CHALMERS
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SPEAKING THE SAME LANGUAGE

AN INVESTIGATION ABOUT THE ARCHITECT'S ROLE AND THE CHALLENGES OF TRANSLATING THEIR KNOWLEDGE TO OTHER STAKEHOLDERS IN THE CONSTRUCTION INDUSTRY IN SWEDEN

Master's thesis in Master Programme Design And Construction Project Management

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CHALMERS UNIVERSITY OF TECHNOLOGY
Gothenburg, Sweden 2019

Master's thesis 2019:ACEX30-19-75

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Cover: Conversation. Illustration by Malin Persson 2019

Typeset in Latex
Gothenburg, Sweden 2019

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Abstract

What is the Architect's situation today in housing projects within the Swedish Construction industry? Why is it how it is? Are there any improvements that can be done to the Architect's role? Why and how?

By understanding the evolution of the Swedish construction industry that resulted in today's organizational structure, and the impact it had in the Architect's role, an analysis on the Architect's situation in today's industry will be portrayed. This background investigation, supported with an empirical study made through qualitative interviews and a theoretical research, will provide a better understanding on the Architect's role and the challenges they face. It will highlight a dynamic of difference of interests happening between Architects and Project Managers/Clients. Also, it will explain how this dynamic becomes problematic by the Architect's inability to communicate their ideas and interest in the same "language" as other stakeholder. Thus, hindering their input within the decision-making process and affecting their collaboration situation in housing projects. Finally a possible solution to this problematic, found in the education system, will be explained and justified.

Beyond providing the reader with better understanding on the role of the Architect during the design phase of housing projects in Sweden, this investigation questions the Architect's way of interacting and communicating within the industry, thus providing them with deeper knowledge on how to possibly improve collaboration processes that allow for a better use of their intellectual assets; all this in the hope of helping the Swedish Construction industry's development.

Keywords: Architect, Project Manager, Translation theory, multidisciplinary education, Design phase, housing project, Sweden

Acknowledgements

We would like to thank our supervisors for their support and constant guidance during the development of our investigation, Martine Buser, Anders Svensson and Simon Svensson. Your input and advice was of great help.

We would also like to thank all interviewees who took part of this investigation, thanks to their time and collaboration a better analysis for this investigation was possible.

On a personal note:

Angélica: Special thanks to my parents Maria Amparo Kishi Maldonado and Juan José Durán López, and my sister Amparo Durán Kishi; your loving support inspired and motivated me along this process. To my family, boyfriend, friends and teachers, thank you for your constant concern and encouragement. Finally, I would like to thank CONACYT México for endorsing my Master's education.

Malin: Thanks to my parents, siblings and partner for showing patient and encouragement throughout this process, as well as the teachers from Architecture and Construction Management Divisions for the support and for making this combination of education possible to carry through.

With this Master Thesis, our education at Chalmers University of Technology concludes. We believe this project has provided us with a lot of lessons and motivation, and we hope to use the acquired knowledge in our future professional life.

Angélica Durán Kishi and Malin Persson, Gothenburg, May 2019

Contents

1
Introduction

A successful project is dependent on Quality, Time and Cost. In construction projects, Project Managers are known to be the advocates of Time and Cost in the Design phase. However, in order to balance out the triangle, the role of the Architect is added to the equation, thus bringing in the Quality factor. During the past century, the Swedish Construction industry went through an evolution where the role of both Project Managers and Architects changed. However, a distinct impact in the latter's profession was noticed within and outside the industry. Going from being responsible for whole projects, the Architect was now limited to a smaller role (Caldenby, 2018).

Today, after all changes have been done, the effects of the transformation the Architect's role had to go through are still present. The Architect is being described as having a strong isolated identity (Villner, 2008), and a feeling of 'exclusiveness' is recognized within this profession (Grange, 2013). With this strong identity, feelings of confusion and misunderstanding, combined with prejudices and judgement, have developed amongst other stakeholders; resulting in the creation of tensions within the industry. Being the only ones defending the design values, Architects have also developed a sense of "Them against Us". Thus, leading to many Architects today being frustrated over their situation and longing for a better position within the construction industry (Grange, 2013).

Coming from an Architectural background, this investigation started with a personal curiosity to find out if prejudices and tensions revolving around the Architect's role were true. A lot of opinions and discussions happening around the role of the Architect motivated the curiosity to have a deeper understanding on what their actual situation is and how it came to be as it is. Also, considering the Construction industry has a direct impact in the structuring and development of societies, and that the Architect has a direct impact within this industry, we consider it of importance to know what to expect out of this role and how to improve it. Only by understanding the Architect's input within the industry, will we be able to break prejudices and suggest an appropriate change that can help improve the working environment they collaborate in, thus helping the industry overall.

1.1 Aim

This investigation aims to question the role of the Architect and find an area of improvement within this profession, thus contributing to the development of the Swedish Construction industry.

Aimed at people within the Construction industry, such as Project Managers, Clients, Architects and other consultants; this Thesis could help the Construction industry have a better understanding on how to improve their collaboration processes, thus allowing for a more effective use of skills and knowledge within the industry. Also, the Architectural educational world could benefit by acquiring a deeper comprehension on what the needs and expectations are from future Architecture student generations intending to work in the Construction industry.

1.2 Purpose

With this Thesis, it is intended to understand, describe and analyse the present situation the Architect faces within the Swedish Construction industry in the Design phase of housing projects. Also, by questioning the Architect's role and their situation, it will be possible to identify and explain a problematic situation taking place in the collaboration processes Architects are part of. Finally, a possible solution to the described problem will be elaborated and suggested.

1.3 Research Questions

The following questions will act as the starting point and main focus of this investigation:

- What is the Architects situation today in the Design phase of housing projects within the Swedish Construction industry?

- Why is the situation like that?
- Is the situation problematic for one or more actors?
- If so, how can it be solved?

1.4 Scope and Limitations

The scope if this investigation is limited to the country of Sweden due to physical resources. All background investigation and empirical sources are based on Sweden's context, way of thinking and working style. Also, in the interest of having an investigation with better focus, this Thesis is narrowed down to the Design Phase of housing projects. This phase is understood as starting the moment the client comes in with the idea, until all architectural and construction plans are drawn, and construction is about to start. Research was limited to housing projects due to their controversial and problematic characteristic in Sweden. Being the main investment target-project right now for the Swedish Construction industry, most Architectural firms, regardless of their size, have dealt with this type of project at one point in their professional life.

In this investigation, the main character analysed and described is the Architect. However, because of their influencing role during the Design phase, opinions from Project Managers and Clients are incorporated and considered. Apart from the

mentioned above stakeholders, this Thesis does not focus or include any other consultants from the Construction industry.

Finally, owing to the time limit set on this Thesis, the empirical study was based on two interview rounds, each one made out of 6 interviewees. All interviews were qualitative, recorded and transcribed. Thus, the opinions presented in the empirical part of the investigation are limited to the interviewee's personal opinions and experiences. This could result in the research being a little biased and/or in need of further investigation, however it does fulfil the aims described for this paper.

1.5 Outline

In this Thesis an explanation of the chosen methodology will be provided, thus explaining how this investigation was carried out. This will be followed by the Context chapter, in which a description of the historical evolution of the organizational structure of the Swedish Construction industry will be provided. Also, the present situation of the Architect will be explained and a description of this role will be given. By providing this background information, combined with the present situation of the Architect, the reader will be set in the right context, thus having a better understanding of the aims of this Thesis.

The following chapter will highlight the main findings from the empirical study carried out during this investigation. Portraying how the industry understands the role of the Architect and the way they interpret the Architect's input in the Design phase of housing projects, this chapter will provide further information complimenting the already described context, thus allowing for a better discussion further on.

The Theory chapter will provide a description of the Translation theory, which is intended to contribute to the analysis of the situation described by the context and the empirical study. This chapter will explain how the Translation process takes part in multidisciplinary industries, and how it can affect in a positive or negative way all collaboration and communication processes taking place within an organization.

Moving on to the Analysis chapter, the information gathered from the context and the empirical background, complimented by the Translation theory, will enable a discussion regarding a problematic found around the Architect's role in the Swedish Construction industry. This analysis will explain what the problematic is, how it came to be and the impacts it is having in the Architect's role and within the industry. This chapter will be followed by a Recommendations chapter, where a possible solution to the portrayed problematic will be suggested and explained. Also, the possible effects of solving this problem will be described in an attempt to motivate the industry for the implementation of a change.

Finally, a conclusion summarizing the findings of this investigation will be provided. Through a recollection of parts of this investigation, this chapter will answer the starting research questions, which motivated and allowed this investigation to take place. Also, future recommendations regarding how this research should be continued will be given, mentioning possible challenges to come.

2
Methodology

The starting point of this investigation was based on personal experience and curiosity. As the beginning of our investigation was based on assumptions and an area of interest, rather than a specific topic, the inductive research approach was chosen as part of our methodology. With this method, observations and empirical studies are carried out at the beginning of the investigation, and a theoretical framework is created based on the findings received from said observations (Goddard & Melville, 2004). Using the analysed information and meanings from the data collected in the empirical study, our theoretical framework was formed and adapted to our area of interest. Also, because no specific theories apply at the beginning of the investigation, this method allows for flexibility of direction after the research process has started (Bernard, 2011). Based on this characteristic, our process of investigation acquired an iterative quality in which change of direction was guided according to the findings gotten from the interviews. Thus, allowing a better and more dynamic learning process for us.

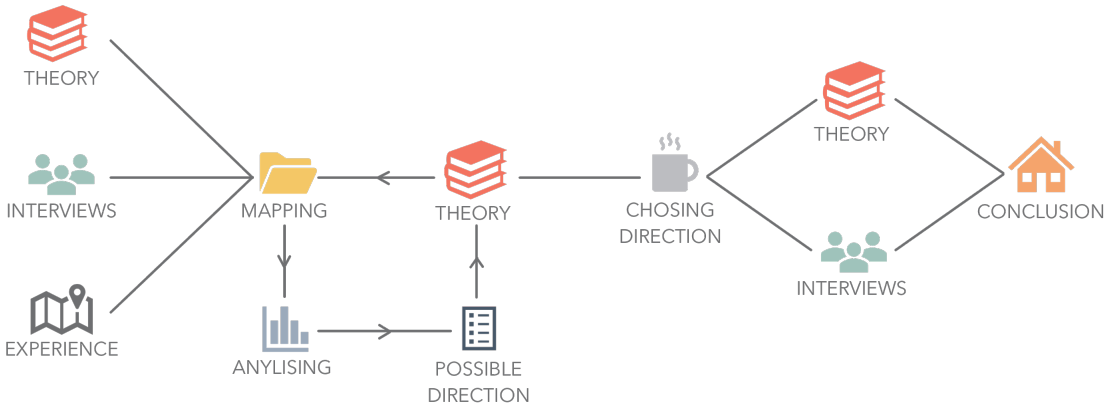

Figure 1. Process of investigation

To compliment the chosen inductive research approach, a qualitative research method was selected for our empirical study. In contrast with a quantitative approach, this type of research focuses on gathering non-numerical data (Babbie, 2014). It aims at understanding a phenomenon through the why and how, rather than the how often

(Berg & Lune , 2012). Also, this method is mainly used in investigation projects related to the human and social factors (Given, 2008). Considering our investigation intends to understand the Architect's situation in their working context, this method seemed to fit best with our aims and interests for this investigation. Also, it allowed us to come into direct contact with people from the studied field, thus motivating and increasing our interest and curiosity for this Thesis.

2.1 Interviews

In order to obtain deeper and better understanding on what the actual situation of the Architect is in the Swedish Construction industry, a series of interviews were carried out in our empirical study. The aim of these interviews was to incorporate in our investigation different perspectives from stakeholders working close together with the Architect, thus eliminating any bias that might be cause by only talking and understanding the Architect's point of view. Having interviews with different stakeholders, provided this investigation with a more complete and realistic picture of the Architect's role. Also, considering these people are working in the industry and set in the right context for this research, interviewing them seemed to be the better option for getting useful information related to our area of interest.

The empirical study was structured with two rounds of semi-structured qualitative interviews. The interviewees were suggested by our supervisors. However, from the list of names provided to us, the interviewees were chosen according to the job position and responsibilities they had (only Project Managers, Clients and Architects were required), the amount of experience they had in the field, the type of company they worked for (only Swedish companies), and their time availability. Also, looking to eliminate or diminish the gender issue from our investigation, a balance between men and women was taken into consideration.

The 1st round of interviews included 3 Architects and 3 Project Managers from Swedish companies within the Construction industry. They were asked the same questions adapted to their professions accordingly. This first round of interviews was performed with the intention to acquire a better understanding on how the industry works, how are responsibilities defined and how roles, especially the Architect's role, is defined. Also, it aimed at helping us get some guidance as to what direction this investigation should follow.

The 2nd round if interviews included 2 Architects, 1 Academic Architect, 2 Project Managers and 1 Client. All of them also came from Swedish companies within the Construction industry, and they were also asked the same questions adapted to their professions accordingly. Based on the analysis developed from the 1st round of interviews, this round, was intended at gaining a better understanding on how the decision-making process works within the Design phase of a housing project and how much impact the economic factor has in this process. Also, the idea of increasing economic knowledge in the Architect's role was suggested as a way to discover what impact this would have in the perception and input of the Architect figure.

Both rounds of interviews were conducted randomly under no specific pattern of

who to interview first. This random factor was derived from the availability of the interviewees. Also, although both sets of interviews were carried at different times, with different questions and different scopes; the discussed topics within them relate to one another, and the empirical part of this paper will make no distinction between both phases to segregate the way information is presented.

Also, on an ethical matter, in order to keep the anonymity of people and companies, the pseudonym Interviewee will be used when quoting or referring to people in this Thesis. This pseudonym will be accompanied by a number and a letter (ex. Interviewee 1A), which relates to the order in which the person was interviewed and the stakeholder they represent, A standing for Architect, PM for Project Manager and C for Client. Interviewees 1-6 relate to the first round of interviews, while Interviewees 7-12 relate to the second round.

2.2 Literature Review

In this investigation, a theoretical framework has been created based on the findings from the empirical study. This framework was created through an extensive literature review, and intends to help the analysis and discussion process of this Thesis. The theoretical framework explains and defines the theory that helps understand why the research problem under study exists (USC University of Southern California, 2019). Consisting of concepts and definitions that support the topic of investigation, the theoretical framework helps strengthen the study by eliminating assumptions and bringing in a critical and objective perspective into the analysis. Also, it connects the researcher with the already existing knowledge, thus increasing their reliability and allowing for a deeper and more intellectual analysis to take place (USC University of Southern California, 2019).

The focus of our literature review was to understand the historical background in the Swedish Construction industry, thus understanding why the situation of the Architect is as it is today. Also to achieve a point of comparison with the empirical study, further research regarding the role of the Architect had to be made. Finally, this investigation was complimented with the research of a theoretic concept, thus contributing to a more cohesive analysis at the end of this Thesis.

This investigation's literature review consisted of published academic journals, reports and books. In order for others to further investigate regarding the topics discussed in this research, a list of references at the end this Thesis is included.

2.3 Reliability and Validity

Considering the nature of these interviews, it is important to consider that they are biased by the interviewees' experiences and only express their personal points of view. This investigation, being strongly based on the information obtained from a series of qualitative interviews, would not be possible for others to replicate and obtain the same results as the ones presented in the empirical study.

