CREATE YOUR OWN HOME

CO-DESIGN PRIOR TO SELF-BUILDING





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EGNAHEMSFABRIKENS SKRIFTER

Create your own home – Co-design prior to self-building

Egnahemsfabriken, Chalmers & Apricus
Tjörn & Gothenburg

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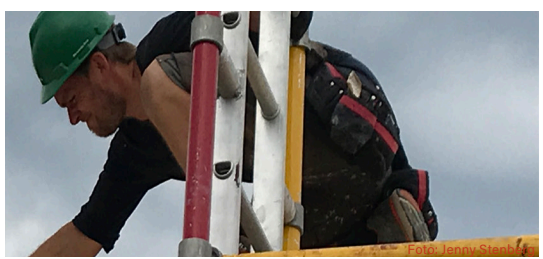


SUMMARY: This text describes methods for co-design of housing. »Egnahemsfabriken« at Tjörn was created by members of civil society in 2017. It is a building center and support structure for anyone who wants to build their own house or help others build theirs. Particular focus is placed on three vulnerable groups in the housing market: the young, elderly and refugees. How can we help them create their own homes? In the first part, the text takes off in co-design and self-building in Latin America, describing the role models for the co-design method developed by Egnahemsfabriken. In the second part, Egnahems fabriken's co-design method is described, as well as how it has been applied and transformed so as to be effective and efficient. Finally, the future is discussed with regard to the potential for scaling up Egnahemsfabriken to other parts of Sweden – and the world.


Photo: Anna Berglund

Content

WHY CO-DESIGN?

CO-DESIGN is interesting because it means a shift of power in society. Voting when there is an election and letting one's commitment to community-building rest until the next election is not enough to build a sustainable society, and this is true from all perspectives. Residents need to be active community builders at all times. This shows not least with regard to the climate crisis we are now are facing.

Co-design also entails building the power of those involved – empowerment. The Swedish translations of this concept do not really describe the whole meaning of it. In Sweden, we focus to a great extent on individuals and how they experience situations, but to a lesser extent on how people are part of community-building. In English, the word is often used with the dual meaning of both reinforcing people's belief in themselves and their own knowledge and working to give someone the power and mandate to act. Empowerment in English thus includes the actual shift of power. Egnahemsfabriken sympathizes with this interpretation of the concept.

This text is based on the presumption that a shift of power is needed for an environmental transition to take place: a shift toward more power for residents. Of course, the fact that residents can demolish a community with commitment is also a reality. Therefore, co-design needs to operate within some kind of framework and be met by systems that take into account the interests of inhabitants in a broad perspective.

Co-design – from student to researcher

The reason this text was written has a long history. My interest in co-design started 35 years ago when I entered the School of Architecture at Chalmers University of Technology, Sweden. Many of us students wanted to develop a professional yet close relationship with inhabitants that was unconventional, and as a result we, while in the headwinds, formed groups and started our own society-related projects in ways different from what our supervisors found appropriate. In this way, we formed an education program with a high degree of learning-by-doing, but still well established in the school's pedagogy of problem-based learning.

During the third year, ten of us students went to Argentina to learn about co-design through a self-building project in a slum area. We had to find teachers ourselves. Our supervisor was an Argentine architect, Omar Varela, who had come to Sweden as a political refugee, and our examiner was Sven Thiberg, a professor in Stockholm. Two of us, Jaan-Henrik Kain and myself, returned a year later to carry out our thesis work in the same area, and this further deepened our knowledge about co-design.

A shift in power to the advantage of inhabitants was not on the agenda when we later began working as professional architects in Sweden. The wind had begun to turn in the late 1980s with the efforts of the Brundtland Commission as well as the activities in most countries that preceded their report »Our common future« in 1987 and the

document »Agenda 21«, which was signed by almost all the world's politicians in 1992. However, it was not until the late 1990s that the rather bold texts on citizen participation in »Agenda 21« began to make an impression in Sweden. That brought with it the opportunity to start researching the theme.

In the beginning, my research was about co-*planning* because that was what the funding agencies at the time considered to be of interest to society. After a number of years, the agencies' focus began to change, and it became possible to also get funding for studies on co-*renovation* – a research area that is still under development. Recently, the agencies began also taking an interest in co-*design*.

Modern co-design and self-building

In the fall of 2017, the idea of self-building began to be developed at Tjörn, north of Gothenburg in Sweden, by architects Tinna Harling and Erik Berg. The idea grew from a large number of local actors who were already collaborating on problem-solving for newly arrived refugees through a method of empowerment called »Eat & Talk«. The research financier Vinnova, focusing on innovation, decided to support this idea of modern self-building, and extensive activities took off in 2018. The co-building center cares especially about three vulnerable groups in the housing market – the young, elderly and newly arrived refugees – but it welcomes everyone. The center serves as a support structure for those who want to build their own house or help others build theirs. The social enterprise has been developed in collaboration with the municipality, research institutes, a church, a study association for adult schooling, three small architectural firms, a business economics, a national association for co-housing and several other civil associations, e.g., supporting building brigades, refugees, children, green transformation, and companies selling building materials.

I joined the process in December 2017 as a researcher in the Vinnova project, with the task of developing the design method for the co-builders and forming models for successive participatory evaluation. I am also a Tjörn resident and active on the board of Egnahemsfabriken, or rather on the two boards, as there is an economic association for developing the social enterprise at Tjörn, and a non-profit national association that aims to support the development of additional Egnahemsfabriken in other places in Sweden – and in the world. Egnahemsfabriken has received funding from many different financiers over the years. In addition, a large number of actors involved contribute co-financing and nonprofit time.

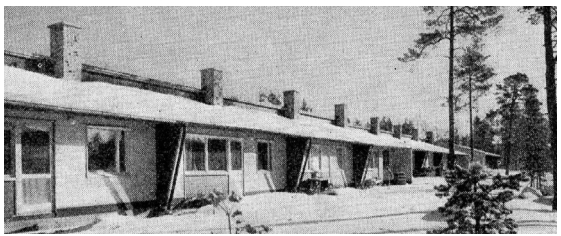

Photo: Anna Berglund.

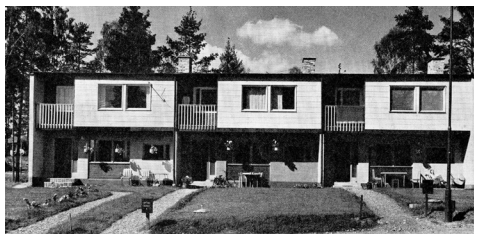
The fact that this book has come about is largely due to funding from Adlerbertska Research Foundation, although the funds from other financiers have also materialized here. The idea is that the book will disseminate concrete, tangible knowledge of the co-design method Egnahemsfabriken has developed, thus making it further accessible. The text is also intended to provide knowledge about the design method's background, that is, the work of the architects on which the method is based and previous experiences that have provided valuable knowledge. The parts can be read individually and there is some repetition, as some parts have been directly copied into Egnahemsfabriken's model.

PART I

Self-building of row houses 2015-2017 in Svartlamon, Trondheim, Norway. Nøysom Architects, team Trygve Ohren, Haakon Haanes & Cathrine Johansen Haanes. Photo: Nøysom Architects.

CO-DESIGN NATIONALLY AND INTERNATIONALLY





Photos: Stockholm's city museum, 1960, stockholmskallan.stockholm.se

Sweden in the early 1900s

Self-building occurs privately in both rural and urban areas, but interest in organized self-building for a group has historically often been associated with a general lack of housing or widespread shortage of housing for groups with limited financial resources. The extensive housing deficiency we have in Sweden today in 2020 is probably a key reason why interest in self-building is increasing. The situation was similar in the early 1900s, when there was both a housing shortage and a large amount of substandard housing. This was behind the initiation of the »private home movement« (Egnahemsrörelsen), a program aimed at providing the working class with its own housing. In 1904, the state began to grant loans to self-builders, and in Stockholm and subsequently also in Gothenburg the municipalities allocated cheap land. The municipality of Stockholm started »Småstugebyrån« in 1926 (later SMÅA), which supported self-builders financially and practically. They had a sensible housing policy with an upper income limit for being in the queuing system (Volny 1977). The concept was also spread to other municipalities, including Gothenburg.

Between 1927 and 1976, 12,000 families built their own houses in this way in Sweden. Municipalities offered support through consultancy, queuing systems, detailed plans, prototype drawings, production of cheap prefabricated building elements and financing, consisting of 90 percent government loans and 10 percent in the form of their own work, which amounted to about 2 hours, 6 days a week for 1 year (Hansson 2009; Lundquist 2015). The rules for amortization were also generous: 5 percent back within 5 years and the rest within 40 years. The site was allotted by the municipality on leasehold with long payback, the builder only had to pay a small upfront fee of SEK 300 (equivalent to SEK 10,000 today) (Lundquist 2015). The positive aspects, in addition to creating a house, was that many people felt empowered by the process, especially regarding the feeling of community connection (Valinger and Ekberg 2017). The criticism was that the time pressure during the construction phase was too big and that families were not allowed to participate in the design of the houses. The »private home movement« died out mainly because gainful employment among workers increased, making time a greater scarcity than money.

The decline of loan opportunities also played a major role (Karlsson 2011). Moreover, a 1935 governmental investigation of the housing situation for the working class had an influence, as it gave municipalities the opportunity to start public housing companies. This limited the »private home movement«. Still, it continued to some extent until the 1960s in Gothenburg and the 1980s in Stockholm (Hansson 2009). SMÅA still exists, but when the Municipality of Stockholm sold out it became a very ordinary private company selling houses. One can still reduce costs by doing one's own work, but only by SEK 150-300,000 (Lundquist 2015).

The organized »private home movement« – with elements of self-building in Sweden – was apparently not focused on co-*design*. It focused mainly on residents co-building their house and feeling joy and pride in being able to realize the building of a home despite scarce financial resources. The state and the municipality supported this in various ways, not least with favorable financing and access to land. There were, however, also some projects within the »private home movement« that were much more focused on co-design. One such project was »Klostermuren« at Hisingen in Gothenburg, where architect Johannes Olivegren created a process with 12 families who designed their houses with him, within a defined, rather narrow esthetic framework. His description of why co-design is important is touching:

> »With the help of a wide range of norms and regulations, we have constructed communities in drawings and in seductive images and models. So, we built these standard societies for standard-Swedes, these dear anonymous consumers, and hoped that they would enjoy themselves and become happy community citizens. When the houses and areas were finished, the inhabitants came. They were real people, who may have lived all their life in the countryside or in the north, in Finland or in Yugoslavia. They have been allowed to leave slaughter and friends, places and tasks that they have loved and instilled cohabitation patterns that have been formed over many generations and by themselves. In the new house and residential area, they encounter a strange world, a completed physical environment with completely different characteristics than what they have been used to and with people they have never seen before. And what tools did we give them so they could form this new community together? At best, a description of how the refrigerator, stove or machines in the laundry room worked.
>
> Is there a better way to build communities? Certainly. A crucial improvement would be if we could truly realize that a society is primarily built with humans as building blocks; and that the result is not primarily houses, streets and conduits, but a social environment, a social process that brings people together in new conditions and patterns of living; a continuous process of community development in which individuals and groups develop by giving each other feelings of solidarity and stimulation as they together create their home and immediate surroundings and take responsibility for the operation and further development of these places.« (Olivegren 1975, 35)

Sweden today – interest in organized self-building is increasing

The »private home movement« began to gain fresh impetus in Sweden in the 2010s, as a result of successful experiences of so-called co-housing (Baugemainschaften) in Germany, where the concept is very well developed and accounts for a significant part of housing production – 10-20 percent is not unusual. Baugemainchaften means that residents come together and act as the developer for new production or renovation of houses they themselves will live in. In Germany, it is often municipalities that drive the development forward. The cities of Freiburg, Tübingen and Hamburg have been pioneers, creating

a framework and rules for co-housing groups that are formed to promote community-building while building for themselves (Ache and Fedrowitz 2012). For example, the groups that are formed may take part in competitions to get land permits, where they must clearly indicate what they will give back to society in the form of integration of things other than housing for themselves. It may be that some apartments will be used for hospice or that part of the building will be for residents with dementia. The best groups, from a community perspective, win and are then helped to form the block together. Nearly 10 percent of Tübingen residents now live in co-housing communities. An important reason for success in Germany is that the banks have changed their view on how to lend money and created special kinds of loans for co-housing. With the kind of loan Germany has developed for municipal and state support of co-housing, the banks see them as more secure borrowers than large commercial developers who build to sell.

In Sweden, the concept is still relatively new, but expanding, with more and more building communities being formed. One obvious difference is that, thus far, municipalities have not assumed the active housing policy role they have in Germany, and therefore in Sweden it is difficult for co-housing communities to obtain loans, which means it is mainly people from the financially strong middle class who participate (Svensson 2012). There are role models for social responsibility in other countries where co-housing has spread from Germany, for example in Vienna, Austria, where feminist groups are asked to express their housing preferences (Czischke 2017). The Swedish state has also not initiated any plan for how the banking system in Sweden can be developed to benefit co-housing, which means that one of the most important prerequisites for such a movement to gain momentum has not yet been fulfilled. Another major stumbling block is the land issue, for which there is also no solution in sight in Sweden. If co-housing is to be developed like in Germany, Swedish municipalities need to change their views on how they lease and sell land.

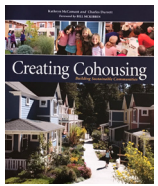
Despite these significant obstacles, there is interest in co-housing in Sweden. Those who drive the issue forward are largely architects, engineers and

Co-housing in Germany. Photo: Jenny Stenberg.

other professionals with knowledge of planning and construction processes, together with active middle-class residents, who want to develop good housing for themselves and see co-housing as an important complement to market-driven housing production – which is obviously unable to produce housing at the required rate and at prices that residents can or are willing to pay. There is also an increasing interest on the part of older people from all social classes; this is linked to the socioeconomic and political situation in Sweden, which entails a highly uncertain housing situation for the very old. Both in rural and in urban areas, groups of elderly are coming together to build for themselves. However, co-housing has not yet attracted other vulnerable groups in the housing market in Sweden, such as young people, newly arrived refugees, people on sick leave, unemployed people and low-wage income earners.

Co-housing does not automatically mean co-*design*. The most common situation is probably when a member of a co-housing community checks the design to some extent, though this varies. It partly depends on what the co-housing community members want and, thus, agree on with the architect and other experts involved. It also depends on the architect's willingness to transfer power over the design to the members who will be living in the house. In addition, it depends on the architect's competence in implementing co-design processes. Architecture students do not acquire such knowledge automatically through their training. Instead, they must prioritize obtaining that competence at the Master's level, for example by choosing a course entitled »Design and planning for social inclusion«, offered annually by Chalmers for three months at full-time in Hammarkullen. In the course, students learn the basics of co-design and co-planning, and develop their knowledge through a collaborative project with members of civil society and local practitioners, such as housing companies, elementary schools and leisure centers.

Creating collective housing: building sustainable communities



This book focuses on the process of collaboratively *creating* housing rather than on the accommodation itself – thus the processes can lead to either single or collective accommodations. Even though Egnahemfabriken is not particularly focused on collective accommodations, it may be interesting to learn from such experiences, as they are related to the concept of »empowerment«. Another book, entitled »Creating Cohousing: Building Sustainable Communities« (McCamant and Durrett 2011), describes collective accommodations in a North American context. The authors are architects who introduced collective accommodations in the US and have developed about fifty of them over the years and written several books about their work.

McCamant and Durrett are particularly interested in collective accommodations for the elderly; they find it interesting that such accommodations are lifestyle-changing and sustainable from many, if not all, social perspectives. They believe that collective accommodations involve recreating the positive social networks that existed before, and trying to do so without including the negative aspects that existed in these structures. They then describe a variety of collective accommodations in both the US and Europe and, in their experience, the common factors characterizing the creation of modern public accommodations are (pp. 25-30):

1. Participatory process. The residents organize and participate in the planning and design of the accommodation and are responsible as a group for all decisions.
2. Design that facilitates community. The design of the accommodation contributes to the development of a strong relationship.
3. Generous common areas. A substantial part of the surfaces are designed for daily use that complements the private surfaces.

4. Full accommodation control. Those who live are responsible for all care and make joint decisions about how.
5. Non-hierarchical structure. Responsibility is shared equally between all adults in the accommodation.
6. Everyone pays a fee for their part but otherwise does not share income between them and usually does not produce common financial resources.

McCamant and Durrett mean that all of these characteristics are always present in what they call collective accommodation, and they are a precondition for an accommodation lasting. The details may differ, but all the characteristics are constant.

Collective accommodations vary in size, but most include 15-34 households. The optimal number of households ranges from 20 to 50 and based on Danish experiemnces McCamant and Durrett strongly recommend never exceeding 50 households. You should also avoid a small number of households, as this arrangement places too much demand on everyone. The book also describes the great environmental and economic benefits of collective accommodation, but does not go into any detail in this regard.

Perhaps most relevant to Egnahemsfabriken are the chapters on implementation and participatory design (p. 215). Resident participation in these processes is the strongest asset of collective accommodation, according to McCamant and Durrett. At the same time, there are obstacles to realizing participation, including lack of knowledge and time. The authors believe it is a balancing act. Giving too much power to a developer can result in greater financial security and a faster construction process, but it can also have a negative effect on the social cohesion on which the housing will later rest. Naturally, financing is a key factor. It determines how much power residents must give away to developers. One extreme is that developers complete the project first, without the disruptive influence of amateurs who slow down the process. However, McCamant and Durrett believe that this is not a viable route, as evidenced by the fact that

The collective housing of Färdknäppen. Photo: Kerstin Kärnekull.

almost no collective accommodation has been built in this way in the US or in Europe. They stress that both co-design and the opportunity for co-building are needed, as this allows residents to discover whether they want to live with the people involved and to refine their vision as the process progresses.

Recommended reading about experiences in Sweden:

»De byggde gemenskap« [They built community: experiences from ten co-housing projects in Sweden] (Westholm 2019).

»Bygga seniorboende tillsammans: En handbok« [Building senior housing together: A guide] (Blomberg and Kärnekull 2013).

Svartlamon in Norway: a role model

There are several good examples in Sweden and the other Nordic countries of different degrees of modern self-building and co-design, but we will not go through them here as they are described in other texts. However, in the case of Egnahemsfabriken, one of the role models seems to be of more significance than others, namely five row houses in Svartlamon in Trondheim in Norway, which were built in 2015–2017, and we will therefore take a closer look at that project. [See Nøysom architects' presentation of the project in Norwegian at the conference »Socialt bostadsbyggande och modernt självbyggeri« socialtbyggande.se and experimentboliger.no] The self-built row houses in an old working class block are owned by a foundation and are rented by the residents for NKR 5500 a month (Holm 2018). The foundation is governed by the municipality and the residents together, where low costs and reuse are important keywords for the production. The land is leased by the municipality who bought it from private landowners. There are 30 buildings in total, with about 240 inhabitants in 130 households. The area's housing policy and ecological program came about as a result of a successful occupation – now the residents in the area work together with the municipality and the area has been classified as urban eco-experimental housing. [See www.svartlamon.org]

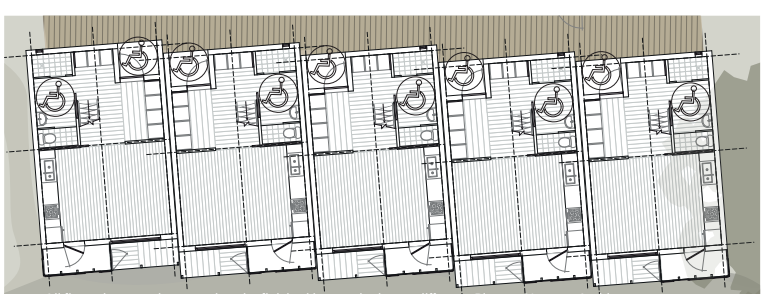
Row houses in Svartlamon. Photo: Nøysom Architects.

