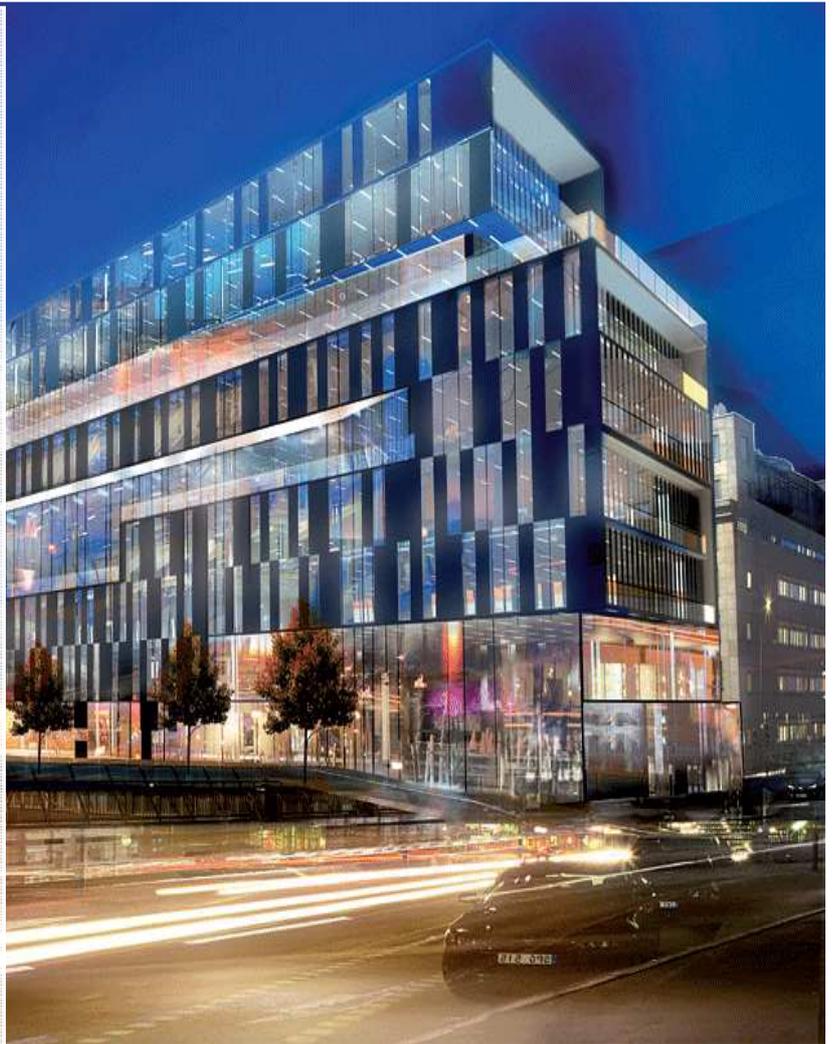


**Steel, glass and interactions: the social  
construction of a green building**

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**Master thesis  
Environmental Communication and Management**



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**Abstract:**

**Purpose:** This thesis is a case study of Kungsbrohuset, a recently completed building in central Stockholm, which has been lauded for its environmental credentials. It is the first building in Sweden to be certified by three separate environmental certification schemes. The building is now rented (in the main) to Schibsted, one of Scandinavia's largest media concerns. The building developer and operator, Jernhusen, has engaged the services of an environmental advisor to assist their tenants in undertaking environmental actions, whilst at the same time the design process demonstrates differences to the norm. The case study is an intrinsic case study with the aim of gaining a better understanding of these particular phenomena.

**Methodologies:** In addition to theoretical understanding, semi structured interviews have been carried out with a range of relevant parties. This data has then been coded, merged and then thematically analysed.

**Findings:** The case study shows that there is a process of symbolic interaction ongoing in the building, coupled with ecological modernization apparent in several of the organisations linked to the building. We can see from the respondents interpretations of a green building, that elements of Habermas' theory of communicative action are relevant to the role played by the classification systems in the respondents' comprehension of a green building. In addition there is evidence of communities of interest and a nascent community of practice in relation to the learning processes apparent in the social interactions connected to Kungsbrohuset.

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# 1. Introduction

## 1.1 Background

Buildings and their symbolism can play an important role in framing society and guiding the public discourse. As the sociologist Thomas Gieryn states “buildings stabilize social life. They give structure to social institutions, durability to social networks, persistence to behaviour patterns” (Gieryn, 2002). Buildings exist not just as collections of raw physical materials, but also as collections of the needs, understandings and desires of society. They consist of socio-technical praxis, which is to state that within the physical structure is written the social structure of society at that time. This is not a new phenomenon. In Kim Dovey’s book ‘Framing Places: Mediating Power in the Built Form’, the author traces the understanding and projection of power (and other themes) in various buildings throughout the ages (Dovey, 1999). So it is an accepted understanding that buildings are inextricably linked to the values of the societies that produce them, and that they act as powerful symbols of the projection of these values. What is equally valid is the role that a building can have in defining a momentary set of values, such as the examples of the Reich Chancellery, or the Arc de Triomphe as symbols of empire, power and endurance; or the progression of the architecture of parliamentary buildings from a symbol of power and glory to one of transparency and openness (as exemplified in the reconstructed Reichstag and the London City Hall, both Norman Foster designs), which invite and allow the citizen to view democratic proceedings. Therefore, it can be construed that the physical structure can be used to ‘hold firm’ and give concrete expression to the ideas and values of a society, or at least, the ideals and values that those involved in design wish to translate.

In this modern age, companies are increasingly aware of their branding and market positioning. The advent of CSR (Corporate Social Responsibility) has brought about a significant change in how companies operate, how they perceive value, and how they attempt to position themselves in the marketplace. CSR has moved the focus of companies from solely the bottom line (profit) to what John Elkington calls the triple bottom line (Elkington, 1999), which incorporates people, profit and planet. These three categorizations relate to the organisation’s social, economic and natural capital. There are varying different degrees of CSR, with differing reasons for practice being proffered, such as licence to operate, brand differentiation, risk management and human resources. A further development and refinement of this has been the push towards understanding CSR as Creating Shared Values (CSV), which means that the incorporation of social values and responsibilities into the business operation structure gives a company a competitive advantage. Porter and Kramer claim that “the concept of shared value...recognizes that societal needs, not just conventional economic needs, define markets. It also recognizes that social harms or weaknesses frequently create internal costs for firms – such as wasted

energy or raw materials” (Porter & Kramer, 2011). This deposits CSV as integral to the company’s operation and integral to profit maximisation. In line with a growing consumer interest in the effects of climate change, business’s attitudes to environmental problems, natural resource use and climate change and increased energy costs along with a greater understanding of issues such as the effect of indoor air quality on staff productivity (Fanger, 2000) has created a situation in which buildings that are both energy efficient and visibly environmentally friendly are considered desired rentable spaces. Here we can comprehend Dovey’s understanding of how this socio-technical praxis operates. Societal values change towards environmentally friendly practices and this leads towards construction of environmentally friendly buildings. But buildings typically last 40 years, so in effect these societal values are locked in for this period (not withstanding that many buildings are substantially refurbished after 20 years). So we can see now, how the current buildings that we create reflect the understandings, attitudes, and values that we deem important at this particular moment, and that these are then converted into a physical form.

As we, as a society, form our understanding of what it means to be a ‘green’ or environmentally friendly building (or miljöbyggnad in Swedish) it is important to understand the processes involved. Is the social construction of the meaning of a green building a transparent, explicit and easily understandable process from the point of view of all participants, or does it take on a more unreflexive, implicit meaning? Equally if so, whom does it affect if the social construction is unreflexive? And is a society with an unreflexive meaning of a green building worse off than a society with a reflexive one? Many of these questions are also contained within our use of the words ‘sustainable development’ to describe the overarching process of which the current interest in green building is a part. Sustainable development itself has several definitions, but the most common is that from the Brundtland Commission, who defined it as “*Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs*”. This definition has generated controversy, due to the coupling of sustainability with development which implies a necessity for growth. This inherent conflict is apparent in the increasingly advanced technological solutions being proposed in building design to solve environmental problems.

It should be noted that both the understanding of a green building; and the understanding of sustainable development are both floating signifiers. That is to say that the meaning of both can signify much more than merely what the words mean, and these meaning are intersubjective, shared and co-constructed through interactions between many actors. In this way, an exploration of the social construction of a green building can provide an insight into the greater questions regarding our understanding of sustainable development and environmental questions in general. It may also be able to cast light regarding the process of this co-construction and point towards a possible future progress. Does the building of a

green building symbolise a conscious action to attempt to act towards reducing negative impacts on ecological and social conditions or is it driven in part by other drivers, such as gaining market advantage, reputation or power. As such, the examination of the social construction of a green building can draw attention to the paradoxical relation between the logics of making choices towards solving environmental problems or making choices which merely appear to be solving environmental problems. This anomaly is quite important, because in a process of eco-modernisation, and in an unreflexive society, we may implement solutions which owe more to the logic of appearing to solve problems, than to actually solving them. To do so, would be a severe hindrance to the actual goal of solving environmental problems.

