THESIS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

An Institutional Approach to Waste Management and Circularity in Construction

RICKARD ANDERSSON

Department of Architecture and Civil Engineering

CHALMERS UNIVERSITY OF TECHNOLOGY

Gothenburg, Sweden 2025

An Institutional Approach to Waste Management and Circularity in Construction
RICKARD ANDERSSON
ISBN 978-91-8103-211-6

Doktorsavhandlingar vid Chalmers tekniska högskola
Ny serie nr 5669
ISSN 0346-718X

Department of Architecture and Civil Engineering
Chalmers University of Technology
SE-412 96 Gothenburg
Sweden
Telephone + 46 (0)31-772 1000

Funding agencies: FORMAS, CMB

Chalmers Digitaltryck
Gothenburg, Sweden 2025

An Institutional Approach to Waste Management and Circularity in Construction

RICKARD ANDERSSON
Department of Architecture and Civil Engineering
Chalmers University of Technology

Abstract

The construction industry, responsible for over 30 percent of all waste in the European Union, is a key contributor to both environmental degradation and resource depletion. Operating largely on a linear production model, where materials are discarded at the end of their life cycle, the sector has led to unsustainable consumption of natural resources. To address this, the European Union has advocated for the adoption of circular economy principles in construction and demolition waste management. The circular economy offers a sustainable alternative by decoupling economic growth from the use of finite resources, promising both environmental and economic benefits.

One of its most compelling aspects is the potential for developing new circular business models, which not only improve resource efficiency but also offer opportunities for organizations to innovate and gain competitive advantages. These models create value through reuse, recycling, and material recovery, allowing businesses to reduce waste while generating new revenue streams. Despite the European Commission's efforts to promote these principles through directives and action plans, Sweden's construction sector has struggled to fully incorporate them.

This thesis addresses the gap between current construction waste management practices and the industry's expected shift toward circular economy principles, where the development of circular business models is viewed as a key driver for change. By building on the concepts of institutional work and institutional logics, the research examines how industry actors navigate institutional complexity and inertia while responding to new expectations posed to them. Institutional work sheds light on the role of actors and how their actions shape the developments by either reinforcing existing waste management practices or promoting the development of new, more sustainable ones.

Drawing on a social constructivist approach and qualitative research methods, this study is based on four separate cases, where the primary methods for gathering empirical material have been semi-structured interviews and observations. An action research approach has provided in-depth insights into how organizational members engage in the development of circular business models, but also reveals their struggles in translating circular economy principles into their existing business frameworks. This approach has allowed me to trace how individual actions influence the institutional field, offering insights into how the field shapes the behaviors of industry actors and how established industry practices persist. The collective efforts of various actors demonstrate that institutional inertia, rooted in these established practices, continues to hinder the sector's ability to fully adopt circular economy principles.

Keywords: Construction and demolition waste management, Circular Economy, Institutional Work, Institutional Fields, Institutional Logics.

Acknowledgements

First of all, many of you have contributed to making this work both fun, exciting, and rewarding. I am grateful to all the colleagues, collaborators, and fellow researchers who have shared ideas, challenged my thinking, and made this journey far more enriching than I could have imagined.

I owe my sincere gratitude to my main supervisor, Martine Buser. I am especially thankful for all our discussions and the support, guidance, and encouragement you have provided throughout this work. It has been incredibly rewarding to work with you and to learn from you. Without your support and insight, I would not have made it to this point. Thank you for that! To my co-supervisor, Petra Bosch-Sijtsema, thank you for your helpful input and contributions during the project.

Thank you to the colleagues and collaborators I've worked with throughout the process. Whether through formal meetings or everyday interaction, your input has helped shape this research in many ways. The chance to exchange ideas and challenge each other's thinking has been one of the most enjoyable parts of the experience.

Thanks also to those I've met through courses, workshops, and conferences during the Ph.D. period. Your questions and reflections has helped to put things in perspective and made the journey more enjoyable. A sincere thank you to all participants and organizations who took part in the research. Your willingness to share your time and experiences was essential to this work, and I truly appreciate your openness and engagement.

To my friends, thank you for the breaks, the conversations, and for being there, in times of need. To my family, thank you for your support, patience, and encouragement. You've helped more than you probably realize.

Though it has been a long and challenging process, but also one full of learning and growth. I'm grateful to all who have been part of it in different ways.

Rickard Andersson
Gothenburg, April 2025

Additional publications

Buser, M & Andersson, R (2023) Circularity and business models. CMB Kortrapport om forskning.

Buser, M & Andersson, R (2023) Including Circular Value Propositions in Business Portfolio. Proceedings of the 39th Annual ARCOM Conference, 4-6 September 2023, UK, Association of Researchers in Construction Management.

Andersson, R, & Buser, M (2022). From waste to resource management? Construction and demolition waste management through the lens of institutional work. Construction Management and Economics, 40(6), 477-496.

Koch, C, Buser, M and Andersson, R (2022) The impact of the EU Taxonomy of sustainable finance on the building field. Proceedings of the 11th Nordic CREON Conference, 19-20 May 2022.

Buser, M, Gottlieb, S C, de Gier, A and Andersson, R (2021) From Concept to Practice: Implementation of Circular Building as a Process of Translation In: Scott, L and Neilson, C J (Eds) Proceedings of the 37th Annual ARCOM Conference, 6-7 September 2021, UK, Association of Researchers in Construction Management, 584-593.

Buser, M and Andersson, R (2021) Circular Building and New Business Models: What Opportunity for the Contractors? In: Scott, L and Neilson, C J (Eds) Proceedings of the 37th Annual ARCOM Conference, 6-7 September 2021, UK, Association of Researchers in Construction Management, 604-613.

Andersson, R (2020) Public policies as obstacle to sustainable CDWM practices. IOP Conference Series: Earth and Environmental Science, 588, 022009.

Andersson, R and Buser, M (2020) On the Road to Nowhere? The Challenges of Aligning Construction and Demolition Waste Practices with Circular Economy In: Scott, L and Neilson, C J (Eds) Proceedings of the 36th Annual ARCOM Conference, 7-8 September 2020, UK, Association of Researchers in Construction Management, 536-545.

Andersson, R, Buser, M and Bosch, P (2019) Improving Renovation Waste Management in Sweden: The Role of the Demolition Company In: Gorse, C and Neilson, C J (Eds) Proceeding of the 35th Annual Arcom Conference, 2-4 September 2019, Leeds, UK, Association of Researchers in Construction Management, 84-93.

Table of Contents

1 Introduction 1

1.1 Background 1

1.2 Aim and research questions 6

1.3 Structure of the thesis 8

2 Literature review 9

2.1 From waste management to circular economy 9

2.2 The public policy framework 12

3 Theoretical framework 17

3.1 Institutional theory 18

3.2 Institutional logics 20

3.3 Institutional work 21

3.4 Critique 34

3.5 Summary of theory 36

4 Methodology 37

4.1 Introduction 37

4.2 Paradigm and research approach 39

4.3 Phase I – The initial phase of the Ph.D. 42

4.4 Phase II – The second phase of the Ph.D. 49

4.5 Methodological considerations 60

4.6 Limitations 62

5 Findings 65

5.1 Conceptualizing the CDWM field 65

5.2 What is waste in waste management? 71

5.3 CBM Workshops 79

5.4 Actors relying on circular business proposition 106

6 Analysis 125

6.1 RQ1 - How does the CDWM institutional field shape field members' behavior? 125

6.2 RQ2 - How do actors within the construction industry engage in institutional work to shape CDWM practices? 131

6.3 RQ3 - How do the actions of individuals and groups within institutional settings promote the development and spread of circular economy principles in the construction industry? 137

7 Discussion 145

7.1 Institutional stability and conditions of the CDWM field 145

7.2 Actors attempts to shape the institutional field 147
7.3 Integration of circular business 150
7.4 Institutional work and its influence on CDWM practices 152
7.5 Reflection on the framework in studying field developments 154
8 Conclusion 157
8.2 Contribution to the field of construction management 159
8.3 Personal research contribution 159
8.4 Practical implications for CDWM transformation 160
8.5 Future research directions 161
9 References 163

List of Tables

Table 1 - Creation work (Lawrence and Suddaby, 2006, p.221) 25
Table 2 - Maintenance work (Lawrence and Suddaby, 2006, p.230) 26
Table 3- Disruption work (Lawrence and Suddaby, 2006, p.235) 27
Table 4 - Interviews Phase I 44
Table 5 - Observations Phase I 45
Table 6 - Selection of documents included in Study L 46
Table 7 - Examples of actions identified for the creation work, (Andersson and Buser, 2022) 48
Table 8 - Finding common ground (Dover and Lawrence, 2010, p.308) 51
Table 9 - Interaction Case company A 56
Table 10 - Interaction Case company B 57
Table 11 - Interaction Case company C 58
Table 12 - Number of interviews study F 59
Table 13 - Maintenance work 132
Table 14 - Creation work 133
Table 15 - Disruptive work 133
Table 16 - Comparative summary of case company A, B and C 137

List of Figures

Figure 1 - Studies included throughout Ph.D. 41
Figure 2 - Chronological representation of studies included 42
Figure 3 - Illustration of the setting for the workshop Greenbizz copyright 54
Figure 4 - Representation of actors and roles throughout a building's life cycle 67

1 INTRODUCTION

This Ph.D. thesis builds on and extends the research conducted in the licentiate thesis published in 2021 (Andersson, 2021). The licentiate thesis, undertaken between 2018 and 2021, laid the groundwork for exploring and analyzing the responses of various actors to the societal and forthcoming legislative demands on construction and demolition waste management (CDWM). Building upon the findings and insights from the licentiate thesis, the Ph.D. thesis delves deeper into the theoretical framework and expands the breadth and depth of the empirical material through the inclusion of a broader range of actors partaking in the development process. Through an extended timeframe and refined research methodology, the Ph.D. thesis seeks to offer a more comprehensive understanding of the complexities surrounding the sustainable development of CDWM. It aims to contribute significantly to academic knowledge within construction management while also providing practical applications for professionals in the field. As an engineer, my ultimate goal is to utilize theoretical tools to generate insights that can guide managerial strategies and policymaking in the construction sector, aiming to reduce its climate impact effectively.

1.1 BACKGROUND

The matters of environmental issues have raised questions worldwide as to how societal and industrial transformation can take place that would result in more sustainable production and consumption patterns. The urgency of sustainable development has grown, making it a recurring topic on the agendas of various actors within our society. The utilization of natural resources worldwide has experienced a staggering increase, surpassing tripled figures since the 1970s and demonstrating continued growth (Oberle et al., 2019), where the construction industry is no exception. In recent years, a significant increase in the global population has been accompanied by the rapid expansion of urban areas globally. This demographic shift has led to an increased demand for resources, particularly in the construction industry. As cities grow, so does the need for infrastructure, buildings, and other construction projects, resulting in a rise in the consumption of natural resources. In fact, statistics show that the construction industry alone accounts for approximately one-third of the world's total resource consumption (Purchase et al., 2022).

Studies indicate that the building and construction industry is a major consumer of global resources, utilizing up to 40 % of raw materials, generating about 40 % of waste, and emitting around 25 % of carbon dioxide (Oluleye et al., 2022). Within the European Union (EU), construction and demolition waste is the largest waste stream, with the sector responsible for over 30% of total waste (European Commission, 2019). This significant waste generation highlights the industry's unsustainable practices. As urbanization progresses, construction waste continues to escalate, posing a substantial environmental challenge. This issue is exacerbated by the industry's predominant linear economic model of "*take, make, dispose*" contributing to its unsustainable consumption patterns (Oluleye et al., 2022, p.1). As urbanization accelerates, the generation of construction and demolition waste continues to rise, necessitating a shift towards more sustainable practices to mitigate environmental impacts.

The linear economic model refers to the traditional approach to resource management and production within industrialized societies. In this model, raw materials are extracted or *taken* from the

environment, then transformed or made into products, and finally, after their useful life, discarded or disposed of as waste. For construction and demolition waste, the linear economic model is an approach that relies on virgin construction materials for building purposes which are then discarded at the end of life of the building (Leising et al., 2018). It is a model that is based on the assumption that there will continue to be an unlimited amount of resources and prioritizes economic growth and consumption without acknowledging the long-term environmental consequences (Benachio et al., 2020). The cumulative issues stemming from this prevailing economic model have raised concerns among diverse stakeholders, including governments, construction professionals, and decision-makers. They emphasize the necessity of exploring alternative, more sustainable approaches to minimize the environmental impact of resource consumption and waste generation (Oluleye et al., 2022).

Due to these challenges, the global focus on environmental concerns has spurred significant efforts to explore avenues for societal and industrial transformation aimed at fostering more sustainable production and consumption patterns. However, despite these efforts, many initiatives aimed at alleviating environmental pressure, such as the introduction of new technologies, implementation of governing mechanisms, creation of economic incentives, and efforts to change consumer behavior, often encounter obstacles in their implementation (Fuenfschilling and Truffer, 2014).

1.1.1 Exploring the Complexity of Construction and Demolition Waste Management

The waste generated from construction, renovation, and demolition activities is commonly referred to as construction and demolition waste (CDW). It is comprised of a diverse array of materials including wood, steel, concrete, gypsum, masonry, plaster, metal, and asphalt (Yuan and Shen, 2011). Efforts to improve the management of construction and demolition waste are often structured around the principles of the waste hierarchy, emphasizing the adoption of practices that adhere to its higher levels. The waste hierarchy, recognized as an influential framework, prioritizes waste management strategies to minimize economic, environmental, and societal impacts (Van Ewijk and Stegemann, 2016). At the top of this hierarchy lies waste prevention, deemed the most favorable approach, followed by the subsequent options of reuse, recycling, and recovery of materials, with safe disposal positioned as the least preferable choice (Yuan and Shen, 2011). It is evident that the negligence of CDW produces severe environmental consequences encompassing, among others, soil and water contamination, land depletion and degradation, heightened energy consumption, emissions, and resource depletion (Lu and Yuan, 2011). Additionally, inadequate CDWM practices not only have environmental consequences but have also been attributed to negative impact on economic profitability and resource shortages within the industry (Ajayi et al., 2016).

The significant impacts of inefficient CDW management strongly emphasize the need for comprehensive and sustainable approaches to address this issue. By prioritizing waste prevention and promoting strategies that maximize material reuse, recycling, and recovery, stakeholders can mitigate harmful environmental and economic outcomes associated with CDW mismanagement. This statement suggests that implementing such initiatives in the construction industry could lead to positive environmental and sustainability outcomes. It highlights the potential benefits of adopting more sustainable practices within the industry.

The management of waste has been described as an interdisciplinary issue including social, economic and environmental aspects, which has been treated from various fields such as engineering, technological, management and policy perspectives (Jin et al., 2019). A large part of the academic

production on the topic has pointed towards the challenges the sector is facing in improving CDWM, including factors such as: the poor material qualities of CDW (Ghaffar et al., 2020), lack of public (Wang et al., 2019) and economic incentives (Lu et al., 2019), scarce interest and demand from clients (Osmani and Villoria-Sáez, 2019), actors attitudes towards reuse (Sáez and Osmani, 2019), lack of training (Park and Tucker, 2017) and ineffective contract forms (Ghaffar et al., 2020). The improvements to the management of CDW show great potential for mitigating these negative effects, as more than 75% of the waste generated by the construction industry is believed to have residual value but is presently not reused or recycled, primarily because of the absence of an integrated waste management framework (Purchase et al., 2022). However, there is also a recognition that both developing and developed countries struggle to achieve higher levels of recycling. Even though many of the developed countries have a robust waste management infrastructure and policies to support the adoption, they are unable to change the existing practices (Jain et al., 2020).

A proposed framework to improve the management of waste is through the concept of circular economy (Jin et al., 2019). The Circular Economy (CE) is a concept that aims to "*redefine growth, focusing on positive society-wide benefits*" by "*gradually decoupling economic activity from the consumption of finite resources, and designing waste out of the system*" (Ellen MacArthur Foundation, 2013, Gallego-Schmid et al., 2020). It is proposed as a solution by reshaping the established production and consumption patterns through closed-loop systems by reusing '*waste*' and resources, as well as slowing material loops by developing long-lasting and reusable products (Leising et al., 2018). The concept of CE has received global momentum in politics, business and academia (Leising et al., 2018).

Multiple regulatory actors such as the United Nations, European Union, and Swedish government have recognized the issue and defined a policy framework to support the transition towards sustainable waste management. The UN has incorporated waste management in the built environment as part of its sustainable development goals (SDGs). The EU has, due to the excessive consumption of natural resources in the built environment, declared CDW as a priority waste stream that needs to be addressed. For construction and demolition waste, the concept of circular waste streams has emerged as a pivotal focus, being prominently integrated into a multitude of policy documents not only at the EU level but also extending to other regulatory frameworks. They have also defined in the waste framework directive (EU2008/98/EC) the goal that 70 % of non-hazardous construction and demolition waste (by weight) must be recycled or recovered. Both the goal and the stipulation of CDW as a prioritized waste stream have been adopted in Sweden through the national waste plan and waste prevention program (Swedish Environmental Protection Agency, 2018).

However, Sweden hasn't realized the goal yet (Swedish Environmental Protection Agency, 2020b). Scholars engaged in sustainable transitions have voiced criticism against the top-down linear thinking associated with the policy framework, which assumes that the mere stipulation of a new legislative framework is sufficient to impose change. They emphasize that governmental, national, and local regulations and incentives may not always guarantee the effective implementation of new directives (Geels, 2020).

Despite growing awareness and advocacy for circular economy principles, translating these ambitions into tangible changes within the construction industry has proven to be complex and multifaceted. According to the circularity gap report, Sweden is 3.4% circular implying that there is a circularity gap of over 96%. This indicates that the vast majority of resources Sweden uses to meet its needs and demands come from virgin sources (Álvaro Conde, 2022). Sweden is characterized as one of the

countries in the world with the highest extraction of raw materials. The country utilizes a third of the resources extracted for construction, in order to meet a high demand for new housing (Álvaro Conde, 2022). In light of Sweden's significant circularity gap, urgent actions are needed to transition towards more circular construction practices. Based on observations, while many major Architecture, Engineering, and Construction (AEC) companies have showcased the technical feasibility of circular building through a few widely publicized examples, they continue to face challenges in implementing and expanding circular principles across their business operations and offerings (Heshmati and Rashidghalam, 2021, Andersson and Buser, 2022, Moscati et al., 2023).

There seems to be a prevailing assumption within both societal and political spheres that the introduction of new legislation, driven by a growing concern for environmental preservation, will inevitably exert pressure forcing the construction industry to change (Andersson and Buser, 2022). This anticipated pressure is expected to catalyze significant transformations in construction processes, driving the sector towards adopting more sustainable practices. Despite notable progress in reducing building energy consumption, it remains evident that the construction industry continues to heavily rely on finite resources for its operations. While progress has been made towards reducing the environmental footprint of buildings through energy efficiency measures and renewable energy integration, the broader spectrum of construction processes and waste management practices still presents a considerable challenge (Leising et al., 2018). In terms of recovery rates of construction and demolition waste, the improvements made are primarily linked to the utilization of reclaimed materials for purposes like backfilling and low-grade applications, limiting the advancement towards truly circular waste streams (European Environment Agency, 2020). Consequently, we find that many of the attempts made to relieve the pressure, including introducing new technologies or governing mechanisms, creating economic incentives, and changing consumer behavior, often fail to be implemented. Technologies fail to be diffused, governing mechanisms are only realized on paper and consumer behavior does not comply with the expectations (Fuenfschilling and Truffer, 2014). That even though there is a critical need for immediate action to address the pressing environmental challenges, transition studies show that technologies often struggle to gain widespread adoption, governing mechanisms remain theoretical rather than practical, and consumer behavior frequently fails to align with expectations (Fuenfschilling and Truffer, 2014). The current linear model of resource extraction and consumption is unsustainable and aggravates environmental degradation. By prioritizing circularity in construction, Sweden shows great potential to mitigate its reliance on virgin resources, minimize waste generation, and pave the way for a more sustainable future (Álvaro Conde, 2022).

One way to entice companies and organizations to embrace circularity is through the development of circular business models, which serve as a compelling way of conveying the economic, environmental, and competitive advantages of transitioning to a circular economy. This management model has been described as a means to overcome the slow progress by incentivizing actors to adapt to this changing environment. This is achieved through the development of value propositions that allow for recycling and other recovery activities, which is claimed to produce competitive advantages for the organization (Geissdoerfer et al., 2020). A business model, in a general sense, can be referred to as a conceptual representation of a business, outlining its organizational and financial architecture (Teece, 2010). It describes the rationale of how an organization creates, captures and delivers value to its customers and specifies the proposed revenue and cost structure associated with it (Osterwalder et al., 2011, Teece, 2010). Thereby highlighting the core features of businesses and organization in how they create

and deliver value to its customers, and at the same time make a profit out of it (Lüdeke-Freund et al., 2019). For circular business models, it can be viewed as an organizational architecture that aims to create value from '*waste*' and is positioned as a sub-category of sustainable business models. Through this thesis, circular business models is referred to as "*a means to redefine how companies create value while adhering to CE principles*" (Lüdeke-Freund et al., 2019, p.37).

The development of circular business models has been described as unavoidable if we wish to increase resource conservation and more efficient use of materials, where the development of business models is considered essential to promote sustainable management of waste in the industry (Oluleye et al., 2022). It necessitates fundamental changes in the underlying value creation system and a shift away from the current linear business models that dominate both large and small organizations (Guerra et al., 2021). The ability to successfully develop and introduce new, or adapt existing business models is considered as an important organizational capability as it enables organizations to adapt to a changing external environment and produces competitive advantages for the organization (Geissdoerfer et al., 2020). The focus here is on the micro level interaction as individuals and organizations make attempts to incorporate circularity in their businesses (Ghisellini et al., 2016). But where it is still important to remember that the success of efforts on the micro level, will rely on the structure and dynamics of their environment (Fehrer and Wieland, 2021). For the development of circular business models, this becomes particularly important due to the need for interaction and interdependence amongst actors that the circular economy calls for.

Based on previous literature, numerous researchers have extensively explored and documented the myriad of barriers faced by the sector in adopting circularity principles (Charef and Lu, 2021, Giorgi et al., 2022). A review of existing literature indicates a predominant focus on technical aspects and technological advancements (Adabre et al., 2022). Yet, achieving sustainable goals requires challenging existing and often taken-for-granted established ways of working (Grin et al., 2010) to facilitate the paradigm shifts. Despite this imperative, academic studies exploring practices, organizational work, and adaptation toward circular economy within construction and demolition waste management remain notably scarce (Wu et al., 2019, Kabirifar et al., 2020).

1.1.2 An institutional approach to CDWM

To tackle grand societal challenges, it often requires changes in societal norms, values, and expectations (Purtik and Arenas, 2019). The transition towards a circular economy in construction demands a fundamental restructuring of waste management practices, challenging the entrenched practices adhering to the linear economy (Zhang et al., 2019). It is, therefore, necessary to focus on both social and behavioral factors, and in particular the elements that guide them (Jain et al., 2020).

To explore the situation and make an account for the existing situation, this thesis builds on the theoretical framework of institutional theory; more precisely, it adopts the lenses of institutional logics and institutional work. Institutional theory states that institutions comprise of regulative, normative, and cultural-cognitive elements, along with associated activities and resources, which collectively provide stability and meaning to social life (Scott, 2014). These elements serve as fundamental building blocks within institutions, shaping and stabilizing the actors' behaviors. This provides insight into how organizational structures, processes, and practices are governed by a combination of endogenous factors from within the organization and exogenous forces stemming from external societal expectations, values, and rules. It thereby offers a comprehensive framework

that emphasizes the importance of the collective efforts of numerous actors and the necessity of introducing comprehensive changes across various domains, including technologies, policies, markets, practices, and cultural norms (Fuenfschilling and Truffer, 2016). The adoption of institutional theory can contribute to understanding both ongoing change processes and inertia in the industry. It serves as a useful lens to study the existing situation by explaining why existing patterns continue to persist and how collectively held assumptions, values, and beliefs are upheld at the industry level, despite their potential disparities from those at the individual level (Patterson and Beunen, 2019).

The concept of institutional logics is used to explore how the institutional settings govern the behaviors and understandings of individuals or collective actors (Zilber, 2013). The concept has been used to describe how field-level logics constrain members, including individuals, groups and organizations by defining which behaviors and meanings are considered appropriate in a specific field (Zietsma et al., 2017).

