with P&G and EF

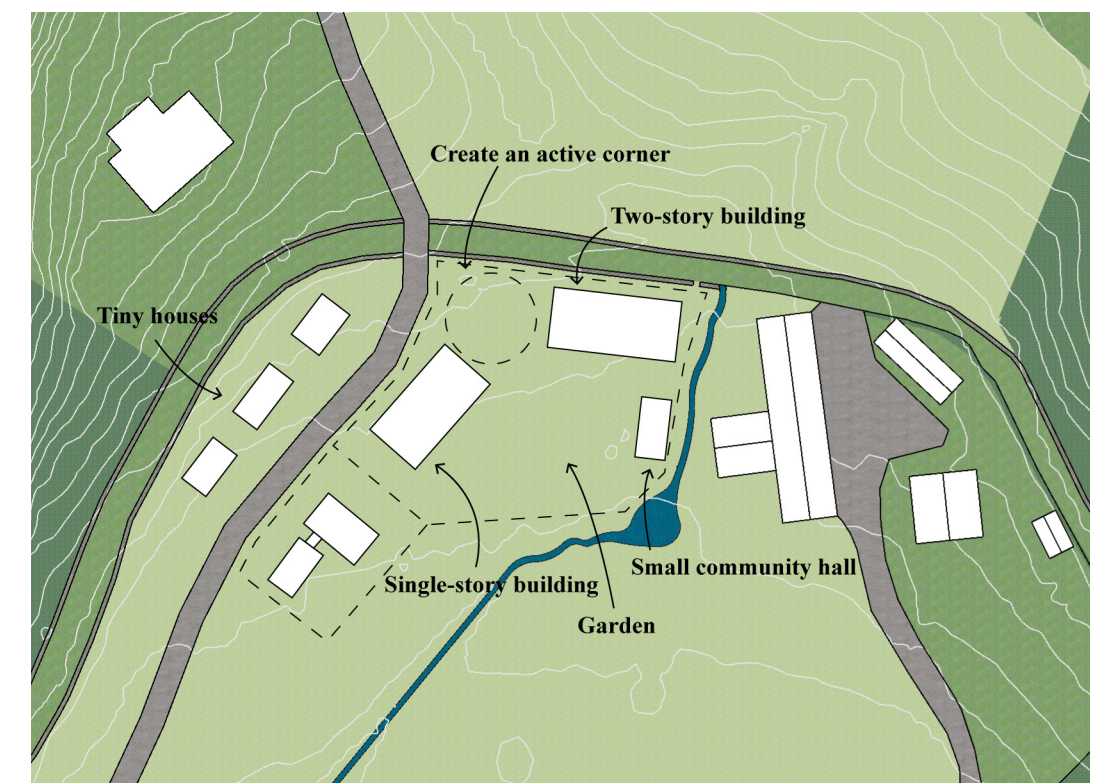
P&G prefer to stay on the assigned plot for several reasons, more privacy, better lake view, and more sun. They also plan for a villa in one and a half floor and the narrow plot suits for one floor. The view should not be taken from the villa behind. It could instead be an option for EF to locate a residential building there in one floor.

### Consultation with P&G and EF

The shape and size of the assigned plot does not allow an optimal plot division or spatiality towards the corner between EF and P&G. The corner is not suitable for dwellings and should activate with semi-public/public functions. It will be more valued letting EF use the whole size of the assigned plot and add an additional plot for P&G south of the plot and along the village road. It will allow EF to split the volume in two and place a smaller volume in one floor along the village road as well. This will create a block and a village street. The gap in the corner in between the dwellings opens up to be an active corner and the two residential building will encircle a common garden. This decision will also allow two more apartments (7 in total) which is preferable. The villa will get more privacy which P&G prefer.

There have been a wish from EF about adding a pair of tiny houses as a complement to one apartment building but the small scale does not suit well on the plot. The middle scale of a twin house in one floor can therefore be a good option. The idea of instead offer some tiny houses across the road, on the narrow plot that only allow small-scale settlement, would be valuable. The tiny houses will add diversity and offer varied housing types in the village center. Tiny house is a growing form of housing both globally and nationally and there is an interest from stakeholders who wants to settle in the village with a tiny house. The proposal of adding tiny houses and increase the plan area needed to be discussed with the ecovillage.

A small community hall for the dwellers is placed towards the large community hall. It could be seen as a complement for the dwellers. The large one might not be accessible all the time if there only will be room for one activity at ones (depending on size of the new community hall). The small community hall can host a living room with kitchen.





