Mechanisms for green concept development in the residential market

How a project developer can get a foot in the door

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Abstract
The construction industry is urged to innovate more. Based on the well known global problems such as global warming and the threats posed by climate change, environmental pollution, declining availability of energy and population growth, the sustainability agenda today poses challenges but also opens up significant innovation and investment opportunities. This paper deals with the challenge for the project developer to improve and rethink the industry for a more sustainable future by developing a green housing concept.

Based on this overall goal a need for green concept developments in the residential market emerges. This thesis intends to suggest solutions in finding mechanisms for a successful concept development. We are entering a new age in architecture where the built environment has higher expectations of buildings. According to the literature in the theoretical framework the trend towards green housing is ongoing and must be examined in the context of its impact on the local, natural and built environment.

The research on the residential market demonstrates that Sweden supports safe innovative investment opportunities including a lack of supply for housing in the residential markets. This paper highlights a need for multi-family housing and a lack of competition with a strong domestic market. Both crucial internal and external challenges for market entrance are presented, such as Swedish regulations, zoning and the aspect of locality. Based on empirical data the research identified eight mechanisms for successful concept development: Product development, risks, development strategy, funding, forcing sustainability, relationship to the municipality, local network and unique selling proposition.

Following the findings of this paper the development for green housing can be profitable in the Swedish residential market for project developers and from the perspective of international developers an investment opportunity has been identified.
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1 Introduction

The introduction chapter contains the background of this master’s thesis, the purpose of the research, the presentation of the chosen research question, the delimitations and the disposition of this master’s thesis.

1.1 Background

The content of the following master’s thesis is categorized in the field of innovation in construction and project development. The paper therefore deals with an opportunity based on well known global problems by having a theoretical and academic approach to how project developers in the real estate and construction industry can improve and rethink their industry to achieve a better and sustainable future. Based on this overall goal a need for green concept developments in the residential market emerges. This thesis intends to find solutions by finding mechanisms for successful concept developments.

As formulated in the United Nations Environment Program, construction activities contributed over 35% of total global CO2 emissions - more than any other industrial activity (United Nations Environment Program, 2015). We are entering a new age in architecture where the industry of the built environment has higher expectations of buildings. Buildings should inspire us while helping the environment and serving the needs of a community by new technology and re-purposed materials. The importance of encouraging more environmentally friendly building solutions through more resource and energy efficient eco-design, architecture and construction practices are inevitable in the construction industry. The understanding of a green buildings is that they must be examined in the context of their impact on the local, natural and built environment. In respect to population and urban growth, the residential market plays an especially significant role in indicating an enormous potential for project developers. As a consequence, this master’s thesis addresses the solution of building green houses in respect to challenges for project developers to enter the residential market in an entrepreneurial way and investigates possible solutions by analyzing the mechanisms for successful concept developments.

The approach of establishing more innovation in construction leads to the idea of analyzing entrepreneurship in the construction industry in respect to sustainable housing. Innovation means to combine the creative process of invention and the entrepreneurial process of creating value (University of Melbourne: Innovation Glossary, 2014). Based on well known global problems such as global warming and the threats posed by climate change, environmental pollution, the declining availability of energy and, as previously mentioned, population growth, the sustainability agenda today poses challenges but also opens up significant innovation opportunities (Tidd & Bessant, 2013).

1.2 Purpose

The real estate industry has been slow to respond to the challenges of the more efficient and sustainable construction of residential housing. The purpose of this thesis is to take
stock of the issues outlined in the background section and to recommend a specific course of action. As rethinking is part of managing innovation and entrepreneurship, the key concept of entrepreneurship is combined with project development, the next key concept of this master’s thesis. Winch refers to the fact that the construction project process is one of progressive reduction of uncertainty through time (Winch, 2010). More importantly in this case, and analogical to the progressive reduction of uncertainty is the progressive reduction of influence. A project developer’s role is most significant in the early stages of a project. Therefore, the project developer in combination with entrepreneurship in respect of sustainable housing is significantly important as key concepts to establish a new green concept on a market which leads to market entrance - the third key concept of this master’s thesis. To set the third key concept “market entrance” into context with the field of the construction industry the theoretical framework will be added with the research about concept development.

In connection with the literature review and the theoretical framework of the key concepts, this master’s thesis deals with mechanisms for successful concept development for such a new innovative product in the residential market. After challenges are identified, possible strategies for a successful market entrance will be presented. This will be carried out with benefits for the development of a ‘Green Housing Concept’.

Consequently, the recommendations of this master’s thesis will point out investment possibilities as innovative and green real estate project developments. Those results can perspectively lead to new company foundations, expansions or form of collaborations for the development of housing on the residential market.

1.3 Research Question
The main research question for this master’s thesis is therefore:

- What are the mechanisms for successful concept development entering the residential market?

1.4 Delimitations
This subchapter describes the delimitations within this master’s thesis as the scope for such a paper can not justify the complexity of its content. Therefore, a clear focus is decided by delimiting the studies as further research can always be undertaken. Additionally, the idea is that this research could be a starting point for future business investments in innovative project development in the residential market for green housing.

As green solutions could definitely be developed for every kind of real estate including commercial and industrial, this thesis delimits its studies within the residential real estate market and the development of housing.
The residential housing market is different in each country and circumstances such as market challenges, market threats and market barriers differ globally, nationally and regionally. However, the focus of this paper deals with the Swedish market as a possible emerging market for a new innovative housing concept. In more detail, the area of Stockholm and its residential market lacking sufficient housing supply is attractive as a starting point of this work. This approach reduces the idea of the broad and global perspective that originated of this idea by this delimitation. However, limits contradict with entrepreneurship and disruptive innovation which seeks an unlimited and global spread of sustainable products. This delimitation is chosen to fit the scope of this master’s thesis.

Furthermore, the fact that innovative investment is promoted and encouraged supports the idea of taking Stockholm, as the capital of Sweden, as the emerging market for a possible continuation of this entrepreneurial business idea. Sweden is a market that provides safe and innovative investment opportunities, considering that it is a country with one of the lowest investment risks (Geurts & Jeffe, 1996). It also has modern and advanced technologies for capital flow, clear and simple standards for building and design, and experienced professionals to lead and support investment projects.

Regarding the number of interview partners delimitations are undertaken in such a way as to reduce the number of experts. The chosen experts are delimited by having the prerequisite of holding a leading position within the company to fit the strategic and entrepreneurial approach it needs to face challenges like entering new markets with innovative housing concepts.

1.5 Disposition
The disposition of this master’s thesis follows a coherent structure commencing with an introduction leading to the content and purpose of this topic. The literature review shows the current knowledge about the research field covering relevant fields and important references. By defining and describing the key concepts the theoretical framework is highlighted approaching the research of this paper.

The chosen methodology will be presented in connection with its reflections, limitations and strategy. The core of the thesis begins with the analysis working on the residential market analysis for new innovative housing taking into account the market circumstances in Sweden in respect of challenges for market entrance. In the following subchapter the research question will be addressed and supported by the executed expert interviews examining the eight identified mechanisms of successful concept development in the residential market.

Based on the research the report will continue with the discussion & recommendation chapter addressing a strategy with a scientific contribution and a practical recommendation of this research illuminating benefits for a 'Green Housing Concept'. The thesis is rounded up with a conclusion and the proposal for future research.
2 Theoretical framework
The theoretical background is subdivided into two main subchapters: The literature review and the chapter presenting the definitions and key concepts. Within the second subchapter the key concepts for the master’s thesis are presented: project developer, entrepreneurship and market entrance including its context to the construction industry with the key concept of concept development.

2.1 Literature Review
This part of the thesis includes the current knowledge of secondary sources framing the theoretical and methodological findings for the topic. The topic of this project deals with the research question of mechanisms for successful green concept development in the residential market. As project developers seem to have influence to improve the construction industry to a better and more sustainable future, the role of developers as entrepreneurs is addressed as well as innovation in the construction industry itself.

Winch mentioned the construction project process is one of progressive reduction of uncertainty through time (Winch, 2010). More importantly in this case and analogical to the progressive reduction of uncertainty is the progressive reduction of influence. The project developer has a remarkable influence in a project as his role is early in a construction project. Additionally as previously mentioned Newcombe (2003) mentions the project developer as a stakeholder who is orchestrating the proceedings. The developer is project manager for the development and clearly has a high level of power and predictability. They know what they want and have the power to enforce their demands establishing good communication (Newcombe, 2003). Consequently, project developers take an elemental approach in the development of new residential space in the built environment and have a significant role in the early stage of a new residential development where the influence is high.

Beyond that the right procurement strategy for each project can decide about project failure or success. As the Egan report states the construction industry needs to educate and help its clients to differentiate between best value and lowest price (Egan, 1998). Eric Lamb from DPR Construction in California states that “real value is not the low bid on a higher cost design. It is achieving the lowest true cost on the right design.” This leads to the point that concept development and its product for the residential market needs to focus on creating value. Especially important to mention is that value equals benefits subtracted by costs. By developing concepts and selecting designers exclusively on the basis of (tendered) price can be widely seen as one of the greatest barriers to improvement (Egan, 1998).

A need for sustainability in the residential market can be found throughout the global literature. For instance an academic paper from Singapore summarizes that the emerging green real estate markets should be encouraged to allow residential developers to capture future benefits associated with green properties (Deng & Wu, 2013). The crucial role of the
developer is pointed out as developers are profit driven and follow market trends. Presently, most developers view sustainability as an added burden with added cost (Abidin, 2010). This requires a change of mindset which is possible through examples of successful sustainable projects that add value to their development.

Entrepreneurs are indeed able to reconcile economic growth while contributing to sustainability (Klein Woolthuis, 2010). The improvement for the construction industry to a better and more sustainable future can possibly be reached by linking the idea of bringing innovation into the construction industry through an entrepreneurial approach. The entrepreneurial approach can be reached with the influence project developers generally have on a project and in the process of developing a new concept for the residential market. However, the literature shows that the potential has not yet been exploited. Abidin (2010) states to improve the momentum of sustainable practice in the industry, actions should be directed towards improving this knowledge at all levels of developers.