Also, with the use of an inductive research methodology, part of the validity of this research relies on the way results from the empirical study were analysed and understood. Thus, it is not possible to generalize the results presented in the Thesis, and further and deeper investigation might be needed in order to give more validity to the conclusions presented here. However, this investigation, being backed up with a strong theoretical background, achieves a certain level of credibility that allows the presented results to carry some truth. The way the information and people's contributions were gathered, compared and analysed in the explained methodology, increases the found result's trustworthiness. Thus, these results are considered relevant and useful in light of further research around the topic.

3

Context

Starting with the portrayal of the context, this chapter intends to provide the reader with specific information regarding the Construction Industry in Sweden. Since the Architect is the main figure of interest for this investigation, his/her role will be highlighted along the description of the context. Thus, providing the reader with important insight regarding how the Architect's role came to be as it is and the evolution it went through. Beginning with information regarding the transformation of the organizational structure of the Swedish Construction industry, the changing role of the Architect will be emphasized. Then, the role of the Architect will be presented along with its work responsibilities, identity and education characteristics. Finally some issues found in the Architect's role within the Construction industry will be presented, thus wrapping up the context and providing the reader with a better understanding of the background and initial information used during this investigation and in the end analysis. Setting the reader in this specific context will help them understand today's situation.

3.1 Evolution of the Organizational Structure

The Swedish Construction industry's evolution during the 1900's has had a lot of impact on the way things work nowadays. Going through a lot of changes during this period of time, the Swedish Construction industry has always been looking to adapt to the people's needs during the context lived. This part of the Context Chapter, will present the evolution of the organizational structure within the Swedish Construction industry. This will be done with the intention of highlighting the Architect's role evolution and set his/her present situation to the reader. Knowing how change took place and why, will be of help in understanding certain behaviours taking place nowadays within the industry.

3.1.1 Previous to the 1960's

During the 18th and beginning of the 19th century, the work of the Architect was represented by the endeavors of craftsmen and farmers who built their homes (Linn, 1990). According to B. Linn (1990), it was not until the late 1800's that a differentiation between the profession of builders and Architects was made; before, those role definitions were difficult to separate from one another. It was during the mid-1800's that contextual conditions started to change and an increased need for new buildings and the start of an industrialization growth, resulted in the beginning of more

defined professions. The Architects became known as promoters of artistic values, architecture history and knowledge of styles.

As aesthetic values gained importance amongst clients and became a big part of the Architect's role in the late 1800's, a need for reliability and broader knowledge in the Swedish Construction industry started to appear (Östnäs & Svensson, 1986). A. Östnäs & L. Svensson (1986) explained that, the Architect started to be asked to increase his/her technical knowledge in practical issues within a project. Hence, a discussion on how their academic preparation should meet this demands started to take place, resulting in major changes on their education program. Their formation moved from the Art Academies into the technical universities, where new technical-theoretical oriented demands were placed in for Architects to graduate (Linn, 1990). As B. Linn (1990) estates, besides architectural modeling and free-hand drawing courses, Architecture students also had to meet technical school terms by taking courses related to math and construction, thus acquiring a more complete preparation for the role they were being asked to develop.

The newly shaped educational profile of the Architect in Sweden, answered to the demands of the people who wanted the Architect to acquire great responsibility and become the client's guardian (Östnäs & Svensson, 1986). 'The Architect is the Client's trustee, thus he should take responsibility for the entire building; that is, for the final design and the construction operations, as well as the technical, aesthetic and economic aspects of the project' (Östnäs & Svensson, 1986, p. 9). As explained by A. Östnäs & L. Svensson (1986), by being in charge for the execution of the building, the coordination of different stakeholders, as well as the design aesthetics of a project, the Architect became the leading role in the organizational structure of the Swedish Construction industry, working mostly on their own as independent professionals. The duties of the Architect as the client's trust-man were the foundation of his/her high position in society; they had the skill to interpret and fulfil the aesthetic and practical needs of a project.

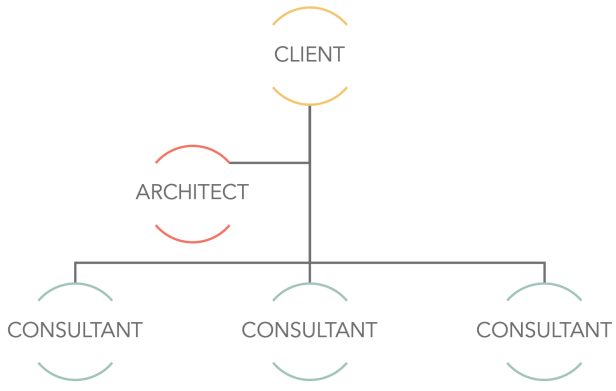

Figure 1. Organizational structure before the 1960's

As the expansion of industrialization and rationalist movements started to strengthen even more in the beginning of the 20th century, a rapid growing demand for urban areas, housing projects and higher living standards began to spread around Sweden (Hall & Vidén, 2005). With an ever growing economy and a constant increase in population, the Swedish Construction industry could not be left behind and started looking for a way to develop and unify its people under a common frame that contributed to fulfilling the needs of the people and, at the same time, answered the demands of the market (Grange, 2005). As a result, an investigation on how to better organize the Construction industry was carried out involving Architects and other stakeholder and, in the 1930's, a new housing policy was implemented by the Swedish parliament, where it was stated that the parliament would take larger responsibility for the housing conditions of the people, thus (Östnäs & Svensson, 1986).

K. Grange (2010) explains that, the parliament's intention was to define more clearly and regulate the Client-Contractor roles, thus private builders who performed as Clients-Architect-Contractor were left at a disadvantage. Also, introducing the independent role of the Contractor in the industry's organizational structure helped the faster development of housing units. Their rational way of thinking and experience performing large-scale projects could be used to fulfil people's needs whilst improving the market's economy.

During this time of change in the industry, Architects intended to consolidate their leading position regardless of the introduction of a new role. They planned on strengthening their role by becoming Client advisors in this newly shaped industry, and thought all the ongoing changes within the industry would be beneficial for them too (Grange, 2010). However, the circumstances of a fast developing society combined with a rapid economic growth, led the Swedish Construction industry into a more business-like oriented perspective, thus organizing the industry according to more market-driven conformations and economic investment ideals (Östnäs & Svensson, 1986).

Acquiring a more business-like mentality in the industry, meant that the exclusiveness of the craftsmanship and the aesthetic wants of the Clients were no longer the most important values that the industry looked to fulfil (Östnäs & Svensson, 1986). This was the starting point of a new era in the building industry in Sweden. The organization of the Swedish Construction industry started to change according to its new values, and a fragmentation of disciplines along with trust issues among stakeholders started to appear as power forces started to adjust (Grange, 2005).

3.1.2 'The Million Homes Program' and its Aftermath

The beginning of the 1960's was faced by an alarming need of housing buildings in Sweden. Even with the new involvement and changes made by the parliament in the industry's housing policies, the problematic did not cease to exist. Looking to solve this problem once and for all, the parliament decided to initiate a program in which a million new dwellings would be built in a period of ten year, between 1965 and 1975 (Hall & Vidén, 2005). As explained by T. Hall & S. Vidén (2005), "The Mil-

lion Homes Program" required of greater productivity and mechanization within the Swedish Construction industry. Thus, mass chain production of prefabricated elements and greater specialization of tasks for the standardization of working systems, were techniques introduced in the building sector that became of key importance in the organization of the industry. The development of this Program became an inflexion point for customize design production, it started to slow down and the role of the Swedish Architect started to change (Caldenby, 2018).

K. Grange (2005) tells that, before the Million Program, Contractors had been introduced to the industry, however their role wasn't completely stablished due to an inconsistent amount of work they received. However, with this new Program, a constant amount of housing buildings were going to be developed with the State as a reliable Client, thus Contractor's companies gained strength and stability, and started to grow. Also, while Architects struggled to standardize their design processes, the State started to rely even more on Contractors and their rational way of working. Contractors started to develop their own design and building systems, thus gaining better control of projects, minimizing risks and assertively responding to the urgent needs the State was having.

The time of the Million Program, implicated a drastic change in the aims and scopes of the Construction industry. During this time, the term 'social engineering' was coined as a way to explain how the focus of the industry has shifted from customized aesthetic design processes the people wanted, into needs of affordable, high speed mass production (Hall & Vidén, 2005). T. Hall & S. Vidén (2005) stated that, although aesthetic and architectural style ideals were not eliminated from the scopes of the industry, the importance of these elements was placed after time and money factors.

The goal set by the government in the Million Program became the main occupation for Architects. However, with the task being so big and the economical and rational questions becoming a larger part of the decision-making process, the leading role of the Architect was threatened and started to struggle to keep control over the whole process of projects. Architects started to be criticized for their lack of economic consciousness and their inappropriate review of construction documents, and a discussion regarding how to utilize their specialized competence in a more efficient way started to take place (Östnäs & Svensson, 1986).

As demands for production standardization grew, and artistic values were being replaced by rational and technical ones; Architects' attempt to argue the importance of the Architecture quality became more difficult (Grange, 2002). Under the pressure of complicated project structures and the frustration of a newly-marginalized role, Architects opted to resign their leading construction management responsibilities and pass them on to companies specialized in construction (Consulting companies), thus the role of the Project Manager was installed (Östnäs & Svensson, 1986). This new role, usually coming from and engineering background, became the Client's advisor (Grange, 2010). Responsibilities that during a long time had belong to the Architect, such as organizational, legal and economic matters; were now transferred to another discipline mainly dominated by engineers (Grange, 2005). Thus, the organizational structure of the Swedish Construction industry had shifted.

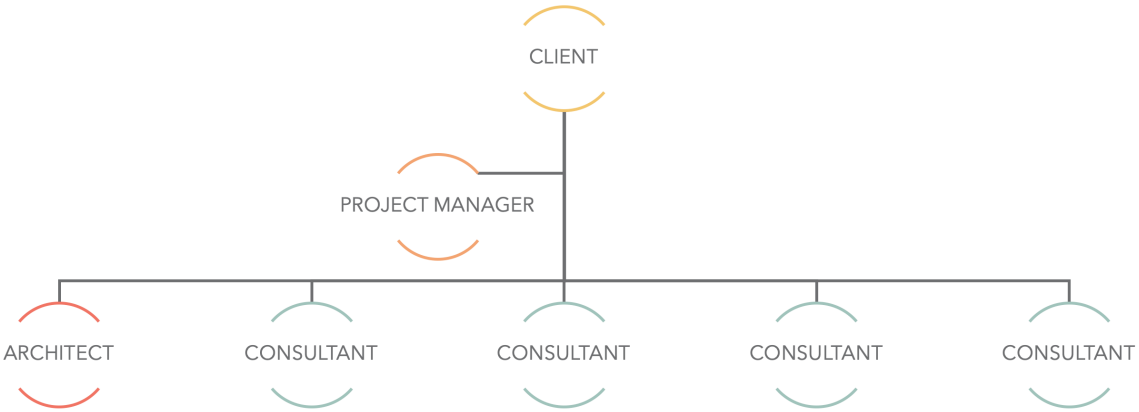

Figure 2. Organizational structure after The Million Homes Program

A decrease in the importance of artistic and architectural values combined with the new organizational structure, led to a more restricted and less independent role of the Architect (Grange, 2002). Architects who previously had been able to follow a project from idea to realization were now often forced to abandon the drawings in an early stage in the process (Östnäs & Svensson, 1986). According to K. Grange (2005), due to the shifting of power and the change in the industry values, a feeling of frustration grew within the Architect's profession. Projects being based on decisions of technical and economic analysis became an impediment for the creative development of the building sector and the Architect's position lost stability.

Suffering of confidence and identity issues (Grange, 2010), Architects adopted an attitude of self-criticism and individualism in the industry (Grange, 2005). K. Grange (2005) states that, in an attempt to strengthen and dignify the role of the Architect again, Architects felt the pressure and the need to fulfill the expectations of their specialization and narrowed their tasks into having a more artistic orientation; Architecture was art. However, the forces of fast production and economic factors were too strong and hard to challenge in the decision-making process, thus no improvement in their position occurred.

3.1.3 Present Situation

Today the Swedish Construction industry is dominated by the Contractors. Acting as both Client and Contractor, four big companies are controlling 40% of the building market (Grange, 2005). Following the organizational structure presented in Figure 2 (Organizational structure after The Million Homes Program), the Architect has decreased its input and lost the power he/she once had. A separation between the architectural qualities from the rest of the building's qualities has been made, thus segregating interests within the industry (Grange, 2005).

As stated by K. Grange (2005), based on social behaviours, a polarization has been identified in the Swedish Construction industry, thus strengthening a lack of cohesive culture within the industry. On one hand you can find the artistic cultural

side and on the other side the technical and economic aspects. The segregation of specializations in the industry has led to a variation of interests from different actors within the industry, and has diminished the development of collective knowledge and understanding. This, in turn, has caused the different interests found in the industry to counteract each other. "It can be concluded that all actors in the industry see themselves as being key players in the process. Everyone wants to take greater responsibility for the construction process in order to gain better control of the elements that their own organization values as important" (Grange, 2005, p. 30).

K. Grange (2005) explains that, the way in which the industry has been structured for decades, has helped strengthen the division of disciplines and stakeholders. Also, the way actors within the industry have been expressing themselves in a derogatory and defensive way towards one another, has led to a fragmented industry full of contradictions. All this segregation, has led to the industry being described as lacking a holistic view of the construction process, lacking quality, having a low innovation level, and having high production costs; all resulting from shift of power and territorialism problems. The industry is being categorized by replacing collective professional terms into individual ones; ethical rules regarding loyalty towards colleagues are being put before the industry's ethics and overall goal. Based on these opinions, a unanimous opinion regarding the industry needing a change in attitude-behaviours and old traditions has been developed.

The historical context gives an understanding of the situation the industry is living today and how the trust and power relationships are operating. Why the organizational structure taking place today is still maintained even though the common opinion is that the industry needs some change? This could be understood as part of cultural structures such as "social belonging", "self-images", "institutional conditions" and "historically established images" of the roles (Grange, 2005).

3.2 Architect's Role

Considering the changes that the Architect's profession has gone through, it is important to understand how the Architect is defined today. As explained by R. A. Lincicome & Z. Weimin (2014), the role of the Architect is defined as the person who is responsible of protecting the welfare, cultural expression, and fair and sustainable development of society's inhabitants; in terms of space, form, and historical context. This person should be professionally and academically qualified, and certified or licensed to practice Architecture.

As described by F. Samuel (2018), the Architect is the one who should take care of the spatial, social, functional and human qualities of buildings. However, their knowledge should also help create values of sustainability and long-term character (Hildebrand, 2016), which go beyond a physical building, thus impacting and making a difference in the way people live (Samuel, 2018). The International Union of Architect adds that the role of the Architect should be devoted to standards of integrity, professionalism and competence; therefore, the profession should contribute

to the society with unique skills and competence to develop a sustainable building environment for good societies and culture (Lincicome & Weimin, 2014).

An important responsibility attributed to the Architect's role, is their duty to provide the client or end-user with objective, open-minded and unbiased opinion on their expertise (Lincicome & Weimin, 2014). Their role is directly linked to the Client. Even if the work of an Architect is done on behalf of the client, Architects should know that their work and knowledge can have a great impact on society and the environment; therefore, they should take responsibility for the opinions provided to the client (Lincicome & Weimin, 2014).