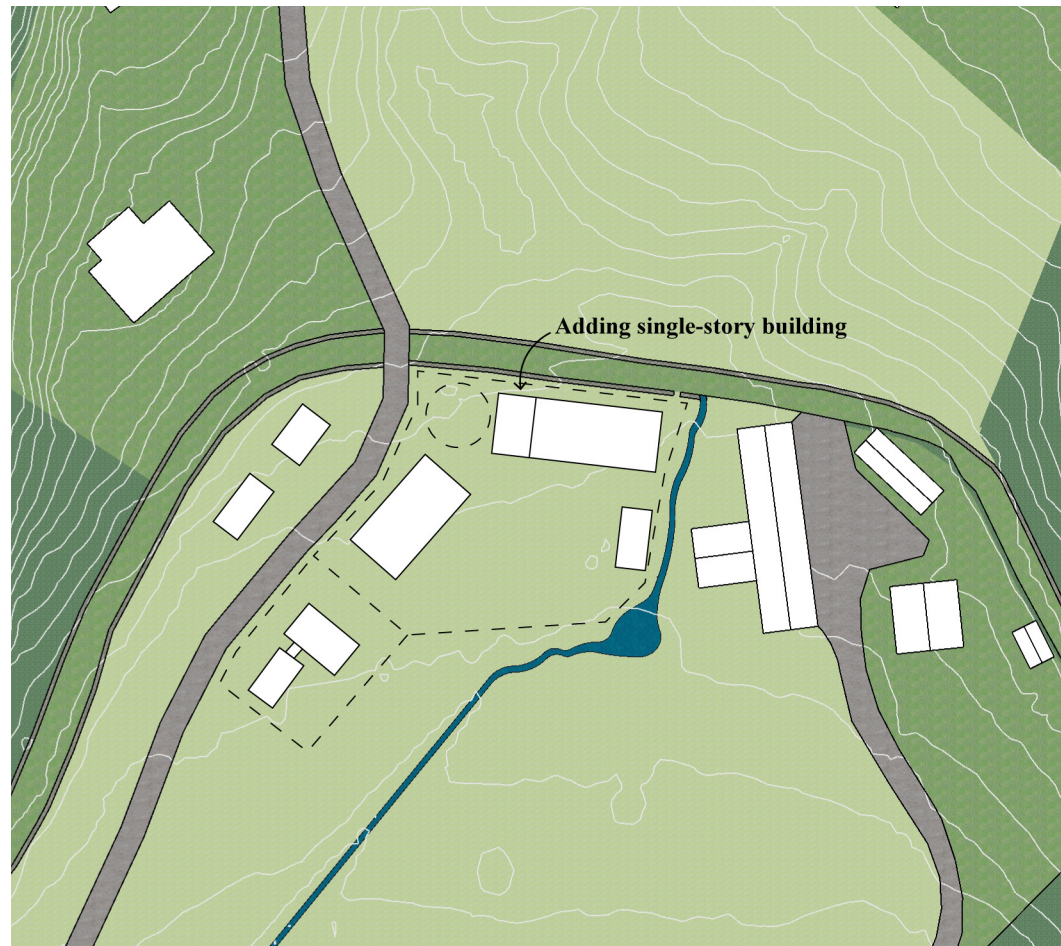
### Consultation with the board of Utsikten and the Barn group.

The representatives from the ecovillage are positive about the development of the area so far. The two squares that have been formed are popular and the variation in scale the residential building and the complement buildings create. They are also positive of the barn layout.

The representatives think it is good to expand the plot as proposed and that 7 dwellings are an optimal number of dwellings. Expanding the area has been discussed within the ecovillage before and was brought up during the workshop as well. It will provide the ecovillage with even more money.

A discussion that was brought up was if rather the joint building venture should have an own smaller community hall or not when a community hall of the same character is planned in the barn, but larger. The majority are doubtful of the joint building venture having an own. They want that everyone should be a part of the barn and are afraid of divisions within the village but they can also see the potential for the dwellers to have their own.

The proposed tiny houses will be brought up for discussion in the ecovillage. Some are directly positive and others need to think about it, maybe it is enough with two tiny house. If moving forward with the tiny houses it will require a change in the development plan and therefore an expansion of the plan area. It will preferably be done in this change otherwise it might take a long time before a second change in the development plan will happen.