The sector of the residential market increases its attention on environmental impacts as long-term implications for sustainability issues such as energy efficiency for housing are identified. However, innovation through concept development has not yet been sufficiently implemented. It also depends on the public interest and their willingness to pay a higher entry cost for such a privilege. One of the elements that make sustainable buildings expensive is the products or materials used. Presently, developers have to import green products. The cost will decrease significantly if the products can be obtained locally. The respondents believed that until such products are made available locally and at a lower price, the progress towards sustainable practice will be slow. Local manufacturers’ interests in green products will emerge when there is a market for them. The interdependency among construction stakeholders will slow down the transformation towards a sustainable industry (Abidin, 2010).

A green housing concept provides benefits for future concept development. In comparison to conventional buildings green buildings are expected to reduce operating costs, provide better indoor environment and have a lower impact on the environment. This leads to the fact that investing in green housing is more beneficial as a customer may be willing to pay extra for a green apartment. Regarding the willingness to pay there has been a scientific study whose results indicate that the willingness to pay for green condominiums is higher than for conventional apartments and demonstrated the evidence that a higher willingness to pay for green-labeled buildings and energy-saving measures may also be detected in the residential market (Zalejska-Jonsson, 2014).

In respect of the public interest and a more attractive investment strategy for developers, findings indicate that low-energy buildings are considered a sound business opportunity. An investment analysis indicates that low-energy houses with its long-term strategy can create a competitive advantage (Zalejska-Jonsson, Lind & Hintze, 2012).
The literature review recognizes compared with other consumer products, the housing sector shows a market conservatism. This market conservatism has an impact that affects its ability to address environmental issues (Congreve & Alina, 2012). Consequently a need for green concept development for the residential market can be summarised and research on its mechanisms for a successful approach justified.

Finally, the EU Directive 2010/31/EU specifies that by the end of December 2020 all new buildings should meet the standards for nearly zero-energy buildings. These changes in regulations for the building standards will support an innovative approach for the development of green housing in the residential market.

2.2 Definitions & Key Concepts
All concepts are defined and described referring to the field of the construction industry. The chosen key concepts are substantially covering the main content within this master’s thesis and underline the importance of being further described.

2.2.1 Project Developer
The role of the project developer can differ within the cycle of real estate development. The following figure shows the process referring to the eight-stage model and underlines that the role of a project developer is complex and diversified.

![The Eight-Stage Model of Real Estate Development](image)

Figure 1: Project development process, self-created and inspired by Miles, Mike; Berens, Gayle; Eppli Mark & Weiss
Figure 1 represents eight stages where the project developer takes action. For the purpose of this master’s thesis the first four are the significant stages as the possibility to influence the concept for the development of the real estate is high and decisions can change before the decision of the final design is undertaken with the formal commitment (stage 5).

The real estate project developer is part of a multifaceted business, encompassing activities that range from the renovation and re-lease of existing buildings to the purchase of raw land and the sale of improved land (Miles, Berens, Eppli & Weiss, 2007). Within the first four stages the developer sees possibilities in the current market refining the concept idea with different stakeholders, checking the feasibility and organizes the chances for the realization of a new development in a legal, financial and physical way.

Real Estate Project Development in the construction industry deals with the project initiation and project conception. Winch (2010) mentioned the construction project process is one of progressive reduction of uncertainty through time. More importantly in this case and analogical to the progressive reduction of uncertainty is the progressive reduction of influence as figure 2 visualizes.

![Graph showing the progressive reduction of uncertainty and possibility of influence](image

The project developer has the influence in a project as his/her role occurs mainly early in a construction project. A stakeholder mapping approach mentions the project developer as a stakeholder who is orchestrating the proceedings. The developer is the project manager for the development clearly holding a high level of influence and predictability. They know what they want and have the power to enforce their demands establishing good communication (Newcombe, 2003).
Consequently, project developers lead an important approach in the development of new residential space in the built environment and have a significant role in the early stage of a new residential development where the influence is high. As mentioned in the introduction the importance of encouraging more environmentally friendly building solutions through greater resource and energy efficient eco-design is inevitable in the construction industry.

Project developers have the ability to create significant improvements in environmental performances of buildings by rethinking the construction industry as for instance in the residential market. Therefore, project developers can be identified as key actors when mechanisms for successful concept development in the residential market are identified. Finally, the responsibility for project developers need to extend. It is imperative that developers not only design, build and sell highly energy-efficient green buildings, but also ensure that the building is energy-efficient during the operation phase (Zalejska-Jonsson, 2013,2).

2.2.2 Entrepreneurship

Entrepreneurship is represented by people who take direct responsibility for turning an idea into a profitable finished product through assertive risk-taking and innovation. In the following entrepreneurship is linked to the construction industry and the research question. The process of entrepreneurship can be structured into six subgroups:

| Identifying an opportunity | Defining a business concept | Assessing resource requirements | Acquiring those resources | Implementing and managing the concept | Harvesting the concept or venture |

Figure 3: Process of entrepreneurship, self-created and inspired by Foley (2014).

Similar to the project developer, an entrepreneur identifies an opportunity, defining the concept, assess the resource requirements and acquires them. An entrepreneur additionally tries to implement, manage and harvest the concept.

Another way of explaining the understanding of entrepreneurship in the context of innovative concept development is by quoting a very well known entrepreneur and founder
of the Virgin Group Richard Branson who once formulated: „One has to passionately believe it is possible to change the industry, to turn its head and to make sure it will never be the same again.”

As formulated above entrepreneurship is characterized by risk-taking and innovation. In the presented context innovation is the combination of creativity and commercial exploitation. According to Foley (2014) the invention itself is not enough as there are five tests that each new innovative concept need to pass:

![Diagram: Innovative concept tests](image)

1. Function test (Does the concept perform the function?)
2. Mass production test (Can the concept be mass produced?)
3. Market test (Will the concept sell?)
4. Financial test (Can we do all the above at a profit?)
5. Permission test (Can the concept be legally used?)

Figure 4: Innovative concept tests, self-created and inspired by Foley (2014).

The presented five questions regarding the function, production, the market, the finance and the permission are questions which can also be raised when looking at a new green concept development in the residential market. As compared with other consumer products, the housing sector shows a market conservatism; this impacts on its ability to address environmental issues and economic factors and the lack of research within the industry mean that the drivers for change are often external. Some of the main areas of innovation have been in specific components in the house rather than its overall redesign (Congreve, 2012).

The process which is indicated above is important to add when connecting entrepreneurial thrill for innovation with the construction industry taking into account the first key concept „project developer“. Congreve states that modern methods of construction have the potential to bring about significant improvements in environmental performance as well as reducing waste and could be the major change in the building industry as governments put more pressure on developers to achieve environmental targets, particularly reduced carbon emissions.
The report of the Construction Task Force ‘Rethinking Construction’ (Egan, 1998) dealing with the improvement of the quality and efficiency of UK construction supports this connection of entrepreneurship with construction. The target of sustained improvement in construction can be delivered through use of techniques for eliminating waste and increasing value for the customer (and client).

Additionally, by addressing innovation in construction in respect of entrepreneurship the process is essential. Here, Egan (1998) suggests the construction industry should create an integrated project process taking into account key elements, both product development (for a housing type) and project implementation - two essential key aspects and concepts covered by concept development in this thesis.

Finally, in the context of entrepreneurship its relationship with the community is relevant. One recent study focuses on how entrepreneurship is embedded in the creative reconstruction of place. A major contribution is to synthesize and apply existing conceptual insights to provide a more local and contextually sensitive view of entrepreneurship as a socio-economic process (McKeever, Jack & Anderson, 2014).

Entrepreneurship recreates and renews certain structures in a community and society, however as change always needs trust, the collaboration with the community is fundamental to make the action of entrepreneurs successful. Consequently, when the economic outcomes are combined with a social focus, gains follow and the very fabric of a community can be changed (McKeever, Jack & Anderson, 2014).

The communal aspect is definitely a key consideration when connecting the aspect of entrepreneurship and innovation to mechanisms for successful concept development in the residential market. One evaluation of low-energy and conventional residential buildings by Zalejska-Jonsson (2012) from the perspective of the occupants underlines that the feedback of the occupants is an important part of comprehensive building performance assessment, indicating areas for improvement that is relevant for developers. Furthermore, their responses suggest that the green profile of the building has a positive impact on their environmental awareness and behavior.

2.2.3 Market Entrance
Market entrance can be defined as activities associated with bringing a product or service to a targeted market while a company or entrepreneur considers barriers to entry.

In relation to the construction industry market entrance especially for innovative entrepreneurs was analyzed in a case study about the Dutch Construction Industry which stated that the strong and closed networks in the construction industry are considered limiting for the possibilities of entrance into the competition of the market for innovative entrepreneurs (Klein Woolthuis, 2010). Market entrance in respect of this thesis is related to project implementation or the development of a new product as two of the main key
aspects that Egan mentioned in his report regarding the UK construction. In connection with this thesis project implementation and product development refer to the development in the residential market emphasizing concept development. Consequently, to set the third key concept market entrance into context with the field of the construction industry the theoretical framework is added with the research about concept development.

2.2.4 Concept Development
In the design community the word concept is usually described as an approximate description of the technology, working principles or form of the product (Ulrich & Eppinger, 2008). A development as a general term can be referred to a process of growth or change. This leads to the term concept development as a highly complex process including different stages and actors. This thesis focuses on the residential market emphasizing green concept development where the enquiry in an environmental perspective is identified. The concept development is one of the initial phases in every project and is also according to Winch of particular importance. The activities in the concept development phase aim to generate several concept alternatives, evaluate these alternatives based on all relevant prerequisites and finally select one or more concepts for further investigation or development (Kihlander, 2009).

Kihlander (2009) also characterizes a concept as an approximate description or an idea (like stage 1 of real estate project development, figure 1). The concept development phase is a stage where many parallel product systems are in progress at the same time creating a large number of interfaces that have to be considered. Additionally, the people working in concept development are prepared for anything which might happen, and that everything can change. This means that the process revealed can not be described according to rational decision-making theories.

Throughout the literature many definitions and expressions are used for terms similar to concept development as no unified definition has been established. However, an option of an illustration of concept development comprising its activities from the beginning to the end is presented by Ulrich and Eppinger (2008) in figure 5.

