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A case study of five projects at an architectural firm

Master's Thesis in the Master's Programme Design and Construction Project Management

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ABSTRACT

The populations of the cities are constantly growing, something that toughens the demands on the society. During the recent years, there has been an increased and emerged focus on constructing and designing sustainable buildings and societies. However, this focus has mainly been on the environmental and economical aspects of sustainability. Nevertheless, the interest about the social aspects has lately arisen. Social sustainability is a widespread concept with many definitions, where the aim is to design societies that are attractive and socially successful. However, to be able to implement it within an organisation social sustainability may be seen as a method for how to work with a project, rather than simply a concept that is to be applied. The aim of the thesis is to create an understanding by identifying and evaluating features within social sustainability and to implement these features within an architectural firm and throughout their projects. Change management supports the analysis of the implementation. The method used for the thesis is a qualitative research approach and a case study has been performed at Liljewall Arkitekter, where five projects from four different market areas have been investigated and analysed. The analysis of the result has been performed with regard to the features of social sustainability that was identified in the literature research. The features were identified from some key aspects and the case study has thereon been investigated according to the following features; *place context, meeting places, safety and security, flexibility* and *participation*.

The possibility for the architects to influence and decide upon the design depends on the type of procurement and delivery method, which makes it hard to compare projects that are under different conditions. An issue that was highlighted during the case study was the difficulty of preserving the early thoughts and ideas during the whole design phase. Many ideas are often forgotten or not prioritized when proceeding through the process. A proposed solution is to implement social sustainability as a checkpoint that will follow the continuous project meetings (same procedures as Liljewall Arkitekter already have for i.e. environmental and quality goals). Another suggestion is to have a person who have a certain responsibility for social sustainability and the integration of it. Developing and using reference projects is also a proposition that can provide an understanding for how to further work with the concept.

Key words: architectural firm, change management, design phase, dismantle a concept, integration of social sustainability, social sustainability.

Att integrera Social Hållbarhet i en byggnads design
En fallstudie om fem project vid ett arkitektföretag

Examensarbete inom masterprogrammet Organisering och ledning i bygg- och fastighetssektorn

MATILDA MOBERG
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Institutionen för bygg- och miljöteknik
Avdelningen för Construction Management
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SAMMANFATTNING

Städernas population fortsätter att öka vilket ställer hårdare krav på samhället. Det har under de senaste åren varit ett ökat fokus på att bygga hållbara byggnader och samhällen. Detta fokus har dock mestadels lagts på de ekologiska och ekonomiska aspekterna av hållbarhet, och den sociala aspekten har inte varit prioriterad. Intresset för de sociala aspekter har dock lyfts på senare tid. Social hållbarhet är ett brett koncept med många olika definitioner, med målet att designa samhällen som är attraktiva och socialt fungerande. För att kunna hantera och integrera social hållbarhet i designfasen bör detta dock ses som en metod hellre än ett koncept som ska implementeras. Syftet med arbetet är att skapa en förståelse för social hållbarhet genom att identifiera och utvärdera element för att sedan integrera dessa i en arkitektbyrås arbetsprocess och i de projekt de jobbar med. För att ge stöd till detta i analysen har change management undersökts. Arbetet har utförts som en kvalitativ undersökning och en fallstudie av arkitektföretaget Liljewall Arkitekter har utförts. Liljewall har bidragit med fem projekt från fyra av deras marknadsområden. Analysen av projekten har gjorts med hänsyn till utvalda element ur social hållbarhet, vilka har identifierats ur litteratur; *sammanhang, mötesplatser, säkerhet och trygghet, deltagande och flexibilitet.*

Hur mycket arkitekterna på eget initiativ kan påverka och bestämma över designen beror på upphandlings- och entreprenadform vilket gör det svårt att jämföra projekt som har olika förutsättningar. En annan aspekt som har lyfts under arbetet är svårigheten i att bevara tidiga tankar och idéer genom hela projekteringen. Många tankar glöms bort längs vägen eller ges lägre prioritet när processen fortgår. En föreslagen lösning är att införa social hållbarhet som en stående punkt i det protokoll som används vid varje projektmöte (samma procedur som Liljewall Arkitekter redan har för till exempel miljö- och kvalitetsmål). Ett annat förslag är att tilldela en person ett större ansvar för att social hållbarhet integreras i organisationen. Att utveckla och använda referensprojekt är också ett förslag som kan ge en ökad förståelse för hur det går att arbeta med social hållbarhet i designfasen.

Nyckelord: arkitektfirma, change management, design, integrering av social hållbarhet, projektering, social hållbarhet.

Contents

Preface

This master thesis is part of the M.Sc. program in Civil Engineering of 120 ECTS, Design and Construction Project Management at Chalmers University of Technology, Gothenburg, Sweden. The master thesis, of 30 ECTS, has been performed during the spring 2016 at the Department of Civil and Environmental Engineering and the Division of Construction Management. Throughout the whole work process, there have been several persons who have contributed to our work, and who we would like to acknowledge.

Firstly, our supervisor at Chalmers University of Technology, Martine Buser, who has guided us throughout the process and provided us with useful critiques both regarding the content and the method. We would also like to thank Liljewall Arkitekter, who provided us with projects to investigate as well as the opportunity to work at their office. We would also like to thank all the interviewees with their willingness to participate in the interviews and with their knowledge to our result. We would especially want to thank Lissie Rossing, our supervisor and contact at Liljewall.

Göteborg June 2016

Matilda Moberg

Ida Widén

1 Introduction

Urbanization and globalization characterizes our society today and people have to compromise their life patterns and interact with each other in a way that has not been experienced before; people are living closer to each other due to densifying (Colantonio and Dixon, 2011). A constantly growing population with higher average life expectancy, makes this into something more than just a temporary phenomenon and do certainly put demands on the capacity of the cities, and on urban development. It is not possible to plan and build according to old habits with new demands setting the limits. Problems related to poor integration and segregation are possible consequences when societies do not succeed to meet the constantly growing needs of the citizens. These problems require a greater focus, and by building and constructing buildings with a higher focus on the social aspects within the design might lead to more sustainable cities. Social sustainability is a quite new but frequently mentioned concept these days, however, the implication of the concept differs (Olsson, 2012, Gustavsson and Elander, 2013, Vallance et al., 2011). The purpose of urban development has also before been to create attractive and pleasant settings that provide a safe and comfortable living for the inhabitants (Magnusson, 2015). However, the critical conditions of today's society do certainly push for an increased interest and certain focus for the question.

As the concept of social sustainability has quickly developed and spread into reaching a wider audience (Olsson, 2012), companies and public authorities want to involve the concept of social sustainability into their business. One of them is the architectural firm Liljewall Arkitekter. The topic of this thesis will coincide with what Liljewall Arkitekter themselves will have an increased focus on during the following years. The thesis will perform a case study of Liljewall Arkitekter where the firm will contribute with their perception of the concept and provide information about some of their developed projects in order to investigate the possibilities for implementation of social sustainability within the projects. Literature and existing studies will be compared with the result from the projects with the attempt of reaching a conclusion.

1.1 Background

Sustainability is a frequently used concept, and with its growth the number of definitions of the concept increase. One of the most widely recognized definition is the one formulated in Our Common Future, also called the Brundtland Report, that was released in 1987; "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland, 1987, pp.41). The formulation is the result of what the World Commission on Environment and Development concluded on the theme "A global agenda for change". The focus was initially set on addressing environmental issues, but the commission soon came to realize that a broader perspective had to be used. When talking to people, environmental issues were not what was on top of people's minds, but the problems that were conveyed were all connected to the theme. This understanding was what framed the formulation. In 1992, the discussion about sustainable development proceeded as the UN called for a major conference in Rio de Janeiro, Brasil, aiming to produce guidelines for future development. What is also referred to as "The Rio Declaration", defined three dimensions of sustainability: economic, environmental and social (Magnusson, 2015).The connection between

them three has later been formulated as "Social sustainability is the finality of development whilst economic and environmental sustainabilities are both the goals of sustainable development and instruments to its achievement." (Colantonio and Dixon, 2011, pp. 21). A common description of how the three dimensions relate to each other can be illustrated with a Venn diagram, see Figure 1, where the dimensions relate but do also evolve into totally diverse domains.
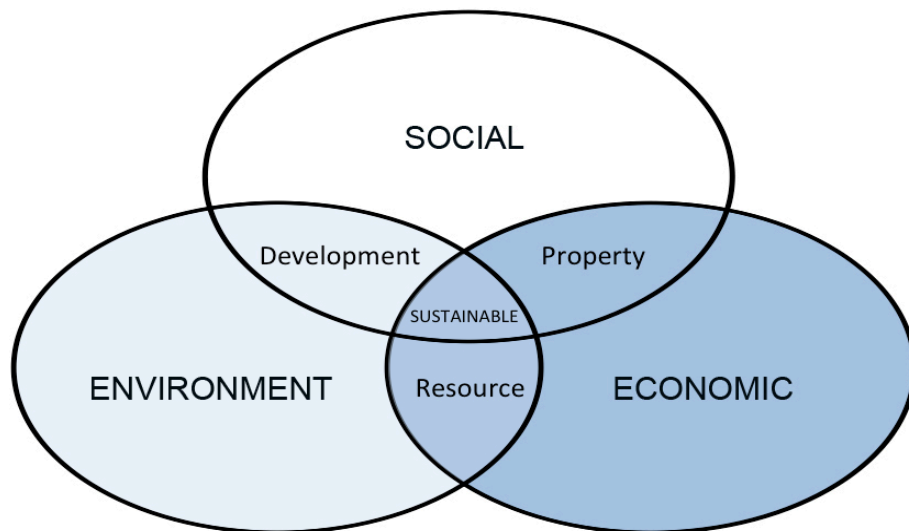
Figure 1 - Venn diagram describing the dimensions of sustainability

The connections between the dimensions may result in different conflicts of interest, as objectives will have to be compromised (Magnusson, 2015, Vallance et al., 2011). The resource conflict, economic development versus environmental conservation, is the most debated conflict while the conflicts including the social dimension are more seldom discussed (Campbell, 1996). The conflicts including the social dimension are development conflict and property conflict. The development conflict concerns the environmental preservation in connection to the social priorities and the property conflict is the compromise between social equity and the economic development. The social aspect does often lack of presence even in residential projects, given the ambitious Million programme in Sweden as an example. If putting more emphasis on the social dimension of sustainability one may design buildings and environments that are attractive with satisfied citizens and well-functioning societies as result (Dempsey et al., 2011). If considering social sustainability, simply as a concept, it is rather difficult to implement it within an organisation. This due to the many different definitions of the concept as well as that the wide concept needs to be more manageable to be able to implement it within the design phase of a project. Therefore, social sustainability can be seen more as a method of how an architectural firm can implement and contribute to a more socially sustainable design of buildings. By using smaller parts i.e. features, of the wider concept and projects to follow and compare, the implementation of social sustainability can be more manageable and understandable.