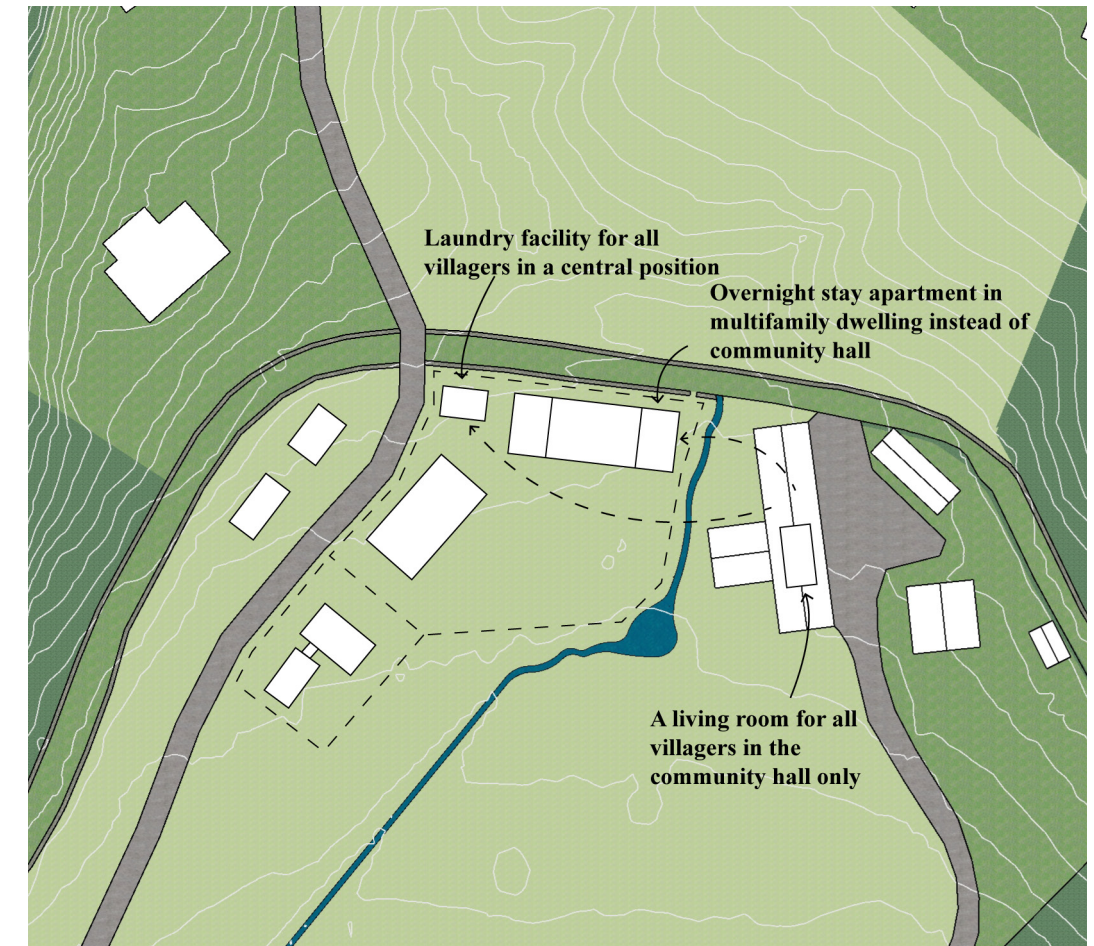
### Consultation with the Barn group

During this consultation common and dual functions in the community hall and the new dwellings are discussed.

A decision is made that the joint building venture will not have an own community hall. It will be a common in the barn. It would be good to have one smaller space only for the villagers and one larger more public space in the barn instead (not only one large room in the barn).

It is discussed whether an overnight stay apartment would be placed in the barn as wished or in the multifamily dwellings. It would probably be better in the multifamily dwelling rather than in the community hall due to regulations which will increase costs.

Laundry facilities are wished for in the community hall but it could instead be a common in the residential area which the villagers can rent. A laundry facility could fit in the corner, centrally located for everyone, and act as a meeting place.





Preconditions for a design of multifamily dwellings

Preconditions for a design of the new multifamily dwellings have been determined as an outcome from the co-creation process. A broad target group have been defined to fit both elderly, families with children, single parents and young adults, to get a diverse living environment in the village center. The dwellings will be rental housing as a complement to the privately owned villas. The housing tenure cooperative tenancy has been chosen so the residents can have the influence over the dwellings and to achieve affordable housing over time.

