

# Documenting Sustainability, Stone by Stone

Climate Change Mitigation in the Building Sector with Unnamed Implications

*Gregor Rahn*

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(30hp/credits)



## LUCSUS

Lund University Centre for  
Sustainability Studies



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Submitted May 16, 2017

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*Our buildings are the records of decisions; as rings of trees are those of environmental conditions.*

Freely adapted from Neimanis and Walker, 2014

## **Abstract**

The building sector is the greatest single contributor to anthropogenic greenhouse gas emissions. A change in the patterns of building practices has the potential to contribute to mitigate the sector's CO<sub>2</sub> emissions. Contemporary governance mechanisms see Non-Governmental actors take a considerable proportion of the action with market mechanisms. Building Councils as multi-stakeholder, non-state actors have emerged as credible players in the sector, who work across governance levels and intend to mitigate the sector's CO<sub>2</sub> emissions. The aim of this study is to identify institutional elements of the Building Councils' work. I ask how Building Councils affect the adoption of their promoted building practice and what implications are unnamed in this process. I collect primary data from the Building Councils and interpret them using institutional theory.

I find that many Building Councils localise the sustainable building concept by primarily engaging nationally-rooted, credible building experts. They jointly design certification systems adhering to sustainable development principles. The certifications and Building Councils as multi-stakeholder organisations are appropriate forms in climate change governance. Many Building Councils train auditors and consultants which is a major institutional element in conjunction with the written documentation as a script to obtain a certification. I find the certification systems to posit a logic of appropriateness and shared logics of actions on mitigating climate change through marketisation. I identify three unnamed implications of their work: firstly, building certifications extend the appropriation of sustainable development by marketisation. Secondly, unknown decision-making processes about the certification systems' content blur responsibilities for climate change governance in the sector. Thirdly, building certifications do not break with global material extraction and their consequences. The normative sustainability concept, and as such nature itself, is check-listed and becomes a subject to economic rationality. Given these conclusions, I suggest research on traditional, local building methods that break with global material flows and technological lock-ins and how these can be successfully, locally mainstreamed.

**Keywords:** climate change governance, political economy of climate change, marketisation, institutionalisation, sustainable buildings, certification systems

**Word count:** 14,059

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## List of Abbreviations

<b>BC</b>	<b>B</b> uilding <b>C</b> ouncil
<b>BREEAM</b>	<b>B</b> uilding <b>R</b> esearch <b>E</b> stablishment <b>E</b> nvironmental <b>A</b> ssessment <b>M</b> ethod
<b>CC</b>	<b>C</b> limate <b>C</b> hange
<b>CR</b>	<b>C</b> ritical <b>R</b> ealism
<b>COP</b>	<b>C</b> onference <b>o</b> f the <b>P</b> arties
<b>DGNB</b>	<b>D</b> eutsches <b>G</b> ütesiegel für <b>N</b> achhaltiges <b>B</b> auen
<b>FSC</b>	<b>F</b> orest <b>S</b> tewardship <b>C</b> ouncil
<b>LCA</b>	<b>L</b> ife <b>C</b> ycle <b>A</b> nalysis
<b>LEED</b>	<b>L</b> eadership in <b>E</b> nergy and <b>E</b> nvironmental <b>D</b> esign
<b>KM</b>	<b>K</b> nowledge <b>M</b> anagement
<b>MSC</b>	<b>M</b> arine <b>S</b> tewardship <b>C</b> ouncil
<b>NGO</b>	<b>N</b> on- <b>G</b> overnmental <b>O</b> rganisations
<b>IT</b>	<b>I</b> nstitutional <b>T</b> heory
<b>SD</b>	<b>S</b> ustainable <b>D</b> evelopment
<b>SQ</b>	<b>S</b> ub- <b>Q</b> uestion
<b>SSc</b>	<b>S</b> ustainability <b>S</b> cience
<b>WGBC</b>	<b>W</b> orld <b>G</b> reen <b>B</b> uilding <b>C</b> ouncil

# 1 Introduction

In this qualitative research, I consider the unnamed implications of non-state actor engagement in mitigating climate change (CC). I focus on the building sector and a group of non-state actors called Building Councils (BCs). They are nationally-rooted, but work transnationally across political borders as well. More specifically, I analyse how BCs as mediators institute contemporary governance trends so their concept of sustainable buildings is adopted. The primary data is collected from the BCs and is interpreted using institutional theory (IT). I offer important insights into modern nature-society interactions that shape future trends in the building sector and beyond.

## 1.1 Point of departure

The building sector has a pivotal role in mitigating CC. The weight that comes with this sector is rooted in its fundamental environmental impact being number one in global raw material use (IEA, 2013). The building sector must curb 84 GtCO<sub>2</sub>e emissions until 2050 to attain the 2°C global warming target (WGBC, 2017a). This is not an easy task because the sector comprises a wide array of actors with different interests. There are, among others, architects, contractors, developers, engineers, investors, manufacturers and lastly the user. Further, many building standards, legal requirements, developments, functions, local geographic conditions and climatic zones need to be considered (Shrestha, 2016).

A key aspect of current CC governance is that both public and private (or non-state) actors are engaged (Bulkeley, 2016). This has changed political-economic landscapes in the past decades (Teegen, Doh, and Vachani, 2004). Nowadays and most likely in the future multi-stakeholder bodies are held high as credible actors (Bitzer and Glasbergen, 2015). Many of the favoured measures rely on market fixes, self-organisation of key players as well as voluntary measurements to counter CC (Van der Heijden, 2016). I summarise these as a process of *marketisation*. In this thesis, I understand marketisation as a process of realising a norm-based concept through economic efficiency (Matulis, 2014). I base it on the valuation of sustainability in monetary terms.

The building sector has been aware of its significance and has not remained idle, and so the concept of green or sustainable buildings emerged (Inkoom and Leiringer, 2016). Through the years, the concept has gained global attention (Kajikawa, Inoue, and Goh, 2011). It is, nevertheless, a fluid concept disseminated by many programmes and organisations. The growth and appearance of this phenomenon is especially linked to Green or Sustainable Building Councils (Sedlacek, 2014). BCs are

nationally-rooted, member-driven organisations comprising of building sector organisations, other non-state organisations and public entities (Sedlacek, 2014). The locally varying concepts primarily focus on decreasing the environmental implications, but include a broad range of solutions to numerous areas also targeting social and economic sustainability (Retzlaff, 2009). Many BCs are members of the global umbrella network World Green Building Council (WGBC), and thus work horizontally and vertically across governance levels.

## **1.2 A Mystery, an aim and a question**

BCs are highly linked-up to the building sector (Sedlacek, 2014). They are a conglomerate of societal actors, who jointly intend to transform the building sector (WGBC, 2017a). My thesis strongly draws on research by Sedlacek (2014), Sedlacek and Maier (2012), and Inkoom and Leiringer (2016), who have researched BCs before. The novelty in my work comes firstly by extending Sedlacek's (2014) research beyond the identified activity categories of BCs and secondly proceeding from Inkoom and Leiringer's (2016) research. The latter have researched how BCs have, among others, established certifications systems. Given the necessity for change in the sector, I pick up one of their suggested research streams: an institutional study on continuous adoption of certification systems (Inkoom and Leiringer, 2016). Little qualitative work has firstly been published about BCs from an organisational perspective and secondly what unnamed implications certification systems have how we deal with CC, or nature in general. I, nevertheless, use an overarching governance perspective for two reasons important to this research: BCs are made up of multiple actors, and governance recognises "... the blurring of boundaries and responsibilities for tackling social and economic issues ..." (Stoker, 1998, p. 18).

The aim of my work is to identify institutional elements of the BCs' work explaining how their sustainable building practice is adopted in the building sector. I engage with the institutionalisation processes embedded in the BCs' work and critically question their intended way of CC mitigation in the building sector. From prior research, I have developed the following research question:

**How do Building Councils affect the adoption of their promoted sustainable building practice and what are the unnamed implications of their climate change mitigation efforts?**

To elaborate the answer to this question in a conducive discussion, my thesis consists of three stages. The first two stage adhere to the following sub-questions (SQs):

**SQ1: Which instruments do Building Councils use to promote the proliferation of their concept of sustainable buildings?**

The vague wording of this question is consciously chosen to not preclude actions *a priori* and remain explanatory. In the first stage, I attempt to illuminate the BCs' applied instruments collecting qualitative data from the BCs. In the analysis, I demonstrate underlying social interactions, or *relations*, that BCs have with members, non-members, the WGBC and its networks. Further, I show what their concept of buildings expresses. Based on all these answers, I use IT and ask in the second stage:

**SQ2: How do Buildings Councils institutionalise their sustainable building practice and why do Building Councils align with one primary instrument?**

Institutionalisation as a process signifies that a group of people or organisations promotes its ideas as standard. According to Scott (2014), choosing an institutional perspective has the advantage to not just direct attention to organisations, but the larger socio-technical environment filled with values, norms and perceptions. In the third stage I turn my attention to the unnamed implications of the BCs' instruments and relations for CC governance.

### **1.3 Relevance for sustainability science**

As a sustainability scientist, I engage in a large field of uncertainty. The academic field of sustainability science (SSc) does not come with a pre-occupied methodology (Thorén, 2015). SSc draws on methods from various disciplines to scrutinize a problem (Clark, 2007) and is inherently normative (Wiek, Withycombe, and Redman, 2011). My topic of interest touches upon one major theme in SSc: marketisation processes as a sustainable pathway (Jerneck et al., 2011). These processes are to large extents "complex multi-level dialogues to formulate strategies and pathways aiming at the fulfilment of sustainability goals" (Jerneck et al., 2011, p. 76). My thesis is of critical nature as I question the cause to what is empirically observed (Sayer, 2000) and unnamed implications of the outcome. My take on the problem is of socio-political nature. To me, rules, values, norms and beliefs are determining conditions for the use of natural resources.

In the light of all three accounts, the need for a change in building practices, non-state actors conveying their idea of sustainability and a heterogeneous governance structure, my research question was also informed by the following two questions, to which I provide a sector-specific

answer: *“What shapes the long-term trends and transitions that provide the major directions for this century?”* (Kates, 2011, p. 19450) and *“How are long-term trends in environment and development, ... reshaping nature-society interactions in ways relevant to sustainability?”* (Kates et al., 2001, p. 642)

## 2 Context

### 2.1 Developments in governance

Humanity transformed from a species that, like any other, had to adapt to its environment to one that vigorously changes an entire planetary system (Steffen et al., 2011). The planet has entered the *Anthropocene*, an epoch where one species governs the planet (Biermann, 2014). The Anthropocene has five important political implications: multiple interdependency of societies, functional interdependence of responses on societal matters, intergenerational path dependencies of actions, uncertainty about implications of actions in an interdependent world and growing societal inequalities (Biermann, 2014). This societal complexity creates, as Rittel and Webber (1973) have put it, “wicked problems” (p. 155). To solve them, “... knowledge of all conceivable solutions is required” (Rittel and Webber, 1973, p. 161). I return to this aspect in the end of my thesis. Most importantly for this research is that governance can consist of informal and as formal applications: laws, language, norms or power (Bevir, 2012). The latter is thought of as carrying ones’ idea through, establishing practices as legitimate.

CC is a prevalent problem that has ultimately culminated in alternative governance approaches (Auld et al., 2009). Since the 1990s, coercive top-down governance has been declining (Auld and Gulbrandsen, 2010). Action is thus not concerted, but dispersed throughout society (Andonova, Betsill, and Bulkeley, 2009). The forecasting of CC scenarios does not prescribe how exactly action should be undertaken. So, a myriad of solutions has been proposed (Bulkeley, 2016). These responses to CC are nevertheless undeniably guided by sustainable development (SD), the “... dominant global discourse of ecological concern” (Dryzek, 2013, p. 147). The Brundtland Commission defined SD as the “... development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987, n. p.). Very open to interpretation, SD as a pathway was easily assimilated by neoliberal approaches (Cock, 2011) and is the currently preferred choice to mitigate CC (Jerneck et al., 2011). “Economic growth should therefore be promoted, but guided, in ways that are both environmentally benign and socially just” (Dryzek, 2013, p. 156). Therefore, I speak of marketisation in this thesis. How strong the liberal idea has become is exemplified in the growing power of private actors in the politics of SD (Dryzek, 2013).

Prominent examples of the alternative governance approaches are voluntary third-party certifications. Societal organisations with multi-stakeholder bodies (Lawson, 2011) form sustainability networks and thereby institutional practices that make their subjects (individuals, organisations

and/or governments) regulate themselves (Ponte and Cheyns, 2013). They label products, if the objects adhered to their set standards of production (Roberts, 2013). These standards are usually grounded in expert knowledge (Ponte and Cheyns, 2013). For example, the Forest Stewardship Council (FSC) and Marine Stewardship Council (MSC) created criteria for their specific sectors and according to Lawson (2011) created social meaning because they are in fact multi-stakeholder bodies. In the case of my thesis, BCs develop among others certification systems assessing building performance and categories of sustainability (Cabeza et al., 2013). They evaluate performances during construction and daily use (Ofori-Boadu et al., 2012). Pursued certifications promote awareness in the building sector (Ding, 2008) and, according to Herazo and Lizarralde (2016), display a certain commitment to SD.

## **2.2 Building councils**

BCs are such non-state actors adhering to SD principles. Basically, BCs are member-driven Non-Government Organisations (NGOs). The reason I consider BCs as NGOs is based on certain features: They do not work for profit, they aim for long-term goals, are funded by their members and all possess similar organisational structures (Sedlacek, 2014). Martens (2002) has highlighted NGOs should also work for common goals, which the WGBC (2017a) is profoundly convinced of.