The concept of institutional work helps us to explore the complex interplay between agency and structure in promoting and realizing the adoption of more sustainable practices within this specific context (Silva and Figueiredo, 2017). Highlighting the different actor's roles in contributing to either maintaining, creating or possibly disrupting the existing institution (Lawrence et al., 2009). It thereby allows for exploring the interaction among actors in their attempts to introduce new practices, uphold existing ones, and adapt to changing circumstances. The concept of institutional work has been described as highly relevant for exploring how actors respond to the need to transform current production and consumption patterns by focusing on the active role of both individuals and organizations throughout the process (Riedy et al., 2019). The concept allows for the study of how the micro-level interaction among actors has implications on the macro level and how their actions may contribute to both the stability and flexibility within the field (Beunen et al., 2017).

1.2 AIM AND RESEARCH QUESTIONS

The management of construction and demolition waste presents significant environmental and sustainability challenges within the construction industry. As global concerns about resource depletion and environmental degradation continue to grow, there is an increasing recognition of the need for effective waste management strategies and circular practices within the sector. In response to these challenges, this research aims to explore the role of institutions in shaping the behavior of actors within the construction industry and its implications for waste management practices and the adoption of circular economy principles.

This research seeks to delve deeper into the interplay between agency and structure within the context of construction and demolition waste management. By employing institutional theory as an analytical framework, the aim has been to explore the complexities of institutional change within this domain. Through the exploration of the roles, behaviors, and interactions amongst actors within this institutional context, the ambition has been to both explore and provide accounts for the slow transition towards more sustainable practices in the industry. By doing so, it contributes to a deeper understanding of how institutions shape organizational behavior, and conversely, how individual and collective actions may influence institutional change at the level of the field.

To guide the research, the following three research questions were defined:

RQ1 *– How does the CDWM institutional field shape field members' behavior?*

This question examines the overarching influence of the institutional field of construction and demolition waste management on the behavior of its members. It looks at how the established norms, rules, and structures within the field guide and constrain the actions and decisions of the individuals and organizations involved. How it may either reinforce existing industry practices or hinder the adoption of new ones.

It seeks to understand how the broader institutional context shapes the actions, decisions, and practices of various actors involved in the construction and demolition waste management process. This may involve examining how institutional pressures, norms, and regulatory frameworks influence the adoption of certain waste management practices, the allocation of resources towards waste reduction efforts, and the overall approach to sustainable waste management within the construction sector.

RQ2 *- How do actors within the construction industry engage in institutional work to shape CDWM practices?*

This question concerns the actions of individuals and groups within the construction industry who actively engage in institutional work. It explores how these actors contribute to creating, challenging, or maintaining the institutional frameworks and arrangements that influence current practices in CDWM, including how waste is handled on construction sites, within organizational routines, and across collaborative projects.

It thereby seeks to understand how actors within the industry contribute to shaping the rules, norms, and values governing construction and demolition waste management. This may involve examining how actors advocate for policy changes, develop new waste management practices, make attempts to challenge the existing regulations, or promote sustainability initiatives to influence the broader institutional context surrounding construction and demolition waste management. By studying the dynamics of institutional work, the research informs us on the processes through which actors engage to shape CDWM practices.

RQ3 *- How do the actions of individuals and groups within institutional settings promote the development and spread of circular economy principles in the construction industry?*

This question investigates the role of individual and collective actions within institutional contexts in promoting and spreading circular economy principles in the construction industry. It looks at how these actions lead to the adoption and integration of sustainable practices in construction and demolition processes. Thereby it focuses on how the behaviors, decisions, and interactions of actors within the industry, as well as the broader institutional environment in which they operate, actually contribute to the adoption and dissemination of circular economy practices. By focusing on these elements, it aims to uncover how circular economy principles become embedded and diffused within the sector, ultimately contributing to its transformation towards more sustainable and resource-efficient practices.

In the domain of transition studies, where institutional change plays a pivotal role in addressing a myriad of challenges within our complex, interconnected, and rapidly evolving world, scholars have extensively researched the meanings and impacts of institutions. However, despite these efforts,

understanding and explaining institutional change remains a formidable task (Beunen and Patterson, 2019).

1.3 STRUCTURE OF THE THESIS

The following sections start with a literature review that delves into construction and demolition waste management, examining its connection to the concept of circular economy. Additionally, a concise overview of the public policy framework governing waste management in construction is provided.

This is followed by the theoretical framework, which introduces the theoretical lens of institutional theory. Concepts such as institutional logics, institutional fields, and institutional work are discussed, as they have shaped the research design and form the basis of the analysis.

The methodology section outlines how the research was conducted, detailing the various research methods used for empirical fieldwork, notably semi-structured interviews, observations, and workshops. It demonstrates how the underlying assumptions guiding the research are suitable for addressing the research aim and questions.

This is followed by the findings section, which presents the empirical material and provides insight into how the field of construction and demolition waste is perceived within the context of the project. It outlines various actors' responses to external pressures for more sustainable CDWM practices and examines how these actors collectively contribute to shaping the field.

The discussion section contains reflections on the analysis of the empirical materials in the findings section in relation to the previous research, illustrating how my research builds upon, expands, and challenges existing literature on construction and demolition waste management. It also contains a description of some of my reflections that have emerged throughout the research process on studying institutions.

The final and concluding section outlines the contributions of the project to the theoretical framework. It further provides practical implications, concluding with some final words.

2 LITERATURE REVIEW

The following section introduces the reader to previous research on waste management within the construction sector and the concept of circular economy as a proposed framework for sustainable waste management.

2.1 FROM WASTE MANAGEMENT TO CIRCULAR ECONOMY

The construction industry significantly contributes to environmental degradation, with its impact encompassing factors like land depletion, energy consumption, solid waste generation, dust and gas emissions, and noise pollution, as well as the consumption of non-renewable resources (Lu and Yuan, 2011). Construction and demolition waste, comprising surplus materials generated throughout the construction process, is a notable aspect (Jin et al., 2019). Apart from its substantial environmental implications, waste management is a crucial activity due to the considerable disposal costs and the loss of material value if not recovered.

The management of waste can be seen as an interdisciplinary challenge encompassing social, economic, and environmental aspects, and dealt with from various perspectives such as engineering, technology, management, and policy (Jin et al., 2019). It's a global concern which engages practitioners, policymakers, and researchers. Research on the topic spans around waste volume quantification (Zheng et al., 2017), waste handling methods (Yuan and Shen, 2011), waste material properties and potential (Poulikakos et al., 2017), life cycle assessment (Bovea and Powell, 2016), 2016), environmental impact (Kucukvar et al., 2014), , and policy-making among others (Ajayi and Oyedele, 2017, Di Maria et al., 2018).

Several factors contribute to the lack of improved construction and demolition waste management practices, including the absence of economic incentives, inadequate support, insufficient regulatory backing, quality and liability issue, an immature market, low awareness about CDW reduction, client awareness, and inadequate training and education (Yuan et al., 2011, Crawford et al., 2017).

The construction industry's substantial use of natural resources and the generation of waste can largely be attributed to its production model, aligning with the conventional linear economic approach (Benachio et al., 2020). Within this linear economy, raw materials are extracted, processed into usable products, and then discarded once they become obsolete, often before reaching the end of their useful life (Mangialardo and Micelli, 2017). In the linear economic framework, waste management traditionally focuses on enhancing treatment methods for generated waste or increasing reuse and recycling activities. However, these efforts fall short of maximizing the potential value of the materials (Romero-Hernández and Romero, 2018).

A proposed strategy for mitigating the environmental impact of resource consumption involves integrating the Circular Economy concept, which seeks to "*redefine growth, focusing on positive society-wide benefits*" by "*gradually decoupling economic activity from the consumption of finite resources, and designing waste out of the system*" (Ellen MacArthur Foundation, 2013, Gallego-Schmid et al., 2020). This approach is grounded in three key principles: eliminating waste and pollution through design, prolonging material usage, and promoting regeneration (Ellen MacArthur Foundation, 2015). This represents a significant transformation for the construction industry, which has historically

not prioritized waste management. Activities such as demolition and recycling, once seen as less important, are now gaining importance.

However, the integration of the circular economy represents a paradigm shift in waste management, going beyond the improvement of existing practices to establish a closed-loop economy that maximizes material utilization (Romero-Hernández and Romero, 2018). It advocates for a transformation in current production and consumption patterns to significantly diminish the impact on our planet and its environmental capacity (Leising et al., 2018). This shift transcends the previous predominant waste management perspective, which predominantly focused on discarding materials through landfilling or incineration (Ghisellini et al., 2016).

The concept revolves around the idea of preserving the inherent value of materials by prioritizing their reuse and not to discard products until their value is completely depleted. This approach thereby aims to safeguard and maintain the value within material flows. Commonly presented as an innovative production model, this concept brings substantial environmental improvements compared to the traditional linear production model often described as the 'take-make-dispose' model, involving the consumption of natural resources through extraction, use, and disposal (Ellen MacArthur Foundation, 2013, Esposito et al., 2018).

Considered a potential catalyst for a paradigm shift in production processes, it represents an industrial evolution towards sustainable production and consumption patterns (Korhonen et al., 2018a). The growing interest in this concept is linked to its capacity to integrate environmental sustainability with economic potential, yielding advantages for economic actors, society, and the broader environment (Geissdoerfer et al., 2017). For practitioners and organizations, this suggests that efforts towards sustainable development can coexist with financial performance. The genesis of this concept is ascribed to practitioners, members of the business community, and policymakers, aligning with the idea that the cost associated with creating a product should be prolonged as much as possible (Korhonen et al., 2018b).

While there is promise in the concept to revolutionize our production and consumption patterns, thus making significant contributions to achieving environmental goals, it is crucial to acknowledge that it has also been depicted as a notion that raises theoretical, practical, and ideological questions (Corvellec et al., 2022). Criticism has been directed at the concept, characterizing it as an umbrella that comprises loosely connected sub-concepts and ideas attempting to encompass a diverse array of phenomena. Umbrella concepts establish connections between different existing concepts by highlighting shared characteristics among them (Blomsma and Brennan, 2017, Korhonen et al., 2018a). Additionally, it has faced criticism for its theoretical shortcomings, asserting a lack of a clear definition for what the circular economy truly encompasses and involves (Suárez-Eiroa et al., 2019, Bocken et al., 2016). This lack of a precise definition has resulted in a broad range of interpretations, from collaborative consumption models such as sharing, trading, and renting (Geissdoerfer et al., 2018, Ghisellini et al., 2016) to large-scale industrial symbiosis. This inherent ambiguity makes the concept challenging to grasp and, consequently, complicates the assessment of its implementation success (Stål and Corvellec, 2018).

The concept of the circular economy is subject to various interpretations and definitions (Reike et al., 2018), all sharing common elements such as waste elimination and the maximization of material value (Kirchherr et al., 2017). The Ellen MacArthur Foundation (2015, p.5) defines the circular economy as

one "*that is restorative and regenerative by design and aims to keep products, components, and materials at their highest utility and value at all times, distinguishing between technical and biological cycles*." For the purposes of this study, the description of the circular economy in construction proposed by Adams et al. (2017) is employed. This framework, derived from a literature review, delineates circular economy components for waste management in construction and outlines various circular economy activities throughout a building's life cycle, from design to end-of-life. Proposed activities within the construction sector to realize the circular economy include designing for disassembly, recycling, and reuse, procuring reused and recycled materials, selecting eco-friendly suppliers, managing materials and delivery, minimizing waste, and enhancing reuse during construction, thereby closing the loop (Adams et al., 2017).

The literature discusses three implementation levels for the circular economy: micro-, meso-, and macro-levels (Suárez-Eiroa et al., 2019, Ghisellini et al., 2016). The first two levels concentrate on companies and organizations working toward circular economy adoption in the industry. The micro-level involves the incorporation of circularity within organizations through the implementation of strategies. On the other hand, the meso-level refers to the interaction between organizations to collaboratively facilitate circular flows of materials within inter-firm networks (Suárez-Eiroa et al., 2019). The growing number of organizations within the chain introduces a diversity of actors, interests, and preferences, intensifying the complexity of governance, management, and decision-making efforts (Korhonen et al., 2018a). Lastly, the macro-level pertains to the implementation of the circular economy on a societal scale, encompassing cities, regions, nations, and international communities. At this level, public policy frameworks are recognized as the primary instrument to facilitate transformative efforts (Suárez-Eiroa et al., 2019).The transition towards a circular economy in construction not only requires the adoption of innovative methods and technologies, but it also involve changes in behavior throughout the entire value chain (Adabre et al., 2022).

Cultural issues are often at the forefront of barriers to the implementation of the circular economy (Kirchherr et al., 2018). Frequently, there is a dual deficiency of interest and awareness among customers, compounded by an internal company culture that exhibits reluctance towards adopting CE principles. Discussions and interest in the potential of the circular economy tend to be confined to specific segments within organizations dedicated to sustainability issues (Kirchherr et al., 2018). Additionally, organizations tend to persist in established practices, often dismissing improvement proposals that do not align with existing processes (Liu and Bai, 2014). Even among companies that embrace circularity, the challenge extends to ensuring that their entire supply chain is willing to commit to and participate in these changes, adding another layer of complexity to the endeavor (Kirchherr et al., 2018). One significant reason for the difficulty faced by actors in implementing more circular material flows is the consumer's preference for products made from virgin materials, with a common perception that products made from recycled materials are of inferior quality (Ranta et al., 2018).

Additional barriers are associated with the market, particularly concerning the costs of both virgin and recycled materials. Firstly, the allure of low costs for virgin materials often makes them a more attractive option for raw material procurement. Furthermore, the recovery activities required to transform materials into reusable products often come with such high costs that they struggle to compete with products made from virgin materials, at least without financial support (Kirchherr et al., 2018). The absence of financial support is identified as a significant barrier, coupled with the lack of a

policy framework that encourages producers to participate in the circular economy. Another critical factor is the availability of technological solutions. Despite numerous technological advancements, their gradual introduction to the market suggests that further efforts are necessary. Additionally, associated challenges include ensuring technical support and an adequately trained workforce (De Jesus and Mendonça, 2018).

Others have observed that participants in the construction industry generally grasp the concept of the circular economy and acknowledge its benefits but face challenges in comprehending how to apply it in practical terms (Benachio et al., 2020). Despite the circular economy's ability to garner interest from a diverse array of actors across various industries and organizations, its implementation remains constrained. Some advancements in waste management have been achieved through enhanced recycling efforts in a few developed countries, but as of now, these efforts haven't translated into widespread reuse (Ghisellini et al., 2016).

In the context of construction, its application is often described as being in its early stages, and the identified improvements related to construction and demolition waste management primarily focus on waste minimization or recycling activities (Adams et al., 2017, Gallego-Schmid et al., 2020, Leising et al., 2018).

Mahpour (2018) outlines a series of obstacles hindering the shift toward a circular economy in construction. These challenges are intertwined with issues related to the dismantling, sorting, transporting, and recovery processes, as well as concerns regarding agency and ownership in construction and demolition waste management. Additionally, there is a lack of integration of sustainable waste management practices and a knowledge gap concerning the implications of implementing the circular economy in the construction industry.

The implementation of the circular economy in construction necessitates a fundamental redesign of existing processes, entailing a reconfiguration of the responsibilities and involvement of various actors throughout the entire process. Moreover, this transformation calls for the development of new business and ownership models that align with the redefined processes (Leising et al., 2018). The circular economy is characterized by a keen focus on maximizing the utilization of resources throughout a product's entire lifecycle. This involves integrating circular principles into activities spanning design, production, use, and end-of-life stages, thereby contributing to the preservation of material value and a reduction in the extraction of virgin materials (Mangialardo and Micelli, 2017). The realization of CE goes beyond simply closing loops through the reuse of '*waste*' and resources; it also involves prolonging the presence of materials in the loop by developing durable and reusable products (Leising et al., 2018).

Despite the promising benefits that the concept holds for both industry and the environment, and the considerable attention given to waste management in construction and the transition toward a circular economy, relatively little focus has been placed so far on understanding the roles and efforts of different actors in shaping organizations' waste management practices.

2.2 THE PUBLIC POLICY FRAMEWORK

As previously mentioned, the literature defines three levels of implementation for CE, the micro, meso and macro-level where the public policy framework is considered as the main instrument to enable

transformation (Ghisellini et al., 2016, Suárez-Eiroa et al., 2019). Several actors participate in the formulation of public policies to encourage the construction sector's transition towards CE. These policies are viewed as a trigger to initiate change in the sector, and the following section therefore presents an account, although not exhaustive, of the existing policy framework faced by the construction industry in Sweden.

2.2.1 EU Framework

The CE is a concept that has been widely adopted among policymakers and is viewed as an important mechanism to support the transition towards more sustainable production models in multiple sectors (Korhonen et al., 2018a). The implementation of CE necessitates societal support in terms of legislative and financial subsidies and where policymakers must design a governance system that guide and support organizations to overcome the barriers associated with the CE and engage them to adopt its principles (Ranta et al., 2018, Liu and Bai, 2014). It is therefore necessary to develop a framework that integrates policies and strategies that stimulate societies to manage their resources in a more sustainable manner (Ghisellini et al., 2016). Particular considerations should be taken to the different actor's interpretations and understanding of the concept within the CE landscape (e.g. academic, policy, business, and nonprofit actors) (Blomsma and Brennan, 2017).

The EU has set its aim at transforming the union and its member countries into a circular economy, thereby increasing resource efficiency by closing material loops and turning waste into a resource. They released their first circular economy action plan in 2015 that "includes measures that will help stimulate Europe's transition towards a circular economy, boost global competitiveness, foster sustainable economic growth and generate new jobs" (European Commission, 2015). An updated version of the action plan was issued in 2020 which includes specific focus areas for construction and buildings. The action plan describes a new comprehensive strategy for a sustainable built environment by promoting circular principles throughout the lifecycle of buildings (European Commission, 2020). The strategy includes enabling reselling of construction materials by updating the construction product regulation (EU) No 305/2011 to the introduction of recycled content requirements, promote circular design initiative that focuses on improving durability and adaptability of buildings, the integrating of life cycle assessment in public procurement, a revision of the material recovery targets defined by the EU and initiatives to increase sustainable and circular use of excavated soils (European Commission, 2020).

The EU policy framework is placing the businesses and consumers as key actors in this transition process. Both local and national authorities are both obliged and encouraged to act as a catalyst by putting demands and incorporating the framework in both legislation and guidelines, where the EU has a fundamental role by supporting and ensuring that the right regulatory framework is implemented. But although this is a regulatory framework, it is still not binding (Milios, 2018). The member countries of the European Union are urged to implement the necessary measures to foremost try to prevent and minimize the generation of waste. But as this is seemingly an impossible task, the waste that is generated needs to be managed in such a way so that it minimizes the impact on both the environment and health.

The management of CDW still varies greatly between the different member countries, which in part has been explained by local variations in terms of legislation and its enforcement, construction and

demolition practices and recycling infrastructure. As such, the member states' CDWM performance within the EU varies greatly in fulfilling its recovery target (Sáez and Osmani, 2019).

2.2.2 UN Framework

The United Nations are similarly trying to address this issue through the sustainable development agenda where they are defining a transformational vision, goals and targets to encourage all member countries to take action, whilst at the same time realizing the immense challenges to sustainable development that societies are faced with. These new goals and targets were defined to guide and set the course of action for the upcoming 15 years. The SGDs are voluntary based, where the member countries' efforts should be built on the three dimensions of sustainable development: the economic, social and environment (United Nations, 2015).

Even though the sustainable management of CDW is not specifically addressed within the SDGs, it contributes to the achievement of the SDG11 for sustainable cities and communities as well as the SDG12 on responsible consumption and production. Three of the targets are more directly addressing these issues. First, to reduce the environmental impact from cities, where special attention is given to waste management. Secondly, to realize environmentally sound management of waste throughout its entire life cycle and according to the international framework. They also encourage practices that improve waste management practices according to the waste hierarchy. And thirdly, that each member country should strive to substantially reduce waste generation through prevention, reduction and increased recycling and reuse activities.

2.2.3 The situation in Sweden

This study set out to explore the current situation in Sweden regarding CDWM, where the point of departure has been in the 2008/98/EC goal defined by the European Commission that aims to increased resource efficiency within the construction industry. It stated that efforts should be made so that 70 percent of non-hazardous construction and demolition waste should either be prepared for reuse, recycled or have undergone other types of recovery activities by the year 2020 (European Commission, 2008). The goal put particular focus on non-hazardous waste, whilst the hazardous waste seemed to already be managed sufficiently. Sorting the material into clean fractions on site continued to be of high priority and received increased support through the latest incorporation into the legislative frame and waste regulation (2020:614). It thereby became mandatory in Sweden to sort CDW according to a minimum of six fractions: wood, mineral waste, metal, glass, plastic and gypsum. There was also an increased focus on the traceability of material, where information about the materials in buildings needs to be stored and made available in the future.

Buildings and materials should also be designed so that they can be easily dismantled and its material separated, which makes it even easier to sort the materials into clean fractions (Government offices of Sweden, 2020) In 2018 the Swedish environmental protection agency claimed that 35,2 million ton of waste was generated in Sweden (2018, excluding mining waste) where the largest amount was generated within the construction industry, 12,4 million tons and thereby constituted more than 35 percent of the total amount of waste generated in Sweden (Swedish environmental protection agency, 2020b). With a recovery rate of CDW at 70%, Sweden is at the bottom of the European countries which show an average of 88%, only bypassed by Finland with 60% (Eurostat, statistic 2022). Sweden also adopted the goal defined by the European Commission and incorporated it as one of the interim targets for the national environmental targets (Swedish environmental protection. However,

according to the Circularity gap report (2023) only 3,4 % of resources are cycled back in economy after use, so there is margin for improvement.

3 THEORETICAL FRAMEWORK

The following chapter describes the theoretical framework adopted in this study. This entails a representation of the theoretical lens of institutional theory and the concepts of institutional logics, institutional fields and institutional work which have shaped the research design and constitute the basis of the analysis.

To gain insights into the slow evolution of construction and demolition waste management practices towards circularity, I draw upon insights from institutional theory. Despite the universal benefits of circularity, its implementation faces significant challenges. I explore why adopting circular practices is complex by identifying the roles various actors play in driving this transformation but also what are the forces which prevent it from happening.

There is a long-standing debate within social science over the primacy of structure or agency in shaping human behavior, and the debate can also be found among institutionalists. The discussion stems from assumptions about the relationship between actors and the environment in which they operate (Battilana et al., 2009). Structure is the recurrent patterned arrangements which influence or limit the choices and opportunities available to the actors and has been described as the complex and stable framework of society. Agency refers to the capacity of individuals or organizations to make their own free choices and to act independently from the prescriptions proposed by this framework. Institutional theory attend to the deeper and more resilient aspects of these social structures and thereby allows us to consider "*the processes by which structures, including schemes, rules, norms, and routines, become established as authoritative guidelines for social behavior*" (Scott, 2005, p.2). Institutions are viewed as relatively stable entities which constrain organizational structures and activities and help us to account for the convergence of organizational practices within a given field. It explains how individual behavior needs to be regarded as legitimate within a specific environment and thereby generate uniformity. However, as institutional scholars started to develop a discussion on institutional change the conception of agency became more problematic (Battilana and D'aunno, 2009). From a growing field of concepts, such as institutional work and the closely related concept of institutional entrepreneurship, devoted to analyzing the active role of field actors to both contribute to institutional developments and change as well as the reproduction and stabilization of institutions, the notion of agency has become even more central (Abdelnour et al., 2017). Whilst most of the previous research has emphasized on the institutions ability to shape individual and organizational behavior, these concepts focuses on the reverse, that is, to study individuals and organizations ability relies on agency to purposefully create, maintain, or change institutions (Glynn and D'Aunno, 2023). They consider institutions as a result of ongoing human accomplishments that is both constructed and needs to be maintained by people's behavior, thoughts and feelings (Hampel et al., 2017) and as such, "*institutions are reproduced only through the agency of individuals.*" (Dobbin, 2010, p.673).