The program

A program for the dwellings has naturally been evolved during the co-creation process. The broad target group require a great mix of dwelling sizes. The dwellings are of smaller sizes than the average in Sweden but have instead access to shared spaces. A government investment support for rental housing can be used in an efficient and affordable way as well. The investment support favour smaller apartments.

It has also been defined what shared space the dwellings should have and what the new community hall will have to avoid duplicate functions, both in a cost aspect and to promote and favour the community within the village.



The final site plan



Type of housing: Collaborative housing

Residential building: 1 two dwelling house  
1 multifamily dwelling

Housing tenure : Cooperative tenancy

Project form: Joint building venture

Dwellings: 7

Target group:

- Elderly
- Families with children
- Single parents
- Young adults

Plot area: 1500 m²

Program

Private dwellings

3	1 RoK	35 m²
2	2-3 RoK	55 m²
2	3-6 RoK	85 m²

Shared space in the collaborative housing:

- Laundry room
- Bicycle storage
- Square
- Garden
- Overnight accommodation
- Technical room
- Parking lots

Shared space in the community hall:

- Conservatory / Green house
- Kitchen
- Assembly hall
- Living room
- Workshop / Atelier
- Large patio



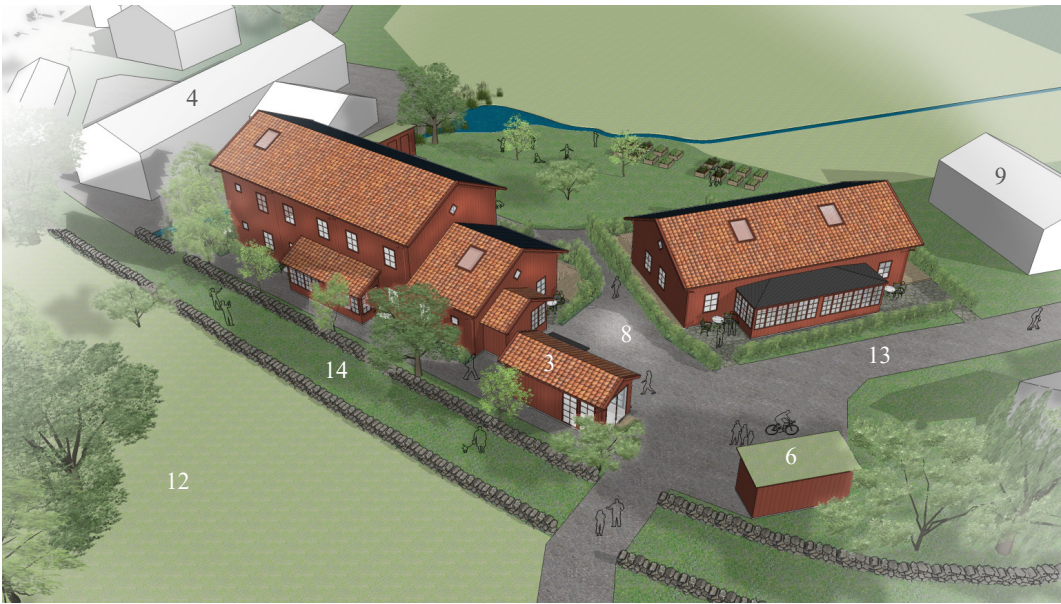
# DESIGN OF DWELLINGS

## Residential area concept

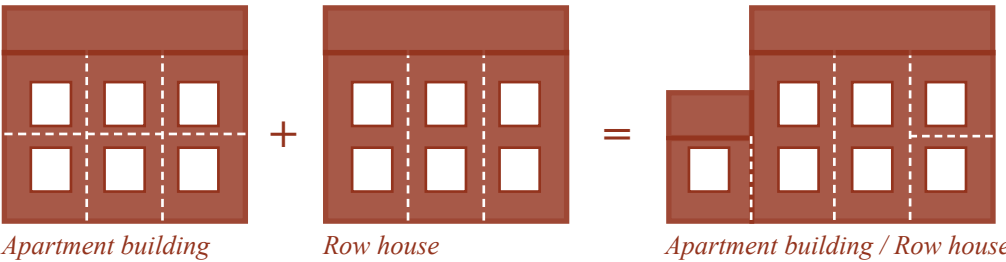
7 dwellings are accommodated in two falu red buildings with solar cells in south and claytiles in north to harmonize with the surroundings. The smaller residential building is a twin house in one floor. The larger residential building is a combined apartment building and row house in two and one floors. This combination allows a greater mix of housing and therefore a broader target group. It also enables all dwellings, except one, to be located and accessible on the ground floor with direct access to a private patio in two directions. The two buildings, together with the community hall, form a block enclosing a common garden. The buildings are placed along the roads to activate and create village streets. The larger residential building steps down to one floor to meet the twin house in scale and together enclose the square towards the crossing. Each dwelling have their own entrance through a porch facing the village streets or the two squares. To not disturb the dry stone face along Häradsvägen a parallel street is running just next to it. The porches helps to break down the scale and create sheltered patios. All dwellings have a more private patio towards the shared garden on the backside.