1.2   Aim

The aim of the thesis is to identify and evaluate features of social sustainability to understand and thereafter implement it as a method within the design phase of a construction project.

1.3   Research questions

- How can social sustainability features be applied in the design of a construction project?
- How is Liljewall Arkitekter currently handling the aspects of social sustainability?
- How can the project process at Liljewall Arkitekter support social sustainability so that ideas connected to the subject are preserved throughout the process?

1.4   Method

The thesis is based upon a qualitative research to identify and investigate which features to include in the investigated projects to be able to attain social sustainability. A literature study about social sustainability has been conducted in order to get a broader understanding of the subject but also to enable an investigation of which features the literature have concluded as important. Liljewall Arkitekter have been used as a reference company to visualise how social sustainability is and can be implemented within the projects and the organisation. A case study of the present situation in different types of projects has been done by interviewing the project members. A literature research about change management was performed after the case study was done. The research investigates a model for how to implement a change within an organisation. Continuous reciprocity between the theory and our case study has enabled a more thorough understanding of the subject. The information from the different projects has then been compiled and an analysis reconnected to the literature has been performed. The analysis has led to a conclusion that answers the initially formulated research questions.

1.5   Limitation

The master thesis investigates projects carried out by Liljewall Arkitekter, all projects have been executed in Sweden. The report focuses on the social dimension of sustainability and on how it can be implemented in a project but also strives to emphasize features that can be recalled to as social sustainability and understand how these are contributing to a project. Economic aspects are not discussed and neither environmental concerns. The thesis discusses social sustainability from the perspective of a project, and the requirements and constraints of the project. The thesis does only investigate social sustainability within the design phase and does not look at the construction phase.

2   Theoretical Framework

This section intends to create an understanding for the result that will later be discussed. The chapter do initially explain social sustainability by describing its origin and then presents some aspects, in the attempt of framing the concept. These aspects culminate into the features that may function as guidelines when striving towards social sustainability.

2.1   Social Sustainability

The impact that the construction of the built environment has on its occupants cannot be ignored (Smith et al., 2014). Sustainability is today an obvious part of the construction industry, but certain aspects on the subject are more commonly expressed and implemented than other. Among the three dimensions of sustainability, that were formulated in Rio de Janeiro in 1992, the social dimension is the least concrete and measurable and consequently the dimension that has least implementation in construction (Magnusson, 2015). As a comparison there are no measuring tool for the social dimension similar to the amount of carbon dioxide that can be used as a measure within the environmental aspect.

Several scholars endeavour to frame or define social sustainability, something that is stated as a "wide-ranging multi-dimensional concept" (Dempsey et al., 2011, pp. 290). The underlying question about what the social goals for social sustainability are, can be used as a starting point when aiming to approach social sustainability (Dempsey et al., 2011). However, the question should not be processed abstractly (Gustavsson and Elander, 2013). Social sustainability must be understood in its context and be reinterpreted due to occasion (Magnusson, 2015). Olsson (2012) argues that social sustainability is not something that can be translated into a sentence, but is rather to be seen as a conception that provides direction. Dempsey et al. (2011) confirms that no general and determined definition of social sustainability exists, saying that it is dynamic, dependent on situation and that it will change over time. However, Olsson (2012) expresses a general content as an endeavour to mount the concept of social sustainability. Olsson also describes it as a system's ability to function, including the interaction among the units.

The physiological as well as the social survival of both the individuals and the society needs to be considered for a society to be sustainable (Magnusson, 2015). Social equity can be described as such, that all people should have equal rights and a well operative place to live that can be adaptable for the different life spaces (Eriksson, 2015). Takai (2014) describes social equity "...as a central dimension for promoting livability and viability, now and into the future" (Takai, 2014, pp. 7). Svara et al. (2015) and Takai (2014) states that social equity is the fairness of access to resources and to be able to have opportunities. The scholars also mention that social equity would include the ability to participate in both social and cultural life of a community. Dempsey et al. (2011) means that social equity should decrease the inequalities in life by ensuring that all people have access to proper services. This correlates with how Hamiduddin (2015) phrases social equity, saying that it is also about social justice where social justice is about how equal the distribution of resources is, without any exclusion of people and that all people can participate in all aspects in the society.

Terms connected to the subject are segregation and integration, which both will be further described.

2.1.1 Integration and segregation

When it comes to urban development and the social aspects among it, a holistic view of the city is equally important as the prosperity of each area itself (Boverket, 2009). Changes, or no changes, to an area may have consequences for another; upswing of one area, as gentrification, can connote in deterioration of the second (Buser and Koch, 2014). One example is when a certain area is considering as being elevated due to for example a higher average income, but the underlying reason for this is in fact that the initial inhabitants cannot afford to stay in their accommodations. Integration and segregation can both be described as a process as well as a condition. It is important to be aware of what perspective that the concepts are used within, as the purport of one can mean the opposite of the other if changing the perspective (Buser and Koch, 2014).

Reciprocal adaptation is the process of integration (Boverket, 2009). Integration as a condition means that everyone has the same possibilities, obligations and fundamental rights. It does not imply that a minority adjusts completely to the majority; instead equal liability for the inclusion occurs. Social cohesion and integration in an area can at the same time be expressions for segregation and exclusion for the city seen as an entity (Gustavsson and Elander, 2013).

When it comes to living, segregation is when different groups of people live physically separated from each other (Boverket, 2009). The groups that are the most commonly spoken about are segregation due to demography (age or household), ethnicity (nationality or culture) or socioeconomics (income or profession). A common perception about segregation is that it should be solely negative. It can be negative due to the fact that it increases intolerance and prejudicing as people from different groups do not naturally meet and interact (Vallance et al., 2012). It can also lead to uneven development of a city. However, segregation can have positive meanings as well as the fact that living among people that are in a situation similar to yours may submit a feeling of safety and trust. Examples of such segregated areas are Chinatown or Little Italy in New York (Gans, 2008).

Gated communities are a phenomenon that is becoming more common in the US. As the name describes, residential buildings are built in blocks surrounded by gates. Security and safety is by that created by exclusion (Olsson, 2012). In comparison to Chinatown in New York, gated communities result in a segregated area but without any possibilities for interaction with the rest of the city due to its foreclosure. Gehl (2010) meant that "we can think of closeness, trust and mutual consideration as the direct opposites of walls, gates and more police presence on the street". Thus, to build and create safety and security by exclusion is not a phenomenon that is included within social sustainability.

2.1.2 Perspective and interfaces

Magnusson (2015) and (Vallance et al., 2011) states that social sustainability must be reinterpreted due to occasion, and many scholars agree about the fact that there is no

general definition of social sustainability. One of the circumstances that is important to determine and acknowledge when speaking about social sustainability for construction projects is at what level it should be discussed (Magnusson, 2015). Different aspects may be relevant depending on the level, seen to the city; communication between the areas is important while an important feature for a building might be how the ground floor is used. Examples of levels that can be distinguished are city, district, building and interior (other definitions may occur). It is also important to investigate social sustainability from varying perspectives as situations may not be unilateral (Gustavsson and Elander, 2013). This is why it is important to consider a certain place, but also to scale out and see to its surroundings and how it contributes to it or is impacted by it.

Even though accessibility and communication with the surrounding areas are important if seen to the city as a whole, it is also an important feature to consider for every building and so when designing and constructing a new building (Dempsey et al., 2011). To have good access to local services, facilities, employment as well as green spaces is an essential feature within social sustainability. Densified communities achieve a greater basis for services and facilities, which benefit for the accessibility of the area. Accessibility is also a feature that includes to which extent the new building is accessible for persons with handicaps, that the public transport system is reached easily, the facilitation for bicycle commuting and that appropriate parking are offered (Carpenter and Toole, 2013).

The identity of a building shall be seen as attractive for the residents as well as for people not living there. A strong and distinctive identity can function as a link to other districts by attracting people to the area and thus strengthening the inclusion to the rest of the city (Dempsey et al., 2011). However, (Gehl, 2010) also stresses the importance of making people willing to stay than simply focusing on making them come to a certain place. A distinctive and positive identity is important and makes the place easy to define and to feel attached to (Magnusson, 2015). Ways of creating an identity can either be by emphasizing what makes the place unique by highlighting a cultural or historical heritage, or by establishing a new identity (Magnusson, 2015). The identity can establish a feeling of pride and belonging among the inhabitants that gives a positive feeling to the area. Pride and sense of community can also be affected by the sense of quality and whether the place is clean and being looked after (Dempsey et al., 2011). According to Uzzell et al. (2002) places with strong identities contribute to how people perceive the sense of identification and membership within the formed group as well as people's behaviours and social interaction can contribute to stronger identities.

2.1.3 Space management

Social interaction is stated to be the fundamental process of the establishment of social nature and social order (Dempsey et al., 2011). It is said that a group living in an area without social interaction are simply a number of individuals living separate lives, with little sense of community and/or sense of belongings. However, social interaction is a complex phenomenon that includes both verbal communication and nonverbal communication, such as body language (De Jaegher et al., 2010). The interaction occurs in varying contexts, with different number of participants and do also often involve technological intervention. Dempsey et al. (2011) argue that social

networks are part of the social support systems; feeling trust to people in our surroundings influences the sense of well-being and strengthens the feeling of being secure. Feeling safe and secure can be seen as one of the most essential features in social sustainability as it encourages social interaction (Chan and Lee, 2008, Dempsey et al., 2011). A place free from crime and disarray will make people feel safe within their networks and social activities (Dempsey et al., 2011). It is therefore important to design meeting places imbued with the feeling of being safe and secure, to facilitate for social interaction to occur. The creation of places where people can meet do also encourage meetings across borders due to i.e. age, culture or social groups (Magnusson, 2015). The meeting places should provide possibilities for activities that appeal to various groups of people. Meetings oppose the feeling of insecurity as neighbours are then not synonymous to strangers (Gehl, 2010). Chan and Lee (2008) mean that people want to know what is happening, and can happen, in their surrounded area, at the public spaces in their neighbourhood. The scholars state that if there is a cognizance of the surroundings, the feeling of being safe will increase.