![Figure 5: Concept Development, Ulrich and Eppinger (2008).](image-url)
Nevertheless, empirical findings conclude that concept development can include not only the concept stage in the product development process, but also the preceding activities, such as the pre-program planning phase (Ulrich and Eppinger, 2008).

For this thesis the concept development phase is put into context as the generation of a new product concept for the residential market where the above mentioned activities by Ulrich and Eppinger can be implemented.
3 Methodology

The following chapter outlines the methodology of this master’s thesis. Firstly, the chosen research method is presented as well as its reflections and limitations. Secondly, the strategy behind this chosen methodology is illuminated. Finally, the interviewee list for the empirical data of this research is presented.

3.1 Research Method

The research focus in this thesis is addressed with a qualitative method approach conducted in the form of interviews. With this type of qualitative research strategy, broad, open-ended questions are raised to generate new insights and build new theories or concepts.

The chosen approach relies largely on inductive reasoning. Qualitative research is more likely to identify new conceptual categories and new theoretical constructs (Suddaby, Bruton & Si, 2014). Additionally, the qualitative method is used to understand and uncover the experience and behavior of people (Ghauri & Gronhaug, 2010). In this way, mechanisms for successful green concept development in the residential market are most likely to be found in interviews addressing the research question. Furthermore, it is essential to consider existing concept developments and conduct interviews with responsible developers in leading positions to get valuable insights. For the interviews the chosen concept developments have different backgrounds as some concepts fail and some concepts are successful and ongoing to get a variety of perspectives.

On the other hand, a quantitative research method is appropriate for an orderly collection of data in a structural way to gather information that can lead to time- and context-free generalizations (Ghauri & Gronhaug, 2010). This is not desirable when addressing the research question. Supported by the fact that quantitative research is too detached and remote to explore the mechanisms for successful green concept development, a qualitative research method is ideal for this thesis. In a qualitative research method, underlying values can be explored in depth by interviewing experts and responsible actors in the field of concept development for the residential market.

As preparation before the qualitative research is conducted in the form of expert interviews, a theoretical background defining and dealing with the key concepts supported by a literature review of mechanisms for green concept development supports the setup of the research. The secondary data for the literature review is based on analytical reviews, scientific papers and studies in the same and adjacent fields of research. In this way valuable information is provided for the empirical study.

Primary data for the empirical study are gained through interviews conducted with people in leading positions by concept developers in the residential market. Additionally, the contact and interview with the institution „Stockholm Business Region“ supports the research of the market analysis to identify key market entrance challenges for the
residential market in Stockholm. The executed interviews are structured in a clear way, but leave space for further investigation and in-depth options for interesting fields of study while the research is executed in face-to-face interviews. This way, follow-up questions can be raised and valuable input generated.

3.1.1 Reflections
The qualitative research leads to valuable input by practitioners who deal with mechanisms for successful concept development in the residential market in their daily work. In this way interesting phenomena can appear and enrich the content of the research. It is therefore essential that the interviews are executed in a face-to-face way as the more personalized encounter leaves space for follow-up questions. Additionally, a personal contact can create a more fruitful base for trust which in turn promotes an information flow (Kromrey, 2009).

Another important fact is that the interview partners are chosen specifically as the process of arranging an appointment, preparing specific questions, executing the interview and the final transcription is time consuming. Consequently, only a limited number of interviews can be executed which is further discussed in the limitations (3.1.2).

The interviews are documented with a dictaphone which is practical for the usage of the data afterwards as the evaluation is finalized with a transcription to point out the key findings of each interview. In this way valuable information is extracted and is complemented by further investigation of mechanisms for successful green concept development in the residential market. The transcripts serve as valuable backups and can be used throughout the process of this master’s thesis.

The next major point regarding the reflections of the chosen qualitative research method is the objectivity of the results. Based on the scope of this master’s thesis, the amount of six interviews is a fair amount, but certainly limited. That leads to a possible lack of objectivity throughout the process. The researcher and also the participants of the expert interviews each have a different professional background which consequently leads to an influence of the results. However, as the research can always be further investigated, the number of interviews for the purpose of this thesis provides a valuable input to process the research question in an academic method holding valuable findings.

3.1.2 Limitations
As already mentioned above the number of interviews based on the scope of this master’s thesis could be increased to provide even more valuable input. However, to fit the scope of this project, a high quality of interview partners was the paramount objective to achieve good results that can address the research question in a convincing way. One ought not to lose sight of the fact that the point of view of the research question is limited in each interview as the subjective knower is the only source of reality (Grüne-Yanoff, 2014).
As previously mentioned in the delimitations (1.4) of this paper the research question just deals with residential project development and the interview partners are mostly stakeholders in the Swedish real estate market, more specifically with the area of Stockholm. Nevertheless, the expert interviewees were chosen to be in leading positions of bigger companies to fit the strategic and business development background of concept development. The scope of the master’s thesis containing four months of time reduced the intensity and quantity of the interviews as further research and investigation is certainly pursuable widening the scope to answer the research question.

All in all, this thesis concentrates on the developer perspective for successful green concept development in the residential market. Here, the perspective of involved actors could also change and illuminated from a different point of view. The personal interest of the researcher delimits the perspective of these mechanisms from a developer’s perspective. The point of view from a municipality, the government, head contractors or subcontractors could also have been taken into account leaving space for further research.

3.2 Methodological strategy

Figure 6 shows the chosen methodology to answer the research question for this thesis in a graphical way. The main path for the research can be subdivided into four main parts: the research question and its formulation, the theoretical background addressing the key concepts in a literature review, the execution of expert interviews and finally its interpretation for the analysis of the report.

A continuous revision guarantees that new input is in accordance with the previous work meeting the goal of this thesis to find mechanisms for a successful green concept development in the residential market. This figure is in connection with the idea of double loop learning which recognizes that the way a problem is defined can be a source of the problem. This idea is in connection with the constant change of how the research question...
is defined in accordance with the literature. Therefore, a continuous revision of each part guarantees the look of the purpose for each part as the research continues.

The strategy for the methodology is an approach based on a systematic combination of theory and practice. The development of this master’s thesis moves between theory and empirical data to develop the understandings for the analysis of our findings in order to generate recommendations suggesting a theory. The goal of this master’s thesis to set up a new tentative typology based on the identified mechanisms in the findings chapter can be reached by systematically combining the theoretical and empirical findings within the research process.

Finally, for the interviewees, an anonymous approach is chosen in respect to research ethics and the scientific community. The responsive approach with an anonymous interviewee list allows the focus on its content rather than the interviewee’s personal details. In the following process of this master’s thesis, the interviewees are referred to as figure 7 shows.

The interviewees represent different roles. As an example, a municipal developer is included as well as a facilitator between the municipality and developers and project developers from the industry themselves. Answering the research question by looking into the phenomena from different perspectives is more powerful for this interpretative research approach.

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<td>Interviewee 6 (2015).</td>
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Figure 7: Interviewee list, self-created

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4 Analysis & Findings

The following chapter deals with the analysis of the thesis dealing with mechanisms for successful green concept development in the residential market. The preliminary findings are structured in a coherent way related to the headlines to firstly put the analysis into context, secondly find problems in terms of challenges and thirdly identify patterns:

1. Residential Market Sweden
2. Challenges for market entrance
3. Mechanisms of successful concept development

This structure underlines firstly that the market area needs to be identified and analyzed where an investment is profitable and reasonable in respect of green concept development (4.1) including the market situation to identify the customer needs. This approach is relevant based on Ulrich and Eppinger (2008) and their process of concept development that includes establishing target specifications. Secondly, challenges and prerequisites for entering the market (4.2) are identified to accordingly respond to the market situation while developing the concept. Thirdly, mechanisms for successful concept development are elaborated (4.3) to answer the research question using the empirical data by the conducted expert interviews. The mechanisms are identified to consequently approach the green concept development in the residential market.

4.1 Residential Market Sweden

With an estimated nominal GDP of almost USD 58,000 per capita in 2013, Sweden is a very wealthy country. Sweden has an open economy, its export structure is both diversified and strong and the Swedish workforce is well-educated (Rabobank, 2014). Those are important factors identifying the Swedish residential market as a possible target market for investment of an innovative green housing concept. Additionally, Sweden is a market that provides safe and innovative investment opportunities, considering that it is a country with one of the lowest investment risks (Geurts & Jaffe, 1996). Furthermore, strong institutions are considered crucial for concept development in the residential market. The corruption in Sweden is very low by international standards and the level of government effectiveness is high (Rabobank, 2014).

It can be stated that the Swedish economy is performing satisfactory in spite of the moderate growth, especially compared to most countries in Europe. This growth has to be seen in a concentrated way as the main economic drivers in Sweden can be localized. Especially, the investor focus is still primarily in Stockholm, Gothenburg and Malmö (Savills World Research, 2014). Among those three main areas in Sweden the capital Stockholm is emphasized in the scope of this thesis. The population of the city of Stockholm is growing by around 17,000 people per year and the county of Stockholm by between 30,000 to 40,000. This makes Stockholm among the fastest growing metropolitan areas in Europe (Wilco, 2013). The population in Stockholm County in 2014 was 2.2 million people and the forecast for 2023 is an increase in population to a total of 2.54 million people (TMR, 2014). Consequently, there is an enormous pressure on the housing
market that needs to grow and expand to satisfy the needs of the city. It forces new productions of apartments in a significant way compared to today. There is a consensus in politics that new housing needs to be established and its speed accelerated, but there is no clear consensus about the way to develop. The office for growth, environment and regional planning for the Stockholm county estimated a forecast for the following ten years with nearly 190,000 new homes in planned construction of which more than 80% are multi-family houses. The stock of housing from 2013 represents a share of 68% for multifamily houses with 26.5% private owned homes (TMR, 2014).

At present, no residential buildings in Sweden are certified according to internationally recognized environmental building schemes such as BREEAM or LEED. However, the Swedish scheme Environmental building (Swedish: Miljöbyggnad) has attracted a few developers and residential owners. The environmental building (Miljöbyggnad) is a voluntary certification process such as the Nordic Ecolabel Svanen (used by Interviewee 5) which includes an environmental analysis from a lifecycle perspective. Those schemes are slowly gaining popularity among housing developers in Sweden (Zalejska-Jonsson, 2013).