This thesis relies on various concepts to explore and account for the myriad of efforts that actors in the construction industry engage in to promote a transition towards more sustainable practices of managing waste and increase resource efficiency. The theoretical framework of institutional theory (Scott, 2014), together with a field level understanding allows for understanding of the composition, relations, and interrelatedness of the various actors in industry. The institutional logics allows for generating understanding on how the institution is prescribing regularity of behavior amongst the actors within the field. However, even though numerous efforts are taking place, the transition process seems to start only slowly to show effect. I therefore build on the concept of institutional work

(Lawrence and Suddaby, 2006) to explore the various actions, ranging from the "*heroic*" to "*nearly invisible and often mundane*" efforts, that actors employ and is necessary to both generate stability of the existing institution and correlating practices, as well as the efforts to change them.

The following section starts therefore by introducing shortly institutional theory, and the concepts of field, and logics. Then the agency-oriented concept of institutional work is described. The section also introduces the role of discourse in institutional work and how sustainable transition has been previously covered by the literature.

3.1 INSTITUTIONAL THEORY

This research builds on the theoretical frame of institutional theory, this enables a better understanding of the socially constructed forces that shape organizational reality and behavior. The framework creates a better understanding of how the organizational structures, processes and practices are governed as a result of both endogenous and exogenous forces from within the organizational and external societal expectations, values, and rules. Thereby allowing us to explore processes of diffusion, legitimation and institutionalization of already existing practices, but also how institutionalized practices and norms are affected over time (Aksom, 2022). The isomorphic pressure within institutions can cause patterns of behavior amongst organizations operating in a given field (DiMaggio and Powell, 1983). According to Scott (2014, p.56) institutions can be defined to be comprised of "*regulative, normative, and cultural-cognitive elements that, together with associated activities and resources, provide stability and meaning to social life*". The regulatory element involves regulatory processes with the intent to influence behavior, such as the establishing of rules, monitoring and ensuring conformity to those rules, and establishing reward and punishment mechanisms. The normative elements emphasize the importance of values and norms, which provides normative expectations for how specific actors should behave based on social obligations, by building on normative mechanisms. Lastly the cultural-cognitive element is the "*shared conceptions that constitute the nature of social reality and create the frames through which meaning is made*". The cognition goes beyond the objective conditions around a situation and instead focuses on the process of how actors subjectively interpret them. Which is carried out through external cultural frameworks, by providing patterns of '*thinking, feeling and acting*'. These three elements are central blocks within institutions that both shape and stabilize actors' behaviors within that institution. It is necessary that the institution provides both guidance and the necessary resources to generate certain behavior, and thereby prevent other behaviors. Where the deviation from the institutionally prescribed behaviors should also be associated with some kind of cost (Lawrence et al., 2011). The three elements of the regulative, normative and cultural-cognitive elements illustrate that this behavior is also shifting from the conscious and unconscious and between the legally enforced and the taken-for-granted behavior (Scott, 2014). Or as described by Mahalingam and Levitt (2007, p.523) institutions can be viewed to consist of "*a set of norms, rules and values operating in a given environment"* that can be used to better understand how it generates *"regularity of behavior among actors affected by that environment*". Institutions are constituted by the multitude of shared practices, technologies and rules that are adopted within a field. These can be more-or-less institutionalized depending on the degree to which they have been diffused and the different rewards and sanctions that either create resistance to change them or support their continued existence. The sanctions and rewards constitute a meaning system consisting of social sanctions, pressure for conformity, intrinsic rewards and values that together shape the legitimized practices within that institution (Lawrence et al., 2002). Besides,

formal institutions are defined by regulatory or organizational structures, and informal institutions are defined by norms and values (Gidley and Palmer, 2021).

The institutionalist perspective has emphasized the enduring aspects of social life that govern behavior. It has traditionally put a focus on how organizational behaviors are governed by the institutional field in which it operates, whilst underlining its stability. Highly institutionalized contexts have been referred to as an '*iron cage*' where it constrains actors and produces similarities amongst actors through their adoption of specific forms and practices that are considered as legitimized within the field. However, although there is a strong element of endurance within institutions that have been well established in the literature, a more common approach to studies on institutional theory has instead shifted to focus on institutional change (Lawrence et al., 2009). Showing that institutional fields should not be viewed as stable entities, but that they instead adapt over time as e.g. new organizations enter it and infuse it with new ideas and thereby contribute to the complexity within it. Different organizations will be more or less exposed to the complexity depending on their interaction and positioning within the field, central versus peripheral (Greenwood et al., 2011). Hinings et al. (2017) make the distinction between different types of organizational fields and claim that they can be either emerging, mature, fragmented or turbulent.

Institutional field

A central concept when studying institutional processes and organizations is the nation of institutional fields (Scott, 2014). The concept is presented by Zietsma et al. (2017, p.5) as a cornerstone of institutional theory as it is the "*predominant source of pressures for institutional conformity and the site of institutional embeddedness*". Scott (2014, p.106) describes the concept of organizational fields as "*a level that identifies a collection of diverse, interdependent organizations that participate in a common meaning system*". The field level emphasizes the interaction of multiple organizations that often share related resources, produce similar outputs or rely on the same set of technologies. The field consists of networks of actors that are created and shaped by the actors, but where the fields over time also shape the actors (Hinings et al., 2017). The stability of the institutional field is built upon the shared logics, the actor's common interests and the governance structure within the field. As these constituent elements of a field align with each other and are shared among the different actors, they also reinforce old patterns and contribute to maintaining the existing institution (Levy and Scully, 2007). Thereby leading to field stability that both regulate and regularize day-to-day interactions among its participants (Hinings et al., 2017). Within this research context, the CDWM process gathers multiple actors, e.g. interdependent organizations, that together share a common understanding of formal and informal processes, norms of conduct, governance structure and contractual agreements as well as taken for granted behaviors that together constitute an institutional field.

The construction industry can be viewed as highly institutionalized, spurred by a great need for coordination in construction projects where actors are independently carrying out tasks in temporary organizations and under strong time-pressure (Urup, 2016). It heavily relies on regulatory systems governing building practices that are built on e.g. the legislative frame, involvement of local authorities and building codes and standards. Contracts are also standardized and determine the distribution of responsibilities. The construction and work processes as well as the roles within them are also described as strongly institutionalized (Kadefors, 1995). Whilst these standardizations and routines generate efficiency within the process, they also restrict flexibility where deviations from these established practices often result in resistance from the actors. This depiction of the construction

sector as a highly institutionalized industry is shared within the frame of this research of how construction and demolition waste management is carried out. That the sector consists of multiple actors that together share a common meaning system and understanding of what the legitimized practices are for managing waste throughout the entire construction process.

3.2 INSTITUTIONAL LOGICS

Institutional logics can be defined as ''*the socially constructed, historical patterns of material practices, assumptions, values, beliefs, and rules by which individuals produce and reproduce their material subsistence, organize time, and space, and provide meaning to their social reality*'' (Thornton and Ocasio, 1999, p.804). The field level logics constrain field members, including individuals, groups and entire organizations by defining which behaviors and meanings are considered appropriate (Zietsma et al., 2017). The concept has been used to describe how individual behavior is governed through its relation to organizational forms and normative societal structures, as the logics provide both identity and meaning to actors (Skelcher and Smith, 2015). The institutional logics are comprised of elemental categories which can be referred to as building blocks. They make out the foundation that prescribes the organizing principles and illustrates how individuals and organizations are influenced by the institutional order as they define the institutional actor's interest, preferences and repertoires of behavior (Thornton et al., 2015). Though these logics constrain and legitimize behavior among individuals, groups, and organizations, they also provide individuals with social constructs that actors can reconstruct according to their own interests. That even though actors are described as embedded and shaped by the institutional setting in which they operate, they are also able to act partially independent from them (Haveman and Gualtieri, 2017).

An increasing area of study within institutional theory is the institutional complexity that occurs when multiple institutional logics become established within a field. This provides actors with space where they can elaborate or manipulate cultural and material resources, resulting in the transformation of identities, organizations and society (Skelcher and Smith, 2015). These attempts can result in both fragmentation and contestation within the field. The existence of multiple logics simultaneously influences organizational actors and provides them with contradictory schemas for behavior (Bertels and Lawrence, 2016). But where institutional logics affects organizations and individuals differently, both through the adoption of different logics, but also the degree to which they become diffused. These multiple, competing and often contradictory logics have given rise to studies on the emergence of new logics, the change and transition into a dominant one and the rise of conflict as a result of them (Ocasio and Radoynovska, 2016). The plurality of logics demonstrate a second feature, the notion of agency, that actors can recognize the existence of them and thereby respond and adapt to them in a way that makes sense in the relationship between the normative expectations of the logics and the organizational context in which they operate (Skelcher and Smith, 2015). As the contradictions between logics become prominent, organizations and their members seek to interpret such contradictions as incompatible or paradoxical and thereby deploy strategies as a response to try and resolve them (Kraatz and Block, 2008).

Organizations can be characterized as more or less stable, consisting of a single strong logic or balance between multiple ones. Emerging fields are illustrated as significantly more unstable that provide space for actors to enter with relative ease. Thereby bringing in alternative logics rooted in other fields and perform work that aims to shape the emerging and potentially dominant logic (Greenwood et al.,

2011). Though new logics can emerge from within or become introduced in the institutional field as a result of exogenous forces, they are often rooted in a more long-standing institutional logics, such as the ideal types proposed by Thornton et al. (2015), the market, state, community, family, religion, profession, and corporation. The process of institutionalization should not be considered as resulting in an end state, it is a continuous process where a specific institutional context is not dominated by one single sovereign logics, but often include a combination of several (Haveman and Gualtieri, 2017). This is referred to as institutional pluralism, where the organizations that consist of more than one logic are faced with more than one institutional identity and socially sanctioned purpose. This may lead to persistent tensions within organizations due to contradictory demands (Kraatz and Block, 2008).

Though change is often most visible at the macro levels of analysis, the actual mechanisms through which change unfold are best understood by focusing on the micro-level interaction. Therefore it's important to study the process of how individuals interpret and integrate seemingly contradictory logics at the micro level to understand the underlying reasons of how a change in the institutional logics are enacted at the macro-level (Bévort and Suddaby, 2016).

The challenge of bridging or merging competing institutional logics is a well-recognized challenge that organizations face. Institutional work offers an explanation as to how individuals cope with contradictory institutional logics and partake in the shaping of them through their everyday practices (Smets and Jarzabkowski, 2013). In organizations facing competing logics in terms of market-based logic and an emerging environmental logic within the organizations, some actors perform different types of institutional work to try and bridge the tensions between them. One example is to make attempts to strengthen the embeddedness of a peripheral logic by diffusing its values, assumptions, rules, and beliefs across the organization. However, when the two logics are seemingly incompatible, these efforts can also result in the reinforcement of the already established logic (Dahlmann and Grosvold, 2017).

In the following section, the concept of institutional work (Lawrence and Suddaby, 2006) is introduced. This concept has been used as a theoretical lens to analyze how organizations are rationalizing their behavior and either stabilizing the existing practices or acting to promote new ones. Where individuals and groups of individuals provide meaning to their social life and govern individual and collective actors understanding of legitimized behaviors within the particular institutional setting and institutional work refers to the identification of individuals efforts to either create, maintain or disrupt institutions. However, as put forwards by Zilber (2013), by adopting a constructivist approach institutions should not be viewed as something that 'exists' out there. It is a socially constructed reality and there is not such a thing as an institutional logic or institutional work that can be captured and presented, these are merely analytical perspectives that are used to try and make sense of the phenomenon that has been identified.

3.3 INSTITUTIONAL WORK

In their nominal piece, Lawrence and Suddaby (2006, p.215) defines institutional work as '*the broad category of purposive action of individuals and organizations aimed at creating, maintaining and disrupting institutions*". Where the notion of 'work' reminds us that actions are required to not only create or challenge the institutions, but also that the efforts are necessary to actively maintain and defend the existing institutions (Riedy et al., 2019). Institutional work is a concept developed within

the wider frame of institutional theory and is an agency-oriented framework that emphasize on the actor's role in shaping their institutional context (Hampel et al., 2017). The role of agency is used here to explain purposive action and the individuals' ability to carry out work within their social contexts. It thereby draws attention to the relations between individuals and their social context. Though any organizational member may be capable to perform action that may shape the institutional context, their ability to influence it will depend on their own individual history, their position and the structural context (Tuominen and Lehtonen, 2018). The concept is partly founded in the sociology of practice, where practices are viewed as individuals' and groups' responses to the demands that are put on them in their everyday lives. It views actors as creative and knowledgeable and sheds light on the micro/individual level in the actors' attempts to either transform or maintain the institution (Lawrence and Suddaby, 2006). It allows us to examine how actors are able to shape the very institutional frames that, in turn, influence their own strategic choices. The theoretical perspective puts a particular focus on the *how, why and when* actors perform actions and the particular elements that influence the actor's ability to do so (Hampel et al., 2017). The definition of the concept proposed by Lawrence and Suddaby (2006, p.215) states that institutional work is "*the purposive action of individuals and organizations aimed at creating, maintaining and disrupting institutions*", where it thereby shifts the traditional view on institutions as shaping the actor's behavior, where instead, the actors shape the institution. Thereby emphasizing the actor's role and ability to '*effecting, transforming and maintaining*' both institutions and its field. Institutions are therefore depicted as a result of the actor's behavior that either reproduce, challenge, or modify them, which may ultimately result in the institutions diminishing.

Institutional work builds on some key assumptions, that individuals and collective actors are able to recognize their ability to make change happen and thereby act in ways that involve awareness about their relation to the institution. As such, institutions should not be considered as static or permanent, but as malleable entities that are part of continuous transformation, partly through the institutional work of actors. Where the actors' actions are performed with the intent to '*build-up, tear down, elaborate and contain institutions*' (Hampel et al., 2017, p.3). These actions have been described to range from "*heroic*" actions to "*nearly invisible and often mundane*" institutional work (Lawrence and Suddaby, 2006, p.1). A central issue in this discussion of institutional change is the notion of embedded agency, which is a continuous debate within institutional theory literature. The so-called 'paradox of embedded agency' refers to an actors' ability to change institutions as their 'actions, intentions and rationality' are all governed by the very institution that they wish to change (Battilana and D'aunno, 2009). That actor's behavior is constrained by the need to be regarded as legitimate, which is defined by the pressure to conform with the broad set of norms within the specific institutional setting. Earlier work has therefore portrayed the individuals and organizations to only have limited ability to shape the institution of which they are part of. But it would be problematic to discuss the actor's role in shaping their institutional context if we continue to suppose that it is solely the institution that shapes the actor's behavior (Lawrence et al., 2009).

As such, it is necessary to challenge this assumption and whilst multiple explanations exist, one response to this is to not merely view actors as passive participants that accept the established structures within the institution. Instead, those actors are able to partake in the process of shaping the institutional context through continuous alteration. Those actors should be considered as aware, skillful and reflexive beings able to interpret, translate or occasionally even transform them (Kraatz and Block, 2008). That even though institutions are described to consist of widely accepted, used and

taken for granted practices, norms and values among individuals, they are still able to act independently (Battilana and D'aunno, 2009).

Institutional work is carried out by change agents within the institutional context by leveraging institutional resources and challenging the institutional '*status quo*' within a field, thereby contributing to the creation of a new institution or transformation of an existing one. Their ability to induce change within that context is however dependent on both their position within the field and the field characteristics (Battilana et al., 2009).

Another underlying assumption in institutional work theory is that institutions are socially constructed. They are results from ongoing human achievement through their behaviors, thoughts and feelings that both create and maintain the existing institution. The actions can be both unintended and a result of the individual's own awareness concerning the institutional setting and their desire to affect it. But the success of these efforts is dependent on a set of factors and cultural resources that govern their ability to do so (Hampel et al., 2017). However, the outcomes of actors' purposeful action to transform institutions do not solely result in achieving the desired end state. On the contrary, institutional work often involves a myriad of day-to-day efforts that often fail, but which together contribute to both institutionalization and institutional change. That these actions may often have an impact on the institutional setting that results in unintended institutional consequences (Lawrence et al., 2011, Hampel et al., 2017).

Existing studies presume that institutional actors faced with institutional complexity can elaborate on the various choices available and thereafter choose the ones that are most favorable to them. But where the process is much more dynamic, involving multiple strategies to cope with the complexity at hand. Those actors are often involved in the mundane work of institutions but without necessarily being intentional in the sense of purposive actions with a specific aim in mind. That even though there is a lack of clear intention, practical work does have implications on the institution where it does purposively maintain established practices and reject alternative behavior proposed by an alternative logic. So these actions should not be labeled as unintentional, just because they lack a clear institutional vision (Smets and Jarzabkowski, 2013).

The theoretical frame of institutional work has become a dominant lens and received vast attention in both management and organizational studies, covering a plethora of topics and as such becoming increasingly manifold (Gidley and Palmer, 2021). The topics vary greatly, where its contribution has been categorized in many ways. To name a few, it has been according to its interdisciplinary element which is achieved through the adoption of an institutional work lens to explore other interrelated aspects such as institutional complexity, logics or entrepreneurship. Or according to the focus on various actors including different roles, such as individuals, managers, or actor type such as marginal, elite, or everyday actors. Last mentioned is the categorization around different forms of context, including geographical location, industry, part of population, time, as well as other factors.

Though having made a late entrance in construction (Bresnen, 2017, Chan, 2018), the application of the concept can also be found within the construction management literature. For instance Lieftink et al. (2019) study how relational institutional work is used in inter-organizational projects to achieve mobilization of key stakeholders around a new project delivery method, and identifies three different forms. Another example is van Doren et al. (2020) study on low carbon housing in the Netherlands where they explores how differences in institutional strategies may promote low-carbon innovations.

Svensson and Gluch (2022) examines the role of objects in public property owners attempts to develop new practices in the process of achieving long-term and sustainable property management. Gluch and Bosch-Sijtsema (2016) studied the role of environmental experts in shaping the institutional development towards a more sustainable AEC industry.

Three forms of Institutional work

Lawrence and Suddaby (2006) provide a typology of institutional work that illustrates different forms of actions that actors perform to shape the institution. This has been organized according to the three categories of institutional work: creating, maintaining and disrupting institutions.

Creating institutions

The creation work includes prescriptions of what the actors do that aim towards the formation of institutions and focus in particular on the characteristics and conditions that contribute to the establishment of new institutions. It consists of three categories containing nine different forms of creation work. The first category is referred to as political work including advocacy, defining and vesting which build on actors' attempts to reconstruct rules, property rights and boundaries, which thereby restricts the access to material resources. (1) Where advocacy refers to the activities involved in acquiring legitimacy through different types of social suasion and thereby gaining both political and regulatory support. (2) Defining and (3) vesting to create rule systems and structures that define membership and status hierarchies and property rights. These types of actions more often result in substantial changes in institutional structures and practices. The second category of creation work consists of actions that aim to influence the normative structure of institutions. (4) Constructing identities involves either the creation of new professions or to alter existing ones, thereby redefining the relationship between an actor and the field in which it operates. (5) Changing the normative association aims to reroute the connection between particular sets of practices and their moral and cultural underpinning. (6) Lastly, constructing networks include where groups of actor's construct networks where practices can be developed and become normatively sanctioned and legitimized, thereby providing the basis for new institutions. The third set of work consists of actions aimed to alter abstract categorizations in which the boundaries of meaning systems are altered. (7) Mimicry refers to associating new practices with already existing ones, thereby making it easier to adopt. Part of (8) theorizing involves the relabeling of concepts and practices so that it thereby becomes part of the actor's understanding of its field. (9) Educating refers to the work of transferring knowledge to actors in terms of both skills and knowledge that support the creation and maintenance of a new institution. The different forms of creation work outlined by Lawrence and Suddaby (2006) are summarized in below. To add to this list, we can find several authors making their contribution to the forms of creation work. van Doren et al. (2020) for instance discuss visioning and coalition building as possible strategies to facilitate institutionalization of niche innovations. Visioning involves defining the problem and creating a vision of how the adoption of an innovation may mitigate it. Coalition building encompass the development of coalitions with actors possessing different skills and knowledge, which thereby mobilizes collective action. Zvolska et al. (2019) describe 10 forms of creation work when discussing how sharing organizations create institutions. These include lobbying and litigation as two forms of regulatory work, self-identification, changing traditional meanings, creating new norms and organizing as four types of normative work and isomorphic mimicry, imitation, constructing new meaning systems and educating as four forms of cultural-cognitive work. In Barnes et al. (2018), they also highlight networking and narrative work as important forms of institutional work in shaping o

local sustainability initiatives. Examples of narrative work in this context include developing a narrative around the problem e.g. procurement contracts and its corresponding solution and networking refers to the efforts to establish a wide network of actor that support the proposal. Arenas et al. (2020) studies sustainable entrepreneurs in their endeavor to promote sustainable initiatives and presents three forms of institutional work enabled through relational work, namely politicizing economic action, maneuvering around regulations and making sustainability convenient. The politicizing economic action implies to go beyond merely introducing new practices, and also to infuse them with political meaning. To develop a normative judgement related to the social and environmental of the customers economic decisions. Maneuvering around regulations, similar to advocacy, is aimed at the legislation but extends to efforts in manipulation and extensions of the meaning of the regulation. The third form discussed emphasizes activities that aim to illustrate the ease of adopting specific sustainability initiatives. To make sustainability convenient through illustrating its availability and accessibility and present it to the target audience in an attractive, organized and recognizable manner. Table 1 below presents the different forms of creation work as outlined by Lawrence and Suddaby (2006).

	Form of IW	Definition
Creating	Advocacy	The mobilization of political and regulatory support through direct and deliberate technique of social suasion
	Defining	The construction of rule systems that confer status or identity, define boundaries of membership or create status hierarchies within a field
	Vesting	The creation of rule structures that confer property rights
	Constructing identities	Defining the relationship between an actor and the field in which that actor operates
	Changing normative assumptions	Re-making the connections between sets of practices and the moral and cultural foundations for those practices
	Constructing normative networks	Constructing of interorganizational connections through which practices become normatively sanctioned and which form the relevant peer group with respect to compliance, monitoring and evaluation
	Mimicry	Associating new practices with existing sets of taken-for-granted practices, technologies and rules in order to ease adoption
	Theorizing	The development and specification of abstract categoriies and the elaboration of chains of cause and effect
	Educating	The educating of actors in skills and knowledge necessary to support the new institution

Table 1 - Creation work (Lawrence and Suddaby, 2006, p.221)

Maintaining institutions

The maintenance efforts include all the various actions that supports the prolongation of the existing institution, which thereby stabilizes the social mechanisms that ensure compliance (Lawrence and Suddaby, 2006). These actions include efforts that either supports, repairs or recreates the institutional underpinnings, but also prevents the emergence of new ones by delegitimizing new practices, roles or technologies (Lehmann et al., 2019). Although much of the literature on institutional change is focused on challenging institutional setting, due to their inherent nature as stable entities, others also emphasize the need for efforts to maintain them as they are otherwise doomed to break down, decay and eventually disappear. Institutional maintenance should therefore not be viewed as a stable property, but rely on the actions of actors to ensure institutional continuity and stability (Aksom, 2022).

The maintenance work is concerned with the actor's efforts to maintain the existing institution and its associated practices. Even though institutions in themselves presuppose a degree of endurance, there

are still few institutions that have enough reproductive mechanisms that would deem maintenance work as unnecessary. The work to maintain institutions are however ranging from a degree of comprehensibility, where some actions are more noticeable, such as the work aimed to enforce rules, whilst the reproduction of norms and belief systems are often much more subtle and intangible. The first three forms of maintenance work are primarily concerned with ensuring compliance to rule systems. (1) Enabling consists of creating rules that support the existing institution, but also authorizing existing or new roles. (2) Policing involves the work of ensuring compliance with existing rules through enforcement, auditing and monitoring. (3) Deterring is the creation of coercive barriers that prevent institutional change, resulting in conscious and obedient actors. The other three are primarily focusing on the efforts to reproduce the already established norms and belief systems. (4) Valorizing and demonizing means to publicly demonstrate examples of what is considered as right and wrong or the 'normative foundation' within the particular institution. (5) Mythologizing is the work of creating myths from historical events that thereby preserve its normative foundations. (6) Embedding and routinizing involve actively infusing the normative foundation through the repetition of practices until they become routinized. The different forms of maintenance work outlined by Lawrence and Suddaby (2006) are summarized in Table 2 below.