## Sharing architecture

The individual dwellings are quite private while there instead is room for a lot of socializing outside the own dwelling, both within the residential area and in the new community hall. Towards the crossing the village street widens into a social semi-public square for both the residents, villagers and visitors. This square intends to strengthen the hub of the village. The square is made active by the shared spaces and services used daily as a glazed laundry facility, a bicycle storage, space for loading and unloading and just places to sit down. The shared garden provides common cultivation and other activities. Space for common indoor activities will be housed in the community hall for the dwellers, together with all villagers. There will be a private part for the villagers and one more public part. The private part will be a living room. The public part will be an assembly hall for cultural events and parties. Both parts will have access to a kitchen, a conservatory and possibly a workshop or atelier. The community hall and the residential area connect to each other with a walking path across the stream, running in between the properties. The stream, greenery and storage building helps to create some privacy for the dwellers from the community hall.



Illustrations of the new residential area



- 1. Apartment building / Row house
- 2. Twin house
- 3. Laundry and technical room
- 4. Community hall
- 5. Storage
- 6. Bicycle storage
- 7. Common garden
- 8. Semi-public square
- 9. Villa
- 10. Tiny house
- 11. Public square
- 12. Forest garden
- 13. Village road
- 14. Häradsvägen

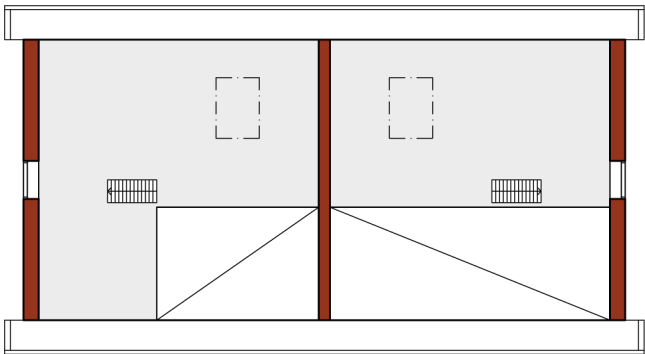
### Dwelling concept

A dwelling concept of three sizes has been developed with flexibility in room distribution and room function to suit many family constellations. The dwellings will therefore be sustainable over time.

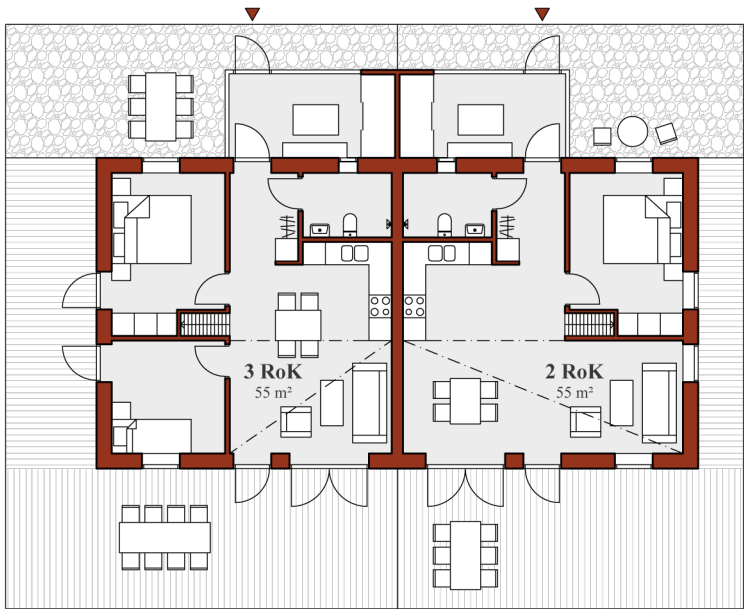
3	1 RoK	35 kvm	Apartment
2	2-3 RoK	55 kvm	Twin house
2	3-6 RoK	85 kvm	Row house