The empirical data from the interviewees is taken into account to more specifically analyze the interesting investment opportunities on the residential market from a developer perspective and what part of the residential market seems profitable for the development of a new green concept.

The Stockholm Business Region acts as a facilitator between the municipalities and the industry having the goal to develop Stockholm to become a leading sustainable growth region within Europe. Here the shortage in supply and need for further housing are confirmed as national developers can not handle the demand and international developers are needed. In the residential sector for multi-family housing units, there is a lack of international stakeholders in Sweden (Interviewee 1, 2015).

The international companies STRABAG AB and Veidekke Sverige AB have realized the potential for developing and investing in the residential market as one of the first international actors on the Swedish housing market stage. The impression of the current market situation is confirmed as ‘the market is ready for new players with special expertise’ (Interviewee 5, 2015):

“In Sweden STRABAG concentrates a lot on housing whereas in Germany that is different. We need to establish our business unit here [Sweden] concentrating more on housing which is unusual including the system of the association part of BRF (bostadsrättsförening). That is why it is tricky to get STRABAG to understand the processes in Sweden. In Germany they do not understand why we need to finance things in an association. That is a Swedish tradition. So, when you developing housing, you focus in "Bostadsrättsförening“ - there is the most potential for project developers” (Interviewee 5, 2015).
About the Swedish market for residential development there are interesting points of view regarding how each developer is addressing the market with their business strategy. Within the city of Stockholm there are several projects for housing which project developers are focusing such as Hagastaden, the Royal Seaport and especially in regions with municipalities that are close to the vicinity of the subway extension (Interviewee 1,2015). As Stockholm is growing the interest for project developers is reasonable, however the market is more challenging than other markets. In respect of product development and green concept development the city of Stockholm might not be the most beneficial.

In Stockholm there are powerful and influential city architects who have strong views regarding how buildings and products are allowed to be built. It is hard to make them accept an industrialized product. Therefore an industrialized product must be very flexible by the design. Otherwise it is difficult to obtain a building permit. It is easier outside of the Stockholm region where the building regulations are not as strict. The demand is high as municipalities are more welcoming regarding getting more residential development built (Interviewee 2,2015). Therefore, in respect of the goal of this master’s thesis Interviewee 2 recommends growth regions such as big city regions in Sweden such as Malmö and Gothenburg and university cities - also parts of Stockholm that are connected to fast-trains outside of Stockholm as many commuters would be moving there.

Looking into product development developing a green housing concept in other markets such as Enköping, Västerås, Uppsala was recommended by several interviewees as „those markets are growing fast containing different volumes, but the demand is there and product development might be interesting and profitable“ (Interviewee 1,2015).

The example of NCC Komplett represents the Swedish residential market well in respect of the goal of establishing a unique concept in a serial production. This concept was highly innovative for the construction industry. It was a system for producing high quality apartment buildings in the factory to customer requirements. The houses are built almost entirely indoors aiming for a high efficiency. One interviewee reflected that it is vital to focus on a bigger market in product development as a concept for the residential market:

“The market in Stockholm for NCC Komplett was too small. You could have aimed for more than 1,000 apartments per year, maybe ten times more. It was not that high of a volume to get the production effect. We could have focused on Germany or England. You need a large amount of the total housing for product development. The demand is there“ (Interviewee 3,2015).

An industrialized product needs to be flexible with the design (Interviewee 1,2015). The residential development within the city of Stockholm is very strictly regulated which makes it not so interesting for project developers:
“Municipalities determine what you have to do. When you are regulated you are not open to this industrialized green concept. It is not so interesting to be in the Stockholm market as regulation can be seen as a restriction” (further developed in 4.2) (Interviewee 5,2015).

In respect of the idea of developing a green housing concept for the residential market, the specific area of where there is most potential to invest needs to be analyzed. As there are different segments within the residential market, the analysis shows that the condominiums in housing cooperatives (Swedish Bostadsrättsförening) is the part where most of development and innovation in construction in a profitable approach can be reached:

“There are rental apartments as well as privately owned real estate with single family-housing and multi-family housing and condominiums in housing cooperatives (The Swedish Bostadsrättsförening)” (Interviewee 4,2015). „Here, there is most potential for innovation and profitability. The rental market is not interesting as the rental market is regulated with a fixed rent and that makes it difficult to be profitable“ (Interviewee 2,2015).

A denser development and a greater diversity can be reached with this type of living as apartment size and target group can be chosen to create a healthy heterogeneity for apartment size and target groups.

As compared with other consumer products, the housing sector shows a marked conservatism; this impacts on its ability to address environmental issues and economic factors and the lack of research within the industry mean that the drivers for change are often external. Some of the main areas of innovation have been in specific components on the house rather than in overall redesign (Congreve, 2012).

Finally, the Swedish residential market shows a lack of competition as a limited number of construction companies and project developers control a majority of the market. For instance Skanska AB, the biggest construction company in Sweden recently presented a turnover equal to the 6th to the 50th largest construction companies together. This strong domestic market is seen as an entry barrier for foreign companies (Noroozian, 2008). Porter (1998) argues that the more established players are present in the market, the harder it will be for new companies to enter it.

In other European countries, especially Germany, France and the UK the market situation is different. As for instance in Germany the Swedish company NCC Deutschland leads the volume for residential development with a relatively lower amount of square meters in comparison to the total amount (Immobilien Zeitung, 2013). This shows a healthier heterogeneity for the residential market in other areas outside Sweden. The strong and closed networks in the construction industry are recognized as limiting the possibilities for entrance into the competitive market for innovative entrepreneurs (Klein Woolthuis, 2010). This leads to further challenges for market entrance and the development of a new green housing concept.
4.2 Challenges for Market Entrance

This chapter provides challenges that are identified to enter the residential market in Sweden. Project development companies face various difficulties and challenges when entering a new market. These challenges are subdivided into internal and external ones. The internal challenges are addressed in chapter 4.3 in more detail in respect of concept development when mechanisms for successful concept development are identified. Until the empirical data is taken into account the internal challenges in respect of challenges for market entrance are generally summarized by expertise, product differentiation and capital requirements. The right expertise includes the right network, education and experience within the organization including the right workforce to face challenges. The main aspect for this chapter are the external challenges for market entrance. By looking at the external challenges, they can be summarized aside from a legal, geographical and political point of view by local circumstances and governmental policies concerning the planning process including the right network of stakeholders (Interviewee 1,2015).

Based on the expert interviews with the chosen experts the following external challenges for market entrance were identified:

4.2.1 The Swedish regulations

Some laws and regulations create barriers for the foreign companies within the construction industry (Noroozian, 2008). Especially for the development of a new housing concept within the residential market there are challenges for the market entry within the Swedish system. Therefore it is important to create an “understanding of the general plan and building regulations“ that points out the zoning for housing. Furthermore, it is crucial to “understand the laws and building permits regarding the building of new houses“ in respect of the regulations from the municipalities (Interviewee 1,2015).
4.2.2 Process of land allocation & Zoning
Within the city of Stockholm the administration for city development is responsible for selling or other ways of allocating land and properties for project developers. The crucial point is to “understand how and when to apply for developing land“ (Interviewee 1,2015). This is supported by the challenge of understanding the zoning process as “zoning is key“ (Interviewee 4,2015). The relationships to municipalities as a project developer is crucial as a challenge for the market entry and of major importance for the development of a new housing concept.

4.2.3 Locality
The expertise and financial resources were mentioned as the main internal prerequisites for a successful development in the residential market. However, the locality was mentioned by all experts as a crucial necessity, for example by Interviewee 5:

“One can not work without the local knowledge. The cooperation with local partners: That is the key“ (Interviewee 5,2015).

It is a paramount objective for an international company to obtain the local market knowledge by considering local companies and partners. One example is STRABAG AB that bought NIMAB Entreprenad AB, a company in southern Sweden offering construction-related services, primarily major housing contracts. The activity includes new construction, reconstruction and building services. That company was bought as part of the strategy in getting the locality and overcoming this market barrier being an international company by having a local player internally (Interviewee 5,2015). A project developer referred “finding a local partner network“ (Interviewee 4,2015) as a key prerequisite for a successful concept development. This also refers to the organization of the company which needs to be local. Porter (2008) argues that entry barriers which are too high at times result in the creation of new distribution channels and these could as well be characterized by the access to local partners.

4.2.4 Reputation
Finally, in order to succeed with the first three mentioned challenges to market entrance the aspect of reputation is significant. The market entry for a new concept development in the residential market requires “a good reputation in the market“ (Interviewee 5,2015).

The approach for the concept to be planned with a “long-term perspective by starting small can be a prerequisite“ (Interviewee 4,2015). Those aspects build up the reputation for a company and create trust towards the municipalities and in the whole industry. The aspect of trust as a consequence of a well-established reputation of a company within the network of the industry as well as with informal leaders is mentioned by interviewed developers as a crucial prerequisite and challenge for the market entry. Later in the process, this reputation can be raised with a convincing first idea for the concept development phase in the process of entering the market.
4.3 Mechanisms for successful concept development

This chapter provides an overview of the mechanisms for successful concept development within the residential market. The results are based on the empirical data that was collected by the conducted expert interviews with high-ranking project developers of the leading Swedish construction companies establishing new concepts in the residential market. The mechanisms for successful concept development in the residential market are identified in respect of the research question proposed in chapter 1.3.

The need can mostly be confirmed both from project developers in the industry and from the municipal development:

“Green concept development is in the time [sic]. These concepts do not have to be more expensive, however it is about if you can get repetition - economies of scale - to push production cost down. It is coming to that in the residential [sector], but still the lowest price seems to be the paramount objective. Green concepts are still difficult, because the client is not ready to pay for them. However if you have a green standard in residential [developments] and the price is not higher, everyone goes for the green version - so the price matters. They are not prepared yet, but it will change“ (Interviewee 2,2015).

One project developer from a municipal developer in Stockholm represents the municipal side within this thesis and confirms the impression of the industry:

“Sustainable construction and living is important and everyone in society needs to contribute to sustainability. Connecting the sustainability with housing as a green concept development will make all stakeholders have a common focus to develop more housing which needs to be established“ (Interviewee 6,2015).