	Form of IW	Definition
Maintaining	Enabling work	The creation of rules that facilitate, supplement and support institutions, such as the creation of authorizing agents and diverting resources
	Policing	Ensuring compliance through enforcement, auditing and monitoring
	Deterring	Establishing coercive barriers to institutional change
	Valorizing and demonizing	Providing for public consumption positive and negative examples that illustrate the normative foundation of an institution
	Mythologizing	Preserving the normative underpinnings of an institution by creating and sustaining myths regarding its history
	Embedding and routinizing	Actively infusing the normative foundations of an institution into the participants' day to day routines and organizational practices

Table 2 - Maintenance work (Lawrence and Suddaby, 2006, p.230)

In addition to the list of maintaining work, Galvan et al. (2020) add to this by showing in their study how grid operators are engaging in activities to maintain the existing energy regime. These efforts share similarities with enabling work, but instead of supporting the existing institution, they are involved in the process of defining rules and regulation that hinder the adoption of the emerging institution. In Graf and Jacobsen (2021) study of the transformation of the German energy sector, they identify how actors supporting the established institution rely on the action of capturing to maintain the existing practices. This is achieved by defining the link between existing institutional practices and the moral foundation of the new institution. Riedy et al. (2019) on the role of meaning in shaping institutions similarly describe how actors aiming to maintain the existing institution are involved in the process of storytelling. Where they assess whether they support or risk undermining the institution, and depending on its fit either adopts, rejects or reshapes depending on how well it aligns with their institutional strategy.

Disrupting institutions

The disruptive institutional work aims to undermine and deter the mechanisms that prevent actors from behaving in ways that don't comply with the institutionally prescribed ways. These actions constitute a part of the process of deinstitutionalization and consist of 'disconnecting sanctions', 'disassociating moral foundations' and 'undermining assumptions and beliefs'. (1) Disconnecting

sanctions mainly imply working through state apparatus to undermine definitions and assumptions and disconnect rewards and sanctions from some set of practices, technologies or rules. (2) Disassociating moral foundations are attempts to undermine certain practices, rules or technologies from the institutionally prescribed moral foundations. Lastly, (3) undermining assumptions and beliefs is to minimize the perceived risk associated with differentiation. Either through innovation that breaks existing assumptions or to undermine through divergent practices. The different forms of maintenance work outlined by Lawrence and Suddaby (2006) are summarized in Table 3 below.

	Form of IW	Definition
Disrupting	Disconnecting sanctions	Working through state apparatus to disconnect rewards and sanctions from some set of practices, technologies and rules
	Disassociating moral foundations	Disassociating the practice, rule or technology from its moral foundation as appropriate within a specific cultural context
	Undermining assumptions and beliefs	Decreasing the perceived risks of innovation and differentiation by undermining core assumptions and beliefs

Table 3- Disruption work (Lawrence and Suddaby, 2006, p.235)

To add to the list of disruptive institutional work, Binz et al. (2016) emphasize on the role of visual materials in shaping individuals attitudes. To show pictures or other forms of illustrations with the intention to either invoking feelings of freight or worry towards the existing or future situation resulting from the existing institutionally prescribed behavior, or to invoke feelings of joy and comfort towards the adoption of new practices. van Doren et al. (2020) provides another example from their study on niche context, where they describe how institutional actors adopt institutional strategies which questions the existing rules in an attempt to change them. That those actors thereby make attempt to break institutionally prescribed practices, but also takes into account the potential risk of sanction from deviating from them. Zvolska et al. (2019) describe 3 forms of disruptive work when studying how sharing organizations disrupt institutions. These include removing privileges as a form of regulatory work, undermining moral grounds as a form of normative work and undermining assumptions and beliefs as cultural-cognitive work. Zvolska et al. (2019) provides the example of removing privileges through lobbying and litigation activities to mitigate the link between privileges and specific actors, practices or technologies. Jotzo (2014), similar to Barnes et al. (2018) emphasize on the power of collective groups. But instead of emphasizing the establishment of network that supports the creation of an institution, actors striving to maintain the existing one may also reside on the potential to mobilize defenders of the status quo to maintain existing institutions.

Meaning and discourse in institutional work

Institutional theorists have long been concerned with the role of meanings in institutional processes as organizations tend to imitate what they conceive as a good idea of an organization (Zilber, 2017). In that, discourse plays an importance role by shaping those ideas and also shape institutions by defining the taken-for-granted structures, practices and beliefs in a specific field (Zilber, 2009). So instead of defining institutions by the patterns of actions, institutions may be defined through its discourse and the basis for institutionalization rely on the texts that describe and communicate those actions (Phillips et al., 2004). According to Scott's (2014) definition, institutions consist of regulative, normative and cultural-cognitive elements, where institutional work involves actions that either support the creation of new or maintain or disrupt any of these existing elements. Likewise, it includes work on the activities associated with institutions and the resources that support them. Where different forms of "communication can be viewed as a generative force with the ability to builds, sustains, and challenges these institution by inflicting reactions from the audience" (Meyer et al.,

2018, p.4). Through the conceptualization of discourse in institutionalization, it demonstrate the role of language and text in the institutional process and thereby offers new ways to study institutional fields (Zilber, 2017).

As institutions may be described as socially constructed forces that shape organizational reality and behavior, a central part of how reality is construed, is through the use of language (Phillips et al., 2004). Phillips et al. (2004) argues that language is fundamental to the process of institutionalization. That it is through the interactions and linguistic processes between actors that our understanding of our surroundings is shaped, and that it is therefore through this process that definitions of reality become shared and accepted. The creation of a new institution, or to challenge existing ones, therefore requires change in the underlying discourse (Zilber, 2009). So even though enactment of institutional work may rely on the patterns of actions, it is not the action in themselves that provides the basis for institutionalization, but it is rather through the texts that describe and communicate those actions. As these texts becomes embedded in the discourse, it contributes to the enactment of existing or to the production of new institutions by the way it is structured and to the extent it is coherent or supportive of it (Zilber, 2017). Actors may rely on their discursive abilities and interaction to support change by demonstrating how and when actors can overcome constraints in terms of interests, path dependence, and/or culture present, which would otherwise hinder action. The introduction of discourse in institutional theory is argued to have the greatest potential in providing insights on the dynamics of institutional change by focusing on the preferences, strategies and normative orientations of actors, and has even been proposed as a fourth type of neo institutionalism (Schmidt, 2010).

So, by turning our attention to the processes of discourse, we are able to identify the mechanisms that enact institutional change and better understand how it shapes individual behavior. Similar observations were also put forward in Lawrence and Suddaby (2006), that many of the forms of IW that were categorized in their framework, relies on discursive actions as mechanisms to shape institutions, both through the written and spoken word. Organizational discourse is argued to shape organizational reality through a process consisting of the production, dissemination and consumption of those texts. As such, discursive institutional work can be found in various forms such as the articulation of legislative texts, the act of telling stories, by make jokes or giving insults, by making announcements or by writing and giving public speeches (Lawrence and Suddaby, 2006). It may be found amongst actors involved in a discursive process and includes a wide range of actors. From political leaders adopting a top-down mass electoral process to members from the civil society engaged in the bottom-up discursive interactions, similar to grass-roots organizations or social movements (Schmidt, 2010). However, others point out that the production of text is often carried out by actors who strive to make sense of reality and gain legitimacy (Zilber, 2017). By doing so, these actors becomes '*carriers*' of ideas who engage in the efforts to generate, deliberate, and legitimizes ideas within their institutional contexts and are thereby able to influence it (Schmidt, 2010).

There are multiple forms of organizational discourse (Lawrence and Suddaby, 2006), but even though it has a long history amongst institutional scholarships, it doesn't seem to have resulted in a coherent definition. The definition and content of the different forms varies and is sometime used interchangeably (Riedy et al., 2019). Lawrence and Suddaby (2006) presents and explain three forms in their typology of institutional work; rhetoric, narratives and dialogue. Within this discussion, institutional meaning is often used as a umbrella concept, but which similarly lack a commonly shared

definition and terminological diversity abounds (Löhr et al., 2022, Zilber, 2017). Institutional meaning has therefore been described as a very broad and inclusive banner, encompassing various concepts such as stories and storytelling, narrative, organizational myths, symbols and discourse (Riedy et al., 2019). Some of these terms are used interchangeably, while others denote specific types or theoretical constructions of meaning. However, institutional meaning can be described as cultural building blocks which are nested into each other. Actors then partake in an interest-driven interpretative process of elaborating, selecting and manipulating amongst these building blocks (Zilber, 2017).

However, words in themselves are rarely enough to shape the institution, they rely on the context in which they are played out. The focus on discourse thereby extends by not only focusing on the content of the words or the ideas that are the substantive content of discourse, but also include how it is said, by whom, to whom, and where it took place (Schmidt, 2010). So, in order for the words to become meaningful and impactful within the organization, they need to fit with the context, and align themselves with existing organizational routines, structures, values, beliefs and relationships for it to become interpretable and actionable, thereby becoming local. This becomes even more crucial within contexts faced with institutional complexity (Hampel et al., 2017).

Within the context of this thesis, the term discourse is understood as the 'exchange of ideas' (Schmidt, 2010), which is taking place through the interaction between individuals, or groups of individuals through texts containing information about actions, and comes to influence the actions of others (Phillips et al., 2004). Similarly to Polletta et al. (2011) discourse is positioned as a broader term that includes stories and narrative as well as other linguistic forms, such as arguments and rhetoric. Discourse is thereby viewed as an inclusive concept that allow us to combine various linguistic components of institutions that emphasize on the production, dissemination and consumption of texts (Zilber, 2017). By adopting a discourse understanding of institutional work, it enables us to understand how systems of language and meaning may perpetuate social structures that support the ideas of certain groups and work against the ideas of others (Hampel et al., 2017). A discourse perspective on institutions provides a framework that shift the attention from merely categorizing the outcome from institutional processes, and instead enable better understanding about the process of institutionalization in itself (Phillips and Malhotra, 2017).

When reviewing the literature, there are multiple examples on how meaning and discourse are used as theoretical lenses to study institutional change. In Riedy et al. (2019) paper, they define and conceptualize meaning work and demonstrate the role of agency in the process of carrying meaning across various discursive layers. By drawing on two environmental governance cases, they explore how environmental governance actors' response to the established institution's inability to effectively act to environmental challenges. The study illustrates the difficulty for them to generate change at the deep discursive level. It emphasizes the environmental actors balancing act of introducing meaning aligned with the existing institutional discourse to mitigate the risk of being rejected and meaning that is challenging enough in order for it to be transformative. In another study by Jarvis (2013), they explore on how discursive institutional work may shape institutions at the fields level where they identifies and theorizes lying as a new form of discursive institutional work and categorizes it into four different types (maintenance, defensive, noble, and demagogic lies).

Lehmann et al. (2022) studies different actor groups and their efforts to shape institutions through discursive strategies in order to either foster change or prevents the rise of a sharing economy. They induce 15 discursive strategies that actors engage in and provide insights to how both offensive and

defensive actors adopt strategies, but also outline cross-countering as opposing discursive institutional work. And how this mechanism of weaken, oppose, or nullify discursive institutional work might shift larger discourses toward change or stability. In a similar vein, Debenedetti et al. (2021) also explore how companies rely on discursive strategies to maintain their legitimacy in mature markets which are confronted with societal shifts in terms of environmental considerations. The study context is the French automobile industry and how carmakers dealt with the increasing environmentalist in the field. They thereby show that the firms rely on different discursive strategies depending on their targeted stakeholder, as opposed to the assumption that organizations respond to institutional pressures in a homogenous way.

Genus (2016) proposes a discourse-institutional approach to furthering our understanding of issues related to the governance of sustainability transitions. With a focus on the role that language and institutional arrangements play, they recognize how text, discursive practices, and social structures shape related developments. Arguing that language and non-discursive phenomena play a role in the reproduction of existing institutional structures, but also contribute to the development, diffusion and embedding of new ones. Where its application helps us to generate insights into the realization of the transition to sustainability. In Barnes et al. (2018) study on the institutionalization of sustainable practices in cities, they mention the importance of agency and how various actors are able to link, influence and transfer narratives will depend on their power position. That the outcomes from discursive activities will vary greatly depending on what has been said and by whom, also taking in the ability of these actors to create sufficiently powerful coalitions through networking activities as an importance factor to induce change.

3.3.1 Institutional theory and sustainable transition

The industrial consumption and production patterns in industrial activities have significant effects on its sustainability. The transition towards more sustainable modes of production and consumption are viewed as sustainable transition has been ascribed as a grand challenge to realize (Coenen and Truffer, 2012). The transition would require a fundamental reorganization of multiple categories as the existing patterns relies on the interplay between several dimensions including formal policies, institutions and rules, actors and the organizational structures, as well as technology and material aspects (Löhr et al., 2022). Institutional theory has been described as useful to study this transformation by explaining why these patterns continue to be the dominant way of providing services and products to the customers, in a way that aligns with the linear economy. It does so by providing explanations as to how collectively held assumptions, values and beliefs continues to be maintained on an industry level, even though they might be different from the ones at the individual level (Stål and Corvellec, 2018).

The theory assumes that social actions are heavily shaped by the institutional context that an actor is situated within and as such offers unique insights into the relationship between the actor and its environment. We therefore need to pay attention to how the organizational practices is shaped in relation to larger societal and ecological systems. And that in order for institutional actors to be able to tackle the sustainability challenges, it will require joint efforts and collective action to realize sustainable development as the challenge is so vast (Fehrer and Wieland, 2021). It may also be common that the practices adopted within the industry are considered as legitimized as well as meaningful by the actors within it, but at the same time questioned by outside actors (Stål, 2015).

Institutional theory has the potential to describe how sustainable transition occurs as it shapes its pace and direction. It can be used to illustrate both the processes involved to generate change as well as the constraining actions that prevent it (Andrews-Speed, 2016). It is becoming increasingly more apparent that institutional change and institutional stability are dependent on sustained human endeavors to either maintain, alter, contest or even reject the already existing institution (Beunen and Patterson, 2019). The concept of institutional work helps by informing us about how the structures and instrumental actions are combined to support and realize the incorporation of sustainable practices within contexts (Silva and Figueiredo, 2017).

The concept of institutional work has been described as highly relevant for exploring how actors respond to the need for transforming our current production and consumption patterns (Riedy et al., 2019). It contributes to the understanding of the current situation regarding CDWM by focusing on the active role of both individuals and organizations in the transition process. It draws attention to the complex dynamics of multiple action contributing to the transition and acknowledges the different components and developments which actors engage in to create, maintain or disrupt (Löhr et al., 2022). It thereby provides knowledge on how the micro-level interaction among actors has implications on the macro level. How their actions contribute to both the stability and flexibility within an institutional field (Beunen et al., 2017). These types of efforts that shapes sustainability modes has been referred to as *transition work* and include the various activities that contribute to the "*shift to more sustainable modes of production and consumption*" (Markard et al., 2012, p.956).

Although studies on institutional work often aim to demonstrate the actor's efforts to change the established institutional arrangements, it also underlines the importance of the ongoing efforts amongst actors that contribute to maintain them (Patterson and Beunen, 2019). Maintenance work is commonly viewed as the efforts to defend the existing institution. But other have also pointed to the importance of maintenance work in attempts to stabilize progress in the transition process (Löhr et al., 2022). To thereby ensure that new practices become institutionalized. The absence of such work could otherwise result in a transformation in unintended directions as a result of both endogenous and exogenous forces (Patterson and Beunen, 2019). Endogenous include motivations which arise internally within the institution and amongst its actors. Exogenous forces may refer to developments carried by institutional actors who shapes field level conditions, the introduction of new institutional actors or other shocks that are external to the institutional structure and overwhelm the self-enforcing behavior associated with the established institution (Gidley and Palmer, 2021). It is thereby influenced by external processes of change in the broader society and economy as business practices take a part in larger societal and ecological systems (Fehrer and Wieland, 2021). In the context of sustainable transition, environmental crises may similarly create uncertainty at the field level and thereby create different motives or opportunities for alternative institutional arrangements to be developed (van Doren et al., 2020). The institutional work perspective supports the rationale that both actor characteristics and field-level conditions together shape the development. The individual's ability to act and influence the field will be limited by the field conditions, but the field level conditions will also be perceived differently by actors, thereby influencing their ability to identify possible routes forward (van Doren et al., 2020).

The current mode of production in the construction sector corresponds to the linear economy and thereby creates institutional barriers that need to be addressed to realize the transition to CE (Fischer and Pascucci, 2017, Ghisellini et al., 2016). The policy framework is put forward as an important

element, where the creation and enforcement of policies and laws, which also include the negotiations about its meaning within the institutional setting. But even though policies, laws and regulations take part in shaping the coercive pressure within the institutional context, it would also necessitate a corresponding shift in the beliefs, values, expectations and cognitive routines of the various actors (Andrews-Speed, 2016, Patterson and Beunen, 2019).

Institutional work has demonstrated that is not enough to introduce change reforms, but the proposed changes need to be adapted towards the existing structures and ideas of others (Patterson and Beunen, 2019). However, the sustainable transition is not always a matter of top-down management of implementing a more sustainable work process but instead relies on a group of strategically aligned actors that perform actions over long time periods to push the transition (Brown et al., 2013). These actions are often faced with active resistance by actors who carry actions that aims to maintain problematic aspects of existing institutions and demonstrate work that rejects these creation efforts (Riedy et al., 2019). The process involves multiple actors engaging in a multitude of activities to shape the development, it doesn't unfold in a linear way. Instead, it involves struggles amongst these actors in their attempt to establish new, to maintain the existing as well as to abandon obsolete structures (Löhr et al., 2022). This has partly been ascribed as one reason for the slow collective progress in mitigating environmental challenges.

The transition to CE requires efforts on multiple levels including individual managers, organizations, field-level actors, and ultimately shifts at the societal level towards institutionalization of responsible management (Radoynovska et al., 2020). The circular economy partly builds on the establishment of inter-organizational value chains that would allow for a common space where shared practices and understanding for how waste management should be carried can emerge (Blomsma and Brennan, 2017) which thereby would enable the emergence of a new CE logic. The emergence of a new institutional logic corresponding to the CE would therefore necessitate a shift in the already established assumptions, values and rule system of the linear economy as well as the inter-firm collaborations and interaction to realize circular economy processes (Fischer and Pascucci, 2017).

The individuals' assigned responsibility to implement sustainable practices in organizations may be referred to as environmental managers. They are often faced with the need to operate in a pluralistic setting where they need to manage the tension between the need to ensure financial prosperity with the emerging environmental demands (Dahlmann and Grosvold, 2017). This requires them to make strategic choices to advance organizational goals, where the effective adoption of sustainable practices seems to be linked to its alignment with the established organizational logic. Thereby reducing the risk of compromising on the already prescribed assumptions and values (Rossoni et al., 2020). It is also stressed that the ability of actors to successfully perform institutional work is very much dependent on both their position within the organization and the support they receive from it. But where environmental managers are often assigned with little formal authority and are therefore unable to enact change that challenges the established organizational norms, beliefs, and routines and promote new practices inside their organization (Daudigeos, 2013). But in cases where they receive formal support and authority, they still struggle to enforce change and are face with the need to shape their own practices to gain acceptance from their institutional members (Gluch and Bosch-Sijtsema, 2016). Also, sustainable transition represents an issue where actors often lack clear incentives to engage in the transition as the goal is not directed towards their own individual benefit.

Its contribution is directed towards a '*collective good*' and thereby creates conflicts for actors with contradictory values and motives (Geels, 2011).

One way for professionals to gain legitimacy for their work is to engage in boundary-spanning activities, outside the organizational borders (Daudiegos, 2011). Actors participating in these collaborations often share a common aspiration to improve for the sake of the environment and include actors from multiple sectors and regime levels. These inter-organizational collaboration shape both the direction and speed of the transition over time and has e.g. been critical in the creation of new institutional routines in urban storm water management (Brown et al., 2013). What was important in that case was the actor's involvement in the creation of these networks by defining the connections between actors. The institutional work is comprised of building collaborative networks that promote collective learning amongst practitioners and contribute to gain legitimacy and agency in the field. These collective efforts were then utilized to carry out disruptive and creation work that pushed forwards a shift in the policy framework.

As actors may be influenced through cognitive, normative or regulative processes to adopt circularity in their line of work, they may respond to those demands by involving in decoupling activities. They mitigate the effects of those demands by only incorporating elements, so they appear to engage with circularity, without having to change the actual practices that result in the continued prevalence of linear processes in the organization (Stål and Corvellec, 2018). This may also be referred to as ceremonial adoption, as the requirements have been formally fulfilled, but where the internalization by organizational members has not been achieved (Rossoni et al., 2020). The implementation of sustainable practices should therefore not be limited to ensure alignment with the public policy framework, or organizational demands, but to incorporate sustainable practices into the everyday lives of individuals within organizations (Silva and Figueiredo, 2017).

Application in literature

The concept of institutional work has been widely used to explore sustainable transitions. To mention a few examples, we find Galvan et al. (2020) who explores the role of grid operators and their support to institutional change through the creation of niches and boundary spanning activities within the energy domain in the Netherlands. This is partly achieved through the active redefinition of their role in the energy system and by partaking in the development of decentralized energy innovations. Similarly, Graf and Jacobsen (2021) also studied the energy sector in German by focusing on the catalyzing force of policy changes at the national and EU level, and its ability to render change amongst publicly owned energy providers. Another example on the role of discourse can be found in Yngfalk and Yngfalk (2020) where they apply a qualitative discourse analysis to understand how nonprofit organizations act as change agents in markets and its corresponding consequences. They present ethical work as a specific form of institutional work and describe how counter discourses may unintentionally contribute to the stabilization of the existing institution instead of its intent to disrupt it.

The sharing economy have also been discussed, e.g. by Zvolska et al. (2019) who uses the concept to better understand, map out and classify a number of mechanisms in sharing organization. Lehmann et al. (2022) studied the disruptive impact from the introduction of a sharing economy and how various actors including incumbent organizations, institutional regimes, and society at large engage in institutional work. This results in the development of a taxonomy of institutional work battles in the

sharing economy. The concepts application can also be found in transition studies where Löhr et al. (2022) for instance draws on the concept to depict how transition processes may be analyzed as 'transition work', and also provides a review of the concepts application in the shift towards more sustainable modes of production and consumption. For the circular economy, we find examples of startups role in changing the normative and cognitive-cultural institutional pillars of an institution with the intent to prevent and reduce food waste (Närvänen et al., 2021). We can also follow the work of small businesses and their owner's role in the systemic change towards circularity, where Bozkurt et al. (2022) studies the work of a female entrepreneur towards the circular transition.

As seen above there has been significant engagement with institutional work, but its application in the management of the construction sector has been relatively recent (Bresnen, 2017, Chan, 2018). Studies have explored various aspects, such as individuals developing environmental expertise within the architecture, engineering, and construction industry. Despite the established role of environmental managers, they encounter challenges in effecting institutional change due to their short-term focus, contrasting with the long-term commitment required from line managers to support their efforts (Gluch and Bosch-Sijtsema, 2016). Other studies delve into how individuals organize strategic sustainable facilities management and renovation in their daily work life (Gluch and Svensson, 2018), with a focus on materiality in this process (Svensson and Gluch, 2022). Additionally, research investigates the role of Building Information Modelling (BIM) managers in driving digitalization in the construction sector (Bosch-Sijtsema and Gluch, 2021), the contribution of municipalities to sustainability through wood construction (Salmi et al., 2022), and the impact of coordination on project performance in design-build management (Urup, 2016) with an emphasis on partnerships (Gottlieb et al., 2020). Furthermore, studies demonstrate how actors utilize relational institutional work in interorganizational projects to institutionalize new project delivery methods (Lieftink et al., 2019).

Existing literature in the intersection of institutional work and the construction sector often focuses on individual actors, organizations, or specific project types. However, there is a gap in understanding how different forms of institutional work are employed during periods of regulatory transformation within a specific field, and how this can contribute to modifying existing norms and practices to create a more sustainable construction and demolition waste sector. This research aims to fill this gap by identifying these actions and assessing their effectiveness in transforming existing practices into sustainable ones.