Forrest and Kearns (2001) as well as Dempsey et al. (2011) emphasize the importance of considering aspects such as networks, knowledge and trust, and that this will simplify the coordination and co-operation for common benefit of the society. The networks and people's relations can also be seen as a capital that when increasing leads to a more well functioning society (Dempsey et al., 2011). Carpenter and Toole (2013, pp. 168) define this as social capital and describe it as "a measure of the ability of people to work together for common purposes in groups and organizations". To ensure that this is mediated throughout the project and into practise, it must be formulated and discussed with all the involved stakeholders.

2.1.4   Stakeholder engagement

An important feature to consider within social sustainability is the participation of the end user throughout the whole construction project (Uzzell et al., 2002, Valdes-Vasquez and Klotz, 2013). A building will not only be seen as a physical place but also a social place, why participation is important in order to obtain values such as sense of belonging and quality for life (Eriksson, 2015). According to (Valdes-Vasquez and Klotz, 2013) it is important to involve and engage all stakeholders in order to obtain a socially sustainable construction project. By including and consulting all stakeholders, all needs can be discussed at the same time and be compromised against each other instead of later being disused. It is important to have competent people within a group that strive to attain and realise sustainable buildings (Cooper, 2006). Valdes-Vasquez and Klotz (2013) also emphasize the importance of performing a stakeholder engagement plan to allow collaboration between the stakeholders during the whole project. The collaboration should explain the project scope if anything is unclear, and also include continuous reflexion and discussion of the design. It is also important to consult the end users and the neighbourhood, in order to give them a possibility to affect the design of the building where they for example will live, work or go to school. According to Colantonio and Dixon (2011) the importance of participation in social sustainability is that people are allowed to express their needs and thoughts. Participation can also entail that more thoughts are being taken into consideration, which in turn will lead to a more valuable building for the society.

Another aspect that is important to consider during the planning and design phase is to document and share the lessons learned with all stakeholders (Valdes-Vasquez and Klotz, 2013). Lessons learned might also involve good examples from previous projects, which can act as an important tool to present how social sustainability can occur in the projects. These examples can then be profit as reference projects.

2.1.5 Dynamic places

The physical environment creates opportunities and also frames the lives of future inhabitants but it is difficult to in advance expect and assure how a place is to be used (Magnusson, 2015). The people that are going to spend their time at the actual place are the best determinants for whether the place is to be estimated as pleasant or not, why it is important to comprehend what people that are going to use a certain place. It is equally important to understand that people are dynamic and will change. Social sustainability is a process that will change over time; it has no end point (Colantonio and Dixon, 2011). It is a continuous work that requires responsiveness and sincerity for how the place behaves. What time perspective that is possible to survey must be determined during the design phase. The physical environment offers possibilities for certain scenarios to happen but the prospective thoughts and ideas about a place during the early design phases cannot be said to give the answer for how the place actually will be used (Gustavsson and Elander, 2013). This is why it is important to comply a project over time to know how people choose to adapt and live. A place may face new challenges or conditions that was not included when the place was designed and built (Olsson, 2012). Endurance is important but in combination with flexibility.

Flexibility must be assured to ensure that a project will last over time and that it will be able to adjust to the current needs (Eriksson, 2015). Concerning residential buildings, flexibility can either mean that the apartment should be able to adapt to life changes of the people living there, or that they can easily be changed in order to meet the requirements of the next residents. If seen to a commercial building it can mean that it should be easy to make changes when a new business is to utilize the premises. A school might be able to change its activities depending on the number of children per year.

2.2   Integrating social sustainability

As there are no clear measurements for the social dimension of sustainability, the concept must be divided into smaller pieces and features have to be used when managing social sustainability (Magnusson, 2015). From the key aspects that have been described in section 2.1.2 – 2.1.5, features have evolved. The features aim to be tools for how the content of the key aspects may be managed. The listed features, see Table 1, shall be considered and applied in construction projects in the planning and design phase, in order to obtain social sustainability. The features will frame the result by presenting examples from the investigated projects.

Table 1 - Listed features, which have been developed from the listed key aspects.

Key aspects	Features
Perspective and Interfaces	Place Context
Space management	Meeting Places
	Safety and Security
Stakeholder Engagement	Participation
Dynamic Places	Flexibility

Valdes-Vasquez and Klotz (2013) has proposed a practical guide of social sustainability to simplify the implementation of features in projects within the planning and design phase. The guide consists of three phases; approach, assessment and desired results, see Figure 2. The arrows visualize how the phases operates as an integrated system (Valdes-Vasquez and Klotz, 2013).
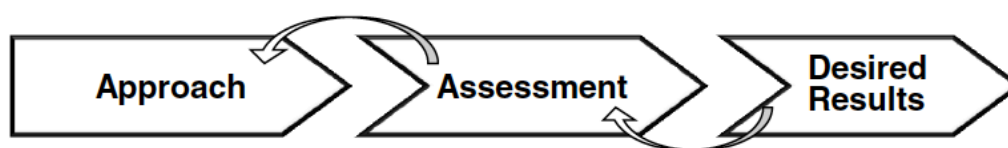
Figure 2 - Proposed practical guide to implement social sustainability within projects (Valdes-Vasquez and Klotz, 2013).

Within the first step, approach, it is important to include all the stakeholders (client, architect, contractor, technical consultants, users etc.) and to ensure that everyone understands and is aware of the common objectives (Valdes-Vasquez and Klotz, 2013). Another important aspect to consider within the approach phase is to document and discuss previous lesson learned. This should be done within the project group, to avoid repeating previous mistakes and to develop a learning of previous projects to be able to know what can be done better. During the assessment phase it is important to consider features as social interaction and place context, which includes for example the accessibility to green spaces, resources and public transportation. The final phase, desired results, is according to Valdes-Vasquez and Klotz (2013) seen as the core of social sustainability within construction projects. The reason for this is because the phase includes essential features such as safety and the importance of ensuring pride of ownership among the users as well as the surrounding community. Another important feature that needs to be considered is the involvement of the current end user, but also to follow up and monitor for future users. Valdes-Vasquez and Klotz (2013) highlight the importance of having a continuous communication with all the stakeholders, during the project as well as after completion.

2.3   Organisational Change Management

Change is continuously occurring within companies and effective organisational change management is when there is a structured approach to shift the individuals, teams and the organisation from the current state to a desired state (Lam, 2009). Organisational change management does also include to shift the people's behaviours and attitudes of the changes. Many different models have been developed in order to transfer from the current state to the desired state. One of the most recognised models for change management (Pollack and Pollack, 2015), is Kotter's eight stage model. Kotter's model has been developed through a extensive study of several companies, a result that then has been translated into an eight stage process for how to operate a major change (Pollack and Pollack, 2015). The list below presents the most vital points of each step of the model (Appelbaum et al., 2012, Cameron and Green, 2009).

1. **Establishing a sense of urgency** - Discussing the potential future, and everyone must feel the need for change.

2. **Creating the guiding coalition** - Form a powerful group that can work well together.

3. **Develop a vision and strategy** - Develop a vision as well as strategies for how to accomplish it.

4. **Communicating the change vision** - Talk about the change vision ten times more than what is believed as necessary. The change should also be told in different ways and in different situations.

5. **Empowering broad-based change** - Involve all employees and enable them to act and get rid of barriers, encourage innovation and allow them to experiment.

6. **Generating short-term wins** - Plan for short term visible improvements and award the involved people for the advances.

7. **Consolidating gains and producing more** - Energize the change process with new projects, resources and develop a success of change.

8. **Anchoring new approaches in the culture** - This is a critical step to ensure a long-term success of change. Ensure that everyone is aware of and understand the gain of the change and that it will lead to corporate success

Kotter's model is one of many change models, where all models highlight different aspects that need to be considered in order to achieve a change (Cameron and Green, 2009). However, as the success of all models is dependent on the organisation that will carry out the change, emphasis must be put on choosing the right model that suits the organisation.

2.3.1   Knowledge as a change

The integration of new knowledge, such as social sustainability, into an organisation can be seen as a change, a change that the members of the organisation have to accept in order to attain the knowledge (Lozano, 2013). The main internal driver for change is leadership but using power and authority can, besides pushing for the change,

create internal resistance. By identifying barriers such as attitudes, one can apply the right strategies.

Attitudes consist of three components that are said to be informational, emotional and behavioural (Lozano, 2013). Informational concerns the beliefs and information about an object or an idea while emotional refers to the feelings and values. Behavioural are the patterns in which we behave when facing objects or ideas. Attitudes may remain if nothing is done and attempts must be maintained. Another important aspect are the different levels; individual, team and organisation, on which these attitudes may occur. Case studies from scholars have shown that most barriers are connected to the emotional attitudes, and the most effective strategies to overcome the barriers is to have a top management that fully support the changes (Lozano, 2013).

3   Methodology

Social sustainability is a complex subject to understand and define, therefore a qualitative research has been made in order to frame the subject in the daily work of an architect. A qualitative research is when practising a systematic data collection through observations or conversations (Travers, 2004). In a qualitative research the data collection and the analysis interoperates throughout the whole process (Taylor et al., 2016). After all data have been collected, a more refined analysis of the cases has been performed. Travers (2004) has stated five different ways to perform a qualitative research: observation, interviewing, ethnographic fieldwork, discourse analysis and textual analysis. The strategy for this report has been to perform a case study and to make interviews as a way to learn about chosen projects. Information has also been collected through participant observations as the work place for the thesis has been at the company of the case study. Through the research method of performing interviews in a case study, the participants of the projects have been able to share a comprehensive description of the project. Due to the complexity of social sustainability and the diversity among projects, a qualitative research makes it possible to receive a better and more detailed result (Gillham, 2000). Furthermore, also the attitudes within the projects and the procedures of the different projects have been of importance in this study. A qualitative research makes it possible to take these aspects into account. Findings from theory support the analysis of the interviews.

3.1   Literature collection

The process with the thesis started with the collection of literature about social sustainability, presented in the theory chapter. The theory describes how different scholars and reports define social sustainability with different kinds of aspects and features. The literature research has principally been performed via the Summon database at Chalmers Library, but also through Google Scholar. The research started with a broader searching to get an overview of the subject. Keywords in the beginning were such as; social sustainability, definition social sustainability, social dimension. A first mapping of the subject was done, through a summary of what social sustainability is and what kind of features it contains. The chosen objectives and features of social sustainability were considered by many scholars as being able to be implemented in the design phase of a construction project (Dempsey et al., 2011, Magnusson, 2015, Valdes-Vasquez and Klotz, 2013). More detailed searching was then made upon the collected material. Examined articles that were considered to be interesting were used as a basis for continuous searching as the references provided further articles. The final articles are up-to-date papers, to the extent possible, as social sustainability is a rather new concept that has evolved in the past years, and is still evolving.