Photo: Vigdis Haugtrø.

Photo: Vigdis Haugtrø.

Model building. Photo: Nøysom arkitekter.

Photo: Vigdis Haugtrø.



All floor plans are the same, but the finished houses look very different. Picture: Nøysom Architects.

The residents built most of the row houses together, with support from carpenters and other experts. The co-design was carried out on a voluntary basis because some of the architects themselves lived in the area. The self-builders used recycled building materials, making it cheap. The five row houses cost NKR 3,000,000, which according to the architects is one fifth of what it usually costs to build housing in Norway.

Another interesting fact about the row houses in Svartlamon is the difference noted when comparing the drawings and the finished buildings. Although the floor plans of the five row houses are almost identical, the finished facades became personal, varied and multi-faceted – resulting in exciting and, in my view, very beautiful architecture. This outcome has been achieved by Nøysom architects designing a frame and allowing the greatest possible flexibility when adding to that frame. The residents have therefore been able to use recycled building materials to a large extent, which they found cheap or free during the construction period. Different types of windows, doors and exterior wall materials have also been able to fit into the flexible frame. Internally, the residents have also developed their own personal living environments.

Inside, the residents' creativity has been given even more scope. Photo: Line Anda Dalmar.

Such a large shift in power to the benefit of the residents is unusual, and the architects have prepared for it through their attitudes and thoughtful basic design. In my view, a shift in power is an important prerequisite for developing co-design to its full potential.

Latin America forerunner in self-building

Latin America is a pioneer in the field of self-building and has for many years also been ahead of Europe regarding academic engagement with civil society. Dictatorships have played a role in this development, as have the widespread injustices and economic and political crises that are taking place. For example, strong memories of the dictatorship in Argentina have meant that society, through collaboration between professionals and civil society, has a high degree of readiness to respond quickly to problems and assume joint responsibility in crises. During one of the most difficult economic crises, the middle class in Buenos Aires created a well-developed support network in the form of garbage stations and childcare for slum residents, so-called informal settlements, so that they could intensify their waste collection for recycling in the center and, in that way, increase their income. The state contributed by removing all chairs from certain trains, so that entire wagons with recycling waste could be trolled in for transport to sorting places that inhabitants had created near their neighborhoods.

In Buenos Aires, more than 20 percent of the city's 12.8 million residents live in insufficient housing, and the situation looks about the same in the rest of Latin America. The widespread and growing injustices per se create self-building cultures, because many people have to take matters into their own hands if they are to have a home. In Buenos Aires, there are 40-year-old informally built neighborhoods in the urban area that are still growing, now often by increasing height because there is no more land to build on. In the area called Barrio 31, just behind the central station, 6- to 7-story houses are now being built, often by experienced craftsmen. They have come looking for work in the metropolitan area from other Latin American countries, such as Paraguay and Bolivia, due to high unemployment and other crises in their home countries. These craftsmen are thus building informal housing in parallel with temporary work for construction companies. The quality of the buildings in informal areas is therefore relatively good in Buenos Aires. Sewage solutions and electricity, on the other hand, are often substandard, as is urban planning. We will not go through self-building experiences from the whole of Latin America here, but mention some contexts that have influenced the development of Egnahemsfabriken at Tjörn.

Barrio 31 & La Cava, Buenos Aires, 2017. Photo: Jenny Stenberg & Jaan-Henrik Kain.

Micro-brigades in Cuba

In 2014, I received funding from the Adlerbertska Research Foundation to make a research visit to Cuba to learn about residents' participation in developing Havana, with a particular focus on renovation of Old Havana – a UNESCO-protected world heritage site. Unfortunately, the houses there are collapsing at a rapid rate. After every rain, some houses fall down, and there are not enough state resources to repair all houses, despite the fact that they are receiving external support to protect the world heritage site. They therefore need to work together with residents to cope with the difficult task as quickly as possible. Many people are also unemployed and want to contribute, even if they are not paid, to save their homes. The state also wants to work with the residents for political reasons; they see it as a negative when renovation of cultural heritage sites leads to re-location and gentrification. While buying and selling real estate has been allowed in Cuba since 2012, the state's ability to influence this process has weakened, and it is already obvious that a gentrification process is in progress in Old Havana.

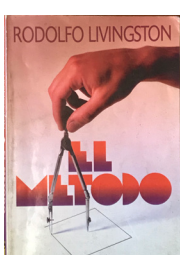
The visit also gave me new insights into self-building. I knew that the so-called Micro-brigades conducted in Cuba were comparable to what SMÅA carried out in Sweden at the beginning of the century. Micro-brigades were a way for the state to quickly build homes during the housing crisis of the 1970s, even though they did not have an industry for it (Mathéy 1989). The method involved releasing workers from their regular services for a number of months and assigning them to construct residential buildings together with other workers. A colleague took over the worker's duties and, thus, his or her double work also contributed to the housing construction. Professional groups other than construction workers, such as teachers, social workers and doctors, also worked in Micro-brigades. During the 1970s, 80,000 homes were built in this way. In the early 1980s, the state developed new ideas for other ways of doing industrial housing construction, but these failed. In the mid-1980s, Micro-brigades returned as a state strategy for housing. In 1989, Micro-brigades were as common as in the 1970s, according to Mathey's article.

Old Town & Alamar, Havana, Cuba 2014 & 2016. Photo: Jenny Stenberg & Jaan-Henrik Kain.

The similarity to what SMÅA did in Sweden during the 1926-1984 period lies partly in the design thinking. The design for what the Micro-brigades built was uniform and decided in advance by a professional architect, without co-designing with the people who would live there. The choice of materials and construction technology were also similar. It should be easy so that anyone could understand and use the technology, and it should be very cheap to keep the total costs down.

One difference is that the financing of Micro-brigades in Cuba was entirely from the state, with some support from charities. Another difference concerns empowerment. For those who were part of the Micro-brigades, there was no connection between the houses they were building and the housing they would move into – there were separate systems for collective construction and the housing queue. People were assigned housing somewhere, often far away from where they had their roots and friends. This broke many bands and alienated people.

In SMÅA in Sweden, on the other hand, people built their own home, often in collaboration with other self-builders. Being able to live in what you built helped encourage people to participate, and the people involved were strengthened as a group. This is particularly important when producing housing for societal groups that have the most difficulty on the housing market.



Argentinian architect develops co-design in Cuba

However, what I learned that was new was something completely different, something that all architecture students in Cuba learn: how to become a »community architect«. This started when, in 1961-1962, Cuba was visited by an Argentinian architect – Rodolfo Livingston. In eastern Cuba, Livingston developed a method of participatory design of housing regeneration specifically aimed at poor people. The method is described in detail in the book »El Metodo« (Livingston 1995). Livingston then worked further with the method in Buenos Aires for several years.

In 1991, he returned to Cuba on behalf of the Cuban state and continued to develop his ideas. In 1994, as a result of the work, a national commission was created with participants from all provinces in Cuba, who were given the task of forming groups of »community architects« in all municipalities. This method that Livingston developed together with residents and young engaged architects in Cuba – integrating architecture issues with housing problems – was thus scaled up nationally, and this was done in a short time period. It was unique in the world, Livingston states in the preface to his book.

Below, I describe a co-design process for refurbishment or expansion of a home. Livingston's method can also be used for new construction of housing or for designing anything. Because this knowledge has influenced Egnahemsfabriken's co-design method quite a bit, and as the book is only published in Spanish, Livingston's design process is presented in some detail below.

Alamar, Havana, Cuba, 2016. Photo: Jenny Stenberg & Jaan-Henrik Kain.

An architect's role includes responsibility for community building

Livingston's starting point was his opinion that architects contribute to misery through their lack of action. After the revolution, Cuba prioritized ensuring good medical care for all people by having doctors in close contact with everyone in the population. But the health problems were nevertheless large, and they were due to, among other things, the fact that houses had major shortcomings in terms of density, ventilation and congestion, as well as poor design solutions (e.g., narrow kitchens). Architects must, according to Livingston, assume responsibility for their personal relationships with people, assist them and »empower« them to develop their homes. All people, he said, are entitled to a »community architect«.

Another thing he said is that housing is a process. Improving a home means nurturing relationships and developing trusting contacts. The same applies if you are building a new home. The architect needs to assume responsibility for sketching the process together with the residents. When the process becomes clear to everyone and the result is in sight, it is not difficult for the architect to request reasonable payment; making that need visible is part of the process. In a respectful collaboration, with a result that meets residents' needs and preferences, they pay for the work with pleasure. These are the steps you need to go through when working as »community architect«:

- ☐ The climate and the environmental conditions of the place are crucial to the design. What does the place look like? What does the place say? The house? What local building materials are available? How is the ground? What traditions are there? Sun and shade. Trees. Wind. Water. How do you live everyday life in this place? How does it vary over the year? Where do you eat? Where do you sleep? Where do you sit outside the house? See the house and the place with different eyes, step in with different roles. Do not have preconceived notions about what is going to happen, that is a later decision. The architect's role is to understand all this location- and culture-based information, as well as document and visualize it for the residents and other actors involved in the change process. Livingston uses floor plans in this type of documentation. I am not convinced this is needed for the residents, though architects may need floor plans to understand the entirety themselves.

- ☐ To get to know the client – that is, everyone living in the house – Livingston advocates a group interview lasting a few hours. He describes a simple arrangement where the interview with the whole family covers four themes. The interview is conducted as a game meant to free the imagination. Each person should respond once to each theme, that is, everyone should be active, no one more or less than others. Everything is documented

    1. Like–dislike. Which place in the home, inside or outside, do you like most, and why? Which place do you like the least? This information is important partly because it provides information about what everyone wants, and partly to help the architect prioritize development of the home.

    2. Inspection. Play a game where everyone in the family plays environmental inspector. They should find faults in the home. Things that are broken, darkness, moisture, whatever is a problem, regardless of whether you think it can be solved. These problems should of course be addressed in the design later.

»Housing is a process«

3. Architect. Make the family an architect; everyone is given the freedom to redraw the home on sketch paper, completely without criticism from anyone or discussion – do not seek solutions, just register. This provides information on each family member's visions of the home.

4. Dream home. What does the family want most of all? Not dry facts like number of bedrooms, but desires such as »I dream of a huge kitchen where everyone can cook together«. The architect brings the family back to the dream game if they let themselves be limited by reality. The idea of the dream game is to put on the table even the inaccessible wishes of the moment, so that the design is not limited by the present and does not close any doors. The design should be flexible so that if the family, in a few years, has saved more money, they can develop the home just as they have dreamed of doing.

☐ Creativity. The architect, or the group of trained designers, now work alone.

1. The field. Set up all feasibility studies on the walls around the room, that is, everything that the place, the house, the story, the family, the dreams, etcetera, have brought forth.

2. Fireworks. A blank paper on the table. Draw everything that exists and »must« remain. The boundaries of the site, parts of the house that are completely unrealistic to remove or change, trees, etcetera. Partitions that can be removed, and the like, are not drawn. Make sketches: Find solutions that correspond to the family's *Dream-home.* Document these solutions on the wall. Test different variants, without considering realism or economics. Consider it a game. What if the kitchen was placed there instead? The entrance there? Document ideas on the wall. During this process, seek answers to questions previously formulated concerning problems in the house, such as why residents get sick from living there. Change your perspective. Question constants, that is, things that do not shift across the different variants. Seek inspiration externally concerning other system models. Synthesize the variants by naming them.

[Take a break for at least one night.]

3. Plausibility. Now pay more attention to the results of *Like–dislike*. Imagine and understand the use of the house (live the house in your imagination). Pay more attention now to physical limitations that are unreasonable to change for any reason. Draw up new variants, put them on the wall.

4. Background and figure. Think of the house and site, deriving inspiration from the picture of the vase and two faces. Both have their own existence, both need to be designed just as carefully, they should fit together but neither of them should be superior to the other. Draw up new variants, put them on the wall.

Using this approach, Livingston believes the architect can provide not what the client has *ordered*, but what the client *desires*: »Here is the key to our involvement: neither obedience nor authoritarianism. Interpretation.« (Livingston, 1995: 69).

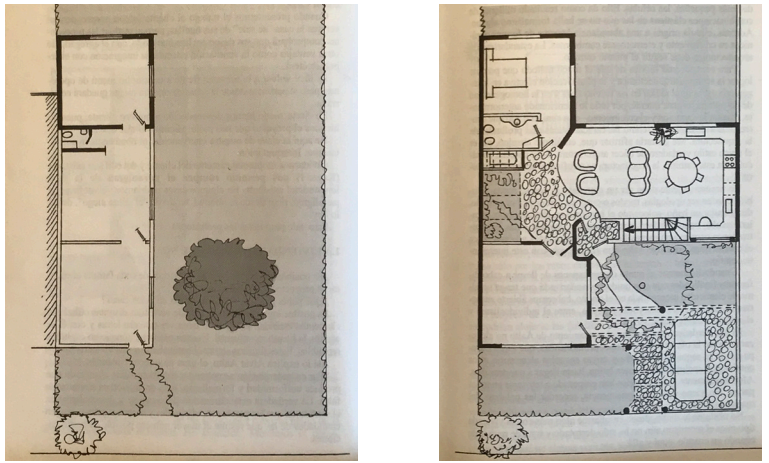
☐ Presentation of feasibility. This is done in the architect's office, to which the adults in the family have been invited. All adults must be present. There should be no interference, neither by telephones nor by children. The group interview is documented. Colleagues of the architect should be included to help evaluate the process afterwards:

1. The architect presents the roadmap, how it looks and is intended to continue. The payment plan is also presented.

2. The architect presents the current plan for the house and site together with the problems and desires raised by the client (*Like–dislike* and *Inspection*, respectively). These will form the basis for evaluating the upcoming design proposals. The architect checks point by point that the family and the architect agree on the evaluation framework.

3. The architect presents the family's design ideas for their future home (from the interview *Architect*) and asks whether he or she has summarized them correctly. The architect suggests that this constitutes a framework for evaluating the design proposals, but that they do not include their dreams (from the interview *Dream-home*) in this situation. Is it okay, or should any of the dreams be included in the evaluation framework?

4. The architect then presents design proposals, one by one, at a slow pace, without adding any values to them. The proposals are neutrally named. To facilitate the selection process, there should not be more than five proposals. Everyone can ask questions; everyone should understand the suggestions. In a second round, proposals are evaluated one by one, carefully following the evaluation framework. The architect never puts words in the client's mouth during this process.



This is an example of a reconstruction sketch Livingston and colleagues produced with this »key« as the basis for their work (Livingston, 1995: 70-71).

When the proposals have been evaluated and everything carefully noted, the architect again sums up the roadmap, pointing out that the choice of design is the only thing that does not need to occur at a predetermined date; it is up to the clients to take all of the evaluated proposals home,

»Here is the key to our involvement: neither obedience nor authoritarianism. Interpretation.«

think them through, and return to the architect when they are ready to make a decision.

At the end of the meeting, the client pays for the work done so far. The date of this payment, like all others, has been visible in the road map at all times. The client always has a copy of the updated road map.

After the meeting, the architect evaluates what has occurred together with his or her colleagues.

- ☐ The clients return. It is good if it takes at least a week before they return. By using the evaluation framework, they should have been able to choose a proposal. But Livingston describes in his book (1995: 78-80) four scenarios depicting how clients may react differently and how, as a professional, one can respond to these different reactions to move the process forward and help them make a decision (that corresponds to their *Desires*). One possible exercise is called »time travel«. All strategies actually have one thing in common: As architects, we must keep in mind that »we are a brain that's being rented out to think through the client's house« (Livingston, 1995: 79), but that the process must also be efficient – it must not be drawn out indefinitely. Managing the process well can be difficult, especially if you have been schooled in a philosophy that is not about renting out your brain, and if you tend, in pressured discussions, to assert your right as a trained architect to assume responsibility for certain things. Livingston urges us to avoid walking into that trap. At the end of the meeting, the client should have chosen one of the options.

- ☐ Final adjustment. The chosen proposal is adjusted by the architect with regard to needs, wishes, finances and future possible development of the home.

One thing to keep in mind is that when we make houses and homes, we create something that survives the people in the house. This is how Livingston describes the process of making a home. We are community-builders – architects and residents together. Critics believe this method takes too much time. Livingston claims, however, that it does not take much time considering what we are doing: building a society. He believes that, using this method, co-design of housing can be carried out in three weeks and include five longer interviews/conversations with the client. That, he says, is not too much time.

Old Town, Havana, Cuba, 2014. Photo: Jenny Stenberg & Jaan-Henrik Kain.

An aside: Is *standardization* of housing good? Can it simplify the design process for community architects? In response, Livingston turns to architect Alvar Aalto, who said that standardization is good to a certain extent. Aalto compared it to the alphabet. With only 24 letters, we can vary a text almost infinitely (Livingston, 1995: 69). But if we had decided on a certain number of standardized sentences to use, the text would have been much worse. Aalto believed that the standardized elements should be of good quality and allow the greatest number of possible combinations: Then the architecture can be a good one. Livingston agrees with this, stating that a standard HOUSE does not exist, because different conditions of all kinds, which all homes have, make them different from the outset. For example, homes in apartment buildings have different distances to the ground and different solar conditions on their exterior walls. In addition, the families in them are different and live differently. The norms differ across countries. What is mainly saved when developing standardized homes is the THINKING architects do. But architects are trained in exactly that – thinking. Removing that aspect of the profession would mean wasting an important societal resource. Livingston argues that architects should instead strive to maintain this responsibility. He says it means working on the same principle that underlies the »microyet« (Livingston, 1995: 75). »Microyet« is an irrigation system used for banana plants in Cuba, where the last piece is special as giving the plant water exactly where it is needed most, which means the system performs better than traditional irrigation systems.

Upscaling the concept of »community architect«

At the end of his book (in the 2006 edition), Livingston describes how getting »community architects« to succeed – with the method being spread to all municipalities in Cuba – was a tough process. During the first years, 1991-1994, many enthusiastic architects, including state representatives, participated in seminars and training sessions on the method. However, most people did not apply the method in their practice. The structures they worked within were too strong and rigid. Livingston and his staff concluded that the lack of success was due to their targeting of already trained professionals – that was a poor strategy. What was needed was a complete redefinition of the profession, including questioning of almost all existing standards. This was not something older professional architects, already familiar with the systems, had the potential to develop. Thus, a small revolution was needed within the Revolution (Livingston, 2006 [1995]: 140).