The first BC was founded in the USA in 1993 and started a wave of foundations. By 2017, the WGBC pooled 77 councils on all inhabited continents (WGBC, 2017b). In 2016, the WGBC stated to comprise 30,000 members (WGBC, 2016). The dominating member group are industry-related professional services, developers, construction companies, contractors and manufacturers (WGBC, 2016). Other members are individuals, government entities, environmental NGOs, professional societies, academia, real estate agents, the financial community and tenants (WGBC, 2016).

The WGBC membership is voluntary, so other BCs exist as well. As each BC is present in only one country, I found another 15 self-declared BCs (see figure 1). Other organisations with similar action exist. WGBC members are of specific interest to me as they try to concertedly push their efforts across governance levels. They do so through their locally rooted members and membership in the WGBC which took part in international climate negotiations. The overarching goal of this “environmental NGO movement” (Sedlacek, 2014, p. 253) can be exemplified in the WGBC’s goal for 2050, which is to deliver on initiatives of the Paris Agreement of the 21<sup>st</sup> Conference of the Parties (COP):

- “Limit global temperature rise to 2°Celsius
- Reduce the building and construction sector’s CO<sub>2</sub> emissions by 84 gigatons

- Ensure all buildings are net zero emissions” (WGBC, 2017a, para. 5)

In other words, the WGBC tries to ensure a concerted effort of all BCs by sharing tools (e.g. marketing and communication) and supports their work (Cole and Valdebenito, 2013). There are three member tiers (prospective, emerging, established) of which each higher tier gains more access to network resources. A BC and its members can join global projects, partnerships, campaigns and events (WGBC, 2017b). Additionally, a BC can join regional networks with region-specific knowledge exchange and projects (WGBC, 2017b). The WGBC has a prescription for what it considers an established organisation: have a diverse, well-experienced and highly industry-linked up core founding group and board, financial independence, Non-Profit status, operations running with an office, general media outreach and registered trademarks (WGBC, 2009).

Sedlacek and Maier (2012) classify the BCs’ activities in three ways:

- “Promotion of sustainable construction and building awareness of the issues of sustainability.
- Lobbying for building codes and policies that support sustainable buildings and sustainable development in general.

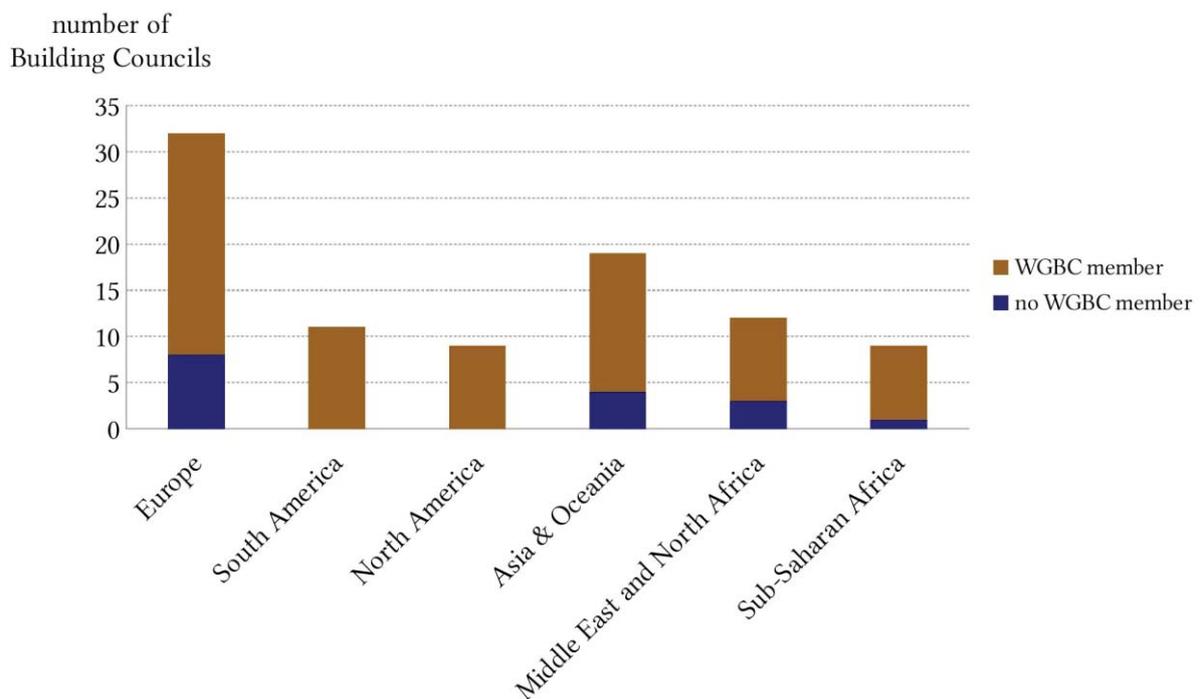


Figure 1. Geographical distribution of Building Councils world-wide. Europe has the most (32), followed by Asia (17), Middle East and North Africa (12), South America (11), North America (9), Sub-Saharan Africa (9) and Oceania (2). Source: WGBC (2017b) and own search.

- Identify best practice examples through the application of sustainable building rating systems” (p. 480).

Markelj, Kuzman, and Zbašnik-Senegačnik (2013) have found two generations among the councils. The first concept were green buildings and hence many BCs bore the name green BC (Markelj, Kuzman, and Zbašnik-Senegačnik, 2013). The second generation has been referred to as sustainable BCs (Markelj, Kuzman, and Zbašnik-Senegačnik, 2013). The first BCs delved into rather one-dimensional sustainability in earlier times, leaving little space for social and economic sustainability next to the dominating environmental concerns (Herazo and Lizarralde, 2016; Jensen et al., 2012). The second generation took one step further by trying to establish a holistic vision, progressing from energy efficiency to more complex sustainability (Sedlacek, 2014). Nowadays, BCs promote more complex forms of certification systems (Cole, 2012) and thus the BCs’ names do not allow to jump to conclusions. To accommodate for both names of the councils, I chose to call them *Building Councils*. To ease readability, but also because both concepts rely on marketisation, I refer to sustainable buildings as the overarching concept.

## **3 Methodology**

### **3.1 Research design**

The question I tried to answer in this thesis is of qualitative nature. Basically, I applied a *cross-sectional design*, which means I collected data from several cases (Bryman, 2012). As my aim was to identify institutional elements, I was interested in the variation of answers and not statistical significance (Bryman, 2012). The BCs were my objects of interest as they are mediators between their members. This allowed me to extract primary data from organisations that sit between governance levels. They have a good overview of processes and are situated in an *institutional field* (explained in section 4.2).

Proceeding from Sedlacek and Maier (2012), Sedlacek (2014) and Inkoom and Leiringer (2016) as main reference points, I conducted a preliminary structured review of peer-reviewed literature to grasp the extent of work accomplished on CC governance approaches. It helped to identify a research gap, pose an over-arching question and design the research.

Bryman (2012) has said that “... arriving at a social scientific account must not lose touch with the world as it seen by those whose voices provided the data” (Bryman, 2012, p. 401). Encapsulated scientific research without acknowledging the social world of the subjects does not make a significant contribution to transitions (Wiek et al., 2012) and likely lacks credibility (Tracy, 2010). It is only when I figured out the BCs’ perspectives that I could proceed to analyse the data from an institutional viewpoint. Although I concentrated on the organisational (IT) and system (CC governance) level, I also consider individual levels of interest throughout as I acknowledge that organisations comprise individuals.

### **3.2 Research philosophy**

As a sustainability scientist who tries to capture its subjects’ life world, I follow Critical Realism (CR) as a philosophy of science. This research paradigm bridges the exaggeration of both positivism on the one hand and constructivism on the other hand (Bryman, 2012). CR takes reality as existent without being observed (Sayer, 2000) and makes clear that reality is socially constructed and simultaneously exists without our observation (Bhaskar, 1975, as cited in Sayer, 2000): “there is no reason to believe that the shift from a flat earth theory to a round earth theory was accompanied by a change in the shape of the earth itself” (Sayer, 2000, p. 11).

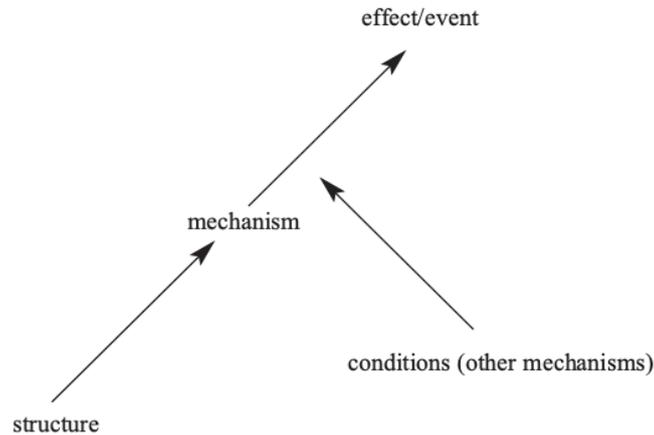


Figure 2. Causality viewed by Critical Realism. Taken from Sayer (2000, p. 15)

How did I then make sense of my subject? Reality is stratified (Sayer, 2000), or layered. This in turn means observed reality is not what it might seem. This bares my general assumption throughout the thesis: what I empirically observed was built upon deeper structure, mechanisms and conditions (see figure 2). “What one person ... can do, depends on their relations to others ...” (Sayer, 2000, p. 13).

All actions undertaken to disassemble and solve problems - hence the (re)actions of the BCs to the perceived unsustainability - are mere interpretations of the world. They make sense to our world and determine our action which is an important aspect in coming chapters. This means, I can make sense of the real world by analysing the social constructions. The advantage of this research paradigm is that it epistemologically focusses on patterns (Nastar, 2014), fitting my interest in the variation of answers. Rarely do precise laws explain the meaning to a social world (Bryman, 2012), but patterns show how the environmental challenge of anthropogenic CC is responded to by BCs.

### 3.3 Research methods

The sources of data for this research stem from the literature and personal accounts. Last-mentioned was given room in both surveys and interviews. I chose these because their mixture - a triangulation (Bryman, 2012) - displayed a strong interrogative way to answer SQ1. My view on triangulation correlates with Denzin (1970, as cited in Bryman, 2012), who understands it broadly as the application of various methods and data sources. Triangulation can also be used to cross-check findings (Deacon, 1998, as cited in Bryman, 2012), but this did not apply here as I assume my interviewees to be the ones who have filled out my survey.

In contrast to the systematic literature review long before the actual start of thesis work, literature reviews during the thesis were of *narrative* nature to develop understanding. Such inductive

exploration is tougher to replicate, as exclusion and inclusion criteria develop throughout the actual process (Bryman, 2012). Although Bryman (2012) has remarked the uncertain scope of such method, some incorporations of structure are present. In the case of my thesis, the starting points were to link problems that arose from the literature to debates in SSc (see section 1.3).

### **3.3.1 Survey**

From the beginning, surveys were thought of as the initial starting points for deeper social research. They were the preparation for my interviews. The BCs are situated in diverse cultural contexts, but the professional work they engage in made me assume my research to be understood if properly conveyed. As I had to reach out to 77 different countries, I deemed a survey to be the most appropriate step for data acquisition. Further, I could accommodate limited time of the BCs' staff and generate as much answers as possible in the given time frame. I had only few reference points to start from, so I chose to deduct my survey questions from a contextualised concept (section 4.1). After all, researchers must endure flexibility. I regret that incoming survey answers over a month did not reach statistical significance for an initial *mixed-method design* (the entire research iteration can be taken from Appendix A and B).

The survey was pre-tested with four individuals and one BC. Answers came in over the time-span of a month. Not giving the consent to the anonymity and use of data would have disqualified participation in my on-line survey. I firstly asked for agreement with a description of themselves, then asked details about a possibly employed educational program. Secondly, I dived into details of these programmes, further motivations and barriers for actions. I let participants rate on Likert-Scales and check a matrix (see my survey attached in Appendix C). Questions were usually accompanied by open-ended questions for comments to ensure space for things I have missed out. I chose the five-ordered Likert-Scale because it is known to have a high reliability of responses (Krosnick and Presser, 2010).

Nevertheless, Foddy (1993) has highlighted few principle survey errors on which I want to reflect. First and foremost, my participants could have misunderstood the intention of my questions. Foddy (1993) has added respondents might show a lack of effort. As many voiced they discuss the survey with colleagues, I provided a PDF copy of the survey when I sent the survey link. Although "... answers to earlier questions can affect respondents to later questions ..." (Foddy, 1993, p. 6), the larger question is whether it was possible to draft survey questions and present answers on my topic of interest. At the end of this research, I might have asked differently. In the given circumstances

with limited capacity to capture my data of interest, surveys proved helpful preparing for in-depth interviews either way.

### **3.3.2 Interviews**

Starting from SQ1, a preliminary analysis was performed on the incoming results of the survey. This clarified whether my question was answered, data was ambiguous or I needed more insight. The interview questions were open to accommodate my intent with cross sectional study design, collecting variations of answers. Six remote interviews were conducted with survey participants, totalling four hours. As my interviewees held very different positions, I assumed their knowledge to vary greatly and so, I used the interviewee's survey answers to begin with. The questions picked were either chosen because of the statistical deviation from my sample's answer or due to a freely stated comment to a question. This helped to stay open to the interviewee's knowledge. Myers and Newman (2007) have referred to this as a *semi-structured interview*. The choice of remote interviews derived from geographical distance to the BCs' offices.