When the first round of interviews from all projects were made, the result gave an understanding of what improvements the organisation in the case study, Liljewall Arkitekter, needs to take. After all interviews, deeper research of theory about social sustainability was made. A research of change management was also made in order to investigate a proper model for how to implement a change within an organisation. The integration of social sustainability is in this thesis referred to as the change. The desired state is when Liljewall have a process where social sustainability is integrated in a more structured way than it is today. The research design can be seen as abductive, where the researcher is in between the theory and empirical data and

gradually let the understanding evolve (Dubois and Gadde, 2002). An abductive design requires an integrated approach and a systematic combining of the different elements in a research. If following a more linear process, it is hard to interact between the different elements of the thesis while performing the study. An abductive design enables continuous reciprocity between the elements; theory, framework, empirical data and the case, see Figure 3 (Dubois and Gadde, 2002).
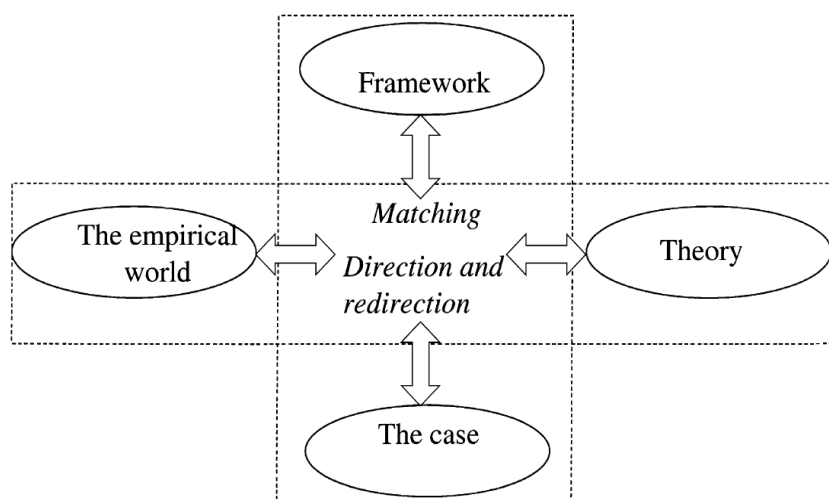

Figure 3 - Illustration of the basic elements in systematic combining (Dubois and Gadde, 2002).

Each element provides direction that after being combined with another knowing can imply to a redirection. Going back and forth like this can also be referred to as matching, which is fundamental for systematic combining.

3.2   Case study

To be able to get an overview of what features that are and/or can be included in a project in order to attain social sustainability, a case study has been performed where a company has provided projects as examples. A case study is research that is made in order to investigate a phenomenon in its context; to describe, understand, predict and/or control (Woodside, 2010). In this thesis the context is the projects within the organisation, and the thesis will describe and understand the phenomenon social sustainability. A descriptive case study has been made and the aim with a descriptive case study is to describe an occurrence in detail within a special situation. A descriptive case study is also easier to compare with an "ideal-type" definition (Gerring, 2004). The information can be categorized and be compared to other descriptive information.

The case study for the thesis is the architectural firm Liljewall Arkitekter. Different projects that Liljewall have developed are included in the case study, and these projects are collected from different market areas that are existing departments at the firm. The projects are of varying character to be able to understand and illustrate how differently the features can be implemented depending on the market area. The choice to include projects from several market areas is also a way to better capture what Liljewall do as they are active in a number of different markets. The chosen market

areas for the thesis are health care, residential, education and trade. An explanation of the chosen projects as well as the different delivery methods can be seen in Table 2,

Table 2 - Explanation of the chosen projects.

Chosen project	Description of project	Delivery method
Health care project	Reconstruction and extension of a hospital	Not yet decided
Residential project A	New construction of rental apartments	Design-bid-build
Residential project B	New construction of condominiums	Design-build
Education project	New construction of a school, all made in wood	Design-bid-build
Trade project	Reconstruction of an airport terminal	Partnering

When choosing the project from the department of education, four different projects were presented. The chosen project participated in a 'Sustainable Building' contest something that was considered as suitable for the thesis. If using this project in the study it could possibly show good results for how to work with social sustainability, even though the contest were mostly about the environmental part of sustainability. However, the school did have multiple alternatives for usage (also when the school is not open). These aspects were determining the final choice. The projects from the other divisions were suggested by the responsible persons at respective division, and were after shorter discussion considered being suitable.

3.3   Data collection

The interviews have been performed through a semi-structured method. With a semi-structured method, the questions are open-ended to be able to get a broad view of the process and later on the questions can be more detailed and specific (Bryman and Nilsson, 2011). The advantage with these interviews is that it is a flexible process. An unknown process can easily be investigated and more specific questions can be questioned during the interviews (Bryman and Nilsson, 2011). The interviewer has made an interview guide with proposed questions, however, the questions do not need to be questioned in the same order for every interview (Buchanan and Bryman, 2009). As the projects within this thesis are all different, an interview process like this facilitates the investigation as the questions may be asked in the order that is suitable for the specific project. A semi-structured interview also enables the interviewer to go deep into some particular areas (Knox and Burkard, 2009), which may vary for the different projects. Interviews can be performed in different ways; face-to-face, telephone call or via Skype. The interviews for this thesis have been performed face to face and via Skype. Face to face, FtF, interviews may lead to safer and more easy-going conversations as a more personal social interaction can arise compared to what a telephone interview can provide (Opdenakker, 2006). Opdenakker (2006) also states that through FtF the interviewer has the advantage of being able to read the social

cues; such as body language, intonation and voice. The interviewer can by the social cues get more information than if the interviews were held via telephone. However, one interview has been performed through Skype. An advantage with Skype, prior to a phone call, is that it provides the option of using video (Deakin and Wakefield, 2014). This gives the same advantages as FtF interviews since the social cues and the interaction between the persons are available. However, Deakin and Wakefield (2014) state that it may not have the same social interaction advantages as FtF, due to the difficulty of getting the real sense of interaction.

The interviewees have been selected through a snowball technique. Snowball technique means that you know some persons that can introduce you to others (Taylor et al., 2016). In this study the supervisor at Liljewall started the snowball effect by introducing the persons responsible for each market area. Interviewees were then selected from each chosen project. An essential consideration when selecting the persons was that they had knowledge about the specific project (Taylor et al., 2016). It was also important that they could spare some time to participate in an interview and had the willingness to talk about their experiences.

The interviewees have mainly been architects, but also some building engineers have been interviewed. In total, nine persons have been interviewed and the interviews have primarily been performed at the office of Liljewall Arkitekter. The interviews have lasted between 30 and 75 minutes, most interviews were about 60 minutes long. The duration of the interviews can vary in a qualitative research, both due to the fact that the interviewees are different but also due to the variation of the investigated projects (Bryman and Nilsson, 2011). The interview questions have been distributed to the interviewees before each interview. This is facilitating for the interviewee as well as for the interviewer, as interviewee is then able to prepare and to get a view of the interview topic on beforehand (Knox and Burkard, 2009). All interviews were recorded, which according to (Bryman and Nilsson, 2011), is important within a qualitative research in order to capture details from the interview such as certain words and phrases of the interviewee. A summary was made after each interview, and thereafter the data have been compiled into the result of this thesis. If there was something that was unclear or more information was needed, additional questions have been asked, but under more informal situations than the interviews. The aim has been to have two or three interviewees per case study. However, two projects (residential building Project A and B) do only involve one interviewee each. This has been assumed to be representative, as these two projects are included in the same bigger project as parts of the same new district. The interviewees are presented in the list below, *Table 3* to *Table 6* declaring their profession.

Additional information has been collected through discussions during lunch and breaks at Liljewall. Being around the employees gives an idea of how they work and communicate with each other, something that may set the tone for the analysis. A midway presentation was held at Liljewall. The presentation was open for all employees and about 20 persons were attending. The presentation was about the results of thesis so far, and was meant to invite to a discussion about the results. The presentation gave all employees a chance to express their opinion and thoughts about social sustainability within their projects. The discussion of the thesis results provided the researchers with ideas and information to the analyse part of the thesis. Information from the discussion of this midway presentation will later be referred to as from the reference group. Information and inspiration has also been gathered at

presentations at Liljewall, which are held on a regular basis. These presentations do usually concern ongoing projects or results from competitions, elements that can give a hint about the current work of the company. A study visit to Kvillebäcken could provide the thesis with pictures as well as the possibility of seeing the project's place and design in real life.

Table 3 - A description of the interviewees involved in the health care project.

Health Care	
Profession	**Description**
Handläggande arkitekt	The main responsible architect, which has an overall view of the design, often in bigger projects
Medverkande arkitekt	Architect that has the responsibility for certain parts of projects

Table 4 - A description of the interviewees involved in the two residential projects.

Residential building (Project A and B)	
Profession	**Description**
Handläggande arkitekt, A	The main responsible architect, which has an overall view of the design
Handläggande arkitekt, B	The main responsible architect, which has an overall view of the design

Table 5 - A description of the interviewees involved in the educational project.

Education	
Profession	**Description**
Handläggande arkitekt	The main responsible architect, which have an overall view of the design, often in bigger projects
Medverkande arkitekt	Architect that have the responsibility for part of projects
Medverkande ingenjör	The engineers are responsible to design and put together the drawings, after suggestions of the architect, so that they are functioning and realistic

Table 6 - A description of the interviewees involved in the trade project.

Trade	
Profession	**Description**
Handläggande arkitekt	The main responsible architect, which has an overall view of the design
Handläggande ingenjör	Engineer that has the responsibility for all on goings in the projects; time delivery and that drawings and documents are correct.

3.4   Trustworthiness

The material to this thesis comes from a number of selected employees at Liljewall Arkitekter, and can by that not be said to reflect the opinions of the whole company. The method of the material sample is interpretive as the result is based upon how the researchers have perceived the interviewees' thoughts and opinions. Hence, how social sustainability was communicated may also affect the result, as interviewees that had an understanding of the subject could contribute with a more detailed description about aspects in the certain projects that could be linked to social sustainability. The number of persons interviewed from each project is not consistent seen to all projects, and no certain weight has been put on what role the interviewee had in the project (being an engineer or an architect and having the main responsibility or more of a participating role etc.). Every market area at the company is not represented why the diversity of examples must be seen as restricted. However, this thesis does not seek to produce a general full implementation guide suitable for all kind of projects but rather to introduce features that can inspire to an increased focus and a new way of thinking.