Another project developer sees the need for more eco-design and includes this goal as a part of the company’s strategy (Interviewee 5,2015). This supports the idea for more innovation.

Interviewee 3 summarizes the need for green concept development in a clear way:

“You can see it in two ways: 1. From a global environmental view there is a huge need. Construction produces a lot of CO2. 2. Willingness to pay: There is not so much driving force in the market yet. It is less than we can hope for. The environmental factor is quite low when customer satisfaction is measured. You can find those concepts but the market that is big enough has to be found. This could push the industry in a whole new direction“ (Interviewee 3,2015).

In the following the mechanisms for successful concept development are presented and serve for the development of green housing as those empirical findings are a valuable resource for the future work of project developers. The empirical results are structured in eight different mechanisms, presented in the figure 9.
4.3.1 Product development

The first acquired mechanism for successful concept development that was continually referred to in the collected empirical data was the connection to product development. According to Ulrich & Eppinger (2008) it is a set of activities beginning with the perception of a market opportunity and ending in the production, sale and delivery of a product. In this case the market opportunity is the development of a green housing concept in the residential market.

After the market opportunity is identified, “the pre-study for a concept is a good start“ (Interviewee 6, 2015). As a basic prerequisite Interviewee 2 (2015) points out that “it is very important to have enough time and that you have enough liquidity that you can actually build a prototype and evaluate it thoroughly before you go into serial production.“

The need for a prototype is confirmed; however, it could nowadays also be developed digitally as an innovative approach: “If your ambition is too high at the very beginning like an industrialized residential development, you need to you have your pilot“ (Interviewee 2, 2015).

In respect of a successful concept development in the residential market the idea of a serial production of one building type is promoted and supported keeping in mind that every single project is unique and every building location has its own local hazards, risks and challenges. This mechanism needs to be considered in respect to its location and regulation:
“First you need greater volume to get the prices down, then we talk about product development. In some places however they are ready for it. You need to find where they are ready; where the regulation is not so hard. This way you can put in your concept” (Interviewee 5, 2015).

A further aspect within product development is the aspect of time in respect of the construction industry not being prepared for a serial production of housing in the residential market:

“It is based on the fact that the building industry is not used to product development - it is very project focused. If you want to have the serial production - it is another mindset. The industry is not used to that“ (Interviewee 2, 2015).

This is supported by the fact that in the example of NCC Komplett, the developed prototype needed “more time for its evaluation“ and before you go on the market it is important to get “first the production, assembly and logistics going“ (Interviewee 2, 2015).

Finally, in addition to location, funding, time and trust in the product, the choice of the volume in product development is essential for its success:

“In NCC Komplett an even bigger market was needed. We found a highly industrialized product that was flexible to build any kind of house. The goal for the total number of apartments should have been ten times higher to fit the goal of industrialization. Maybe the market in Stockholm for NCC Komplett was too small with 1,000 apartments per year. The volume was not high enough to get the production effect. We could have focused on Germany or England. You need a large amount of total housing. The demand is there“ (Interviewee 3, 2015).

4.3.2 Risks for concept development

For any kind of project development the risk assessment is one of the key challenges influencing the success of the project. In respect of concept development for the housing market it is also an opportunity when taking the aspect of green concept development into account. This is because sustainability represents an assortment of risks and possible rewards for real estate developers and investors. This way the risks for concept development are identified as the second mechanism for successful concept development in the residential market.

As previously mentioned the aspect of time is a major risk as time for the development needs to be taken (Interviewee 2, 2015). One of the lessons learnt with the revolutionized concept of NCC Komplett confirms that fact. In concept development “things take longer than you expect and external costs happen“ (Interviewee 2, 2015). With the concept development of NCC Komplett there was for example a huge number of repairs on building sites, something that was initially intended to be reduced to a minimum.
A further risk in concept development is finding the balance between flexibility and standardization in the design and construction process to lower construction costs, a major risk element for the development of housing (chapter 4.3.4 Funding). If the structure is too strictly designed, it might not be easy to sell the concept. On the other hand “more flexibility in the design is increasing the value, but also increases the costs” (Interviewee 2, 2015). In the end it comes down to the price as the concept needs to be profitable. “The market risk needs to be taken into consideration.

“There is a risk with concept development as in the case of failure reputation can be lost and companies that are on the housing market are careful to not lose their reputation” (Interviewee 3, 2015). Possible reasons for failure are “a too high price and an unsuitable location” (Interviewee 4, 2015). For NCC Komplett the insecurity was very high and a lot of money was invested with the uncertainty of the right balance as summarised in the following:

“One billion SEK was the investment for NCC Komplett. It was a lot of money, but it was a high risk for the whole company and the board was not prepared to handle that risk. That was one problem. Another problem was when you plan such a development, finding the right process, because if you go straight out to the market and sell the product to external people, you put yourself under big pressure” (Interviewee 3, 2015).

As previously mentioned, the willingness to pay for the influential stakeholders in the process is a risk in concept development as the final product can potentially rise in cost which the customer does not want to pay. It could be [so much] more expensive, that the customer does not want to pay [the] higher price. “It is the willingness to pay. Today people do not want to pay extra for low energy yet” (Interviewee 5, 2015).

The risks in concept development can be summarised as high in a political, geographical and legal way as regulations (further discussed in chapter 4.3.6 ‘Relationship to the municipality’) are very important and each municipality has its own rules. The municipal developer summarizes the risks with the aspects of “financing, processes, access to land and regulations as the key aspects for a concept to be successful“ (Interviewee 6, 2015).

Finally, relating the mechanism of risk to concept development as a significant one in respect of the goal of developing a green housing it can be stated how sustainability issues are considered does not only rely on new concepts: good real estate development and investment requires expertise in managing risk (World Green Building Council, 2013).

4.3.3 Development strategy
Each empirical research gives insight into possible ideas for the business strategy for the concept development stage in a particular way. The findings of this research are in the following presented in four different categories for a concept development strategy:
Generally, it is vital to create the reliability with your concept towards all involved stakeholders, especially the customers as it is crucial for a successful concept to build a sense of loyalty with customers (Teece, 2009). A member of the initial concept phase of the innovative housing concept BoKlok confirms that for a successful development strategy the focus should be on „consumer insight, municipality connections and location“ (Interviewee 4,2015). The municipal developer mentions “the market, relationship to municipalities (4.3.6), technology, financing (4.3.4) and the aspect of energy & environment” as suggestions for strategy elements for concept development in the residential market. All parts are of a high importance (Interviewee 6,2015).

The quality of the concept should have a paramount part in the strategy as in IKANO AB the quality is in finding the mix among “industrialization, repetition, getting it on the market and meeting the flexibility of social demand. It is about to finding the platform that allows that quality and still gives you the repetition for cost efficiency“ (Interviewee 3,2015). The STRABAG approach for quality is the reputation of German quality attracting investors willing to work with quality. The concept aims on the market where quality can be paid for the „outside of the box‘-concept in respect of design and energy. This way of marketing the product in combination with delivering a project in a reasonable time makes the business strategy convincing for municipalities to collaborate with the developer (Interviewee 5,2015).

The strategy of an “early collaboration with the design and production team using also all the competence we have internally“ (Interviewee 5,2015) was already mentioned in the Egan report in the theoretical framework of this paper and can be seen as a potential successful element of the mechanism „development strategy‘ as additional benefits are created. The approach by STRABAG AB is to collaborate early: externally with clients, coordinating with the construction partners early, purchasing properties and internally using the in-house concept getting expertise from Germany for the development in Sweden (Interviewee 5,2015). In this way an additional benefit for the concept due to integrated work between development and construction can be identified. In the end it is about the “wheel you need to start turning“ (Interviewee 5,2015). One suggested way from the Stockholm Business region was the collaboration with municipal developers in the early stage of the concept development to “get a network“ (Interviewee 1,2015).

As a local developer, the long-term strategy is creating trust for the relationship with the municipality which leads to repetition of projects. With IKANO AB the reputation is a big advantage and a value in terms of trust, funding and especially the long-term strategy. IKANO AB has the possibility to grow and settle on the market with the goal to double the
volume in the next five years (Interviewee 3,2015). As part of the business strategy Interviewee 3 represents the company that successfully took the strategy suggested by Interviewee 4 that for successful concept development “the long-term perspective and starting small can be prerequisites“ (Interviewee 4,2015). Supported by the long-term perspective, the possibility of starting as a head contractor for five years before going into project development is explained by the developer of IKANO AB pointing out the long-term strategy as a prerequisite for the company’s business model:

“The head contractor role is more about gaining trust for the goal to establish in those markets and that makes it interesting for the municipalities as trust is built up with the long-term strategy. Additionally in respect of sustainability, we can make the areas far outside more dense. Municipalities want approximately 80% „Bostadsrätter“ and 20% rental (supports findings in chapter 4.1). The market far outside the city is our goal as the value can increase profitably. One example: The municipality mentioned you can build 1.000 apartments, but we thought that we could build 1.400 apartments. In total that gives us more apartments and more people can live on the same ground. So, we seek for more space efficiency. This in an important aspect also for the sustainability and the ecological aspect with more denser developments“ (Interviewee 3,2015).

4.3.4 Funding

As addressed above, a successful concept development requires huge funding as high costs evolve. This mechanism is highly important for successful concept development and is repetitively mentioned, however always in combination with other attributes such as trust, reliability, the right employers (organization form and expertise) and the long term strategy within the company to enter the market. The aspect of a strong player with a long-term strategy (see 4.3.3) relates well to the definition of mechanisms as a part of a whole apparatus and process to make concept development combining those aspects successfully:

- “Trust and reliability that can actually finance the project and funding are key for a developer and investor“ (Interviewee 1,2015).
- “You need proper funding and that is so much bigger than you would calculate, you need the right employers. However, the funding is elemental“ (Interviewee 2,2015).
- “Funding is essential. It is not about the concept itself it is about to getting it running and a lot of funding is needed to do so“ (Interviewee 3,2015).
- “Big financial strength in the company is important“ (Interviewee 5,2015).
- “All parts are of a high importance. Finance is one of the most important“ (Interviewee 6,2015).