This experience made them start working hard to implement an idea: Groups of »community architects« would be *mandated* to act very freely to achieve the goals of good housing for all residents. In addition to this freedom, each »community architect« group would have a *budget*. They would have *premises* that were easy for all residents to find. Moreover, a good *leader* who was trusted in the local environment would be appointed. Thus, the idea of this approach was to develop the concept of »community architects« in a way that would not only lead to good housing in a given situation, but do so in a way that *challenged* societal systems and *developed* them. This happened in 1994, that is, a few years after the fall of the Soviet Union in 1989 and the economic depression that it caused in Cuba. The whole decade of the 1990s was characterized by severe, widespread poverty, and the entire transport system in Cuba stopped because of the oil shortage.

The ideas were heard surprisingly quickly. Livingston describes how the first group of »community architects« was formed from the ground up in the city of Holguin in 1994, consisting of 14 young architects, 12 of whom were female. They found centrally placed premises and had a leader people trusted, but otherwise the above-mentioned conditions were not met: they had neither a mandate nor a budget. However, the state used the group's work as a kind of pilot project to discover whether »community architects« could work in the same way that »community doctors« had done in Cuba – doctors who had developed a local health-care system to serve the entire population. Delegations from the state visited Holguin to learn.

As a result of this learning, a commission was appointed to implement »community architects« in all municipalities in Cuba, in the manner proposed by Livingston and his colleagues. However, how much of a mandate and budget they were given is not clear. Many of the young professionals worked on a voluntarily basis, but many also succeed in getting paid for their work by the residents. Whether the state paid them is not clear, but the scaling up was fully implemented. When the book was written in 1995, »community architect« groups had been implemented in all municipal districts (consejo popular) in Cuba.

In conclusion, Livingston describes in his book that what he did in Cuba was to »empower« residents and architects together. He brought nothing with him. What they developed was already there.

Trinidad, Cuba, 2014. Photo: Stenberg & Kain.

When I was in Cuba in 2014, and also on my return trip in 2016 for another research project, I did not explicitly investigate how the concept »community architects« had developed. What was clear, however, was that architecture students knew this concept well, and in Old Havana there was a district planning office that was working on upgrading the cultural heritage site and that had been inspired by this way of working – called Consulta Popular (referendum). There are similarities between Consulta Popular and the concept of Participatory Budget. In 2014, people were about to test this in Old Havana, but the plan was thwarted, mainly because the municipality did not have the mandate to delegate power to residents in this way.

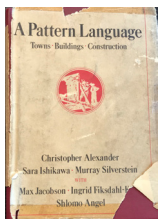
There is also a group of architects in Havana who, since 1989, have run TTIB (Talleres de Transformación Integral del Barrio, Workshops for Integrated Neighborhood Transformation) (Hernández, Kellett, and Allen 2010). There is a definite relationship with the concept of »community architects«. TTIB is a government-controlled group started by architect Gina Rey, who had a close professional relationship with Fidel Castro. It only exists in Havana. Based on the interviews I conducted in Cuba, including Gina Rey, the purpose of TTIB is to »empower« residents as well as to link social and physical aspects. The group engages and brings together residents and local actors with different professions. Thus, they have an area perspective. They have a conscious strategy of handing over power to local actors (both residents and professionals), because these actors have local networks and local knowledge and can therefore best express what the area needs.

Experiences with TTIB have been very good, according to my interviewees. It is above all the synergies of linking physical and social problems that are described as most interesting, in combination with area thinking and increased power for residents in relation to problem description. The greatest shortcoming of TTIB is, according to my interviewees, that there is no connection to the budget process in the municipality. Had there been such a direct link, TTIB would already have been an ordinary process. Bureaucrats are often opposed to TTIB. They feel that municipal law needs to be changed if TTIB is to survive, and this seemed to be in progress in 2016. Such a change would also favor the introduction of a Participatory Budget. As was the case when I was there, TTIB lived in a limbo state. At most, there were over one hundred TTIBs in Havana, in 2016 there were 20 and no new ones had been started.

TTIB seems to have similarities with the idea of »community architects«, but success in financing extensive changes to the physical environment has been rare. In some cases, they have collaborated with Micro-brigades and built homes, for example, for vulnerable single mothers. Most often, however, the important issues raised in TTIB have been addressed with very limited funding, which means that the method – although thought by many to have great potential – cannot generally be considered successful. In 2016, however, there was an externally funded project in Cuba, Proyecto Habitat II, which focused on learning from all different types of experiments linked to ideas of resident engagement in planning and to creating a structure for this approach to work in all municipalities in the country. This initiative fits well with the idea of »community architects«. After the first year, the project sought external funding for implementation of initiatives prioritized by residents. I have no information about the outcome of these efforts.

The many different attempts that have been made in the country to increase residents' power in urban development, renovation and planning have simply been *too* successful, says one of my interviewees. They have hit the ceiling for what is possible in Cuba. What is needed is a change in the system, and all new projects are actually looking for ways to make this system change possible.

Co-design and self-building in Argentina

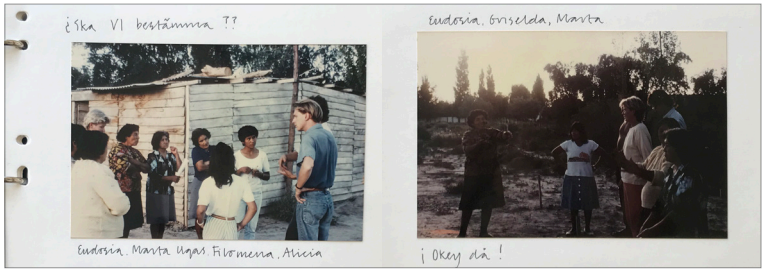


A book entitled »A Pattern Language« (Alexander et al. 1977a), written by the Austrian architect Christopher Alexander and his US-based colleagues, describes a design language for architecture and a method for residents to design and build housing together with trained designers. The method has been tested in many different contexts throughout the world, including Latin America, especially with poor populations, and there are several interesting books that describe their visions and experiences (Alexander et al. 1977b).

»A Pattern Language« conveys the notion that there is a universal architecture. It does not claim that this architecture is expressed equally throughout the world, but that there is a similarity – a language – that recurs – a language you as a designer can use to communicate with residents or users. Alexander has been criticized for this view of a universal architecture, but we do not have to go into that discussion. What I find most interesting about »A Pattern Language« is that the book *makes design components visible*, thus making them accessible to everyone. He also describes the *design process* and has a clear idea of what it should look like, an idea that I agree with for a number of reasons.

My thoughts about »A Pattern Language« are based on the fact that I examined the method in 1989 together with another architecture student, Jaan-Henrik Kain, in Mendoza in western Argentina, where we completed our thesis work.

Student project 1987: We have built up the frame of the community house and casted the floor. Don Juan – one of Branden's oldest residents – was always there with us working. One of the inhabitants proved to be good at plastering and led the work on making a nice colored cement floor surface. Photo: Stenberg & Kain, the photo of Don Juan probably Sergio Aguirre.



Student project 1987: The women were initially hesitant to co-design the community house, but it loosened up fairly quickly and they had many views and ideas about what should be contained within the house and what qualities the house needed. Photo: Stenberg & Kain.

Student project 1987: There was a workshop with carpentry machines, but all were useless due to the lack of spare parts and knowledge. One of us fixed the machines, and we could start doing some work in the workshop instead of outdoors. Photo: Stenberg & Kain.

Student project 1987: The aunties were our constant supporters. They designed the house with care – for both work and relaxation. A bench in the sun was important in wintertime and one in the shade for the summer months. The workday always began and ended with them serving us »mate«. Photo: Stenberg & Kain.

Student project 1987: The children were around us all the time and contributed in different ways. The community house contains a homework room, a clothing reuse department, a medical facility and a traditional baking oven in the yard. Photo: Stenberg & Kain.

As students, we had worked there the year before for six months with a self-building project in a slum area called Barrio Brandsen. We were there to learn from Argentinean students' work to help poor people create about 30 homes by employing self-building. We Swedes participated in this to learn. We also made a community house using cross-timber technology, which we both designed – using »A Pattern Language« – and built together with the residents. The house was used for meetings, as a school, as a sewing workshop, as a bakery, and as a medical facility. It stood for 30 years. The built community house was crucial in promoting residents' empowerment; it became a symbol showing that they could also self-build their homes, which took several years to complete.

In our thesis work a year later, we delved into Alexander's book and completed a full design process together with one of the Argentinean teachers, who wanted to build a house with his wife. The house was never built for various reasons, but when we were working on the design, their idea was that they would start building immediately and do all the work themselves, with the help of friends. The family had a site to build on, but almost no money, however they had a car they were planning to sell to get money for the house.

The economy in the country was on an extreme downhill path, with inflation of 500 percent that year and levels varying rapidly; money was exchanged several times a day so as not to lose too much. Goods were hard to buy at all because no one wanted to sell. The contractors had a hard time pricing and had to invest the money in something the same day. The economy was therefore an important aspect throughout the design process.

Student project 1987: Hm.... someone measured it wrong... the roof supports were too far down... But no problems are unsolvable – each of us designed a face to fit into the interspaces. And we succeeded after many attempts to buy a tree for the courtyard! Photo: Stenberg & Kain.

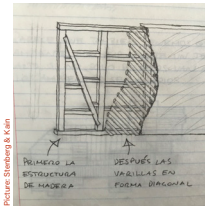
How the design process was carried out

»A Pattern Language« describes not only house design but also urban planning; it thus starts from the regional level and begins with a number of patterns that describe the design process from this overall perspective. When we tested the method in Argentina, we did not consider the regional level and it is also not relevant to our project at Tjörn. Therefore, I do not include that part of the method here, but go directly to the design of individual housing.

Alexander pointed out that the design process should go »from wholeness to detail« and that one must make a definite decision for each pattern before moving on to the next. Thus, the method that we as architects learned in Sweden – to constantly switch between the whole and the detail – is not something Alexander advocates, at least not when dealing with clients.

The method thus begins with the overall perspective: the site and its relation to its surroundings and to nature, the sun, water, etcetera. The method also urges one to start building the house when the design process has reached a stage at which building is possible. We did not apply this aspect, however, because the family could not yet afford to start building.

The method also says that one should both choose mode of construction based on adaptation to traditional technology and use local building materials. Because Mendoza is an earthquake area, this was important. Modern construction in the region involves reinforced concrete pillars with a brick structure in between, which is expensive in general and especially in Argentina, given that the concrete industry was then corrupt. Concrete construction is also environmentally deleterious from different perspectives. The family had already chosen to use cross-timber technology as a construction mode for their house, as they had good experience of this from Chile where people have been building like that for generations. Their houses are built using local



Picture: Stenberg & Kain

materials, are cheap to build and survive earthquakes. We had also recently used the technology in the community house in Barrio Brandsen and knew how it worked. In Alexander's book, it is assumed that you will choose the construction mode quite late in the process, but we did not encounter any problems because we chose it early on. However, the construction mode was gradually developed as we designed the house using the patterns. The picture shows a sketch based on a pattern called Gradual Reinforcement.

The method requires being on the site a great deal and doing a large part of the designing together with the client on site – marking it with cords and sticks. Hence, many design occasions with the family took place on the site – in a desert climate at 30-40 degrees. We had sunbeds, brasse chairs, coolers with food and drinks, a potty for the child, and *the book*.

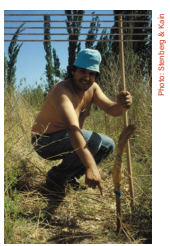


Photo: Stenberg & Kain

Because »A Pattern Language« was published in Spanish, we gave the family some homework before each design opportunity to prepare a discussion on 5-10 selected patterns. Then we discussed these, one pattern at a time, on site, and made notes and marked the decided design for each pattern on the ground. The man and woman in the family had very different views on what they wanted the house to look like; for this reason, the discussions were quite extensive. The woman was a medical student and focused on spatial relationships and distinctions between private and public. The man, an engineer, had an interest in different types of energy solutions, which was not particularly common in the 1980s. As a result, we expanded Alexander's book by adding a number of patterns. On the one hand, they came from the family's ideas and cultural history, and on the other, there were new environmental patterns. We also tested the final design at a solar energy institute in the city.

Photo: Jenny Stenberg & Jaa-Henrik Kain.

A pattern language for designing homes

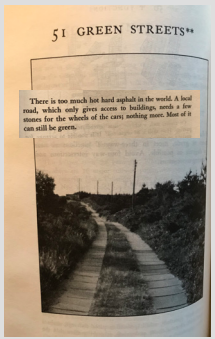
»A Pattern Language« contains a total of 253 different patterns that together form a language. Each pattern contains a »political belief« about what is right and wrong in relation to a design element. For example, the pattern »farmhouse kitchen« shows that isolated kitchens, separate from where the family meets, are a remnant from the time when we had waiters who cooked the food and from the time when women had taken over that role. Then follows a descriptive text about this and a recommendation: make a large kitchen where everyone can sit, with comfortable seating and light coming through windows. The patterns are thus in no way neutral. They are characterized by an architectural and a political principle.

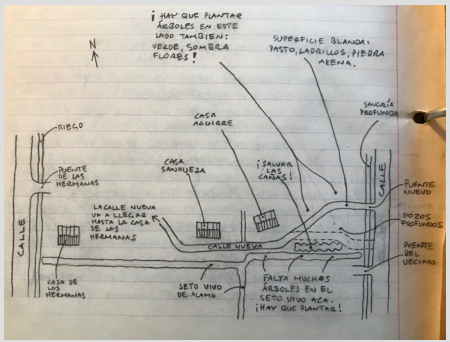
This political mechanism was a major asset in co-designing with the family, as it sparked discussion. Often, after some debate, the family would conclude that Alexander was right, but the *design* was not always what we imagined Alexander would have advocated if he had been a process leader. In cases where the family did not agree with Alexander, we noted the family's beliefs or opted out of that pattern.

The design process was documented through pictures and photos on the site as well as by us architects subsequently writing about and sketching the decisions that were made – pattern by pattern – giving copies of all material to the family. Our ambition was to never reverse decisions on previous designs, but in some cases this was necessary, mainly because we did not fully understand the meaning of the pattern.

In total, we used 122 patterns to create the design of the house. Below is a presentation of a selection of these patterns, showing how we worked with the design and documented the work.

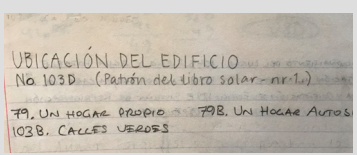
Pattern: Green roads

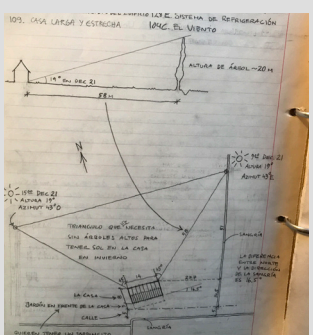




Alexander's pattern & the family's design of the road leading up to the house.

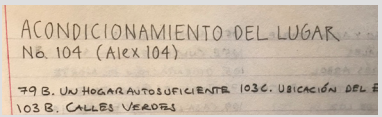
Pattern: Location of the building



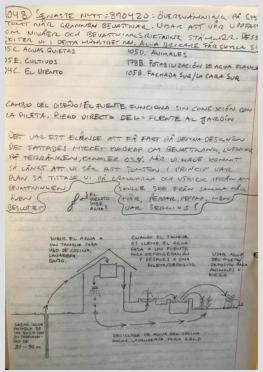


This is an example of a pattern that comes from »the Sun Book«, a book from Chile that is structured like Alexander's book, with different patterns and with the assumption that the design process should go from the whole to the details.

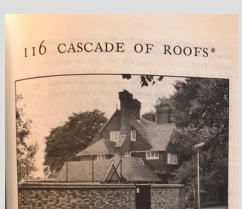
Patterns: Site conditions and Irrigation and drinking water

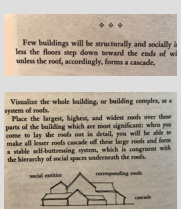


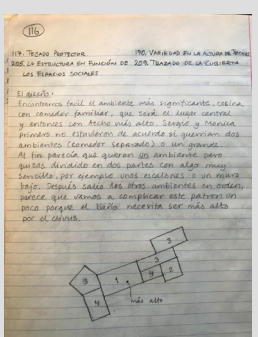
Irrigation and drinking water is an example of a pattern that the family added to the overall pattern language. Because Mendoza is located in a desert area, water is an important issue for the region. All planning of housing, industry and more is based on a comprehensive network of irrigation channels filled through storage of snow and ice up in the Andes, a system built by indigenous peoples before the Spanish arrived. The region is the country's most important fruit and wine district, and the irrigation channels are a prerequisite for this.



Pattern: Cascade of roofs

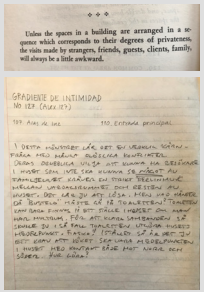


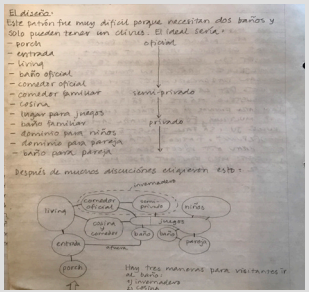




It was very rewarding to start thinking three-dimensionally with the family early on. They began assuming the designer role more when we took this step, understood the pattern and became more competent.

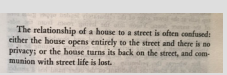
Pattern: Intimacy gradient

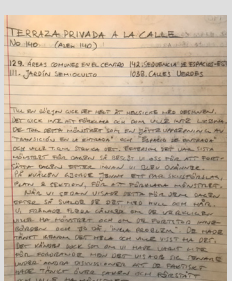


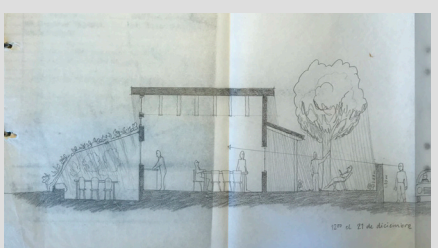


This was one of the most interesting patterns to design, and the discussions about achieving the results the family wanted were intense. Afterwards, we found that this pattern was a major reason why the house turned out to be as big as it

Pattern: Private terrace facing the street

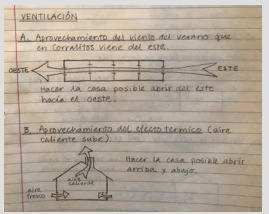


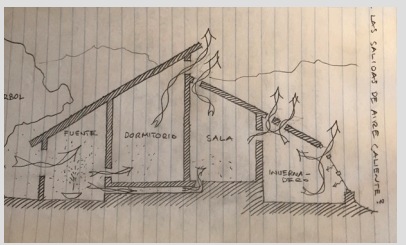


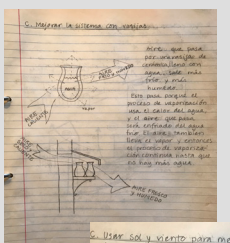


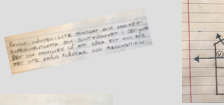
It was interesting that some patterns were so difficult to discuss, but after a night's sleep it could turn around completely, with all the pieces falling easily into place. Designing housing is truly a process!