4   Case Study - Liljewall Arkitekter

Liljewall is an architectural firm with offices in Sweden (Gothenburg, Stockholm, Malmo) and Argentina (Buenos Aires). The company was founded in 1980 and has of today 140 employees in the fields of architecture and engineering. Liljewall has projects in a wide range of markets; urban design, residential buildings, trade and office, industry, education, sport, culture, health care, internal environments, landscape and caterers.

There are many actors involved in the projects that Liljewall design, all with different possibilities to contribute to the design[1]. The client can either have explicit requirements or let the architect have more freedom to develop the design. The contractor can also have more or less requirements on the design, much depending on the delivery method. The technical consultants can affect the design in terms of technical requirements that need to be compromised[2]. Design-build is the delivery method when the contractor has the responsibility for the design, therefore, the contractor also has more influence and requirements on the design (Touran et al., 2011). Design-bid-build is when the client addresses an architect to perform the design and therefore, the design does often evolve in collaboration between the client and the architect (Tenah, 2000), however the contractor and technical consultants need to be involved. Governmental requirements or politics may also be seen as actors that may affect the project; these are included no matter the delivery method. Partnering is a delivery method where a temporary organisation is created and actors are working towards the same goals with a close collaboration and communication (NCC, 2016). Therefore, all actors within the temporary organisation are involved in the design. The main objectives with partnering are to share the economics, the goals and the organisation.

The procurement approach affects the architect's possibilities to influence the design, as the requirements of the design may already have been decided when the architectural firm gets the project. All public companies in Sweden need to follow the law of public procurement (Notisum, 2007), which means that the client list their requirements of the architects and the design, and then they need to choose the firm that get the best score of their requirements. If it is a private procurement, the client can choose the architectural firm they know have good knowledge and/or whom they have had a good collaboration with. An architect can also participate in an architectural competition to win a tender, this can occur both in the public and private sector (Sveriges Arkitekter, 2015). The client has then set some basic requirements on the design, but the competition is often a free mindset for the architects to perform the best they can in order to follow the requirements of the client meanwhile being as innovative as they want.

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[1] Reference group from lunch presentation at Liljewall 20/04/2016
[2] Handläggande arkitekt, Education

4.1 Description of the projects

The following section presents the result from the case study, more specifically the information received from interviews. A brief description about the involved projects will be given followed by a summary of the interview material with reference to the features found in the literature of social sustainability.

4.1.1 Health care - Women's clinic

The project is the reconstruction of a women's clinic at a hospital area[1]. The project is divided into two parts that together form the new clinic. The project is extensive and the time frame is tight as the hospital is in urgent need of the planned facilities. Construction has not yet started but the clinic is planned for opening in 2021/2022.

Liljewall was awarded the project according to the law of public procurement, with regard to their references and the price[2]. Since the project is still in an early phase, the delivery method is not decided and no contractor has been procured yet. Liljewall have only had contact with the client so far. The project was at first meant as a smaller reconstruction project but developed over time and as Liljewall have been involved since the beginning they have had insight and possibility to influence on the process. There is a public transport station on the premises, and the plan is to integrate the hospital area with the surroundings to greater extent than of today and to make it into a natural part of the district.

4.1.2 Residential building - Kvillebäcken project A and project B

Both project A and B is part of the urban district Kvillebäcken that is situated in the northern part of Gothenburg on the western side of the river. The area is a quite new district and the intension is to link the central city with the districts on the western side of the river. When the detail plan of Kvillebäcken was decided, the next step in the process of the new area was to determine what contractors that should be responsible for what quartiers in the area[3]. The idea of Kvillebäcken, according to the detail plan, was to have a mixed city with residences, stories, cafés and restaurants, and part of this was to include many contractors into the process. The contractors could wish for which parts of the area that they wanted to develop. Liljewall was at an early stage contacted by a private building contractor for project A, in order to help them evaluate what blocks in Kvillebäcken that, according to them, would be the most attractive. Aspects that were concluded during the evaluation process were qualities that were directly connected to the future inhabitants such as sunlight and noise. The quartiers that Liljewall considered as the most favourable were also the quartiers that the contractor later was assigned to develop and one of them is project A.

Project A was a private procurement with a design-bid-build delivery method[4]. However, the contractor was involved early in the design phase, which lead to a close contact and a good collaboration work. The building has 97 rental apartments that are of varying sizes from studio apartments up to four-room apartments. Most of the

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[1] Handläggande Arkitekt, Health Care
[2] Ibid
[3] Handläggande Arkitekt, Residential project A
[4] Ibid

apartments are however of medium size, and there are just a few examples of the bigger apartments. The block will also provide accommodations for special needs. The bigger apartments have balconies towards the courtyard, facing northwest. The apartments facing east have their entrances towards a public square and therefore these facades are slightly more detailed and welcoming. The building has a garage below ground level.

Project B was also a private procurement, and with a contractor that Liljewall Arkitekter had a close relation to. The delivery method was a design-build contract, so the client and the contractor contributed with a lot of input during the design work[1]. Project B is a residential block including 113 apartments along with four premises on the ground floors that are available for restaurants, shops etc. The apartments are of varying sizes from studio apartments up to bigger apartments with four and a half rooms. This project does also include a garage below ground level. Liljewall have been working with other projects in the same area, which was the reason why the private client contracted Liljewall Arkitekter for the design of this project as well. The private client had a detailed programme for what to include in the project, which gave Liljewall more of a consulting role than the ability to influence to a greater extent.

4.1.3   Education - Herrestaskolan, Barkarby

Herrestaskolan is a new school in a relatively new urban district in Barkarby, close to Stockholm. The district is currently under construction and will continuously be developed. The school has a capacity of approximately 400 children; 100 children in preschool and 300 children in primary school, in the age of 6 to 11 years (Liljewall Arkitekter, 2015). The school was ready for school activities in January 2016. The building has an area of about 8200 m^2 and do beyond the school also accommodate a part of the municipality's library, that is open for all inhabitants of the municipality.

The client, the municipality, announced an architect competition in 2011, where Liljewall among three other architect firms participated via the law of public procurement[23]. The detail plan illustrated two school buildings but Liljewall's proposal to the competition was one incorporate building, where all classrooms, canteen, sport auditorium, library etc. were integrated[4]. The delivery method of the project was design-bid-build. It was already decided that the school should be built according to the environmental certification of Miljöbyggnad Guld, and during the design phase the municipality also suggested to build the school in solid wood. The combination of these requirements was a challenge but Herrestaskolan ended up as being the first school built in solid wood.

4.1.4   Trade - Landvetter

The departure hall at Landvetter Airport needed a reconstruction as no bigger reconstruction of the departure hall had been made since the airport was built in 1970. The airport is located east of Gothenburg, and is reached by car or airport coaches.

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[1] Handläggande arkitekt, Residential project B
[2] Handläggande arkitekt, Education
[3] Medverkande arkitekt, Education
[4] Ibid

Liljewall had earlier been working with the client, and therefore got the opportunity to design the reconstruction of the departure hall. The delivery method was a partnering contract, between the client, contractor and Liljewall Arkitekter[1]. The aim with the project was to increase the commercial spaces and the shopping areas but also to increase the comfort for the travellers. The commercial area increased with approximately 1000 m^2.

4.2 Social Sustainability dismantled into features

As stated in literature, social sustainability must be understood in its context and be reinterpreted due to occasion (Magnusson, 2015). The features that culminated from the key aspects presented in the literature review, are here presented with examples from the projects of the case study.

4.2.1 Place context

The interplay of a building and its surroundings is important to consider. It is important that the building itself has a positive and distinctive identity, as it facilitates for how it is linked to its surroundings but also for the occupants to feel a sense of pride and belonging.

The women's clinic is part of a bigger hospital complex that will go through an extensive renovation the following years. The area is already a known place in the city. An idea of the renovation is to make the area more welcoming and inclusive, as it of today may be an area that people just pass by on their way from the station. Smaller shops and restaurants will make people stay to spend their time in the area, which as well will provide services for employees at the hospital. The main entrance at the women's clinic will be at street level and will be designed in order to be distinctly announced and easy to locate. The ambition of the women's clinic is to give it an atmosphere that reminds of a hotel or a spa rather than a hospital. All the rooms should give a homelike feeling to give the best start possible for the new families. To include the whole family and not solely focus on the mother is something that has been the core idea throughout the whole project. Each room has place for the whole family to stay near the mother and the new-born and the rooms are designed as being possible to adapt to encourage the feeling of being at home, with details such as light setting and music choices. Each room has also been designed to have a bathtub, since it has become a more usual place to bore. If neonatal care (early born babies) is needed, the aim is that this shall be performed close to the family as well. Research shows that skin closeness is crucial for the early development of a new-born why this is something that the architects wanted to enable[2]. Overall, a calm and harmonic environment does biologically give good signals to the mothers, signalling, "This is a safe place to give birth on". This is something that Liljewall has worked towards creating.

The keywords of the district where both residential projects are situated are variation and city feeling. There is a square next to the block of project B that will give character to the area and the square can also be a neutral place to meet, both for the people in the neighbourhood and other citizens. This will in turn give the residential

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[1] Handläggande arkitekt, Trade
[2] Handläggande arkitekt, Health Care

building a known location in the city. The courtyard at the residential project B is open but sheltered at two points on the side close to the road, due to noise requirements. One of the noise barriers is possible to pass, in order to reach the stop for public transports, which is just around the corner. Facilities such as gym, cafes, library, pharmacy and restaurants are situated within walking distance from the residential in project B. A park will be built in the area that will also be reached in a few minutes.

The school building, with its solid wood design, aims to generate a powerful character and identity to the area[1]. The ground where the school is built used to be an airfield, which is something that the architects have emphasized by creating details that brings the history of the place to mind[2]. For example, sculptures formed as air balloons are used at the schoolyard as indicators. Another example is found inside the school where each room, such as smaller rooms for seminars etc., has been dedicated a planet where information about each planet is presented in the rooms. Just as the planets strengthen the identity of the school, it is expected to have a learning function by providing knowledge about the solar system as well as it may simplify the ability to orientate. Another help to orientate has been to give every classroom that is home for a class a certain colour, this helps the children and teachers to find their way but also creates identity and sense of place.