In an attempt to better define the Architect's role, the Council of the European Union (2005) has stated the following responsibilities:

a) ability to create architectural designs that satisfy both aesthetic and technical requirements;
b) adequate knowledge of the history and theories of architecture and the related arts, technologies and human sciences;
c) knowledge of the fine arts as an influence on the quality of architectural design;
d) adequate knowledge of urban design, planning and the skills involved in the planning process;
e) understanding of the relationship between people and buildings, and between buildings and their environment, and of the need to relate buildings and the spaces between them to human needs and scale;
f) understanding of the profession of architecture and the role of the architect in society, in particular in preparing briefs that take account of social factors;
g) understanding of the methods of investigation and preparation of the brief for a design project;
h) understanding of the structural design, constructional and engineering problems associated with building design;
i) adequate knowledge of physical problems and technologies and of the function of buildings so as to provide them with internal conditions of comfort and protection against the climate;
j) the necessary design skills to meet building users' requirements within the constraints imposed by cost factors and building regulations;

Even though the responsibilities attributed to the role of the Architect portray an idea of what people should expect from this profession, a complete understanding and definition of the Architect's figure can only be done by describing the work they perform, the identity they have in the Swedish Construction industry, and the educational background they grow in. In this Chapter, having this information will allow the reader to have the complete picture of how the described above historical context (Chapter 3.1, Evolution of the Organizational Structure) impacted the Architect in particular, and it will enable, further on, a better analysis on why the found problematic came to be and how it can possibly be solved.

3.2.1 Working in the Industry

Even though a formal description of the role of the Architect helps understand their purpose in a construction project, it is also important to understand what their actual tasks in a job are. This will provide a more complete picture of what the Architect actually does. As described by The International Union of Architects, 'The practice of architecture consists of the provision of professional services in connection with town planning and the design, construction, enlargement, conservation, restoration, or alteration of a building or group of buildings. These professional services include, but are not limited to, planning and land-use planning, urban design, provision of preliminary studies, designs, models, drawings, specifications and technical documentation, coordination of technical documentation prepared by others (consulting engineers, urban planners, landscape architects and other specialist consultants) as appropriate and without limitation, construction economics, contract administration, monitoring of construction (referred to as "supervision" in some countries), and project management.' (Lincicome & Weimin, 2014). Considering design is a constant concept describing the Architects work and responsibilities, it is important to understand that 'Design is a work process for developing solutions in a conscious and innovative way where both functional and aesthetic requirements are included based on the end-user's needs. Design is applied for the development of goods, services, processes, messages and environments.' (Stiftelsen Svensk Industridesign, s.f.).

A. Östnäs & Svensson (1986) express that, the work of an Architect requires an extensive variety of knowledge from other disciplines, as well as collaboration and interaction with different managers corresponding to the many projects they take part of. Thus, it can be stated that the work of an architect can be defined expressly by the unique projects the architect is involved in. The majority of architectural firms today are working predominantly with building design processes. These processes within housing projects are in many cases a strictly bounding process with extensive legal and economic consequences and it is therefore surrounded by a lot of legislation and other expressions of state control and of the construction companies' requirements and conditions (Östnäs & Svensson, 1986).

Even though there is a need for multiple disciplines in the Architects work, Sveriges Arkitekter (2016) explains that, the structure of architectural offices differs from many other, in the sense of mainly consisting of one group of people with the same professional education. They explain that, as in many other organizations, in Architectural offices there are also organizational issues such as unspoken hierarchies and a variety of tasks are present. However, because of the lack of other disciplines, the profession themselves usually describe the structure of their offices as a flat business organization, with high influence of the employees, as well as the ability and willingness to collaborate between them. Nonetheless in many other organizations, there is a much more conscious connection between complementary competencies (Hildebrand, 2016).

Considering the variety of diverse responsibilities the Architect has and the isolated work environment in which they develop, K. Grange (2013) states that, there seems to be a difference between what the Architect knows to be their professional role

and responsibilities, and what the Client expects the Architect to actually do. This might derive from the misunderstanding between what the Client believes the Architect does and what they actually do (Samuel, 2018). The consequences of unclear responsibilities, the changing role of the Architect, and doing something else than what practice says; unsurprisingly ends up confusing the public regarding what the Architect actually does.

3.2.2 How are Architects Identified

Part of understanding the Architect's context, comes from the strong identity that follows this figure inside and outside the industry. The common knowledge of the Architect's profession is often unclear and superficial (Östnäs & Svensson, 1986). F. Samuel (2018) argues that, the key attributes of a profession are knowledge, ethics and professional judgement. However, lack of clarity about what it is that Architects know makes it very difficult for them to defend their territory.

When it comes to the Clients perception of the Architect, K. Grange (2013) explains that in many cases there is certain distrust amongst them towards this profession, leading to the Architect's perception of needing to deserve and protect their role. In a set of interviews carried by her, a unanimous opinion, shared by Clients and Architects, was that Architects lacked an understanding of market conditions as well as of the Client's businesses. The consequence of this, enables the behavior of the Architect to act according to own demands. Thus, leading to the public impression, that Architects often "design" in a higher level than the client wishes, and that they design for their own sake and not the clients. Hence, creating a sense of the Architects not doing what they are asked to do.

On the other hand, while this Client's perception is developing, Architects feel they are not in the right environment and working conditions to do their job. The unwelcoming attitude they get from the client to execute their expertise, leads to disappointment and frustration, and a surprising feeling of disrespected (Grange, 2013). K. Grange (2013) explains that, with the lack of understanding for the role of the Architect from society and other stakeholders in the industry, the search for confirmation and acceptance within the profession is not a surprising act. With this in mind, Grange identifies certain exclusiveness around the role of the Architect, which can be perceived by everybody in the Swedish Construction industry. Grange also states that, this exclusiveness has a strong impact in the formation of an identity for the Architect. The situation of the Architect designing 'above' or 'more expensive' than the demands from the client, combined with this perception of the Architect not wanting to follow what the others do or doing what is expected from them, plus the feeling of needing to protect their role as an Architect; is strengthening the creation of an identity defined by exclusiveness and isolation (Grange, 2013).

People's attitudes and behaviors can reflect a form of institutional heritage (Rothstein, 2003). This means that there are certain conditions, norms and identities within each profession; that lead to the creation of a culture tradition. The institutionalization and the perceptions of the different Architect's role in the industry

seem to still be of high attendance and are slowing down the process of innovation and creativity (Byfors & Lindahl, 2019).

3.2.3 Educational Influence

Part of having the explained above identity and the Architect's role developing and being understood as it is, comes from the educational background in which Architects are being prepared for the industry. F. Samuel (2018) explains that there is a vocational approach during the Architect's education in which ideas such as high workload, unsociable working hours, and unreasonable work expectations appear, thus fuelling the introspective-look and exclusive nature of the field.

According to Sveriges Arkitekter (2016), beyond students getting knowledge and skills to design the built environment, Architect's education involves the foundation of Architect's self-image in the future generations. The ways in which we socialize during our education, creates attitudes and perceptions that are likely to stay beyond University level, thus affecting collaboration processes during future professional work (Andersson & Grysell, 2002). A vocational education in Architecture gives the student also a strong sense of identity, where being an architect means so much more than just a profession (Villner, 2008). As explained by L. B. Villner (2008), Architect's education today is pretty much focused only on design and allows the student to become the idea of this pure Architect, doing 'just' design. This strong identity that comes with the education, is not only having an effect in the way Architects dress, as well as shaping the students personality and values in aesthetic and moral issues.

Even though Architects have a design/ artistic education defining their lifestyle and role in the industry, when going out to the real world students normally end up developing responsibilities that go beyond understanding and knowing only design (Grange, 2005). Many Architects graduate from school and meet a different reality from what they were expecting according to their education. As stated by K. Grange (2005), architecture students are being shaped in a culture in which the education is giving them a different picture of the reality of their profession. Many Architects are unprepared for what the profession is actually demanding from them and, when graduates face this reality, it can often lead to disappointment and frustration within the first years of their professional experience (Grange, 2013).

According to K. Grange (2005), the discussion of what the Architect is supposed to do and know, unravels an ongoing discussion of contrasting ideas in which it is questioned if the knowledge of design Architects possess should be the only knowledge they need or, if the core competence of Architects should be compromised for an increase in other knowledge. These contrasting opinions create a division within the industry, in which some believe the isolation of the Architect could be devastating, while others believe architectural education does not belong in the technical university where Architects live under the oppression of technologists (Grange, 2013).

K. Grange (2002) explains that, right now, Architects are streamlining their knowledge towards artistic elements in the profession, while engineers are striving towards a more narrowed theoretical knowledge, thus a difference in education and knowledge

are separating them from each other. D. Engström & A. Falk (2004) add that, the separation of art and science, might be an unfortunate development for both the engineers and the Architects, the respect and understanding they have for each other, and the common respect for the immeasurable and measurable values. Engineers have as much to learn about Architecture, as Architects have about technique. The ability to communicate and collaborate could increase with greater understanding for each profession.

In an investigation carried out by B. Hjort (1997) where the Architect's education was questioned, it was concluded that the changing Construction industry, combined with the changing role of the architects, will require an increase of knowledge from the Architect in areas such as reflection, deeper theoretical understanding, communication, and analysis knowledge. A more academic approach is needed; research, innovation and knowledge sharing should be developed and given greater importance to the architectural activities (Hildebrand, 2016). 'If academic architectural research is to be developed in power and reach, it must be made clear and communicable to others in normative formats that translate across disciplinary boundaries' (Samuel, 2018, p. 183).

The reason why old perceptions and attitudes are still stuck in the industry is mainly being pointed out in the education systems (Byfors & Lindahl, 2019). Education can play an important role in the transformation of the industry, but as long as the interaction between stakeholders during the education is low, the chance of change in attitudes and understanding will not be of significance (Byfors & Lindahl, 2019).

3.3 Looking for a Brighter Future

Historical developments have led to an unbalance between the different stakeholders involved in the Swedish Construction industry, and changes regarding role responsibilities, power shifts, and organizational structures; have created certain cultures identified in behaviors and attitudes adopted by the different professions (Grange, 2005). A. Byfors & M. Lindahl (2019) state that, old structure's memories and perceptions of each other in the industry might be a reason for the slow process of improvement, but even if not much has happened during the last decades, positive changes can be witnessed in the education system. Attitudes, perceptions and stereotypes are not as dominant as before on the different institutions and there is an interest from students and teachers to achieve mutual understanding of the roles and improve collaboration through an interdisciplinary approach.

It is clear that Architects are longing for a stronger role and an extension in responsibilities for the whole building process. In an investigation carried out in the 90's, 80% of the interviewed Architects said that they could be the leading person in the building process (Boström, 1991). Sveriges Arkitekter (2016) adds that, a stronger role for the Architect is also wanted from people outside of the profession. Many Clients want the Architect to take greater responsibility, primarily in regards to the customer's businesses. A study carried out by B. Hjort & A. Forssén (1990) established that, there is a general longing within the industry for a more involved Architect so that their competences can be used in a more efficient way. This same

study identified a lack of mutual respect in the industry and a need to let go of old prejudices and deep beliefs so that change can happen. The Architect being required in other roles, such as Project or Design Manager, strengthens their influence, thus taking the Architect's expertise into the room of decision-making (Hildebrand, 2016).

As explained by K. Grange (2005), many stakeholders within the industry believe that old structures, attitudes, traditions, and behaviours need to be broken and changed. The industry's longing for better communication and closer collaboration is described by her as the main condition for restructuring the processes of knowledge exchange involved in the industry, thus breaking each other's prejudices. A greater openness and collaboration can lead to a better knowledge exchange and many more advantages (Hildebrand, 2016).

4

Empirical Study

In order to deepen into a better understanding of the context described above (Chapter 3, Context), an empirical study composed of twelve qualitative interviews was carried out during this investigation. This will provide the reader with better understanding on the Design phase of housing projects in Sweden.

The following chapter will present the main findings from said empirical study, which later on, will be compared and contrasted with the contextual and theoretical parts of this thesis. Although the interviews were carried out according to the process described in Chapter 2 (Methodology), this chapter will be arranged in a way suitable for the topics of this Master Thesis. It is also important to say that these interviews, being qualitative, reflect the interviewees' experiences and only express their personal points of view. Although difficult to generalize, they do show a repeating pattern that helps the analysis process of this investigation.

In order to keep the anonymity of people and companies, the pseudonym *Interviewee* will be used when quoting or referring to people. This pseudonym will be accompanied by a number and a letter (ex. *Interviewee 1A*), which relates to the order in which the person was interviewed and the stakeholder they represent, A standing for Architect, PM for Project Manager and C for Client. *Interviewees 1-6* relate to the first round of interviews, while *Interviewees 7-12* relate to the second round.

4.1 Describing the Architect

The empirical study started with the interest of understanding how the Architect's role is described, especially by Project Managers who appear to be the stakeholders with whom the Architects have a lot of contact during the development of a project. Understanding the context in which the Architect has to work, became an important step on the investigation in order to portray where and how the problem originates.

Asking Project Managers what is the role of the Architect according to their opinion, gave insight on how the Architect is categorized in the industry and what is expected from them. The study revealed that Project Managers believe the Architect that the Architect's main role is to take care of the design of the project. Although it was not said explicitly, it appeared as if they understood design as the aesthetic qualities of the building which, even though these qualities include functionality, it somehow leaves out the economic and technical aspect of the project.

> *"In Sweden the Architect's role is mainly the design. They have design responsibility... The Architect is mainly design because many*

Architects have a vague knowledge of cost, they can suggest a wall, but they don't know the cost. Architects have a lack of knowledge because Swedish Architects are more narrowed down into design focus."
Interviewee 1PM

"They (Architects) are maybe very good at surface/shallow quality and design quality, but they can't see houses, the whole way; moisture, construction, etc. That is a part where they are not so strong."
Interviewee 5 PM

"My experience is that they (Architects) are mainly focusing on the design issue... We have one party here suggesting larger canopies over the doors or whatever, but it looks ridiculous, I can see it doesn't look nice, but it does the work of keeping the rain out. And usually the Architect says "Let's get rid of it" because it damages the whole design idea. So usually they are not that generalist." Interviewee 1 PM

Even though the Project Manager does seem to be aware that the Architect also develops other activities not related to design, such as being the leader of the other contractors, they did make an emphasis on pointing out the Architect is foremost related to looking after and developing the aesthetic design of projects.

"I would say, in a normal process, the Architect is the leader in the consultant group. She or he, not depending on that, is the person with the ideas on how it should be designed and that is their main purpose. And the other consultants are more supporting him or her, to fulfil the requirements." Interviewee 2PM

"The Architect's responsibility is to do the overall decisions of how the building will look. And then it will be a refinement... They should sell it to me, the client, in the first step. I mean, I need to be in love with the product, otherwise it is a completely waste. In the next step they need to be good at leading the other consultants in a good way"
Interviewee 5PM

Based on the Project Manager's understanding, the Architect is the protector and advocate for the design aesthetic of the project. This implies for him/her to focus mainly on how it looks and solving spaces. This perspective appears to leave the Architect in a very specific position and as the only one responsible for design.

4.1.1 Influence of Education

The Project Manager's perspective, although clear to understand, seemed very limiting for the Architect. However, in the empirical study, it was also discovered that this understanding of the Architect's role was based on what they knew about their education.

> *"I believe in periods, for example during my education, it was a time when the Architect's education was very hazy (artistic), very far from mechanics knowledge, so the Architect didn't really have the knowledge"* Interviewee 5PM

> *"Because you don't talk about that (technical/economic knowledge) at school, it's all about design, which is good, maybe that is what you are supposed to learn to become an Architect, the design process, the way of becoming a creative person, you should limit yourself at school, BUT I think that there should be one or two classes to get the knowledge of the process and how it works when you get out, because you actually ARE the one person defending the arts in the design, and that is good. But you shouldn't have to fight for things that are not possible."* Interviewee 10PM

The Architect's education appears to be mostly based on design aesthetics, leaving Project Managers under the impression that the Architect is not prepared or capable of understanding or being interested of anything else. Along this investigation it will be possible to see how Architects relate to other stakeholders such as Project Managers and Clients. This will help portray a problematic in their position and it will also provide with better understanding on how this problematic came to be.