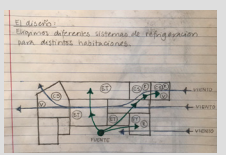
Pattern: Cooling system

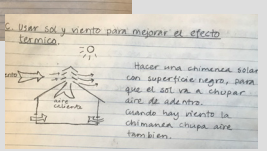


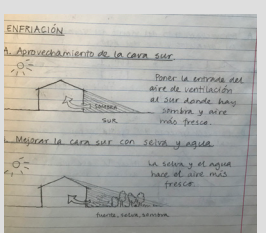






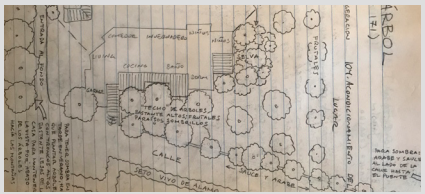


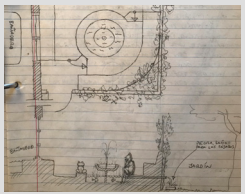




Cooling system was a pattern introduced by the family. Passive cooling is an important issue in this desert climate, where it can get up to 45 degrees in the summer. The design process of this pattern was engaging and resulted in many new fun ideas being put forward by the family. They were satisfied with the results.

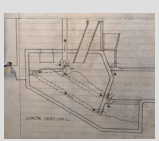
Patterns: Trees and Fountains

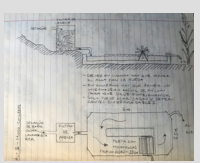




Planning for and protecting trees is obvious in a desert climate, right? Wrong, in fact: In all new housing projects in Mendoza, they cut down all existing trees before construction started! And after the houses were built in straight lines, small new trees were planted out along the irrigation canals. What an incredible waste of resources! It also resulted in a poor environment during the 20 years it took for the new trees to grow to be reasonably large. In addition, it led to a lack of shade in this climate. For the family, however, trees were obviously an important pattern and the design process went smoothly. They also added a new pattern in the context: Fountains.

Patterns: Compost, Dry Toilet and Water purification of gray water

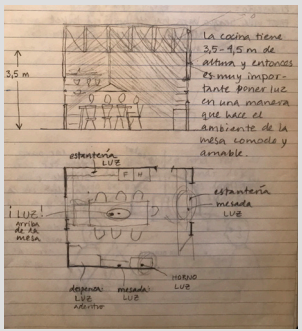


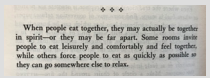


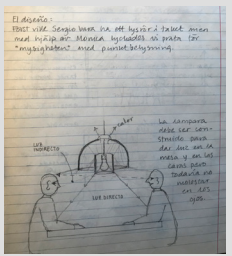
The pattern of Compost accompanied a number of other elements to design, as the family was convinced beforehand that they wanted a Dry toilet and Water purification of gray water. When we visited Mendoza 30 years later, we saw that they had been absolutely right in their forecast that water would become scarce. The huge dam that intermittently stores the entire region's water was almost completely dry during our visit in 2017. It seems that Mendoza will soon find itself in the same situation as Cape Town, where drinking water is sometimes completely shut off to residential areas! In addition to protecting the water, the family wanted to take advantage of the nutrients in food, urine and feces for use in cultivation by composting and using a dry toilet.

Images: Scanned from printed book are from Alexander's »A Pattern Language«, hand drawn and handwritten are from Stenberg & Kärki's thesis.

Pattern: Eating atmosphere

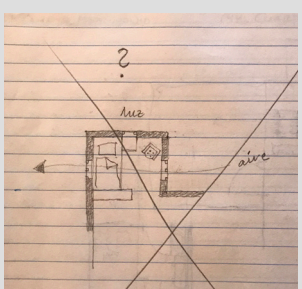



When people eat together, they may actually be together in spirit—or they may be far apart. Some rooms invite people to eat leisurely and comfortably and feel together, while others force people to eat as quickly as possible or they can go somewhere else to relax.



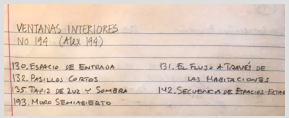
The design is now becoming more and more detailed.

Pattern: Alcov

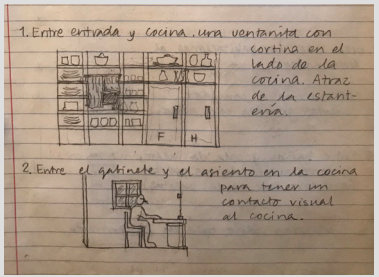


Example of a pattern they did not want. Alcov means feeling congested and warm, and this is not appropriate in Mendoza in the summer.

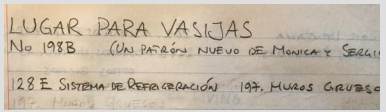
Pattern: Interior windows



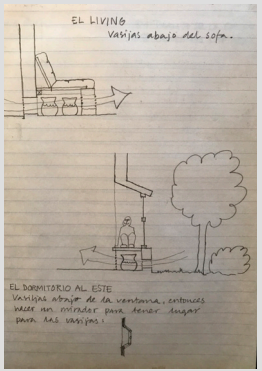
They wanted two interior windows to the kitchen, one from the entrance and one from the office.



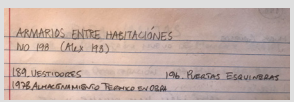
Pattern: Place for vases

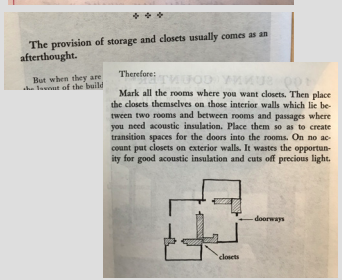


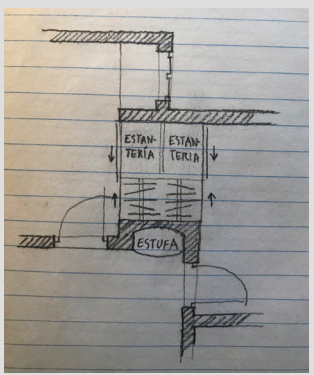
A pattern created by the family to make room for ceramic vases that should be part of the passive cooling system for the house.



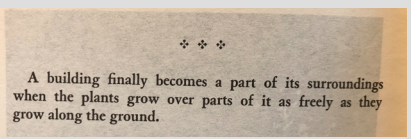
Pattern: Wardrobes between rooms





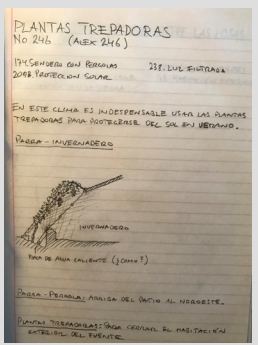


Pattern: Climbing plants



A building finally becomes a part of its surroundings when the plants grow over parts of it as freely as they grow along the ground.

An important pattern not only because it is beautiful when the building becomes part of its surroundings, but also because in Mendoza there must be shade for the greenhouse in the summer – otherwise it becomes unbearably hot and the plants die.



Images: Scanned from printed book are from Alexander's »A Pattern Language«, hand drawn and handwritten are from Stenberg & Kalin's thesis.

The result of the design process

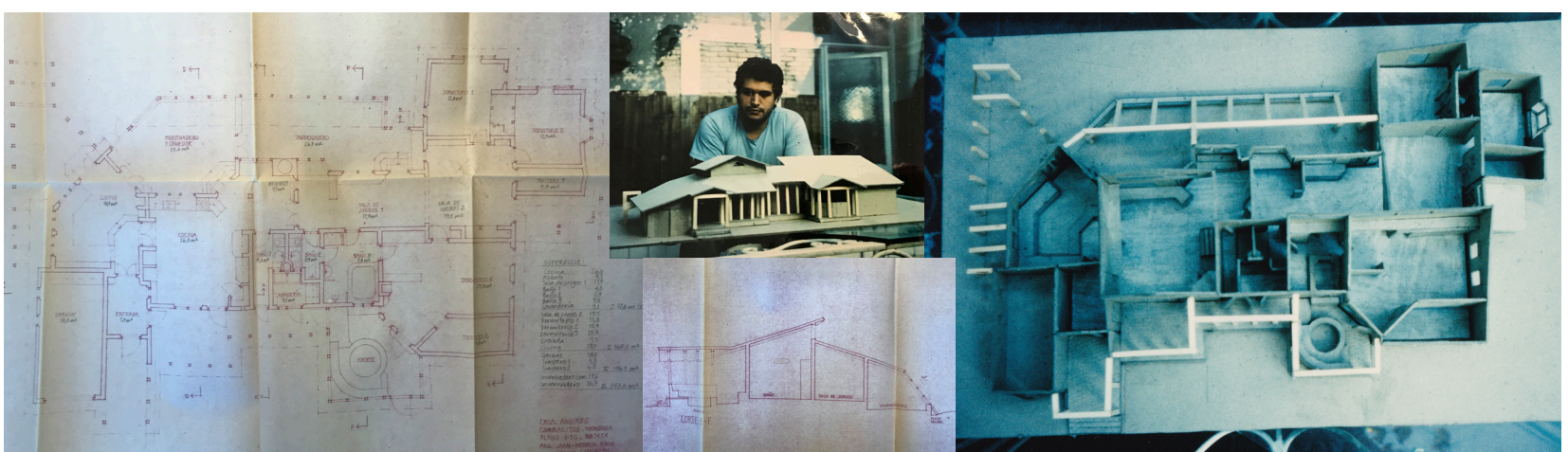
As mentioned earlier, we gathered the design of all patterns into a binder with text and sketches, which we gradually shared with the family. The design was also marked on the site. Additionally, after the design process was completed, we made traditional drawings on the house and the site, and built a simple cardboard model. We made the model to check how the design turned out, to animate the family and to deliver a clear result. They especially liked the model, but the binder containing all the sketches on the pattern was also appreciated. We also used the model to conduct simple solar studies.

For us, it was interesting to hear how the family talked about the house after the design was completed, and they took out the model to show it. They could describe every little detail of the house. It was *their* house!

We documented the time we spent in the design process. In total, we met with them 30 times. We spent 27 hours choosing patterns and 78 discussing them with the family and making designs on site; this amounted to a total of 105 design hours during which two architects and two family members participated.

Added to this were 40 hours to draw plans, facades and sections for the family and the solar energy institute, and an estimated 20 hours to build a model. There was also time for preparation, which involved us – the architects – reading to learn about Alexander's method and all the patterns.

The solar energy institute carried out an evaluation of the house when the design was completed. Because this was in the 1980s, including all the information in their system was a cumbersome process, so we did it only once – we could not evaluate environmental aspects successively, which

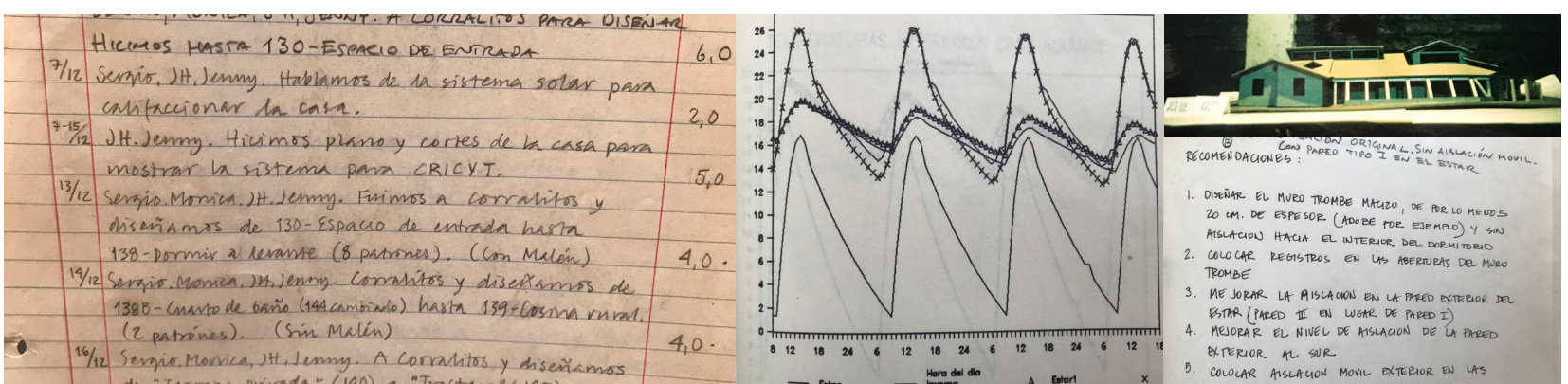


Thesis work 1988: Plans, section and model of Casa Aguirre. Co-designed by Monica, Sergio, Jaan-Henrik & Jenny.

could be done more easily today. Thus, we did not know at all where we would end up. We received an answer that the house worked well in terms of energy. The recommendations they made included increasing the thickness of some walls, increasing the insulation on others and making detachable insulation for some window surfaces to prevent energy loss in wintertime (below freezing temperatures occur in Mendoza for some months).

We carried out an evaluation with the family and two invited critics after everything was finished, going through a number of design process questions and listening to their criticism and suggestions for improvement. It was interesting that the stress we architects sometimes felt from the family to move forward had not really been based on them thinking it was a slow process, but more about them becoming increasingly anxious to get to the interior details. They did not understand until afterwards, they said, how important it is to have a sense of the outside and the wholeness. It was only at a certain stage in the design process that they began to see the entire volume of the house in front of them. Before that, the appearance of the house had been divided into different patterns.

An important point of view the family mentioned was that the process could have been much faster if the architects had been able to use all the patterns easily, like running water. We were students and thus in a learning process ourselves. In addition, we conducted the process in Spanish, a language we did not fully master. The fact that the book was available in the family's own language was a great asset – probably a prerequisite. One recommendation we received was to first try to find a pattern that is clear to the family and then to explain the whole method based on it. At one point, we made a »map« of all the patterns and this helped them understand. An alternative to giving the family patterns as homework, after we briefly described them, would have been to offer more structured mini-talks about each pattern before every design occasion. In a controlled environment with a projector, a large empty table for sketching and quiet surroundings, this would have been a good strategy, but the conditions were different where we worked. At home with the family it was messy – with children interrupting, food being served and relatives talking. On the site, it was hot even under the sunshade; their little child were with them often and needed attention, thus the level of concentration was not always one hundred percent.



Thesis work 1988: Diary, energy analysis, solar studies and recommendations from the solar institute in Mendoza. Co-designed by Monica, Sergio, Jaan-Henrik & Jenny.

We also asked the family to evaluate the *design* of the house. They were to imagine a day when they lived in the house and describe to us their activities hour by hour, from morning to evening. First, we laid out the day. The daughter wakes up at 6 and so on. Then they would »play« the day. They thought it was difficult, though the woman found it easier than the man did. Maybe they had no desire to evaluate the design now that it was finally done... part of the method is not to change! But in the end, interesting criticism emerged. Some things could not affect the design (such as the length of the playroom), but we were able to bring in other aspects (like arranging for a hammock to nap in). The end result – a very spacious house – was also discussed. The size was very much due to the fact that the family of three people at that point lived in 15 square meters at home with the woman's in-laws, so they dreamed of having lots of space. But could they afford it? The construction technology they chose was very cheap and their solutions for water, sewage, heating, cooling and other things were effective. Once the house was built, it would be cheap to live in, and they felt this allowed such a large house. The plan was also to build in stages, with kitchen and bathrooms first, and then to gradually expand by adding the other rooms.

In retrospect

Our own final reflection comes now, 35 years later. Alexander's method is interesting for many different reasons. It gives residents power, which is perhaps its clearest advantage. The family liked the design of the house very much! When we greeted them ten years later, they could still describe every detail of the house. The method thus »empowers« those who will build a house and live in it. Without this power, it is extremely difficult for them to create their own home, because they do not have the financial resources to buy a turnkey home. As it turned out, they never built the house, and it goes without saying that the power they received was not enough to get them through the hardships they lived. So how can such a method be further developed to give clients even more power?

The reviews the house received from external critics during the evaluation was that it had a traditional expression well suited to the rural areas of Mendoza, but that there was also a modern »touch« that made them curious about how the house came to be. The family liked that. They wanted their neighbors to like the fact that they came there and built, but they also wanted to attract visitors to come, study the house and learn from their environmental installations, with a dry toilet, passive heating and cooling, purification of gray water and more.

Another reflection concerns time. We thought it took a long time and the design process was also extended, lasting for three months. However, as we look back, we do not think 105 hours for design and 60 hours for documentation is excessive. It would probably have been beneficial to compress the design process to reduce the feeling of it taking a long time, both for the family and for us, the architects. At the same time, it is a good thing if everyone is able to reflect and seek knowledge in the intervals between the meetings. It would also have been difficult for the family to meet more often, because they were living their ordinary lives in parallel.

It would definitely have been better to choose a different time of year to design on the site; during the final month it was simply too hot to think well. We did not have air conditioning where we lived either, which meant putting drip protection on our wrists when we drew so as not to ruin the drawings with our sweat. The importance of adapting the design process to the climate cannot be underestimated!

In the next section we will return to Sweden. How have these earlier experiences played a role in shaping Egnahemsfabriken's co-design method for self-builders?

PART II

Foto: Jenny Stenberg.

Draw and build your own house – together [VERSION 1.0]

Egnahemsfabriken at Tjörn is a building center that serves as a support structure for people who want to build their own home or help others build their own homes. The study association for adult schools (Studieförbundet Vuxenskolan) is one of the actors participating and is the reason for teaching the design method in a »study circle«, an educational arrangement that receives some support from the state. The normal course fee was SEK 7,000, and 5,000 for people with a discount. During the fall of 2018, we tested the design method with four interested self-builders who we had met through various outreach activities during the first half of the project:

- ☐ A woman, 65 years old, who was about to retire and wanted to build a small house on her site to have some nice company and the opportunity for extra income through renting.
- ☐ A man, 33 years old, who wanted to build a home for his family. They were expecting their first child, he wanted to build a little bigger and preferably for two families, because he wanted to share the site with his brother and family.
- ☐ A man, 29 years old, who wanted to build a small house for his mother on his brother's site, because he wanted both to learn to build and to do something fun and meaningful.
- ☐ A man, 34 years old, who still had no site, but wanted to build a resource-efficient small home for himself in the middle of a remote, wooded area.

Hence, in this first test, we had someone from each of the following particularly interesting target groups: one older person, one immigrant and two young people. None of these four people, two young people. None of these four people, however, belonged to the »particularly vulnerable« group on the housing market. Although they do not have very large financial assets, they did have work, contact networks and other resources. We will return in a later chapter to a description of the reasons why, in the first few years, Egnahemsfabriken found it difficult to reach the most vulnerable groups in society: for example, elderly people facing a very challenging financial situation at retirement; newly arrived refugees who are homeless or lack contact networks in Sweden; and young adults who are forced to live in the parental home because of the housing shortage, and who thus cannot move on in life. It should also be mentioned that work with the four participating self-builders is only part of Egnahemsfabriken's activities. The website contains information on the construction projects that have been carried out thus far [tjorn.egnahemsfabriken.se/byggprojekt].