Accessibility and friendliness were words that permeated the project of the department hall at Landvetter airport. The architect wanted to give the airport an international feeling while at the same time showing Gothenburg from its best side. The departure hall shall give the travellers a welcoming feeling, but also submit the feeling of being at a special place, away from the everyday life. An example is the security checks where the staffs has got certain education and training to reduce the sometimes robust and harsh impression that might occur in security. The aim was further to create an including atmosphere but with an "exclusive" touch. It was important that it was not too luxurious though as it may have a deterrent effect on the trade and create a feeling of exclusion. Liljewall wanted to minimize the stressors that can occur at an airport, as catching the flight in time etc., and wanted to design the departure hall as to be easily oriented. A good overview over the departure hall do also facilitate for the shopping and restaurants, as the travellers will possibly feel safe to leave the gate areas and walk around at the airport. If the travellers feel that it is hard to find the gates they might just stay at the gate in fear of missing their flight. Another measure that the architects at Liljewall applied to avoid the scenario of people just sitting in the gates was to limit the number of seatings in the gates and instead create more seating possibilities in the shopping and restaurants area, see Figure 4. Areas with seatings along with possibilities to charge electronics were also established. The target group suitable for these measures may be restricted, as a number of travellers will still aim for the gates when entering the airport.

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[1] Medverkande arkitekt, Education
[2] Handläggande arkitekt, Education

Figure 4 - The open shopping area with seatings in the middle.

4.2.2 Meeting places

Creation of places for people to interact can be constructed and designed in varying ways. An example found through the thesis interviews can be seen in the residential project A where the architects have decided to have a garden house of glass in the courtyard, with the intent of creating a possible meeting place for the residents, see Figure 5. The architects do also have a vision of creating a more social and unifying atmosphere among the residential by facing the balconies towards the courtyard. The dwellings on the ground floor have terraces that are meant to serve the same purpose[1]. The idea behind the terraces was also to give the ground floor apartments a further value, as the ground floor apartments are usually not among the most attractive[2]. There are benches by the entrances, towards the street, where the architects wanted to encourages social interaction among the residents as well as the neighbours.

Figure 5 - View over the garden house and the balconies to the right. (The house behind the garden house is another project).

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[1] Handläggande arkitekt, Residential project A
[2] Ibid

The apartments at the residential project A and B are of varying size, something that can generate in a neighbourhood with a range of family constellations. The prices for the dwellings will though narrow the target group of buyers. There is a square at the south-eastern part of the building of project B that is meant to be used as a meeting point for the residents of the nearby buildings, as well as for people from other parts of Kvillebäcken and Gothenburg. The ground floor of the building facing the square is prepared to accommodate a restaurant. The detail plan had already decided where the buildings were supposed to be situated, and this involved the open design for the courtyard.

The schoolyard is a potential place for social interaction and the main thought about about the yard at Herrestaskolan was to create a social area[1]. The school accommodates facilities such as a football plan, a basket plan, a stage etc. The schoolyard does also include an open park, see Figure 6 for an overview of the school and the schoolyard.

Figure 6 - An animated picture of the school and the school garden with the park nearby (Liljewall and Järfälla Kommun, 2015).

Furthermore, the library will also be a natural place for the citizens to meet and interact with each other. The canteen is designed to be more special than ordinary canteens; e.g. more equipment, special light arrangements and special consideration on the choice of furniture. This was decided in order to make it available for rental to the citizens, for party or bigger dinner activities. The school has been designed in order to be a natural meeting place in the municipality, both with a library and as mention before with an open park close to the schoolyard[2]. The sport auditorium and other special classrooms, such as handicraft and domestic science, are available for rental. The architects tried to avoid corridors when designing, partially due to the notion that these may encourage bullying, therefore, Herrestaskolan has a lot of open spaces[3]. The open spaces, mainly outside classrooms, can be seen in Figure 7. The

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[1] Handläggande arkitekt, Education

[2] Medverkande arkitekt, Education

[3] Medverkande ingenjör, Education

main entrance to the school is also a big open space that has been a central part of the design, and the meaning has been to create a natural place for social interaction. All functions in the school can be reached from the main entrance[1].

Figure 7 - Overview of 2nd floor of Herrestaskolan, including mostly the classrooms (Liljewall and Järfälla Kommun, 2015).

4.2.3   Safety and security

The contribution from a building to the surroundings can be important when it comes to how a place is perceived. This was something that the architects wanted to take into consideration when designing the women's clinic. To avoid the feeling of having closed facades, the first floor has glass facades that aim to give a smooth transition and interaction between the inside and outside environment[2]. The glass facades were part of the development program for the hospital area as a way to give a pleasant and more secure feeling for people in the area. The windows will be possible to cover though as the activities of the building have certain demands for secrecy and integrity[3]. The rooms on the first floor will due to this partly be consulting rooms as these activities are planned on beforehand, which makes it easy to adjust the insight. The information desk in the entrance hall will be manned so that visitors will have people to ask instead of simply being referred to signs.

Residential project A has a courtyard that is semi-private; it is clearly defined but people can come and go as they want. Even though the courtyard is practically seen accessible to everyone, people may not cross the yard if they have no intention of

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[1] Handläggande arkitekt, Education
[2] Medverkande arkitekt, Health Care
[3] Handläggande arkitekt, Health Care

going there. There are no activities in the courtyard that directly address other people than the residents. The balconies towards the courtyard allow people to look after each other and aims to submit a presence to the courtyard[1]. The stairwells have high windows in order to allow daylight. The architects of Project A wanted to prevent the garage from being perceived as an insecure and dark place. The walls are therefore painted in bright colours and have light decorations, see Figure 8.

Figure 8 - View of the entrance to the garage.

The colours in the garage are designed with the intention of creating a friendlier atmosphere. The colours do also provide information as each colour represents a function; the exits have one colour and the bicycles storehouse another colour, see Figure 9. Each exit is also marked with the house number to point out different staircases, something that also facilitates for the accessibility feature. The garage does also have a workshop with tools where the inhabitants can repair their bikes. This is meant to serve as a practical function but has also the intention of providing an opportunity for people to meet.

Figure 9 - A view in the garage, showing the different colours for respective function.

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[1] Handläggande arkitekt, Residential project A

4.2.4 Participation

The architects at the women's clinic has had and still has, since the project is not finished, good communication with all parties involved[1]. The architects have continuous meetings with both the client and with some midwives and other personnel at the hospital. The meetings have helped the architects to get a view of how the employees and the client want the new clinic to be designed, and the architects get feedbacks on their ideas. This has facilitated for the architects as faster decisions and agreements on the design could be made[23]. One example that the midwifes and the personnel at the hospital proposed was that the nursery rooms should be a room for all members of the family and not exclusively for the mother and the new-born. The rooms should also be flexible and adjustable for each family's preferences.

No contact with the end user was obtained in neither of the residential projects. The clients were very engaged in both projects though, and continuous meetings were held where they contributed with a lot of input.

At the school had the architects close contact with the client, as well as with the person responsible for the education department at the municipality. An idea that Liljewall appreciated and used, suggested by the municipality, was to have music on the toilets, which was considered as providing harmony. There was no participation of the end user though, as the school was a new construction and the teachers that would work at the school in the future was not determined during the design phase[4].

The departure hall at the airport had clear descriptions and information of how the client wanted the reconstruction to be designed[5]. The departure hall is not only a place for trade but also an office. When reconstructing and designing an office, governmental requirements command the client and the architects to confirm the design with the employees of the office premises[6]. The designers have therefore been in continuous contact with the employees at the airport. The architects have had meetings with maintenance personnel, to consult them about what material to use for the floors to facilitate cleaning[7].

4.2.5 Flexibility

It is difficult to foresee how citizens and buildings will evolve in the future, therefore is it necessary to put high demands on flexibility when constructing and designing buildings. Especially hospitals put high demands on flexibility as the health care is developing quickly. The women's clinic will be designed in order to have rooms that are general and possible to use for several activities[8]. The women's clinic project will also, along with flexibility, put a lot of effort on consistency. Every room should provide the same possibilities for all patients and there will be no need for them to

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[1] Handläggande arkitekt, Health Care
[2] Ibid
[3] Medverkande arkitekt, Health Care
[4] Handläggande arkitekt, Education
[5] Handläggande arkitekt, Trade
[6] Handläggande ingenjör, Trade
[7] Ibid
[8] Handläggande arkitekt, Health Care

move to another room if in need of any certain health care. For examples the soon-to-be mothers can stay in the same room before, during and after the given birth. This provides comfort as well as it is an important aspect if seen to hygiene[1].

Neither of the apartments of the residential projects is designed in order to be adaptable but there is a range of apartments in different sizes. As the apartments are of varying size, the residents have the possibility to stay in the neighbourhood even if the family situation would change as they can move without leaving their district.

There has not been any certain focus on flexibility when designing the school. The design has mainly ensured to meet the current needs and have less room for future changes. However, it may be possible to use the preschool as a school, if more classrooms are needed. The canteen does have a shielding wall that enables the possibility of changing the size of the canteen. This will also make it possible to rent a smaller part of the canteen.

The available area for the departure hall was at project start very limited, due to previous design. The client predicted the number of travellers to increase in the future and that the security control therefore would need to be expanded. The new design makes it possible to increase and expand the capacity of the security control.

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[1] Medverkande arkitekt, Health Care

5   Analysis

The information given in the thesis up to this point will now be discussed. The result has primarily focused on what is said in literature and how the investigated projects at Liljewall correspond to that information. This chapter aims to problematize the findings from the projects and to argue their correlation to social sustainability, as well as to question the consequences and magnitude of certain measures. The analysis will be divided into sections where the features of social sustainability, the current process at Liljewall Arkitekter as well as possible changes will be discussed.

5.1   The integration of features within the projects

The literature reviews as well as opinions when conducting the case study indicated the importance of dismantling social sustainability down to smaller parts to make the concept into something understandable and manageable. The aim of this thesis has therefore been to formulate features that together describe what social sustainability stands for. The projects of the case study have been screened for examples that can derive these features of social sustainability. Many of the features are however overlapping each other. Meeting places do for example also involve safety and security. A place will not be socially sustainable if people have a feeling of being insecure when being at a certain place. Therefore, it is important to consider the features not only one by one, but also to have a complete thinking of how the features interact and contribute to each other.