It is important to acknowledge that the data reflect the interviewee's knowledge as well as opinion. The diversity in positions interviewees held ensured to respond to a possible *elite bias* (Myers and Newman, 2007), if I were to only interview the highest-ranked people in an organisation. In some way, remote interviews also helped me to have the interviewees remain in their natural work environment. Farther, I encouraged free answers and highlighted that the interview is following the flow developed together rather than following a straight line forward. Myers and Newman (2007) have called this "minimis[ing] social dissonance" (p. 16), loosening the interview situation and hence encourage a conversation. I did not want to be perceived as a mere researcher, but an interested citizen with background expertise.

### **3.3.3 Data analysis**

I transcribed the interviews word by word. This helped to firstly revisit the material and secondly ensure that I re-phrase confidential material. Leaving out unintended sounds, like stutters and coughs, Mayring (2014) has referred to this as "smooth verbatim transcript" (p. 45). My interest was in the content of statements; therefore, this form of transcription was considered sufficient.

My data analysis followed a mixture of *induction* and *deduction*. Once all interview data had been collected, I inductively generated categories to the patterns of answers. This first stage of research helped to answer SQ1. Three categories of instruments could be established: *certifications, education* and *policy advocacy*. Two other data categories were *Network Functions* and *Future Development*. In

the second stage of my thesis, I used IT to interpret prior findings of stage one. They were categorised deductively according to the three pillars of IT (see the next chapter). Throughout chapter five, I engage with the interviewees in direct and indirect speech to generate a smoother text flow.

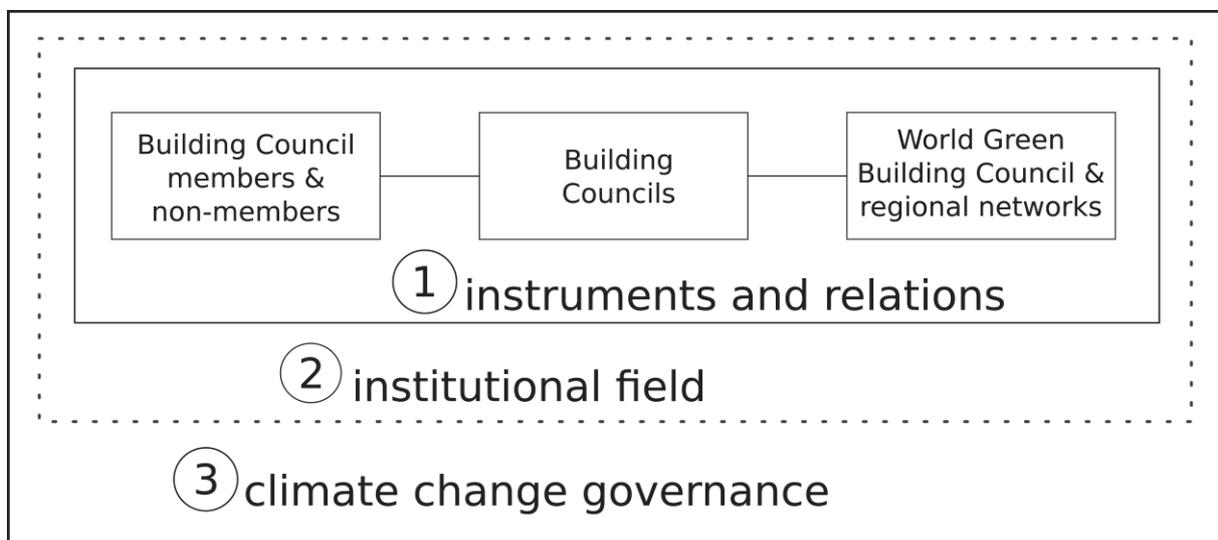
### **3.4 Ethical considerations**

While conducting my research, ethics played a considerable role as I engaged across cultural contexts. Diener and Crandall (1978, as cited in Bryman, 2012) have identified few main areas: one considered important to my research was the lack of informed consent. All participants received an official letter inviting for participation explaining how I use the sampled data (see Appendix B). I promised not to disclose any names or affiliations to statements that could lead to the identification of the interviewee or BC itself. Interviewees were given randomised names (see Appendix D). Altogether, I ensured to avoid any envy, competition or unjust treatment between collaborating BCs. A consent form was provided in the beginning of surveys (see Appendix C). For the interviews, I orally repeated the way I use the data and asked for consent (see Appendix D). Transcriptions were forwarded for authorisation if requested.

There were further no questions that directly or indirectly invaded privacy in the survey (Diener and Crandall, 1978, as cited in Bryman, 2012). This has been ensured by pre-testing survey questions with one participant. The last part of ethical consideration is deception (Diener and Crandall, 1978, as cited in Bryman, 2012). Professionalism remains at the forefront to not adversely affect the participant's perception of me in the role of the researcher and social science research itself (Bryman, 2012). However, it might not always be the cleverest strategy to fully disclose oneself to participants (Bryman, 2012). The BCs I studied are working closely together with industry and are most likely aware of critical views on these relationships. The intent of my research was not to criticise them for it, but to - among others - examine this trait. The final thesis is shared with participants.

## 4 Theoretical framework

In this chapter I present the framework of my thesis, how I have used it in my analysis and later in my discussion (see figure 3). I started by analysing the *instruments* BCs apply and iteratively analysed the existing *relations* of BCs with members, non-members, the WGBC and its regional networks (1). It is only when I understood these two features that I could analyse the *institutionalisation* of a sustainable building practice (2). Lastly, I discussed the unnamed implications of the BCs' actions for CC governance (3) to form an answer to my research question.



**Figure 3.** Thesis framework. The figure displays the three-fold structure to answer my research question. Own figure.

### 4.1 Contextualising a knowledge concept

To collect survey data from the BCs themselves, I needed to generate a list of questions that allowed me to investigate which instruments BCs use to promote the proliferation of their concept of sustainable buildings (SQ1). At the same time, it should reveal relations so I can form a body of findings needed to answer SQ2 on institutionalisation processes.

My understanding of knowledge is like my understanding of relations. Knowledge is an ongoing process based on social interaction. The management of knowledge (KM) exists as both a management approach in organisations and an academic concept. Last-mentioned has been successfully applied analysing organisational behaviour (Lina, 2010; Alipour, Idris, and Karimi, 2011; Neagu, 2013; Hasnain, Jasimuddin, and Fuller-Love, 2016; Lapniewska and Szczerbicki, 2009; Hailey

and James, 2002). From a management perspective, organisations need KM to adapt to a changing future (Alipour, Idris, and Karimi, 2011). KM assists an organisation to “... continuously expanding its capacity to create its future” (Senge, 1990, p. 14). Without knowledge, any organisation loses its position in its respective arena (Senge, 1990); it is fundamental to the survival of an organisation (Grubbauer, 2015; Häkkinen and Belloni, 2011). The successful exchange of knowledge between actors benefit each other (Hasnain, Jasimuddin, and Fuller-Love, 2016) and it displays a vital part of the councils work if BCs wants to successfully engage in their work.

In the case of NGOs, the team must work under economic and personal pressure while improving (Matschke, Moskaliuk, and Cress, 2012). Neagu (2013) has described NGOs as knowledge-intensive organisations, while Lapniewska and Szczerbicki (2009) have gone further describing a dynamic evolvement of knowledge as a fundamental resource to NGOs. For BCs, I understand this as the necessity to grow as a credible actor in the respective national building sector.

KM can vary in its scope depending on the subject of research, so an alteration to its understanding is necessary (Holsapple and Joshi, 2004). For my research question’s answer to be investigated in detail, I need to embrace two aspects of knowledge: its creation and transfer (Lina, 2010). Their definite separation is not the aim because I regard them to be co-evolutionary and dynamic. The two aspects of KM can happen intra-organisational or extra-organisational (Lina, 2010): within BCs themselves, amid the BCs, in the WGBC network, among BC members and non-members. But, what then is knowledge?

For the aim of my thesis – identifying institutional elements – “... knowledge is the whole body of cognition and skill which individuals use to solve problems. It includes both theoretical and practical everyday rules and instructions for action” (Probst, Raub and Romhardt, 2000, as cited in Alipour, Idris and Karimi, 2011, p. 62). Furthermore, knowledge is conveyed in usable representations (Holsapple and Joshi, 2004). My understanding of KM is that it is an aspect of actual work (Kelloway and Barling, 2000). Based on the discussion above, the KM model used in this thesis is framed as:

*organised activities of a BC, its members and networks to create and transfer usable knowledge in written format that forwards their concept of sustainable buildings.*

I derive questions for my survey from Hasnain et al.’s (2016) results on knowledge transfer for NGOs and the developed KM model. I ask:

- what expertise are BCs being asked for, and by whom?
- what expertise do BCs perceive necessary to perform their work?

- how do BCs engage with their members?
- what is the motivation for knowledge transfer?
- what mechanisms are used to transfer knowledge?
- what are the barriers to their work?

As a management approach, KM tries to secure positions of organisations in the respective arenas. Put simply, IT is then concerned with how this happens and delivers diverse answers.

## **4.2 Institutional theory**

SQ2 is theoretically-informed from IT and the theory itself is directly connected to reaching my aim: identifying the institutional elements of the BCs' work that ensure their concept of sustainable building is adopted. It is a theory suitable for qualitative research which allowed me to question why something was empirically observed. Next to IT, I could have used other theories. In chapter six I show why specifically an intersection of transition theory and social practice theory (Hargreaves, Longhurst, and Seyfang, 2013) can be an interesting entry point in further research. The reason I chose IT as my figurative hammer to knock on data were the clear fit into CR and SSc. Last-mentioned foresees to integrate varying views (Thorén, 2015) and I show how IT facilitates this aspect.

### **4.2.1 Connections to social worlds**

IT has come a long way since its inception by the social sciences in the 1850s (Scott, 2014). Essential for this research is that IT assists in explaining why an organisation or individual – I only refer to organisations from now on, but I do not disregard individuals make up organisations – behaves a certain way. This approach helped researchers to connect past and present processes in society. The current *neoinstitutional* form, started with - among others - Silverman (1971, as cited in Scott, 2014), who followed Émile Durkheim's view (an early institutionalist). In his late works, Durkheim gave priority to shared systems of belief, employed as a normative framework guiding behaviour (Scott, 2014). The framework is produced by ourselves in action, giving order and meaning to our social world (Scott, 2014). To Durkheim, an institution is then "... a product of joint activity and association, the effect of which is to 'fix', to 'institute' outside us initially subjective and individual ways of acting and judging" (Alexander, 1983 in Scott, 2014, p. 14). In other words, people together standardise actions. Berger and Luckmann (1967, as cited in Scott, 2014) gave way for a new sociology of knowledge: it is rather important how reality is created through social interaction than whether it is valid. Thus, meaning systems mentally fence our actions, which then reinforce the fence (Scott, 2014). Other actions become illegitimate; they are socially unaccepted (Scott, 2014). Later, Meyer

and Rowan (1977) have added rationalisation as a process to belief systems. The rationalised forms of belief are rules which inform an institutional environment influencing organisations (Scott, 2014). Socially accepted behaviour hardens, it is *institutionalised*. Zucker (1977) has termed this “social knowledge” (p. 726); “... once institutionalised [, it] exists as a fact, as part of objective reality, and can be transmitted directly on that basis” (p. 726).

From an institutional perspective, organisations need to exercise legitimate practices to survive in their environment (Scott, 2014). In the case of my thesis then assists in investigating in how far the sustainable building practice (of the BCs’ sustainable building concept) is legitimate and survives. The influence on the legitimacy can be diverse and depends on which viewpoint is taken: a *regulative*, a *normative* or *cultural-cognitive* one (Scott, 2014).

A great influence on IT came with Pierre Bourdieu. A *field* approach had existed long before in the sciences, but Bourdieu brought the relational dynamics between actors into the concept (Scott, 2014). To Bourdieu, a field is an arena where actors fight for setting their rules, but in which an actor also exercises power (Scott, 2014). Though many levels of analysis exist to IT, I follow Powell (1983), who uses his concept as a level of analysis, explaining three isomorphic mechanisms: *coercive*, *normative* and *mimetic*. These are constraining mechanisms forcing an organisation to act a certain way and/or resemble others in the institutional field. So, adhering to rules, norms and beliefs strengthens an organisation’s position in an environment. This conceptualisation was central to answering how BCs affect the adoption of their sustainable building concept.

#### **4.2.2 Three pillars of institutions**

Institutions are dead if not filled with life; they cannot be mere physical objects (Berger and Luckmann, 1967, as cited in Scott, 2014). Interactions give life to an institution (Hallet and Ventresca, 2006), hence an institution occurs, persists and changes through interaction which forms rules, norms and gives meaning to e.g. a physical object (Scott, 2014) like a building. “Institutions comprise regulative, normative, and cultural-cognitive elements that, together with associated activities and resources, provide stability and meaning to social life.” (Scott, 2014, p. 56, emphasis by author). Scott (2014) has made it clear that an institution is never an organisation itself and that an institution rarely exhibits only one element (Scott, 2014). An institutional perspective concentrates on what drives actions (Westphal, Gulati, and Shortell, 1997). The three institutional elements belong to three same-named pillars: a regulative, a normative and a cultural-cognitive (see table 1). In the table, you find the earlier-mentioned three isomorphic mechanisms (coercive, normative and mimetic) again under *logic*.

A conflict that arises with the three pillars are their different assumptions of change in the world as they originally stem from different ontologies (Scott, 2014). In my thesis, I follow Scott's (2014) idea, that the analysis of their elements together generates greater explanations than individual consideration. Although I mentioned these pillars to rest on different ontologies, I from a critical realist perspective view the respective pillars as socially constructed i.e. enforcing a regulation because of observed patterns of CC is an interpretation. The pillars might be aligned and combine forces or can be misaligned i.e. what is legal does not have to be normatively endorsed (Scott, 2014).