### Floor plans

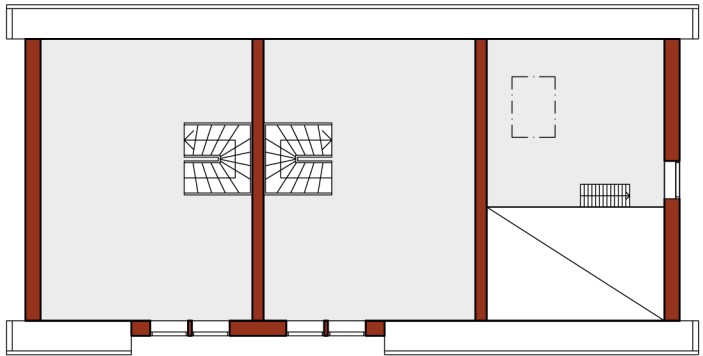
The dwellings have an open floor plan with a social area where the living room and dining area face a larger patio in south and southeast. Through large glass sections, the dwellings have a view of the common garden and the open landscape beyond. The porch function both as a storage and an extra living space during the summer season.



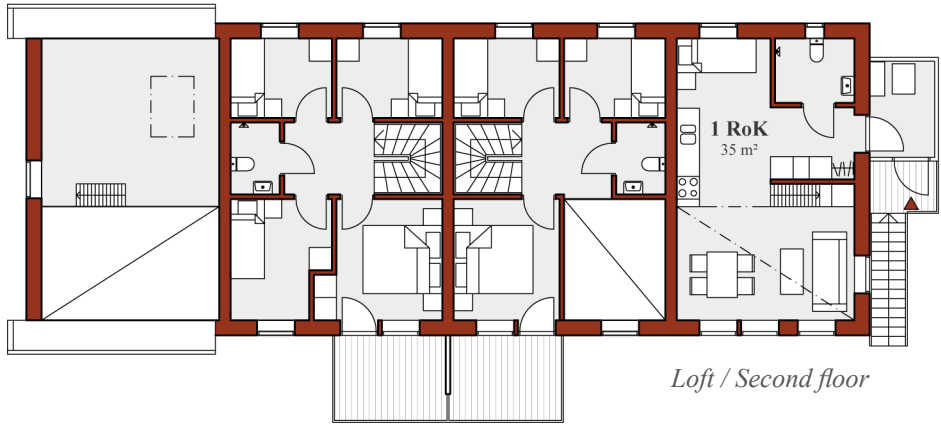
Loft



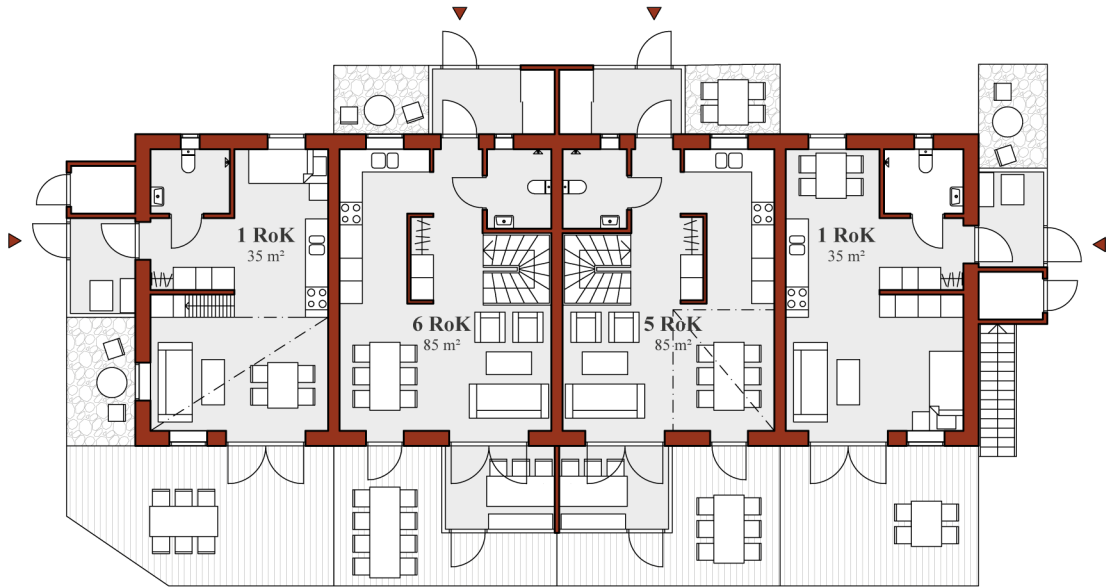
Ground floor



Loft / Attic floor



Loft / Second floor

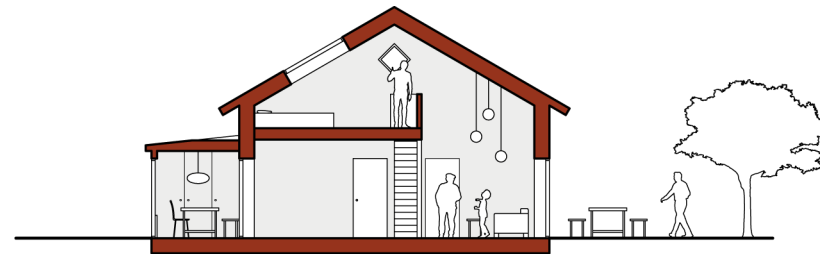


Ground floor

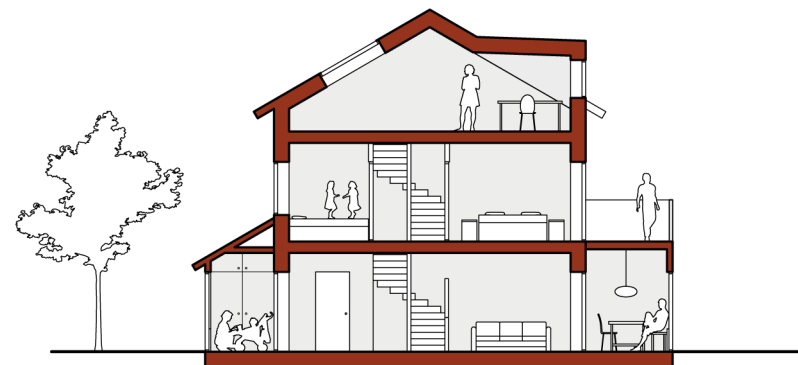


## Sections

The two smaller dwelling types have spacious lofts with glare-free northern lights through skylights. The lofts provides spaciousness and additional space in the dwelling but are not included in the residential floor area (BOA). The larger dwelling type is designed as a row house in two floors. There is an opportunity for a third floor, an attic floor under the gable roof, with a dormer window and skylight. There is also an opportunity to add a balcony above the patio and build a conservatory underneath. This is something that could be done in a later stage. The conservatory and the balcony will be easy to self-build when the floor of the balcony is separate from the floor of the house. The porches are a construction step which easily can be self-built as well, with reused windows to reduce costs. A third opportunity for the row houses is to open up between the ground floor and second floor with an interior balcony above the dining area to get spaciousness.



Section of twin house



Section of row house

## Presentation of the design proposal for the ecovillage / Reflection

A presentation of the final design proposal was held where all villagers who wanted to could participate. This presentation aimed to inform the villagers about the proposal. Also to obtain their consent to advertise the proposal to find stakeholders.