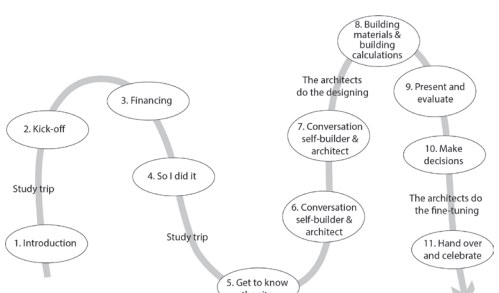
Shaping the design method

The four interested self-builders thus participated in the study circle as a test group,

on whom we could test the first version of the design method. They knew that the method was under development and contributed greatly to generating knowledge about how it could be improved.

In addition to the self-builders, volunteer architects participated in the work. These were young immigrant architects who wanted to contribute to Egnahemsfabriken's development as well as learn about the design method and apply it. They have roots in Syria, Poland and Lebanon, respectively, and saw participation as an opportunity to develop their contact networks in Sweden. It was also an opportunity for them to work on mastering the Swedish language. The design results were then followed up by the responsible architects at Egnahemsfabriken (Tinna and Erik). Tinna was also the course leader.

The design method included a number of steps that were reviewed in the eleven study circle meetings, always beginning with »inspirational talks« that were open to the public. In addition, the study circle included two study trips.




Design study circle at Egnahemsfabriken. Photo: Jenny Stenberg.


Study trip to Hogslätts vänboende, Gerlesborg. Photo: Tinna Harling.


Preparations for cultivation at Egnahemsfabriken. Photo: Tinna Harling.

The different steps of the design method

1. Introduction

Time: 2018-09-24, 6:00-9:00 pm.
Place: Egnahemsfabriken Studio Svanvik.
Participants: Self-builders, the association for adult education representatives, Egnahemsfabriken's project managers

Welcoming the participants. Introduction, review of programs for the autumn, schedule date and place for study trip 2. Define the framework, conditions, needs and visions for each project.

Common study trip 1

2018-09-29: To Bottna – all day. Transport for the study trip is by bus from Tjörn; we visit an event in Gerlesborg organized by Aktiva villages (aktivabyar.se).

2. Kick-off

Time: 2018-10-01, 6:00-9:00 pm.
Place: Egnahemsfabriken Studio Svanvik.
Participants: Self-builders, adult educators, project managers, guest lecturers.
The kick-off is preceded by public inauguration of the prototype EgnahemETT 4:00-6:00 pm.

Guest lectures, including questions and open discussion: Christian Rubell, Site manager Egnahemsfabriken: »The history of a self-builder. How to build cheaply with recycled materials«. Lena Boman & John Helmfridsson.

3. Financing

Time: 2018-10-08, 6:00-9:00 pm.
Place: Egnahemsfabriken Studio Svanvik.
Participants: Self-builders, adult educators, project managers, landowners, municipal representative (building permit and land exploitation), guest lecturer.

Part 1 Guest lecture:
Ingrid Westerfors, Coompanion: »Financing small-scale housing construction. What are the options? How to think?«. This lecture was canceled. The municipal employees talked about how to apply for building permits and discussed the accessibility rules.

De kommunanställda berättade om hur man söker bygglov samt vilka regler om tillgänglighet som finns.

Part 2 Discussion on financing and sites:
What possible financers are there, how should contacts be drawn up? Discussion about sites for the houses.

4. So I did it – »empowerment«

Time: 2018-10-15, 6:00-9:00 pm.
Place: At home with Erik Berg in his house, which he built himself.
Participants: Self-builders, adult educators, project managers, landowners, architects, guest lecturers.

Part 1 Lectures:
Inspiration and transfer of experience from former self-builders, with the goal of giving the participants inspiration and support.

Design study visit at Egnahemsfabriken. Photo: Tinna Harling.

Erik Berg, Egnahemsfabriken: »Will we need to build our whole life?« Erik tells about his family's construction of a house and barn in the traditional style at Mjörn«. Louise Ekeroth: »Accessibility in a small home – my own experiences as a self-builder«.

Part 2 Each self-builder and architect:
»Empowerment«. It is probably not obvious that self-builders will have the knowledge needed to be involved in designing their own homes. Many believe that architects alone possess all of the necessary skills. Others leave power over the design of the house to the architect more out of tradition or perhaps out of respect. To break this pattern, a confidence-building meeting is needed between the self-builder and architect – them alone. The potential landowner is not included in this meeting, because they have a power advantage over the self-builder, both because they own the land and because of their social position.

Proposal for a confidence-building method: The volunteer architect has a deck of photos of houses that have been designed – or could have been designed – by the people living in them. Because Egnahemsfabriken will mostly produce small cheap houses, the photos show this type of building. The self-builder may be encouraged to include photos of favorite houses as well. The self-builder and the architect have a completely open discussion about these photos, the aim of which is to give the self-constructer a feeling of competence. When finished, the self-builder should think: »I can do it!«.

Common study trip 2

2018-10-20: To Orust Ecovillage. Determined by the group at the start of the course. Dates were also set jointly.

5. Get to know the site & mark out the house

Time: Daytime before the next meeting (can be split into two occasions).
Place: Each site.
Participants: Self-builders, landowners, architects.

Part 1 Get to know the site:
The climate and the site's environmental conditions are crucial to the design. Do not include any preconceived ideas. Look and see. What does the place look like? What does the place say? What is the ground like? Sun and shade. Trees. Wind. Water. What local building materials are available? What houses are nearby? What building traditions are there? How do you live everyday life in this place? Where do you sit outside the house? How does this vary across the seasons? See the place with different eyes; step in with different roles. Understand the whole place, its nature- and culture-based information. Document and visualize the site.

Part 2 Mark the house on the ground:
Read the pattern »The house on the site« before doing this step. Considering everything you have learned about the place – especially bearing in mind where the sunlight reaches in different seasons and what you see from different places – where do you think it is best to build the house? Approximately. No details yet.


Eat & Talk at Egnahemsfabriken. Photo: Anna Berglund.


Summer worker at Egnahemsfabriken. Photo: Anna Berglund.


Summer worker at Egnahemsfabriken. Photo: Anna Berglund.

Both self-builders and landowners are equally active in the discussion. Neither of them more than the other. Concerning some issues, there may be reason for the landowner to have more power. Hammer down sticks to mark corners; pull and attach cords to mark the exterior walls. Feel what it would be like to live there. Move the sticks and the cords. Mark out several alternative locations. Document the location choices with photos and maps. Leave the sticks and cords there. Go there again and see what it feels like. Change the documentation if needed.

6. Conversation self-builder and architect

Time: 2018-11-05, 6:00-9:00 pm.
Place: Egnahemsfabriken.
Participants: Self-builders, architects, adult educators, project managers.

Self-builder and architect:
In order for the architect to get to know the person(s) who are going to live in the house, a group interview is conducted based on different themes, as indicated below. If there are several self-builders living together, everyone should be active in the conversation, no one more or less than the others. (The landowner is not included in this meeting). The architect may well have an assistant who should provide service, but not talk him-/herself. Put materials of different kinds on the table, to visualize the discussion. Large paper and thick pens. Cardboard, tape, knife, scissors and lots of sticky notes. Summary documentation in text and images is needed for the architect and the self-builder.

A. Like—dislike

The self-builder should think of a home he or she has lived in. Which places in the home, indoors or outdoors, are the favorites, and why? Which places are not appreciated as much? This knowledge is important, because it provides information on what the self-builder likes and dislikes, based on everyday life.

B. Private—public

Read the pattern »Degree of privacy« together. The self-builder should then describe which functions in his or her future home should be completely private, which should be public and which should be in between. Place a large piece of paper on the table. Write and draw with thick pens.

Egnahemsfabriken produces small houses, which is not as comprehensive an exercise as drawing larger homes. However, this knowledge is still important, partly because it provides information on what the self-builder thinks is private – an opinion that varies across cultures and that is, therefore, extra important to consider when the self-builders are immigrants. The small scale also makes thinking about privacy important, one example being making sure the toilet does not end up in the wrong place. Document all results in pictures and photos, specifying which is the final result.

C. The kitchen

Read the pattern »The kitchen is the heart of the house« together. The self-builders should then talk about what cooking means to them.

Summer worker at Egnahemsfabriken. Photo: Anna Berglund.

Summer worker at Egnahemsfabriken. Photo: Anna Berglund.

Is it a »matter of the heart« or not? Do they want it to be or not? We may be way off base considering the kitchen to be a matter of the heart, which has to come up.If the kitchen is a matter of the heart, then the self-builders should put on the table how they want it to be. Explain how cooking is done. Do several people cook together, or not? Are several in the room? What does a beautiful kitchen look like? What is considered functional? How should the lighting be? Do they want several sinks with water? How should garbage storage and recycling work? Compost? Document all the results, set priorities, and decide what is most important.

7. Conversation self-builder and architect

Time: 2018-11-12, 6:00-9:00 pm.
Place: Egnahemsfabriken, Studio Svanvik.
Participants: Self-builders, architects, adult educators, project managers.

Part 1 Guest lecture:

Karin Saler: »Transition in mind and reality – building ecologically from the bottom up«.

Part 2 Conversation between self-builder and architect continues:

D. Zen view

Zen view means »getting a glimpse«; the pattern concerns taking advantage of something nice in the surroundings and forming the house so that you can see that element in a somewhat surprising way. For example, put in a small window so you can see

a beautiful tree or lake when you are sitting on the toilet. Go back to the documentation of »Get to know the site together« and note interesting things in the surroundings that the self-builder wants to create a Zen view of. Document this.

E. Outdoor room

Shaping outdoor spaces is as important as shaping rooms indoors. This is especially important in our case, because the houses will be small, so you will need the outdoor room for everyday things. You may think this is temporary, that you will build more afterwards, but it may also be permanent. What does the self-builder want to place outdoors? What activities? What features? Discuss. Look at role models. Sketch ideas. Document everything.

F. The volume of the house

Last but not least, it is time to put words into the shape of the house and the volume of the house. What does it look like? Oblong and narrow? Thick and short? The roof? Use the materials on the table and build the model. Simple things. Share ideas. Completely free from criticism from anyone; do not seek solutions, but instead register the ideas. Document by photographing. In this conversation with the self-builder, the architect should constantly think about registering what is currently impossible, so that in the continued design process, they can make the house as flexible as possible. This approach allows the self-builders to further develop the home as they wish in a few years, when they can afford it.

Summer workers at Egnahemsfabriken. Photo: Anna Berglund.


Summer workers at Egnahemsfabriken. Photo: Anna Berglund.

8. Building calculation, materials, construction

Time: 2018-11-19, 6:00-9:00 pm.
Place: Egnahemsfabriken Studio Svanvik.
Participants: Self-builders, landowners, architects, adult educators, project managers, site manager, guest lecturer.

Part 1 Guest lecture:

Maj-Liz Marcusson, Färgtrappan: »How to choose colors and paint your house. What organic colors are there on the market".

After the end of the course, there is an opportunity for 1 hour of free color scheme advice.

Part 2 Discussion:

The meeting aims to put on the table what materials are available for building the houses and what construction technology is possible regarding choice of material. Gradually, Egnahemsfabriken's building worksheet is completed for each project during the meeting. The site manager has information on materials; he says what is available at the moment and what can be bought at what prices. He also describes one or a few construction techniques that Egnahemfabriken can use and which works well for self-building. It is important that the self-builders feel secure and grow during the meeting, that is, that the discussion be conducted in a way that includes the self-builder and the landowner, increasing their competence. It is the self-builders who should »own« the building worksheets.

At the end of the meeting, a summary is made of which materials appear most interesting for each building project and which construction techniques each self-builder and landowner are interested in employing. This is documented. Decisions on selection of material can also be made successively during the design process, and must then be documented on the respective building worksheets. The meeting also goes through what »developer responsibility« means as a legal concept.

The architects design proposals for houses

2018-11-19–2018-11-25

How much the architects influence the design with their own ideas depends on the extent to which they are able to empower the self-builders to take command over the design of their house: the more empowerment of the self-builder, the better the self-building process.

Livingston gives instructions for this part, where the architect works alone::

A. The field

Put up all of the studies on the walls around the room, that is, everything about the place, the house, the history, the residents and their dreams that has been put forward.

B. Fireworks

A blank paper on the table. Pull up everything that exists and »must« be there. Consider the boundaries of the site: What is unrealistic to remove or change, trees, etcetera? Then make sketches: Find solutions that correspond to the self-builder's dreams. Document on the wall. Test different variants, without considering realism or economics. It's a game. Move things around freely. Document on the wall. Change your perspective. Question constants, that is, things that do not shift across the different variants. Synthesize the variants by naming them.

Summer workers at Egnahemsfabriken. Photo: Anna Berglund.

Summer workers at Egnahemsfabriken. Photo: Anna Berglund.

[Take a break for at least one night]

C. Plausibility

Now pay more attention to the results of »Conversation between the self-builder and architect«. Imagine and understand the use of the house (live the house in your imagination). Next, start more from physical limitations that are unreasonable to change for any reason. Draw up new variants and put them on the wall.

D. Background and figure

Think of the house and site, deriving inspiration from the picture with the vase and two faces. Both have their own existence, both need to be designed equally carefully; they should fit together, but neither of them should be superior to the other. Draw up new variants, put them on the wall. The work results in a number of design proposals that are neutrally named.

There should be no more than five proposals for the selection process to work properly. A calculation of the approximate cost is prepared for the different proposals. The architect should check the design proposals with the site manager (expert on materials and construction) before the next phase, where the proposals are evaluated, but the site manager is not included in the evaluation meeting, as there is a risk that the self-builder's and landowner's expertise will be neglected. The architect and the site manager update and concretize the roadmap together.

9. Present and evaluate

Time: 2018-11-26, 6:00-9:00 pm.
Place: Studio Svanvik.
Participants: Self-builders, landowners, architects, assistants, adult educators, project managers.

Architect, self-builder and landowner meet:
All adults who will be living the house should be present throughout the meeting. There should be no interference, neither by telephones nor by children. The work is documented. An assistant to the architect should be present to manage the documentation and help to evaluate the process afterwards.

A. The roadmap
The architect repeats what the roadmap looks like, including the payment plan.

B. The site
The architect repeats what the site looks like and the proposed location of the house; several options can be presented.


Design study circle at Egnahemsfabriken. Photo: Jenny Stenberg.


Summer workers at Egnahemsfabriken. Photo: Anna Berglund.

C. The self-builder's thoughts about the house
The architect presents the self-builder's design ideas for his or her future home (from the interview »Conversation between self-builder and architect«) and asks whether he or she has summarized these ideas correctly. The architect proposes that this constitutes a framework for evaluating the design proposals and clearly points out the evaluation framework. The architect asks whether this is okay, or whether any of the future dreams should be included in the evaluation framework. The framework is established.

D. The proposals are presented and evaluated
The architect then presents the neutrally named design proposals, one by one, at a slow pace, without adding any values to them. As mentioned previously, there should not be more than five proposals for the selection process to go smoothly. Everyone can ask questions; everybody should understand the suggestions.

E. The proposals are evaluated

In a second round, the proposals are carefully evaluated one by one, following the evaluation framework. The architect never puts words into the self-builder's and landowner's mouths self-builderduring this process. Use »Ranking as a method« (Ranger and Westerberg 2004, 102). The method entails the self-builder

and landowner being given a number of stickers with dots of different colors to put on the proposals to mark what they think, that is, their evaluation results. One can vote on each proposal once because each evaluation criterion has its own color.

To equalize the inherent power differences between the self-builder and landowner, the self-builder's dot can be counted as two votes and the landowner's dot as one vote. Another way of doing this is to make the self-builder's dots larger.

F. Summary

When the proposals have been evaluated and everything carefully documented (photograph all proposals with dots on them and note the votes per proposal), the architect again sums up the roadmap, pointing out that it is up to the self-builder and landowner to take home all of the evaluated proposals, think them through, and return to the architect when they are ready to make decisions.

After the meeting, the architect evaluates the process thus far, together with the assistant, and documents the evaluation.

10. Make decisions

Time: 2018-12-03, 6:00-9:00 pm.
Place: Egnahemsfabriken, Studio Svanvik.
Participants: Self-builders, architects, adult educators, project managers.


Summer workers at Egnahemsfabriken. Photo: Anna Berglund.


Summer workers at Egnahemsfabriken. Photo: Anna Berglund.

Summer workers at Egnahemsfabriken. Photo: Anna Berglund.

Architect, self-builder and landowner meet:

The self-builder and landowner return with a decision. By using the evaluation framework, they should have been able to choose a proposal and present it to the architect. The presentation is then further elaborated by the self-builder describing »a day in the house«, that is, how he or she will move in and around the house from morning to evening, in everyday life. This provides information to the architect, indicating whether something in the proposal needs adjustment.

The choice can thus be easy, but Livingston describes in his book (1995: 78-80) four scenarios describing how the clients might react differently and how, as a professional, one can respond to these diverse reactions so as to move forward in the process and help them make a decision (that coincides with what they NEED). »Community architects« learn about these strategies in their education. All strategies actually have in common the notion that, as an architect, one should think of oneself as »a brain that is rented out to think out the client's house« (Livingston, 1995: 79). But that process must also be made efficient; it must not be prolonged indefinitely. Managing the process well can be difficult, especially if you have been schooled in a philosophy that is not about renting out your brain, and if you tend, in pressured discussions, to assert your right as a trained architect to assume responsibility for certain things. Livingston urges us to avoid walking into that trap. At the end of the meeting, the client should have chosen one of the options.

The architects do the fine-tuning

2018-11-27–2018-12-02

The chosen proposal is fine-tuned by the architects in collaboration with site manager and course management with regard to needs, desires, finances, material availability and future possible development of the home.

Drawings and other documents are produced by the architect. Formal »Construction notifications« are made by Egnahemsfabriken and submitted to the municipality. If the houses are large, formal »Building permits« will be needed instead.

11. Hand over and celebrate the results

Time: 2018-12-10, 6:00-9:00 pm.
Place: Egnahemsfabriken Studio Svanvik.
Participants: Self-builders, landowners, architects, site manager, adult educators, project managers.

Everybody together:
Drawings and other documentation are handed over to self-builders and landowners. The result is celebrated with food. The self-builders are now ready to take the next step in the process, that is, to start the self-building process. The site manager welcomes them to begin this step, informing about how to register, and presents the roadmap for the self-building process. There is also an oral evaluation of the study circle.

Food & Talk at Egnahemsfabriken. Photo: Tinna Harling.

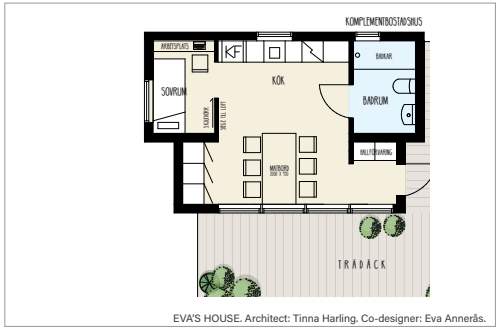
The design of the four houses

One of the four houses was built in 2019 and one is being built in 2020. The building is done by Egnahemsfabriken carpenters on assignment, supplemented with elements of self-building and building brigades. You can thus purchase construction services from Egnahemsfabriken if needed, and this is an important element of the financial considerations, as the carpenters must always have assignments that earn the money necessary for their wages.

The remaining two self-builders are waiting to start building their houses – one because he does not yet have a plot, the other because the plot he bought proved to be complicated to build on with the desired design. The pictures below show drawings and photos of the four houses.