Each of the quotes clearly underlines the mechanism of funding as a major one for successful concept development in the residential market.
4.3.5 Forcing sustainability

The following mechanism relates more in respect of green concept development as the role of politics was discussed in several interviews in how far more sustainable housing can be established with governmental influence. Research shows how governments can leverage green building policies to support local economies and meet their long-term goals pushing sustainable design in the residential market. There is increased consensus that governments will implement regulations that target sustainability factors far more aggressively than has previously been the case, and investors will need to understand what the consequences will be. For instance in San Francisco and New York public disclosure of energy use data for certain buildings was mandated with the intention of encouraging the energy use data as a crucial aspect for the investment decision-making in their housing concept (World Green Building Council, 2013).

The governmental role towards more sustainable housing on the residential market is crucial and can support clients and developers in taking action for more focus and investment in this area. “Restrictions from the municipalities need to be there towards a more sustainable development. My thought is that it will be stricter and stricter to be more and more energy-efficient. More Green housing - it will come“ (Interviewee 5, 2015). Another interviewee confirms the impression by reflecting to a failed concept analyzing that “as there is so much discussion going on nowadays: If we started nowadays our focus would also be a lot more on energy-efficient development within the concept. Back then with NCC Komplett we were just within the standards“ (Interviewee 2, 2015).

This mechanism underlines the impression mentioned already in the theoretical framework that presently, most developers view sustainability as an added burden with added cost (Abidin, 2010). However, governments should implement laws representing public welfare and social, environmental and economic benefits. In respect of the public interest and a more attractive investment strategy for developers, findings indicate that low-energy buildings are considered a sound business opportunity which the government can support in different ways. As indicated above an example for the mechanism ‘forcing sustainability’ the EU Directive 2010/31/EU specifies that by the end of December 2020 all new buildings should meet the standards for nearly zero-energy buildings. The empirical data confirms the need for improvement.

4.3.6 Relationship to the municipality

A key mechanism for successful concept development is the relationship to the municipality as “there are a lot of environmentally friendly housing concepts at a low price, but the issue is finding land to get it through the municipal process“ (Interviewee 3, 2015). The interviewed municipal developer states that “a good relationship with the municipality is the base for more housing“ (Interviewee 6, 2015). This identified mechanism is recognized in the empirical data by all the interviewees as one of the key challenges to develop housing in the residential market successfully.
It additionally addresses two of the four identified external challenges for market entry, the Swedish regulation and the process of land allocation & zoning. The municipalities are responsible for the development of the municipally owned land and that requires a municipal land allocation for the developers to be able to establish their concept.

Establishing a so-called development agreement supports why “the relationship between the developer and municipality is extremely important” (Interviewee 4, 2015). The cooperation between the municipality and developer is based on reference projects which means that getting the first project going is the key challenge to get connected and be able to prove expertise. Interviewee 3 (2015) suggested by starting as a head contractor and building up trust with municipalities. Alternatively, a local partner is needed.

Especially for international developers the challenge of establishing a relationship with the municipality is challenging as it needs reliability and trust. However, “municipalities want the international expertise and that is quite clear” (Interviewee 5, 2015). The international project developer represented by interviewee 5 focuses on different municipalities than Stockholm city which appears to be very regulated and inflexible “taking too long with too much regulation where the strength of the core business can not be used“. The concept of the international developer therefore seeks municipalities with more flexibility:

“Consequently it can be proven that the energy part in concepts is low and then rumors start getting better a reputation (fourth external challenge for market entry, see above) to get repetition. The repetitive business is the key for success in combination with a focus on high quality using the knowledge within the company“ (Interviewee 5, 2015).

The facilitator between developers and the municipal site confirms the potential for international developers establishing a trusting relationship to the municipality as a base for the development of housing in relation to the reputation: “When they see it is a player such as a big German Construction company, this supports the development. The opportunity is excellent regarding size and expertise“ (Interviewee 1, 2015). It is important that when a project is allocated that the results are successful in terms of meeting the project goals underlining the importance of this mechanism as “the relationship to the municipality is very important in terms of trust. When you get into the market, you need to deliver“ (Interviewee 5, 2015).

IKANO Bostad as a project development company has a big advantage in respect of the relationship to the municipality for the residential development as the long-term strategy, trust and reputation is established within its foundation of the company as IKEA as a global company with national reputation backs up their concept development.

Similar to the previous focus of the international developer, IKANO focuses on areas far outside the city center and seeks a positive long-term strategy with municipalities with high potential and space for improvement. “It is the goal to establish in those markets and that
makes it interesting for the municipalities as trust is built up” (Interviewee 3, 2015). Regarding the regulation Interviewee 3 criticizes the regulations combining the chances of connecting the mechanisms of forcing sustainability and relationship to the municipality as an opportunity for the future of development:

“Regulations are not following the development of the society and this is a major problem. So, a lot of regulations limit and restrict the concept development. It is not customer or consumer driven. For instance each student room needs to be built for accessibility and that makes them double the size than needed” (Interviewee 3, 2015).

Finally, as public housing companies develop in the interest of the city of Stockholm and sustainable and green concept development will develop more (chapter 4.3.5, forcing sustainability) a further contact for collaboration opportunities with the municipalities and housing companies of the municipalities is an option to proceed with green concept development (Interviewee 1, 2015).

4.3.7 Local network

The seventh identified mechanism for the successful concept development in the residential market is addressing the third challenge for market entry (described in 4.2.3, Locality) and is especially a major one to be thriving as an international developer. It is about the local network with local employers and partners to get the local know-how and expertise. This is confirmed in the empirical data as it is crucial to “find a local partner network” (Interviewee 4, 2015).

For successful concept development a localized team of employers is crucial “as an integrated model that takes advantages into account of local management skills, market knowledge, cost and efficiency synergies and risk diversification“ (Interviewee 5, 2015).

The international developer especially needed the local know-how and expertise which was initially established by acquiring an existing construction company. Moreover as part of the strategy, the goal is as a “new player to be local on the local market to make the difference by bringing in the knowledge, expertise and financial background underlines with the will of being local“ (Interviewee 5, 2015). The strategy is supported by collaborating with a local broker to support the idea of increasing the local network. In combination with the previous mechanism of maintaining a trusting relationship to the municipality the local network is vital.

The Stockholm Business Region supports the prerequisite for successful concept development on the residential market with the local network referring to the municipal developers as “teaming up is essential by increasing the network. Doing that progressively in terms of starting with one project and getting repetition is [one part of] the way to go to become established on a local market“ (Interviewee 1, 2015).
4.3.8 Unique selling proposition

The final identified mechanism for successful concept development in the residential market is the unique selling proposition which is in relation to the entrepreneurial part of this paper as a green housing concept aims for innovation in the construction industry. By pinpointing what uniqueness the concept reflects the target can be reached as “you should have a vision of where you want to go with your building system and concept” (Interviewee 2, 2015). “As long as there is profitability investors are interested” (Interviewee 6, 2015). However, profitability can be reached combining the presented mechanisms in a concept. It is important to “be very strict with one thing to concentrate on in your concept. The Swedish market has not understood the energy aspect yet and the willingness to pay is not there yet. So, the creation of a unique selling proposition with a clear concept is the solution. It is about a start-up with motivated employees and establishment of international groups with local management” (Interviewee 5, 2015).

The interviewee of the international company underlines the importance of a convincing first idea as they call it a concept being “outside the box but inside the box”. It is the goal to be unique somehow with the concept “making Europe come into Sweden. You deal with Sweden how it is inside the box and what you add is the design and energy - outside the box. It is about the use of the knowledge to try to get outside the box but still be inside the box. You need to find production parts to be more efficient supporting the sustainable development“ (Interviewee 5, 2015).

Finally, entrepreneurs seek a unique selling proposition convincing customers to switch to their product. As identified in the conservative construction industry, this is challenging and more-complex as the presented challenges for market entry and different mechanisms underline. The vice president of the strategy department concludes raising hope for a more sustainable future by rethinking the construction industry:

“It quite takes some years with a start-up in the construction industry until you have cash-flow coming in. Private Equity companies usually buy on cash-flows. You need to find other types of funding. They will not put up this $500 million, but probably invest when you are up and running. So, you have these financial issues as private equity is a bit difficult [to obtain]. A big construction company like NCC or a big real estate company with big ambition to increase their building stock with a big balance sheet and financial background have possibilities for a successful green concept development“ (Interviewee 2, 2015).

Finally, the findings of the empirical data for the residential market in respect of green housing, the market entry challenges and prerequisites for developers supported by the analysis of the research question dealing with the mechanisms for successful concept development can be regarded as valuable and significant research results. The research results are crucial in respect of developing new green housing in the residential market and can be seen as a base for a business strategy.
5 Discussion & Recommendations

Followed by the analysis of the empirical data and the findings of the research question, this discussion chapter addresses the outcome in respect of a possible strategy for the green concept development in the residential market in a theoretical and practical approach and shows the benefits of a green housing concept.

5.1 Strategy

Firstly, possible strategies for entering the residential market are presented. Secondly, the scientific contribution serves as a model based on the empirical data illuminating the mechanisms that are crucial for a successful concept development in the residential market. Thirdly, practical recommendations are formulated as a further result of this thesis showing possible improvements for rethinking the construction industry in respect of concept development.

The EU Directive 2010/31/EU specifies that by the end of December 2020 all new buildings should meet the standards for nearly zero-energy buildings. These changes in regulations for the building standards will support an innovative approach for the development of green housing in the residential market. From a developer’s perspective, it might be wise to add a “green element" to the company strategy, as it might be a way to adapt to the future market conditions (Zalejska-Jonsson, 2013,2). It is also subject to continuous improvement and being one step ahead of the competitors. This should be part of a successful company’s strategy.

Implementing a green housing concept on the residential market from the perspective of a project developer entering the market in the Stockholm region is an approach that can succeed in different ways. For a company to be successful its strategy must be explicitly stated. In respect of the development of a new concept the concept itself needs to be understood by all including a long-term goal and a strategy of how the project developer representing the company should act to achieve its goals.