5.1.1   Considering the target group

There should be meeting places for all people. The intention of creating a meeting place is good but if the target group for it is selective, then it will only encourage certain groups of people to meet. This can for example be by creating meeting places that do not consider people of all ages. An example of a meeting place like this can be playgrounds in a residential area. These are not meeting places that attract everyone, but to encourage parents within the neighbourhood to meet, a playground can be a suitable place for interaction. When creating socially sustainable meeting places, it is important to identify the users for the places and to ensure that the target group is not exclusive. For example, the courtyard at residential project A was designed with a garden house and with smaller grass areas and plantings. The users of a yard like that will probably be persons that want to relax and that do not want any noise. The courtyard is by that not designed for everyone, and not even for all residents. The area is obviously not designed for kids to play football or even to run around as the plantings have demarcated the grass area. Also, the courtyards of both residential buildings are designed as being semi-private, something that can be problematic if relating to social sustainability. The idea about opening up the courtyard to the surroundings may be good, but the fact that it is possible to enter will not automatically mean that people actually will do so. The fact that everyone can come and go as they want might also affect how the residents use the courtyard. A private courtyard would possibly give a safer and more unifying feeling among the residents than a courtyard that is public, a feature that in literature has been concluded as crucial to consider when creating meeting places (Dempsey et al., 2011). In other words, if seen to the context of the residential building, a private courtyard could be a better alternative than a semi-private one. At the same time, a semi-private courtyard

could contribute to the society and surroundings in a better way, but the target group must then be fully taken into account. When claiming that a design should be socially sustainable, it is important to identify to whom it will be socially sustainable. To have a semi-private courtyard that do not concern everyone cannot be said to be an example of social sustainability, however, it can still be a pleasant place for the people it may concern.

The residential buildings have had apartments of varying sizes that has been said to appeal to many different kind of family constellations. However, as already mentioned in the result, the expected target group for the apartments is narrowed down when investigating the prices. It can be noted that not just any citizen will be able to live in the rental apartments of Project A. The prices are not dramatically exclusive but require a certain economy. Furthermore, the apartments of Project B are condominiums that, no matter the prices, claim that the buyer holds a capital. With this said, the residential projects may not be promoted as a socially sustainable accommodation, seen to the fact that it is not available for everyone. However, this was not in the hands of Liljewall as the client had already decided the target groups for the projects.

An aspect about meeting places is that they may contribute to a well functioning society, as interaction generates networks and an increased feeling of trust (Dempsey et al., 2011). The residential project A presents an example of a meeting place that may contribute to this idea, namely the work shop for bicycle in the garage. If supporting the idea that Dempsey et al. (2011) declare, the workshop can be one way to facilitate the creation of a network among the residents. If your neighbour is not longer a stranger the feeling of trust within the area will increase (Gehl, 2010), and with that the coordination and co-operation for common benefit of the area.

5.1.2   The importance of the context

A socially sustainable society is not dependant on each and every project itself but on the role it has in the bigger perspective and how well it complements and interacts with the surroundings. It might not be wrong that Project A only has apartments for certain target groups, but it is important that there are possibilities for a variety of accommodations in the area, for everyone. This once again strengthens the importance of context and perspective when discussing social sustainability. However, this might not be something Liljewall Arkitekter can affect, the responsibility may be on the client or the municipality. An aspect that may seem obvious for an architect to take into consideration, equally connected to social sustainability, is the identity relating to the neighbourhood and to the city is an important feature to consider. The building's identity does not only need to be designed to fit in with the surrounding buildings, but do also need to be designed so that the end users feel a sense of belonging. The building's identity is important for the end users' sense of feeling attached to the building and also to feel trust and to feel safe in and around the building. Integration and segregation can be attached to this subject, as there is a fine line between a strong identity and a segregated area. The identity must be present but still inclusive as an exclusive feeling can seem foreign and deterrent - opposites to the message that a socially sustainable society should send. Examples of segregation but with different consequences are, as noted from the literature review, gated communities versus areas such as Chinatown and Little

India(Gans, 2008). The same process can generate a different result depending on place and whether it is voluntary or not. An essential distinction between these two phenomena is the possibility of interaction with the surroundings, and how it is communicated and expressed.

The two residential projects were part of the same new area, however no communication between them was carried out. Communication between these projects could have been a way of providing a collective contribution to the new area. The projects did have different clients though, and were not carried out at the exact same time. Still, talking to actors that operate in the same area can bring new insights to a project and to the area where it is located. This correlates with an issue that was discussed during an interview[1] about creating something more than just what the client asks for. The demands of the client are always important, but it is also important that Liljewall feel that they contribute with something that they believe in, in every project. Liljewall will always have to meet the demands of the client, and they will not be able to completely change the target group of all projects. They can however impact on how a building is perceived by its surroundings, and how it interacts with it. A contribution to a better society or surroundings of the project may not be part of the project scope, but it can be part of Liljewall's philosophy.

5.1.3   Participation of the end user

The feature that has been concluded to be the most difficult one to consider has in our case study shown to be participation. Almost all respondents have noted that it is difficult to include and consider the end users, partly due to the fact that the end users are in many cases not yet decided during the design phase. The residential buildings or the new school are examples of this. It is important to highlight the possibility of using other methods to consult the end users. One method could be to use reference groups that have similar competences and experiences as the possible end users. Having Herrestaskolan as an example, no teachers were yet determined but there was an old school in the area that was going to close as soon as the new school was finished. All the children from the old school were going to be placed at the new one so the teachers from the old school could have been used as a reference group, as well as the children. What concerns residential project B, the client already had a clear picture over the design why the possibility of using reference groups was never lifted. Liljewall could here have stressed the interest.

As emphasized in a previous section of the analysis, considering the target group is an important matter, as well as trying to extend the target group if possible. This however implicates a greater responsibility and complexity when including the end user in the process. Giving the school project as an example, certain parts of it will be public and open for the local residents. The target group is hard to determine and so, hard to consult. The same goes for the residential projects, and specifically the courtyards that are semi-private. How are people going to use the courtyard? And what people are going to use it? These questions are especially difficult to answer when talking about public places. It is a complex issue that requires time and money, and the participation of the end user is something that will be compromised with the current responsibilities, demands and interests when working with the design.

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[1] Handläggande arkitekt, Residential project A

5.1.4 Designing flexible places

To design and construct for flexibility within all types of projects has also been indicated as difficult. Examples of flexibility can be such as making it possible to transform a studio into an apartment with a bedroom, or to split a big apartment into smaller apartments. Reasons why this is not emphasized can be that the client might ask for a certain solution and is only interested in that, and that the time plan may not leave room for such considerations or that it is a question of cost. However, during the lunch presentation the group[1] discussed the magnitude of considering ideas of how to apply the flexibility feature, and how to learn from each other. The reference group mentioned that Liljewall have designed a residential project with certain focus put on flexibility and into making it possible to adapt over time, i.e. due to different family constellations. This project would be a great reference project to look back on and to get ideas from on how to implement flexibility in all kinds of projects.

5.2 Barriers and possibilities in the project process

It is mentioned already in the introduction of this thesis that what social sustainability includes are matters that to some extent is already being made. These matters may often be designed without intentionally having an expressed focus towards social sustainability. Creating meeting places is such example, as that is something that architects have an ambition of doing in order to create pleasant environments. Possibilities as well as barriers for future integration of social sustainability may be found when analysing the current work at Liljewall Arkitekter.

5.2.1 Identifying social sustainability by referring to examples

A challenge concerning social sustainability that has been detected in both literature as well as through interviews is the difficulty of formulating and capturing the subject. Also the reference group[2] said that it is hard to point out how their design can attain social sustainability, as it is hard to understand the concept. Social sustainability can be abstract and hard to grasp if looking at the concept as a whole. Tracing examples from current projects could also be used, as a help to identify the concept and to prove that social sustainability do not have to be something that is difficult to implement in projects. Adding colour to a garage can connote an additional value that can be connected to social sustainability. It is important to highlight significant examples that are already accomplished as well as providing examples or ideas for how to improve something. The reference group did also discuss that an effective way to visualize what social sustainability is would be to present concrete examples of the consequences when implementing features in the projects. This can both motivate and clarify why to do something. Using reference projects is further stated in the literature to be productive. Developing and providing reference projects to enable an implementation of a new concept is a commonly used method (Karim and Strzelecki, 2012). According to Karim and Strzelecki (2012) the use of reference projects provides the intangible features with a clearer understanding. The reference projects

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[1] Reference group from lunch presentation at Liljewall 20/04/2016
[2] Reference group from lunch presentation at Liljewall 20/04/2016

will as well provide a reality of what the architectural firm can create with the features and how, and not only describe a solution.

5.2.2 Including features within another objective

The architects that designed the departure hall at Landvetter Airport wanted to avoid that travellers went directly to the gates by having less seating places near the gates. However, the reason for this may in fact have been to have an increased economic advantage rather than simply considering the social aspect. Reducing the number of seatings at the gates forces the travellers to walk around in the shopping area or going to the cafés or restaurants close by. This will however, in turn provide social aspects as well, as the travellers may interact more with each other. The fact that a social aspect can be developed from an economical aspect can be used when discussing the features with a client or a contractor. The economic advantages do often have a higher priority than the implementation of social features. Therefore, if there is a certain goal, not specifically related to a social sustainable feature, it may be possible to angle and interlace a social feature within the goal anyway. If a social aspect is included within another aim, the chances are higher that the implementation of it might be realized.

5.2.3 Consequences due to procurement and delivery method

Barriers for an architect and for Liljewall Arkitekter when implementing social sustainability features are the different kinds of procurement and delivery methods. The different procurement and delivery methods affect when the architects can get involved in the design, but also how much they can influence the design. Therefore, the numbers of features of social sustainability will vary depending on the procurement and delivery method. For example, when Liljewall are participating in an architectural competition, as in Herrestaskolan, they have more freedom to design the building exactly how they want it to be (besides from some requirements set by the client). When the client and the contractor have clear requirements of how the design should be, as at the residential project B with a design-build delivery method, the architect might not have much room for own ideas, and could therefore not implement any social sustainability features. The delivery method partnering allows everyone to discuss, and enable everyone to have an influence on the design. This can encourage the architects to highlight their ideas and together they can form the project. However, as the partnering process also include that all actors share the economy, the interest of including new ideas and socially sustainable features may not be a focus. If the actors share the same vision though, and the vision is to build socially sustainable buildings, then this will of course be positive for the outcome of the project if seen to the social aspect.

5.2.4 Preserving early ideas throughout the design process

An important issue to mention is that the women's clinic is still in the planning phase of the design. Nothing is yet fully decided and therefore, the measures that are highlighted in this thesis cannot be taken for granted that they will be implemented. As an example, it may not exist bathtubs in all rooms[1] due to i.e. economical reasons.