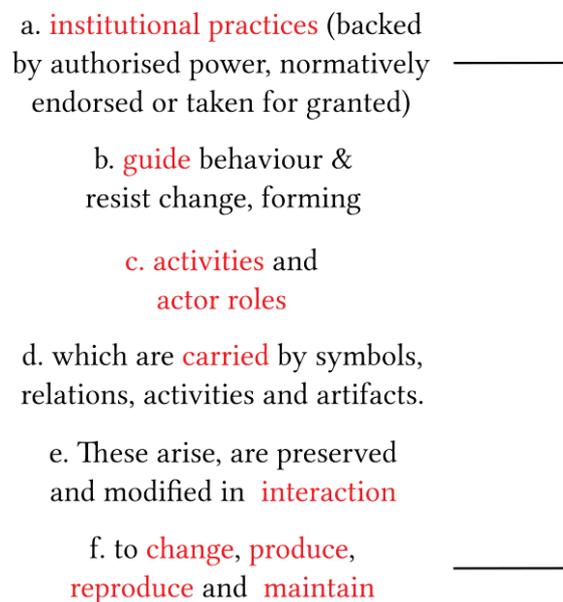
Firstly, the regulative pillar puts emphasis on constraining behaviour (Scott, 2014). The dominant mechanism is the involved capacity to sanction and reward through *coercive* power. Rational choice or instrumentality is further the operating logic: rules are created to advances the creator's interest while conformers want rewards or avoid sanctions (Scott, 2014). Secondly, the normative pillar in contrast encompasses values and norms. A value herein determines preferred actions as standard which can be contrasted to other actions whereas a norm outlines the end to these actions and how they shall be attained (Scott, 2014). It is important to recognise that not all values and norms must

**Table 1.** Three pillars of institutions. Each pillar is made up of various dimensions. Source: Scott (2014, p. 60, italics in original).

	<i>Regulative</i>	<i>Normative</i>	<i>Cultural-Cognitive</i>
<i>Basic of compliance</i>	Expedience	Social obligation	Taken-for-grantedness, Shared understanding
<i>Basis of order</i>	Regulative rules	Binding expectations	Constitutive schema, Mimetic
<i>Logic</i>	Instrumentality	Appropriateness	Orthodoxy
<i>Indicators</i>	Rules, Laws, Sanctions	Accreditation	Common beliefs, Shared logics of action, Isomorphism
<i>Affect</i>	Fear, Guilt, innocence	Shame, Honour	Certainty, Confusion
<i>Basis of Legitimacy</i>	Legally sanctioned	Morally steered	Comprehensible, Recognisable, culturally supported

apply to all actors to the same degree because certain actors have different roles which they are expected to fulfil (Scott, 2014). In contrast to rational choice, organisations ask what their appropriate behaviour would look like (Scott, 2014). Thirdly, the cultural-cognitive pillar stresses that it is shared understanding which give meaning through interaction to objects and activities (Scott, 2014). Someone’s actions are only internal reflections of what this someone ought to do (D’Andrade, 1984, as cited in Scott, 2014). This reflection is influenced by the surrounding cultural framework (Scott, 2014). In this thesis, I understood this to be the dominating discourse of SD. Why organisations would comply from a cultural perspective is “... the perceived correctness ... of the ideas’ underlying action” (Scott, 2014, p. 68).

The reason I picked up a field-level for an institutionalisation process is that it demonstrates the BCs are competing in an arena over setting rules. The arena comprises all the building actors and elements like legal requirements or local conditions that I have pointed out in the introduction. Hence, BCs achieve their aim from an institutional perspective, when their sustainable building prac-



**Figure 4.** Simplified institutional flow. The six stages displayed exemplify institutional aspects and how they work together. Own figure. Adapted content from Scott (2014).

tice is viewed as legitimate. The practice can either become coercively forced, normatively endorsed or even taken for granted. Organisations only exercise legitimate practices that ensure they survive in their environment (Scott, 2014), as I have pointed out earlier. As such, the sustainable building practice in question institutionalises in the best case, becoming “social knowledge” (Zucker,1977, p. 726). The question why BCs primarily align with one instrument is answered in the end of section 5.2, when I have generated more understanding of IT. Figure 4 demonstrates how an institutional flow works out. Backed by varying elements, institutional practices promote an idea as standard. They guide behaviour, but also restrict and resist change. They are carried out in activities and actor roles conveyed in symbols, relations, activities and artefacts. It is important to remember that it depends on what pillar is emphasised, as each points to a different mechanism how an idea is adopted and what legitimacy it relies on (Scott, 2014). The carriers of actions arise, are preserved and modified in interaction to change, produce, reproduce and maintain the institutional practices. This cycle in turn means institutionalised practices can be hard to overcome. In the case of my study, BCs try to institutionalise a sustainable building practice. The BCs’ instruments and relations comprise an idea (their sustainable building concept) conveyed by symbols, relations, activities and artefacts. The concept and its implied practices must be legitimate ones for organisations to adopt the promoted building practice.

## 5 Results and analysis

Now, this chapter follows the flow of the SQs. Firstly, I iteratively engage with both survey and interview answers to describe which instruments BCs use to promote the diffusion of their idea of sustainable buildings (SQ1). The instruments imply relations I analyse throughout. The concept is evidently looked at as well. From an institutional perspective, it is not a concept that is institutionalised, but its implied practice. In the second section I revisit the established findings about the sustainable building concept, the instruments that promote it and the BCs relations in conjunction from an institutional perspective. I shed light on why BCs align with one primary instrument and how all instruments as well as relations together institutionalise one sustainable building practice (SQ2).

### 5.1 Instruments and relations

Before I delve into the data, let me firstly introduce my twenty-one participants. 21 have filled in the survey: thirteen from Europe, two from the Middle East and North Africa, four from Asia and one from Sub-Saharan Africa, one participant stems from North America. No participants could be found in South America and Oceania. Of these 21 participants, six European participants were interviewed:

- communication manager Keelin, who organises training events, does administrative work and maintains general communication,
- business development manager Stefan, who handles the administration, strategic development and marketing,
- sustainability officer Agape, who creates member programmes and is responsible for industry research,
- chief executive officer Garnett, who handles the operative work of the council
- international affairs manager Paula, who is responsible for communications with the WGBC, the regional network and her council and
- finally, project manager Andrej, who works on projects and runs the communications and memberships.

In my sample, I found three instruments to various extents: *certifications*, *education* and *policy advocacy*. Volunteers of BC members engage in working groups on individual topics or specific instruments. The offices are figuratively speaking central to knowledge processes. All interviewees make clear that their councils are member-driven: “The people who work within the ... team as

employees are not technical experts and we do not claim to be such. We are vast repository of information, that is true, ... “ said Agape.

BCs are nationally well-connected to credible actors in the building sector (Sedlacek, 2014). My interviewees hinted that the motivation to become a member of the BC is to partake in shaping the work of a credible governance player that connects the entire value chain for a consensus-based end: a sustainable built environment. The initiative to found the BCs were industry-driven in five out of six interview cases. For Agape’s BC, the initiative came from an NGO. Nevertheless, core founding groups have been industry-dominated and have often served as board members simultaneously (Sedlacek, 2014). The initial choice of instruments depended to a large extent on the founders’ aim. To the largest extent, *certification* is the primary instrument. Five interviewees highlighted that member engagement heavily concentrates on certification scheme development. To explain this, I analyse how *certification* and *education* cling together.

### **5.1.1 Certifications and education**

The interviews confirm that a certification must be more ambitious than the national build policy. Instead of loosely claiming sustainability, as Keelin calls it, Stefan asserts the industry founded BCs to “... establish an organisation and a [system] which could progress the sustainable construction agenda”. To make a point clear, local building materials and methods had no influence: “The certification tool was produced for the professional building industry. I don’t think ... traditional buildings had any influence on what kind of [certification system] they chose in the end”, said Keelin.

I asked my interviewees why organisations pursue certifications? Stefan said, from the viewpoint of a developer, one has a “... natural incentive to minimize the construction costs in terms of when you sell the building right after you built it, [because] you make a lot of profit”. He related the interest also to a growing time horizon of investors. Garnett reckoned it is the cost of savings as well. To him, savings occur because certifications start early in planning processes. To Keelin, certification systems are efficient, economic planning tools, favouring “... a participative process. Deciding for a certification makes you [go] through what is initially funded”. She added that “... you can actually measure the impact when you look at it”. The documentation is an integral part of certifications. Stefan and Paula highlighted the importance of registering current knowledge, so they can evaluate it in the future. Keelin alluded the need to document sustainability to attract investors and tenants. The presented views are strongly limited as e.g. the governments or members were not asked. The government however can be the largest builder in a country, which is the case in Keelin’s and Andrej’s country. Stefan reported that some lower tiers of the government already made their

certification mandatory whereas Andrej mentioned that members created a certification system only for the public.

If a project is to be certified, two entities must be contacted: a professional trained in a certification system and the certification-issuing organisation. This can be among others a BC. The professional accompanies the project to its end and hands in the required documentation to the certification-issuing organisation. They do a conformity check and lastly issue a label according to an achieved rating. So, the certification body needs trained professionals to consult clients, overview projects and document achievements in the building sector's organisations. The organisation a trained professional works for has then the possibility to offer certification to clients. As the building sector comprises many organisations, a variety of professionals get involved "When an investor demands a DGNB-certified building, the whole value chain is affected. So, the material producers, the architect has some questions, the contractor has some question, the consulting engineer has some question ...", said Stefan.

The forwarded ideas required many to learn. My samples of BCs have formalised education programmes concentrating to a large extent on conveying knowledge for certifications, training consultants and auditors. Other forms of education exist, too. Agape's BC concentrates among others on identifying best practices among their members. These are conveyed in formats to increase everyone's "sustainability performance", said Agape. In Andrej's case, the BC works closely together with traditional education institutions. They complement their work, find gaps in education and fill them. Sometimes other members serve as the providers of programmes. There is also education beyond the certification. Stefan developed material on the certification and went on a road show with trained consultants to guest-lecture construction-related students at universities. The aim was to convince people on the three pillars of sustainability, that need to be found and documented in buildings. Their material and the one of many other BCs can be found freely available on-line. By now, certifications have evolved to cover many aspects of modern buildings: new construction schemes, refurbishment and daily management schemes range from private homes to district planning (see table 2). "Different councils have different schemes and different perspectives on sustainability, which is fair enough as the world isn't the one great unit", said Stefan. This exemplifies the *fluidity* of the sustainable building concept across space (Stenberg and Räsänen, 2006). The certification systems are a framework for the building sector's development, said Stefan, Paula and Andrej. Although the WGBC states that only half its members administer a certification system (WGBC, 2017a), the reality is more complex. In the cases of Agape's, Andrej's and Paula's BCs, various circumstances in their respective building sector made them not to administer a certification

themselves. I nevertheless found in both surveys and interviews a promotion strategy for certifications.

With all the different certification systems available, well-connected BCs in their respective countries and trained professionals, I wondered whether there was any competition? Keelin’s BC adopted a larger certification system to her country. To her knowledge, an international investor would likely be redirected to their nationally used system. The domestic network trained in the adapted certification system is large enough by now. Furthermore, banks “give better loan conditions if the developer chooses to certify”, said Keelin.

Comparisons between systems are complicated (see figure 5), “... because these methods have been developed to adjust to each region, each building, each stakeholder and many criteria” (Kajikawa, Inoue, and Goh, 2011, p. 244). The points achieved in building certifications thus vary with the focus to criteria (Giama and Papadopoulos, 2012). Here come the BCs’ working groups into play. Experts review schemes and develop them, “... to meet changing market demands and environmental expectations” (Inkoom and Leiringer, 2016). This adds a temporal aspect to the fluid conceptualisations, but also a normative aspect which I point out in section 5.2. Stefan commented that their members “... have an interest in being part of the process in developing measurement of

**Table 2.** Examples of certification systems and their individual schemes. The examples comprise of Deutsches Gütesiegel Nachhaltiges Bauen (DGNB), Building Research Establishment Environmental Assessment Methodology (BREEAM) and Leadership in Energy and Environmental Design (LEED), Source: DGNB (2017), BRE (2017) and USGBC (2017).

<i>System</i>	<i>Certification schemes available</i>
DGNB	New offices, Existing offices, Residential buildings, Dwellings, Healthcare, Education facilities, Hotels, Retail, Assembly buildings, Industrial, Tenant fit-out, Urban districts Office, Business districts, Industrial locations, Event-areas
BREEAM	groups: New construction, In-Use, Communities, Infrastructure, Refurbishment and Fit-Out, Deconstruction (only in the Netherlands)
LEED	groups: Building Design and Construction, Homes Design and Construction, Interior Design and Construction, Building Operations and Maintenance, Neighbourhood Development

criteria, [t]his is their whole business”. Garnett held a similar view: trained auditors extend their line of business by actively participating in the working groups concerned with the development of schemes. As an example, Stefan’s BC involved 150 and Paula’s 120 experts to adapt a foreign certification system to their build policy. When regulations are set higher, experts review the certifications’ standards. Garnett and Agape said, that non-industrial members are mostly involved in reviewing both scheme reviews and education programmes. “Universities would of course prefer to go about this alone. However, no scheme is of use when clients do not dare to sell it. It’s always a compromise ...” (author’s translation), said Garnett.