The proposal received a good response from the villagers. It was experienced that there was a greater interest in moving into the houses themselves in the future. During the workshop that was held, very little interest was shown to move into the new dwellings when getting to old.

More villagers also showed greater interest in the proposal for tiny houses this time than for the first time it was presented. Many are positive about moving forward with it if it is possible to include it in the detail development plan.

The proposal for a bicycle storage on the other side of the village road along the square is also highlighted due this has not been discussed before.

## Reflection on the process

The co-creation process shows that change in the immediate environment require time and a transparent process for all concerned. There is a greater resistance from people when new thoughts and proposals are presented which needs to be processed. This shows that ecovillages and other communities need to have an open mind for change to be able to develop in the long run.

The collaboration between “amateurs” and professionals in this project has result in a solution that probably would have been very different with only amateurs involved or with only professionals. The first sketches made by the villagers and the stakeholders differs greatly from the end result. Many values and qualities in the project would probably have been lost without the co-creation process and ended in a worse result. In the final solution the proposal is adapted and designed in the best way based on the local context and its prerequisites and the people living there. The co-creation process has proven to be very valuable to create a sustainable living environment.



**Closure**

## DISCUSSION & CONCLUSION

The thesis strived to answer the overall question, *How can new multifamily dwellings be designed for collaborative building & living in a growing ecovillage in the countryside?* and the two sub-questions, *How can an ecovillage in the countryside develop?* and *How do collaborative building & living affect the architectural process and the role of the architect?*.