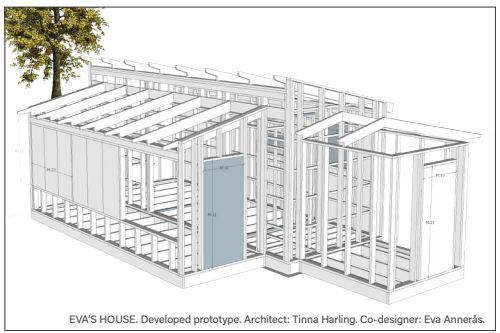
How the design process worked

Egnahemsfabriken conducted a comprehensive, collaborative evaluation of the design process; it also received valuable feedback on the knowledge process from a Chalmers student who followed the entire work and wrote a thesis on pedagogy and leadership (Allinger 2019). The evaluation involved the four self-builders, two of the volunteer architects, course management staff and others at Egnahemsfabriken.

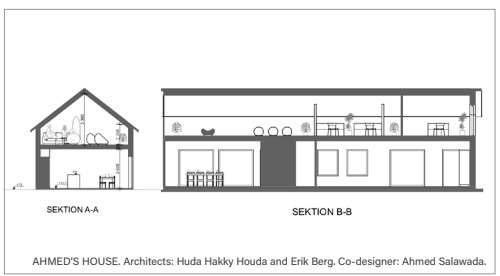


EVA'S HOUSE. Architect: Tinna Harling. Co-designer: Eva Annerås.

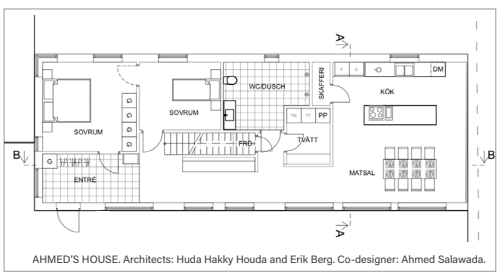

EVA'S HOUSE. Photo: Tinna Harling.


EVA'S HOUSE. Developed prototype. Architect: Tinna Harling. Co-designer: Eva Annerås.


EVA'S HOUSE. PHoto: Jenny Stenberg.



AHMED'S HOUSE. Architects: Huda Hakky Houda and Erik Berg. Co-designer: Ahmed Salawada.



AHMED'S HOUSE. Architects: Huda Hakky Houda and Erik Berg. Co-designer: Ahmed Salawada.

This resulted in both praise and blame. As the work was in the start-up phase, the project management staff for Egnahemsfabriken were very open and flexible in their search for ways forward, and this approach also characterized the study circle. The main self-criticism on the part of the course management staff was therefore that they were a bit in over their heads – it became a far too extensive process that required too much time from those involved. This became a problem in terms of their energy, which they could not cope with, and by extension also economically, as the idea is that, in the future, Egnahemsfabriken will be financially self-supporting, meaning that self-builders must cover the costs of the co-design process.

Moreover, the self-builders found the design process too extensive. They had many concrete suggestions as to what in the process could be eliminated, such as the many guest lectures given; they would rather have spent time sitting down calmly with their respective architects. The fact that the course was on weekday evenings in the winter darkness was perceived as very energy intensive. Fewer occasions and a mixture of weekday evenings and weekends were desired.

The volunteer architects did not participate on all of the occasions, and their main criticism did not concern the time required, for them it was the disorderly situation that was the worst. They came in fairly late in the process and were not trained in the design method – they therefore felt insecure. It was unclear to them who was responsible for what. Linguistic barriers increased this problem because they did not speak Swedish fluently and therefore mainly communicated in English. The long bus journeys from Gothenburg were also energy consuming. What they appreciated was getting the experience and having a contact network. Overall, they found the process very rewarding and offered significantly more praise than blame.

Regarding empowerment, the design process received a great deal of praise. The self-builders generally enjoyed the process, they supported each other in a nice way. The group feeling was tangible, and in the end, they felt very competent to design their own homes. However, they would like to have built more things with their hands during the design process. Sometimes it was also a little »disempowering« for self-builders to wait for the course to come around to the things they needed. This was partly due to the fact that some ingredients (mainly the guest lectures) were deemed unnecessary, but also that the four people were very different in their readiness to design and build. The fact that one of them did not even have a building site was also an obstacle.

As it turned out, many of the steps in the design process described above were simply not carried out. This became clear during the evaluation. It was partly due to lack of time, the plan being too ambitious, but the open and flexible attitude of management also played a role: decisions were made on the fly that were not well thought out. An important self-criticism related to how the design patterns were used. In theory, they were seen as very valuable for their potential in promoting a power shift in the design: from architect to self-builder. However, the management staff did not succeed in describing or teaching the volunteer architects the pattern language well enough, which meant that the design thinking did not have its full impact. In many cases, the architect gained more power over the design process than had been intended.

Another misstep on the part of management was that the self-builders did not feel ready to *build* after the design process. This readiness was considered very important to change. Design and construction should go hand in hand to a greater extent.

All in all, the evaluation indicated that the design method should:

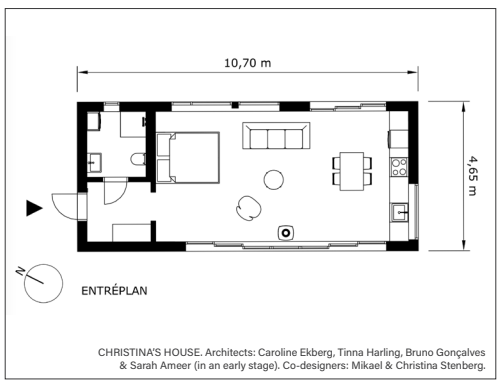
1. be compressed
2. increase in clarity
3. be more practical
4. be developed in relation to the patterns

A new proposal for the scheme was formulated that was cost-calculated and discussed by the board of Egnahemsfabriken in August 2019. The new proposal meant significantly lower costs, but it was still more than the board expected self-constructors to be able to pay. How would we finance the rest – in the short and long term? We had no additional external funding to finance the process. Would we really be able to offer a co-design process, or would we need to step back and merely offer a co-building process? Could we, based on the above experience, formulate a strategy for small, medium and large degree of intervention and see it as a process where we start with the small and work our way forward? Are there any business partners who might be willing to join us? How would we proceed?

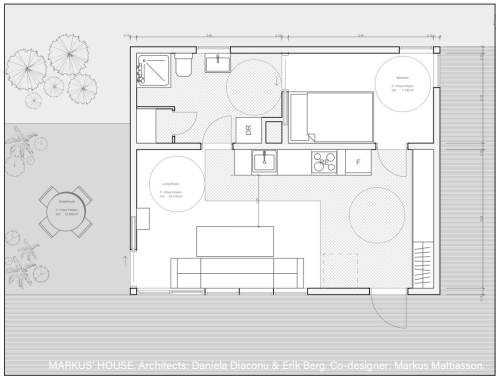
With the evaluation and experience in our back-pack, we formulated two new alternatives: A co-building process where self-builders use the prototype of Egnahemsfabriken, which can be modified to some extent; and a co-design process where self-builders are also involved in determining the shape of their homes. These alternatives are presented in the next chapter.

MARKUS' HOUSE. Architets: Daniela Diaconu & Erik Berg. Co-designer: Markus Mattiasson.

CHRISTINA'S HOUSE. Architects: Caroline Ekberg, Tinna Harling, Bruno Gonçalves & Sarah Ameer (in an early stage). Co-designers: Mikael & Christina Stenberg.



CHRISTINA'S HOUSE. Architects: Caroline Ekberg, Tinna Harling, Bruno Gonçalves & Sarah Ameer (in an early stage). Co-designers: Mikael & Christina Stenberg.



MARKUS' HOUSE. Architects: Daniela Diaconu & Erik Berg. Co-designer: Markus Mattiasson.

CHRISTINA'S HOUSE. Photo: Egnahemsfabriken.

CHRISTINA'S HOUSE. Photo: Christina Stenberg.

Build your own home – together [VERSION 2.0 »SMALL«]

— self-building of prototype houses designed by Egnahemsfabriken architects

The aim of this alternative is for self-builders to be ready to build; that is to say, after a joint process, they should know all of the elements of building Egnahemsfabriken's prototype house and be able to build such a house for themselves – together with other self-builders and with support from Egnahemsfabriken. In total, this arrangement requires 330 hours of those involved, and the course is estimated to cost SEK 75,000 plus VAT (see Appendix). We have calculated the lowest possible hourly rates, as Egnahemsfabriken is a non-profit organization run as a social enterprise.

With four self-builders, the course costs SEK 18,500 per person, with eight it is SEK 9,200. We believe that most self-builders are prepared to pay SEK 7-10,000 per person to get a designed home and are ready to construct it. Thus, if there are eight parallel self-builders, the finances should work.

Given the evaluation results, the guest lectures that were open to the public have been put aside and are not compulsory for the self-builders – but are offered at times adapted to their process. The inspirational guest lectures are funded by the adult education association Studieförbundet Vuxenskolan, which charges for them separately. We have nevertheless included the time for the inspirational guest lectures in the 330 hours so as to give a holistic picture of the time required.

The time to make building permit drawings of the design (about 8 hours) is also something the self-builders pay for separately.

HomeONE. Egnahemsfabriken has developed a prototype for simple, inexpensive, transportable wooden houses that can be varied depending on what kind of second-hand building materials are available. Photo: Egnahemsfabriken.

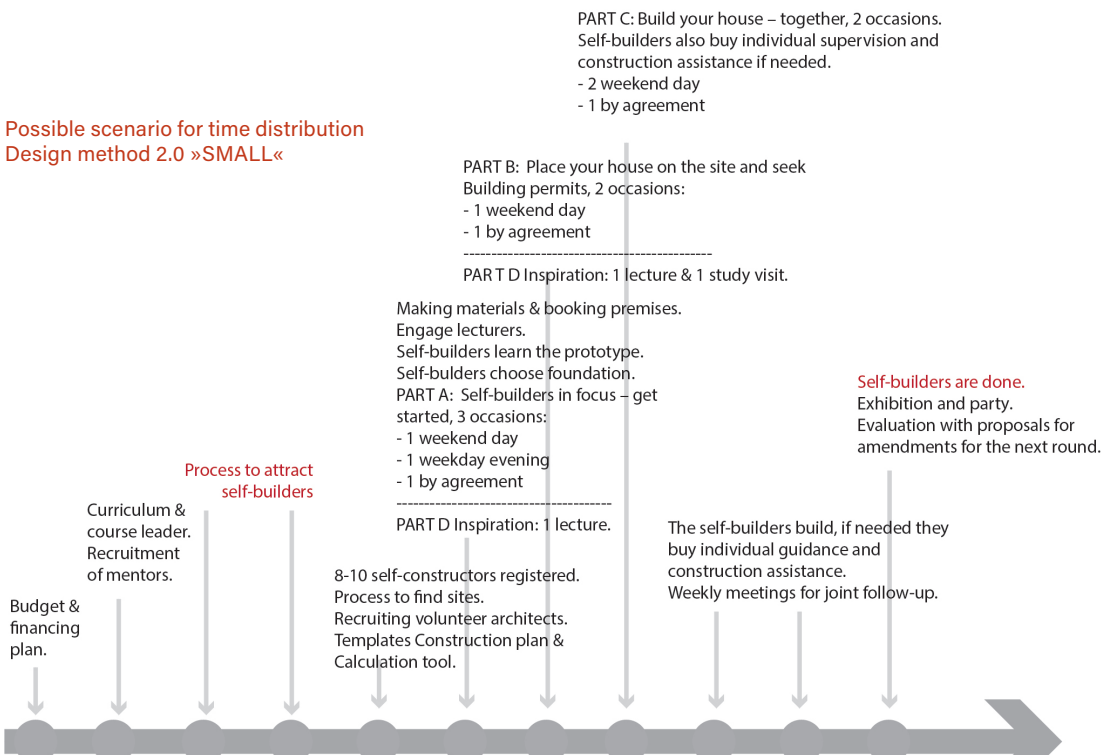
Preparations, be ready before start

- ☐ the prototype designed, as well as different types of foundations
- ☐ templates for Construction plan and Calculation tool
- ☐ budget and financing plan for the course
- ☐ curriculum and responsible remunerated course leader (Tinna, architect)
- ☐ remunerated architect responsible for site adaptation and building permit drawings (Erik or Tinna)
- ☐ process of attracting self-builders, eight to ten interested self-builders registered
- ☐ process of finding sites; all self-builders need to have their sites ready

PART A
Self-builders in focus – get started

1. **Building-brigade** [4 hours, weekend]. All self-builders build something together to get to know each other and become stronger in their conviction that they can build. The day is organized by Erik, architect, according to the Building-brigade arrangement used before. Christian, site manager, and carpenters are present. They introduce how to use the machine tools and show all available recycled materials and how to find them in the App. The Building-brigade conveys concrete knowledge of the prototype and different types of foundations.

Possible scenario for time distribution
Design method 2.0 »SMALL«



1. **Building permits and regulations** [3 hours] including energy requirements, accessibility requirements, information on »Attefallshus« (small house that does not require a building permit) and more. Calculation and financing. Timetable and Construction plan (all self-builders bring computers with an Internet connection).

   A. A municipal representative tells about laws and regulations and shows a building permit application for a small house, describing how to apply.

   B. Erik demonstrates the Calculation tool and how to use it. In a short workshop, everyone starts filling in their house in the tool on Google-drive. They continue at home themselves.

   C. Erik or Christian demonstrate the Construction plan tool and everyone starts filling in their house on Google-drive. They continue at home themselves.

3. **Follow-up of Calculation plan and financing [2 hours].** Individual supervision of each self-builder by Erik and Christian, the aim of which is to complete the tools and together evaluate the feasibility and check that the self-builder will be able to handle the financing. The Construction plan and Calculation tool, which are located on Google-drive, are thus revised during the meeting. Result: the self-builders should know that they will be able to afford to build.

PART B Design your home

1. **Place the house on the site** [2 hours]. Respective self-builders and architects (Erik or Tinna) meet on the site and choose a location for the house.

2. **Seek building permit** [8 hours]. The self-builders apply for building permits with the help of their architect (Erik or Tinna) and pay separately for that work.

PART C Build your house – together

1. **Building-brigade** [Full day, week 1]. All self-builders jointly build a house section that will be needed for one of the houses. The day is organized by Erik, and the aim is to engage and encourage everyone. Site manager and carpenters are present; they provide individual tool-/machine-use licenses for the self-builders. In the afternoon, Erik organizes a conversation so that the self-builders can tell them where they are in the process and what their plan looks like. The plans are discussed and adjusted with the help of Erik and Christian. Self-builders update their respective pictures on the wall.

2. **Building-brigade** [Full day, week 2]. All self-builders build a foundation together, draw water and sewer pipes, draw pipes for electricity, build a wall, put in a window, a door, make roofs, lay a floor, build a partition wall, a bathroom wall and a bathroom floor, make bathroom fittings and a kitchen unit. The day is organized by Erik, and the aim is to engage and encourage everyone. Site manager and carpenters are included. The object is hopefully a house that former participants are building at the moment. Then Christian's time can be paid for by that project, and the participants' time serves as a brigade. The homeowner supplies the food.

3. **Individual supervision** of each self-builder by Erik & Christian as needed. Building help with Christian and the carpenters. This is paid for according to the hourly rate list.


Photo: Anna Berglund.

DEL D
Inspirational lectures

The guest lectures address both the self-builders and an interested public. The lectures are voluntary for the self-builders and are held on a separate day, but the content and timing are adapted to their needs. The inspirational talks are funded by the adult school and they charge a fee per visitor. Location: Egnahemsfabriken if appropriate, otherwise somewhere else.

1. **I did it like this** [2 hours, weekday evening]. A self-builder talks about building his or her house, as a person who has had experience of building a small cheap house (after Place the house on the site in Part B above).

2. **Cheap housing construction – who finances it?** [2 hours, weekday evening]. What does cheap housing cost? What do banks say about financing (invite)? Interested landowners who want to pay for construction on their site (invite). Example of crowdfunding of housing construction (invite) (after building permit and calculation in Part B above).

3. **Study trip – co-design and self-building of cheap housing** [Full day with bus, weekend] (before Part C Build your house – together)

Stage building at Egnahemsfabriken. Photo: Anna Bergland.

Design and build your own house – together [VERSION 2.0 »LARGE«]

— that is, with an architect and including co-design of the self-builders' homes

The aim of this alternative is for the self-builders to both give shape to their own homes and be ready for construction: They will design the house and then be able to build it – together with other self-builders and support from Egnahemsfabriken. In total, this program requires 770 hours of those involved and the course costs SEK 145,000 plus VAT (see appendix). With four self-builders, the course costs SEK 36,000 per person, with eight it costs SEK 18,000. We believe they will be prepared to pay SEK 7-10,000 per person to get a designed home and feel ready to build. Therefore, if we have eight parallel self-builders who each pay a fee of SEK 9,200, SEK 71,400 is missing per course to finance this alternative.

As in the first alternative, we dropped the inspirational public guest lectures. Attendance is not mandatory for the self-builders, but the lectures are scheduled at times adapted to their process. The guest lectures are funded by the adult education association, which thus charges for them separately. We have nevertheless included the time for the inspirational talks in the 770 hours, to give an overall picture of expenditure of time.

The time for building permit drawings (about 8 hours) is also something the self-builders pay for separately. Volunteer architects are included when calculating time, but not when calculating money, because they are »paid« by being trained in co-design. Each volunteer architect has a mentor, that is, an experienced architect who can provide advice and who is responsible for the end result. The mentors are paid.

As mentioned earlier, we have been calculating using the lowest possible hourly rates, as Egnahemsfabriken is a non-profit organization run as a social enterprise.