Primarily, I found one major difference to occur: some certification systems are rather prescriptive when others are not. Stefan makes clear that their system does not judge and remains open when others award points in rating schemes for using certain products. One reason not to prescribe is the nature of his BC: having the entire building value chain involved, they “... cannot go in and judge which material doesn’t function, what is more sustainable than the other”, said Stefan, adding on: “...we will not say ‘wood is good, concrete is bad’ ...”. Their system, just as the one used in Paula’s country primarily evaluates the material with Life Cycle Assessments (LCAs): “The importance is the balance at the end, depending on the performance you aim for”, argued Paula. The divergence of in-

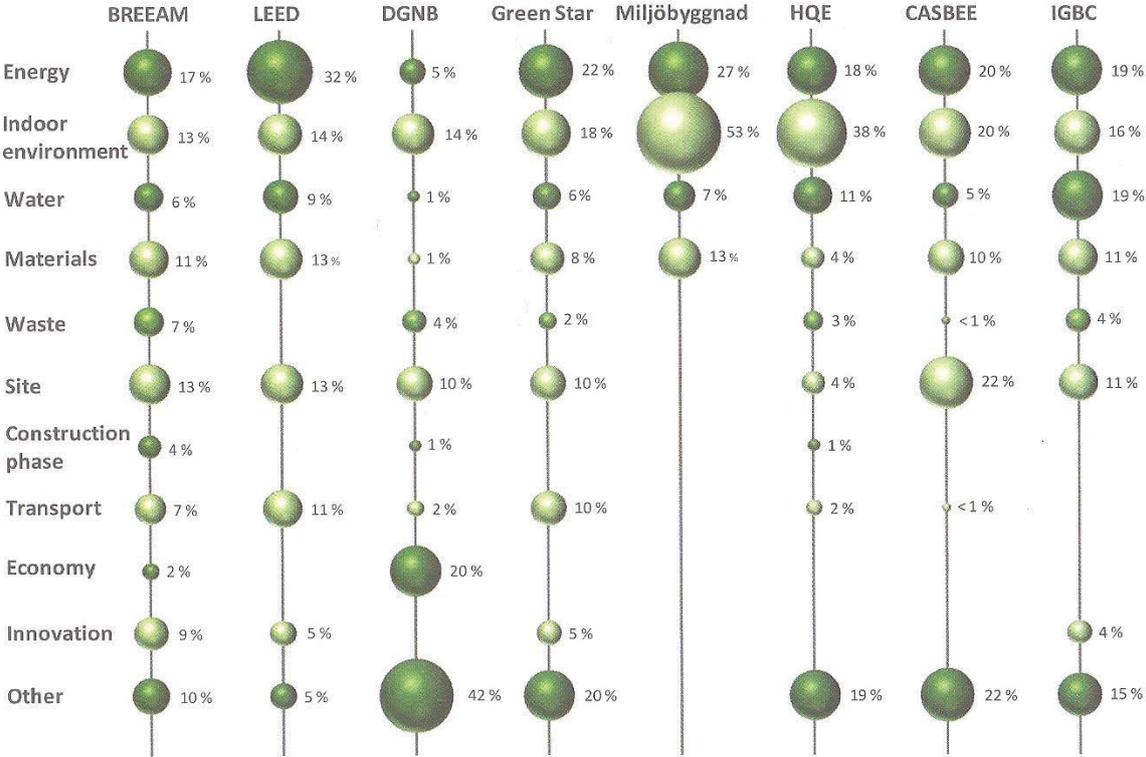


Figure 5. Dimensions of various categories in building certifications systems. The figure shows the large variety of categories certification systems pay attention to. Source: Heincke and Olsson (2012, p. 107).

interpretations this leaves open has given important incentives to innovations (Stenberg and Räisänen, 2006). Herazo and Lizarralde (2016) have described green or sustainable buildings as innovative because the process of attaining such certification requires various innovations “at strategic, tactical and operational levels” (Herazo and Lizarralde, 2016, p. 295). I return to the topic on innovation and LCAs again in the discussion. So, I saw that intangible knowledge about sustainability and tangible forms of knowledge (regulations, technology) are mixed, hardening in a written format. The working group gives the opportunity for members i.e. competitors and sub-contractors to discuss questions that would otherwise not be posed without a contract between them, said Andrej. Unfortunately, the decision-making processes in working groups are veiled. Goulden et al. (2017) have said this has “... led to a black-boxing of the [sustainable building] concept which contributed to its ability to maintain different interpretations and legitimately function in different governance settings” (p. 10). I turn my attention to the implications of this point in the discussion.

### **5.1.2 Policy advocacy**

As mentioned earlier, a certification must be more ambitious than the national build policy. Four of my sample of BCs could be found to engage in policy advocacy to governments and political parties. From the survey, the picture emerged that policies are regarded as an important area of expertise for BCs. Let me showcase three ways how BCs engage.

Paula’s BC has a seat in multi-stakeholder government entity, “... contributing in all the new regulations and the big discussion topics affecting construction and real estate sector”. Her BC itself has working groups on policies, so the members look after the BC staff to represent their views. Wondering about the influence of political changes, Paula negated. Governmental change did not infringe policies for sustainable building: regulations were progressing every second year, most significantly shifting away from a pure energy perspective to affordable housing and low-carbon.

The example of Agape shows how influential BCs can become. Her BC has a “... policy department whose manager constantly engages with the government at very different levels including the all-party-parliament group on the environment to giving evidence in our parliament houses, all the way to advising on how to implement a particular energy policy ...”, said Agape.

She reported that policies which had been created in task groups consisting of BC members, have become actual national policies. There was substantial involvement from their site on housing standard reviews or on setting minimum energy efficiency standards, sitting “... on the government’s hearing board taking advise from the industry on how this should be implemented ...”, said Agape.

The engagement with local authorities are of peculiar importance as they are often mandated to implement national policies, are procurers and builders likewise. Andrej held a similar opinion. Being part of governmental task groups, the BC ensures that environmental and sustainability aspects are considered, said Andrej. Their member's voices should be heard in discussions. The own image with this work varied, some called themselves "lobbyists", others denied such label.

Yet another form of engagement shows Keelin. Her BC had hardly concentrated on such work. She argued the partially opposing views of their members hindered them from engagement. Due to upcoming national elections, they started to intervene as to their frustration buildings were not on the political agenda. They took initiative to talk to all political parties and create political pressure. They held meetings with politicians, commented on suggested regulations and "... put suggestions into all parties' programmes", said Keelin.

### ***5.1.3 WGBC and regional networks***

Lastly, I want to turn my attention to the WGBC and regional networks. My interviews reveal that the use of the WGBC is contested. I have so far not pointed it out, yet, but Stefan's BC was never part of the WGBC. In the initial research phase, his BC slipped through. This brings me nevertheless to the interesting fact, that the WGBC and its network can be of little interest to their national work. Garnett's BC is a member, but "... visiting some general assembly or similar is pointless ..." (own translation), he said. He added that his predecessors spent much money for WGBC conventions when it could have been better used for in-country development. Stefan's BC did not see the necessity to engage. Their work is closely related to a larger BC in the region, whose certification system they have adopted. If anything important happened they would be informed, Stefan said. Garnett mentioned they could make use of their WGBC membership if someone was working primarily with the WGBC. He imagined it to be interesting to communicate and share ideas on similar topics. Paula, who works with the WGBC, held a similar opinion.

... [I]t's interesting to share our priorities ... We can also do partnerships with one or two [councils] to focus on a topic, when we find we are at the same maturity level ... So, instead of doing all from scratch we can be inspired by what others do. When we notice that we are the first on a certain topic we can share with the rest of the WGBC so that they can push this idea to their governments, said Paula.

Keelin's BC joined just lately, as an established member right away. They had concentrated on developing themselves first. Now, they want "... to be part of this whole community working towards

common goals and give our members the possibility to follow the global course”. This is a point; my data has shown: internationally-minded companies look for the international trends discussed in regional networks.

To Agape, Garnett and Andrej, BC members find connections through the regional network with BC members in other countries valuable. BCs and members alike can join WGBC campaigns. When speaking about the relation to the WGBC, Agape called it an “equal partnership”, making the further comment that “... without them, the issues ... would not have been anywhere as high-profile as they are now”. It helped them put things forward to the government. Andrej’s BC herein functioned as a broker for their national Ministry of Environment on a European Commission Horizon 2020 project. They - together with the ministry - collected national industry voices to assist commenting on a second version of the European Union’s energy efficiency Directive 2012/27/EU. To Andrej, the regional networks provided by the WGBC have three impacts: they help to develop operations and actions, be up-to- date with trends and lastly share best practices to others. Especially last-mentioned could be found more often. One commented on the motif to engagement on a survey question: “Support and export our national accomplishments and best practices, transfer the knowledge and applications by our members”. Paula revealed a similar promotion strategy of practices.

According to Paula, the WGBC had been identified as a key stakeholder in COP21. So far, the building sector had not played much of a role in previous COPs, as “... [t]here was just no organisation to represent the sum of all these to the negotiation”, Paula said and added: “Thanks to the WGBC they can make a summary of where we are and bring it back to the UN”. This development confirms Teegen (2004), who has attributed NGOs a growing role in the global political-economic context. They find themselves in multiple interactions with the public and private sector.

#### ***5.1.4 Promoting the proliferation***

On the last pages, I have demonstrated that to the largest extent certifications are the primary instruments of BCs. My data hints that education as another instrument is essentially used for certification systems, to either disseminate knowledge about them and/or to directly train auditors and consultants. Their sustainable building concept shall arouse by documenting sustainability criteria which vary from context to context.

The BCs’ work has influence across governance levels, horizontally and vertically through certifications, education and policy advocacy. Private, societal and public members cover the range

of local to global governance levels, membership is however dominated by the industry. As member-driven organisations, working groups are the prevalent interaction tool to create content for instruments. The working groups update certification schemes, design education programmes or draft policy options. The regional networks the WGBC provides their members are used to varying degrees, but exemplify how BCs, and their members work across regions exchanging knowledge. Some BCs intend to spread their certification abroad, or share their best practices in the networks. The WGBC provides campaigns and programmes BCs and their members can join. The WGBC further operates in international climate negotiations. Following Ponte and Cheyns (2013), BCs can be described as multi-stakeholder, standard-setting sustainability networks. Now, economic efficiency might be an incentive to certify, but let me show how IT explains the adoption.

## **5.2 An institutional theory perspective**

My sample of BCs promote their concept of sustainable buildings by institutionalising their building certifications. From an institutional perspective, certifications must become a legitimate practice, so the BCs' concept is ultimately adopted. Now, to IT there are three explanations why this would occur. Either certifications are coercively demanded, their use is socially obligated by expectations or they are taken for granted. As I show hereinafter, last-mentioned is especially achieved because certifications follow the idea of SD, which is inherently connected to marketisation processes.

BCs bring people together to pursue deliberative action. I conclude that their establishment “reflects the relative power of organised interest” (DiMaggio, 1988, as cited in Scott, 2014, p. 115) of the building sector's industry. The industrial experts develop the certification systems, their schemes and verification measures together. Individuals, or organisations, are confronted with the BCs through four carriers: *symbols, relations, activities* and *artefacts*. I now take a detailed look at the three pillars of IT to demonstrate how each explains the adoption of certifications.

### **5.2.1 Regulative pillar**

The regulative elements stress that legitimacy stems from conformity to legal requirements (Scott, 2014). From this perspective, coercion is weak due to the certification's voluntary nature. Viewed from this pillar, sustainability is conveyed through the written prescriptions of certification systems and action of documenting. The certified building then functions as an artefact, representing the sustainable building concept of BCs. Is certifying then an expedient response? Not to a coercive power in this case. Only one interviewee has hinted that some local authorities adhere to

certification systems and use their coercive power enforcing building certifications on their administration.

Though somewhat disconnected to certification systems, BCs can successfully advocate policies in arenas setting rules. The legal requirements by the state either require a minimum of energy efficiency or seek performance (Shrestha, 2016), but affect the masses with effective mitigation potential (Van der Heijden, 2016). Thus, this work is of crucial interest as it *a*) affects the BCs' members and *b*) assists in reaching their overarching aim - mitigating CC. As I found working groups to engage in formulating policy options as well, the members of BCs might thus indirectly promote their concept of sustainable buildings. My interviewees made clear that they use policy advocacy to push the regulatory sustainability agenda for buildings, so their forwarded ideas likely resemble what is demanded in categories of certifications. The regulative explanation is nevertheless contingent as all interviewees stress that certification systems go beyond the legal requirements.

### **5.2.2 Normative pillar**

To this pillar, decisions are moral decisions (Heclo, 2008, as cited in Scott, 2014). The norm describes the goal - a sustainable building - and prescribes how to get there - document sustainability and prove it obtaining a certification. The normative explanation why certifications are adopted is the binding expectation and social obligation. The most important carrier my research revealed are jobs, or "... structured activities in the form of habitualised action" (Scott, 2014, p. 101). Educating and authorising auditors as well as consultants in a certification system adds to already institutionalised forms of life: *job roles*. That certain job roles are necessary to audit a certification is well-fitting into rationalised work life and thus easily accepted. Job roles are the codes of an organisational structure and have authority (Scott, 2014).

To Scott and Ruef (1998), the empirical indicator for a normative institution to exist are standard-setting *professional associations*, such as BCs. The trained professionals bring the knowledge about certifications back to their organisations and can share the concept through their work. This process of connecting the normative concept of sustainability to categories in certification systems and training expertise in them, corresponds to the normative standardisation of a "particular constellation of ideas" (Scott, 2014, p. 104).

This in turn hinted *a* sustainable building as an *artefact* has normative elements, it represents the moral obligation to meet conventions as in certifying and proving sustainability. My interviewees suggest that this is also the case for BCs not issuing certifications themselves. The normative

explanation goes further by linking the entire BC's instruments and relations to SD and as such to a cultural-cognitive understanding how to pursue sustainability.