3.4 CRITIQUE

The institutional framework has shown its potential in explaining and predicting how organizations over time become more and more similar to each other through the spread and adoption of formal organizational structures (Aksom and Tymchenko, 2020). The framework, together with its correlating concept of work and logics, have received vast attention amongst scholars for its ability to explain how organizational behavior is shaped by its context. During the last couple of decades, it has come to occupy an increasingly dominant position within management and organizational studies, even to the extent that its becoming "*creaking under the weight of its own theoretical apparatus*" from Lawrence, Suddaby, and Leca, (2011, p.52) in (Alvesson et al., 2019).

However, despite its popularity it has in recent years been receiving broader criticism in related to the different concepts, some of the underlying assumptions, its developments and some of its definitions

(Suddaby, 2010, Alvesson et al., 2019, Reed and Burrell, 2019, Carter and Spence, 2019). Some even accuses it for being degenerative and that its development simply consists of a reformulation of whatever knowledge it has already generated (Reed and Burrell, 2019) and to lack critical self-reflection (Carter and Spence, 2019).

The institutional umbrella encompasses various debates and sub-concepts, such as institutional work, logics, and entrepreneurship, which explore the intricacies of organizational behavior within institutional contexts. Additionally, sub-disciplines like institutional trust, continuity, and agency delve deeper into specific aspects of institutional theory, offering nuanced insights into how institutions function and evolve over time (Alvesson and Spicer, 2018). Moreover, there has been a notable trend in recent scholarship towards integrating institutional theory with other theoretical frameworks, resulting in its broader application across different organizational contexts and managerial roles. Researchers have developed typologies and employed diverse methodological approaches to study the multifaceted nature of institutions and their impact on organizational dynamics (Gidley and Palmer, 2021). Despite the impressive explanatory power of institutional theory in explaining various organizational phenomena, there is a growing concern about its extensive application and the production of associated concepts. Critics argue that the theory's widespread use risks reducing its core principles and may lead to its misapplication in contexts beyond its intended scope (Alvesson and Spicer, 2018, Suddaby, 2010). Thus, while institutional theory remains a valuable tool for understanding organizational behavior, there is a need for caution to ensure its continued relevance and effectiveness.

By looking at the different definitions of institutions, it is possible to find a wide variation where some are more vague than others (Alvesson and Spicer, 2018). This vagueness and the variation between them, seems to have resulted in that almost all empirical content may fit with what we view as institutional research. However, others claim that this should not be underestimated, that this broadness corresponds well with the underlying intent of the theory, that it opens up for the possibility to apply it for multiple forms of organizational research purposes (Reed and Burrell, 2019). Another aspect is related to the labelling and terms in institutional theory. The critique with regards to this aspects is related to tautologies as various concepts are used to denote the same meaning, thereby using different words to repeat the same idea (Alvesson and Spicer, 2018). This becomes apparent when discussing the definition for some of the central concepts, e.g. the definition of what constitutes as institutions, institutional orders or institutional logics. All of these elements are described as influencing individual and organizational behavior, but where it seems very difficult to identify the distinction between them (Alvesson et al., 2019).

On another notion, Modell (2022) further discuss the notion of embedded agency, pointing to the importance of recognizing the interplay of institutional work as it unfolds on multiple levels including individual, organizational, field and even societal levels. That although it would be unrealistic to pay equal attention to all the level, and that there are analytical implications from trying to link cause and effect relation between them, institutional work is conditioned by, and unfolds in relation to these levels.

Alvesson and Spicer (2018) also discuss whether institutional theory should be viewed as a lens that enables us to view the world through a specific construct, or, as others have argued, that it has a distinct phenomenon out there which may be observed. This creates confusion about what we are able to explicate from the framework, and should therefore be clearly addressed. For the concept of

institutional work, this would have an impact on how institutional work should be considered. Where a lens approach of the concept would imply that it would include almost any kind of purposeful action whilst an opposing view would seek to differentiate and identify would differentiate the extent to what is considered as institutional work and that of '*plain old work*' (Alvesson and Spicer, 2018, p.207). However, as argued by Zilber (2013) the adoption of a constructivist approach imply that institutions is not something that we can find out there. I rely on the concepts as analytical perspectives to make sense of the phenomenon under study.

3.5 SUMMARY OF THEORY

Institutional theory is considered with structure and agency in social science and focuses on understanding how institutions shape behavior in relation to the transition to a circular economy within the construction industry. My research relies on institutional theory to comprehend the forces shaping organizational behavior in the transition to sustainable waste management in the construction industry. The theory emphasizes that internal and external forces influence organizational structures, processes, and practices. It explores the diffusion, legitimation, and institutionalization of practices and norms. The regulative, normative, and cultural-cognitive elements of institutions shape stability and meaning in social life. The research also introduces the concept of institutional work, which examines actions — heroic or mundane — undertaken by actors to stabilize existing institutions or drive change. The construction industry, a highly institutionalized sector, follows standardized practices governed by regulatory systems, contracts, and norms. Institutional work is crucial for rationalizing and stabilizing these practices or fostering new ones.

4 METHODOLOGY

The following chapter outlines the research design and approach throughout the study. It introduces the overarching paradigm and research approach. It is then structured into two distinct phases, representing the progression of the Ph.D., each with its specific methods and analytical focus. Finally, the section concludes with a discussion of key methodological considerations, including reflections on the research process and limitations.

4.1 INTRODUCTION

This research was initiated to broaden our insight into how individuals and organizations contribute to transforming CDW management practices within the construction industry following the launch of new regulations and directives, focusing primarily on the changes taking place at the sector level. However, over the five years of the PhD, the focus has evolved; initially focused on waste, the emphasis has shifted towards the development of circularity. Specifically, in response to the EU's projections about the emergence of a new market for circular products, the second part of my PhD examines the components of circular business models and how companies known for applying circular principles are redefining the value of waste.

To achieve this, the research builds on institutional theory to identify and analyze the contributions of specific practices and the prevailing dynamics within the construction industry. While the broad theoretical frame of institutional theory was established from the start of the project, the research adopts an abductive approach and draws on the iteration between the rich and detailed material gathered and the various streams within institutional theory (Bell et al., 2018). This process involved continuously revisiting the different theoretical concepts and the data throughout all the phases of the research to make sense of it (Mantere and Ketokivi, 2013). The interplay between theory and empirical evidence influenced each other, enhancing the understanding of the data while also prompting new inquiries.

My PhD. takes on an exploratory research framework, building on qualitative research methodologies to collect empirical material. Grounded in a constructivist ontology, the study presupposes that reality and institutional frameworks are the outcomes of social constructs (Zilber, 2013). However, to collect and analyze my empirical material, I built on an interpretative epistemology that emphasizes the importance of understanding people's subjective meanings and interpretations of their experiences (Bell et al., 2018). Following the shift in focus, I have also tried different types of research settings motivated by a combination of strategic choices and emerging opportunities

I began with a qualitative study that included interviews and site visits to explore how the main construction-related stakeholders engaged in waste management responded to introducing the new regulations. Although this phase improved my understanding of the field and facilitated the application of institutional theory, it left me feeling uncertain about my grasp of the actual changes occurring within companies, particularly how they defined, chose, and adopted new sustainable production modes.

So, when I had the opportunity to join another PhD student in workshops designed to help construction companies develop sustainable business models, I jumped on the occasion. We engaged

with three companies, gathering data through workshops and conducting interviews with participants. This phase provided valuable insights into organizational processes. However, these companies were ultimately unsuccessful in implementing concrete new business models.

Therefore, the third study shifted to focus on examining the key components of successful circular business models and how companies recognized for applying circular principles are redefining the value of waste.

So to summarize, the empirical material has been gathered on three successive occasions during my PhD.

- The first study aims at changes taking place in the field of WM, mapping the actors, roles, and practices in the Swedish construction industry and gathering the point of view of mostly contractors and demolition company, **Study M** for mapping.
- The second study draws on in depth case study of three companies focusing on their processes when struggling to develop sustainable and circular business models, **Study B** for Business models; this study builds on a more active relationship with the participants close to an action research methodology.
- A third study aims at identifying the best practices of the forerunner companies who have already engaged in developing new business models including circularity principles and examining how they develop these solutions, **Study F** for Forerunners.

Parallel to Study M, I conducted a comprehensive literature review on the policy and legislative landscape related to construction and demolition waste management. This review aimed to understand how these policies and laws frame the backdrop and prerequisites for implementing sustainable waste management practices and principles of circularity. To achieve this, I collected and analyzed a range of documents, including directives, reports, and guidelines, issued by various entities such as the European Union, the Swedish government, local municipalities, and industry associations, **Study L** for literature.

Choosing qualitative research methods enables both exploration and explanation of the perceived obstacles and challenges in enhancing CDW current practices. Such a methodology allows for an in-depth examination of the stakeholders' actions, motivations, and interpretations of the environment (Silverman, 2013). The qualitative approach is particularly suited to achieving a comprehensive understanding of the nuances in this context, offering insights into the actors' behaviors and attitudes towards the issue at hand (Flick, 2014). This study centers on individuals within their institutional contexts, where these contexts not only shape their behaviors but also impact their interpretations of significant events and their decisions to either maintain or change the existing conditions.

The methods include semi-structured interviews, workshops, observations on-site and in contexts with focus group to discuss first CDWM and then circularity related topics. We talked to various stakeholders in different trades, such as architects, contractors, and property owners, with diverse roles within their respective organizations, such as project, site, production, and environmental managers. I follow a thematic analysis to identify patterns within the data (Flick 2014). The process involved transcribing interviews, generating codes, defining themes, and iteratively refining the analysis to align with the paper's objectives and theoretical framework (Braun and Clarke, 2006).

The main aim of my PhD is not to draw broad generalizations from the findings but to improve the study's transferability by offering thorough insights into the research process and its specifics. To strengthen the credibility of the results, the study adopts a comprehensive approach focused on enhancing reliability and validity. By ensuring transparency in data collection and analysis, providing detailed descriptions of the research process, and actively addressing potential biases, I aimed to produce findings that are robust, credible, and applicable to various contexts.

During the five years of the PhD, I also changed the way I deliver my results, moving from a thesis by publications for my licentiate -Swedish mid-term in a PhD process- to a monography for my final delivery, and this for three reasons. Firstly, I found that the most intriguing questions couldn't be thoroughly explored within the constraints of the paper format, which prioritizes specific research results over the research process itself. Moreover, the monography provided more space for unfolding a comprehensive literature review and a detailed methodological discussion, elements that are often limited in journal articles. Lastly, the article format requires clear, well-defined contributions, whereas my results were often complex, partial, and sometimes contradictory, requiring, I felt, a more nuanced presentation.

This chapter is organized as follows: It starts with a section on research design and approach and explains the rationale for using qualitative methods, aligned with a constructivist ontology and interpretative epistemology and builds the PhD framework, which uses qualitative methods to examine the transition from waste management to circular business models. Given the complexity of the social phenomena under study, this approach allows for a detailed exploration of participants' views and experiences. Then, I organized my process into two phases: before and after the licentiate. Accordingly, the four studies - M, L, B, and F - are presented based on the timeline of their execution. The participant selection is detailed, explaining the methods used to ensure diversity and representation for each study. The data collection methods section describes the techniques and instruments used, such as interviews, observations, focus groups or workshops and outlines the procedural steps followed for the three empirical studies. Ethical considerations are addressed, detailing measures for participant confidentiality and the informed consent process. The data analysis section then outlines the coding and analytic techniques, ensuring the findings are systematically developed. The chapter also discusses the trustworthiness and credibility of the research through strategies like triangulation and member checking and concludes by acknowledging potential limitations and their impact on the study's generalizability. This methodology chapter ensures that the research is robust, credible, and ethically sound, making a valuable contribution to the field of construction management. The chapter ends with a reflection on my own practices as a researcher.

4.2 PARADIGM AND RESEARCH APPROACH

My PhD project employs an exploratory research framework that utilizes qualitative methodologies for gathering empirical material. Based on a constructivist ontology, which suggests that reality and institutional frameworks are products of social constructions (Zilber 2013). This perspective on the nature of reality suggests that reality is not a fixed, objective entity but rather is constructed by people through social interactions and experiences. This viewpoint argues that our understanding of the world is shaped by our perceptions, social encounters, and the meanings we attribute to events and interactions rather than being an independent reality that exists outside of our perception (Creswell, 2016). Additionally, the collection and analysis of my empirical data are guided by an interpretative

epistemology, which underlines the significance of understanding individuals' subjective meanings and interpretations of their experiences (Bell and Bryman, 2022). This approach also recognizes that individuals' interpretations are heavily influenced by their social, cultural, and historical contexts. The understanding of these contexts is necessary for interpreting individuals' experiences and actions (Creswell et al. 2016). This paradigm also acknowledges the interactive character of the research process: researchers and participants engage in a relationship and influence each other, and therefore contribute to co-construct meanings (Creswell et al. 2016). Despite their distinctions, interpretivism and constructivism share common ground in their focus on understanding the subjective experiences of individuals and the meanings they attach to those experiences. Both reject positivist notions of an objective, singular reality that can be quantified and understood independently of the observer. Instead, they advocate for a deep, nuanced exploration of the complex, multifaceted aspects of people's experience and knowledge and allow us to gain a comprehensive understanding of the topic at stake from the perspectives of those experiencing them within their specific contexts and through their unique processes of meaning-making (Creswell and Poth, 2016). The interpretative research approach is aligned with the theoretical frames of institutional work as it seeks to describe the how and why of social actions, as the theory is concerned with how actors consciously act to shape their institutional setting on a micro-level (Hampel et al., 2017). Actors are viewed as capable beings who can perform actions counterintuitive to the institutional prescriptions. It is further emphasized that neither institution, institutional work or institutional logics are something that exists or something that individuals 'do', it is merely a theoretical lens that is used to analyze a specific phenomenon, where the theory enables us to both organize and interpret the complex and ambiguous social world (Zilber, 2013).

The PhD process

To clarify the presentation, I divide the Ph.D. process into two sections, separated by the licentiate thesis. A thematical representation of the research process is shown in Figure 1 below. The first period thereby covers the empirical material gathered within the frame of the licentiate thesis from 2018 until 2020.

The focus during this first part of the process was to investigate how the different actors contribute to CDW's existing practices and account for the current situation in the sector, Study M, as well as describe the regulative setting framing their actions, Study L.

The material consists of information gathered for the two studies carried out during this period. Here the primary focus has been on how two actors, demolition companies and large contractors, and their efforts in either maintaining or transforming construction and demolition waste management practices. This was also complemented with material from a data set gathered prior to the initiation of the Ph.D. and the literature study covering the Swedish legislative framework. For the second period, ranging from 2021 until 2023, the focus shifted toward construction actors' efforts in the development of circular business models.

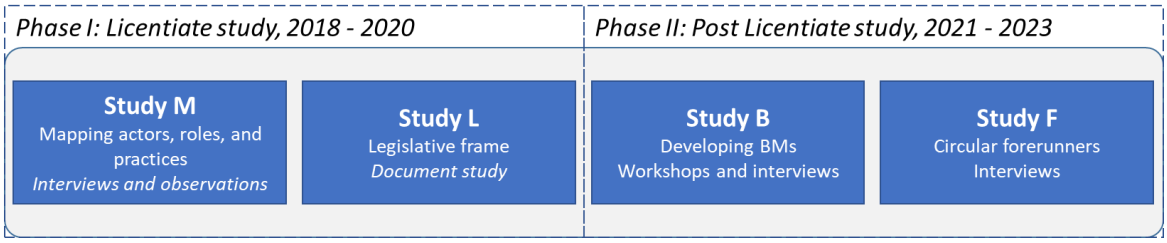

Figure 1 - Studies included throughout Ph.D.

4.2.1 Phase I: Licentiate study, 2018 - 2020

The initial data set in this Ph.D. project (Study M) concentrated mainly on two key players: the contractors and demolition companies. This choice was influenced by the central role contractors play in coordinating construction and demolition waste management during the production phase. Furthermore, they are seen as established companies, '*incumbent firms*' equipped with the resources to hasten the shift toward more sustainable CDWM practices within the sector (Geels, 2011). This focus aimed to deepen our understanding of their waste management organization strategies and their interactions with subcontractors, suppliers, and clients. Within these companies, the study primarily targeted two groups: environmental managers, especially those tasked with enhancing waste management practices, and a second group composed of personnel involved in construction projects, including project and site managers, supervisors, quality engineers, and construction engineers.

The demolition companies play a central role in waste management, especially during the demolition phase. These companies are also often neglected in the waste management literature (Bosch-Sijtsema and Buser, 2017) but become particularly important in a Swedish context as they are often assigned the responsibility of ensuring proper management of the material on-site and what happens afterward. Study M also includes interviews with managers in different positions as well as site visits. It also included complimentary interviews with one recycling representative and a subsidiary of one of the large contractors.

The final part of the first phase of this research process, Study L, focused on the policy and legislative framework concerning CDWM and how it defines the conditions for adopting more sustainable waste management practices. This was done by gathering various directives, reports, and guidelines issued by actors such as the EU, Swedish government, municipalities and industry associations.

4.2.2 Phase II: Post licentiate study, 2021 – 2023

The concept of circular economy was already a central element in the first phase of the research process; however, it became even more crucial in the second phase. Here, the focus shifted from a focus on CDWM and broadened into a discussion on circularity and the development of circular business models. This change can be explained for three reasons:

1. Shifting focus from material and technical flows to establishing a new market, EU policy (EC 2022) recognized businesses and consumers as central players in driving the transition process. It also proposed that the extra costs associated with adopting circular practices for

new constructions, renovations, and acquisitions should be counterbalanced by the mechanisms of this newly established market.

2. Discussing waste management without clear end-use strategies and possible financial gains proved useless. Building on my initial analysis of institutional logic and institutional work, I discovered that most companies would not engage in transition without clear KPIs and evident economic benefits.
3. Aside from the EU's shifting priorities, another factor contributing to this change is the increasing volume of research in the circular economy, which has also begun to influence the field of construction management. Although its application of circular principles is only in its early stages, the research contribution has continuously been growing and prophecies great potential for the construction industry to increase its resource efficiency and efficient use of materials (Oluleye et al., 2022).

The second process of the Ph.D. has included two studies, an action research project, study D, which relies on an action research approach that aims to support small and medium-sized enterprises in the development of new and more sustainable business models. The second study, study E, was carried out with the intent to identify best practices amongst the forerunner construction companies who have already engaged in the process of developing new business models that incorporate circularity principles. A chronological representation of the different studies included is shown below in Figure 2.

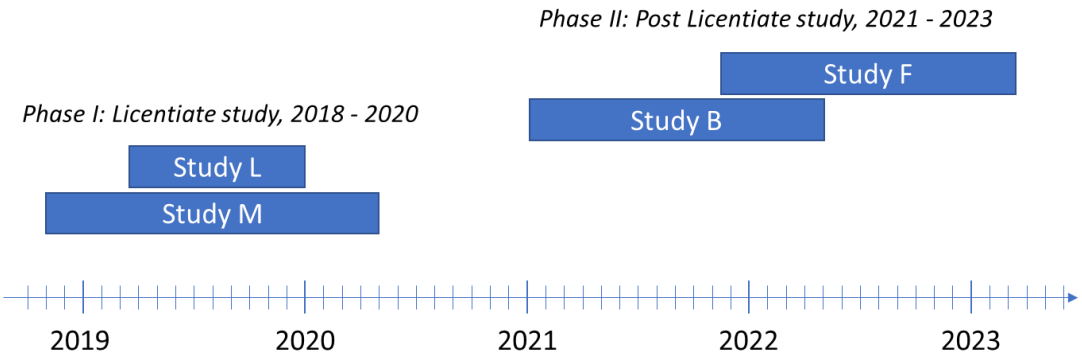

Figure 2 - Chronological representation of studies included

4.3 Phase I – The initial phase of the Ph.D.

4.3.1 Data collection

To adhere to the institutional work agenda, we focused on the micro-level actions and interactions of individuals. Our data collection steps emphasized interviews and observations to capture practitioners' activities and their meanings (Zilber 2008, Smets and Jarzabkowski 2013). Specifically, we targeted demolition companies and the three largest contractors in West Sweden, as they are integral to CDW production and management. Demolition companies were identified through snowball sampling and web searches using specific trade terms (Bryman 2016). Out of 21 companies contacted, seven participated, involving 11 managers or owners who possess formal authority to drive organizational change (Battilana et al. 2009).

We also reached out to the three largest contractors in Sweden, who are key players in shaping the CDW institutional field. This approach is consistent with exploring emerging phenomena (Yin 2009).

Initially, we interviewed environmental managers at the regional level. Although their formal roles may differ, they share the common task of developing and implementing CDWM processes within their organizations. These managers introduced us to site managers, allowing us to gather detailed information on CDW practices and attitudes at the project level. A total of 13 project, site, and production managers from four different sites participated in the study.

Data collection primarily involved semi-structured interviews with practitioners in the CDW field, a method frequently used to study institutional work and identify actors' roles in shaping their institutional contexts (Lawrence et al. 2011, Granqvist and Gustafsson 2016, Dahlmann and Grosvold 2017). By combining these data collection methods, we aimed to capture a comprehensive view of the ongoing activities related to the new regulatory framework in CDW, focusing on both individual actions and broader organizational practices.

Semi-structured interviews

The main method for collecting empirical material is semi-structured interviews with the intent to gather the experiences, perspectives and subjective viewpoints of the participants (Flick, 2014). This method is also described as particularly "*useful for understanding how people make sense of their work and the issues they believe are important*" (Barley and Kunda, 2001, p.84). It partly involved the gathering of a more descriptive understanding of the different practices adopted in the CDWM process, the context in which it is carried out and the complexity of the field that the respondents are facing. An important aspect was also to encourage the respondents to elaborate on the activities within their line of work, and the perceived potential to improve the current situation (Smets and Jarzabkowski, 2013). This has provided a description of the respondent's subjective understanding, justification and explanation of what they do and why they do it (Dahlmann and Grosvold, 2017). Thereby also providing both a retrospective account of the development of the current situation and the actors' perception concerning the potential for improvements. This has led to a deeper insight into the underlying motivations behind why individuals undertake specific actions and their intentions in doing so. However, it is crucial to acknowledge that the strategic actions of actors do not invariably achieve their intended results and can sometimes lead to unintended institutional consequences (Patterson and Beunen, 2019). Understanding this dynamic enhances our grasp of how individuals interpret their institutional contexts and how they transform these interpretations into actions.

The sampling of respondents in Study M has been based on a combination of selecting actors providing demolition services in the construction industry and large contractors. It builds on a sample of convenience where the accessibility and possibility to carry out face-to-face interviews were privileged (Bell et al., 2018). The different participants were found by searching the internet for companies in the nearby region where the study was carried out. The sample consisted of large contractors in Sweden, where the initial contact was made with the environmental managers within the three organizations as we wanted to contact individuals responsible for sustainability and waste management issues. These individuals were thereafter asked to provide contact information to individuals operating within the project organization.

An interview guide was designed prior to the interviews with the demolition companies, and this was later adapted to the contractors. The guidelines were categorized into three sections. The first part focused on the respondent's background such as educational background, professional experience and current role in the organization. The second part asked for a generic representation of their

project process and how elements of waste management are incorporated. The third part shifted toward their perception, the potential for improvements and their ongoing efforts, and the perceived challenges to changing WM practices. Some adaptations were made to the guidelines according to information available about existing projects and efforts to improve CDWM in the organization. Different emphasis was also placed depending on the respondent's role in the organization and their scope of responsibility.

All the interviews conducted for study M were carried out by me, occasionally accompanied by one of my Ph.D. supervisors. These interviews took place either in the respondent's office or at construction sites, typically lasting from one to one and a half hours. On eight occasions, they were performed as group interviews with more than one representative from the organization. In total, the empirical material in terms of interviews consists of 22 interviews with 30 respondents. They mainly include large contractors and demolition companies, but also other actors such as recycling contractors, clients, architects, municipality representatives, and a representative from the Swedish Construction Federation. An overview of the interviewees of study M is presented in Table 4 below, where the numbers within brackets indicate the numbers of interviews carried out in a pre-study by my supervisors and the number without my own interviews.