## **1.2 Aim**

The aim of this thesis is to further understand the social construction of a green building by exploring the processes undergone by several of the key actors involved in the building design, construction, marketing and use. The aim is to decipher these processes and understand the main drivers which give credence to the assertion that the building is environmental. By doing this, the thesis wishes to uncover how the classifications are used by all parties to guide their understanding of green and vis-à-vis their acceptance or rejection of the building as a 'green' building. The thesis also wishes to explore what meaning the different respondents attribute to a green building, in terms of it as a symbol for other meanings. In this way, the thesis shall examine what information a green building can transmit to societal actors.

## **1.3 Scope of Work**

The social processes which appear in relation to Kungsbrohuset involve a large number of actors, interests and stakeholders, some of which are actively involved, others which have little or no knowledge of their influence. This research will look only at actors which are explicitly involved. Within the complete process, different actors can be involved throughout, at only the design and construction phase or only once the tenants are in place. For some actors it is also possible that throughout this process, their roles may change and take on a different meaning, for example, when the building design architects are also hired as the new tenant's fit-out (the internal office space design) architects. The research will attempt to understand how this affects the social process, both from an individual and organisational perspective. The research shall consist of a series of semi-qualitative interviews carried out with the different actors identified. As the research is about understanding and getting a sense of the social interaction, it is not necessary to be definitive (i.e. to identify and interview every actor involved), rather it is more conducive within the boundaries of the research to focus on those actors which have pivotal roles, and which can

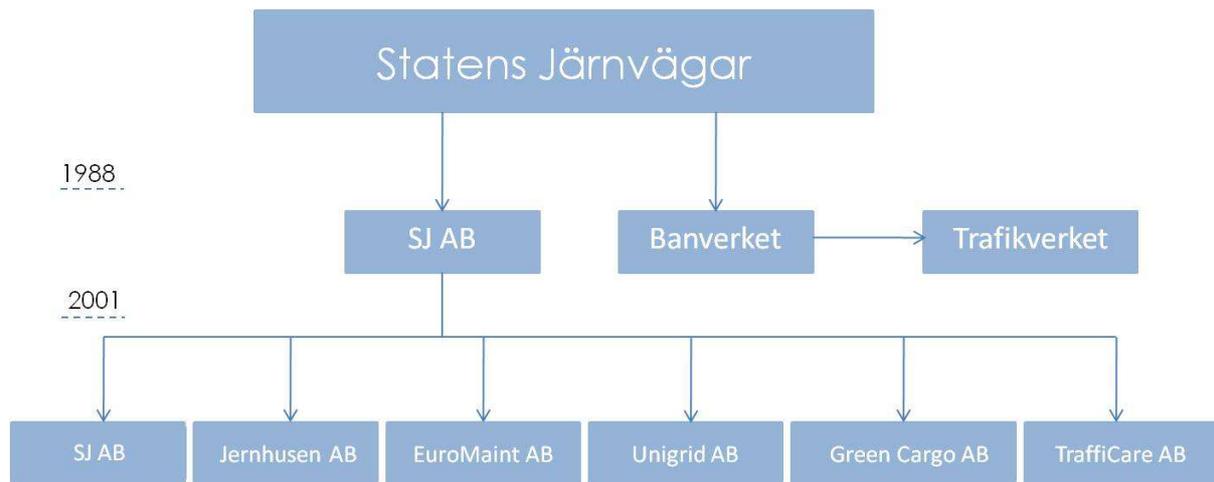
enlighten the research as to the underlying structures which underpin the social interaction regarding Kungsbrohuset.

## **1.4 Research Question**

The research questions which this thesis aims to investigate are to understand which kinds of processes are engaged to socially construct a green building, by using symbolic interaction. Furthermore, I plan to use Habermas' Theory of Communicative Action to examine the role of classification systems in legitimising and supporting a building's claim to be green. Additionally, with the assistance of the concept of ecological modernisation, the paper shall attempt to understand the effects of this process on the companies and actors involved, and the society in which they interact.

## **2. Context of the Case Study**

Kungsbrohuset is a building recently constructed in the centre of Stockholm, the capital city of Sweden. The building was developed by the company, Jernhusen, a state owned company, whose function is the development, administration and ownership of buildings connected to the Swedish railway sector. Jernhusen was formed out of a series of rationalizations of the Swedish Railway system in the decades 1980-2000 (Sveriges Järnvägar - Om Oss), which left six main government owned entities; SJ (the passenger train service), Unigrid (a transport IT company), TraffiCare (a cleaning/maintenance company), Euromaint (a rolling stock maintenance company), Green Cargo (the freight company) and Jernhusen, into which the real estate holdings of the old SJ were transferred. The aim of this was to encourage competition in the provision of rail services to commuters, travellers and freight. Therefore Jernhusen is now the owner of stations, depots and maintenance facilities providing services to both government and private operators within the Swedish railway sector.



Based on <http://www.statensjarnvaggar.se/info.asp/id/1515>

**Figure 1 - The organisational history of Jernhusen**

As part of Jernhusen’s role, it is also to actively develop and unlock the potential in the large amount of real estate that exists along transportation corridors. Within the major cities of Sweden, and especially Stockholm, this real estate could be potentially very valuable. As part of their mandate, they should develop this in a manner which unlocks the greatest potential, and this in Stockholm means that they can cater for the growing need for office space that exists in the capital.

Therefore Jernhusen is in a unique position, in that it is the possessor of a large land and real estate bank, but it as a company is relatively young, and is still in the process of forging a company identity. Coincidentally, the largest tenant in Kungsbrohuset, Schibsted Sverige AB is also creating a corporate identity by bringing together disparate elements of its media holdings into the same location and also providing common organisational functions such as human resources and economy.

The building itself as an example has achieved a large amount of media interest, and has come to be considered one of the better examples of architectural design in Sweden constructed in the past few years. As such, it was a runner-up in the Stockholm City Building of the Year competition in 2010 (Nyheter, 2010). Jernhusen have had approximately 200 visitors to the building to understand its environmental features, concept, and construction. The building has received three separate environmental classifications, the Swedish P-märkning (which is related mostly to indoor air quality and occupant environment) and Miljöklassad Byggnad, and the European Union-wide Green Building classification. It is the first building in Sweden to have all of these three classifications.

However, whilst the building has some very interesting environmentally friendly features, it does not appear remarkably different to other buildings, both in its appearance and construction. This is what interested me in the original idea, to investigate and explore the social construction of a green building.

At this stage it is also important to highlight that the term 'green' building, in Swedish – miljöbyggnad, or environmental building has no common or defined meaning. Therefore it is a meaning which must be negotiated between the different actors, as the building moves through stages, from design to construction and use; this meaning will change as the different actors have different perspectives, needs and values, in addition to large disparities in knowledge regarding different areas of the building's functions. It is a process of interaction and interpretation which the actors must embark on. In order to attempt to construct a meaning of green, and be able to symbolize this to all stakeholders, there exists several different classification systems, which can be privately operated, operated by national or EU governments and agencies, or organized in a collaboration between industry and the relevant authorities. Of the many available classifications, Kungsbrohuset has been assessed using three quite different ones, the EU Green Building, the Swedish P-märkning and Miljöklassad Byggnad. It is important to understand the differences between each of these classifications, and others, as they are not neutral actors in themselves, as the developers are free to choose between several competing classifications in order to express the green credentials of their building. The first, the EU Green Building, is a voluntary European Union wide programme designed to recognize those buildings constructed in energy efficient and cost efficient manners. The Green Building states as its main goals as to trigger investment in energy efficiencies and renewables in the non-residential sector, using market principles and also promoting the implementation of above minimum building standards and codes (The Goals of Green Building). As such, the Green Building programme can be acknowledged as understanding 'green' from an energy efficiency and a cost efficiency perspective, with a small emphasis on the need for fossil fuel substitution, but a predominance on fossil fuel use minimisation. It also attributes the market economy, and in particular, the private sector, as the arena for the implementation of green building. Miljöklassad Byggnad, (environmentally –rated building) now known as simply Miljöbyggnad (environmental building) is a Swedish system which was developed by an industry-research cooperation, which was financed as part of Bygg-Bo Dialogen (Home- Building Dialogue), a public scheme for increasing quality in the Swedish construction industry. This classification takes a wider view of 'green' than the EU Green Building, by inclusion of indoor climate, energy and the materials and substances used in the building (Miljöbyggnad - en Svensk certifiering som värnar om människa och miljö). It also requires a post-occupancy survey to gauge tenant satisfaction before the highest level, gold, can be awarded. The Miljöbyggnad classification system is run by an organisation called the Swedish Green Building Council (SGBC). P-märkning, run by SP Technical Research Institute of Sweden, a state owned entity, is a certification system that is primarily concerned with both indoor climate and low energy use, two objectives that can sometimes be diametrically opposed. The classification focuses heavily on the operation and management of the building, with inspections regarding the systems installed and their maintenance and the documentation of such.

### 3. Methodology

#### 3.1 Data Collection

In order to answer the research question, it was necessary to understand what data needed to be collected. In order to understand processes and understandings and perceptions, a real situation is required which can provide the qualitative data required. As such, a case study was highlighted as a possible good fit with regards to data collection.

Data was collected throughout the period April - May 2011, with a series of interviews being conducted throughout this period, as well as background research. All interviews were recorded and the recordings are available via the researcher. The following individuals were interviewed:

No.	Company	Responsibility
1	Jernhusen	Project Manager
2	Tenant & Partner	Relocation Project Manager
3	Tenant & Partner	Marketing & CSR
4	Strategisk Arkitektur	Architect
5	Strategisk Arkitektur	Architect
6	Structor	Environmental Consultant

Table 1 - List of interviews

All interviews took place at the place of work of the respondents by prior appointment.