Preparations, be ready before start:

- ☐ budget and financing plan for the course
- ☐ curriculum and responsible remunerated course leader (Tinna, architect)
- ☐ recruitment of paid mentors – in addition to Tinna & Erik – who are responsible for 2-3 volunteer architects
- ☐ process of attracting self-builders, eight to ten interested self-builders registered
- ☐ process of finding sites; all self-builders need to have their sites ready
- ☐ templates for Construction plan and Calculation tool
- ☐ all self-builders need to be familiar with Egnahemsfabriken's prototype/building type (fees paid to Christian, site manager, & Erik, architect)
- ☐ all self-builders, in consultation with Egnahemsfabriken, need to have chosen the type of foundation that works on the site (fees paid)

- ☐ recruitment of one volunteer architect for each self-builder (the process includes visiting Egnahemsfabriken and being introduced)

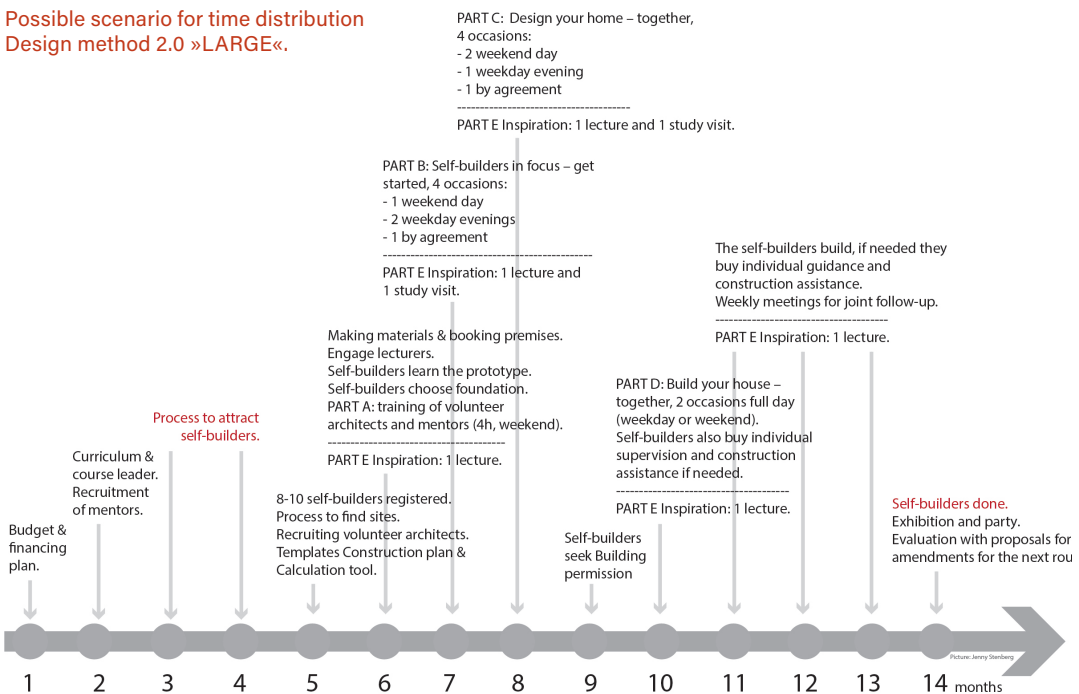
PART A
Training of volunteer architects & mentors

The philosophy behind Egnahemsfabriken's strategies. [Time for the self-builders: 4 hours, full day]. Description of the entire design and building process including Construction plan. Description of the construction technique used (most often) in the factory. Education in the design method – how to do it, step by step. The responsibility of the volunteer architects. Choice of software. Info and questions. The mentor's responsibility. Info and questions.
Participants: Course management (Tinna), project manager (Erik), all volunteer architects, all mentors. Site manager (Christian) and carpenters, in the beginning. Researcher (Jenny) participate in training in the design method.

Results:

- ☐ Everyone knows each other – they become a team.
- ☐ Everyone feels secure in their roles and responsibilities.
- ☐ Everyone knows the design method.

Possible scenario for time distribution
Design method 2.0 »LARGE«.



PART B
Self-builders in focus – getting started

1. **Building-brigade** [4 hours]. All self-builders build something together to get to know each other and become more confident in knowing they can build. Mentors are welcome (unpaid).

   The day is organized by Erik. The brigade imparts practical knowledge of the building technology that Egnahemsfabriken usually applies. Site manager and carpenters participate; they introduce how tools should be used; they show the available recycled material and demonstrate how to search for material in the App.

   At lunch, Tinna organizes a conversation where the self-builders tell about themselves and their thoughts and ideas concerning what they want to build. On the wall, a space is prepared where each self-builder can begin placing pictures and texts.

2. **The site** [2-4 hours]. The site. All self-builders and volunteers walk around showing each other their sites. Erik or Christian take part in this and are prepared to answer self-builders' questions about financing, so that the issue of money is on the table.

3. **Building permits and regulations** including energy requirements, accessibility requirements, information on »Attefallshus« (small house that does not require a building permits) and more. med mera [3 hours].

   Calculation and financing. Timetable and Construction plan (all self-builders bring computers with an Internet connection).

   A. A municipal representative talks about laws and regulations and presents a building permit application for a small house, describing how to apply.

   B. Erik demonstrates the Calculation tool and how to use it. In a short workshop, everyone begins filling in their house in the tool on Google-drive. They continue at home themselves.

   C. Erik or Christian demonstrate the Construction plan tool and everyone begins filling in their house on Google-drive. They continue at home themselves.

   D. Self-builders constantly update their marked space on the wall.

4. **Follow-up of Calculation plan and financing** [1.5 hours per self-builder, in agreement with Erik & Christian]. Individual supervision of each self-builder by Erik & Christian, the aim of which is to complete the tools and together evaluate the feasibility and check that the self-builder will be able to handle the financing. The Construction plan and Calculation tool, which are located on Google-drive, are thus revised during the meeting. Result: the self-builders should know that they will be able to afford to build.

PART C Design your home – together

1. **Place the house on the site** [2 hours]. The respective self-builders and volunteer architects meet on the site and choose a location for the house using »Design-card 1: The house on the site«. The choice is checked with the mentor,

2. **Conversation between self-builder and architect** [6 hours]. Tinna, Jenny and the volunteers have met previously and planned the day. Self-constructors have read the design-cards in advance. The day starts with a short joint lecture on the design method (max 30 min). Then each self-builder and volunteer sit down for the rest of the day and conduct a workshop based on »Design cards 2-6«. Thus, one sound-insulated room per self-builder is needed as well as different tools for the design process (large paper, cardboard, glue, computer, etc.). Tinna and others provide support when needed.

   Result: At the end of the day, each self-builder has a clear concept of his or her house, which is documented in text, pictures and a model.

3. **The volunteer architects** draw up the proposal in Sketchup or by hand. The mentors review the proposals from different points of view and indicate things that need to be changed with regard to laws and regulations, as well as proposing other improvements. [16 hours volunteers / 2 mentors.]

4. **Feedback and evaluation** [6 hours]

   A. The respective self-builders and architects sit down and look at the results together. Thus, one sound-insulated room per self-builder is needed.

   B. Is everything as the self-builder expected? The architect notes what adjustments need to be made.

   C. All self-builders and architects sit together and each self-builder presents his or her house. Everyone reflects on each other's houses and suggests improvements. The self-builder indicates whether he or she wants the architects to change something. Architects take notes.

   D. Joint dinner to celebrate that the design is largely finished. Friends can be invited. The sketches are posted on the wall. The models are on display.

5. **The architects fine-tune** the proposals and the mentors check them again [4 hours for volunteers and 1 for mentors]. The sketches are emailed to the self-builders and others. The self-builders update their respective pictures on the wall.

6. **Seeking building permits** [8 hours]. Self-builders apply for building permits on their own initiative. They decide for themselves whether they want to buy this service from the volunteer architects/mentors and agree on it separately.

PART D Build your house – together

1. **Building-brigade** [full day, week 1]**.** All self-builders jointly build a house section together that will be needed for one of their houses. The day is organized by Erik and the aim is to engage and encourage everyone. Site manager and carpenters are present, they provide individual tool-/machine-use licenses to the self-builders.

   In the afternoon, Erik organizes a conversation where the self-builders talk about where they are in the process and what their plan looks like. The plans are discussed and adjusted with the help of Erik and Christian. Self-builders update their respective pictures on the wall.

2. **Building-brigade** [full day, week 2] **.** All self-builders build a foundation together, draw water and sewer pipes, draw pipes for electricity, build a wall, put in a window, a door, make roofs, lay a floor, build a partition wall, a bathroom wall and a bathroom floor, make bathroom fittings and a kitchen unit. The day is organized by Erik, and the aim is to engage and encourage everyone. The site manager and carpenters are included. The object is hopefully a house that former participants are building at the moment. Then Christian's time can be paid for by that project, and the participants' time serves as a brigade. The homeowner supplies the food.

6. **Individual supervision** with Erik & Christian, as needed for each self-builder. Building help with Christian and the carpenters. This is paid for according to the hourly rate list.

PART E Inspirational lectures

The guest lectures address both the self-builders and an interested public. The lectures are voluntary for the self-builders and are held on a separate day, but the content and timing are adapted to their needs. The inspirational talks are funded by the adult school and they charge a fee per visitor. Location: Egnahemsfabriken if appropriate, otherwise somewhere else.

1. **I did it like this** – a self-builder tells about building his or her house (2h], as a person who has had experience of building a small cheap house (after Place the house on the site in Part C above).

2. **Cheap housing construction – who finances it?** [2h] What does cheap housing cost? What do banks say about financing (invite)? Interested landowners who want to pay for construction on their site (invite). Example of crowdfunding of housing construction (invite) (after Building permit and calculation in Part B above).

6. **Study trip** – co-*design* and self-building of cheap housing (after Part B Self-builders in focus – get ready). ≈

7. **Study trip** – co-design and self-*building* of cheap housing (after Part C Design your home – together). [Full day with bus, weekend]

8. **Building inspiration** by visiting, for example, Erik's house or Tinna's new guesthouse and hearing about how the work went – being able to ask questions. [2 hours]

9. **Choosing type of paint and color scheme.** [2 hours]

Alexander's design-thinking develops into Egnahemsfabriken's DESIGN CARDS

We had very good experiences using Christopher Alexander's pattern language book in Argentina, together with the family who designed their house. The woman and the man in the family got the patterns as homework before each meeting, and this worked well in several ways. It gave them insight into the architect's world; they were given tools to learn about what a design process looks like and what knowledge underlies different choices. The book also gave them tools to talk to each other about their different preferences – the book's political message sparked discussion. In these conversations, they developed as individuals and we – as architects – gained insight into


Photo: Anna Berglund

this process and it became our task to guide them toward decisions – gradually from the whole to the details. The book also encouraged them to develop the method itself. The clarity of the pattern language revealed when there were missing components that were important to the family. This led us to develop new patterns that touched on environmental aspects (concrete ecological solutions) and cultural aspects (what houses look like where they live and what they wanted to relate to).

When we applied the first design process (1.0) at Egnahemsfabriken, we had not had time to formulate texts or instructions for the patterns we thought were needed in the process. Alexander's book was available, but we did not delve into it during the design process. To some extent the patterns emerged anyway, because Tinna and Erik know the method to a limited degree. The volunteer architects also did not receive any training in the method.

For the next step of the design process (2.0), we have formulated a few patterns we consider to be indispensable. With Alexander's book as a model, these patterns have been described very briefly, much shorter than in the model, which, using simple language, addressed a broad public and offered a concrete guide for how the self-builder and the architect should approach the design process. To maximally compress the course, only six such design cards have been created. Some are very similar to Alexander's, others have been altered to suit our context or been completely re-created.

DESIGN CARD 1: THE HOUSE ON THE SITE

Buildings are strategically placed in the 'ugliest' places – not the most beautiful or the easiest to build on. You want the nice places to remain, to see the beautiful parts and use them in everyday life outdoors.

Self-builder and architect visit the site at a time when the weather is good. Bring A3 paper on a writing board, a measuring stick or graduated tape measure, plastic tape to mark things with, a small sledgehammer and sticks to drive into the ground.

✓ If you only have a measuring stick: Measure your step length by stepping ten to twenty steps and measuring the distance. Two steps are about 1.5 meters on flat ground, but this varies with person and place.

Inspect the site together:

✓ Set out the approximate plot boundaries with sticks.
✓ Note on the paper how one gets to the site on foot, by bike and car.
✓ Note north-south-east-west directions using a compass App in your phone.
✓ Note what the neighbors have near your site.
✓ Note the qualities of the site: fine trees, nice bushes, visible mountains, running water, slopes, moss, nice-looking seating, attractive places for cultivation, wonderful light, stunning sound, ant stacks, and more. Put these on the paper by measuring/stepping from the boundaries. Put plastic ribbons around trees, bushes, etcetera, that are nice and should be saved.
✓ Note potential problems on the site, such as wet areas, vole holes, diseased plants, waste, etcetera.

Imagine your home on the site:

✓ Where does the house fit on the site? Where does the sun rise and set, winter and summer? Where are the nice views you want to see from inside the house? Where is it windy in the winter and summer? Where is it dry and wet? What do you want to avoid seeing? Position the house with regard to listed qualities (do not destroy) and problems (solve them with your building).
✓ How do you approach the house? Where should the entrance be?
✓ What shape should the house be? Do you prefer a long narrow house or square?
✓ How big should the house be on the ground floor? You already know the approximate size you can afford, but you can build one floor or two: Which is best for the location?
✓ Use sticks to mark the corners of the house.

When the house is in that location, discuss how to solve:

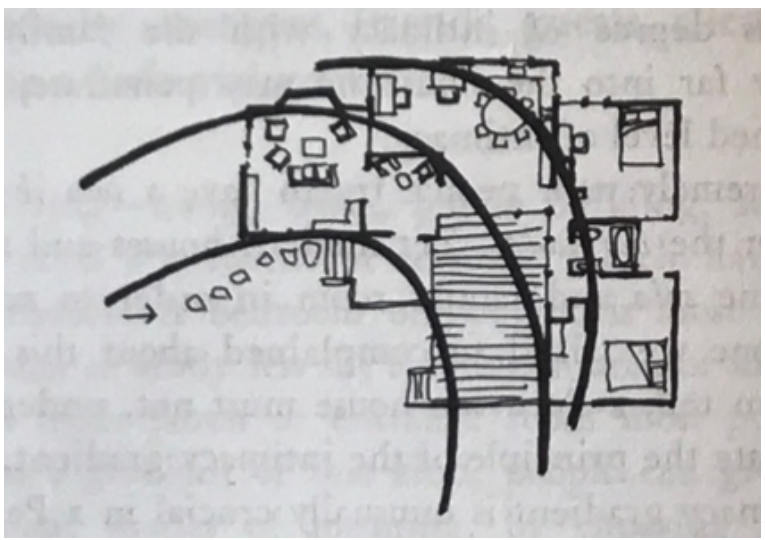
✓ Water. Where can a drilled well be placed?
✓ Drainage. Where could a private sewage treatment system be located?
✓ Solar cells. Where can free-standing solar cells and solar water heater be placed?
✓ Cultivation. Where could cultivated land or a greenhouse be located?
✓ Car. Where can cars be parked?

Adjust the location if needed and note the final location of the house on the paper. Put it up on your board on the wall in Egnahemsfabriken. Photograph all documents and place them in your folder on Google drive. The volunteer architect checks the house location with his or her mentor.

DESIGN CARD 2. DEGREE OF PRIVACY

Unless the rooms in a house are arranged in a sequence corresponding to their degree of privacy, then visits by strangers, friends, guests, customers and family will feel a bit uncomfortable.

Different rooms feel different with regard to privacy. A bedroom or sleeping area is perhaps the most private. Bathrooms often come next. A workplace is somewhere in between. For many people, the kitchen is the most public place. When rooms or functions follow the degree of privacy, it feels comfortable to have visitors enter the home. This is because the person understands, based on the design, how far into the privacy sphere one is expected to move – though some may go further than others. It also feels safe for those who live there. For example, it feels safer to have a bedroom at the farthest from the front door, if you think the bedroom is the most private place.



Alexander 1977: 612.

But ideas about privacy vary from person to person. This pattern concerns you thinking about how you feel about the privacy of your home. Because you are going to build a small house, you should think of *functions* instead of rooms when you create this pattern. Include all the functions you want to have, even those that may end up outdoors or in another building.

- ✓ Note all the functions of your home on sticky notes. One function per note. Cook, sleep, shower, etcetera.
- ✓ What function do you experience as the most private? What comes next? Think and discuss. It is the self-builder who decides.
- ✓ Put all functions in a row from most private to most public. Number them.
- ✓ Draw a line between the functions you want to be closely related.
- ✓ Save the result by documenting it on a sheet of paper.

When this design card is complete, the self-builder and architect have an idea of what functions the house and site should include and how these functions should relate to each other. Whether this can be realized is a later issue.

DESIGN CARD 3. THE KITCHEN IS THE HEART

Cooking together – can be just as enjoyable as eating together.

Separating kitchen from dining area and parlor became desirable in rich homes with servants, and this, according to the architect Alexander, later meant that women, who took over responsibility for cooking from servants, were separated from the rest of the family while cooking. In order to assume joint responsibility for cooking, many today want the kitchen to be the focal point, both in everyday life and when having visitors. This means that the kitchen needs to be designed to function for several people working with cooking and clearing the table at the same time. Space is also needed to do other things in the kitchen, such as visitors sitting and talking or children doing homework. Our modern environmentally aware society also demands that there be space for sorting waste, and innovative methods of food storage may be needed.

Because you are going to build a small house, there is not much room for the kitchen. This makes it even more important to think through what is important to you. Discuss the following:

- ✓ First, ***is*** the kitchen important to you? Do you even want a kitchen? Decide for yourself.
- ✓ What *functions* do you want in your kitchen? Think about everyday life and having visitors. List the functions. Write them on sticky notes. Prioritize functions – space is limited.
- ✓ Can the kitchen be outdoors? Outdoor kitchens can be very nice. Maybe not so practical in wintertime, but think about it – perhaps parts of the kitchen could be outside, which would save a great deal of space in a small house.
- ✓ Can you share a kitchen with someone who lives nearby? This would make your house considerably cheaper and encourage social activity around cooking and eating.
- ✓ Can the whole house be a large kitchen? Maybe that is the solution for you?
- ✓ What style do you want for your kitchen? Robust and rustic? Open shelves and things hanging on the walls? Tight, cabinet doors, clean and dust-free? Light, with nature visible through large windows or a glazed door? Cozy, cave-like and without transparency? Look at pictures the architect has brought and discuss your desired design.
- ✓ Summarize your preferences, document them.

When this design card is complete, the self-builder and architect have a picture of how the kitchen would feel and be connected to the rest of the house. The kitchen is thus the starting point for discussions about what the whole house should look like and feel like inside. The soul of the house. (If the self-builder does not want a kitchen, this pattern is obviously removed.)

DESIGN CARD 4. THE BATHROOM

Bathroom for practical purposes or for pleasure?

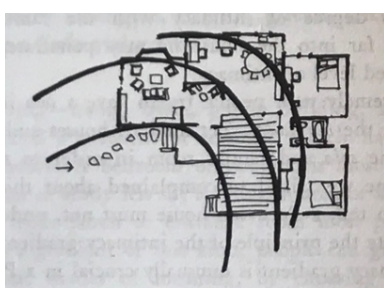
Having bathrooms for pleasure was common in the past; think about the beautiful public bathhouses. This largely disappeared with puritanism, where it was considered to be the breeding ground for the evil society. But the pleasure aspect has returned, now in more private environments. Architect Alexander even argues that communities that support the development of public baths for pleasure promote peace and counteract sadism. How do *you* want your bathroom to be? For practical purposes or pleasure, or both?

The bathroom consists of various functions. You started discussing them in the design-card »Degree of privacy«.

- ✓ Write down all functions of the bathroom on sticky notes. Also, consider functions that have to do with pleasure, if you want such a bathroom.
- ✓ Note which functions you feel should be private and which should be public. Some functions need to be both.
- ✓ Think about whether functions must be indoors or whether they can be outdoors – note this.
- ✓ Draw three semi-circles as in the picture below and place the sticky notes with functions in relation to them. Because you are building a small house, there is probably no room to duplicate, that is, to make bathroom functions both private and public, which means you need to make a decision on what you prioritize.
- ✓ Document the results.

Designing bathrooms also means deciding how to relate to environmental aspects. These decisions need to be made in parallel with the above design exercise. The decisions depend not only on your preferences, but also on the conditions of the site, for example if there is water and sewage on the site and if it is possible to make your own sewage treatment system. The architect brings pictures of different solutions. Discuss:

- ✓ Will you have a water toilet? If you are going to have a dry toilet, what solution do you want?
- ✓ Will you have urine separation? If yes, how should the urine be made use of?
- ✓ Will you recycle water from the bathroom sink, shower, laundry, kitchen sink? If so, what will you use it for? For irrigation? For the toilet?
- ✓ Will you have municipal water or your own well? If own well, what kind of well?
- ✓ Will you have municipal sewage or your own sewage treatment system? If your own, what kind?
- ✓ Note all choices.