Organization	Interviews	Respondents	Positions
Large contractors	10	13	Project-, site-, production manager
	3	3	Environmental manager
Demolitions small-medium contractors	6	10	Project-, site-, production manager
	1	1	Environmental manager
Large contractor - subsidiary	(1) 1	(1) 2	Business development manager,
Recycling contractor	(3) 1	(4) 1	Business development manager, coordinator
Architect	(1)	(1)	Environmental manager
Municipality	(1)	(2)	Unit manager – Environmental dept. manager
Construction industry association	(1)	(1)	Officer in charge of WM
Clients/FM	(2)	(2)	Project managers
Total	(9) 22	(11) 30	

Table 4 - Interviews Phase I

Site visits and observations

A complementary method for collecting empirical material throughout this research project has been attending different meetings and site visits where CDWM was organized, discussed, or carried out. I was part of five site visits carried out either alone or in the company of one of my supervisors. The site visits in relation to the interview provided the opportunity to observe and get an overview of the site and allowed the interviewees to reflect on the opportunities or challenges that come with it. A site visit was also performed at a recycling plant in connection with the interview with its representative. The study also included attending 2 startup meetings arranged by the main contractors in one of their projects where they introduced a new waste management concept to their subcontractors. This was later complemented with a site visit to observe and gather the practitioner's view on its implementation. The different site visits, which took around two hours, were documented with both notes and pictures, and some of the discussions were also recorded.

The observations have also included participation in 2 workshops and 3 seminars on circular economy and waste management, which brought together practitioners from the construction sector.

The main focus when visiting sites, attending workshops, or participating in meetings was to observe and gain an understanding of the context and the actor's attitude towards and perceived challenges to improve CDWM practices. This was done to gather the interpretations and understandings of their '*reality*' and see what the participants do. To identify how actors exert elements of their understanding as a mean to shape the view of others through the adoption and dismissing of certain elements (Zietsma and McKnight, 2009), how they argue for and against to either dismiss or accept the proposed actions to improve CDWM. This provides insights into the process of how a shared understanding and consensus can emerge from negotiation and co-creation during the actor's interactions. The observations took place on different occasions from October 2019 until November 2020 and the number of observations is presented in Table 5 below.

	Occasions	Type	Purpose
Construction project related	5	Start-up meetings, site visits	Increase understanding of the contextual conditions that define the CDWM process; Introduce a new CDWM concept for subcontractors
Industry related	7	Webinars, workshops, presentations	Discussions and presentations related to actors' efforts to implement sustainable CDWM practices in their business.
Total	12		

Table 5 - Observations Phase I

Documents study

Study L of this Ph.D. project consists of a document review of the existing policy framework referring to waste management within the construction industry. The primary focus of this work was to gain a broader understanding of the legislative framework that is putting pressure on the actors to transition to more sustainable practices. Public policies have been viewed as an inclusive term that ranges from legislations, directives and other regulatory measures as well as other types of documents such as guidelines and defined targets.

The review includes documents from actors across three levels, with the largest actors at the macro level, including state regulators like the European Commission and the United Nations. They are providing broad guidelines as to how the member countries can create sufficient conditions to improve waste management and initiate the transition to a circular economy. These directives aim to reduce the amount of waste generated, increase reuse and recycling and improve how the waste is managed. The second level includes the legislative frame in Sweden that describes the purpose, definitions, distribution of responsibilities and the necessary actions to both prevent and manage waste. The third level includes industry guidelines defined by industry associations as well as municipalities' recommendations and guidelines related to CDWM. The primary document from the Swedish Construction Federation was the "Resource and Waste Guidelines during Construction and Demolition," which is widely recognized in the industry and has been approved by the member organizations. The material gathered has been issued during a timespan ranging from the beginning of 2000 to 2020 (Andersson, 2020). A selection of documents included in the study can be found in Table 6 below.

Data type	Document specification
EU	Directive 75/442/EEC, Regulation (EC) No 2150/2002
	Directive 2008/98/EC, Directive 2014/95/EU
	Directive 2014/955/EU, Council Directive 1999/31/EC
	Directive (EU) 2018/851, Regulation (EU) 2019/2088
	Regulation (EU) 2020/852, Regulation 2021/2178
	Directive (EU) 2022/2464, Directive 2014/95/EU
	Action Plan: Financing Sustainable Growth (2018)
	The European Green Deal (2019), Circular economy action plan (2020)
	A Renovation Wave for Europe (2020)
	Financing the green transition: The European Green Deal Investment Plan (2020)
	2030 climate target plan (2020),
	Closing the loop (2015)
Swedish - National	Swedish environmental protection agency 2019 *Who does what with construction and demolition waste*
	Swedish parliament 2010 *Planning and building act (2010:900)*
	Swedish parliament 2011 *Waste regulation (2011:927)*
	Swedish parliament 1999 *Legal act (1999:673) on waste tax*
	Swedish parliament 2001 *Regulation (2001:512) on waste landfills*
	Swedish Construction Federation 2019 *Resource and waste guidelines for construction and demolition*
	Swedish parliament 1998 *Miljöbalk (1998:808)*
	Swedish Environmental Protection Agency 2019 *From waste management to resource efficiency* (Bromma)
	Swedish environmental protection agency 2017 *Steering towards efficient waste management – An evaluation on the national waste management plan and waste prevention program*
Swedish - Local	Swedish Construction Federation *Resource and Waste Guidelines during Construction and Demolition*

Table 6 - Selection of documents included in Study L

The literature review involves *analyzing* the material and comprehending the social world, both of which are essential for understanding the phenomenon at hand. The approach used for identifying, analyzing, and reporting patterns in the data has primarily been thematic analysis (Flick, 2014).

Analysis of the empirical material

Though the data set and aim of the papers have been different, the process of analysis has corresponded to the phases described by Braun and Clarke (2006).

The initial step in organizing the empirical material involved transcribing the recorded interviews, ensuring that every detail was accurately captured. This comprehensive dataset primarily consisted of interviews but was enriched with field notes and detailed protocols from various observations made during the research process.

Each interview transcription was systematically matched with the corresponding observation material to ensure a cohesive understanding of the context and content. This meticulous matching process helped in creating a foundation for subsequent analysis. Once all the data were gathered, I immersed myself in it by reading through the material multiple times. This repetitive reading allowed me to familiarize myself thoroughly with the data, ensuring that no nuances were overlooked.

Following this, a process of generating codes from the data extracts commenced. These codes were then categorized into different themes. This stage of analysis was guided by the content of the empirical material, and the theoretical framework adopted (Dubois and Gadde 2002, Jarzabkowski et al. 2009). Our first goal was to identify forms of work in line with the typology of institutional work by Lawrence and Suddaby (2006), Lawrence et al. (2013), and Hampel et al. (2017). Using Nvivo software, we employed open coding to identify relevant concepts and group them into categories, seeking evidence of institutional work performed either internally within the organization or externally to influence the existing field (Clarke et al. 2015, Bryman 2016, Silverman 2015, 2020). Initial codes included terms such as "resisting changes," "valorizing existing practices," "verbalizing tension between existing practices and new demands," and "engaging in external network activities." We then identified relationships among these codes to form themes (Clarke et al. 2015, Silverman 2015, 2020). These themes were refined through connections to literature on institutional work (Lawrence and Suddaby 2006, Lawrence et al. 2013, Hampel et al. 2017).

The results were organized into two categories:

Discursive Category: Emphasizing actors' opinions, how they generated and communicated ideas, e.g., re-labeling terms or positioning themselves in workshops (Schmidt 2010, 2015).

Action Category: Focusing on the work performed to shape the institutional context, e.g., participating in networks or defining organizational goals.

My supervisor and I completed both rounds of thematic analysis separately, followed by comparing, discussing, and debating our findings.

To find patterns and themes, the researcher condenses the material and selects what to focus on and, thus, what to exclude (Rennstam and Wästerfors, 2015). To determine whether a theme was found, I followed Ryan and Bernard (2003, p.87) advice that "*You know you have found a theme when you can answer the question, what is this expression an example of?*". An attempt to illustrate how actions were translated into forms of institutional work can be seen in Table 7 below.

Examples identified in the study	Definition	Forms of IW
Building on CE principles and forthcoming legislation to advocate for changes Lobbying for the application of CE principles at local and national levels	The mobilization of political and regulatory support through direct and deliberate techniques of social persuasion	**Advocacy**
Establishing new rules and goals related to waste within the organization Creating prizes and rewards New certification systems	The construction of rule systems that confer status or identity, define boundaries of membership or create status hierarchies within a field	**Defining**
Defining new set of competences, roles and functions in the organization New actors entering the CDW field	Defining the relationship between an actor and the field in which that actor operates	**Constructing identities**
Creating thematic groups related to CE within the organization Investing in electric machines and vehicles.	Re-making the connections between sets of practices and the moral and cultural foundations for those practices	**Changing normative associations**
Allying with other companies, research and academic institutions Participating in research projects	Constructing of interorganizational connections through which practices become normatively sanctioned and which form the relevant peer group with respect to compliance, monitoring and evaluation	**Constructing normative networks**
Building on the existing competition between departments to promote CE Investing in the same initiatives as the competitors	Associating new practices with existing sets of taken-for-granted practices, technologies and rules in order to ease adoption	**Mimicry**
Creating and applying new vocabulary Building on the CE concepts	the development and specification of abstract categories and the elaboration of chains of cause and effect	**Theorizing**
Creating training Diffusing new competences	The educating of actors in skills and knowledge necessary to support the new institution	**Educating**

Table 7 - Examples of actions identified for the creation work, (Andersson and Buser, 2022)

The first row in the table shows the actor's statement, the second row shows the definition of the same statement, and the third row contains the type of institutional work.

We triangulated diverse sources to increase the trustworthiness of our results (Bell and Bryman 202). As the study is qualitative and explorative, we did not aim for generalization of our findings.

To avoid too much overlap and for the reader's sanity, since the method I followed for analyzing the material for the next studies is identical to the one presented above, the section will not be repeated again further in the text.

4.4 PHASE II – THE SECOND PHASE OF THE PH.D.

As already explained, the focus of the second phase of the Ph.D. moved from waste management to the more encompassing concept of the circular economy.

The second phase includes two studies. Study B builds on workshops to study three small and medium-sized enterprises crafting business models that integrate circular economy principles. Study F, on the other hand, concentrates on leading companies that have already successfully developed new business models. The focus here is on extracting insights from their experiences to understand the elements contributing to their success.

4.4.1 Circular business models

The first part of the Ph.D. sets out to explore the actors' role in transforming waste management practices in the sector and to investigate how the existing practices are shaped by the institutional setting. To thereby investigate how they contribute to the existing practices and account for the current situation in the sector. For the second phase, the aim has been to explore the role of discourse in shaping the development of circular value propositions in organizations.

To observe the actor's institutional work to create projects and develop strategies towards the integration of circular economy principles, I rely on the tool of circular business models. As previously discussed, the circular economy paradigm has received vast attention worldwide due to its focus to "*conserve finite resources, reduce waste, and shift away from the linear economy*" (Oluleye et al., 2022, p.1). However, in order for the circular economy to be realized, it requires companies to rethink how value is created and offered to their customers (Lüdeke-Freund et al., 2019). In theory, this approach encourages businesses to move from profit generation through product sales to earning profits from the continuous flow and reuse of resources and materials. Using a circular business model should allow companies to rethink their strategies by providing economically sustainable methods where products and materials are reused and, whenever possible, rely on renewable resources, offering new value creation over time (Bocken et al., 2016). Business models have therefore been proposed as a suitable framework for organizations to reconsider the design and processes related to how they both create and deliver value. As such, both business models and business model innovation may be viewed as tools which organizations can utilize to offer a more structured approach to fundamentally challenge the way their current business is organized in their attempts to redefine how they create value whilst adhering to CE principles (Fehrer and Wieland, 2021). However, the incorporation of circularity would require questioning the dominant business paradigms and the way companies think of their supply chains, the use and ownership of material and how value is created and delivered to its customers. So, studying how companies engage in new business models should provide a perfect frame to observe of how institutional work can be mobilized to transform an organization.

4.4.2 Study B

The workshops

To examine the process of developing sustainable business propositions, we adopted a context-bound approach that addresses this real-life challenge. The workshops provided a setting where participants engage in discussions and activities, allowing us to observe and analyze the process of knowledge generation. This approach was informed by the principles of action research (Greenwood and Levin, 2006), but we emphasized the communicative interactions among participants rather than direct researcher involvement in shaping the outcomes. Action Research (AR) is typically described in literature through the AR cycle, also known as the plan-act-reflect cycle (Lewin, 2005), which is intended to facilitate behavioral and conceptual changes among participants. However, the simplicity of this model has been critiqued for not capturing the dynamic and often non-linear nature of AR processes. Researchers like Herr and Anderson (2005) illustrate its non-linearity, while Chisholm (2001) points out its messiness. Despite these complexities, Stringer (2014) views the cycle as a useful guide, though acknowledging its limitations.

Participation is a central principle of Action Research (AR), which emphasizes collaborative knowledge creation and action design, involving local stakeholders as active partners in mutual learning processes (Greenwood and Levin, 2007). AR is characterized by the co-construction of practical knowledge by all participants through research, action, and reflection (Dover and Lawrence, 2010). According to Greenwood and Levin (2007), involving participants in jointly addressing their challenges fosters greater engagement and motivation to develop solutions. In contrast, our approach to the workshops has been more observational. Rather than actively co-creating knowledge or directly facilitating action, the workshops have provided a structured environment where SME contractors engage in the process of discussing and testing the possibilities of new business models. The focus has been on documenting participant interactions, discussions, and emerging ideas, allowing insights into how they navigate challenges and identify potential solutions. While collaboration among SME contractors remains a key aspect, our role has been primarily to study these dynamics rather than to guide or intervene in the process.

In an AR process, both insiders (the organizational members) and outsiders (facilitators and observers) participate in the mutual learning process. Thereby shifting the perspective of the actors from being treated as '*subjects*' to participants who are active and engaged in the research process. Through the AR process, we seek a personal encounter with the participants to gain their insider knowledge and to better understand their perception and attitude on the matter discussed. Thereby reflecting their everyday experiences and unique situations (Dover and Lawrence, 2010).

This approach also allows the researchers to support the process and motivate the individuals participating in a workshop format to influence both their perception of the matter as well as how they behave (Lawrence, 2010). Action research may be described as a collaborative form where the researchers and practitioners work together and where it has been argued that the interaction and dialogue between the 'scientific expertise' among academic researchers and the 'professional expertise among practitioners contribute to improvements and relevance in empirical research (Malaurent and Avison, 2017). The aim in our workshops was to give the possibility to the company to discuss the actual and future business activities so that new practices may emerge that would deliver substantive change for the participants and their surroundings. The approach gives 'voice' to the

different participants, which hopefully will generate critical reflection and awareness of both their positions and their own resources. Here, the diversity of experience gathered by the group members is valued as it enriches both the research and development process (Greenwood and Levin, 2006).

By adopting this approach, it enables us to observe what people do, not only what they say they do; it stages a situation that provides a representation of the different actors' efforts to shape the outcome of the events. It creates a space where a common discourse among collective actors may occur as a result of each individual process of sensemaking and through collective discussion, arguments, and debate. The process is viewed as an ongoing achievement where the participants discuss and debate over how reality is interpreted and make assessments of the possible routes forward for them (Greenwood and Levin, 2006). It thereby allows for a closer connection to what is being observed and connects us with the practices of individuals and organizations, and let us witness how they cope with and also make attempts to influence their institutional setting (Dover and Lawrence, 2010).

In the authors (Dover and Lawrence, 2010) attempt to promote a shift in the study from organizations and institutions, towards the micro level of individual and organizational practices as they cope with their institutional context, they argue for the potential of action research. They claim that the application of participatory action research could lead to new answers to 'key questions', and also to energize its development through the interaction between academics and practitioners on practical issues that matter. According to them, the two perspectives share important common elements. The three parts that connect them in particular are outlined in Table 8 and include the primacy of heterogeneous agency, the importance of practice, and recognition of situated knowledge.

	Institutional Work	Participatory Action Research
Heterogeneous agency	The importance of individual and collective actors and their awareness, skill and reflexivity. Recognition of the 'janitors' and 'mechanics' in institutional processes that have been overlooked.	Participants viewed as competent, reflexive and capable of participating in exploring their social worlds and realizing change. Focused on assisting powerless groups of people, for example, the exploited, poor, oppressed and the marginal.
Emphasis on practice	In studying the practices that create, sustain and disrupt institutions, wider effects might be explained. Interest in understanding how diverse actors combine on common projects.	Understanding practice as the basis for action and change. The development of new shared practices to transform social arrangements.
Situated knowledge	Actors are embedded in institutional contexts. Agency and practices operate within institutionalized rules.	Participants are knowledgeable of their specific situation. Recognizing tacit knowledge can enable actors to engage in substantive change.

Table 8 - Finding common ground (Dover and Lawrence, 2010, p.308)

This approach allows us as researchers to move closer to organizational actors' day-to-day concerns and experiences (Dover and Lawrence, 2010). So, instead of what is common in the studies of institutions and organizations, bearing retrospective accounts of institutional change, the participation to the workshops allows us to better explore how meanings, practices, and structures interact (Zilber, 2008b). Adopting a research approach similar to AR should let us take part in the ongoing process of actors' attempts to shape assumptions, values, and beliefs, thereby shaping behaviors and adopted practices. This becomes particularly useful as institutional work emphasize actions that are often unintentional, less visible and often more mundane (Zilber, 2008a).

AR is a dynamic process, and as Greenwood and Levin (2007) suggest, as the research evolves, the various components will align, leading to a clearer direction and defined objectives. This might sound straightforward, as if the process unfolds effortlessly. However, in reality, researchers and participants must collaboratively identify the problem, investigate it, take action, interpret results, reflect, learn,

and develop solutions together. This is the ideal scenario, though projects seldom proceed exactly as planned. According to McNiff and Whitehead (2009), when participants engage actively, they transition from being passive recipients to becoming influencers who shape their learning and involvement. Theoretically, if everything goes as intended, participants will work together to resolve the issue at hand and emerge as proactive agents of change within their environments, rather than mere subjects of study. However, conducting research with real people who have their own interests and schedules introduces complexities that may challenge the smooth execution of an AR process.

Using CBM as tools for knowledge production

Workshops on developing circular business models can serve as an effective tool in studying setting where stakeholders, such as businesses, researchers, and community members can co-create solutions that promote sustainable practices (Stringer, 2014).

The goal of the AR workshop is to foster knowledge development and collaboration among participants, enabling them to co-design innovative circular business models. Initially, stakeholders should identify challenges and opportunities within their context, setting a clear research direction. In our cases, the workshops were intended to facilitate knowledge exchange between diverse participants, sparking new ideas and solutions. Through iterative cycles of planning, acting, observing, and reflecting, participants could test and refine their concepts in real time. This process should have enhanced their capacity to apply circular economy principles, leading to actionable plans for implementation. The workshops also served as platforms for evaluating outcomes, refining strategies, and advocating systemic changes to support the transition to circular business models.

AR is a dynamic process, and as Greenwood and Levin (2006) suggest, as the research evolves, the various components will align, leading to a clearer direction and defined objectives. This might sound straightforward, as if the process unfolds effortlessly. However, in practice, researchers and participants must collaboratively identify the problem, investigate it, take action, interpret results, reflect, learn, and develop solutions together. This is the ideal scenario, though projects seldom proceed exactly as planned. According to Bocken et al. (2018) when participants engage actively, they transition from being passive recipients to becoming influencers who shape their learning and involvement. Theoretically, if everything goes as intended, participants will work together to resolve the issue at hand and emerge as proactive agents of change within their environments, rather than mere subjects of study. However, conducting research with real people who have their own interests and schedules introduces complexities that may challenge the smooth execution of an AR process.

The Workshops

For the AR project, we emailed 57 AEC SMEs in the Gothenburg region to finally schedule workshops with three of them. We selected companies by looking at their websites, focusing on the ones explicitly claiming to want to engage in sustainable development and circularity.

The agreement with the companies entails an intro session, three workshops aimed at defining new business models building on the company's current organization and process, and a wrap-up meeting to assess the results. Besides, several interviews were conducted with the participants during and after the process. The work was carried out over five months, between May 2022 and November 2022. All the workshops but the first one took place in the companies' head quarter.

Methods

At least two researchers have been present during the sessions, one taking on the role of a facilitator, and the other as an observer. The workshop built on a tool designed for green business development as support to the discussion. The tool is intended to help businesses develop and implement sustainable and circular business models. It adapts the traditional Business Model Canvas (BMC) by incorporating environmental and social sustainability aspects, guiding companies in aligning their operations with circular economy principles, resource efficiency, and sustainability goals.

The canvas typically consists of nine key building blocks, similar to the classic BMC but with a strong sustainability focus:

1. Value Proposition – What sustainable value does the business offer?
    - Focus on eco-friendly products/services, waste reduction, renewable energy use, or social impact.
2. Customer Segments – Who benefits from the green value?
    - Identifies eco-conscious consumers, sustainable businesses, government agencies, or local communities.
3. Customer Relationships – How does the company engage customers?
    - Builds trust through transparency, green certifications, and education on sustainability benefits.
4. Channels – How are green products/services delivered?
    - Uses sustainable logistics, digital platforms, and eco-friendly packaging or direct-to-consumer models.
5. Key Activities – What operations drive sustainability?
    - Focuses on circular production, renewable energy use, eco-innovation, and sustainable supply chains.
6. Key Resources – What assets support the green business?
    - Includes sustainable materials, energy-efficient infrastructure, and partnerships with green suppliers.
7. Key Partnerships – Who supports the sustainability strategy?
    - Collaborates with environmental organizations, ethical suppliers, circular economy networks, and regulators.
8. Revenue Streams – How does the company generate income sustainably?
    - Introduces green pricing models, circular service subscriptions, pay-per-use, or upcycling profits.
9. Cost Structure – What are the financial implications of sustainability?
    - Analyzes costs related to renewable energy, circular supply chains, and sustainable innovations.

By mapping out all elements in a structured way, companies can visualize, refine, and implement sustainable business strategies that create value while reducing environmental impact.

The facilitator's role was to ensure that participants fully understood each content block and progressed in their development by engaging with the nine key features. This involved not only presenting the material and initiating each session but also leading discussions, creating a comfortable environment for participation, and supporting meaningful interactions among participants. An important aspect of this role was balancing open dialogue with maintaining control over the conversation’s direction. Above all, the researchers did not act as consultants or experts to influence or guide the companies' solutions. Instead, their focus was on observing how the tool triggered the participants to define, test, or develop sustainable investment opportunities. An additional advantage

of having multiple researchers present was the ability to conduct comparative interpretative discussions after the event. This allowed for deeper analysis of both the content and the participants' responses, enabling richer reflections on the activities and stakeholder interactions (Malaurent and Avison, 2017).

While the process enables us to influence the events' outcome, the main objective is to observe how participants interact. In the workshops, researchers have taken on roles as either facilitators or passive observers, aiming to document the process. The focus has been on participants' activities, their interactions with each other, and their engagement with the tools provided for each session. Attention has been given to specific behaviors, group dynamics, and social norms, encompassing both verbal and non-verbal communication. Although my primary role has been to observe the sessions, the level of participation has varied across different workshops, and at times, I have also taken on the role of facilitator.

In an attempt to impose structure and creativity, different forms of objects recur throughout various sessions (Eppler and Hoffmann, 2012). These would include visual representations and PowerPoint presentations about business models, interactive boards for the participants to visualize their organization, and writing down and defining the various dimensions of their business model. The setting is illustrated above. The purpose of my PhD was not to assess the quality of the model and how well it contributed to the process but to observe how the participants navigate and form their meaning, and how they make decisions to engage or not in changing their business. Figure 3 below illustrate the setting for the workshop.

Figure 3 - Illustration of the setting for the workshop Greenbizz copyright

The documentation was done through notes in an observation sheet developed within the group. The observation sheet was divided into different aspects related to each corresponding session. The first part included three sections covering questions related to the business model dimensions discussed, the participants' interaction with the tools, the role of the facilitator and observer, and how the session was documented. In addition to this, photographs were used to document the outcomes from the session, and all the sessions were also recorded and later transcribed.

Though there has been a general view that the researchers' ideas and suggestions should be limited to not impose our own values and beliefs, this has also been used to ensure continuity and to energize the discussions. To a varying degree, but similar to the description in Malaurent and Avison (2017) the participants in the workshop perceived us, the researchers, as experts within the field. Because of this, there seem to have been expectations for us to contribute to the development of their business. The participants were referring to us when in doubt to seek support or expecting us to provide solutions for how they could generate successful and sustainable value propositions. However, our shared purpose has been to facilitate a setting for them to build their new business models on their own.