### **5.2.3 Cultural-cognitive pillar**

When I first thought of this pillar, I remembered one specific comment to a survey question on the motivation for knowledge transfer: "personal appreciation of the importance of sustainable buildings in the preservation of the environment". From this comment and the interviews, a lot of enthusiasm on the problem of a sustainable built environment got across.

From the cultural-cognitive pillar, organisations interpret their surrounding cultural frameworks (Scott, 2014). This is aggravated by the fact that organisations are a conglomerate of individuals, whose interpretations might vary. The explanation of this pillar is called *orthodoxy*: I conform to a template of action because I believe the idea is correct (Scott, 2014). The advantage of the BCs is the inherently fluid concept of a sustainable building which can localise in each given context.

The work BCs and their members engage in, experiences cultural support through endorsements: the WGBC is a major stakeholder in COP21 (Paula) and as such contributes to SD, there are strong ties with governments for EU projects on sustainability (Andrej) and they are in the position to advise governments on policy options (Agape, Paula). Quoting Keelin earlier, she stressed the importance of the connection to SD, whether in international climate negotiations or general transnational action.

As pointed out in chapter four, organisations adopt ideas if these are legitimate, promising them to survive in their sectors (Scott, 2014). To some extent, I see that the BCs' relations, their members from the entire value chain and beyond as well as organisational set-up, are legitimating the certifications in question. Saying this, legitimacy is exogenously given (Thrandardottir, 2015) and SD as a pathway plays a role. With their aims, BCs and the WGBC adhere to SD. How does this happen? Above all, BCs focus on the continued existence of the capitalist political economy. This is in line with SD, which has been appropriated by neoliberal beliefs resulting in market-friendly governance (Cock, 2011). The message is that aligning economic growth with SD is possible. As part of the marketisation trend, certifications go together with the three pillars of sustainability. This enables the BCs to promote certifications as a way advancing the public good (mitigating CC).

BCs as organisations themselves, however, must ensure credibility, which to the WGBC's belief stems from high-profile (industry) members (WGBC, 2009). I think there is more explanation to this. BCs are one of taken-for-granted pathways to attain SD. The cooperation of all players across governance levels is the message put across by SD (WCED, 1987). As such, the relations BCs have from local levels

all the way to the COP and their instruments, emphasise that a BC can be a legitimising organisation of certifications. Following Scott (2014), the BCs' own legitimacy rests on "... preconscious, taken-for-granted understandings" (p. 74) in SD. I return to this in the discussion.

What had started with Ellul's observation in 1954, who spoke of "... a technician [sic] mentality, which encourages analytical approaches and the development of systematic, instrumental rules to pursue specific objectives" (as cited in Scott, 2014, p. 88), can be found with the BCs as well. The rationalisation delineates means (policy and certification) for a normative end: sustainability. BC members engage in working groups and have their say in general assemblies on the strategic direction. This creates a sense of togetherness, that can be seen not just for specific instruments, but relations as well.

#### **5.2.4 Maintenance**

To break with unconscious habits and beliefs is tough, as Keelin noticed when confronting companies who do not apply their certification system: "'We've been building for years, our buildings are great. Why would we need a certification tool?'" was a rhetoric questions often posed to Keelin. The elephant in the room are the masses, whose actions BCs must focus on to reach the aim of mitigating 84 GtCO<sub>2e</sub> emissions by 2050. On this base, the networks BCs can provide (internal, regional network, WGBC) assist the spread of shared norms. The larger the BCs' networks grow however, the more difficult it becomes to maintain the shared norms as new members might not entirely share them. Or entirely different, individuals or organisations built according to certification standards to profit by the energy savings, but avoid costly certification processes (Qiu, Su, and Wang, 2017). This suggests the cultural-cognitive, shared logics of action, acting similar. The symbolically reflected, rationalised conceptualisation of SD in a certified building is strengthened transnationally; through specific relations between the BCs themselves, their members as well as the regional and global networks all are part of. The fluidity of the sustainable building concept and the collaboration in working groups enables further shared logics of actions for certification systems. They are locally developed and well-accepted among members.

#### **5.2.5 Institutionalising a building practice**

Job roles, documentation, jointly defined certification systems, collaboration across governance levels and a diverse range of members ensure that the fluid concept of sustainable buildings is locally accepted. BCs achieve the standardisation of their sustainable building concept primarily through

rationalised forms of norms and culture: a certification. They work normatively, but to a growing extent receive cultural support as the concept aligns with SD principles.

Modern society expresses itself in accountability (Brown, 2010); certification systems herein are collectively drafted check-lists of the normative sustainability concept with accredited actors verifying them. The primary effect of certifications is that they change the standard practices of organisations in the building sector (Schweber, 2013). The linkage a certification requires along a building's value chain is beneficial to proliferate the concept.

The members of BCs are united, accepting the jointly generated rules as appropriate (Bernstein and Cashore, 2007), hence certifications are legitimised. The BCs as organisations themselves gain legitimacy from their member diversity and attachment to the WGBC (if the case) which works among others in climate negotiations.

### ***5.2.6 Aligning with pre-existing forces***

IT can also help us to understand why the building sector has reacted on its environmental impact with professional associations and third-party certifications. This hints there have been isomorphic mechanisms at work, making BC founders choose similar organisation forms to other economic sectors. Among the most prominent third-party certifications that have been researched are FSC and MSC. Bernstein and Cashore (2007) have shown the gain of political legitimacy for FSC, MSC and other voluntary measurements to posit a logic of instrumentality and appropriateness. The response of the founders of BCs to choose NGOs as the organisational form and certification systems is reacting to and reinforcing marketisation. In contrast to FSC and MSC, the strategy was different. Each country has its own BC to create greater local credibility (WGBC, 2009) and thus certifications gain local legitimacy. In the next section I turn my attention to the unnamed implications of my findings.

## 6 Discussion

Now that I have elaborated answers to both SQ1 and SQ2, I am in the position to answer how BCs advocate sector-wide sustainable building practices. However, my answer would be incomplete if I were to stop here. So, I continue with a discussion considering the implications of market-friendly approaches to CC. This happens iteratively, engaging with the literature, my findings and theory. I eventually lead over to suggesting further research that arose from my thesis work and complete this chapter by reflecting on my research focus, methodology and thesis process.

### 6.1 Unnamed implications

The question of how to govern or steer CC mitigation is inextricably linked to society-nature interactions. The reason I spoke of *unnamed* throughout the thesis and in the title is that the implications are hidden and not communicated. Only the critical consideration of the BCs and their actions gives meaning to transnational governance trends, shifting responsibilities, and lastly society-nature interactions.

#### 6.1.1 Transnational governance trends

How wicked can a problem be? Levin et al. (2012) have referred to CC as “super wicked” (p. 123) and I can relate this to the building sector: time is running out for the building sector’s practices to change. As I show in this discussion, marketisation is both reason and solution simultaneously for a path-dependent development, when the neoliberal state does not exercise coercive power for the change needed (Levin et al., 2012). Marketisation is the key force in ongoing transnational governance (Djelic and Sahlin-Andersson, 2006) and the increasing use of third-party certifications becomes taken-for-granted (Goulden et al., 2017). Indeed, Bitzer and Glasbergen (2015) have found the multi-actor partnerships unabatedly attractive for voluntary standards. To my understanding, the response is coupled to the current processes in climate governance, which emphasises that societal actors take an active role in climate governance (Biermann, 2010; Andonova, Betsill, and Bulkeley, 2009). How did the state respond to all of this? My sample of BCs showed some loose and some strong connection to (local) governments.

The BCs have largely influenced the uprising of a new market for building certification as their certifications are dominating it. This lastly served especially the industrial member’s financial interest. BCs display an opportunity for organisations to train their staff to supply demand for

certifications and influence government policies as well as develop and influence certification systems. In contemporary climate governance, the state's coercive power is little used and gives way to non-state soft laws. Kajikawa, Inoue, and Goh (2011) have found these to then reinforce soft laws, avoiding government regulation.

In retro-perspective, BCs have done a fair job in empowering themselves. In the words of Neal (2014), BCs have built alliances, have spread their word and have captured the interest of others. Climate governance structures see nation states losing more and more power over private actors with progressing privatisation and an expanding global economic system (Palmujoki, 2006). NGOs are part of the larger environment and thus also subject to "... globalization, economic integration, technological advancement, and pressure for increasing returns" (Teegen, Doh, and Vachani, 2004, p. 477). I showed how the building sector teamed up founding NGOs for their interest. Andonova, Betsill, and Bulkeley (2009) have held these non-state actors of importance in efforts to govern the environment, but I show that this is truly just one opinion.

Fukuyama (2016) have said the focus on non-state actors arose because the top-down approach seemed unfruitful. I argue that there are deeper processes at work. BCs, follow common trajectories of our time. SD is subaltern to the market (Cock, 2011); "... the sustainability discourse has been appropriated by neoliberal capitalism" (Cock, 2011, p. 47). In the case of this thesis, the conjunction of different member types (societal organisations, the public and private sector) with an emphasis on certifications exemplify the process in the building sector. However, this does not leave climate governance just to the market, it also leaves it to unknown processes. What BCs do cannot be steered from outside, but they can claim to adhere to SD principles, which are non-prescriptive in how to pursue them. Within this context, my thesis was illuminating the fact that decision-making processes within BCs are invisible.

Principally, the BCs' and their members' actions respond to and strengthen "... institutional forces constitut[ing] 'the rules of the game' in the transnational world" (Djelic and Sahlin-Andersson, 2006, p. 31). My sample of BCs display one example in a governance system that tries to move forward the interdependent building sector through market incentives (certifications), policy advocacy on various government levels and education. I conclude that BCs are one of the "... unlimited number of possible combinations of local responses across nations and time frames" (Biermann, 2014, p. 58) to global CC mitigation targets, strengthening marketisation. I am convinced this development has profound influences on responsibilities.

### **6.1.2 Shifting responsibilities**

BCs have a growing role in international conferences, driving forward UN frameworks on the issue of a sustainable built environment (interviewee, personal communication, 10.03.2017). With buildings now even present on the highest climate negotiation agenda, it is likely that states will to a growing extent draw on BCs as sources of expertise. Betsill (2008) has found this to be a trend with NGOs in climate governance.

I previously mentioned that the interest BCs capitalise on are the ones of industrial members especially. I argue the marketisation approach to CC veils solutions that lay beyond the market. Srinivas (2009) has argued this is also the case for NGOs steered by professionals. Following Srinivas (2009), I wonder if BCs restrain alternative solutions when supported? Although certifications are nationally adapted to local build policies, they are mere exports of codified knowledge. The coded norms in the certification system are appropriated disregarding traditional knowledge. In how far traditional building knowledge is still existent and practised in each case is questionable, I agree. My considerations are nevertheless reasonable. Grubbauer (2015) has shown how marketisation in the Polish market reduced opportunities of local solutions to designing and planning. Over time, the influence of imported building knowledge suppressed them (Grubbauer, 2015). In the Polish case, the knowledge was loosely bound to projects and co-created in social interaction, ultimately leading to legal changes (Grubbauer, 2015).

While Urge-Vorsatz et al. (2013) have been convinced policies alone do not bring us as far as scientifically needed, I see the greater question to lay in *accountability*. What I see is a threat to the role of the state. I agree with Chan, Brandi, and Bauer (2016), who have said that the danger lies in releasing the state from climate mitigation responsibilities because of non-state action. Modern society expresses itself in accountability, with building certifications creating a checklist of the normative sustainability concept, maintained through the actor roles verifying it (Brown, 2010). The crux of the matter is the fluid sustainable building concept (Inkoom and Leiringer, 2016). Certification systems are “black-boxed” (Goulden et al., 2017, p. 11), because internal power struggles of certification development remain hidden. The diversity of individuals in BCs’ working groups developing certification systems, schemes and policy options, display an arena of struggling powers over what the concept of sustainable buildings entail (Goulden et al., 2017). Unspecified areas of concern can possibly be taken for granted (Stenberg, 2006). Further, there is a lack of knowledge why something has been favoured over another point. It is questionable how priorities are chosen, and so if sustainability networks favour environmental, social or economic sustainability (Ponte and Cheyns,

2013). MacGregor, Ramasar, and Nicholas (2017) found that schemes created by firms were more serving the interest of the firms rather than SD. I see those findings synonymous in the case of BCs precisely because industry expert work together though other members seem involved in approving them. In the case of building certifications, the consumer is then confronted with an opaque, complex label. It cannot be compared to others without expert knowledge - if at all (Kajikawa, Inoue, and Goh, 2011). I conclude that an opaque mélange of actors is changing responsibilities in climate change governance in the building sector.

### **6.1.3 Nature-Society Interactions**

As briefly mentioned, marketisation has been ongoing in many other areas. It essentially commodifies nature (Cock, 2011). CC has been caused by a society-nature interaction, in which the accumulation of capital is institutionalised, it is taken for granted (Pichler et al., 2017). Now, unsurprisingly from this perspective, marketisation as a response to CC is trying to mitigate CC with the tools causing it (Pichler et al., 2017). Market responses keep us in the current situation and do not foster needed change. From Donella Meadows' (1999, as cited in Abson et al., 2016) perspective, certification systems are parameters, the shallowest form of change. We can modify certifications, and they are constantly being altered, though often for good reasons reflecting local conditions. As I highlighted, institutions resist change and reproduce practices, so deep change through new institutional practices is difficult (Abson et al., 2016), especially when capital accumulation is institutionalised (Pichler et al., 2017). IT makes nevertheless clear, that BCs are not mere recipients of coercive, normative and mimetic mechanisms. Following Djelic and Sahlin-Andersson (2006), BCs joined an arena, competing with taken for granted activities that they want to replace certification systems. This competition is specifically in the interest of industrial members.