4.2 Quality Understanding

The concept of quality is broad and complex, its definition and understanding depend on the context it is portrayed on. However, considering housing projects have a specific aim of what the result product should be and the function it should accomplish, "good quality" in this type of projects should be able to be defined in a similar or same way by the stakeholders involved in the process, specifically the Architect and the Project Manager who guide the Design phase and, in closeness with the client, set the scope of the project's final result.

Looking to see if this supposition was true, interviewees were asked to define what they considered to be "good quality" in a project. The most relevant findings out of this question are presented in this chapter. These findings not only confirm or deny this supposition, but they also portray an insight on what both Architects and Project Managers want to achieve when developing a project and how they explain it to others.

4.2.1 Architects' Point of View

When regarded with the quality question, interviewed Architects brought up the concepts of "good design" and "good economics", the combination of which enables a housing project to be referred to as having "good quality". However, while they were clear to express that "good economy" referred to not spending a lot of money on the construction of the project, they were unable to describe what they meant by "good design".

"We don't have a project unless it's a good design and a good economy, so they are very well connected. But of course, there are a lot of different views about what is good design. That is a very big question."
Interviewee 6A

"If you can make a good design from the start, which is not too expensive then you can have probably a good project all the way, but if it is too expensive at the start then it is... we have problems."
Interviewee 9A

Although they were not able to explain what they meant with "good design", it was possible to see that they thought the visual aesthetic part of a project was important when describing what should be considered in the definition of "good quality".

"So, the problem is that the Project Managers are always like more technical rather than (about) the full situation... I think that is something that is missing in the broader quality topic, actually. And I'm pretty convinced that it is about the money as well... I think that you pay much, too much money for things that you don't see in the building today" Interviewee 3A

"I would say it is always on the details, that you have good materials and think like long time for the building, that they are going to stand there for a long time" Interviewee 4A

"I think one interesting question is how come that most, over 90% of buildings are really really ugly? The ones produced in Sweden."
Interviewee 3A

However, as with the concept of "good design", the definition of "good quality" seemed to be clear in their minds, but when put into words it was ambiguous and not clearly explanatory or straightforward.

*"I think much, very very much about the things that are built, are not built with high quality."*Interviewee 4A

"I think it is sad, because now there are very high quality projects that are very expensive, and then the others... before in Sweden it wasn't that way, in the 50's it was a lot of buildings that were built for everyone, it was not that expensive and it was good quality. Nowadays I don't think it is." Interviewee 4A

4.2.2 Project Managers' Point of View

Asking the same question to the Project Managers proved to have a different result. They were able to explain their definition of "good quality" in a clearer way and even used some examples to make sure it was understandable what they meant. Their first approach to "good quality" in a project was the economic aspect of it.

According to them, a project with this description should be an efficient monetary investment in which the construction process should not cost too much and the final result should bring economical profit in the near future for the client.

> *"As a Project Manager, I don't allow a landlord to say "We want a good project", I would say "Good in what way? Do you mean high quality, or low cost, or high income? Very neat design?"... Most projects have the economic (factor), (it) isn't greatly affected if the design is good or not... So, a very good design can cost twice as much as a very standard, but you cannot get the double income from e.g. rents."* Interviewee 1PM

> *"...they (Architects) had made a design on the facade and the roof and got a very quick shelter around this building in order to keep the rain and moister out, and that will be very good quality. But the suggestion was to put the facade together on site and it would take months and you have to have a big tent and that would be very costly with the storms..."* Interviewee 1PM

> *"(Quality is) A building that has a functional design, like it contributes to us both in short and long terms. And a low need of maintenance. And of course, the total sum of the project is good. It should not be an over prize just because it is designed a certain way."* Interviewee 5PM

Another factor that was described by the Project Managers as being important for the definition of "good quality" were the technical aspects of the project, such as structural solution, proper insulation, working heating systems, etc. The functionality and optimization of these aspects was made relevant in their description.

> *"One of the challenges for quality I would say is the moisture in the buildings today. We have quite a lot of problems with damped buildings and that is one of the main... it is usually the Architect's scoop of work. To secure that you have a good solution that worked with the climate and the rain and stuff... I can see many design solutions that are high quality design wise, but maybe they maybe won't put the rain out of the facade that good, because larger pieces would make the weather work better."* Interviewee 1PM

> *"Quality for me is connected to the product, not a process. The process could be good, but the product has the quality... good quality is a building with no technical errors, a product that mainstream people can look at and say "This is a good building". It doesn't need to be a high-profile building, but it's an ok building...and those who live in it, think it's a good building...(The Client) have decided what type of building system it should be, it is not only plan efficiency system. We always build with prefab concretes... It is a very controlled process; it makes it easier to achieve the quality requirements. We don't have any problem with tenants hearing each other. And the heat isn't leaking out*

through the walls. It is rather good, it's a bit more expensive than other systems, but during the whole time that we have it, it will be a better product." Interviewee 2PM/C

Based on the Project Managers' description of "good quality", it is possible to notice that, unlike Architects; they do not prioritize the aesthetic and design characteristics of a housing project as important to formulate their definition. Also, based on what they said, it is easy to follow and understand what they mean by good investment and good technical solutions. However, it is interesting to see that, even though Project Managers strongly focus on technical issues, it looks like when there is a problem within this area, they a tendency to attribute these responsibilities to the Architect.

4.3 Decision-making Process

The decision-making process of a project is very important. It dictates how the project will move forward in order to reach its final goal. In construction projects, this process is influenced by multiple stakeholders depending on the phase the project is on. However, the final decision is always made by the client, thus making him/her a main character throughout the project.

"Usually you have a Client having a request saying "We are going to build this", at that stage they don't really know what to build, but our job is to build what they want because they have a big bag of money they want to spend... So, I usually always let the Client know, you can choose this or this... it is not the Architect's decision, it's the Clients." Interviewee 8PM

"The Client is always the one who has to make the decision... you have to understand that the Client rules the project, but you have to be supervisor giving good advises during the whole process, but the Client always has to make the decisions." Interviewee 9A

"The Client owns the project and you have to have a good cooperation with your Client and you have to make the design that you think is good and the Client likes." Interviewee 10A

"We have very big companies that are customers and they keep coming back because we have a good relationship... at the end of the day, they (Clients) are taking the decisions. Whether to move on, whether to mix certain system choices... choices of ventilation systems, choice of the level of quality and expenses, that is their choice." Interviewee 10A

In the Design phase of a housing project the Architect, Project Manager and Client are the main stakeholders taking part of it and, even though the client is the one with the final ruling, the decision-making process of this phase is influenced by the way these three different stakeholders interact with one another. The creation of

relationships combined with the input these stakeholders are expected to bring at a certain time of this phase in the project, influences the opinion of the client, thus having an impact on his/her final decision.

4.3.1 Relationship Formation

Carrying on this investigation through interviews, allowed for a deeper understanding on how these three actors interact. The following findings not only portray said dynamic, but also give an insight on what is expected from each stakeholder, how much impact they could have on the final decision and why.

The series of interviews carried out for this empirical investigation, provided with information on how relationships usually take place in the Design phase of a housing project, between Architects, Project Managers and Clients.

> *"So, it could be either way. Sometimes the Architect is early in the project phase and has the greatest understanding of the project, and sometimes the Project Manager has the greatest understanding."* Interviewee 1PM

> *"Usually the Architects are the only consultant in the very early phase. The Project Manager, Architect and the Client are usually the ones being in the first phase. The Project Manager and Architect are usually in the project very early. The others come later on. The others are not brought until you have a good idea and decided that this is a good project."* Interviewee 1PM

> *"Sometimes we are hired by the Client and sometimes we are contacted by the entrepreneur (Project Manager), so it is kind of very different, I mean, some (projects) are both."* Interviewee 4A

> *"The early stages of the project there is often only the Architect and the Client. I would say that the Project Manager sometimes is in that, often not."* Interviewee 4A

> *"The Client has a very strong relationship with the Architect first. Then the Project Manager comes in."* Interviewee 8PM

There are usually two scenarios on how relationships between the Architect, Project Manager and Client form, where the main variation between them relies on who is invited first into the project, the Architect or the Project Manager. As the Client is the one requesting a service, he/she is the one in charge of starting the interaction process according to what he/she needs.

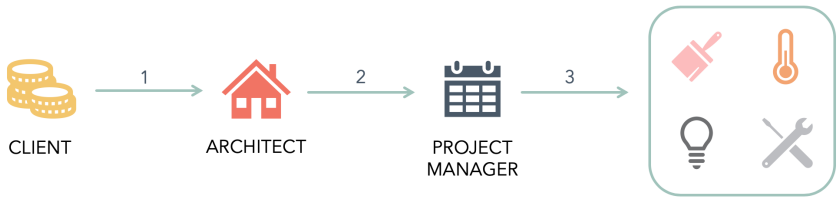

Figure 4. Formation of collaboration relationships 1
Architect is invited by the Client into the project first.

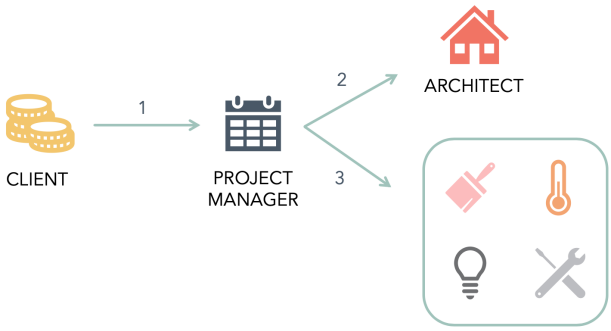

Figure 5. Formation of collaboration relationships 2
Project Manager is invited by the Client into the project first.

The diagrams in Figure 1 and Figure 2 show an important link between the Architect, Project Manager and Client that places these three stakeholders as main characters of the Design phase in a housing project. Since the Architect and the Project Manager are the first to be contacted by the client and have direct interaction with him, these two figures develop a close relationship with the client.

> *"So, if you have contact straight with the Client, sometimes it is easier to convince that person. But it could increase the possibility to get some better status and better control of the result."* Interviewee 3A

> *"I feel like they (Client) often have a kind of trust in us, but if there is a Project Manager from the beginning at the start of the project, then I feel like they have the closest contact with the Client, more than us, because then we (Architects) are like one of many consultants."* Interviewee 4A

> *"It is really difficult to know how... how other people work, but I think a lot of Architects are really tight to the Client, and the Client looks at the Architect as someone to really have a deep relation with."* Interviewee 7A

"When I worked with Astra, the Architect there had worked with them for many years, so they had a very strong relationship with the Client."
Interviewee 8PM

According to the information provided in the empirical study, being in constant interaction with the Client, the Architect and Project Manager have the opportunity to influence his/her opinion, thus having also an impact in the decision making-process and the final decision.

4.3.2 Chronological Influence in Decision-making

Although both Architects and the Project Managers are in a privileged position having direct contact with the client from the beginning of the project, further investigation in the empirical study revealed a contrasting finding in which the Architect does not have a strong voice when the decision-making process is taking place; regardless of their early participation in the project and their tight relationship with the client.

"Someone (Architect) in the team can raise a solution and present it, and if it's likely that they (Client) will like it, we can spend time on this and make sketches as an alternative, but that also has to be in reason. But if the Client has been very specific and wants this done by Monday, within this budget, they are not likely to be interested in a second opinion." Interviewee 1PM

"The common thing, I think is that we (Architects) are not in charge of the important decisions. So, the decisions for the Architect, that we find important, we are not in charge of that, making the choices."
Interviewee 3A

"Sometimes the Client just says to the Architect "Just let them draw something, it's going to be changed in the end anyway". That's a shame, because he (Architect) should just have the right information instead." Interviewee 8PM

"Interviewer: Do you think that Architects have the right amount of influence in the decision making of a project? Interviewee: No, not really. Especially in some kind of projects, I think the most problematic one is housing projects, where it is a major challenge with high building costs" Interviewee 9A

Intending to find out the reason for this discovery, interviewees were asked to describe, in a general way, the chronology of the decision-making process and its participants' input that a housing project follows in the Design phase. Although the interviewees did not hesitate to clarify that the Design phase is not strictly developed in a single way, the process described by most interviewees followed a similar path.

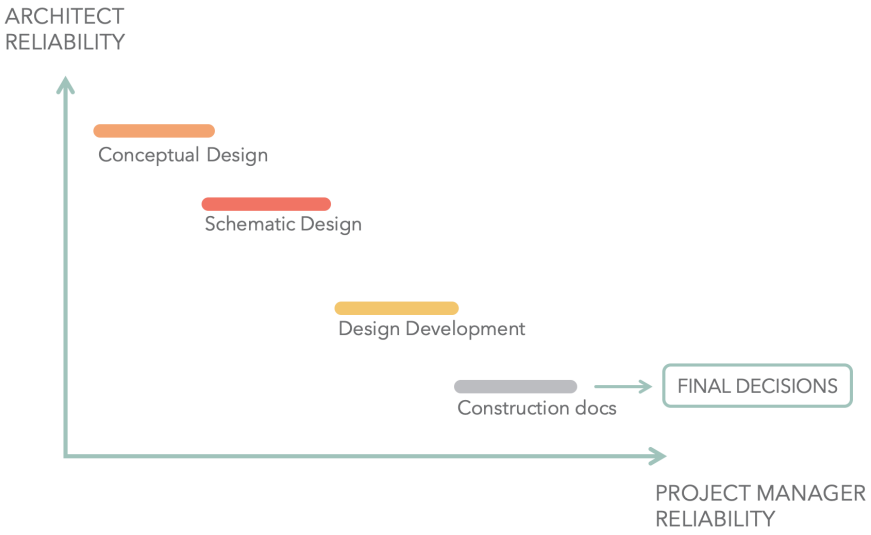

Figure 6. General process of decision-making in the Design phase. This diagram represents a general and simplified version of the process as described by interviewees. It shows the relation between the inputs of the Project Manager compared to the inputs of the Architect.

The portrayed decision-making process combined with the comments provided by interviewees while describing it, showed that, although the Architects are always a present figure in the process, they are not regarded as influential people when it is time for the final decision to be made. They are mostly described as the ones that are in charge of drawing what they are told and of doing the changes that said drawing might need in order to please the Client.

> *"That is the primary task (designing) from the beginning for an Architect. We don't let them draw the outside; we start with the inside. And we know relatively well from our current tenants or Clients what they want to have, how large should a two-room apartment be, how large should a three-room apartment be and that's what we focus on in the first stage. We much work very close together."* Interviewee 2PM/C

> *"So, if we are going to do this with this amount of money, we have to do certain changes... Sometimes they (Client) decide we want all the material the Architect picked on the first floor... So, I usually always let the Client know, you can choose this or this, but then it is not the Architect's decision"* Interviewee 8PM

It is pointed out by the Client himself that, although their starting relationship may sometimes be with the Architect, when the time comes to make important changes or to take a final decision, the Client relies more on the Project Manager. Especially

in housing projects where money is of big interest; in the client's opinion, Project Managers can talk money and time better than Architects.