#### 3.2 Case Study Method

As explained above, in order to be able to describe the processes undergone with regard to the interactions surrounding green buildings, it is necessary to be able to highlight these processes within a contextual situation. This points towards the need to be able to understand a particular situation, or in short, a case study. Case study methodology is a qualitative research method which enables the researcher to study a particular situation within its context and using a variety of different sources. It is a common research method within the social sciences field. According to Yin, (Yin, 2003) case study methodology allows the researcher the ability “to explore individuals or organisations, simple through complex interventions, relationships, communities, or programs”. Fry et al (Fry, Ketteridge, & Marshall, 1999) describe case studies as complex examples which can give an insight into the context of a problem as well as illustrating the main point. Yin is one of the main proponents of the case study method, along with Robert Stake, and both researchers propose

slightly different concepts of what a case study may involve. However, according to Johansson (2003), there is agreement between several researchers, including the above, that a case study must involve a 'case' which features the following:

- A complex functioning unit
- Be investigated within its context using a variety of different methods
- Be contemporary

From this point of view Kungsbrohuset characterises a case by having a functioning unit, which many would take to be the building, but in this instance is the communicative process by those involved in the building's environmental performance. This is the unit of analysis used in this case study. This constitutes a process which stretches from building design through to building use, and so fulfils the necessity to be contemporary. There are several other examples of functioning units which may be applicable within the same context, in order to answer different research questions, but this allows us to draw a conscious boundary around the case study and to include or exclude possible sources of information as relevant or irrelevant to our case study. Within the case I shall utilise interviews as the primary data collection method.

Yin categorizes case studies as explanatory, exploratory or descriptive, whilst Stake uses the different classifications of intrinsic, instrumental and collective.<sup>1</sup> These differing classifications do not have a clear cut divide between researchers, as their methods of differentiation differ and in some instances overlap. However it is possible to say that, firstly there is a wide scope of differing types of case studies, and secondly, there is a distinct difference between the construction of case studies as used by Yin and that used by Stake. Yin focuses on the procedural element, in which the case study is defined by how the case study is conducted, whereas Stake takes a different tack, with the case study being defined by the case itself, and by the interest in the case. I attempt to follow Stake's argument here, by describing in the background section the features of this particular topic and situation that make it both amenable and instructive from the environmental communicative field of research. One could also describe this case study as exploratory, according to Yin categorisations, certainly in terms of methods, as exploratory requires data collection first and then you attempt to understand and apply theory to the data. But it is most useful to describe this research as an intrinsic case study.

### **3.2.1 Selecting the Case Study**

In order to select a case study, it is important to understand the different types of cases as outlined above. Do we wish to describe or understand theory through the lens of a case study, or are we more interested in understanding the case study

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<sup>1</sup> See Baxter and Jack (2008) for a complete description of each type of case study.

itself? Additionally, perhaps we wish to compare several cases and draw similarities between them?

In the initial searching for a case study, it is important to be able to draw together a set of criteria that can assist you in selecting the case. In this instance several immediate criteria existed, the building must be located in the Greater Stockholm area, in order to allow for data collection, the building must be recognised as 'green' and must be recently built and occupied. Several buildings reached these criteria, but two warranted further investigation<sup>2</sup>. These two buildings were Norra Bantorget (also known as the Flat Iron building) and Kungsbrohuset. Norra Bantorget, however, had been recently sold by its original developer to an investment concern, and as such, significant doubt existed as to the availability of data collection, and also as to the continuance of involvement with regard to green issues and interaction. Therefore, it was decided that Kungsbrohuset displayed the best potential to serve as the contextual setting for a case study which could answer the research questions.

### 3.3 Qualitative Semi-Structured Interviews

Interviews were the method of data collection, and the method of interviewing was semi-structured interviews. This is a method in which the questions are not preconceived beforehand, but where the interview is allowed to follow several themes, and the interviewed subject has control over the process. The interviewee has the ability to focus the subject on the questions, but also has the ability to delve deeper into statements made during the interview. This is the elements that give the semi-structured interview its qualitative significance, as Kvale (Kvale, 1996) quotes Spradley (1979) in demonstrating the functionality of the semi-structured interview from the viewpoint of the researcher:

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<sup>2</sup> The other buildings were predominantly discarded due to the tenants involved being involved within the construction industry (ÅF for example), or having initial strong environmental consciousness (LRF in this case).

*"I want to understand the world from your point of view. I want to know what you know in the way you know it. I want to understand the meaning of your experience, to walk in your shoes, to feel things as you feel them, to explain things as you explain them. Will you become my teacher and help me understand?" (p.34)*

Therefore, we must understand the process of the interview as an interpersonal dialogue, one in which there is a shared interest (the case study). However, we must note, the semi-structured interview is not a conversation; there is an implicit (and often explicit) power structure. As Kvale states "the interviewer defines the situation, introduces the topics of the conversation, and through further questions steers the course of the interview" (p. 126). The interviewer may be open regarding the purpose of the interview, and the themes to be explored; or this can be hidden, and equally the interviewee may not be open in such a situation, if he or she is unsure how the material may be used. It is the skill of the interviewer that can set the interviewee at ease, and can also bring to the fore the knowledge that the interviewee can impart regarding the case study.

In this case study, the interviews are of a descriptive nature, that is to say that the purpose of the interviews is to understand the different actors description of their process, and to enable the researcher to allow the interviewees to explore their particular emphasises and important moments. The interviewees were chosen on the basis of their connection to the case study, and the different aspects of the research questions that could be approached with each person. Therefore the most important interview subjects were deemed to be the developer, in order to understand their perspective and the rationale behind the building and how they had driven interaction, the agent involved in the tenant's leasing of the space within the building, the architect, the environmental advisor and the tenant. In order to develop the questions for each interview, it was necessary to break down the research question into themes exploring their initial positions, their involvement and interactions, their reflections on the process and their own interpretations. These themes also left scope for the interviewee to develop the interview in their own fashion, in accordance with the semi-structured nature of the interviews.

### **3.4 Analysing the Data**

Interpretative Phenomenological Analysis or IPA was the method used to organise and analyse the data. According to (Smith & Osborn, 2003) the aim of IPA is "*to explore in detail how participants are making sense of their personal and social world, and the main currency for an IPA study is the meanings particular experiences, events, states hold for participants*". IPA is particularly well used in the field of studies regarding health, but it can be used in a wider context. IPA has a strongly constructivist basis focussing on the meaning of phenomena. The method is in itself not rigid and is therefore open to modification. As the IPA researcher which

to understand the user's experience of different phenomena, it is rather flexible in terms of its data collection methods, however the dominant method is the semi-structured interview.

To move from raw data to interpretation, the recordings are first transcribed. Then the researcher must carefully analyse the transcript, several times, making annotations and comments each time. Next the researchers attempts to build lower order themes from these. The aim of these themes is to capture the essence of the initial readings. Connections are then made between themes until the themes can give a coherent and ordered understanding of the transcript. Next the series of transcripts have to be connected via higher order or superordinate themes (Chapman, 2002). This leads to a situation of superordinate level themes, which connect back to the lower order themes of each transcript, which are in turn based on the annotations of the researcher within the transcript. These superordinate themes then provide the narrative for the research and can be exemplified and illustrated via direct quotes from the transcripts.

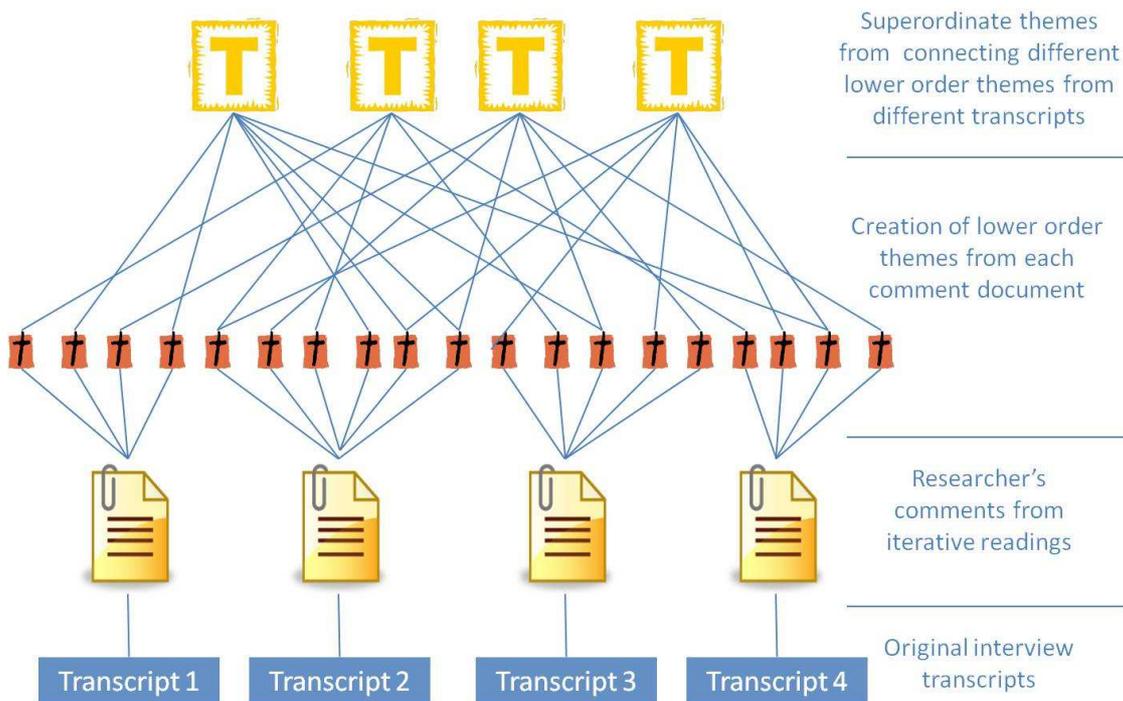


Figure 2 - Methodological process for Interpretative Phenomenological Analysis

The methodology calls for looking for themes in the transcripts, and then connecting and clustering themes. Several early themes emerged such as learning, green as a process, normalization of classifications, and these were final connected into four final themes, as can be seen below; learning, the role of the classifications, reflexivity and process. These four themes are not exclusive in themselves and there is quite an element of overlap, particularly between elements of reflexivity and process, as the reflexivity is driven by the process undergone.