### ***How can an ecovillage in the countryside develop?***

There is no universal solution for how an ecovillage can grow and develop. The project carried out shows how one specific ecovillage can grow. It is important to take into consideration ecovillages different prerequisites to grow, depending on the local context. A decisive prerequisite is how much land the ecovillage owns and who owns the land next door. This determines what opportunities the ecovillage have to expand. The size of the ecovillage is another prerequisite. Case studies show that it is good to grow continuously in stages with new housing groups. Ecovillages can expand with new areas next to existing settlement or within. These housing groups can be their own associations with an own community hall depending on the size of the ecovillges.

Today's ecovillages need a more varied housing supply to counteract the fact that the ecovillages remaining exclusive and isolated residential areas. Many ecovillages especially need to be supplemented with rental housing. Ecovillages are also in need of more public zones to strengthen the community and collaboration within the village but also outside the borders. Ecovillages need to become a part of a larger context. Public zones can be some form of public activities, squares, village streets, public roads, parks and gardens. The countryside can learn from the city and its qualities by creating small-scale urban spaces but in the countryside. Case studies and the project show the importance of a village center with denser settlement and a varied range of housing and public zones, preferably with different actors. The village center should be integrated with surrounding society by public road/roads. Densification in rural areas can be good, especially in a village center. There was once a village life in the countryside but it disappeared when the villages were split due to the reform of agricultural parcel in the 1800s. R:ekobyn and Bysjöstrand are two ecovillages which are currently being planned in Sweden. These ecovillages have learned from previous generations of ecovillages. Both ecovillages integrates with the outskirts of smaller localities, offer various types of housing and creates a center to increase meeting places and a local economy.

The thesis has experienced that there is both fear and curiosity of growing. We humans tend to be afraid of change in our immediate environment, but it is with change that development takes place.

### ***How do collaborative building & living affect the architectural process and the role of the architect?***

Architects have for a long-time designed villas directly to dwellers based on the dwellers' wishes. When it comes to the bigger scale, multifamily dwellings and city planning, architects have mostly designed and planned based on own experience and preferences, without the dwellers' opinion. Collaborative building & living goes beyond this. Collaborative building & living builds on co-creation processes where architects and dwellers design together, in all scales. The role of the architect will not be less important only because the dwellers are

included in the process. On the contrary, the role is a new or changing role where architects must take on a greater teaching and leadership role. Co-creation processes turn out to be more time and energy consuming but the result will be of higher quality and reach long-term sustainability. The thesis shows that the most crucial decisions have been made during consultations between involved actors. Co-creation processes with both professionals and amateurs will enrich and strengthen all actors and the project. It forces the architect to think beyond ordinary patterns which will contribute to a more innovative and diverse living environment, adapted to the local context. A last conclusion is that it is of course much more fun to design together with those who live or will live there.

### ***How can new multifamily dwellings be designed for collaborative building & living in a growing ecovillage in the countryside?***

Collaborative building & living is about people in social collaboration during the entire construction phase and the housing phase. It shows that the process is as important as the final design. The design is a result of a co-creation process which affects and changes the role of the architect and the architectural process in relation to what it looks like today.

There are some common factors to consider regarding a design of multifamily dwellings in the countryside. The housing tends to be some form of collaborative housing dedicated to a broad target group. The housing is often self-organized as a joint building venture. These factors places demands on the design. The housing should therefore be designed with sharing architecture to varying degrees. The housing would preferably be designed based on a basic design to reduce costs. The basic design can then be customized to varying degrees. The housing would also be designed with regard to self-building to reduce costs and to increase the inclusion of dwellers in the process. To include a broad target group, varying types of housing and housing sizes are required. A mix of apartments and row houses in the multifamily dwelling is therefore a good option. The housing tenure cooperative tenancy turns out to be a good housing tenure to achieve great influence over the housing and make it affordable.

Except from these factors there is no universal solution of a design, there need to be many solutions. The design of our living environments needs to be adapted based on the local context and its prerequisites and the people living there, always. It also show that it is important to consider change and development over time. The overall conclusion is that we need each other, we grow together.



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UNIVERSITY OF TECHNOLOGY

## **GROW TOGETHER**

*Rebecka Larsson*  
*Master Thesis Spring 2021*

*Chalmers School of Architecture*  
*Department of Architecture and Civil Engineering*  
*Architecture and Planning Beyond Sustainability*

*Building Design for Sustainability*  
*Examiner: Krystyna Pietrzyk*  
*Supervisor: John Helmfridsson*