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[1] Medverkande arkitekt, Health Care

It is essential to have many good ideas in the beginning of a project, but it is even more important to ensure that the ideas will follow through the whole process.

Change Management has been mentioned in the literature section of this thesis, as providing examples for how to implement a change. Kotter's model is one example (Appelbaum et al., 2012). If concluding the current state at Liljewall, by using the model, it can be presented as below, see *Table 1*.

Table 1. Determining current state at Liljewall, according to Kotter's eight-step model.

Kotter's model	Liljewall Arkitekter
1. Establishing a sense of urgency	An increased focus is put on social sustainability during this year.
2. Creating the guiding coalition	A group of people has been put together to discuss the possibilities
3. Develop a vision and strategy	In progress
4. Communicating the change vision	-
5. Empowering broad based change	-
6. Generating short term wins	-
7. Consolidating gains and producing more	-
8. Anchoring new approaches in the culture	-

Liljewall Arkitekter is currently developing their vision and stategy for how to work with social sustainability. According to Kotter's fourth step in the model, the next step is further to communicate the change vision (Appelbaum et al., 2012). This means to ensure and to tell everyone about the meaning of the vision and that everyone understands it. For Liljewall Arkitekter it is important that within their organisation ensure that all employees have the same perception, knowledge and understanding of the features of social sustainability. To ensure this, all employees should be educated about the features and so about social sustainability, which can be related to the fifth step in Kotter's model. The fifth step aims to empower a broad-based change, and involving all employees in the change and encourage innovation. An educational day could help all employees to feel that they have enough knowledge about social sustainability and therefore feel more attracted to implement more features within their projects. However, the educational day ought to be more of an interactive day, where all employees can contribute with their knowledge and experience based on the social sustainability features. Seen to how the work will be supported on a daily basis, a person who is dedicated and who has good knowledge about the features of social sustainability could act as a supervisor, as a way of making sure that it is thought about and being implemented within the projects. Persons with this role are usually referred to as champions when talking about change within a company (Carter, 2013). This person could remind, inspire and give input to the design of the project, or

simply work as a sounding board for the architects. The champions may function as a role model that will lead the way and palliate the attitudes towards the change. Lozano (2013) especially emphasise the importance of concerning the emotional attitudes that implies feelings and values. Another way to inspire could be to have study visits to chosen reference projects. The architects and engineers that work with the same project could visit projects together, as a way to ensure that everyone has a similar vision.

Implementing new knowledge can be challenging for an organisation (Liebowitz and Megbolugbe, 2003). The challenge to implement new approaches is to continuously work and follow up the new input. At the first meeting, when planning the design, the architects have a lot of ideas, but the problem is to really implement the ideas and to not forget them during the design process. This does not only consider social sustainability features but all propositions that are not directly connected to the demands of the client. However, a solution to remain social sustainability features throughout the design process could be to add a checkpoint at the general meeting protocol for the project meetings[1]. Other checkpoints on the protocol are i.e. the environmental and quality goals. When adding such checkpoint, the project group will be continuously reminded to discuss and reflect on their social sustainability goals, as stated in the beginning of the design phase. This was also lifted during the lunch presentation where a suggestion was to present social sustainability with graphics, as a way to quickly remind about the content and to give inspiration during the design phase. To present the concept with pictures can be an easier way to assimilate the meaning, prior to reading a long text. Another solution can be to focus on particularly one feature to implement within a project. Narrowing ambitions can help the project team to remember their focus and the feature can easily be highlighted during the whole process. This can be related to Kotter's model, in the sixth step Kotter emphasise the importance to have short-term goals (Appelbaum et al., 2012, Cameron and Green, 2009). Short-term goals, makes the improvements more visible, and can motivate the employees to continuously make changes. Over time, when the features are becoming more of a natural part of the project process, more features can be added. This will eventually lead to projects where features of social sustainability are fully implemented.

5.2.5 Understanding why implementing features

One reason for why something that is initiated early in the process does not stay until the end is that the reasons behind certain measures might not be formulated for everyone in the project. Other needs are then easily being given higher priority if the arguments are not clear. Social sustainability is complex, as concluded throughout this thesis, and time and energy must be sacrificed in order to understand it. However, if knowing the arguments and understanding why something is designed in a certain way, social sustainability features might have higher priority within the design. The reasons behind details in the design do also need to be communicated so that people in the production phase understand its importance. This is coinciding with another remark that was disclosed during the lunch presentation, about the importance of working towards the same objectives and to be on the same page. People that are working in the same project might not have the same competencies and knowledge

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[1] Handläggande arkitekt, Residentail project A

about social sustainability, and they might take some aspects for granted. This is another reason why it is important to discuss within the project group. If this is being done, it is easier to maintain features connected to social sustainability and also to introduce features in projects where this might not be included in the programme.

5.2.6 Presenting social sustainability to stakeholders

By having knowledge of how social sustainability can be implemented in projects, Liljewall should always discuss and highlight the opportunities to include some features within the scope of the design. An interviewee stated, "we must dare to arise the question of social sustainability with the client" [1]. Even though the client might not want to add any features within the particular discussed project, the client and other stakeholders might realize and understand the importance of social sustainability. Highlighting and discussing the features among the stakeholders might lead to a more comprehensive understanding among all actors, which in turn can lead to more features being implemented within the next projects scope.

Another barrier we explored during the work process was that the word social sustainability could be redoubtable. Therefore, we think it is important to present social sustainability as the features, and by that the concept becomes more comprehensible and manageable method for all stakeholders. The concept can be discussed as social sustainability internally within the company but do not necessarily need to be communicated in the same way towards the clients. It could rather be favourable to promote the arrangements and the design on its own, together with arguments the implementation.

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[1] Handläggande arkitekt, Residential project A

6   Conclusion

The result and analysis of this thesis originates from the research questions that were formulated at the beginning of the thesis, to support the purpose. The conclusion is structured to provide answers to these questions. The section does as well include some suggestions for future research.

6.1   Managing social sustainability

To overcome the difficulties of how to implement social sustainability within the projects at an architectural firm, social sustainability has been dismantled into features. The features derive from key aspects that have been formulated in the attempt of framing social sustainability. The concluded features of the thesis are; *place context*, *meeting places*, *safety and security*, *flexibility* and *participation*. Instead of seeing social sustainability as a concept, it has also been reformulated into being seen as a method.

6.2   The investigated projects

The investigated projects in the thesis have been evaluated due to their capacity of coping with the features connected to social sustainability. The results from the interviews were much depending on the interviewees' engagement and interest in the topic, and as the result and given description of the projects in this thesis is very subjective, the result has shown to be more covering and equitable when more persons from the same project have been interviewed. However, the possibilities for the architectural firm, Liljewall Arkitekter, to impact is constrained both due to their role seen to the whole construction process as well as depending on the different delivery methods and procurements. A project where the architects have more freedom and can influence on the design to a greater extent will possibly include more features connected to social sustainability, than a project that has more requirements. Liljewall Arkitekter will always have to meet the demands of the client and they cannot completely change the use of a certain project, but they can always impact how a building is perceived by its surroundings and how it interacts with the surroundings. The importance of context and perspective is crucial, something that is stated several times throughout this thesis. A project cannot be assessed when delimited from its context, and even if a project is considered as not involving many features of social sustainability its role can still be an important contribution to a bigger picture. However, the focus of social sustainability is something that must be compromised and fitted within the current work process when it comes to time, space and money. These concerns must be included into the discussion to conclude a realistic solution.

6.3   Recommendations for change

To successfully be able to implement the social sustainability features within Liljewall Arkitekter, some commitments need to be considered. If using Kotter's eight step model, Liljewall Arkitekter is currently at the third step, *Developing a vision and strategy* (see 5.2.4 Table 1). When completing the third step, the next step, *communicating the change vision*, is to ensure that all employees have proper knowledge about all features to be able to highlight the possibilities of implementing

the features within projects, regardless the conditions and requirements of the project. Therefore, an educational day about social sustainability and possible implementations is proposed. The day should be interactive so that the employees enhance their engagement and are encouraged to share their knowledge. To support the daily work, a person who is dedicated and who has good knowledge about social sustainability could act as a supervisor of social sustainability at Liljewall Arkitekter. This person shall remind, inspire and give input to the design of the projects, or simply work as a sounding board for the architects when working with their projects. Another important commitment for Liljewall Arkitekter to consider is to implement a checkpoint at their meeting protocol to continuously follow up ideas that occur in the beginning of the design process. Completed projects may be evaluated to know if there are any good examples that can be transferred into similar projects. Using reference projects has been concluded as a good help when working with social sustainability, to be able to present concrete examples of how social sustainability features can be implemented in the projects. The reference projects can be projects that Liljewall themselves have developed, or external projects that are considered as good examples. The reference projects may however be dismantled into examples, similar to how social sustainability has been dismantled into features, to facilitate the manageability. Study visits to reference projects may be done, preferably together as a project group during the early phases of a new project to generate a mutual vision. One suitable reference project at Liljewall Arkitekter is Herrestaskolan. The school has many different examples of how to design socially sustainable, for example with premises available for all citizens and not only the children or the teachers. Another improvement action would be to focus on particularly one feature to implement within a project. If a social aspect is included within another aim, the chances are higher that the implementation of it might be realized. An example can be if a social aspect is interlaced with a design that also has an economical advantage. The list below summarizes the recommendations.

- Everyone has propitious knowledge
  - Study visits
  - Interactive educational day
- Champion - responsible person
- Use reference project
- Checkpoint on meeting protocol
- Focus on one feature
- Including a feature within another aim

6.4   Further research

As concluded in this report, the responsibility for the implementation of social sustainability features, does not only affect the architects. Further research about the topic can be to investigate the integration of social sustainability with regard to the client and/or the contractor, and to look at the issue from their perspective. The client has great influence on the design and it would therefore be appropriate to investigate their mindset of social sustainability and how they can change their work process into being more socially sustainable. However, the contractor does also, depending on delivery method, have great influence on the design. Nevertheless, the contractor's

perspective and influence on the design of a building exists in all cases and therefore their opinion and knowledge about how they can affect and implement features of social sustainability would also be an interesting further research to perform.

If staying with the perspective of this thesis, investigating the design, the aim can be developed into investigating change management further and to determine what model that is the most suitable for Liljewall (or any other architectural firm). The model can then be followed up by creating a detailed plan for the implementation of social sustainability, with the ground of information from this thesis.

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