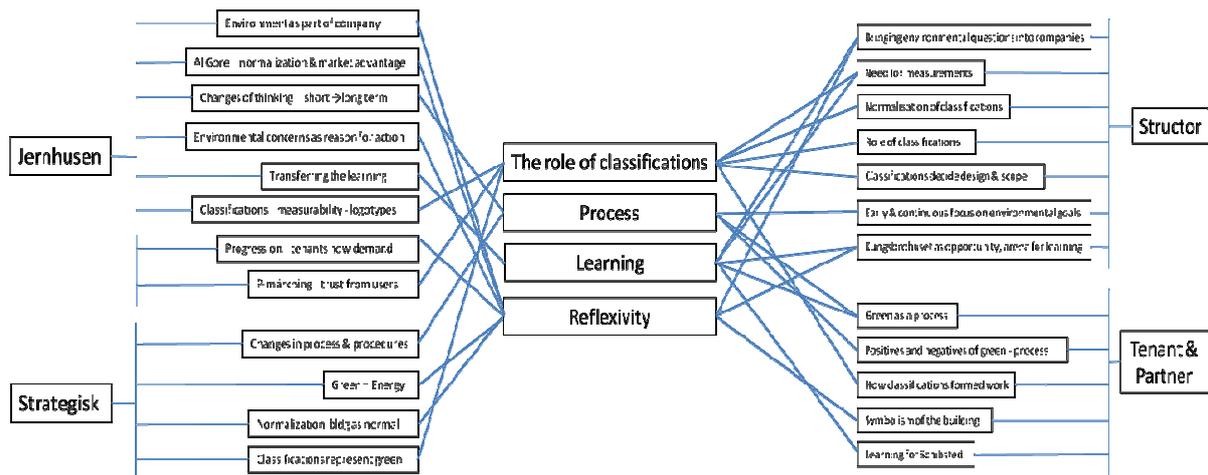


Figure 3 - Data after IPA analysis

### 3.5 Reflections and criticism of research process

In general, the Case Study method has been open to criticism as a valid methodology for conducting research, on the basis of its subjective nature. Flyvbjerg (Flyvbjerg, 2006) outlines five main misunderstandings relating to the conduction and relevance of case study method as a tool for scientific inquiry. The five misunderstandings defined are:

*Misunderstanding 1:* General, theoretical (context independent) knowledge is more valuable than concrete, practical (context-dependent) knowledge

*Misunderstanding 2:* One cannot generalise on the basis of an individual case; therefore, the case study cannot contribute to scientific development

*Misunderstanding 3:* The case study is most useful for generating hypotheses, that is, in the first stage of a total research process, whereas other methods are more suitable for hypotheses testing and theory building.

*Misunderstanding 4:* The case study contains a bias towards verification, that is, a tendency to confirm the researcher's preconceived notions.

*Misunderstanding 5:* It is often difficult to summarize and develop general propositions and theories on the basis of specific case studies.

Flyvbjerg then proceeds to deal with each misunderstanding in turn, outlining how social science is based upon context dependent knowledge, the precise type of knowledge that the case study method is proficient at creating and that the qualitative, descriptive and rich nature of case studies forces the researcher to be more open in understanding. He also describes the differences in case study selection, determining whether the case study is selected for generalisation or whether for understanding of a particular phenomenon. The tendency of researchers to pick case studies of exceptional nature leads to the belief in case study as being unable to provide an ability to generalise.

In any case study the researcher is faced with the difficult task of identifying and obtaining data, which in this case refers to identifying the individuals which can be considered relevant to interview, and also developing the themes and questions which will highlight the important details. An intrinsic case study develops as it progresses, with some areas of preliminary research and understanding being found to be incorrect or not relevant, and new understandings and scopes being opened up through the interview process. This was also the first large scale research of this nature that I have undertaken, so the case study was a learning process in itself. Understanding how to probe and to follow the interviewee's narrative provided a steep learning curve at the beginning of the research.

I have found that that as the themes are developed during the interaction with the respondents, that the order of the interviews could have a large bearing on the results obtained. I initially attempted to schedule the interviews in an order of general importance and connection to the building, i.e. the owner first, the tenant and then the connected consultants and design team. However due to the extremely busy schedules of the parties, this order was not maintained, and interviews came in a 'first available' manner. This resulted in the interesting points and emergent themes of one interview being picked up and further elaborated on in the succeeding interviews. In addition, several of the interesting parties were unable or unwilling to be involved in the research. Whilst this lowers the potential learning, there is sufficient data available for the conclusions which are drawn.

It is also important that it is recognized that the aim of this research is to understand experiences and perspectives; therefore triangulation is not a necessary element of this research. It is how people perceive that is interesting to this case study as opposed to understanding whether what they perceive is correct. This is apart from the valid discussion that there are no 'correct' answers to be found.

## 4. Theory

### 4.1 Introduction

The research questions and aim of the case study must be justified in order to guide the theories which are used to form the bedrock of the analytical portion of the overall project. Referring once again to aim; to understand the social construction of a green building by exploring the processes undergone by several of the key actors involved, it is clear that to understand these processes we require different theories of explanation. Theories of symbolic interactionism can be utilised in pursuance of explain the processes undergone by the different actors in relation to the building, with theories of ecological modernisation further explaining both how the contextual situation has come about (need or relevance of a green building) and also the effect on the organisations involved. The processes should also be looked at as learning processes, so as to understand better the lasting effects of these processes and whether the processes can become contextually independent and subsumed into the working practices of the respective organisations.

## 4.2 Symbolic Interactionism

*“Social beings are things as definitely as physical things are social”* – George Herbert Mead

George Herbert Mead was one of the most important contributors to Symbolic Interactionism, a branch of sociology which deals with how we (human beings that socially interact) interact with each other and other objects. Herbert Blumer (Blumer, 1969) sets out the three basic premises of symbolic interactionism as follows:

- 1) Human beings act towards things on the basis of the meanings that those things have for them. Things can include people, categories of people, such as teachers, friends etc., physical objects such as trees or buildings or ideas and concepts, such as freedom or honesty.
- 2) The meaning that a person attaches to these things is derived from the interaction that the person has with others and with society.
- 3) These meanings are changed via an interactive process between the person and the object in question.

Smith and Bugni (Smith & Bugni, 2006) take the concept of symbolic interactionism further and attempt to understand how it relates to our understanding of architecture. They postulate that the underlining theories of symbolic interactionism can be understood in the field of architecture in three different ways:

- 1) That the designed physical space and the self potentially influence and find expression in the other
- 2) The theory informs us how these designed physical environments contain and communicate our shared symbols and meanings
- 3) Symbolic interaction posits that the built environment is not a neutral object. Some built spaces can cause us to change our actions, i.e. they have agency through our interaction with them

From (Smith & Bugni, 2006)

From a sociological perspective, architecture and the built environment is subsumed into the much wider field of social space, in order to differentiate between the physical and the abstract spaces. Bourdieu, Foucault and Giddens deal extensively with this concept as a way of examining society and humans. They all deal specifically about how a particular structure or design can inform us about society, power and structures (social). They rely heavily on either simple buildings such as a peasant's house in North Africa (Bourdieu, 1990), or institutional buildings, such as prisons (Foucault, 1979) or concentration camps (Giddens, 1984) to develop and express their theories. This method is instructive, as these places are the largest places of social constructivism (homes), or institutionalization and examples of buildings designed purposely to deal with those who are considered outside of

society (prisons and concentration camps). But if we accept that reality is a social construction, then we must accept that they have a “symbolic field of meaning” (Berger & Luckmann, 1966), and if so, there exists a social interplay between buildings and societies, and it must surely be expressed in that most mundane of non-residential buildings, the office block.