Ulrich and Eppinger (2008) state in their understanding of successful concept development that the process from the mission statement to the development plan includes several steps that can be repeatedly found in the empirical data of this thesis. Therefore, it is crucial to constantly perform an economic analysis, be competitive with a unique selling proposition and test the prototypes. Furthermore as part of the process for implementing a green concept development customer needs and target specifications need to be identified and established.

This is supported by the entrepreneurial process by Foley (2014). The business concept needs to be clearly defined and understood by the organization after the opportunity is identified. In this case the business opportunity is the development of green housing which needs further steps to be implemented such as assessing the resource requirements and acquiring them. The scientific contribution with the eight identified mechanisms for
successful concept development explain more detailed what those requirements, prerequisites and resources are in order to be able to implement the concept.

As identified above the project developers can be identified as a key actor when mechanisms for successful concept development in the residential market are identified in respect of a green housing development. The project development company needs to face internal challenges such as building up an organization that fulfills the financial capital requirements, enriches the market with a unique concept bringing new techniques and knowledge to the market and especially the expertise.

This leads to the external challenges for market entrance that the strategy needs to include. The expertise of the organization needs the locality, the understanding of the Swedish regulations as the process of land allocation and zoning are crucial. Therefore, building up a trustworthy reputation within the industry needs to be established as business models have to be sold to the broader public, not just the supervisory board.

Consequently, there are different possibilities for a successful strategy. The key concept of entrepreneurship has been discussed in this master’s thesis and as mentioned above there are parts of concepts that are fruitful for addressing innovation in construction. In respect of a project development start-up company the conservative construction industry is not aligned with the cash-flow oriented start-up industry. The research shows that a successful concept development for the residential market needs too much time and a strong financial background. A new start-up does not fulfill the requirements for such a goal.

This means, a reorganization of an existing company with strong balance sheets where project developers can start a new organization within the organization can be a beneficial approach for successful concept development in the residential market. This strategy can be pursued in collaborative structures such as joint-ventures in terms of partnering. One successful example is the concept development of BoKlok Housing AB where IKEA and Skanska are partnering.

From the perspective of an international project development company the local know-how is needed as the external challenges for market entrance and the identified mechanisms underline. This has the consequence that a strong international stakeholder should deliberate on a company acquisition to buy in the local expertise and overcome market entry challenges. One of the major mechanisms for successful concept development the relationship to the municipality is crucial for reaching the goals as a developer. An empirical example of this thesis underlines that the relationship to the municipality is improved by trust and a positive reputation. This reputation can be established by showing convincing work in other projects over a period of several years as a contractor before starting to develop their own ideas.
5.1.1 Scientific contribution

The scientific contribution of this master’s thesis is based on the findings of the empirical data by the conducted interviews and the analysis of the residential market in Sweden and its challenges for market entrance. In the following figure a tentative typology is proposed categorizing the eight identified mechanisms in a model based on the theoretical framework and the conducted interviews. Additionally, the scientific contribution serves as a model based on the empirical data illuminating the identified mechanisms that are crucial for a successful concept development in the residential market.

As there are different analytical ways to link the eight mechanisms, the approach of finding patterns among them is threefold as figure 10 shows. The threefold model is characterized by the chosen attributes in respect of priority grading, internal/external alignment and time referring to the stage-model in project development (figure 1) and presented in the following:

![Tentative typology, self-created.](image)

Using the eight mechanisms as a result of the empirical analysis of the collected data, the first approach for the creation of this model is to characterize each mechanism by its internal or external alignment. The next step is the placement of each mechanism into the stage of project development (see figure 1) where its occurrence is paramount for the continuation of a successful concept development.

The third and final step for the creation of this model is the priority grading which is symbolized by the size of the circle referring to the importance of each mechanism in the process of successful concept development.
In reference to figure 2 which illuminates the high importance of the early stage in project development the project process is a process of progressive reduction of uncertainty through time. Consequently, the beginning of every project is crucial for the outcome of each concept development. At the very beginning of a project the project developer sees possibilities in the market with an initial sense of an investment opportunity. The mechanisms of local network and the development strategy are categorized in the first stage. As explained in the strategy the empirical data underlines its necessity to begin the development with the advantage of the local expertise in the local market. Formulating the development strategy within the organization is important in respect to the first ideas of the concept. The alignment of the first steps are external as project developers need to position their concept based on the market situation setting up the right strategy.

The second stage where the concept is refined requires a different type of management role by the project developer as an in-house professional within the organization. The model underlines the need to develop the concept in more detail in respect of finding a unique selling proposition and aspects of product development to increase the efficiency and quality of the concept. The empirical data supports the idea of the model that time internally is needed to basically establish the positioning of the concept on the market.

The third step of the model deals with the feasibility where the value of the concept is estimated in comparison to the project cost and a lot of funding within the organization needs to be acquired to be able to continue the process of successful concept development. Big financial strength in the company is important with proper funding for the concept development as the empirical data strongly supports. This sets the aspect of funding as the crucial internal mechanism. As different types of management can be identified among the eight mechanisms, the mechanism of risk deals with the developer role as a risk manager. The successful concept development in the residential market requires expertise in managing risks from a legal, financial and political perspective.

Before the final commitment for the implementation of the developed concept and after a great deal of internal work, the relationship to the municipality plays a significant role in the fourth stage where the permits from the local government need to be obtained on the final design. This step is determining success of the concept as the interviewees confirmed. A good relationship with all involved stakeholders should start right from the beginning by building up a positive reputation. However, in this step the relationship to the municipality is crucial for the successful outcome of the development. Here, the project developer deals a lot with the aspect of stakeholder management to realize the project.

The final mechanism in this model does not have the highest priority grading as it can only be influenced by the developer in a limited way as it is mainly a governmental task to support more sustainable housing incorporated into laws. Finally, this model as a tentative typology reflects the scientific contribution of this master’s thesis based on empirical data and can be validated in future research, also in comparison to other markets.
5.1.2 Practical recommendation

This chapter provides a practical recommendation for stakeholders within organizations to develop a new innovative concept on the residential market presenting suggestions for the process and specific improvements for the construction industry in respect of concept development. As an international project developer is part of the empirical data, the approach for international project developers to establish on the Swedish market is likewise part of the practical recommendation as a result of the findings.

Concept development and its product for the residential market needs to focus on creating value. As the findings of this master’s thesis underline the concept development for housing is capital intensive, meaning that large amounts of money are necessary to begin such a concept development for green housing. As the scientific contribution and the variety of the identified mechanisms underline the project the development team requires several management roles as a weak leadership and poor management can ruin a good concept development idea.

As every project is unique and is solved in teams, the construction industry seem to have an advantage in comparison to traditional organizations as a project-based organization is recommended to address innovation. For many enterprises the challenge is one of moving towards project-based organization in order to create a unique selling proposition on the market. Here, the team can work on the concept right from the beginning. This leads to the next practical recommendation within the organization. The linkage between the design and the production team is a crucial aspect for coordination and generates several advantages throughout the concept development stage.

In respect to the theoretical framework addressing entrepreneurship, several practices can be used to be successful in concept development for green housing. The idea of creating demand by a blue ocean thinking for example can move the substitute and attract customers, in this case tenants, investors and municipalities. This is meant by creating a unique selling proposition and create a new offer by a unique business strategy on the market. The aspect of trust needs to taken into account as building sense of loyalty with customers is important for the success. By creating a unique selling proposition in connection with the loyalty to the customer a possible sustainable competitive advantage can be reached with the concept.

The next entrepreneurial link is the linkage between concept development in the residential market and the innovative concept tests (figure 4) where the five tests for an innovative idea can be well transformed to the development of green housing. After the investment opportunity of green housing is identified, in the next step when the concept is refined, the function test whether the concept works, needs to succeed. The next step would be finding structures in the concept that allow us to build this type of concept on several sites in similar ways - the mass production test. By referring this step to concept development for green housing it is referred to the mechanism of product development
identifying certain functions within the concept for the development of green housing. The following market test fits well to the concept development for green housing as it needs to sell and the willingness to pay from the market needs to be analyzed. The financial test is crucial as funding is required to start the development of green housing and the concept should include its profitability. Finally, the fifth concept test is the permission test which refers to the mechanism dealing with the relationship to the municipality and the market entrance challenge of land allocation.

After the theoretical framework is used for practical recommendations, the empirical data additionally holds valuable recommendations for a successful concept development of green housing in the residential market. The above addressed mechanisms resulting in the tentative typology underline that next to the funding and the strategy for the concept development aiming for the unique selling proposition and the sustainable competitive advantage, the relationship to the municipality should have the paramount objective target as repetitively mentioned.

This leads to one of the external challenges for market entrance in the residential market: the process of land acquisition and zoning. As especially in the Swedish market the municipality has the decisive responsibility for land allocation, a proactive dialogue with authorities should be aimed at early in the process.

Having the sustainability agenda by the concept development of green housing is a factor that supports externally challenges as authorities will continuously intend to increase the development of housing in an environmentally-friendly way. Setting green as a priority increases the sustainable competitive advantage in the process. This is supported by the aspect of sustainability being based on the triple bottom line where the environmental development is in accordance with the economic prosperity and social responsibility.

In support with the scientific contribution, the mechanisms of the empirical data and the theory with the Egan report (1998) the practical recommendations for the concept development of green housing on the residential market can be seen as change of the approach of how to develop projects in the future.

Therefore, it is needed to integrate systems and processes early in the development for instance regarding the cost and constructibility processes by using BIM models for production planning and cost estimation as the project program is much more detailed early and continuously throughout the concept development phase.

This should be supported with the key drivers for change according to Egan which is committed leadership, a focus on the customer, a quality driven agenda, commitment to the people and an integrated process as presented in the following chapter.
5.2 Benefits of a Green Housing Concept

The following chapter adds some valuable content in respect to the benefits of a green housing concept. According to the literature in the theoretical framework of this master’s thesis the trend towards green housing is ongoing and must be examined in the context of their impact of the local, natural and built environment. This leads to the definition of green housing taken from Adhamina C. Rodriguez, the Director of Sustainability at Stanford University who says that green housing are consists of „buildings that are sited, designed, constructed and operated to protect the health of its occupants and reduce the environment impact.”