> *"You (Project Manager) are mostly the Client's voice. And mostly the Client focuses on the budget part because that is what they can control better. Would it be valid for you, at some point in the decision-making, to agree more with the Architect and try to not change the Clients mind?"* Interviewee 1PM

> *"We (Client) don't have so much opinion on the architectural, it's like that's their profession and we pay them to deliver this, so it's only kind of the economic questions."* Interviewee 11C

Although the Architect is involved in the whole Design phase and might even be the first person the Client contacts, the empirical study showed that the Client and the Project Manager appeared to have a better understanding of each other and be aligned in the same interests for the project. The client understanding better what the Project Manager says, is then inclined to relying and trusting more their opinion.

> *"Sometimes the Project Managers are in charge for the whole cost picture... So, if you have contact straight with the Client, sometimes it is easier to convince that person. It could increase the possibility to get some better status and better control of the result... We (Architects) can understand the cost. Everything is not as important; of course not. But they (Project Managers/Clients) don't dare to take the discussion because they think that we think that everything is important and that we don't want to change anything at all."* Interviewee 3A

> *"And the whole market is influenced by people (Project Managers and Clients) coming from the construction industry, they are super concentrated on the cost level, because this is the normal way when the constructor gets the commission and also is done with the commission."* Interviewee 12A

> *"Both our Clients and the construction industry are a little bit... the leading characters are from the same origin, they (Project Managers and Clients) come from the construction industry basically. So, in my perspective they are a bit over-focused on the cost side... Architects, in general, can be marginalized quite a lot"* Interviewee 12A

Comments made to the Architect on what he/she needs to change in the design, are not based on the conceptual design, but rather on the cost it has when being built. Although the Architect appears to be in the right time at the right place, his opinion and area of expertise is not having an impact on the Clients decision.

4.4 Economic Impact within the Industry

During the empirical study the thought of money and project-economy was a constant that seemed to be in all interviewee's minds. The construction industry was described to be highly influenced by it and, even though the final judgment is made by the Client, money appeared to play a big role on the decision-making process and the opinions he/she listened to.

> *"Because time is, of course, money, but there is a certain point when pressuring time will not be sustainable. Of course, time is money and money rules."* Interviewee 6

> *"It is like at home, money is important. And even if you have a lot of money, you don't want to waste money. I think it is in our genes, we don't want to waste it. We want to be careful about money. It's respect for resources."* Interviewee 7A

Housing projects, being regarded as investment projects rather than iconic buildings, are highly driven by money. As a result, one of the main reasons for developing housing projects turns out to be to make money back in a fast way and with an extra profit.

> *"We (Client) also need to have apartments that will be rentable and where the person we rent them for will stay and think it's a lovely place to be, so they don't move around all the time."* Interviewee 2PM/C

> *"That is why you always come back to the costs, because somewhere in the end the property owner invests money that is being paid by tenants... I mean, the whole thing is related, you can't just start building and then say "Oops that got expensive."* Interviewee 10PM

Moving further along in the empirical study, the topic of money was used to have a better understanding on why the Architect seems to have a weaker input when decisions need to be made. Since this topic was a constant throughout the interviews, asking more directly about it gave insight on why the Client seems to relate more to the Project Manager and misunderstand the Architect, thus affecting the impact this last-mentioned stakeholder has on the final decision. Also, the following findings give away a reason why the Architect might not be able to convey his/her interest for design in a relatable way.

4.4.1 Client's Money

As shown in Chapter 4.3.2 (Chronological Influence in Decision-making), Clients and Project Managers generally come from an engineering formation, thus sharing a better comprehension and more interest in numeric results and technical terms. Within this technical understanding and background, design qualities, such as functionality and sustainability within and aesthetic frame; tend not to be a priority when judging a decision in the making of a project.

Looking at housing projects as investment machines to make profit and not prioritizing aesthetic aspects, has resulted in Clients normally having broad knowledge on the calculations of sellable meters squares and strict rules for space measurements. This means, that they already have a clear idea of how they want the Architect to "solve" the project and clear limitations and rules on what they will invest or not, leaving little space for the Architect to bring in creative design input.

> *"We (Clients) have very strong demands on what the architect shall achieve with the projects. We have a rather long list of this and this and this... is what you need to achieve. So, very much it is a question of the plans, the... floor plans. So, they will be efficient enough. That is the ground for economy in the project. If we don't have the efficient plans, we don't have the possibility to get enough money."* Interviewee 2PM/C

> *"In some questions, we (Clients) have a very strong view inside in the house as well, so, there I need to "Ok, we have decided this" and that's what you (Architect) have to live with. And many decisions about the facades and the outside of the houses are part of the economic reality."*Interviewee 2PM/C

> *"This is what you (Architect) have, you have the planning permission from the town, you have to fulfil that, you have to fulfil all the other responsibilities that the authorities will lay on us... if a two-room apartment can be like 48 square meters instead of 55 square meters, it will be cheaper at least. So, that's why it is so important to us (Clients). And many people don't really need those extra 4-5 square meters."* Interviewee 2PM/C

Although the empirical study pointed out that Clients do not disregard completely the design element of a housing building, it was possible to see that interviewees felt the Client always prioritized money. Clients appeared to think of the design aesthetics only as a way to make the project more attractive for tenants, thus increasing its monetary value, rather than thinking of the spatial and sustainable qualities design can bring.

> *"But I should say it is too much focus on the cost and it means that, in the end of the day, it is a decision by the Client to buy the construction company to a certain level of investment. And here we can... Architects, in general, can be marginalized quite a lot "Well, we have to reduce the cost 20|% percent" "Ok, but who is taking charge or responsibility about the outcome of the Architecture?"* Interviewee 12A

> *"But most projects... come down to money, time and money."* Interviewee 10PM

> *"Let's put it this way, if you (Architect) are facing a Client, he is of course... he is frankly quite interested in the Architecture, a little bit interested in the technology, and he is VERY interested in the economy."* Interviewee 12A

From these statements, it is clear the client, in this specific type of projects, is very interested in the economic aspect when it comes to decision-making. It also becomes apparent that the Architect's role, as understood by the Project Manager/Client (Chapter 4.1, Describing the Architect), does not seem to fit with the interests they have in mind.

4.4.2 Money Impact on the Project Manager

The project Manager, sharing similar interests to the ones of the client (Chapter 4.2.2, Project Managers' Point of View) and having the same background and understanding as them (Chapter 4.3.2, Chronological Influence in Decision-Making), finds it easy to communicate with the client in an understandable way.

> *"In the beginning of a project, the Client usually thinks they can do everything on their own, they are after a while bringing in the Project Manager... then it is my role to say "This is very expensive, do you want to have this? Is it worth it in the end? You have this amount of money"... The Client brings the PM to the project to have more control of the economic part of a project."* Interviewee 8PM

> *"The Architect had drawn very nice facades, fancy materials on the facade. But the Client couldn't see the difference between this and this. And we (Project Manager) told him "This costs twice as much as this, do you still want this?" And in the end, they choose something in between. That is our role, we deliver numbers for him."* Interviewee 8PM

Acting almost as an intermediary that translates the Architects' message to the Client, the Project Manager manages to put information into words that are attractive to the Client so that they can make a decision based on what they find attractive. This leads the client to go for the Project Manager for support when he/she does not know what to decide.

4.4.3 Money Impact on the Architect

Between having different interests (Chapter 4.2.1, Architect's Point of View) and being the only advocates for design in a project (Chapter 4.1), Architects are not being trusted by Project Managers and Clients when it comes to the economic aspects of the project. They are left aside in this area, even though it is a very important one for the decision-making process, thus having a weaker impact than Project Managers on the client's opinions and final decisions.

> *"Since the education has been focusing on design issues, for quite a long of time, almost close to art history design wise, so I would say in design matter, a great trust (for the Architect), but will it work, will it be within the budget; that could be perspectives not foreseen by Architects."* Interviewee 1PM

"I think we (Project Managers/Clients) are afraid of letting them in to that room (see budget, economy), because every hour I teach an Architect about the cost, I am charged by them." Interviewee 5PM

"One is that Swedish Architects are very much focused on design and don't have that much understanding for the economics, the economic questions, how important they are." Interviewee 2PM/C

"The Architect is mainly design because many Architects have a vague knowledge of cost. They can suggest a wall, but they don't know the cost. Architects have a lack of knowledge because Swedish Architects are more narrowed in design focus." Interviewee 1PM

"I think that there is a mind-set, there has been a mind-set in the building industry, in the entrepreneur thing, where Architects are just difficult, they are just messing things up. It is also about the knowledge and understanding. I mean, you have to understand what is driving them (Clients), what is their initial goal in life. And their drive is to make money." Interviewee 6A

Thinking that Architects do not share their interests and don't see eye to eye, Project Managers and Clients believe they are not able to perform their design duties to their best because they do not have economic knowledge. According to them, usually Architects do not come up with good economic (cheaper) proposals that are attractive to the Client, resulting in them not being incorporated in certain conversations. Project Managers and Clients think that by acquiring economic knowledge, Architects will be able to have a better and stronger input in the decision-making process. It will allow them to have better discussions with the other stakeholders and it will make it possible for them to defend their design ideas in an understandable and attractive way.

"I think they (Architects) should have more economic knowledge because then I think we would have a better project. We don't have to do all these changes." Interviewee 8PM

*"I think that is very important, to be aware of that (economic aspects), because as an Architect is not easy, but you... you want so much, you want to create things that, at the end, very often you will hear "It is too expensive."*Interviewee 10PM

*"The credibility for the Architect would be more... If I had an Architect that had big knowledge in economics, I would trust that one, I would depend on that person drawing what is most beneficial for the project."*Interviewee 8PM

"Good design doesn't become good design without knowing the whole thing... I think the Architects will take a more important part if they knew about the prices; they could have a bigger impact of the project...

So, the frames are important and the economical frames and the quality frames are an important part of that." Interviewee 10PM

*"They (Architects) know that if they want to work with us, they have to have an economic knowledge and know how, and explain that "This may seem like a detail but if we can do this instead of this it would reduce cost effectively."*Interviewee 11C

Adding the Architect's perspective to this matter, the empirical study revealed that, although Architect's agree they need more economic knowledge, it seemed as if they considered they had some awareness regarding that topic and that it was the Project Manager's mistrust that was putting them at a disadvantage when collaborating. However, they also appeared to agree that maybe the way they communicate this economic awareness is not the right one.

"Often we (Architects) are quite off to the budget thing, I think that is one thing I think is missing, the faith of... to rely on us as a party in the economic thing... they (Project Managers and Clients) don't want us to see that, I think. I think that is quite common. But sometimes they open up and it works much better." Interviewee 3A

"If I (Architect) knew more about the economical (aspects) of the project, it would be better for the project and for me, because then I can suggest something that is possible to do. So, I often ask for that, so I would like from the Project Manager to be more open and explain." Interviewee 4A

"Because if you (Architect) manage to talk in terms of investment and value, then you have very good arguments for what you want to achieve, or what you are aiming for. I think you have to touch the Client's heart, the Client's brain and the wallet. So, if you are able to discuss this, then you will end up on a better level in the discussion." Interviewee 7A

"So, I (Architect) prefer to talk about things that people understand... you should speak with what the Client wants to speak about, but we are so focused on our design and dreaming about Architecture, that we are a little bit stupid in that, I should say." Interviewee 12A

Even though Architects seem to have some tools to relate their design ideas to the Project Managers' and Clients' interests, there appears to be a miscommunication factor preventing this from happening. Unblocking said limitation, was looked as a possible solution for Architects to have a less disappointing design outcome out of housing projects.

"It should be so much easier to be an Architect, because then you don't get disappointed all the time. You design something that you think it is really really great and then "Oh nah, it is too expensive". Maybe if you (Architect) have the frames you can still do something fantastic, but within the economical frames and that is not impossible." Interviewee 10PM

5

Translation Theory

As understood from Chapter 3 (Context), the Construction Industry has a multidisciplinary quality where different stakeholders meet and, regardless of their different professional backgrounds, come together for the realization of a common goal. This organization, being constituted by multiple actors, is subject to the natural and organizational process of group formation (Clegg, et al., 2016). As explained by S. R. Clegg, et al. (2016), part of a multidisciplinary organization is the assignation of roles and responsibilities; which encourages individuals to create groups that provide them with accreditation, prestige and professional trust within the community. These groups, derived from common interests and functions, provide group-members with a strong team culture or identity that helps and influences the way they understand their tasks and inputs within the organization (Bolden, 2011). This is the nature of group dynamics that enable collaboration within an organization (Clegg, et al., 2016).

Also, as showed with the findings gathered in Chapter 4 (Empirical Study), the Design phase of a construction project is embedded in an extended network of stakeholders with different disciplines of specialization, where the above mentioned activities of group dynamics are inevitable (Suchman, 2000). However, as explained by L. Suchman (2000), an important part of these activities involve organizational actions of sense making, persuasion and accountability. For efficient collaboration processes to be able to take place in a multidisciplinary organization, the development of group dynamic activities is not enough. Organization members are required to be competent beyond their task execution and be able to perform the above-mentioned organizational actions (Suchman, 2000).

Based on the findings from the interviews and the interesting statements made by Architects in Chapter 4.4.3 (Money Impact on the Architect), it was realized that being a competent organization member requires learning how to transmit one's experiences and knowledge, through acknowledged forms of speaking, writing and other productions; translating them in intelligible and rational organizational actions (Wæraas & Nielsen, 2016). 'Demonstrations of competence are inseparable in this sense, from artful compliance with various professional disciplines, reflexively constituted through those same demonstrations' (Suchman, 2000, p. 313).

The following chapter will present a description of the concept of Translation, the process it follows, its characteristics and the side-effects it can have when being implemented in an organization. By having a deeper knowledge regarding this topic, it will be possible, further on, to develop a better analysis of the investigation and the reader will have a better understanding on the problem found during the empirical

study.

5.1 Meaning of Translation

The concept of Translation is commonly defined as the act of converting words from one language to another (Oxford University Press, 2019). However, although this is a very straightforward and simple definition, it cannot only be used for the interpretation of spoken languages. This concept can be applied to analyse how different stakeholders within the same organization interact between one another and how they understand each other. As explained by A. Wæraas and J.A. Nielsen (2016), it is a terminology that can refer to the conceptualization of the complex process of negotiation in which there is an exchange of meanings, interests and claims between stakeholders; and a professional, intellectual and, maybe, personal understanding takes place.

The concept of Translation implies conveying a message in a way that is understandable by others so that change or action can take place (Wæraas & Nielsen, 2016). Because Organizational structures, such as the one found in the Construction Industry with its multidisciplinary characteristic, are made up by various forms of knowing and acting; ambiguities such as interpretative processes, experiences, conflicts and power relationships can take place (Suchman, 2000). However, regardless of this mix of multiple factors, understanding and collaboration most happen to achieve a common goal. Because of this, as established by L. Suchman (2000), the act of Translation must juxtapose, summarize and homogenize the information obtained from the stakeholders' interaction in order for reflection, compromise and decision-making to take place.

As described by M. Callon (1980), the concept of Translation involves relating things that were previously different by creating convergences and homologies, assuring that intelligible connections exist between stakeholders, thus emphasizing the interdependence between them. However, the concept of Translation not only involves the manner of speech stakeholders use for one another, L. Suchman (2000) explains that it also takes into account the understanding acquired or transferred by the use of material tools (budgets, graphs, render, etc.). Because material tools are not given in a natural order, but are an effect or produce of the stakeholders involved in the organizational structure; thus Translation is an alignment of human an nonhuman elements (Suchman, 2000).