Hence we now have an understanding of the sociological and symbolic interactionism framework with regard to buildings. We start from the point that human beings attach meanings to objects, which are formed via their interactions with the object and society, and they interpret and change or reinforce these meanings through their interactions with the object. From Smith and Bugni, we can relate this to the built environment, and understand that the built environment is a distinct part of the social space, and as such, is reflective. This signifies that this is not a one way process, the buildings are themselves interpretations and physical symbols of society; and which are then constantly reinterpreted by both society and the individual. In this way, the built environment is an important element of how we construct our ‘realities’. From this we can return to Mead’s quote which started this section “*Social beings are things as definitely as physical things are social*”. We can now understand the process of interpretation, fixing (within the physical form) and reinterpretation, which accompanies any building construction. Finally the building will be torn down, not when it falls down, but when society deems that it is not of use to society anymore. One cannot definitively separate the physical from the social, as the process of interaction is constantly undergone. We can in general describe how the built environment can be an understanding of society, and how it can then have a transformative effect via symbolic interactionism of the users or others, but it is of course difficult to pinpoint instances of this effect, especially in modern Western societies which via electronic communication has a much expanded, indistinct and fluid social space. However, with regards to Kungsbrohuset, it has been the topic of media interest, has a large main tenant which is moving from several other buildings and, as a place of work, is a significant social space for the 1,800 people who use it daily.

In order to use the theory of symbolic interaction, I intend to analysis the documents with regard to exploring what the building means for the different actors, whether interaction causes these meanings to be of a certain character, and if these meanings are related to the classifications.

### 4.3 Theory of Communicative Action

Jürgen Habermas, the German philosopher, in his ‘Theory of Communicative Action’ (Habermas, 1984-87) speaks of the system and life world. The system represents the quantitative world, exemplified by money and votes, whilst the life world is qualitative, which represents values and influence, which is created via the communicative act. Habermas speaks of crisis where the system colonizes the life

world, as legitimacy, which is the life blood of the system, can only be generated within the life world. Legitimacy refers to the belief that these quantifiable measures serve us, and reflect what we wish them to reflect. Colonization is the process by which the system dominates, and restricts the social space necessary for the communicative actions in the life world that are required for legitimacy to be reinforced and renewed. These theories can be used within this case study to explore the role, understanding and legitimacy aspects of the classification schemes which are used in relation to green buildings.

#### 4.4 Ecological Modernization

Another concept which has gained much traction in recent years is ecological modernization. The concept holds a particularly optimistic view towards how society, institutions, industry and policy can incorporate environmental issues and realign themselves in a way in which advances in technology, society and industry do not necessarily come at the cost of environmental degradation. According to Mol and Sonnenfeld (Mol & Sonnenfeld, 2000), for ecological modernization the societal and institutional changes required can be grouped into five different clusters:

1. Changing role of science and technology
2. Increasing importance of market dynamics and economic agents
3. Transformations in the role of the nation-state
4. Modifications in the position, role and ideology of social movements
5. Changing discursive practices and emerging new ideologies

Ecological modernization is not only an analytical tool in understanding these phenomena but can also be used normatively to outline future policies and action. Hajer states that “the discursive power of ecological modernization manifests itself in the degree to which its implicit future scenarios permeate through society and actors reconceptualise their interests and recognize new opportunities and new trouble spots” (Hajer, 1997). Hajer is a leading voice within the understanding of the fifth cluster, that of discursive practices and emerging new ideologies. However I shall devote my attention to the first two groupings, and most distinctly to the second, which is dedicated to the role of the private sector. Ecological modernization can refer to the decoupling of the economy from a reliance on environmental extraction and disruption. We could say that ecological modernization instead encapsulates the coupling of the environment and economic through policies regarding waste, green taxes and the pricing of environmental costs. In the same volume (*Ecological modernization around the world: Perspectives and critical debates*) as Mol and Sonnenfeld’s introduction, other authors examine ecological modernization from the perspective of consumer behaviour and also from the perspective of material production among others. As Mol states, “Environmental reform is coming about in the interplay between economic markets and actors on the one hand, and (organized) citizen-consumers and political institutions seeking to condition them on

the other. Such interplay allows environmental considerations, requirements and interests to slowly but increasingly become institutionalized in the economic domain” (Mol A. P., 2001).

Mol further explains that the markets are not the natural driver of these conditions, “Political decisions, civil pressure, and citizen-consumer demand are decisive. But while they may arise in one corner of the globe at a certain point in time, the economic “domain” has a strong role to play in articulating, communicating, strengthening, institutionalizing and extending (in time and place) these environmental reforms across the globe by means of its own (market and monetary) “language,” logic and rationality and its own “force”, however it is the institutionalization of these demands and conditions that structures them and normalizes them within a company’s operations. A result of this could be to say, as Mol iterates that the economy (he generally speaks of a global economy, but I infer in this instance, the economy of a company, be it a developer or a tenant) is no longer the sole principle of operation; “The environment becomes to some extent institutionalized in the economic domain. And thus (global) economic institutions, rules and actors operate less and less according to economic principles alone and they can no longer be understood in mere economic logics and terms”.

In order to use eco-modernisation as a supporting theory, the analysis must be able to examine the transcripts with a view towards examining whether environmental issues were used as a cause for action, and how did the process change in order to accommodate these new drivers. The transcripts will also be examined from the point of view of normalisation of environmental issues. Are the issues that were new for the actors now more routine and commonplace within the industry? Have new processes or changed processes become accepted?

## 4.5 Learning Theories

I turn now to the theory of Communities of Practice (CoP) as developed by Etienne Wenger and Jean Lave (Wenger & Lave, 1991) to describe learning processes. Such communities of learning have existed for millennia; however Wenger and Lave introduced the concept of Communities of Practices to both delineate them and to formalize them as learning practices. According to Wenger (Wenger, 1997) Communities of Practices are defined based on three criteria; what they are about, how it functions and what it produces. It should be a joint enterprise which can be reinterpreted temporally, has a basis of a mutual engagement and also produces a communally shared repertoire of communal resources.

Communities of practices share similarities with two other structures, project teams and Communities of Interest. We can state that the design and construction team at Kungsbrohuset consist of a project team, but it is also relevant to understand

whether any of their remit, actions or contributions displays characteristics more attributable to a CoP or a Community of Interest as opposed to a project team. A CoP differs from a project team in that it is the shared interest and the shared learning which sustains the community, as opposed to a shared task, that has a start point and a finish point. Wenger highlights the difference between teams and CoP by stating that the Community of Practice “is defined by knowledge rather than by task, and exists because participation has value to its members”. It should be noted that Communities of Practice can exist within project teams, and likewise project teams within Communities of Practice. We constantly exist in many different Communities of Practice, teams and Communities of Interest at the same time. Likewise, a Community of Interest brings together interested parties from different Communities of Practices. Whilst in a CoP it is assumed that perspectives, epistemologies and disciplines are shared, a Community of Interest is a heterogeneous community drawing on different understandings, perspectives, problem definitions in order to share knowledge and learning across a wide spectrum. Fischer (Fischer, 2006) outlines the differentiating attributes of Communities of Practice and Communities of Interest in the following table:

<b>Dimensions</b>	<b>Communities of Practice</b>	<b>Communities of Interest</b>
<b>Nature of problems</b>	Different tasks in the same domain	Common task across multiple domains
<b>Knowledge development</b>	Refinement of one knowledge system; new ideas coming from within the practice	Synthesis and mutual learning through the integration of multiple knowledge systems
<b>Major objectives</b>	Codified knowledge, domain coverage	Shared understanding, making all voices heard
<b>Weaknesses</b>	Group-think	Lack of shared understanding
<b>Strengths</b>	Shared ontologies	Social creativity, diversity, making all voices heard
<b>People</b>	Beginners and experts, apprentices and masters	Stakeholders (owners of problems) from different domains
<b>Learning</b>	Legitimate participation	peripheral Informed participation

Table 2 - Differentiating Communities of Practice and Interest

In order to be able to operationalise the learning theories in the reading of the interview transcripts, it is required to examine them from the starting points of looking for experiences of learning, knowledge transfer or processes designed to transfer this knowledge. These examples can range from transferring the knowledge the interviewee has to other parties, having the knowledge transferred from the other parties, or the co-creation of shared knowledge. In examining the transcripts, it is also important to try to detect how this knowledge is being created and transferred. To this end, a focus will be on trying to discern whether Communities of Practice or Interest are alluded to in the transcripts.

As can be seen, we have identified five separate theories or spheres of knowledge which shall be utilised in the analysis in order to answer the original research questions. This theoretical background is diffuse and represents a wide body of knowledge which allows the case study to be probed from several different angles of inquiry. In the analysis of the raw data the theory is used to firstly guide the themes, but more importantly to evaluate and interpret the thematically grouped data into a comprehensible interpretation which has clear theoretical underpinnings.

## 5. Finding and Discussion of Qualitative Research

At this stage of the paper I shall discuss the finding of the qualitative research undertaken. The following different themes were used in order to frame the discussion;

### 5.1 Role of classifications

The role and importance of the different classification systems that Kungsbrohuset is certified to, was an important element of the research question, as it could indirectly point to whether there is a process undergone by those involved in the project regarding the understanding of what a green or environmental building is, and if so, whether the classification systems had a role in forming this.

*“We wanted to make it as green as possible, but we had a special miljö-consultant. He looked at the different classifications you can get, and by the time it got fewer and fewer until there were three...”*

In attempting to understand how the classifications may have played a role in the design of the building, we firstly must understand the stage at which the classifications came into the picture. According to the respondents the selection of classifications was an important element of the initial work. The task of finding out “*what level, environmental ambition to have in this building*” was the initial task of the environmental consultant when starting to investigate different classification systems, showing that the selection of classification was involved in the setting of the level of environmental ambition. The above quote from the architects’ also demonstrates the close symbiosis between designing a green building and using the classifications as a template for deciding what is green. This relationship between green and the classification system is of course not exceptional, given that the classifications are environmental. However it raises the question of subjectivity when considering the effect of the classifications. Do they form and guide the involved parties’ understanding and conception of green?