Accordingly, BCs are on a path-dependent track for nature and society in which technological lock-ins and inertias determine our direction of travel. Although Agape claims their BC strives for a built environment within planetary boundaries, the development continues a path accepting the "... inevitability of economic growth" (Faran, 2010, p. 5). The WGBC, BCs and their members adhere closely to SD. While many tools were developed by organisations aware of the environmental consequences of their actions, I follow Faran (2010), saying that certifications are essentially a product of their conception of sustainability. What is to be sustained and developed is economic productive power (Faran, 2010). Certifications shall create new markets where adherence to SD can be displayed, "certifying virtue" (Brown, 2010, p. 741). The dominating thought of neoliberal, or market-friendly practices undeniably assisted in the spread of certifications (Brown, 2010).

That itself reinforces the private sector innovations (Westley et al., 2011). If we acknowledge, that modern societies rely on the global value chains extracting resources from distant ecosystems and “... materially, all societies are connected to the environment through consumption of natural resources ...” (Abson et al., 2016, p. 34), I am inclined to say that the innovations of BCs are foreseeable inventions for the building sector, but that they are blind to complex system interactions (Westley et al., 2011). The building sector craves for raw materials linked through the flow of imports and exports across boundaries (Potoski, 2015). The narrative of building certifications that arose from my thesis work pronounces one element: efficiency. Continuing to build with materials such as cement shows the large inertia of technology and lock-ins. As I showed, the certification systems of interest do not intent to discriminate a certain product and this in my view is the exact fault. Often LCAs are the hailed means to efficiency, but I contend they display an “incommensurability of values” (Martinez-Alier, Munda, and O’Neill, 1998, p. 279), the impossibility to measure. This not due to the sheer diversity what and how the different LCA methods measure (Anand and Amor, 2017). More importantly, the more complex a construction is, the longer is its value chain. LCAs of an entire building do not capture the social, economic, or ecological destruction caused in faraway places. Hence, voluntary certifications fail to deliver an answer on how to overcome drivers of CC (Potoski, 2015). As BCs are mostly industry-dominated (Sedlacek, 2014), they are no neutral actors when it comes to building. Their industrial members earn on their expressly created market, reproducing power of capitalised interest. The problem with certifications is that they simplify externalities (Lohmann, 2011). Sustainability is pressed into auditable check-lists, whose “... integrity is maintained through rituals of verification ...” (Brown, 2010, p. 741).

I conclude, that the dominating members of BCs keep up the rational thoughts of economic feasibility over what is scientifically necessary by check-listing nature. They enrich the sustainable building concept with norms of SD, and drive marketisation further. This shifts responsibility of society for inequitable outcomes of CC (Matulis, 2014) into nothingness. Pursuers of certifications can claim they did their best according to the norms (SD) while BCs as multi-stakeholder organisations with opaque power circumstances continue to take decisions about sustainability in an unknown fashion. The BCs’ various members and instruments ensure that the sustainable building concept is locally accepted while communicated across governance levels. As the need for change is great in terms of mitigation, a radical turn is needed (Carton, 2016). A taken-for-granted attitude of marketisation comprises the danger that the building sector is not able to compensate curb 84 GtCO<sub>2</sub> e emissions until 2050. Now, re-framing can be a powerful tool to understand problems (Jerneck and Olsson, 2011). Due to the global material consumption of buildings, the focus to my understanding following this discussion should be on *local products*, *regional value chains* and *local architecture*. In

the end, profound CC mitigation can be local action. Neimanis and Walker (2014) reminds us that humans are not just part of the climate, but inter-act with it. Our buildings are the record of decisions; as rings of trees are those of (local) environmental conditions (Neimanis and Walker, 2014).

## **6.2 Suggesting research**

On the last pages, I have discussed the profound, unnamed implications of the BCs' actions. Sustainable Buildings are and will remain a loose concept. It must, in fact. Throughout the thesis process, I have come to realise how ideas about them can be picked up and localise themselves to contexts. IT helped to understand that regulation, norms and culture are decisive institutional elements explaining complex phenomena.

Since SSc is especially eager to support a sustainable pathway and "... promote a sustainability transition" (Kates et al., 2001, p. 641), I see a large potential in researching traditional, local building methods. "Before sustainability had a name, traditional builders incorporated sustainable elements into buildings. Working in sync with the environment was the norm ..." (Curtis, 2008, p. 2). The local methods could be possible pathways to answer two important forwarded questions by Westley et al. (2011): How can we circumvent the risk that unsustainable development pathways may be reinforced and under what conditions does this counter ongoing lock-ins? Otherwise, or simultaneously, the research could also ask under what conditions barriers for mainstreaming of these traditional building methods in the building sector can be overcome (Schweber, 2013)? This involves to re-frame CC as local issue (Bulkeley, 2016).

On these grounds, I propose a reflexive approach of two cross-cutting approaches - problem-solving and critical theories (Jerneck et al., 2011) - to investigate how social practice (local traditions) can assist in transitions (Hargreaves, Longhurst, and Seyfang, 2013). This means to critically question the local implications of the chosen aspect in sustainable buildings, "... seeing beyond its boundaries ..." (Jerneck et al., 2011, p. 78-79) while accommodating for the framework that action is happening in.

## **6.3 Reflection on the research**

A limitation of my study rests on the found diversity of the BCs' organisational structures, chosen mechanisms, and hence, relations. It should be said, that my theoretical explanations of the institutional mechanisms are generalised and likely to be subject to change if looked at one national context in detail. Thus, further details could have been discovered with more interviews, because of the different contexts. To a considerable extent, my research is focused only on the mediator, the

BCs. My data does not explain how members of BCs perceive certification systems themselves. It could have been fruitful to ask them on their perspective to extend my argument on a taken-for-granted understanding. I am, nevertheless, convinced a deeper investigation would not contradict my findings and similar conclusions would be drawn. The BC's instruments and relations fit into the ongoing and dominating neoliberal SD pathway emphasising market mechanisms as a legitimate way to mitigate CC across the globe. I contributed to the debate of marketisation processes showing that BCs amplify the technological and power-related lock-in in the building sector.

Theory-wise, IT is not critical in nature. Surely, critical theories analysing underlying power mechanisms (feminist theories, critical discourse analysis) are of interest on the topic of sustainable buildings. It must, nevertheless, be said that they did not align with my research aim. I have shown that IT is a valid option for critical research because its explanation of institutional elements assists in concluding on unnamed implications of the contemporary marketisation phenomenon. I also found the contextualised KM framework helpful in creating the questions for surveys. The body of data I created was sufficient given the constraints of my study.

The research process was far from linear and the endured iterations facilitated a great learning process: anticipation of reluctance to win study participants did not put me off, but rather incentivised to strategically improve how I share research intentions. Looking at one of the first emails from September 2016, I see I had my critical thinking at full work already. The failure to win more than six interview participants in about 500 emails was devastating, but taught me to think deeply about the material I have. Strategic-wise, not precluding certifications as the dominant instrument from the beginning improved my understanding of BCs. CR as a research paradigm enriched my study, because I could bring together reactions to the unsustainability of the building sector with what I had empirically observed. The stratified ontology of CR was especially helpful in the last part of my study. The earlier discussions about the limiting role of the state and proliferation of neoliberal, market-friendly CC governance is to my understanding the causal structure to the BCs' instruments and relations.

## 7 Conclusion

The building sector is responsible for great resource extraction and thus largely contributes to anthropogenic climate change. BCs are multi-stakeholder, non-state actors in their respective national building sectors, well-known in fact beyond the sector as well for their goal to reduce the building sector's CO<sub>2</sub> emissions. They are among others at the forefront of changing building practices through marketisation, which has profound implications on how we mitigate anthropogenic CC. In this study, I focused on BCs that are members of the WGBC. I primarily wanted to answer how BCs affect the adoption of their promoted sustainable building practice and what unnamed implications go along with this trend of governance. The aim of this thesis was to identify institutional elements of the BCs' work.

The theoretical framework for this study consisted of three stages. I firstly contextualised a KM concept to establish questions that I posed to BCs in surveys and interviews to ask which instruments BCs work with to proliferate their concept of sustainable buildings. I secondly used IT to analyse the institutionalisation of one primary instrument and find an explanation why they focused on it. Lastly, I discussed the unnamed implications of marketisation.

My thesis showed that certification systems are the primary instrument next to education to proliferate the concept of sustainable buildings. I found it to be a fluid concept, localised according to the context and spread through diverse members and networks transnationally. Further, I discovered BC members to jointly shape the content of instruments in working groups, which are, nevertheless, opaque from the outside. The certifications - and BCs as multi-stakeholder organisations - were chosen because they are appropriate forms in CC governance which favours marketisation. I found trained auditors and consultants to be a major institutional element in conjunction with the written documentation as a script to obtain a certification. I identified the certified, sustainable building serves as a symbolic value-laden artefact when certification systems are a normatively and culturally legitimate building practice, because they align with SD principles. Unnamed implications were primarily the reiteration of how CC is governed: firstly, BCs – through all instruments and relations – strengthen the appropriation of SD by marketisation with an opaque mélange of actors. Secondly, I found this in turn to diminish anyone's responsibility for inequitable outcomes of CC. Thirdly, I did not find certifications to break with the fundamental problems of capitalist political economy, check-listing nature irrespective of material resource flows and their caused destruction. I contributed to the debate on marketisation for CC governance, showing that BCs have comprehensively used

marketisation in the building sector. With the adherence to SD and the prevailing neoliberal ideology, certifications and BCs are shaping the building sector's sustainability trends for an indefinite time.

Given these conclusions, I suggested research on how traditional, local building methods could avoid larger material flows and technological lock-ins. It should be researched under what conditions barriers for mainstreaming them can successfully be overcome. Limitations of my work occur because I concentrated on BCs as the mediators and secondly the found diversity of BCs. I am, nevertheless, convinced a contextual study of one BC does not contract my findings.

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## Appendix A

This appendix describes the iteration of my research. I decided to establish contact to BCs in the beginning of February (see table below). This first step ensured to identify my prospective participants, let them know about the upcoming survey and discover interested parties in remote semi-structured interviews. During this phase, some people raised concern over interviews, as the aim of my thesis touches upon their strategic direction. Further, it came to my knowledge that BCs vary in their own development process. Grounded in large differences between countries, I assumed the EU's building sector to be the one displaying most similarities in legislation. The scope of my study would have encompassed all 19 of the European GBCs listed as members of the WGBC. They stem from countries belonging to the European Union and hence adhere to a single domestic market underlying its legislation. Most of the BCs were fully established members of the WGBC (WGBC, 2017b).

In a second step, I officially invited for the study collaboration providing them generic insights into my research and explaining anonymity and use of data (see both letters in Appendix B). I could not contact many BCs via phone or email. During the data collection, my initial assumption about market differences was found indefensible as my understanding of BCs had progressed. Comparable market restrictions are not an appropriate feature. I then thought it was their feature being an established member of the WGBC. I opened my scope and would now include all listed 76 WGBC members. This should ensure to generate more feedback at least for the survey. During the interviews, this second thought proved inaccurate as well. I turned out lucky that I had one included the entire time (see section 5.1). The entire research process can be taken from the table below.

Date	Task	Intent	Medium
February 3 - 6	establish contact with 21 European BCs	arouse interest, communicate intentions of research	Telephone
February 7 - 19	strengthen contact with European BCs	ensuring responsible contact person, encourage participation, share preliminary timeline	Email & telephone
February 20	sent out research invitation (see Appendix B)	introduction to study, survey, interview and confidentiality	Email
February 22 - 26	pre-test the survey	ensure clarity of survey with four individuals and one BC	Email
February 27	sent survey	encourage participation, ask for and schedule interviews	Email
March 1	sent research invitation to all WGBC members	generate larger survey participation, ask for interviews	Email & telephone
March 5	sent reminder	encourage participation, ask for and schedule interviews	Email
from March 6	sent preliminary interview questions if requested	encourage and ensure participation	Email
March 8	prolong survey deadline, sent out survey link to all WGBC members	encourage and ensure further survey participation	Email
March 9 - April 4	conduct interviews	collect primary data on instruments and relations	Skype

**Table 3.** Thesis process

## **Appendix B**

On the following pages, you find two invitations for research participation. The first one was sent during an earlier stage of the thesis focusing on the EU building sector. 21 BCs received the invitation. This first letter sent to European BCs speaks of awareness building. The iterative work had it that the scope was extended to all further BC members listed by the WGBC in 2017. The second invitation speaks of knowledge management and was forwarded to BCs following the successful establishment of contact. The two letters show a conceptual difference, however, both filled in the same survey speaking of knowledge management (see Appendix C).



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February 20, 2017

To whom this may concern  
Green/Sustainable Building Council  
Europe

Dear Sir or Madam,

My name is Gregor Rahn and I am a Master student at Lund University's Centre for Sustainability Studies. I have been contacting you in the beginning of February to identify a contact person in your Green Building Council (GBC). The aim of my research is to study the aspect of awareness building by NGOs. The European GBCs are my case of choice. Problems associated with awareness building are methods, knowledge aspects and the diversity of societal actors. The findings contribute to the understanding of barriers in your environment which can improve the way forward to a more sustainable built environment.

The research design foresees two steps: by Monday morning on the **27<sup>th</sup> of February** you receive a survey that consists of a few open-ended questions. The deadline is Wednesday on the **8<sup>th</sup> of March**. Some of you have indicated to participate in the second step as well. These 30-minute remote interviews via telephone or Skype shall follow **March 9 to 17**. Guiding questions will be sent prior to the interview. If you have not yet decided to participate in the interview, but wish to do so, please contact me.