5.1.1 Process of Translation

The process of translation refers to the movement of people and ideas through time and space within the organizational structure, so that understanding and agreement can happen (Suchman, 2000). Because this process involves each person's interpretation, participation and intention (Wæraas & Nielsen, 2016), Translation asserts the necessity of conversion and change of both the idea and the stakeholder during its process (Callon, 1980).

The process, also referred as the moments of Translation, is described by M. Callon (1986) in four steps:

1. *Problematization:* A problem or an idea is presented by a stakeholder. He/She intends to convince other stakeholders of aligning to his/her point of view by presenting this idea as the "correct" one.
2. *Interessement:* A strengthening of the links between various stakeholders' interests and the presented idea occurs. It involves the form these links take; it can be material tools or speech.
3. *Enrolment:* Participation takes place and an agreement amongst the different stakeholders is built up by them aligning their interests to the presented idea, thus accepting it and prioritizing it.
4. *Mobilization:* Once the stakeholder network is aligned under the same idea; this agreement is kept in place by monitoring and ensuring that the spokesperson acts according to the set interests.

According to the described process, Translation not only seeks to create understanding, but it also enables for change to happen across the organizational structure and encourages stakeholders to take action according to the final agreement (Wæraas & Nielsen, 2016). Also, the process shows how the concept of Translation takes into account the identity of actors, their social interaction and their material means (Callon, 1986).

5.1.2 Characteristics of Translation

Since the concept of Translation involves the result of social interactions and relationships (Suchman, 2000), it becomes complex and acquires three different characteristics. (Wæraas & Nielsen, 2016). These are explained by (Nicolini, 2010):

a) *Political:* Establishing and achieving associations always involves pursuing specific interests, creating differences and sustaining unequal power relationships. In Translation processes, intermediaries have some sort of control mediating desires and expectations by involving persuasive and strategic political tactics in order to achieve the homogenization of an idea.
b) *Geometric:* The concept of Translation involves the movement of an idea across different stakeholders through time and space. Movement happens through the creation of associations and relationships, and the use of verbal and material tools. This makes the stakeholders' interactions the boundaries of the Translation process (Star & Griesemer, 1989).
c) *Semiotic:* Because of the geometric characteristic explained above, the process of Translation is subject to semiotic interpretation, where a shift in meaning in the idea can happen.

These characteristics give meaning to the concept of Translation since they are inbred in its process (Wæraas & Nielsen, 2016). They portray the complexity of contextualizing Translation in an interdisciplinary industry and show how change is always part of the process and its participants.

5.2 Outcomes of Translation

Considering the characteristics of Translation described above, it is possible to understand that change and agreement does not happen by coincidence; it is in fact the result of an active participation and involvement of specific stakeholders in the Translation process (Wæraas & Nielsen, 2016). However, this process can also have some unintended outcomes, which could be looked at as positive side-effects of Translation (Doorewaard & Van Bijsterveld, 2001). These side-effects are influenced by the stakeholders' way of developing the Translation process and the characteristics they emphasize along the way (Wæraas & Nielsen, 2016). This chapter will describe three main side-effects that can result from the Translation process, as described by A. Wæraas & J. P. Niersen (2016).

5.2.1 Knowledge-Transfer

Within multidisciplinary organizations, knowledge can be perceived as a static element that can be stored or replicated depending on the competitive advantage that said organization is looking to acquire; or it can be considered a moving tool that, by transferring knowledge across stakeholders, emphasizes and develops the act of learning throughout the organization (Chiva & Alegre, 2005). Considering the later understanding of knowledge, most organizations use Translation as a tool to ensure an effective flow of critical information and domain-specific knowledge across the different stakeholders, thus promoting knowledge-transfer and ensuring the development of learning (Wæraas & Nielsen, 2016).

As explained by S. D. Pawlowski & D. Robey (2004), Translation can work as a knowledge-sharing tool by framing the ideas of one community's world view, in terms of another community's world view. Being an activity that involves sharing evolving ideas (geometric characteristic) and having an interpretative capacity to develop common meanings (semantic characteristic; two or more groups of people, with different functions or hierarchies, can create a link and common ground of understanding from one another (Merminod & Rowe, 2012). When the need for Translation comes from the difference between stakeholders in an organization, thus different group members can translate their knowledge into a "language" appropriate for the created shared context between groups (Bresman, 2013).

5.2.2 Improved Collaboration

As explained in Chapter 5.1.1 (Process of Translation), change is an inherent part of Translation. However, because the process of Translation stresses the circulation of an idea or practice through highly interactive routes involving social and material encounters (Djelic & Sahlin-Andersson, 2006), change not only occurs to the traveling idea itself, but it also affects, in a collective way, the stakeholders involved in the process (Wæraas & Nielsen, 2016). A. Wæraas & J. A. Nielsen (2016) explain that by creating a common context of participation and growth where all involved stakeholders, regardless of their different functions and hierarchies, take part of the

same changing process; Translation enables and helps interdisciplinary collaboration dynamics to happen in an effective way.

Beyond enabling an idea to go from its abstract form to an enacted practice, the process of translation can be a tool that helps manage and deal with the change brought by the constant exchange of ideas that happens across multidisciplinary organizations (Wæraas & Nielsen, 2016), hence improving the collaboration process of an organization.

5.2.3 Reliability and Credibility

As D. Nicolini (2010) established, one of the characteristics of Translation is the political meaning the process can have. Multidisciplinary organizations are bound to have diverging or contrasting interests amongst stakeholders, so it does not come as a surprise that, in order for a homologous environment to appear; strategic tactics or discursive tricks appear at a certain point of the process (Wæraas & Nielsen, 2016).

It is necessary to recognize that in order to convey an idea that interests other stakeholders, the Translation process requires the liquidation of opposing ideas (Best & Walters, 2013). This is why Translation can be seen as a tool of persuasion that allows stakeholders to actively mobilize meaning towards ones interests, thus gaining reliability and authority in decision-making processes (Wæraas & Nielsen, 2016). The way in which a stakeholder translates his/her message, can also impact the way this stakeholder is perceived within the organizational structure (Best & Walters, 2013).

6
Analysis

Throughout this investigation, the role of the Architect was researched and questioned regarding how their performance in the Design phase of housing projects in Sweden is. Through a process of constant analysis, and as shown in Chapter 4.3.2 (Chronological Influence in Decision-making), it was possible to identify that Architects, although being present in the whole Design phase, play a weaker role when it comes to having an input in the final decision-making process. However, how come this is their situation considering they are one of the main stakeholders taking part in the project?

Comparing the researched context and the information received from the interviews, and complementing it with the chosen Translation theory; an analysis regarding this question will be presented. This chapter intends to explain a problem found around the Architect's role that explains, to some extent, the reason behind their unfavourable working situation. It will present an analysis on how this problem is found and where it appears in the industry. It will also explain the possible origin source found during this investigation, and the impacts it has in the Architect's role and the Swedish Construction industry.

In order to better understand the following analysis, information presented above, along this Thesis, will be referred to and recalled. With this analysis, it will be possible, further on, to suggest a possible solution and explain the possible effects said solution can have in the industry.

6.1 Translation Problems

Although the first findings behind this investigation led to believing that the main problem was the Architect's lack of enough knowledge regarding other disciplines; after analysing the information gathered form the Architect's formation of identity (Chapter 3.2.2, How are Architects Identified), and the answers received from the empirical study, it was possible to understand that there might be another reason leading to the Architect's weak input in the final decisions of the Design phase of housing projects.

As explained in the Translation theory (Chapter 5.1, Meaning of Translation), the concept of Translation can be applied into multidisciplinary organizations such as the Construction industry. By doing this, the Translation concept refers to the way stakeholders communicate in order to make themselves be understood to other stakeholders who come from a different discipline, thus creating a working environment

of comprehension and agreement, which leads to the realization of a collaborative action. Bearing this in mind, through this investigation it was possible to identify three main Translation issues regarding the Architect's role.

The first identified Translation problem relies on how Architects try to explain their own profession and responsibilities to others. As explained by F. Samuel (2018) and A. Lincicome & Z. Weimin (2014), the role of the Architect goes beyond the ability to design good aesthetics. It involves sustainable, social, and end-user skills that can also be brought into the project, thus making it much more complete and compelling for the Client. However, this type of description, although formally used by researchers and authors, is difficult to put into words by Architects without falling into the use of general concepts that are not easy to understand or are easy to misinterpret by others.

As shown in Chapter 4.2.1 (Architect's Point of View), Architects struggled to describe what good quality in a project meant for them, which should be quite easy considering that is the goal they are aiming for in every project they take part on and gives the interviewer an idea of what they do in the industry. Repeating concepts such as "good design", Architects leave the public with an open area for interpretation which, as stated in Chapter 3.2.2 (How are Architects identified) by A. Östnäs & Svensson (1986), usually leads people to not have a clear idea on what the Architect actually is responsible for, thus creating their own conclusions based on what they see or hear from others, even if it is wrong. Using terminology that falls into the generic and not self-explanatory category, makes the Architect unable to convey an understandable message on who they are and what they do, thus an agreement on what the Architect does cannot be reached between Architects and other stakeholders. The Translation theory explains this issue through the geometric characteristic (Chapter 5.1.2, Characteristics of Translation) that the Translation process has. Since the message is put in terms that are only understood by one stakeholder (Architect), it cannot be moved along in the organization for other stakeholders to accept, thus the process of Translation is hindered and interrupted.

The second Translation problem found through this investigation was identified in the way Clients and other professions understand the role of the Architect. As explained by A. Östnäs & Svensson (1986) (Chapter 3.2.1, Working in the Industry), the profession of the Architect has many different tasks involving different disciplines; this combined with the fact that the profession itself cannot explain completely or in an understandable way who they are and what they do, makes it possible for Clients and other stakeholders to take it into their hands to interpret what the Architect is saying. Thus, the term "good design" or the concept of "design", are translated into comprising only the aesthetic qualities this concept has. However, as explained by Stiftelsen Svensk Industridesign (Chapter 3.2.1, Working in the Industry), this concept goes beyond this quality and includes the innovation and end-user factor, which are relevant for understanding the reach the Architect can have by "just" designing.

As shown in the empirical analysis (Chapter 4.1 Describing the Architect), Clients and Project Managers are limiting the role of the Architect to their own understanding of the concept of design. Thus, the Architect's responsibilities and inputs

are also restricted to this narrow description of their tasks. The Translation theory explains this issue through its semiotic characteristic (Chapter 5.1.2, Characteristics of Translation). The lack of clarity in the "language" the Clients and Project Managers are receiving, leads to misinterpretation of concepts and fabrication of own ideas, hence preventing the Translation process to take place fully.

Finally, the third identified Translation problem resides in the way Architects communicate their design ideas of a housing project to Clients and Project Managers. Considering housing projects are looked at as investments (Chapter 4.4.1, Client's Money) and Clients and Project Managers are mainly focusing on the economic aspect of this projects, the Architect should be able to sell his/her project in a way that is interesting and relatable to them. However, as shown in Chapter 4.4.3 (Money Impact on the Architect), Architects have a hard time explaining themselves in monetary terms. As a result, even though Architects might have a good economic proposal, considering they can't highlight these economic elements in the right way when explaining it, this proposal is not taken into account and disregarded (Chapter 4.3.2, Chronological Influence in Decision Making).

Architects are unable to communicate their design message in a "language" that is interesting to the Project Managers and Clients. Because the message is not translated in terms that catch the attention and relate to these stakeholders, they become immune to paying attention and taking into account these ideas. F. Samuel (2018) explains that, the holistic activity of Architecture and the values Architects are creating are difficult to transform into measurable units according to the rest of the industry. The need to break their concepts down into countable values is an unnatural process for Architects.

As portrayed in the Chapter (5.1.1 Process of Translation), the process of Translation between Architects, Project Managers and Clients ends up being limited to the first step of idea creation by the Architect, but it does not reach the second step of Interessement, thus not attracting Project Managers and Clients who would help the created idea be put into action. Also, the fact that Project Managers and the Clients usually come from the same professional background (Chapter 4.3.2, Chronological Influence in Decision Making), helps them develop a better communication with the same terminology and concepts. The collaboration between them is synchronized so that change is managed and accepted by them, leaving outside the loop the one unable to convey their message, the Architect. As explained by the Translation political characteristic (Chapter 5.1.2, Characteristics of Translation), establishing and achieving associations always involves pursuing specific interests, thus creating unequal power relationships.

6.1.1 Impacts of Translation Problems

The explained above Translation issues are categorized as problems due to the consequences they have. The Architects inability to clearly explain who they are and what they do hinders the Translation process and creates a limitation for knowledge-transfer around the network of the organizational structure (Chapter 5.2.1, Knowledge-Transfer). Since other stakeholders cannot understand or know

for sure what the Architect is actually responsible for, misunderstandings are easily enabled and justified prejudices for this profession spread around other stakeholders. Thus, making it easy for others to lose interest in the Architect's scopes and diminish their input in a project.

As described by F. Samuel (2018) in Chapter 3.2.2 (How are Architects Identified), the creation of prejudices and misunderstanding around the Architects profession, makes it difficult for them to be able to defend their knowledge and share it with other stakeholders in a welcoming work environment. This can also be perceived in Chapter 4.3.2 (Chronological Influence in Decision-making, the way Clients and Project Managers easily decide to disregard the Architect's input as not being a priority comes from a lack of knowing what they are actually capable of doing.

Another impact of these Translation issues relies on the Client's misinterpretation on what Architects do. Since the Clients and Project Managers are misunderstanding the Architect's capabilities, it becomes easy for them to limit them to a very narrow area in the industry (Chapter 4.1, Describing the Architect). Not only are they narrowing down their line of scope, but they have also labelled the Architect's input as being completely unrelated to their main areas of focus in projects. As a result, the Architect's input in final decisions is also limited and weak, thus leaving them with an intensified feeling of isolation and frustration (Chapter 4.3.2, Chronological Influence in Decision-making).

As explained by the Translation Theory in Chapter 5.2.2 (Improved Collaboration), the lack of proper Translation processes within a multidisciplinary organization, can hinder collaboration processes by misunderstanding or, in this case, limiting other profession's input on the project's outcomes. As explained in Chapter 4.4.1 (Client's Money), Clients limit the Architects input according to what they "know" the Architect to do, since this information has been translated in an improper way, Clients end up narrowing down too much the Architect's input in the final decisions, thus interrupting their possibility to efficiently collaborate in the final result of the project. Also, as shown in Chapter 4.4.2 (Money Impact on the Project Manager), since Clients and Project Managers seem to speak the same language and thus understand each other, an unbalance of power seems to appear in the impact Project Managers can have in the project, compared to the impact of Architects. This makes an uneven collaboration process, where skills from every profession might not be being used properly or fully. Also, it intensifies the feeling of self-defence and reclusiveness explained by K. Grange (2013) in Chapter 3.2.2 (How are Architects Identified).

Finally, the Architect's inability to communicate an idea in an understandable and relatable way, that interests Clients and Project Managers, has taken a toll in their reliability. As explained in Chapter 5.2.3 (Reliability and Credibility), the realization of a proper Translation process can help stakeholders be better understood in order to receive agreement and acceptance from other stakeholders, thus leading to an increase in credibility and trust. However, as shown in Chapter 4.4.3 (Money Impact on the Architect), Architects are not capable of communicating in an attractive way for Clients, thus Clients believe Architects do not have their interests at heart in projects. Hence, Clients do not believe Architects capable of performing

to their expectations, and a feeling of distrust appears. This is also reaffirmed by K. Grange (2013) in Chapter 3.2.2 (How Architects are identified), where she explains that Clients believe Architects do not understand what they want and the market influence.