An interesting understanding of the interaction undergone in the building came via asking each of the respondents for their own definition of a ‘green’ or ‘miljö’ building.

As no standard definition exists, it would be expected that there would be a distinct variance in the responses, with certain elements present in one response and absent in others and so forth. Energy is, of course, the most common and accepted measurement of a green building, so this featured in all. However, it is interesting to note that all of the responses were similar; energy, materials, indoor climate, location (often referred to by respondents as '*citi-ness*'), longevity and flexibility being cited as the most common features of a nominal 'green' building. Other green features such as renewables etc. were not mentioned. Although this is rather circumstantial, the appearance of features such as indoor climate, which is a rather neglected part of sustainable design, highlights the process of constructing a shared meaning through their common interaction with the building and also reflects the different classifications which are used to give this definition and recognition of green to Kungsbrohuset. Tellingly, the environmental advisor, who is the person familiar with the most widespread different types of classification systems, states that.

“Kungsbrohuset is a green building, *within the aspects of these three*  
[classification] *systems*” (author’s emphasis)

In this statement, he is not only asserting that Kungsbrohuset is a green building, but he is also acknowledging the possibility of equally valid and different ways of assessing this green-ness. To this end, he states that “*so, here we have a rather narrow aspect of green building...because you have other green aspects that are not included here*” He outlines that the understanding of the concept of a green building is a fluid and nebulous concept, in both an economic and social sense. Just as buildings can be used in society to structure societal concepts, so can the classifications applied to them structure our meaning of what a green building is. Furthermore, the other respondents, after their involvement with the Kungsbrohuset building, have adapted or formed their understanding of the concept of a green building to reflect the reality of the existence of Kungsbrohuset and also the reality that someone, who they perhaps deem more competent than them in this area, has deemed it so via the classification system. As the respondent from Jernhusen states “*the logotypes (the classifications) are easy for people to understand, they don't know what it is, but it is logotypes. And it's some kind of certification over there, and there's some kind of angry man that gives this certification, and that's good enough for them*”. It is also interesting that the same respondent notes that the classifications have been discussed widely in the media in reports relating to the building, but nobody has asked what the classifications mean, they are accepted as symbols of the building’s green credentials. The existence of classifications points to a certain measurability, a quality assurance in a sense, even if the people relating to the building have no in-depth knowledge of what the classifications actually refer to.

There were differing opinions as to the relative impact and importance of the selection of the different classification systems. This also appears to be correlated with the level of understanding of the thinking and criteria behind the certification systems. As one respondent stated, the classifications work almost as 'logotypes',

visual representations of information that provides the recipient with trust, whilst at the same time the recipient is not fully aware of what criteria are behind this logotype. In all media Jernhusen have used the fact that the building is certified to three different classifications, but at no time have they explained, or been asked to explain, the classifications. Jernhusen also relate that the choice of classification reflects as much the company itself as opposed to the building. A competitor of Jernhusen's uses a different system, for instance, which more reflects their organisational structure, operating locations and global spread, as opposed to the buildings that they construct.

The different respondents' attitudes to the classifications also reflect their own work in the building process. Those involved at the early stage, the developer, architect and environmental advisor assert that the classification had a small impact on the building, reflecting *'the ambitions'* or providing the *'goals but not the solutions'*. The classifications were decided after a process undertaken by the environmental advisor, and these respondents feel that the classifications were important in path setting, but not in actually changing significantly the outcome. The tenant's representative sees the classification system as important, and playing an increasingly important role in her perspective clients wishes. She also stated that the classifications gave a fundamental basis for environmental work in her field; the building is certified to a certain standard, so further work can be taken from this basis. Therefore they provide a springboard which can be used to involve the tenants in greater environmental consciousness and action with regard to their own actions in the building. But she also found that the classifications can sometimes be limiting. In this instance, it was the requirement to select furniture which corresponds to a particular database (SundaHus)<sup>3</sup>, which sometimes limited the tenant and their architect in implementing novel, attractive, and creative interior solutions that may have allowed greater occupancy density (itself a saving in space, conditioned air and heating/cooling requirements). The need to select from such a database was also referred to as giving an advantage to the larger office furniture manufacturers, who can afford the testing required for their classification, whereas smaller manufacturers may suffer as a result of a large scale adoption of classification systems by developers.

The role of classifications is important in our understanding of why this building is considered green. The classifications provide measurability in terms of proving that issues such as indoor climate and materials used; *"some of these environmental classifications take care of this"* and also trust. For example P-märkning, the least obviously environmental classification imparts trust to users familiar with its brand, as it is awarded on the basis of user feedback, which in Jernhusen's eyes is a particular positive, *"it's about satisfied customers to have the P-märk, which for us is a good example of how it is done"* The classifications also control the scope. In this example

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<sup>3</sup> Sundahus is a Swedish database for environmental and health classification of a wide range of different construction materials and fittings.

we see that the classifications have formed an understanding of green which is related to the selection of classifications. In future projects, by using wider classifications, the environmental advisor sees the classification systems as a means for widening the debate of potential environmental strategies, moving the options beyond energy and into more disparate issues such as the materials and indoor climate. As these classifications continue to be adopted in the Swedish building industry, they will continue to scaffold our understanding of green within their own particular strengths. The respondent from Structor sees a normalisation of the classification systems currently in Sweden:

*“...those certifications [classifications], BREEAM and other systems that are quite accepted now in Stockholm and Sweden, but earlier it was a bit of a new experience for all of us”*

## 5.2 Process

*“First I was contacted by Karl Sundholm, to find out what level, environmental ambition to have in this building....that was the start to get the envelope or the building in best practice, or what do you say. But then we have the tenants. Because Jernhusen would like to manage Kungsbrohuset in the best way, then we have to include, or take account of the tenants. But then came in rather late in the process, because we did a lot of work with the envelope and the process.”*

Throughout the research, it was important to understand more precisely whether differences exist in the way this building was developed, in terms of the organisational process and interaction process, in order to discern whether the project management of a project such as Kungsbrohuset can play a role in its subsequent green performance. According to the interview analysis, all respondents highlighted one issue as the key ingredient for a successful outcome to Kungsbrohuset; the early involvement and raising of environmental issues as a key design goal. This is further reinforced by the continuation of several design partners into the management phase of the building's life. The respondent from Structor asserts in the above quote and in further statements that the key to successful implementation of the environmental goals was the early focus on them, and well as the continuity of the importance of these issues. Without the constant focus, there is a possibility of failure in the successful implementation of the initial goals.

*“...I think it is important to be in the process from the start, to the end. There is a lot of different stages in the process, as the information during the start can disappear when it comes to, when the building is built. So it is*

*important to deal with the aspects early and follow them up. In all the different stages.”*

The various other actors involved in the project also reiterate the early focus on environmental issues as a key attribute towards the successful creation of Kungsbrohuset, or inversely, the lack of early focus is the cause of the failure to go further. The architect raised the importance of a design team retreat, conducted in the Stockholm archipelago at the very beginning of detailed design as a key moment for not only reinforcing the environmental goals, but also for bringing together the whole design team to discuss the environmental goals. This also had the benefit of bringing forward the input of different disciplines. Several of the respondents pointed to the fact they were working with other design team members at an earlier stage than they were used to, and also working more intensively with them. They pointed to the original brief from Jernhusen as a particular factor in this, as it set strong goals but left the solutions to the design team. As the respondent from Structor states with regard to the absence of minutely detailed instructions from the developer to the project team; *“they had the skills”!* In this, we see that developing a brief, involving everybody in that development and in implanting it strongly, and then letting the project team solve the issues, was an important feature of ensuring that the correct solutions would be chosen.

At the initial phase, Jernhusen worked with a team of ten persons, both from Jernhusen and outside in developing the brief for the building. It was at this stage that they considered what type of building would be considered valuable and desirable to rent in this part of the city. These meetings coincided with the release of the film “An Inconvenient Truth” which has been credited by the Jernhusen respondent as an initial raiser of what environmental goals the building should aim to achieve; “and by that time also, the movie, Al Gore’s movie [An Inconvenient Truth] had had its Oscar by then, and the CO<sub>2</sub> question just hit the newspapers like a really big boom”. In this way the general society showed a possible path to what would be valued in the future, not just energy efficiency, but a greater commitment to creating a green building.

An important part of the process undertaken involved the two major bridges between the developer and the tenant, Tenant & Partner, the tenant agents, and Structor, the environmental advisor which was contracted by Jernhusen to assist the tenants. These two agents played a key role in the long term sustainability of the environmental efforts started by Jernhusen, transferring the environmental goals from the developer to the major tenant, Schibsted. According to the respondents, Schibsted’s brief for its new offices did not explicitly set out strong environmental goals that it wished to achieve. However, once the decision to move to Kungsbrohuset was taken, it was seen as an opportunity for Schibsted to also reflect critically on its own environmental goals as an organisation. The extent to which this

was self recognised or driven by the consultants working with it is unclear. Certainly, Schibsted considered the environmental credentials as “på köpet” (included in the deal, i.e. a bonus). However the respondents from Tenant & Partner and Structor stated how they partnered actively with Schibsted to raise the importance of actively building on the environmental opportunities presented by the move to Kungsbrohuset. As one respondent stated, “any move is an opportunity to change things, to leave behind the bad and take with you the good”, but the fact that many of the things that Schibsted have decided to change are with positive environmental outcomes, is due to a strong application of and adaption of the ethos created by Jernhusen. As one respondent points out, a successful building in terms of environmental performance requires a commitment from the beginning to the end, and as another respondent states that firstly it was Jernhusen and Tenant & Partner who drove Schibsted’s environmental consciousness, from now forth it shall be Schibsted that drives, as they will see the opportunities by changing the way that they work. This reflects on the constant re-interpretation of how the building and the tenants interact.