The three case companies include one contractor Company A, one total entrepreneur Company B, and an architect workshop Company C.

Case company A

Company A is a contractor whose core business is managing and implementing construction contracts along the Swedish West Coast. They were established in the late 1920s, with the head office in one of the larger cities within the area of its main operations. Today, the organization consists of around 70 employees and includes both white- and blue-collar workers. According to themselves, their ambition is to become the first choice when it comes to building schools and multi-family buildings, renovating apartments, and carrying out reconstruction of public premises, office environments, and hospitals. Their customer mix consists of about an equal mix of public and private customers, and the aim is that most of them should be returning customers.

As a company, they aim to position themselves as a competent actor in the industry, with a core ability to deliver complex projects. Their primary and then preferably in the product areas; school, health and other public buildings as well as remodeling and new construction of homes and offices. To do so, they strive for organizational excellence that ensures high quality in all their deliveries, ranging from business proposals and tenders to planning, implementation and handover. This is to be achieved through strong collaboration among all their employees, who all take part in the development of their business.

Their sustainability work is based on three overlapping dimensions: ecological, social and economic sustainability. All three are considered important for running a responsible business. The overarching goal for their business is divided into three parts, to contribute to reduced environmental impact, to ensure that their employees should feel comfortable and safe in safe workplaces, and to work according to a sustainable business model, with good business ethics. They therefore wish to contribute to a positive social development together with their customers, suppliers and employees. These goals take a stance from the sustainable development goals defined by the United Nations where key target areas are translated into organizational goals.

The material gathered through the interaction with company A consists of workshops, meeting observations and interviews.

Case interaction:

For Case company A, five interactions were carried out related to the business model development workshops, summarized in Table 9 below.

After compiling the final results from workshop III, the business developer as well as the environmental consultant received a written report covering the three previous interactions, which were to be discussed during the final feedback session.

Interaction	Content	Participants Case	Participants Academic	Duration
Intro meeting	Presentation of project: Content and scope	Business developer	Facilitator **Observer**	1h
Workshop I	Mapping of existing business models	Business developer, Environmental consultant	Facilitator **Observer**	4h
Workshop II	Defining business model dimensions	Business developer, Environmental consultant Human resource manager	Facilitator **Observer**	4h
Workshop III	Development of new or existing business models	Business developer, Environmental consultant	Facilitator **Observer**	4h
Wrap-up meeting	Presentation of and discussion on results	Business developer, Environmental consultant	Facilitator **Observer**	1h
Total				14h

Table 9 - Interaction Case company A In **bold** my role in the workshops

3 Meeting observations

In addition to the business development workshop, we also followed a group of individuals within the organizations. This group was responsible for developing organizational processes and practices to realize the sustainability targets defined by the company. The group consisted of the business developer, the environmental consultant, and two site managers and has been assigned the formal responsibility by the management group. The aim here was to gather more insights on how they organize their environmental efforts and listen in on how they discuss and debate various aspects related to the broader concept of sustainability.

Case company B

Company B describes itself as a total entrepreneur and consists of around 60 employees. They provide a wide range of services including, among other; crushing and sieving, land and construction work such as excavation, digging, house foundations, bearing layers, surface layers, laying pipes in the ground, construction work such as work with roads, tracks, lines, sewers, or parks, district heating, cabling, fiber laying. The business is based on delivering complete solutions for their customers. The work carried out must maintain high quality and be carried out with modern and reliable machinery. The business is mainly aimed at waste management and crushing together with various contracting work and has a high focus on recycling and the environment. They put their customers in focus and ensure that they are able to deliver what has been agreed on together with their customers. This is achieved through their service-oriented and competent staff as well as with the wide range of machinery. Their main target is customers from small to large contracts and construction assignments to turnkey contracts.

They also have a workshop on their own, but which is mainly dedicated to carrying out services, repair, and preventive maintenance on their own machinery. This is to ensure that the machinery both have high accessibility and reliability and as such can quickly go on to the next job, which they consider to be a benefit to both their customers and themselves. They want to continue to invest forward and to develop their business into the future with the help of, among other things, environmentally friendly machines, expansion of employees, expanding cooperation with both existing and new customers.

In recent years, they have developed an environmental management system that is now certified according to ISO environmental management systems. Through the management system, they aim to constantly improve their operations and ensure compliance with both the applicable legal framework and other environmental requirements that may affect the company.

They have set an internal target that in relation to contracting activities and renting of machines, all employees should strive to ensure that the consumption and handling of energy, raw materials, and fuel is optimal and environmentally friendly. Employees should receive training and be kept informed so that they can act environmentally consciously in their work. Related to their crushing operations the life cycle perspective should always be included as part of their business, and with it an effort to maintain as high sorting ratio as possible.

Case interaction

For Case company B, six interactions were carried out related to the business model development workshops, summarized in Table 10 below.

After compiling the final results from the workshops, two participants received a presentation to be discussed during the final Wrap-up session.

Interaction	Content	Participants Case B	Participants Academic	Duration
Intro meeting	Presentation of project: Content and scope	Environmental manager	Facilitator **Observer**	1h
Workshop I	Mapping of existing business models	Environmental manager, CEO, Area manager, Communication, Human resource	**Facilitator** Observer	4h
Workshop II	Defining business model dimensions	Environmental manager, Area manager,	Facilitator **Observer**	4h
Workshop III	Defining business model dimensions	Environmental manager	Facilitator **Observer**	4h
Workshop IV	Development of new or existing business models	Environmental manager	Facilitator **Observer**	4h
Wrap-up meeting	Presentation of and discussion on results	Business developer, Environmental consultant	**Facilitator** Observer	1h
Total				18h

Table 10 - Interaction Case company B In **bold** my role in the workshops

Case company C

The third case company is a medium-sized architectural office with around ten employees, primarily consisting of architects, but also construction engineers and collaboration partners. They describe themselves as a small team, small enough to be personal and large enough to be able to design complex assignments themselves, with a market-leading position in developing cost-effective housing. As an example, they discuss contracting competitions, which is an approach to achieve the optimal balance between form, function and economy and at the same time identify the most suitable architect for the task. In these competitions, the participants invest their creativity and competence to produce the best proposal, which includes generating long-term values for the organizer and architect as well as for society at large. Their participation in these competitions has been well rewarded with almost 100 percent outcomes with about 10 victories. When it comes to developing the best possible product in competition with others in terms of function, design and durability in relation to what it costs to build, they've had a very good outcome.

This is also aligned with their business proposal to optimize the product in relation to the cost through well-qualified staff and good cooperation. Even though they have broad experience in designing homes, other types of buildings, such as elderly homes, preschools, schools, and offices, are also well represented in their portfolio.

Case interaction

The interaction with Case company C includes 2 workshops, the participants and duration are listed in Table 11 below.

Interaction	Content	Participants Case C	Participants Academic	Duration
Workshop I	Mapping of existing business models	Environmental manager, CEO,	Facilitator **Observer**	4h
Workshop II	Defining business model dimensions	Environmental manager	Facilitator **Observer**	4h
Total				8h

Table 11 - Interaction Case company C In **bold** my role in the workshops

4.4.3 Study F

If the first part of the second phase of the Ph.D. aimed to both support and explore companies in their process to develop more sustainable business models, the second part of this phase was dedicated to the actors which have already been through this process, and as such have developed circular business proposals to their customers. The purpose here has been to identify forerunner companies who have engaged in the process to develop new business models which will provide insight of what value propositions they build on. The concept of circular business models as presented under 4.4.2 has been mobilized to describe, organize and analyze the content of these new solutions.

The empirical material has been gathered again through semi-structured interviews, as this form of enquiry aligns well with the intent of the study, to gather the interviewees experience, perspective and subjective viewpoint from the process of developing circular proposals (Flick, 2014).

The process to identify and select these forerunner companies consisted of four steps, an initial screening was made by visiting industry associations' webpages which gathered companies related to the topic of circularity, where a list of 41 different companies active in the AEC industry were compiled. This list was then evaluated by reviewing publicly available databases, company websites, and professional publications to gain insight into which companies were actively engaged in circular development. This could for instance be that they have participated in pilot projects, actively engaged in a public discussion on the topic, actively participated in industry associations or by partaking in developing tools to facilitate circular processes. However, as the focus of the study was on the development of circular business models, we continued to identify whom of which had, or at least showed strong ambitions to do so, developed circular business proposals. This resulted in 12 companies that we wanted to contact. Here, we aimed for a relatively representative mix of the industry, and therefore included architects, consultants, contractors, as well as suppliers.

To get in contact with the company, I usually contacted the person responsible for environmental concerns via e-mail, where the contact information was commonly available through the company website. They were contacted as their role often becomes central in these types of developments. With the e-mail, I also included information such as a brief background to the study together with a short description about the intent, scope and format of the interview. If additional interviews were carried with individuals from the same organization, potential interviewees were discussed during the end of the interview where contact information was usually provided by the interviewee, i.e. snowballing. So, in total 12 companies accepted to participate, which resulted in 15 respondents representing 8 different companies as shown in Table 12.

The interview guidelines were semi-structured and most of them were carried online.

Number of interviews:

Organization	Companies	Respondents	Positions
Supplier	2	3	CEO, Sustainability manager, Sales manager
Contractors	1	1	Sustainability manager
Architects	1	3	Environmental manager/Architect
Consultant	1	2	Environmental consultant
Property owner	3	7	Sustainability manager, environmental specialist, Project manager
Total	8	15	

Table 12 - Number of interviews study F

Assessing the circularity progress among the companies revealed that initial impressions might not fully capture the diversity of practices across departments and projects. Engaging with various stakeholders within these organizations provided different perspectives on their circularity advancements. This diversity demonstrates the importance of a nuanced evaluation of each company's progress, and the complexity of drawing generalized conclusions. In particular, the gap

between external expectations, shaped narratives shared publicly, and the companies' actual practices has led to some disillusionment among the researchers, who found the realities of the companies' implementations less extensive than anticipated.

As previously mentioned, the interviews, observations, and analyses conducted for these two studies followed the same methodological approach as the study M described at the beginning of the chapter. This included structured and semi-structured interviews, systematic observations of participant interactions, and an iterative process of thematic analysis. The collected data were transcribed, coded, and categorized into key themes to identify patterns and underlying meanings related to the theoretical frame of Institutional work -ref. table 7- and the circular business models in. This approach ensured consistency across the studies, allowing for the continuity of interpreting the findings while trying to capture the nuances of participant experiences. By maintaining methodological consistency and applying the same coding techniques, I try to enhance the trustworthiness of the thesis and provide a deeper understanding of the emergent themes within the research context.

4.5 METHODOLOGICAL CONSIDERATIONS

To gain a broader understanding of the phenomenon, it was essential to explore how individuals' perceptions are shaped by their experiences and backgrounds, which in turn influence their interpretation of their surroundings and drive specific behaviors. This perspective made it possible to contextualize their actions and understand the underlying motivations behind their attempts to either transform or preserve industry practices (Patton, 2002). Given this approach, the aim is not to make generalized claims based on our findings. Rather, the focus is on representing the diverse efforts of actors to influence industry practices and examining how existing practices are shaped by the contextual conditions in which these actors operate.

By adopting an interpretative approach and qualitative methods, the research builds on the description of the quality criteria of credibility, transferability, dependability, and confirmability with the intent to increase the trustworthiness of the research (Patton, 2002, Korstjens and Moser, 2018). To enhance the research's credibility, I drew on multiple sources for gathering empirical material, including interviews, documents, and observations, while involving various actors within the field. This approach supports triangulation and allows for capturing diverse perspectives of reality, rather than aiming to establish a single, definitive truth (Silverman, 2015).

Since the primary aim is not to make broad generalizations from the findings, efforts to support the study's transferability focus on providing thorough descriptions of the research process and the specific context in which it was conducted. Thereby providing others with information to decide whether the findings would be applicable in other contexts. This includes descriptions of the different methods and the context of where it was gathered including a description of how it has been analyzed. By doing so, it enables cross-comparison of the findings among the different sources as well as achieving a more coherent understanding of it (Bell et al., 2018). The studies are not carried out in an ideal space where information is perfect, infinite resources are available and perfect rational behaviors may be observed. As such, the study of the complexity that is going on ‘out there’ will be based on compromises in trying to understand it (Greenwood and Levin, 2009).

The aspect of dependability in the research process involves submerging in the data by reading and re-reading, to increase the understanding of what it contains and means. But also to include a clear

account of the purpose of the study, how and why the different participants for the study were selected, how the empirical material was gathered and during which periods as well as for how the material was prepared for and interpreted (Thomas and Magilvy, 2011).

The confirmability is concerned with reducing the risk and adopting a self-critical attitude of how the researcher's preconceptions affect the research. To ensure that the analysis of the material is not subjected to biased views of the researcher (Thomas and Magilvy, 2011). That even though it is difficult to be truly objective, it is still important that personal values shouldn't be overly influential in the process (Bell et al., 2018). To increase the confirmability of the study and ensure proper interpretation of the data, all the work of analyzing the material except for paper III has been carried out by more than one researcher. The findings were then compared, discussed and debated, thereby reducing the risk of overt influence of personal interpretations. For paper III, both the findings and its underlying process were discussed together with my supervisor to reduce the lack of bias.

4.5.1 Reflection on the research process

What was I looking for

Alvesson and Kärreman (2007) suggest that research should give attention to '*mysteries*'. That we may thereby enable alternative discoveries and ways of explaining phenomenon or '*what's going on here*'. They describe a mystery as something we can experience that runs counter to the dominant and commonsensical understanding of the phenomenon. It often challenges the conventional way of explaining certain phenomenon. In this study, there seems to be a general understanding within the industry that circularity, or more sustainable waste management, is something that we should embrace and strive towards (at least the popularized version which often may hide the 'true' attitude towards the topic). However, in the analysis, I therefore align with the reasoning of Müller and Frandsen (2020) that counter- narratives in the analytical process and the process of understanding 'what is going on here' may help by offering a more informative way of examining the slow progress in the industry. So, instead of focusing on establishing main narratives that are based on 'the most salient, significant and frequent codes', I instead aimed to focus on what could be essential to the empirical discovery: counter-narratives. Rather than attempting to process large volumes of qualitative data as if it were quantitative, the preference is to focus on finding small, insightful details within the vast amounts of repetitive and unremarkable information. Gabriel (2018) proposes that qualitative researchers should adopt the approach of beachcombers, who scan a vast shoreline in search of valuable or intriguing objects and materials. "*A beachcomber will ignore large amounts of sand, rocks and rubbish with eyes that search restlessly for small items of value and interest. In this sense, a beachcomber is in a quest not for objects themselves but rather of possibilities offered by different objects.*" (Gabriel, 2018, p.17). Counter-narratives may be described as the 'stories silenced by the dominant narrative' (Müller and Frandsen, 2020, p.115) which may be identified by treating every story as a potential counter-narrative and acknowledging that multiple narratives, and interpretations of events may be true and which should be embraced. To deconstruct narratives and explore alternative meanings which might have been rejected, ignored and neglected in the dominant narrative. Counter-narratives should therefore not be viewed as the opposite of the dominant narratives, but instead as an alternative version of the same narrative.

Whereas I intellectually subscribe to the idea of focusing on mysteries and counter-narratives, the process has undoubtedly been more challenging than anticipated. Conducting these five studies has

been both exciting and, at times, overwhelming. The process has generated a large volume of empirical data consisting of interviews, detailed observations, and workshop recordings, all offering valuable insights. However, managing such a vast amount of material has proven to be a significant challenge. There have been moments when I felt buried under transcripts, field notes, and recordings, struggling to organize, categorize, and make sense of it all.

One of the most significant difficulties has been selecting which citations to include. With so much rich material, identifying the most meaningful and representative excerpts often felt like an impossible task. It was easy to get lost in the details, constantly trying to balance thoroughness with maintaining a clear and coherent analysis. I frequently questioned myself: Am I truly capturing the essence of what participants are expressing? Am I fairly representing their voices without unintentionally filtering their perspectives?

Traditional logic, which insists that contradictions cannot coexist and that there is no middle ground, can be limiting when analyzing complex social situations in qualitative research. In everyday life, one thing cannot be another simultaneously, contradictions imply one part is true and the other false, and there is no middle ground. While practical for daily reasoning, this approach is problematic in evaluating conflicting accounts of complex social situations. Common sense reasoning in qualitative research, or 'common sense coding,' limits the analysis of social situations with various actors, interests, and viewpoints, as logic laws do not easily apply. For instance, management can decide to both support sustainable development and stop its implementation simultaneously, and employees can feel both motivated and demotivated to do so at the same time (Müller and Frandsen, 2020).

Thematic analysis and coding introduced another layer of complexity. Sifting through extensive datasets to identify patterns and extract meaningful conclusions required time, patience, and a structured approach. Without a well-defined analytical framework, there was always the risk of losing sight of key insights and getting lost in the details rather than making sense of the broader picture. To navigate these challenges, I found it essential to establish clear methodological guidelines and utilize data management tools effectively. Iterating between empirical material and analysis, while regularly stepping back to reassess the core research questions, has been valuable. Engaging in discussions with my colleagues also provided new perspectives, helping to refine interpretations and ensure that the analysis remained focused and insightful.

4.6 LIMITATIONS

The adoption of institutional theory intuitively suggests the inclusion of observations to capture the context in which these practices are carried out. While this research has incorporated observations, it has not extensively examined actors in their direct engagement with CDWM or how they negotiate circular solutions with their partners or clients. Observations could have provided valuable insights into actions and interactions at the individual level, reducing the over-reliance on retrospective accounts and mitigating the risk of interpreting efforts as more purposive than they originally were (Chia and Holt, 2009). However, given that much of the institutional work shaping organizational practices is longitudinal and involves multiple actors, accessing key moments and developing a comprehensive overview of the various institutional efforts would have been challenging.

Alternative qualitative methods could have been employed, such as shadowing managers to gain a more embedded perspective. Additionally, a mixed-method approach incorporating quantitative data

collection could have complemented the qualitative insights. However, studies on institutional logics and institutional work often rely on interviews as the primary method to capture actors' experiences, efforts, and insights (Dahlmann and Grosvold, 2017). The strength of interviews lies in their ability to provide an insider perspective on the actions and decisions of respondents. That said, as interviews have been a central method in collecting empirical material, this study is inherently based on retrospective accounts, which must be acknowledged as a limitation.

A related challenge is the issue of impression management. Respondents may construct narratives that present both themselves and their organizations in a favorable light. Their accounts may be biased or shaped by their own perceptions, rather than providing an objective reflection of reality (Alvesson and Spicer, 2012). Therefore, interviews should not be viewed as a means of extracting an indisputable truth but rather as a way to gather personal interpretations of reality. The analysis must go beyond accepting responses at face value, focusing instead on identifying and interpreting patterns of meaning, themes, and underlying narratives. To mitigate the risk of respondents engaging in impression management, participants were informed about the study's objectives and assured that both their own identities and those of their organizations would remain anonymous.

The COVID-19 pandemic further complicated data collection. With restrictions limiting in-person interactions, I had to adapt by conducting interviews and workshops online. While this shift allowed for continued engagement with participants, it also altered the dynamics of interaction, making it more challenging to build rapport and observe non-verbal communication.

Beyond data collection, the pandemic caused delays and interruptions throughout the research process. Fieldwork was postponed or modified, and scheduling interviews became more complex as participants navigated their own uncertainties and shifting priorities. These disruptions extended the research timeline and introduced additional unpredictability, requiring constant flexibility and reassessment of plans. Adapting to these challenges involved reevaluating methodologies, managing expectations, and finding creative ways to ensure the continuity of the study despite these unforeseen constraints.

4.6.1 Use of AI-assisted editing in the research process

During the last year of my PhD, AI-assisted tools, such as ChatGPT, have increasingly become standard tools for editing and refining texts. Whereas earlier publications, such as the CME article, relied primarily on human language proofing, I found myself turning more frequently to ChatGPT to enhance sentence clarity, coherence, and readability in the later chapters of this thesis. Using ChatGPT as part of an iterative editing process helped me to rephrase complex arguments, improve logical flow, and maintain consistency in terminology. Although AI-assisted editing significantly increased efficiency, it also shows a tendency to produce standardized text. Therefore, I tried to critically review and revise the AI-generated content to ensure the dissertation retained my voice. Importantly, the use of ChatGPT complemented rather than replaced the intellectual work of analysis, interpretation, and traditional editing and peer-review processes. However, the participants' quotes have been translated by me and were not processed or altered by ChatGPT. I take full responsibility for the content of this thesis, including the accuracy, originality, and integrity of all text, regardless of the use of AI-assisted tools.

4.6.2 Ethical considerations

Ethics is an important consideration in research and in the workshops in particular because the researcher is actively engaged with the field. During this type of projects, researchers may encounter various ethical dilemmas concerning participants' confidentiality, integrity, anonymity, and voluntariness (Greenwood and Levin, 2006). The Swedish Research Council, a federal authority established in 2001 to support scientific research, has outlined four ethical principles for Swedish research (Hermerén et al., 2011; Vetenskapsrådet, 2007)

Information Principle: Researchers must inform participants about the research's aim, ensure that participation is voluntary, and communicate that participants have the right to withdraw at any time.

Consent Principle: Participants must provide their consent to take part in the research project.

Confidentiality: Any sensitive information that emerges during the research must be securely stored to prevent unauthorized access.

Utilization: Collected information should be used exclusively for scientific research purposes.

All four ethical principles were acknowledged and respected in the research, with particular attention to the confidentiality principle to reassure participants that professional secrecy would be maintained, especially as business development might uncover new innovations or possibilities.

Given that the workshops rely on the relationship between researchers and participants, additional ethical dilemmas can arise. It's important that participants to have control over the process, own the problem, and make decisions, while researchers should guide without dominating (Gustavsen, 2001). According to Gustavsen (2001), the foundation of this process is the researcher’s trust in the participants. However, for participants, several other factors are defining their contributions: their willingness to own the problem and make decisions, their confidence in the matter, their trust in the researcher, and their commitment to investing in the project.

5 FINDINGS

The following chapter aims to shed light on the empirical material and how various actors of the industry are contributing to shape the industry practices related to construction and demolition waste management. To start with, the first section will provide a description of how the field of construction and demolition waste is framed within the scope of the project. Here, we find various actors whose behaviors are expected to be shaped by both the legislative policy framework and the increasing societal demands on sustainable resource management.

The initial section demonstrates how the policy framework has shifted in recent years, from a primary focus on improving the management of waste, to a broader industry transition that is expected to incorporate the principles of a circular economy. This transition was initially expected to be pushed by changes in the legislative frame, whilst more recent policy updates indicate a shift where the transition should be realized through market forces and companies' own ambitions to drive the transition.

The following section builds on the material gathered in study B and focuses on the actions carried out by actors in the field to either create, maintain or disrupt the institution. While this section considers multiple industry actors, it primarily emphasize on two key players: demolition companies and large contractors. The initial focus of the project was mainly on waste management, making these two actors central to the discussion. Both are central as they oversee how work is organized on-site and determine the subsequent handling of materials.

As the project progressed, the legislative framework increasingly emphasized market forces and companies' ability to develop business models based on circular economy principles. This change sparked interest in looking at the companies expected to adapt to and take advantage of these new conditions, including an engineering and an architect company. The third section, therefore, presents three cases of SME companies that expressed an ambition to develop a circular business proposition. Through a series of workshops aimed at facilitating the development of this circular business model, we explore the process of how the participants interactively couple the concept of circularity with their businesses. The ambition has been to explore how participants collectively shape the ongoing conversation through the way they construct and present their arguments, as well as how they strategically apply them. The focus is on how this approach can either drive or hinder the development process.

In the fourth and final section of this chapter, the focus is broadened to a diverse set of industry actors, who seemingly share a common ground where they have embraced the concept of circular economy. At the time of contact, these companies had all been publicly depicted as circularity forerunners in industry media, either for their active participation in research projects or their development of circular business propositions. This section depicts how these actors have made attempts internally to translate the concept into organizational practices and externally by engaging outside actors to realize their efforts.

5.1 CONCEPTUALIZING THE CDWM FIELD

The institutional field refers to the relations between organizations, actors, and structures that shape and is shaped by a particular area of activity or industry. It encompasses the formal and informal rules,

norms, and relationships that govern the behavior of actors within that specific domain. They consist of diverse, interdependent actors that collectively share a common system of meaning.