The data contribute to adding empirical findings and make your voice heard in my master thesis. The data may be published in my master thesis, but names or affiliations remain confidential. I want to avoid any comparison or unjust treatment of collaborating GBCs. I ensure statements from the interviews not to lead to the identification of an interviewee or GBC itself. Transcription for authorisation are provided if requested. No sponsorship applies for my work.

I thank you very much for your attention and look forward to receiving your answers to my survey March 8. If you have any remaining questions or if questions arise when filling out the survey please do not hesitate to contact me.

Sincerely,

A handwritten signature in blue ink, appearing to read 'G. Rahn'.

Gregor Rahn



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March 1, 2017

To whom this may concern  
Green Building Council

Dear Sir or Madam,

My name is Gregor Rahn and I am a Master student at Lund University's Centre for Sustainability Studies. I currently write my master thesis and would like to request your research participation in my survey on knowledge management. European Green Building Councils have been supporting me so far and I would now like to widen my scope to all GBCs. The findings contribute to the understanding of knowledge transfer barriers in your environment which can improve the way forward to a more sustainable built environment.

By Monday, the **8<sup>th</sup> of March** you will receive a survey that consists of 16 questions. So far, GBCs took about 15-30 minutes to answer them. If you have decided to participate and have remaining questions, please contact me at [ess15gra@student.lu.se](mailto:ess15gra@student.lu.se). The deadline for the survey to be filled out is Friday, the **17<sup>th</sup> of March**.

The data contributes to adding empirical findings and makes your voice heard in my master thesis. The findings may be published, but names or affiliations remain confidential. I want to avoid any comparison or unjust treatment of collaborating GBCs. I ensure no statements to lead to the identification of a GBC. No sponsorship applies.

I thank you very much for your attention and look forward to hearing from you soon.

Sincerely,

A handwritten signature in blue ink, appearing to read 'G. Rahn'.

Gregor Rahn

## **Appendix C**

In this appendix, you find the PDF extract of my survey attached. These were forwarded to my research subjects following the successful establishment of contact and the sending of the research invitation (see Appendix A for research details).

Welcome to my survey on knowledge transfer

Dear participant,

thank you very much for taking part in my research on the Green Building Council (GBC) movement in Europe. Your feedback is important to me, a master student of Environmental Studies and Sustainability Science at Lund University. My aim in this project is to assess the role of knowledge in order to build an understanding of GBCs' knowledge management. The first step consists of this survey on knowledge transfer. If you want to take part in the second step focusing on knowledge creation, please contact me so we can find a suitable date. Remote interviews shall take place between March 9 and 17.

The data may be published anonymously in my master thesis, affiliations remain confidential. I want to avoid any comparison or unjust treatment of collaborating GBCs. Your anonymity will be ensured during the entire research process and afterwards. You can retrieve SurveyMonkey's Privacy Policy and Security Statement [here](#) and [here](#).

For more information or questions arising during the survey, please contact me at [ess15gra@student.lu.se](mailto:ess15gra@student.lu.se). You will be forwarded the results of my research in June 2017. Good luck filling out the survey!

\* 1. Do you give your consent on the stated data process?

Yes

No

\* 2. Address

Name of the GBC  
[CONFIDENTIAL]

Country  
[CONFIDENTIAL]

Email Address  
[CONFIDENTIAL]

**This survey consists of a variety of questions. Not all apply to each GBC to the same degree. Please try to answer as it seems possible. Ask your team for help on difficult questions. Knowledge management is hardly ever a thing one person might completely know about. The following description is necessary to be read to answer question 3.**

**You as a member of the World Green Building Council are listed as an NGO, whose greatest asset is knowledge. Your aim is to transform the building sector so it would take up more sustainable measures. You work not for profit, aim for long-term goals, are funded by members and donations, work independent from the state, possess an organisational structure and your staff shows a strong commitment your common goals.**

- \* 3. Do you agree with the short portrait of your GBC given above? Please state whether you agree or disagree and add, rephrase or describe further.

- \* 4. Does your GBC have an educational program aiming to train or educate any professionals?

\* 5. What is the motivation behind the educational program? Please explain.

\* 6. What does the programme convey? Please specify if 'others' apply.

- Training on our certification schemes (e.g. auditor, consultancy)
- Policy training
- General knowledge on a sustainable built environment
- Technical knowledge
- Planning knowledge
- Knowledge on the economics of sustainable buildings

Other (please specify)

**You have answered not to have an educational program.**

\* 7. Please indicate whether your GBC is intending to have one in the future. Motivate your answer.

Areas of expertise, motivation and mechanisms (page 4 of 5)

**Now we come to the specific part of this survey. Knowledge management may be an intangible concept, but it can be understood as actual work of an organisation. Learning and implementation of ideas, attaining objectives, requires knowledge transfer. Thus it is fundamental to the survival of an organisation. The successful exchange of knowledge between actors benefits each other. The transfer may happen intra- and interorganisational as well as with your environment.**

\* 8. What areas of expertise is your GBC asked for and by whom? This also includes requests you can not satisfy. Indicate who are 'other actors' or If there is any other area of expertise you have (or not) and are asked for, please indicate it in "other".

	GBC member	Individuals	Government entities	Research entities	Other actors	Does not apply
Sustainability in general	<input type="checkbox"/>					
Impacts of the building sector	<input type="checkbox"/>					
Impacts of a building	<input type="checkbox"/>					
Certification schemes	<input type="checkbox"/>					
Sustainable buildings technologies	<input type="checkbox"/>					
Knowledge on how to build awareness	<input type="checkbox"/>					
Environmental issues	<input type="checkbox"/>					
Policies on sustainable buildings	<input type="checkbox"/>					

Other (please specify)

\* 9. What area of expertise is necessary for **your** GBC to possess? Please rate by ticking a box. If there is any expertise your GBC possess which has not been mentioned, please describe it and its importance.

	Unimportant	Less important	Somewhat important	Important	Very important	I don't know.
Holistic understanding of sustainability	<input type="radio"/>					
impacts of the building sector	<input type="radio"/>					
impacts of a building	<input type="radio"/>					
certification schemes	<input type="radio"/>					
sustainable buildings technologies	<input type="radio"/>					
knowledge on how to build awareness	<input type="radio"/>					
environmental issues	<input type="radio"/>					
Policies for sustainable buildings	<input type="radio"/>					

Other (please specify)

\* 10. What is your motivation and objective to engage in knowledge transfer? Remember, knowledge transfer happens in both directions. Tick **all** boxes which apply to **your** GBC. If 'other' applies, please explain it in the **next** question.

- Enable GBC members of our council to understand what sustainable buildings entail
- Economic development support for our GBC members in the area sustainable building
- Fill knowledge gaps of our GBC members
- Raise awareness on the need for a more sustainable built environment
- Stay up to date and discover with latest trends and development
- Discover & strengthen new policy options
- Other
- I don't know.

11. Is there any other motivation and objective to engage in knowledge transfer? Please explain.

\* 12. What mechanisms does your GBC use to transfer expertise to others? Please rate the importance. If 'other' applies, please explain.

	Unimportant	Less important	Somewhat important	Important	Very important	I don't know.
Workshops/Seminar for the public	<input type="radio"/>					
Workshops/seminars/meetings with GBC members	<input type="radio"/>					
E-Learning for the public	<input type="radio"/>					
E-Learning for GBC members	<input type="radio"/>					
Reading material for the public	<input type="radio"/>					
Reading material for GBC members	<input type="radio"/>					
Conference hosting & participation	<input type="radio"/>					
Regional & World GBC meetings	<input type="radio"/>					
Collaboration with universities aiming for students	<input type="radio"/>					
Collaboration with universities aiming for research	<input type="radio"/>					
Collaboration with the (local) government	<input type="radio"/>					

Other (please specify)

\* 13. What mechanisms does **your** GBC use to close **own** knowledge gaps deemed necessary? This questions aims at **your** staff development. Please rate the importance to you. If 'other' applies, please explain.

	Unimportant	Less important	Somewhat important	Important	Very important	Does not apply
Hiring competent staff for a certain topic	<input type="radio"/>					
Internal staff training	<input type="radio"/>					
External workshops and seminars for the staff	<input type="radio"/>					
External E-learning	<input type="radio"/>					
GBC network meetings	<input type="radio"/>					

Other (please specify)

**These last questions focus on barriers of knowledge transfer.**

\* 14. Does your GBC's economic situation constrain you from using aforementioned mechanisms (question 12 & 13)?

Inability to do any of the mechanisms	Major constraints for costly mechanisms	Ability to perform most mechanisms to a satisfied extent	Little constraints from using costly mechanisms	No constraints at all	I don't want to or can not give an answer
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. Are there any other barriers that constrain **your GBC** from using certain transfer mechanisms? Please describe them.

## Appendix D

The following gives a rough overview of my six conducted semi-structured interviews. Five interviews were held in English, one in another language. You can find more information in the table 4.

### Introduction

- greeting and thanking for filling in the survey and now participating in this interview
- explaining the aim of this interview
- the interview is semi-structured by survey answers
- the interview shall last thirty minutes
- state that personal name and GBC is confidential, but position is published
- asking for consent on recording and data use

### Main part

- ask for position in the BC
- pick a few answers from survey question answers statistically deviating from the average of all 20 survey answers
- ask for the BC's background (aim, strategy, foundation)
- ask for member involvement in (daily) work, strategic development
- ask for involvement in the WGBC / regional network (interests, strengths, weaknesses)

### Closure

- asking whether there are questions left from his or her side
- asking whether she or he wants the transcript

thank the person again for taking the time

**Table 4.** Interview details

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<i>Randomised name</i>	<i>Position in the BC</i>	<i>Date of Interview</i>	<i>Type and Length</i>
Keelin	Communication Manager	20.03.2017	Remote, 37 minutes
Stefan	Business Development Manager	10.03.2017	Remote, 47 minutes
Agape	Sustainability Officer	16.03.2017	Remote, 40 minutes
Garnett	Chief Executive Officer	10.03.2017	Remote, 43 minutes
Paula	International Affairs Manager	10.03.2017	Remote, 44 minutes
Andrej	Project Manager	05.04.2017	Remote, 35 minutes

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(Abson et al., 2016)

(Alipour, Idris, & Karimi, 2011; Anand & Amor, 2017; Andonova, Betsill, & Bulkeley, 2009; Auld, Balboa, Bernstein, & Cashore, 2009; Auld & Gulbrandsen, 2010)

(Bernstein & Cashore, 2007; Betsill, 2008; Bevir, 2012; Biermann, 2010, 2014; Bitzer & Glasbergen, 2015; BRE, 2017; Brown, 2010; Bryman, 2012; Bulkeley, 2016; Cabeza et al., 2013)

(Carton, 2016; Chan, Brandi, & Bauer, 2016; Clark, 2007; Cock, 2011; Cole, 2012; Cole & Valdebenito, 2013; Curtis, 2008; DGNB, 2017)

(Djelic & Sahlin-Andersson, 2006; Dryzek, 2013; Faran, 2010; Foddy, 1993; Fukuyama, 2016; Giama & Papadopoulos, 2012; Goulden, Erell, Garb, & Pearlmutter, 2017; Grubbauer, 2015)

(Hailey & James, 2002; Häkkinen & Belloni, 2011; Hallet & Ventresca, 2006; Hargreaves, Longhurst, & Seyfang, 2013; Hasnain, Jasimuddin, & Fuller-Love, 2016; Heincke & Olsson, 2012; Herazo & Lizarralde, 2016; Holsapple & Joshi, 2004; IEA, 2013; Inkoom & Leiringer, 2016; Jensen, Sjøgaard Jørgensen, Elle, & Hagelskjær Lauridsen, 2012; Jerneck et al., 2011; Jerneck & Olsson, 2011)

(Kajikawa, Inoue, & Goh, 2011; Kates, 2011; Kates et al., 2001)

(Kelloway & Barling, 2000; Krosnick & Presser, 2010; Lapniewska & Szczerbicki, 2009; Lawson, 2011; Levin, Cashore, Bernstein, & Auld, 2012; Lina, 2010; Lohmann, 2011; MacGregor, Ramasar, & Nicholas, 2017)

(Markelj, Kuzman, & Zbašnik-Senegačnik, 2013; Martens, 2002; Martinez-Alier, Munda, & O'Neill, 1998; Matschke, Moskaliuk, & Cress, 2012; Matulis, 2014; Mayring, 2014; Meyer & Rowan, 1977; Myers & Newman, 2007; Nastar, 2014; Neagu, 2013; Neal, 2014; Neimanis & Walker, 2014; Ofori-Boadu, Owusu-Manu, Edwards, & Holt, 2012; Palmujoki, 2006)

(Pichler, Schaffartzik, Haberl, & Görg, 2017; Ponte & Cheyns, 2013; Potoski, 2015; Powell, 1983; Qiu, Su, & Wang, 2017; Retzlaff, 2009; Rittel & Webber, 1973; Roberts, 2013; Sayer, 2000; Schweber, 2013; Scott, 2014; Scott & Ruef, 1998; Sedlacek, 2014; Sedlacek & Maier, 2012)

(Senge, 1990; Shrestha, 2016; Srinivas, 2009; Steffen et al., 2011; Stenberg, 2006; Stenberg & Räisänen, 2006; Stoker, 1998; Teegen, Doh, & Vachani, 2004)

(Thorén, 2015; Thrandardottir, 2015; Tracy, 2010; Urge-Vorsatz, Petrichenko, Staniec, & Eom, 2013; USGBC, 2017; Van der Heijden, 2016; WCED, 1987; Westphal, Gulati, & Shortell, 1997; WGBC, 2016, 2017a, 2017b, 2009)

(Wiek, Ness, Schweizer-Ries, Brand, & Farioli, 2012; Wiek, Withycombe, & Redman, 2011; Zucker, 1977)