Architect's Translation problems have an impact on the final building product. Since all the explained issues are taking part on the Design phase of housing projects, the combination of them has led to the Architect's design quality to be less evolved and experimental, thus the design of these projects seems repetitive and boring. By not allowing the Architect to balance out the qualities of cost and time that Project Managers and Clients are taking care of, the result is a project lacking an innovative, sustainable and social design, and a compliance to what has been built before and it is already known to work becomes the norm.

6.2 Gap of Interests

While doing this investigation, the possible origin for these Translation problems was found. As shown in the empirical study in Chapter 4.4 (Economic Impact within the Industry), Project Managers and Clients have different priorities than Architects when developing a housing project. While Architects are more concerned regarding the design quality he/she can bring in to the project, Project Managers and Client are more engage in topics regarding the cost and time of the project. This results in a difference of interests between these two parties, denominated in this Thesis as the Gap of Interests.

The Gap of Interests is perceived in the way stakeholders are attributed a specialization within the industry. The Architect is assigned the design, while the Project Manager is left to take care of the budget and schedule of a project. This is highlighted in the way they describe good quality in a project (Chapter 4.2 Quality Understanding), while the Architect describes good quality coming from the design quality, Project Managers and Clients use terms that refer to economy and time. Having different interests to focus on when developing a project, leads to a difference in expectations for the outcome of said project; thus fully displaying the Gap of Interests that is taking place within the Swedish Construction industry.

This Gap can also be perceived in the way the decision-making process is taking place. As explained in Chapter 4.3 (Decision-making Process), stakeholders are involved in the development of a project according to the needs of the Client. If the Client is intending to solve something about the design, they call and ask for the Architect, while if they have a doubt concerning the budget or the schedule they go straight towards the Project Manager. As a result, both Project Managers and Architects, have to attend different responsibilities, thus developing major interest for their areas of input in the project, which, in this case, happen to be very different.

The formation of this Gap does not come as something unnatural. Considering the historical context in which the organizational structure of the industry changed into one that had more segregated and specialized roles, it is not abnormal that each role decides to focus in their assigned area of expertise. As explained by A.

Östnäs & L. Svensson (1986) in Chapter 3.1.2 ('The Million Homes Program and its Aftermath), having an area to look after in a specialized way, can lead to a more efficient performance by shaping your professional interests, thus your priorities. Because of the formation of a very organized and specialization-divided structure (Figure 2 Chapter 3.1.2), the way to define roles became straight forward, thus being simplified and boxed into focused skills.

Also, as shown in Chapter 3.2.2 (Educational Influence), this Gap is also a result of the education system that has followed the "needs" and evolution of the industry. This education has also narrowed down the Architect and other professions into their own area of expertise by which they are defined. The lack of interdisciplinary interaction between professions, contributes to the strengthening of this Gap and a bridge of knowledge between interests is disabled.

The dynamic of the Gap of Interests has a natural source of occurrence by the context described in Chapter 3 (Context). Taking this context into another industry, it would also be normal that specialization and segregation are seen as a way to implement efficiency and quality. However, this Gap ends up having an impact in the way each stakeholder perceives, describes, creates, and develops their working environment. When actors in the industry are strongly focused on their own part, the common goal, collaboration processes, and knowledge exchange can be absent. Communication channels, if not treated carefully under this diversity of interest, can be limited and damaged by the lack of understanding and familiarization with other stakeholders' ideas and approaches. Thus the occurrence of Translation problem would be inevitable. The fragmented industry and the fact that specialists in the building industry tend to stay within their area of knowledge and keep others on a distance, can in the worst-case lead to poor knowledge retrieval and stagnation (Hildebrand, 2016).

6.2.1 Gaps within the Gap

During this investigation, complementary gaps deriving from the Gap of Interests were found. These gaps, as explained with the Gap of Interests, contribute to the formation of the Translation issues described in Chapter 6.1 (Translation Problems). It is important to mention that these gaps were found from the strong connection they have to the Gap of Interests, thus they are considered to be part of of it.

The first complimentary gap found within the Gap of Interests is named the Gap of Intensions/Values. Part of having segregated specializations with contrasting interests, affects the way each stakeholders approaches the final goal of the project. As portrayed in Chapter 4.2 (Quality Understanding) of the empirical study, Project Managers and Clients have a different description on what good quality in a project is when compared to the Architect's point of view. With the analysed answers from the interviews, it was possible to see that, although the shared scope of a housing project is to have an end-product building with good quality, because Architects and Project Managers/Clients find value in different aspects of a project, their intensions when collaborating are different. Without realizing it, they want to achieve different end-products and they take action during the project according to their own interests.

By not having a unified common goal and acting in an individualist way, Translation issues are enabled and every stakeholder is not able to use their skills in an aligned intension.

The second complimentary gap found is the Gap of Vocabulary. As explained in Chapter 3.2.3 (Educational Influence), Architects and Project Managers are being educated in a focused way according to the interests they are supposed to protect. D. Engström & A. Falk (2004) adds that, this strong separation of interests from an early stage as education is an unfortunate event , as it enables for strong identities to be formed, and hinders communication and collaboration processes. As seen through the empirical study in Chapter 4.4 (Economic Impact within the Industry), Architects are only familiar with design terms, and Project Managers are only familiar with numeric terms, the Gap of Vocabulary is created out of this appeal to segregate interests. Developing specialized "languages" and having no bringing process between disciplines, gives room to the Translation problems described above.

6.2.2 Gaps Derived from the Translation Issues

Even though the Translation problems might be originating from the Gap of Interests, these issues also leave a trace of different gaps that separates even more Architects from Project Managers and Clients. These gaps make it even harder to bridge and narrow down the Gap of Interests, thus creating a tenser working environment within the Swedish Construction industry. The following gaps were found to be a result from the Translation issues. However, they contribute to the intensification and problematisation of the Gap of Interests.

The first gap derived from the Translation problems is the Gap of Power. As shown in the empirical study (Chapter 4.3.2, Chronological Influence in Decision-making), Project Managers and Clients, usually coming from the same engineering background, develop a tighter relationship of trust between them. Their understanding of each other and the possibility for both to talk money and numeric terms, facilitates their communication and, as explained in the Translation theory (Chapter 5.2.3, Reliability and Credibility), reliability from the Client to the Project Manager develops. However, when considering the Architects inability to express themselves in a relatable and appealing "language" (Chapter 4.4.3, Money Impact on the Architect), the Client's trust and credibility for them is weakened.

Having this reliability unbalance generates power oriented relationships, where the authority is shifted in favour of the Project Manager, rather than being balanced out between him/her and the Architect. Because the Translation process has a political characteristic (Chapter 5.1.2, Characteristics of Translation), achieving an association only between Project Managers and Clients, leads to strategic political acts, where Project Managers can have more power and input in advising the Client what to do according to their interests. Thus, the Gap of Power appears, leaving the Architect in an unfavourable situation to influence the project's outcome, compared to the one Project Managers are in.

The second gap found to be originated from the Translation problems, is the Gap of Does and Wants. This Gap, refers to the difference existing between what the

Architect actually does and what the Client wants. Because the Translation problem enables a misunderstanding in the definition of the Architect's role, Clients do not understand what to expect from them. However, in the Client's intend to make use of the Architects profession; they limit the Architects input to the specifics of what they want, rather than using the full capabilities of what the Architect actually can do. This can be clearly seen during the empirical study (Chapter 4.3.2, Chronological Influence in desicion-making), with the Client having a detailed list of what they specifically want; little room is left for the Architect to develop the skills they learned at school.

When the Architect is unable to express what they can do in an understandable way, and the Client misinterprets the little information described by the Architect, trust issues appear and the relationship between them is damaged. Because of this, the Client looks to protect themselves from the unknown and appeals to limit the Architects input. Unfortunately the Gap of Does and Wants is created, because what the Client limits the Architect to do is different or does not cover entirely their skills and capabilities. As explained by K. Grange (2013) in Chapter 3.2.3 (Educational Influence), this situation of not actually being asked what they studied for leads to feelings of frustration in the Architects profession.

Finally, the third gap deriving from Translation issues is the Gap of Knowledge. As explained in Chapter 3.2.3 (Educational Influence) and affirmed during the empirical study (Chapter 4.1.1, Influence of Education), Architects are primarily educated in design topics under a design "language". However, the demands from Clients and Project Managers require the Architect to communicate and understand terminology and concepts from different disciplines. This is portrayed in Chapter 4.4 (Economic Impact within the Industry), where Project Managers and Clients can be perceived with a longing for Architects to learn about economic aspects of housing projects, so that they can defend their design ideas. A difference between what the Architect learns and knows within the school, and the requirements that Clients and Project Managers are demanding from them, can be seen. And, even though Architects might be familiar with economic and technical aspects, they do not know how to convey this knowledge in the right terms, because of their lack of practice talking these "languages".

The formation of these gaps, derived from Translation problems, results in an even more segregated industry, where the internal conflicts and differences are prioritised over the common goal, which should be to satisfy the end-users needs. There is a need for a solution that can eliminate the Translation Problems and that bridges the Gap of Interests and its complementary gaps.

7
Recommendations

Based on the above mentioned Translation issues, a possible solution will be presented and explained. It will also be discussed the possible impacts this proposal can bring to the Architect's role, and how these can be beneficial to the industry as a whole. It is important to mention, that the following suggested solution is built on the specific context of the Swedish Construction industry, and on the specific situation the Architect is developing in.

7.1 Multidisciplinary Education

Following this investigation's findings, it is possible to say that the Translation problems rely on the Architect's inability to communicate in an appealing, understandable and relatable way to other stakeholders. As explained in the context and empirical study of this Thesis (Chapter 3.2.3, Educational Influence & Chapter 4.1.1 Influence of Education), Architects are being educated in an isolated environment. Not only are they being mainly educated on design topics, but they are also being prepared in a setting where they only need to collaborate and explain themselves to other Architects. Even if they had courses regarding other topics, these tend to also be only for Architects and separated from their design courses, so that the bridging between different topics never happens within their studies. Thus, creating a comfort zone and strengthening what K. Grange (2013) described as an 'exclusiveness', which contributes to the isolation and misunderstanding of the Architect's role.

As explained in the Context Chapter, when Architects are exposed to the real world after education, the industry's organizational structure and needs, demands for them to interact with other disciplines. However, their ability to convey their design message in an understandable "language" to others is a skill that has not been developed considering the educational background they come from. Thus, Translation issues appear and interrupt collaboration processes within the working environment. As explained by Sveriges Arkitekter (2016), even in their work environment, Architecture offices are mainly dominated by Architects talking in design terms. Very few offices are recently changing into a more interdisciplinary atmosphere where design is discussed under the lens of another perspective or discipline.

Considering the important role education plays in the development of the Architect's collaboration and communication processes with other disciplines, Sveriges Arkitekter (2016) say that, the Architect's education needs to keep up developing while its core competence is retained, thus giving the students a view of the diversity of tasks they will have in the future. Architects need to be prepared from an early stage for

a much broader professional practice and gain insights into how the education can be used in more areas. The need for continues training increases as the professional practice opens up new possibilities for the role; research, innovation, and knowledge development is of great importance to be able to meet the demands from the society. Adding to this line of thought, F. Samuel (2018) believes that, a change towards an education involving a preparation with a broader perspective will have an impact in the way the Architect is described and the identity that they have in the present.

Bearing in mind the educational context of Architects, and the above described opinions, we consider Architects get their design skills, professional capabilities and architectural identity from the early stages of education. Thus we propose an increase of multidisciplinary education as a tool to possibly diminish or eliminate the Translation issues found during this investigation. We consider this to be the best approach in light of the impact education has, from an early stage, in the Architect's ability to communicate and interact with others. Attending Translation issues from an early stage, is the base for improving future generation that will be part of the Swedish Construction industry.

By introducing a multidisciplinary education we mean that, Architects should be required to take classes regarding complimentary topics such as structural solutions, economic administration of projects and strategic planning. These courses should be taken along students from these other disciplines. In this way, Architects would be learning from other professions and about them, so that better understanding, respect and awareness for other disciplines is developed. With these implementations, Architects would be required to explain themselves and sell their projects to other professions that are also involved in the Construction industry. Thus, they will have to develop multiple "languages" so that they can justify their designs in an understandable, attractive and interesting way. Also, multidisciplinary education, would allow for other disciplines to learn what the Architect is actually capable of, and to acknowledge their skills. Thus, eliminating prejudices and misconceptions about the 'misunderstood Architect', and eradicating frustrations around this profession.

Introducing a multidisciplinary education would increase awareness and understanding for other disciplines, thus possibly erasing Translation problem. It is important to say that we intentionally mean awareness and not knowledge when talking about the scope of a multidisciplinary education, because knowledge implies a deeper grasp on the topic, while awareness refers to the skill of being able to take into account other elements when designing, while not specializing in these other areas. This possible solution, will not only help the Architect learn how to communicate with other disciplines, but it will also allow them to have a better understanding on how they can incorporate other profession's interests into their design ideas, thus making them stronger and easier to argue for. As described in the Translation theory (Chapter 5.1, Meaning of Translation), having a broader awareness regarding other areas involved in the industry, will help Architects become "bilingual- stakeholders" who would be able to know how to communicate in the right terms to other disciplines.

Supporting our suggested solution, F. Samuels (2018) thinks that Architect's education needs an increased level of academia and awareness based on research in order to get closer to the other disciplines, and to facilitate the multidisciplinary collabo-

rations. Students need to be able to develop the professional judgement to ask the right questions as well as the research skills to answer them. She argues that, the diversity in learning styles and intelligences that exists within student cohorts, must be acknowledged in education if the profession is to become more inclusive. Adding to this, K. Grange (2013) says that more time for training in communicating with other actors would most likely lead to easier access to criticism, but, above all, to the Architects becoming better at arguing for their choices, and how they relate to social issues.

Although interactions with other stakeholders, and awareness regarding their ideas and working styles, are important aspects that should be provided from the early stages of the Architect's upbringing, thus to avoid translation problems; it is important to mention that it is not only the educational system's responsibility to do something in order to improve the collaboration situation for Architects. The industry should also be interested in motivating this collaboration process and should work hand in hand with the education system to provide a real picture of what they need from their graduate students. Also, companies should encourage and promote this awareness by constantly training their employers and incorporating multidisciplinary topics to their daily life. Bringing in disciplines from outside into their Architectural working environment and creating interdisciplinary teams is of value and a key element to eliminating Translation problems.

7.2 A Brighter Future

The possibility of eliminating the Translation problems that Architects face, would allow for better and more efficient systems within the Swedish Construction industry, especially in housing projects. The outcomes of having better communication processes would also contribute to a better working environment that has a positive effect not only on the Architect's role, but also in other stakeholders involved in the project.

As described in Chapter 5.2 (Outcomes of Translation), we believe that solving the Translation problems would open and enable knowledge-transfer channels involving the Architect. Stakeholders from other disciplines would be able to know what the Architect is capable of and how he/she does it, thus learning from their interests and about their skills. This would allow for Architects to be better understood and acknowledge for what they can contribute to the project, and it would also enable their knowledge to be put into more efficient use. This positive effect of knowledge-transfer won't only help eliminate prejudices and judgements towards the Architect's role, but it will also allow Architects to keep on learning from other disciplines, thus making their design proposals more cohesive and coherent with what the industry demands from them. Also, with the implementation of the multidisciplinary education solution, this sharing of knowledge would be able to take place from and early stage in the process, so that change within the industry would happen in an organic way.