### 5.3 Learning

The learning element of the Kungsbrohuset experience is important in understanding how this process has evolved and to be able to analyse it from a theoretical perspective. This thesis is also particularly interested in being able to distinguish the learning formats that are present in Kungsbrohuset, to be able to dissert whether there are Communities of Practice or Communities of Interest present, and if so, what functions do they play. There is also the further question, can buildings such as Kungsbrohuset serve as learning opportunities or ‘arenas’ so that they can have an effect beyond their physical boundaries?

In regard to the existence of Communities of Practices and Communities of Interest, there appears to be evidence that we can say that in the social processes surrounding the building there is an opportunity of the establishment of these learning formats. Certainly we can say that there is a large scale Community of Interest regarding the building, with stakeholders from different domains (external consultants, owners, tenants etc.), with extensive attempts to make voices heard via advisor roles, whilst at the same time grappling with the different preconceptions and understandings of responsibilities, priorities and commitment of the different stakeholders. This widens the scope beyond that of purely a project team. Several respondents claim that the building has been a major learning experience for Schibsted, but respondents also point to their own need to learn the priorities and a *priori* knowledge of the tenant, in order to be able to assist and advise towards a shared outcome. However the respondents’ answers assert that the largest learning

has been from Schibsted, which had the lowest environmental knowledge (according to the respondents) at the start of the process. The company lacked any criteria for environmental performance before they signed the contract for the rental of Kungsbrohuset. However in the contract they also received the assistance of an environmental consultant to assist them in considering environmental questions when they were undertaking the move. The aim of this was to transfer the knowledge that Jernhusen has accumulated to the tenants. The consultant sees this as an educational process:

*“It’s about education. It’s an education for them [Schibsted] as well, what kinds of environmental ambitions or steps they want to take. Firstly, we spoke of materials; and in the specification of the move from the old local to Kungsbrohuset. I think it’s a process that we are all, consultants, to take clients to a higher level of environmental consciousness”.*

The consultant mentions that when talking about environmental questions with Schibsted, he has the ability to use Kungsbrohuset as an example or as an opportunity or arena for learning. By using Kungsbrohuset, it is easier to relate other environmental questions as opportunities for change or as issues that must be dealt with. However once this has been achieved, the companies have seemed willing to go further:

*“I think it is a consciousness or education. When they moved to a high level of environmental aspects in Kungsbrohuset and then they wanted to take it further, or to deal with the deeper questions.”*

With an issue such as a green building, which has a vague and fluid meaning, and with such a complex situation such as the design, construction and operation of a city-centre office block, it would be difficult to find Communities of Practice, due in a large part to the CoP’s requirement for shared epistemology and a codified knowledge. However, perhaps due uniquely to one of the failings of the building, a Community of Practice has emerged around one issue; bicycling. Kungsbrohuset heralds itself as “huset som älskar din cykel – *the building which loves your bicycle*” (Cykelgarage och elbilsuttag). However, due to the profile of the tenant (a media company, with a younger age profile, and more active staff than standard office tenants), the cycling facilities proved inadequate. Also, the staff from one section of Schibsted, SvD, had very good facilities in their previous building, and, with the heightened expectations of the move to a green building, they were disappointed with the facilities available. From this, and with assistance from Tenant & Partner, a bicycling group was created in an attempt to solve these issues. The current paucity of Communities of Practices does not limit the opportunity for other Communities of Practice to evolve however. We have already seen how the different respondents have formed their understanding of a green building around their experience of Kungsbrohuset, particularly in terms of their common referral to the classifications as their basis. Therefore they are developing a common epistemological basis, and

shared ontologies, key components in Communities of Practice. As the operational stage develops further, key actors such as Jernhusen, Structor and Schibsted may consider themselves within a Community of Practice.

“So if we gather lots of nice people, that we know about, that are interested in these questions, lots of consultants, lots of people and if we try to learn ourselves as much as possible about all existing knowledge, we will probably manage to do it anyway.”

At the very early stages of the project, the Jernhusen respondent described how the project team had to understand for themselves which technologies fitted their objectives for the building. Jernhusen categorically did not wish the building to become a research building, i.e. with unproven technology, as they believed that there existed enough technology presently to achieve their ambitions. As part of this, they needed to explore, with the other members of the project team, different types and combinations of green technology. One example of this was the roof strategy. Originally they considered a green roof, however the calculations proved that a different, more conventional roof structure gave higher energy performance, and therefore it was selected instead. In this instance we can see several different phenomena, namely the learning of technologies, but also the formation of a common understanding of the meaning of green in this situation; here green means energy saving. The potential water saving and ecological elements of a green roof are not included in the equation. Although a project team, these attempts and willingness to check all available technology resulted in the project members looking at methods they were not familiar with, or calculations that they had not done before. This element owes a lot to the Community of Interest approach in addition to a project group. The fact that elements of a Community of Interest exists is explicitly referred to by the respondent; the aim was to bring together people that “are interested in these questions”. By verbalising how Jernhusen approached the task of constructing a project team, they first had to create a common task across these very different domains that the consultants inhabit. The procedure of a shared learning throughout with the integration of multiple knowledge systems comes into focus when we return to the issue of the green roof. For one consultant this may be a very green technology, but as the group absorbs it, and examines it, it becomes clear that it does not satisfy the common task, a low energy building as opposed to the concept of green and is so rejected for another alternative.

It must also be pointed out that the building does not exist within a vacuum. Jernhusen has many other competitors in the Stockholm market. These have also learned from the successes of Kungsbrohuset. Many are attempting to use similar certifications, or are employing similar methods, such as the use of environmental advisors. Jernhusen have also received many visits from their competitors. The respondent from Jernhusen is particularly happy about this, as it implies success, and also for the fact that the building was not conceived as a research building. He states of the visits by competitors;

*“and that's still without being experimental, that's what we tried to tell them, you can also do this. This is just engineering and existing knowledge. I'm happy to see them pick it up and use ideas, like the environmental consultant.”*

## 5.4 Reflexivity

As outlined in the initial sections, the construction of a building such as Kungsbrohuset gives an opportunity to physically ground the aspirations and priorities of a society. This building can then lead to different interpretations throughout its use, as these priorities change. Kungsbrohuset can therefore be considered as encapsulating a society in churn, as issues such as environmental issues take on heightening values and meanings, and a reflexive process takes place. In the research, the respondent from Jernhusen labelled “An Inconvenient Truth” as an important stepping stone in this process.

*And by that time also, the movie, Al Gore's movie [An Inconvenient Truth] had had its Oscar by then, and the CO<sub>2</sub> question just hit the newspapers like a really big boom”.*

The film, by Al Gore, the former vice president of the United States of America, brought the issue of climate change to a higher consciousness. Through this, we can see that the film (which is discussing issues relevant to society) informs the design and aspirations of a building in Stockholm, which in turn may have an effect on the tenants that occupy the building, the marketplace in which the building operates, and also the marketplace in which the tenants operate. As Jernhusen is also a relatively young, but powerful company given their mandate, the building also reflects a statement of their values. As the respondent states, *“we also saw a really nice market potential here, that if we can walk in the frontline of these questions, then we could get lots of media attention, we'll get followers. We want to try to be a nice role model in these questions.”* Therefore the company hoped to position themselves at a crux of a reflective building practice, to not only follow convention but to frame themselves in their own unique way.

*“If you count in all those benefits, maybe they're prepared to [pay] a little bit more. And if you count in the marketing, and Schibsted have made an excellent point there. That's probably thanks to Olaf [Brundin]”.*

*“...we talk about image here. Strengthening the brand, it's easier to get clients, to get co-workers, and it's a good message to society as well”*

In addition to this, the letting agents involved in the design team predicted that the building would be used as promotional material as part of the tenant public relations

and marketing work. At this time, Jernhusen did not believe that this would happen, according to the respondent. However, as this screen grab testifies, that has come to pass:

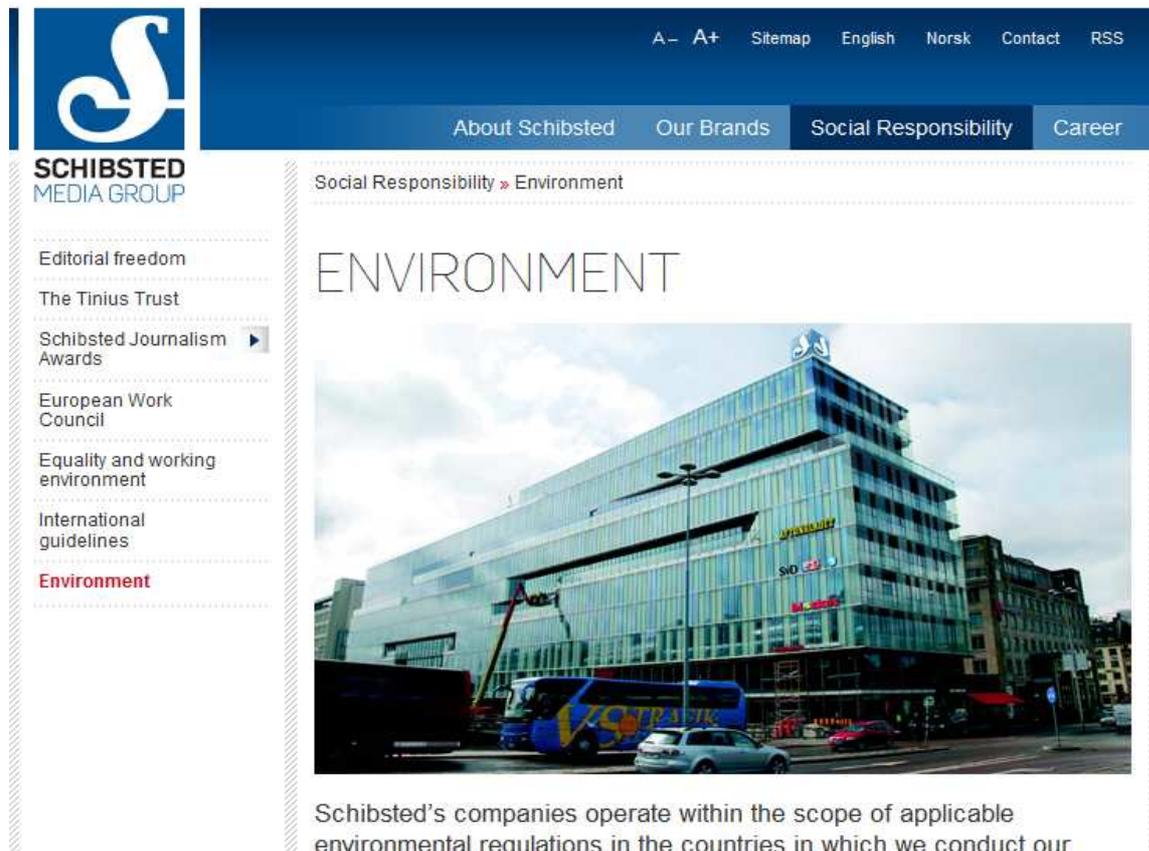


Figure 4 - Picture of Kungsbrohuset on Schibsted's website under "Environment" section <http://www.schibsted.com/no/Vart-samfunnsoppdrag/Miljo/>

As such it is clear that the building offers to the tenant not just shelter and an address from which to carry out their business, but that it also fulfils a role that may not have been necessary several years ago, the positioning of the company's commitment and action with regard to environmental and social issues. That is to say, the building provides an opportunity for business's Corporate and Social Responsibility (CSR) obligations. This has been further referred to by the respondents from Tenant & Partner. They are not surprised at how Schibsted has used the building in their CSR work, particularly as the person responsible for the leasing at Schibsted is also the marketing chief for Schibsted. But they also see this as forming an important element of future demands from tenants, that the building must offer 'green'. They state that it is increasing common to sign green contracts. As such, they see this as becoming the norm, although they are unsure at this stage as to how much the rental market is willing to value, in monetary terms, a green building.

In terms of the effect on the tenants, the respondent from Jernhusen stated that each tenant had now started working with environmental issues, "So *they have started*

*their own process [Schibsted have embarked on a cooperation with KTH (an Institute of Technology located in Stockholm), which is examining the environmental impacts of the company's entire operations]. That's really interesting; you can see it in all the companies in the building, since they began working with environmental issues. That feels good in the heart.*" The respondent from Tenant & Partner also stated that, whilst their organisation and Jernhusen had worked extremely hard with the tenants to bring open environmental issues, from now *"it will be Schibsted that drive it"*. Therefore we see an example of reflexivity here, where the initial promoters now take a back seat and the situation is driven by the tenants, and the issues that are brought up will come from their perspective and their objectives. As the respondent from Structor states, *"slowly the space for discussion is opening"* with regard to what a green building is. Previously there was a concentration on energy reduction, as it was a cost, now increasingly he believes that companies will approach it more as an opportunity, an investment.

Green buildings are also coupled with other symbols in the discussion. Green buildings can not only stand for opportunity for marketing, or fulfilment of social responsibility goals, but they can also transmit other values that a prospective tenant may find positive. The respondents from Tenant & Partner see the inclusion of environmental goals as building blocks towards bringing up organisational questions for the companies involved, *"...it is an excellent opportunity of making something good out of this. Both with regard to the environmental questions in the company, and the organisational itself"*, i.e. by attempting to answer environmental questions, organisations are forced to consider different questions regarding how they may wish their organisation to work. This is exemplified in simple issues such as questioning the need for individual waste bins for each employee, or even individual workspaces. In this way aspect, the company that deals with environmental questions also deals with organisational questions, strengthening the company's abilities to create and maintain a desirable operational culture.

*"But really it is an ordinary house, ordinary building. It's the quality; it is more a sustainability equals quality. You really get a house that is planned, so it is more a factor of high quality."*

The respondent for Structor sees the environmental aspects of the building as masking another important attribute; that of quality. By focusing on the environmental aspects, and by taking extra time to design and understand the different solutions, he sees it as creating a building that is of a higher quality, in an overall sense to prospective tenants. In this way, green buildings may not simply appeal to tenants in purely 'green' terms, but may also denote a building of superior quality. This can be related to the issue of classifications, as classifications in their most basic sense, exist to differentiate and decode to those without specific knowledge, that the classified object meets certain standards, i.e. a certain quality has been achieved. As such, the importance of classifications may be as much about communicating quality as communicating 'green'.

## 6. Conclusion

The research question which this thesis aims to investigate is to understand which kinds of processes are engaged to socially construct a green building, by using symbolic interaction. Furthermore, I planned to use Habermas' Theory of Communicative Action to examine the role of classification systems in legitimising and supporting a building's claim to be green. Additionally, with the assistance of the concept of ecological modernisation, the paper attempted to understand the effects of this process on the companies and actors involved, and the society in which they interact.

As can be seen from the results it appears that the design and use of a green building such as Kungsbrohuset engages on a theoretical level with several significant theories relevant to environmental communication. All of the respondents see Kungsbrohuset as a green building, and they consider it a success in this regard. However they frame their understanding of a green building in a way which is driven by the classifications. This can be said to echo Habermas' theory of communicative action where the system has colonised the life world. The system, represented by the classifications, has shaped the conception of what a green building is. This is important, for when we come to rely on quantifiable measures, they can lose the legitimacy behind them as the connection between them and the values they represent grows more tenuous, and it can also impede development. For example, Jernhusen spoke of other developers aiming for also receiving two or three classifications on their proposed buildings. Jernhusen did not say that other developers were attempting to build greener buildings than their competitors, but buildings which had more classifications. This demonstrates that one could say that the classifications are shorthand, proxies or symbols for green, whereas in fact they may take precedence in design. Buildings will be designed to meet the classifications as opposed to receiving classifications as a consequence of designing a green

building. In an increasingly cluttered world of different classification systems, this could have a major effect on our understanding of green buildings. In effect, the classifications could reinforce a simplistic view of a green building, from a building which is designed, constructed and operated in a manner which aims to reduce the building's effect on the environment, to one in which the building is a vehicle to garner certifications and goodwill. The potential for 'greenwash' may be strong in future developments. That is not to say the Kungsbrohuset is itself wrong in its approach to classifications, but competing developers will have taken notice of the media attention, and rentability generated by the building, and the lack of questioning of what the classifications represent in the media. The potential for the classifications as proxies to overshadow their aims is strong, and further research should be done into the efficacy of classifications as measures of progress.

One can also ascribe the framing of a green building in relation to the classifications as a strong example of symbolic interaction. By each party's strong interaction with the classifications, they have absorbed this as a meaning for green. This shows the power of the classification systems as symbols for representing a certain type of green.

A pattern of ecological modernization can be discerned from the ability of the environmental goals of the building to be firstly formed from society and culture (with An Inconvenient Truth making a cameo appearance) are then reinterpreted, institutionalized and normalized into the developer's and tenants' organisations. It is interesting that ecological modernization is itself an optimistic outlook, with regard to environmental problems, and each organisation also sees environmental issues as important to their operations but also as opportunities where they differentiate themselves in their respective marketplaces, and within their organisational structures. This is most signified via Schibsted's use of the building in the framing of their CSR policy section of their website. This also links with Porter and Kramer's "Creating Shared Values". Furthermore the respondent from Structor sees the process that they went through as now much more routine, as the Swedish construction marketplace has not just adapted to the appearance of environmental classifications, but reconfigured their operating aims to highlight their commitment to these new incorporated goals.

Learning aspects of the building are very much tied up in the processes which were used to design and operate the building. Members of the design team found themselves in slight uncharted territory with the strict goals laid down by Jernhusen, and a need for deep and timely interaction with each other in order to realise these goals. This results in new ways of working, which the design team members will carry forward with them into other projects. The new tenants also had a steep learning experience, from the absence of environmental objectives in their initial brief to embarking on a large scale research endeavour with KTH. Within this, you can see how environmental goals were sometimes used for economically advantageous purposes, such as renting less floor space, but also that the company took steps

where it was environmental reasons as opposed to economic reasons that were the driving forces.

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## Appendix

Transcripts of interviews available on request at [farrellyd@gmail.com](mailto:farrellyd@gmail.com)