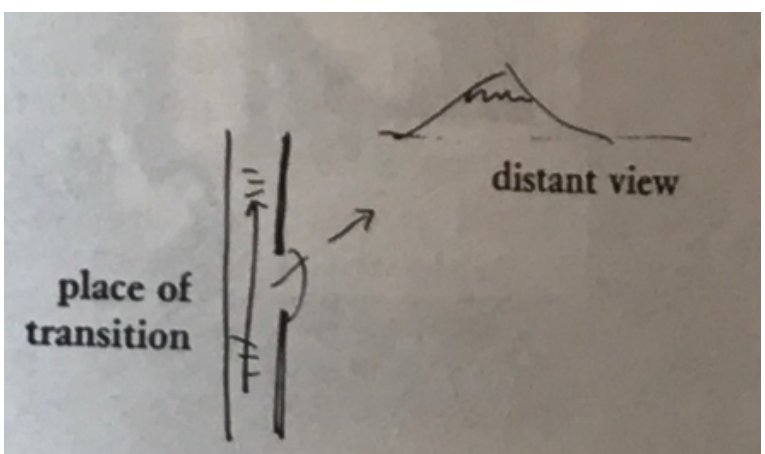


Alexander 1977: 612.

DESIGN CARD 5. ZEN VIEW

The more magnificent a view is displayed and the more visible it is every day, the sooner it will fade for those who live there.

The architect Alexander found the archetype of »zen view« in a Buddhist monastery in Japan. The enormous view of the valley was visible only from one place in the monastery: a narrow interstice on the wall in a hallway between two buildings. You only saw the view for one second each time you passed through the hallway. The idea of »zen view« is thus about preserving the most beautiful view, so that it is kept alive even for those who live in the house, not just for visitors who see it for the first time.



Alexander 1977: 643.

Go back to the documentation from the design card »The house on the site« and see if there is something really beautiful visible from your site – something you would like to be surprised by now and then, instead of getting used to. Discuss the following:

- ✓ Where do you see this view in the house? Is it possible to do a »zen view« for it? Where?
- ✓ Are there places outdoors where you can create a »zen view« for this, by building a fence, sculpture, or the like?
- ✓ Summarize and document.

This design card touches only on one detail, but is included because it will otherwise probably be forgotten. It also returns thoughts to the place – how the house is situated on the site.

DESIGN CARD 6. BUILD A MODEL

It is the self-builder who should feel competent, not necessarily the architect.

Three-dimensional design results are easily accessible to people in general, and building a model is a particularly useful tool for getting people to feel engaged and competent. The self-builder should thus feel very confident in taking command of the house design: feel free, dare to try. The architect's role is very much a matter of process management. How can self-builders be supported so that they give shape to the house they want and stay within a set budget?

- ✓ On the table, place a large piece of cardboard in A1 format, on which the results from the design card »The house on the site« are inscribed. The site's qualities and problems are thus highlighted and the house's preliminary location and entrance are drawn.
- ✓ Place the house's functions (sticky notes) on the board and start creating a model of the house and site with cardboard, sticks, twigs, stones, etcetera.
- ✓ Think of the house and surroundings, deriving inspiration from the picture of the vase and two faces. Both have their own existence, both need to be designed equally carefully; they should fit together, but neither should be superior to the other.
- ✓ Play. Try new variants.

At the end of the day, the self-builder and architect have a model of how the functions shape the house, how the house is situated on the site, how the house shapes the surroundings – and vice versa.

Co-design in Hammarkullen 2010 with architect Carin Smuts from South Africa. Photo: Jenny Stenberg.

PART III

Photo: Jenny Stenberg.

THE FUTURE

Difficult to reach the most vulnerable

As mentioned earlier, during its first few years Egnahemsfabriken has had difficulties reaching the most vulnerable groups in society: for example, elderly facing a very problematic financial situation at retirement; newly arrived refugees who are homeless or lack contact networks in Sweden; and young adults who are forced to live at home due to the severe housing shortage. The two main reasons for the difficulties are the issues of financing and land. The most vulnerable groups do not have the resources to solve these problems and have therefore, thus far, not been attracted to what Egnahemsfabriken has been able to offer. In the long run, we hope to be able to find financing alternatives for the most vulnerable through, for example, special banks such as Ekobanken, or the state and municipalities supporting self-building, as they did in the early 1900s in Sweden. We also see opportunities in crowd-funding and other types of resident-driven financing.

The land issue also needs to be dealt with on the initiative of authorities, for example by offering long municipal leases. The state can also support self-building in a variety of ways, by changing laws, rules and norms regarding how small houses may be built. At the local level, the land issue can also be dealt with through, for example, dissemination of knowledge about Egnahemsfabriken, the goal being to get local landowners to approve sites for small-scale self-building.

In parallel with working within the current societal framework, Egnahemsfabriken will continue to generate knowledge about what structures need to be changed for self-building to reach the most vulnerable people in society.

Test the version 2.0 among young people

For some time now, through Egnahemsfabriken's youth project manager Anna Berglund, we have worked intensively with a group of young people. Initially, we got support for the project »Together we are visible« from Vinnova in 2018. The project aimed to integrate primary school pupils (12 to 15 years of age) – both the newly arrived and those who had grown up at Tjörn – into Egnahemsfabriken's activities. The project allowed them to build different things while at the same time being tasked with documenting the work in text and images as well as spreading knowledge about Egnahemsfabriken.

The concept worked well and was developed in the project »Together we build«, funded for the period 2019-2021 by Region Västra Götaland and Formas. In this project, we increased the age to 25, because we saw that even though the younger youths were very enthusiastic about building their own houses, they were not really ready for it yet – it was too early.

In »Together we build«, we are testing the design method 2.0 »LARGE« together with young people. During the first year, youths design and jointly build an outdoor kitchen at Egnahemsfabriken, an idea we have received separate funding from Region Västra Götaland to realize in the context of the project »From seed to oven«. In the second year, some of the young people will then be able to design and build four movable small residential houses. Additional funding for realizing that idea

is being sought in different ways, and the land issue is being pursued so that the houses have a site to be placed on.

With this opportunity to test the design method 2.0 »LARGE« with young people, Egnahemsfabriken will gain valuable knowledge about how it works and a chance to develop it further.

Spreading the concept in Sweden – and globally

From the outset, Egnahemsfabriken Tjörn has had the ambition to help scale up the idea. This was an important reason why the innovation agency Vinnova initially supported the project. This is also why, as mentioned previously, both a local economic association and a national non-profit were established early on. Given the growing interest in co-housing (Baugemainschaften) in the country, there is reason to be optimistic that self-building will increase. Rise Research Institute – which participated in the Vinnova project as an academy tasked with looking specifically at the issue of upscaling and business models – and Egnahemsfabriken have written a forward-looking report on the possibilities of developing a new self-building movement (Tekie et al. 2019).

The stumbling block, as I see it, is deciding which path is most appropriate to take if your goal is to reach the most vulnerable groups in society. Is it possible to implement such a thing from above – with a definite structure for controlling the development? Can ready-made templates for agreements, service descriptions and fixed drawings for prototypes, perhaps suitable for factory-produced modules, be used that are identical throughout the country? Or do such support centers need to grow from the ground up if they are to succeed in reaching the most vulnerable? Do they have to build on people's commitment and local networks and be flexible enough to develop in different directions depending on where they are? This remains to be seen.

There is potential for such support centers to be set up in contexts in Sweden where we have had contacts and cooperation. However, it is in smaller, so-called depopulation municipalities where members of civil society tend to take things into their own hands and manage to reverse migration trends in different ways. There, we have found inhabitants who are interested in starting an Egnahemsfabrik to support those who want to stay in the region and to offer interesting economic alternatives for those who are interested in moving there.

There is also an interest in urban neighborhoods in larger cities. In Gothenburg, two different initiatives are running in parallel in the northeastern part of the city, which was built up in the 1960s and 1970s as part of the so-called million program. This is an area where many immigrants live. One initiative has been started by members of civil society in collaboration with an adult education association. They are looking for a way forward to start a social construction company that supports co-housing. The other is an initiative of the Swedish Union of Tenants, a large association that – in collaboration with a Chalmers' course entitled »Design and planning for social inclusion« – is looking for ways forward to start a self-building support center. These are examples of growing movements that may result in new a Egnahemsfabrik – or something similar. Egnahemsfabriken's non-profit association supports these initiatives with its experience and knowledge.

There is also an international interest in Egnahemsfabriken. Perhaps we will have the opportunity to return to Argentina and convey what we learned in Sweden, based on the knowledge we gained from them 35 years ago. Argentina has a strong housing cooperative movement, which builds quality housing for vulnerable groups on a small scale, but with great success. However, they are now experiencing a difficult economic situation, as their governments have gradually worsened the preconditions for cooperative construction. Hence, Argentina also needs a turnaround if the gap between those who have and those who do not is to narrow. Co-design is, as I said before, very interesting here, precisely because it entails a shift of power in society to the benefit of inhabitants.

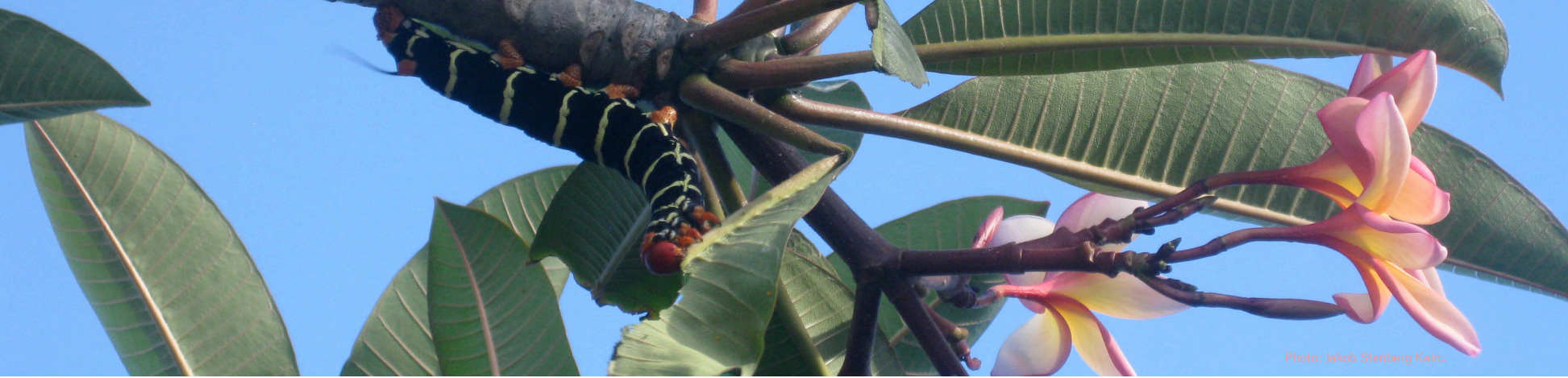


Photo: Jakob Stenberg Kain.

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This text has come about as a result of collaborations – both past and present. The experiences in Argentina described in the first half of the book were shared with Jaan-Henrik Kain, and we send a warm thanks to Omar Varela, Sergio Aguirre, Monica Tennenbaum and all the people in Barrio Brandsen who gave us so much warmth and knowledge of co-design. We also thank the other eight architecture students as well as all students and teachers in Argentina whom we got the chance to learn from and learn together with.

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APPENDIX 1

Summary of time for empowerment process and study circles - Version 2.0 »SMALL»

2019-08-19

Number of hours	Co-builder	4	Volonteer architect	4	Mentor	2	Course leader	Adult education	Researcher	Architect	Site manager	Carpenter	Carpenter	Sum of time	
Preparations	2	8	0	0	0	0	8	8	0	24	16	0	0	**66**	
Education	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	
A Co-builders get started	9	36	0	0	0	0	2	0	0	17	17	4	4	**89**	
B Design your home	2	8	0	0	0	0	0	0	0	8	8	0	0	**26**	
C Build your house	16	64	0	0	0	0	0	0	0	16	8	8	32	**144**	
E Inspiration lectures	0	0	0	0	0	0	0	4	0	0	0	0	0	**4**	
Sum of time	**29**	**116**	**0**	**0**	**0**	**0**	**10**	**12**	**0**	**65**	**49**	**12**	**36**	**329**	inkind time is included here
Hourly rate excl VAT			400		550		550	400	985	550	400	360	240		
Total SEK excl VAT			**0**		**0**		**5 500**	**4 800**	**0**	**35 750**	**19 600**	**4 320**	**8 640**	**73 810**	inkind-money is NOT included here
			inkind					inkind							

The hourly rates were for 2019, they have been increased since then.

73 810	for 4 co-cons	18 453	per self-builder
73 810	for 8 co-cons	9 226	per self-builder

Time paid for directly by the self-builders (thus outside the course fee):

Building permit drawings (4 * 8h), hourly price SEK 5!	17 600					17 600
Consulting and construction assistance (4 * 40h)		5 500	4 000	3 600	2 400	15 500
Total SEK excl VAT						**33 100**

Inspiration guest leactures

Paid by the adult education association and should go around through visitor fees at the door

APPENDIX 2

Summary of time for empowerment process and study circles - Version 2.0 »LARGE»

2019-08-19

Number of hours	Co-builder	4	Volonteer architect	4	Mentor	2	Course leader	Adult education	Researcher	Architect	Site manager	Carpenter	Carpenter	Sum of time	
Preparations	2	8	0	0	0	0	40	8	16	24	16	0	0	**114**	
A Education	0	0	4	16	4	8	7	1	4	4	2	2	2	**54**	
B Co-builders get started	11	42	11	42	0	0	2	1	1	17	17	4	4	**151**	
C Design your home	14	56	34	136	7	14	9	1	7	6	6	0	0	**290**	
D Build your house	16	64	0	0	0	0	0	1	0	16	8	8	32	**145**	
E Inspiration lectures	0	0	0	0	0	0	2	12	0	2	0	0	0	**16**	
Sum of time	**43**	**170**	**49**	**194**	**11**	**22**	**60**	**24**	**28**	**69**	**49**	**14**	**38**	**770**	inkind time is included here
Hourly rate excl VAT				400		550	550	400	985	550	400	360	240		
Total SEK excl VAT				**77 600**		**12 100**	**33 000**	**9 600**	**27 580**	**37 950**	**19 600**	**5 040**	**9 120**	**144 390**	inkind-money is NOT included here
				inkind				inkind							

The hourly rates were for 2019, they have been increased since then.

144 390	for 4 co-cons	36 098	per self-builder	
144 390	for 8 co-cons	18 049	per self-builder	

Time paid for directly by the self-builders (thus outside the course fee):

Building permit drawings (4 * 8h), hourly price SEI	17 600					17 600
Consulting and construction assistance (4 * 40h)		5 500	4 000	3 600	2 400	15 500
Total SEK excl VAT						**33 100**

Inspiration guest leactures

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REFERENCES

Ache, Peter, Micha Fedrowitz. 2012. "The Development of Co-Housing Initiatives in Germany." Built Environment 37 (3):395-412.

Alexander, Christopher, Sara Ishikawa, Murray Silverstein, Max Jacobson, Ingrid Fiksdahl-King, Shlomo Angel. 1977a. *A Pattern Language: Towns Buildings Construction*. New York: Oxford University Press.

Alexander et al. 1977b. *The Timeless Way of Building*. New York: Oxford University Press.

Allinger, Alice. 2019. *Building a house and reaching a dream? An investigation of the pedagogical dimensions of participatory design in a self-building process* (Master's thesis in Learning and Leadership). Gothenburg: Chalmers.

Blomberg, Ingela, Kerstin Kärnekull. 2013. *Bygga seniorboende tillsammans: En handbok (Building senior housing together: A manual)*. Malmö: Svensk Byggtjänst.

Czischke, Darinka. 2017. "Collaborative housing and housing providers: Towards an analytical framework of multi-stakeholder collaboration in housing co-production." International Journal of Housing Policy 18 (1):55-81.

Hansson, Einar. 2009. "Självbyggeri: tradition med morgonluft" (Self-building: a tradition creating new opportunities). *Byggnadskultur* (3).

Hernández, Felipe, Peter Kellett, Lea K Allen. 2010. "Rethinking the Informal City: Critical Perspectives from Latin America." New York: Berghahn Books.

Holm, Maria. 2018. "Självklart med återbruk i Svartlamon: Stadsekologiskt experiment utmanar bygg- och levnadsnormer" (Self-evident recycling in Svartlamon: An urban ecological experiment challenges building and living standards). Kloka hem 6:22-31.

Karlsson, Erik. 2011. *Deltagande i planering och byggande: brukarplanering och självbyggeri (Participation in planning and construction: co-design and self-building)*. Karlskrona: Blekinge Tekniska Högskola.

REFERENCES

Livingston, Rodolfo. 1995. *El Metodo.* Capital Federal, Venezuela.

Lundquist, Linus. 2015. *Organiserat självbyggeri på 2000-talet (Organized self-building in the 2000s: Inventory of completed projects and conditions for housing production with the involvement of private individuals).* Göteborg: Chalmers.

Mathéy, Kosta. 1989. "Microbrigadas in Cuba: A Collective Form of Self-help Housing." Netherland's Journal of Housing.

McCamant, Kathryn, Charles Durrett. 2011. *Creating Cohousing: Building Sustainable Communities.* Gabriola Island: New Society Plublishers.

Olivegren, Johannes. 1975. *Brukarplanering (User planning).* Göteborg: FFNS-gruppens förlag.

Ranger, Anna, Karin Westerberg. 2004. *Metoder för möten: För ökat deltagande i lokalt förändrings arbete (Methods for Meetings: For Increased Participation in Local Development Work).* Malmö: Miljöförvaltningen.


Photo: Jenny Stenberg.

Svensson, Anders. 2012. *Byggemenskaper: Ett bidrag till hållbart stadsbyggande även i Sverige! (Co-housing: A contribution to sustainable urban construction in Sweden too!).* Stockholm: Delegationen för hållbara städer.

Tekie, Haben, Tomas Bokström, Erik Berg, Tinna Harling. 2019. *Fler vägar till egna hem åt fler (More paths toward private homes for more people: A plan for scaling up Egnahemsfabriken's platform for professionally organized social building processes – financing and organizational structure).* Göteborg: RISE & Egnahemsfabriken Tjörn.

Valinger, Alice, and Caroline Ekberg. 2017. *To build a home: An exploration of self building* (Master's Thesis). Gothenburg: Chalmers.

Volny, Olle. 1977. *Arkitektur genom eget arbete organiserat självbyggeri i Stockholm 1927-1976 (Architecture through your own work: Organized self-building in Stockholm 1927-1976).* Stockholm: Svensk Byggtjänst.

Westholm, Helena. 2019. *De byggde gemenskap: erfarenheter från tio bygg- och bogemenskaper i Sverige (They built a community: Experiences from ten co-housing communities in Sweden).* Göteborg: Chalmers.

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Photo: Jenny Stenberg.