The demand for sustainable homes continues to grow. There is now a huge focus on healthier building practices, internal fit-outs, resource efficient products and increased efficiency and less waste. For the understanding of green housing it is crucial to understand that this type of housing becomes native to the specific site in the natural, local and built environment to select appropriate orientation regarding sunlight, wind, air quality, water sources and the community as examples.

This leads to the idea of harvesting the site conditions to get the local benefits of each specific location in the development of green housing. Consequently, this differs everywhere in the world as each market and environment differs from the other. That means that the choice of the usage of green materials depends on the project area. It is

**Figure 11: Adaptation to its unique site, Rodriguez, Stanford University (2015).**
crucial to build green housing to protect health and comfort by design for flexibility and de-
construction. This leads to the final point of the operation and maintenance as important
aspects to consider as a green building should be analyzed over the whole life-cycle.

Green housing will improve the water and energy efficiency of the home which is reducing
the energy bills and costs (see economic benefits). Another major point is that green
buildings create healthier homes for their occupants (see human benefits). Consequently,
the benefits of green housing are presented in two ways: human benefits and economic
benefits.

Regarding the human benefits of green buildings there is research that shows that the
green design attributes of buildings and indoor environments can improve worker
productivity and create advantages in different industries and other real estate
developments other than only residential.

For instance improved test performances in schools and earlier discharge from hospitals
can be reached. In office buildings it is possible to increase the workplace productivity
achieving less absenteeism with the right air and light strategy for instance. Finally, the
major human benefit can be the aspect of improved health and well-being in green
buildings.

In respect to the economic benefits which are often mentioned as the downside for green
housing development there are remarkable benefits that need to be considered in respect
of the development of green housing for the residential market.

Regarding the design and construction costs, research shows that building green does not
necessarily need to cost more, particularly when cost strategies, program management
and environmental strategies are integrated into the development process right from the
start (see integrative design process below).

Green buildings have especially been shown to save money through reduced energy and
water use and lower long-term operations and maintenance costs. Additionally, green
housing improves the building value in terms of rent, sale and occupancy from the
perspective of the project developer and might qualify for grants or incentives.

In comparison to conventional buildings green buildings are expected to reduce operating
costs, provide better indoor environment and have a lower impact on the environment
which leads to the fact that investing in green housing is more beneficial as a customer
may be willing to pay extra for a green apartment.

Finally, investors and occupants become more knowledgeable and concerned with the
environmental and social impacts of the built environment, which leads to buildings with
better sustainability credentials enjoy increased marketability.
Those benefits can be reached by an integrated design which equals green combined with an integrative design process.

The intergovernmental panel on climate change proposes an integrated building design which is supported by practical recommendation for concept development as a result of this thesis. An Integrated building design focuses on exploiting energy-saving opportunities associated with building siting as well as synergies between building components such as windows, insulation, equipment, and heating, air conditioning, and ventilation systems. Most importantly, it will become possible in the future to design a building where operation can be monitored, controlled, and faults detected and analyzed automatically (IPCC, 2001). This will lead to the next step of development, a possible green smart concept development.

The already above mentioned Egan report (1998) mentions the need for radical changes to the processes to achieve the targets of sustainability and more efficiency in the industry by the way projects are delivered. The integrated project process includes a transparent approach around the above mentioned key elements and mechanisms of product development and project implementation. Sustained improvement should then be delivered through use of techniques for eliminating waste and increasing value for the customer (Egan, 1998).
6 Conclusion
This chapter rounds up the master’s thesis including the concluding remarks and a proposal for future research in the field of project and concept development, market entrance in the residential market and innovation in respect of green housing. The master’s thesis developed a model as a tentative typology based on the empirical findings of eight identified mechanisms for successful concept development in the residential market to answer the research question of this master’s thesis. The conceptual model was developed based on the four chosen key concepts of project developer, entrepreneurship, market entrance and concept development. Supported by the empirical data the analysis of the residential market in Sweden and the identified challenges for the market entry to the market, the model is created as a scientific contribution for the described field in respect of green housing development.

6.1 Proposal for future research
As this paper deals with the perspective of the project developer, the green concept development for the residential market is a phenomenon that could be researched from a different perspective as for example the tenant or owner perspective. Here, for instance the lower operating and maintenance costs would have a bigger impact as the project developer generally focuses more on lower design and construction costs, quicker sales and especially a higher sales price.

The executed master’s thesis and its scope for such a project does not justify the complexity of its content. Therefore, the intensity of this research field can be pursued and more involved stakeholders with different backgrounds can be interviewed. Especially, the number of interviewees is suggested to be increased for a future research project as more valuable input from different perspectives is presumable.

The previous proposal for future research is especially valid for stakeholders from different markets as this paper focuses on the Swedish Market, mainly the Stockholm County. The mechanisms for green housing concept development and innovation in construction can be analyzed within different markets in Europe where the local, natural and built environments differ. Another differentiation could be other global markets as the need in strong economies differ from that of developing countries. Furthermore, the natural and financial resources differ. This underlines once again how complex concept development for the residential market can be and that the empirical data depends on the background of the interviewees.

This master’s thesis has the focus on the residential market which consequently means that future research can focus on mechanisms for concept development in commercial and industrial real estate development. This research can be undertaken as differences can be analyzed. Finally, the created tentative typology (chapter 5.1.1 Scientific contribution) is developed as a model proposing mechanisms for concept development in the residential market.
As this proposal is based on existing concepts and the empirical data other researchers can evaluate the model, use and test it in order to verify it.

6.2 Concluding remarks

Finally, the role as a project developer of how a foot can be set in the door in respect of mechanisms for green concept development in the residential market is highlighted in many different ways in this master’s thesis. A complex business opportunity such as developing a new innovative green housing concept involves many different stakeholders and the quality of a developer to manage those as everyone is in some way connected to the development process. This long-term prospect of such a development justifies a considerable amount of planning in the early stage where the influence and risks are the highest in any project. This is supported by the fact that green buildings have been shown to save money through reduced energy use supporting lower long-term operations and maintenance costs.

It can also be concluded that the public sector should be seen as a partner for the project developer as the relationship to the municipality and the people is crucial for any project as the responsibility of a developer is to create space over time with associated services that meet the needs of a society. Additionally, this master’s thesis points out that concept development in respect of a unique innovative project is an art that requires creativity coupled with risk management, stakeholder management and the right strategy.

The eight defined mechanisms respond to the research question and underline that this highly-complex process of project development faces internal and external challenges that require an organization with a strong financial background, a unique selling proposition in their strategy and the right expertise to face such challenges. The local zoning requirements/ regulations are problems. Developers must often obtain approvals locally for specific developments. Those need to be clarified and solved before the development can begin. This leads to the crucial fact of establishing an organization where the project development team has the local knowledge and expertise to face those challenges.

This leads to the final point rounding up this master’s thesis that the governmental role is important where sustainability can be forced in a political way in the form of laws where the influence for more green housing can be used to support its development. Pushing sustainable design in the residential market needs to be addressed by all involved stakeholders, the developer, the owner, the tenants, but also by the whole industry and especially the society. The aspect of sustainability in the concept development on the residential market should not longer be seen as an added burden with added cost as the social, environmental and economical benefits in respect of the public interest should be acknowledged and rewarded as the paramount objective. As innovation in the construction industry can support the fight against the well known global problems it refers back to the quote of Richard Branson that „one has to passionately believe it is possible to change the industry, to turn its head and to make sure it will never be the same again.“
7 References


Zalejska-Jonsson, Agnieszka (2013). Impact of energy and environmental factors in the decision to purchase or rent an apartment: The case of Sweden. School of Architecture and Built Environment, KTH Royal Institute of Technology, Stockholm, Sweden.


8 Appendix

Interview Guide

1) Introduction with background and experience.

2) Explaining thesis background:
   - Interest in developing green concept in residential market.
   - Entering new markets in residential development, its challenges and mechanisms.

3) Question flow line with space for follow-up questions:

Q1: Could you elaborate on the need for green concept development in the residential market for Stockholm and globally? What is your understanding?

Q2: What are the key aspects making concept development in the residential market successful?

Q3: Under which circumstances could concepts in the residential market fail?

Q4: In order to enter a new residential market successfully what is needed as prerequisites?

Q5: What are elements of a strategy in concept development for the residential market?

Q6: How strong do you classify funding as the most important aspect in concept development of the residential market? How strong „novelty“ of the concept?

Q7: A) What are the most important aspects for a concept in the residential market to attract investors? B) How do you see the importance of the relationship between the developer and the municipality?

Q8: How can a concept be proven to be successful in the residential market?

Q9: Which mechanisms of concept development would you see regularly in conflict? What are the key points from your perspective?

Q10: What are the chances for a start-up company in green residential development? Could it work? What makes it difficult?
Interview Guide (På svenska)

1) **Introduktion Explaining,**

2) **Förklara thesis bakgrund:**
   - Marknadens intresse av gröna koncept i bostadsmarknaden och en analys av dess mekanismer.
   - Inträdde på nya marknader i bostadsutveckling, dess utmaningar och mekanismer.

3) **Frågor:**

Q1: Vad anser du om behovet för grön konceptutveckling inom både Stockholms bostadsmarknad och globalt?

Q2: Vilka element är viktigast för att lyckas med utvecklingen av nya koncept i bostadsmarknaden?

Q3: Vilka förhållanden kan leda till att nya koncept i bostadsmarknaden misslyckas?

Q4: Vad för förberedelser krävs för att kunna ta sig in på en ny bostadsmarknad?

Q5: Vilka beståndsdelar finns i en strategi för konceptutveckling i bostadsmarknaden?

Q6: Skulle du ange finansiering som den viktigaste beståndsdelan för konceptutveckling i bostadsmarkanden?

Q7: A) Vilka är de viktigaste aspekterna för att attrahera investerare till ett nytt koncept inom bostadsmarkanden. B) Hur viktigt anser du att relationen mellan kommun och utvecklare är?

Q8: Vilken approach borde användas för lyckas med sitt projekt?

Q9: Vilka mekanismer i konceptutveckling anser du ofta hamna i konflikt med varandra? Exempelvis finansiella och juridiska frågor.

Q10: Vad tror du om chanserna för ett startup-bolag inom grön bostadsutveckling? Kan det fungera? Vilka hinder finns?