Another possible effect of eradicating Translation issues is that credibility and reliability for the Architect would increase. Because other stakeholders would be able

to understand and know what the Architect's input can be in a project, their opinion would be validated amongst others, thus allowing for a stronger influence from the Architect in the final decision-making process. Architect's opinions being understood, would allow other stakeholders to eliminate their prejudices against them and a welcoming working environment of respect would be able to settle within the industry. Also, feelings of isolation and misunderstanding would be eliminated, enabling the Architect with more confidence and willingness to perform to their best, thus gaining the Client's trust and reliability.

One more possible effect of solving Translation problems is that collaboration processes within the industry would become more efficient. By acquiring better understanding and communication channels between professions, and developing trustful and respectful relationships with no misinterpretations or prejudices, interactions between disciplines would develop in a better working environment that allows the efficient and proper use of everyone's skills and expertise. Decision-making processes would probably be balanced between the Project Managers and Clients' interest for Cost and Time, and the Architect interest for design Quality. Thus, a cohesive collaboration would take place and internal power-relationship issues within the industry won't hinder the scope of the project, which is satisfying the end-users needs.

Finally, looking at the bigger picture, we believe that solving the Translations problems and allowing all the mentioned above effects to take place, would probably help the Construction industry evolve and develop better housing project. Having a balanced input from all major stakeholders, would probably allow Swedish Architecture to move forward in the experimentation and innovation areas, thus allowing for better cities to be built and probably also having a positive effect in the social and sustainable aspect of cities.

8

Conclusions

Looking for an answer to the question of what is the Architect's situation right now in the Swedish Construction industry and why, through this investigation it was found that during the past century, an evolution in the organizational structure of the Swedish Construction industry led to the introduction of the Project Manager figure and a segregation of responsibilities according to more specialized roles. This had an impact in how the industry's roles were defined and their collaboration dynamics in the decision-making process (Grange, 2010). During this transformation phase, the role of the Architect shifted from being the person responsible of a project, to today's situation where, in many cases, the Architect is being the advocate of only the aesthetic design qualities of a project.

Because of the segregation and specialization of roles within the industry, the Architect has been placed in a limited position in which they are now the only advocates for the design quality of housing project, thus isolating them from the other stakeholders. This isolation, combined with the difficulty of explaining the design quality because of its lyrical character and its subjective language, has made it difficult for Architects to explain the value they bring into projects to other stakeholders. Thus, finding it difficult to have a strong influence in the end-product of housing projects, most of which are normally driven by money.

Also, the fragmented industry and the fact that specialists in the building industry tend to stay within their area of knowledge and keep others at a distance, is leading to a lack of understanding and poor knowledge exchange within the industry (Hildebrand, 2016). While the Architects are specialized in design qualities during the education, Project Managers and the other consultants usually come from a technical or engineering background (Östnäs & Svensson, 1986). This results in a Gap of Interests where Architects and Project Managers are interested in contrasting aspects of housing projects, thus leading to the creation of tension and power-relationships between them. Adding to this situation, the Architects design-focus education, has limited them to only knowing how to talk design "language". This has led to the creation of challenges in their communication channels. Thus creating trust issues and confusion between them and other stakeholders.

Based on this understanding derived from the main investigation question, it was possible to find a problematic relating to the Architect's role. The Translation problems found around the Architect's role hinder their collaboration processes, thus limiting their input and creating feelings of isolation and frustration. Facing the challenge of speaking in the same terms as the rest of the stakeholders, the Architect's input is reduced to only having the responsibility of design aesthetics,

thus resulting in a lack of acknowledgement for their values and knowledge. With this problematic, knowledge-transfer channels between stakeholders and Architects are limited and, as a result, prejudices and judgements prevail. Also, Architect's reliability is affected and weakened. And, finally, collaboration within the industry is affected and biased by misunderstandings, thus affecting the end-built products' quality.

Considering this discovered problematic in the described context, a possible solution has been suggested. The misunderstandings developed because of the Architect's inability to translate their knowledge to other actors in the industry, is suggested to be reduced by a more multidisciplinary approach in the educational system. By setting the Architect in an educational environment where they would have to talk and learn with and from other disciplines, would give the Architect the awareness and communication skills to defend and better their proposals in projects. Understanding would be improved and the way Architects communicate their knowledge would be adapted to the existing context in the industry.

There is a great opportunity seen in the education of Architects to facilitate change in the industry. The Architect's education should be able to prepare the students to the current demands of a broader role, as well as a fair insight in the requirements of the Architect in the professional life. By giving Architecture students the right tools, their core knowledge of design would be able to be carried throughout the whole industry today. This suggestion would, hopefully, create a curiosity and respectful atmosphere amongst all stakeholders and not just Architect. Also, by introducing this measure in an early stage as education, it probably would facilitate a faster evolution of change in the industry, and collaboration and knowledge-transfer channels would be enabled without being interrupted by misunderstandings.

With responsibility comes power, and if the Architect shows the maturity to understand more disciplines, tasks will be given to them, and their influence and acknowledgement might increase. With a greater input from the Architect to balance out the Cost and Time ideals of other stakeholders, there would be an opportunity to strengthen the common goal of satisfying the end user's needs and requirements.

Considering Architects create soft and abstract values, which are sometimes difficult to describe, they need to work harder on their communication skills compared to other disciplines. By working consciously, showing interest and understanding of the people they work with and design for, other stakeholders would be more eager to understand and listen to them too. It is important say that Architects should not be isolated in this change process, the search for better collaboration processes within the Swedish Construction industry should go beyond their own profession. However, by showing others an openness and willingness to understand, Architects can lead the way in the transformation necessary for a better working industry.

8.1 Future Considerations

Although the findings of this investigation give insight on a change in the Architect's role, which can improve collaboration and understanding within the Construction

industry, it is important to understand that this suggested solution alone is not enough for things to get better. The Architect should not be the only one looking to improve their collaboration skills in order to be able to have an input in the final scope of the project. Even though his/her position, as described and explained in the context, might be on a "weaker" spot right now, this does not mean that they are the only ones that need to adapt to other stakeholders in order for peace to be restored within the industry.

Project Managers and other stakeholders, should also work on being open to knowing more about the Architect's interests and should also work on giving the design quality the respect and place it deserves. Regardless of the hierarchy the organizational structure portrays, every actor taking part of a construction project brings something relevant and important for the project, thus everyone should be eager and open to try to understand and be understood. This does not mean that the Architect should be given a higher position or a more privileged place, but it rather means that their knowledge should also be looked at with the importance it deserves according to the context it is set in.

It is also of importance for further investigation regarding the Translation topic to be carried out, and broader and deeper implementation solutions should be informed. This investigation, being carried under a specific context and focused on the Architect's figure, does not cover the whole of the Construction industry. However, the findings obtained through this thesis might be the beginning of a broader and more complete research in which the Project Manager and the Client are also put under question, and other phases during construction projects could also be analyzed under the Translation lens.

Investigating more broadly about this topic will not only help stakeholders in the Construction industry communicate better with one another, but it will also help improve collaboration processes as a whole by encouraging an open-minded culture and opening knowledge transfer channels that will strengthen people's relationships and the outcome of projects. Eliminating trust issues and creating a better work environment where every profession is acknowledged and able to contribute to the construction project, will allow for projects to be looked at and solved in a holistic way, thus resulting in better buildings and an improved urban scale overall.

Increasing investigation regarding this topic and other issues within the construction industry is of major importance. The Construction industry, being one of the biggest and most influential ones, has a responsibility with the people and the way a city is lived. Considering the Architect's role can play an important part in the contribution of sustainable and social factors in construction projects, it is of importance for them to also have the right influence in the final result. Thus, the way we plan, develop and live cities can be improved in an urban scale. If the industry's internal collaboration processes work better, this will reflect in their outcomes, hence directly having an impact in people's lives and society.

Bibliography

[1] Östnäs, . A. & Svensson, . L., 1986. Arkitektarbete : fallstudier inom projektet kunskap och kontroll. 5th ed. Göteborg: Göteborgs Universitetet.

[2] Star, S. L. & Griesemer, J. R., 1989. Institutional ecology, "translations" and boundary objects: amateurs and professionals in Berkeley's Museum of Vertebrate Zoology, 1907– 39. Social Studies of Science, 19(3), pp. 387-420.

[3] Andersson, E. & Grysell, T., 2002. Nöjd, Klar och Duktig: Studenter på Fem Utbildningar om Studieframgång, Pedagogiska institutionen, Umeå Universitet: Akademisk avhandling.

[4] Babbie, E., 2014. The Basics of Social Research. 6th ed. Belmont: Wadsworth Cengage.

[5] Berg, B. L. & Lune , H., 2012. Qualitative Research Methods for the Social Sciences. 8th ed. Boston: s.n.

[6] Bernard, H., 2011. Research Methods in Anthropology. 5th ed. s.l.:AltaMira Press.

[7] Best, J. & Walters, W., 2013. Translating the Sociology of Translation. International Political Sociology, 7(3), pp. 345-¬-349.

[8] Bolden, R., 2011. Organizational Perspectives on Leadership. In: Exploring Leadership: Individual, Organizational, and Societal Perspectives. Oxford: Oxford University Press, pp. 67-101.

[9] Boström, G.-O., 1991. Arkitektbranschen och företagandet : en redovisning i hårda och mjuka data. 11th ed. Stockholm: Arkitekternas forum för forskning och utveckling (ARKUS).

[10] Bresman, H., 2013. Changing routines: a process model of vicarious group learning in pharmaceutical R&D. Academy of Management Journal, 56(1), pp. 35-61.

[11] Byfors, A. & Lindahl, M., 2019. Universitetets påverkan på samarbete mellan arkitekter och ingenjörer, Lund: Lunds Universitet, Lunds Tekniska Högskola.

[12] Caldenby, C., 2018. När Arkitektur tog debatten. Arkitektur, 7 December, Issue 8, pp. 84-85.

[13] Callon, M., 1980. Struggles and negotiations to define what is problematic and what is not: the socio-logics of translation. In: K. D. Knorr, R. Krohn & R. Whitley, eds. The Social Process of Scientific Investigation. Dordecht: D. Reidel Publishing Company, pp. 197- 219.

[14] Callon, M., 1986. Some elements of a sociology of translation: domestication of the scallops and the fishermen of St. Brieuc Bay. In: J. Law, ed. Power, Action and Belief: A New Sociology of Knowledge?. London: Routledge & Kegan Paul, p. 196–229.

[15] Chiva, R. & Alegre, J., 2005. Organizational Learning and Organizational Knowledge: Towards the Integration of Two Approaches. Management Learning, 36(1), pp. 49-68.

[16] Clegg, S. R., Kornberger, M. & Pitsis, T. S., 2016. Managing & Organization: An Intorduction to Theory and Practice. Fourth Edition ed. London: SAGE Publications Ltd.

[17] Djelic, M.-L. & Sahlin-Andersson, K., 2006. Transnational Governance: Institutional Dynamics of Regulation. Cambridge: Cambridge University Press.

[18] Doorewaard, H. & Van Bijsterveld, M., 2001. The osmosis of ideas: an analysis of the integrated approach to IT management from a translation theory perspective. Organization, 8(1), pp. 55-76.

[19] Engström, D. & Falk, A., 2004. Arkitektur & bärverk. 4th ed. Stockholm: Formas.

[20] European Parliament, Council of the European Union, 2005. Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the recognition of professional qualifications. Official Journal of the European Union, p. 22–142.

[21] Forssén, A. & Hjort, B., 1990. Arkitekten i byggskedet : intervjuer & objektstudier. 8th ed. Stockholm: Arkitekternas forum för forskning och utveckling (ARKUS).

[22] Given, L. M., 2008. The Sage Encyclopedia of Qualitative Research Methods. s.l.:SAGE Publications.

[23] Goddard, W. & Melville, S., 2004. Research Methodology: An Introduction. 2nd ed. s.l.:Blackwell Publishing.

[24] Grange, K., 2002. Från byggnadsyrke till making profession? : om mötet mellan arkitekter och ingenjörer. 4th ed. Göteborg: Chalmers tekniska högskola.

[25] Grange, K., 2005. Arkitekterna och byggbranschen: om vikten av att upprätta ett kollektivt självförtroende. 4th ed. Göteborg: Chalmers tekniska högskola.

[26] Grange, K., 2010. 'Mellan skrå och profession. Om de svenska arkitekt- och ingenjörsutbildningarnas framväxt och hur ett dominerande kunskapsideal har tagit form. FORMakademisk, 3(2).

[27] Grange, K., 2010. Den svenska arkitekten: fast i ett historiskt etablerat styrkeförhållande?. In: G. Graninger & C. Knuthammar, eds. Makten över rummet: Tankar om den hållbara staden. Linköpings universitet: Stiftelsen Vadstena Forum för samhällsbyggande, pp. 11-31.

[28] Grange, . K., 2013. Att förtjäna sin roll? om villkor, föreställningar och självbilder i arkitekters och beställares syn på den svenska arkitektrollen. Stockholm: Arkus.

[29] Hall, T. & Vidén, S., 2005. The Million Homes Programme: a review of the great Swedish planning project. Planning Perspectives, 20(3), pp. 301-328.

[30] Hildebrand, C. H., 2016. Sveriges Arkitekter Branschrapport 2016: Arkitekter har blivit bristvara, Stockholm: Sveriges Arkitekter.

[31] Hjort, B., 1997. Arkitektutbildningens akademiska nivå. 27th ed. Stockholm: Arkitekternas forum för forskning och utveckling (ARKUS).

[32] Lincicome, R. A. & Weimin, Z., 2014. UIA Accord on Recommended International Standards of Professionalism in Architectural Practice. Durban, Union Internationale des Architectes.

[33] Linn, B., 1990. Arkitektutbildning och arkitektkunskap i Sverige. Arkitekturforskning, 3(2), pp. 60-76.

[34] Merminod, V. & Rowe, F., 2012. How does PLM technology support knowledge transfer and translation in new product development? Transparency and boundary spanners in an international context. Information and Organization, 22(4), pp. 295-322.

[35] Nicolini, D., 2010. Medical Innovation as a Process of Translation: A Case from the Field of Telemedicine. British Journal of Management, Volume 21, p. 1011–1026.

[36] Oxford University Press, 2019. English Oxford Living Dictionaries. (Online) Available at: https://en.oxforddictionaries.com/definition/translation (Accessed 6 May 2019).

[37] Pawlowski, S. D. & Robey, D., 2004. Bridging user organizations: knowledge brokering and the work of information technology professionals. MIS Quarterly, 28(4), pp. 645-672.

[38] Rothstein, B., 2003. Sociala fällor och tillitens problem. 1st ed. Stockholm: SNS.

[39] Samuel, F., 2018. Evidencing and Communicating the Value of Architects. 1st ed. London: Routledge.

[40] Stiftelsen Svensk Industridesign, n.d. Definition of Design. (Online) Available at: http://www.svid.se/en/What-is-design/Definition-of-design/ (Accessed 15 05 2019).

[41] Suchman, L., 2000. Organizing Alignment: A Case of Bridge-building. Organization, 7(2), pp. 311-327.

[42] USC University of Southern California, 2019. Organizing Your Social Sciences Research Paper: Theoretical Framework. (Online) Available at: https://libguides.usc.edu/writingguide/theoreticalframework (Accessed 01 06 2019).

[43] Villner, L. B., 2008. "Jag kan inte kopiera corbusier hela livet": Arkitekter, historia och arkitekturhistoria. Konsthistorisk Tidskrift, 77(2), pp. 96-101.

[44] Wæraas, A. & Nielsen, J. A., 2016. Translation Theory 'Translated': Three Perspectives on Translation in Organizational Research. International Journal of Management Reviews, Volume 18, pp. 236-270.