This research sets out to explore how the actors within the field of construction and demolition waste management contribute to the shaping of the institution. However, defining and understanding the composition of the field is central for analyzing how individuals, as well as groups of individuals or organizations operate within a given industry or sector. The field is constituted of members who share a common understanding of a set of values, norms, beliefs, and practices that guide their behavior.

5.1.1 Members of the field

At the beginning of the PhD, we could identify a stable set of actors consistently involved in the handling and management of construction and demolition waste, each with clearly defined responsibilities. These actors collectively maintained the ongoing organization, management structure, and operation of waste processes within the construction sector. Clients typically had the possibility to set the initial framework for waste handling by specifying requirements and standards in their project contracts. They could outline the expectations regarding waste management practices, often detailing procedures for waste reduction, sorting, and disposal, thereby establishing baseline conditions for the project's waste management activities. Main contractors had the operational responsibility for managing waste throughout the construction phase. They coordinated the logistics of waste separation on-site, oversaw compliance with disposal regulations, maintained accurate records, and ensured adherence to health, safety, and environmental guidelines. As they are legally accountable for waste generated, their role was central for ensuring that waste management practices were carried out effectively and within legal boundaries. Subcontractors had defined roles regarding waste management related directly to their specific tasks or trades. They were responsible for correctly handling and disposing of waste generated by their particular construction activities, ensuring compliance with established on-site waste management procedures. Demolition companies handled the practical aspects of dismantling structures and managing the subsequent waste. They were directly responsible for safely removing, segregating, and disposing of waste materials resulting from demolition activities, ensuring materials were handled in compliance with regulatory standards. Overall, each actor's stable and defined role ensured the continuous and organized management of waste, adhering more or less to regulatory standards and maintaining the operational integrity of waste handling practices in construction and demolition contexts.

Waste and recycling companies handled the collection, transportation, and processing of construction and demolition waste. They ensured that materials are sorted, recycled, and disposed of in an environmentally responsible manner. Lastly, the suppliers could contribute to waste reduction by providing materials with minimal packaging, offering reusable or recyclable products, and adhering to sustainable sourcing practices. Figure 4 below is an illustration of actors and roles throughout a building’s life cycle.

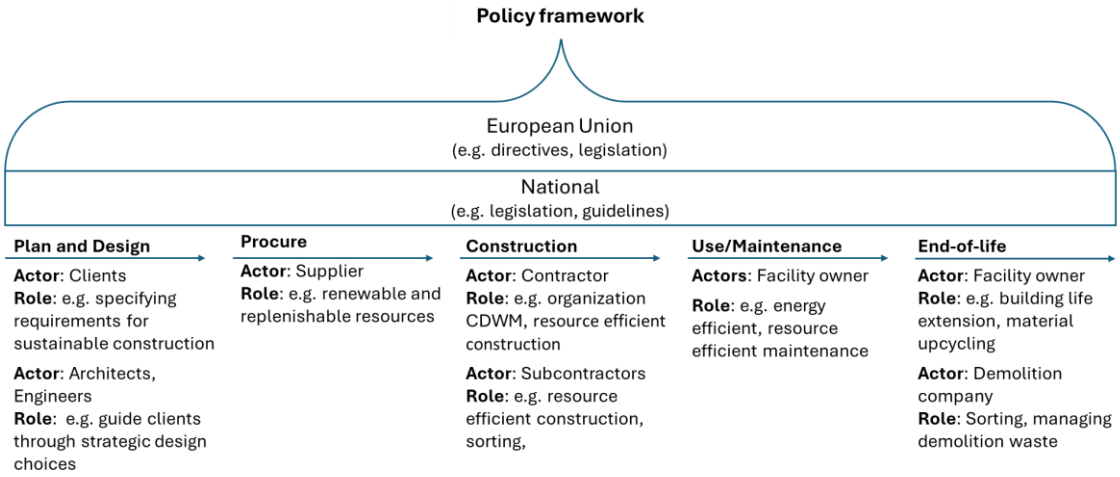

Figure 4 - Representation of actors and roles throughout a building's life cycle

The on-site activities varied depending on whether the project involved new construction or demolition/renovation. In the case of the latter, it was and still necessary to conduct an audit to estimate the expected quantity and types of waste, with subsequent monitoring of these figures. The planning for waste production and reduction is incorporated into the project design phase, while the primary waste management occurs during the production phase. Contractors and/or demolition companies were responsible for on-site sorting of fractions, transportation, and subsequent handover to recycling companies for proper treatment. In instances where specific fractions, such as gypsum, require recycling, their quality must be assessed on-site, a process that often leads to temporary work delays. Collaboration among stakeholders was founded on shared interests, aiming to minimize waste and, if not to increase profitability, at least to reduce handling costs. While all actors contributed to disseminating best practices, larger entities, owing to their size and central role in the field, possessed the potential to exert a more substantial influence on developments.

5.1.2 The legal frame

Through this study, the institutional field related to the management of construction and demolition waste in Sweden is partly shaped by a combination of national legislation, European Union policies, and guidelines issued by various agencies and associations. The formal rules and regulations guide the conduct of activities within the field, including laws, policies, standards, and compliance requirements that organizations within the field should adhere to. Government agencies, operating at diverse administrative levels, play an important role in crafting and enforcing regulations that govern the responsible management of construction and demolition waste. This crucial role encompasses the establishment and enforcement of both national regulations as well as those stipulated by the European Union, where each member state is responsible for adapting their national laws to comply with EU directives through the process of transposition.

5.1.3 The EU level

The legislative framework encompassing this institutional field is supposed to drive the need to address environmental concerns through compliance with its regulatory frameworks, and thereby promote a circular economy in the construction industry. The European Union (EU) has been actively

addressing construction and demolition waste through various policies and initiatives aimed at promoting sustainable practices, waste reduction, and the transition to a circular economy. The EU has implemented a series of initiatives to address construction and demolition waste as part of its commitment to a circular economy and sustainable practices.

For the EU, the issuance of the Waste Framework Directive (2008/98/EC) (European Commission, 2008) marked a fundamental moment in the regulation of construction and demolition waste management by setting objectives for transforming "*Europe into a recycling society"*, thereby framing CDW practices. This directive introduced the waste hierarchy, thereby prioritizing practices based on their environmental impact, and prompting member states to adopt more sustainable waste management approaches. Specific parts were tailored to construction and demolition waste, such as defining recovery targets for non-hazardous construction and demolition waste. It also introduced end-of-waste criteria, facilitating the use of certain construction and demolition waste materials as secondary raw materials. Member states were required to develop waste management plans, incorporating strategies for waste prevention, recycling, and proper disposal of construction and demolition waste, while adhering to the principle of extended producer responsibility. Landfill restrictions targeted the reduction of biodegradable municipal waste, including relevant construction and demolition waste, promoting alternative treatment methods. The directive emphasized information reporting, ensuring transparency and accountability specifically to the context of construction and demolition waste management, and established rules for the transboundary movement of such waste to prevent illegal dumping.

In 2018, the Waste Directive underwent a significant revision, which introduced several key changes to the EU's waste legislation (European Commission, 2018). Partly they established new and higher recycling targets, emphasized the importance of separating through collection of waste streams, and reinforced the concept of extended producer responsibility, which holds the producers more accountable for the waste generated by their products. These changes thereby aimed to align the EU's waste legislation with the broader goals of the Circular Economy Action Plan. As a result, the revision of the Waste Framework Directive plays a crucial role in shaping a more sustainable and circular approach to construction and demolition waste management across the EU.

If the Waste Framework Directive (2008/98/EC) sets overarching objectives for waste management, the *Circular Economy Action Plan*, a flagship initiative, outlines strategies to improve resource efficiency, waste reduction, and the use of secondary raw materials (European Commission, 2015). It contains a comprehensive body of legislative and non-legislative acts and was first issued in 2015, where it aimed to transform the European economy from a linear to a circular one. In accordance with these circular economy measures, buildings ought to be constructed using components and materials that can be reclaimed and reused for new purposes at the end of the product's life cycle. Ensuring that materials are given a new life rather than being disposed of or incinerated. Later, the action plan underwent significant changes, resulting in an updated version, which was issued in 2020 (European Commission, 2020). The updated version reflected an increased commitment to circular economy principles and a more comprehensive approach. In the first version, the action plan primarily focused on waste management, recycling targets, and resource efficiency, whilst the updated version in 2020 is more ambitious, extending its scope to cover the entire product life cycle. It emphasizes the creation of a new market and identifies businesses and consumers as central actors to drive this transition process. Moreover, it suggests that the supplementary cost generated for new constructions,

renovations and acquisitions should be supported by the mechanism of this newly created market. The revised edition underlines the importance of a simplified regulatory framework, ensuring the incorporation of life cycle assessment in public procurement or the potential to mandate recycled content for specific construction products. Overall, these changes demonstrate a shift toward a more holistic and ambitious strategy to drive systemic change and accelerate the transition to a circular and sustainable economy within the European Union. The updated action plan, together with the support from the European Green Deal is thereby shifting focus from material and technical flows to the creation of a new market. The new policy identifies businesses and consumers as central actors to drive this transition process. Moreover, it suggests that the supplementary cost generated for new constructions, renovations and acquisitions should be supported by the mechanism of this newly created market.

5.1.4 The national level

The national legislation framing the management of CDW in Sweden has primarily focused on reducing landfills, tracing hazardous waste, and promoting recycling. The guidelines outlined in the Swedish Waste Plan 2012–2017 build on the EU waste framework directive and structure it around the five steps of the waste hierarchy (Swedish Environmental Protection Agency, 2012). It thereby prioritizes prevention, followed by preparing for reuse, recycling, other recovery (such as energy recovery), and finally disposal, for instance, landfill. This strategy placed increased emphasis on the imperative to not only reduce the quantity but also mitigate the hazardous nature of waste. This was to be achieved by initially preventing its generation and ensuring the thorough and accurate sorting of different fractions. The plan significantly increased its focus on the imperative to diminish both the quantity and hazardous characteristics of waste. The emphasis was placed on preventing waste generation from the outset and ensuring the thorough and accurate sorting of diverse fractions. Specifically for construction, this entailed achieving, by 2020, preparation for reuse, recycling, and other recovery rates of non-hazardous construction and demolition waste of at least 70 percent by weight.

At the national level, a significant change in waste management took effect in 2020, particularly for construction and demolition waste, as on-site sorting of such waste is now mandated by the Swedish waste ordinance (2020:614) (Swedish parliament, 2020). The updated regulation requires producers to actively sort specific waste type's on-site, ensuring separation from each other and other general waste. This shift aims to improve waste management efficiency by allowing for improved recycling practices. In the document Circular Economy Action Plan for the Transition of Sweden, issued at the beginning of 2021, they claim that Sweden is still at the beginning of the transition and that there is a need for a comprehensive review and development of both the waste legislation together with other instruments within the waste management domain (Government offices of Sweden, 2021). The regulations are, in many respects, reactive rather than adopting the proactive approach that the transition to a more circular economy demands. Though Swedish policies addressing resource efficiency, extended producer responsibility, and other circular economy concerns is considered to have a longstanding history. Yet, it wasn't until 2021 that a Swedish national strategy and action plan on circular economy were presented.

Municipal authorities are integral in the localized implementation of waste management strategies and are responsible for ensuring adherence to regulatory frameworks, which involves conducting site inspections to assess compliance with established standards and guidelines. They also manage waste collection, recycling programs, and disposal facilities, tailoring their approaches to the specific needs

and challenges of their communities. However, respondents from both contractors and demolition companies report infrequent inspections. This is acknowledged by one of the municipality representatives who attributes this issue to insufficient resources. As a result, the situation signals a potential gap in regulatory oversight, leading to reduced scrutiny and enforcement of the waste ordinance for the companies it addresses. The implication of this might be that companies may not be overly concerned about complying with this legislation.

5.1.5 The industry level

At the industry level, we find industry associations who play a central role by aligning with government bodies to promote best practices within the construction sector. These associations bring together professionals in the field and can contribute to the development of professional norms and practices. Their involvement includes the issuing of guidelines which offer guidance to members on sustainable building practices and contributing to the ongoing development of industry standards.

With the title of *Waste Management during Construction and Demolition,* the first version was introduced in 2007 and issued by Sweden's recycling council and relies on an agreement between industry actors. It contains industry norm-setting texts to act as guidelines for how material generated from construction and demolition work should be managed. Its aim at the time was to reduce landfill volumes in accordance with the environmental program developed for the construction sector. It has since been continuously updated according to changes in the legislative frame. In 2013, the guidelines underwent a significant revision and were renamed to *Resource and Waste Guidelines for Construction and Demolition*. This change implies a paradigm shift, emphasizing that materials generated from these activities should not merely be considered as waste but recognized as valuable resources to be harnessed, urging for a perspective that goes beyond mere disposal. However, it wasn't until another large revision in 2019 that the guidelines included a much stronger focus on the circular economy, thereby aligning and mirroring the shift according to the legislative frame. This was later followed with prompting on the management of waste on-site by tightened requirements for source sorting. This was based on the conception that the potential for recycling is significantly influenced by the degree of source-sorting on sites. These guidelines serve to structure and streamline the processes associated with construction and demolition waste management on construction sites.

5.1.6 The certification standards

Similarly, other organizations contribute to the regulatory systems and the creation of a standardized framework. The integration of certification systems such as ISO 14001, ISO 9001, BREEAM, and Miljöbyggnad adds another layer of credibility and standardization to waste management practices in the construction industry, thereby partaking in the shaping of the practices adopted in the CDWM process. These certifications establish well-defined norms and standards, providing a clear roadmap for stakeholders to follow. ISO standards focus on environmental and quality management, while green building certifications specifically address sustainability in construction projects. Together, these certifications contribute to the stabilization of the industry.

The coming section provides an overview of the evolving policy framework for sustainable construction and demolition waste management and examines how industry actors translate the regulations mentioned above into practice. It documents how various actors interpret, adapt, and navigate these policies, focusing on the different actions and negotiations involved in implementing them. This demonstrate the complexity of turning policy into practice.

Drawing on data from Study M, the section outlines the actions of key players who are responsible for organizing waste management on-site and handling materials afterward such as small and medium-sized demolition companies and large contractors. Interviews with project, site and production managers serve as the primary source of material.

The section identifies various forms of institutional work, categorized by Lawrence and Suddaby's (2006) framework: maintenance, creation, and disruption. A previous version of this work has been published in Andersson and Buser (2022). It explores efforts by industry actors to maintain the existing institutional field, focusing on how traditional construction and demolition waste management practices are reinforced through vague contractual obligations, a reactive approach, and resistance to change.

5.2 WHAT IS WASTE IN WASTE MANAGEMENT?

5.2.1 How waste management is defined and prioritized (2019–2020)

At the beginning of my PhD, around 2019-2020, waste was not really considered as an issue and its handling rarely appeared as a concern. From the demolition companies' perspective, the criteria used to select companies in the tendering process cover a broad range of factors, but waste management is rarely a central consideration. Clients primarily evaluate companies based on work experience, licensing, financial stability, equipment availability, and adherence to timelines. While environmental considerations, including waste management, might be mentioned, they serve merely as one criterion among many rather than being decisive. One CEO from a demolition company explicitly emphsized this lack of attention, explaining:

> *"In any formal document you send to the administration, no one will read the parts concerning waste and environment. That's the way it is, they never check that part."*
>
> *– CEO, Demolition company*

Contractors similarly described assessing the quality of demolition companies primarily based on dismantling speed and cleanliness of the site, while the quality or quantity of waste and its subsequent handling are rarely considered. Contractors frequently include only vague statements regarding waste management, allowing demolition subcontractors to deprioritize environmental improvements. This approach is rooted in financial incentives, as clearly expressed by one demolition subcontractor:

> *"It's all about money, ultimately that's what it's all about; everyone needs to earn money on it." – Demolition subcontractor*

Once demolition companies take over waste management responsibilities, contractors often cease tracking or accounting for that waste internally. This reflects limited awareness of their ongoing responsibilities:

> *"I realized it when I came here. That it is the demolition company that manages our waste. It is ours, but we don't include it in our [statistics]." – Environmental manager, Contractor*

An environmental manager from a demolition company criticizes this practice, questioning the selective reporting of waste statistics by contractors, who typically exclude demolition waste to present better recycling and reuse rates:

"... it is my biggest criticism to the clients, that every time the project is finished, because I have seen construction projects where they have evaluated everything as recycled and reused. Then, of course, you calculate based on the construction waste. Everything you don't want to include in those calculations, you have given to us... what they calculate internally, the numbers they present, it is not guaranteed to include demolition waste, it cannot, because the numbers are not that good."

– Environmental manager, Demolition company

Moreover, contractors rely heavily on contractual documents, which define responsibilities but rarely include strict or explicit demands regarding waste management. Contractors often apply the same vague waste-management expectations they receive from their clients to their subcontractors:

"… I wouldn't say that there are such demands unless it's specified by the customer. That's our starting point. We look at the demands on us and put the same on our subcontractors."
– Project manager, Contractor

Expectations become progressively less strict down the supply chain, with subcontractors operating under minimal oversight or enforcement:

"It could be that the subcontractor simply says, 'No, but we are very environmentally friendly,' but there is actually no control over what they have actually promised or what they actually fulfill." – Environmental manager, Demolition company

Moreover, adherence to environmental standards differs significantly depending on the company size and visibility. Larger companies are driven by reputational risks, while smaller companies experience less scrutiny, potentially compromising environmental compliance:

"If you consider the large actors, they are global companies, they cannot afford a scandal or a problem even in a small project because it spread so quickly. A smaller company that acts on a local market, they can probably afford it." – Business developer, Recycling company

Responsibility for waste management becomes a "hot potato," passed down from clients to contractors, eventually landing with subcontractors further down the supply chain:

"Then maybe they [Large contractors] are using subcontractors that are using subcontractors and then it gets lost." – Business developer, Recycling company

5.2.2 Weak enforcement of the legislation

Actors acknowledge that sustainability clauses included in contracts and tender documents have often been ceremonial, without significant enforcement or monitoring. Historically, these clauses were rarely integrated into inspection plans or evaluated in practice:

"I mean, we do have, a sustainability clause or a section on sustainability which, up until perhaps at least until a year ago, was not something that people thought much about, it was just in BBR, but it was not something that anyone included in any inspection plan or anything like that." – Head of projects, Property owner

Although the legislation aims at improving environmental performance, contractors rationalize maintaining existing practices. They argue that compliance with current frameworks, which primarily focus on hazardous waste, is adequate, noting that the broader ambitions of the EU circular economy

principles have not yet translated into clearly enforceable requirements within the national legislation. Contractors frequently mention practical barriers to adopting circular economy practices, particularly emphasizing operational and financial limitations:

> *"… this is all fine, but we have to be realist. I have a business to run, I have people to pay at the end of the month." – Project manager, Contractor*

Resistance to change is also entrenched culturally within the industry. Actors frequently express skepticism about their ability or willingness to adopt innovative waste management practices, reinforcing established ways of working. An officer responsible for waste management humorously illustrates this conservatism:

> *"You must've heard about the 11th commandment in the construction sector? ... That is the way we've always done it! Followed by the 12th; We've never done it like that before!" – Officer in charge of waste management*

Ultimately, despite the formal inclusion of environmental clauses and the introduction of updated legislation around 2020, limited enforcement, cultural resistance, financial constraints, and weak contractual demands significantly undermine meaningful improvements in waste management within the construction and demolition sector at that time.

Promoting and reframing waste management

While most companies restricted their investments in waste management, environmental managers were tasked with improving construction and demolition waste management within their organizations. Drawing upon their expertise, experience, and strong commitment to sustainability, these managers strategically influenced company policies to bridge internal gaps.

Many companies have established internal sustainability work groups that bring together participants from various departments within the organization. This internal collaboration allows employees across different departments to contribute to and stay informed about sustainability initiatives within the company. Though the primary purpose of these meetings may be different, they commonly share the ambition to create awareness on the topic, to facilitate knowledge-sharing, and to enhance employees' sense of responsibility toward environmental matters.

The environmental manager from one of the demolition companies, who strongly promoted sustainable waste management, provided an illustrative example of reshaping negative perceptions associated with waste management: "*as by calling it waste, we've already accepted it as waste."* This approach involves adopting alternative language or terminology that emphasize the value and potential for reuse rather than simply categorizing materials as waste. Examples include re-labelling common waste management terms to reduce misconceptions and improve attitudes. For instance, regarding the demolition process itself, it is stated that "*we do not demolish but deconstruct*." Similarly, she referred to "*materials generated during demolition activities as products or resources*, *instead of waste*," thereby challenging the widespread perception that such materials are obsolete or worthless. Furthermore, the traditional "*end of life understanding of WM*" is replaced with a lifecycle perspective, in which waste is viewed as merely one stage within a continuous cycle of transformation

In a similar vein, the contractors' project managers have adopted a proactive approach by conducting information sessions with their subcontractors. These sessions serve as platforms for presenting the organization's waste management policies. Whether through initial start-up meetings or

informational displays on construction sites, the contractors actively communicate their commitment to sustainable practices for the people on site. This transparent communication strategy not only informs subcontractors about the company's WM policies but also encourages a collective understanding and adherence to these environmental guidelines across various levels of the construction process.

A notable outcome of these collaborative efforts is the establishment of an intranet-based marketplace specifically designed to facilitate the sharing of leftover materials across different projects. This platform serves as a centralized hub where surplus materials from one project can be efficiently redistributed to others, aiming at fostering a culture of resource optimization and waste reduction, however without much success so far.

Comparable initiatives have also been found within the demolition companies where one of the organizations collects waste from both its own and other companies' projects. Some of the demolition companies have gone beyond their primary services and actively contribute to the industry's improvement by providing training to their clients. As a complement to their core demolition services, these companies offer expertise to assist their clients in organizing and optimizing their waste management practices. Thereby providing the client with the necessary knowledge that incentives them to pay for the incorporation of sustainable WM practices. This initiative not only reflects a commitment to their clients but also demonstrates a broader engagement in promoting sustainable waste management. Notably, two leading demolition companies have taken a more comprehensive approach by integrating sustainable WM into their strategic agenda. This means that sustainability considerations are not treated as separate initiatives but are now part of the company's overall strategy. Furthermore, these companies actively share information about sustainability at various levels of their organization. This dissemination occurs through forums and internal meetings involving employees, fostering a culture of awareness and commitment to sustainable practices throughout the company. These efforts indicate a proactive stance in promoting and implementing environmentally responsible practices within the demolition industry.

Translating changes into existing practices

A common initiative among the three large contractors participating in our study was to increase sorting ratios by defining goals on project, department and organizational levels. These initiatives connected WM efforts to the already established organizational practice of measuring and evaluating performance through the monitoring of key performance indicators. Thereby associating this new sorting practice with already established practices in order to ease its adoption. As illustrated by this manager:

> *"I have organized a competition between the building sites. Each month the results related to WM are published and the best site is nominated and rewarded. It is very effective, and I truly believe in measuring and visualizing the results, it is because of the competitive instinct between units" - Environmental manager, Contractor.*

The ambition with this was to foster a competitive environment between projects that would contribute to improved metrics, e.g. increased sorting ratios.

The three large contractor organizations, along with three of the demolition companies, had implemented training programs for their employees aimed at improving waste handling efficiency and

promoting environmentally friendly practices. This includes education on health and safety, proper use of equipment and vehicles, and the organization of transport. Notably, one of the contractors has instituted mandatory training for all employees, supplemented by job-specific training tailored for roles such as procurement, project managers, and estimation professionals with a focus on waste management.

One demolition company is actively challenging the widespread belief that leftover materials from construction and demolition are low-quality and too costly to reuse. By adopting a circular model, the company not only reclaims materials from its own projects but also collects them from external sources, reselling them as construction materials. This initiative demonstrates that construction and demolition waste can be salvaged, processed, and reintroduced into the construction cycle without compromising quality. Their success challenges long-standing industry assumptions and proves that a circular approach to waste management is both environmentally and economically viable. By turning CDW into a marketable resource, the company argue for the financial feasibility of circular strategies. This undermines the notion that dealing with CDW is prohibitively expensive and encourages industry players to rethink waste as a valuable asset rather than a costly burden. Their model serves as a compelling example for the sector, potentially inspiring others to reconsider traditional waste management methods and adopt more sustainable practices.

Developing network

Nevertheless, despite their clear mandate to embed sustainable practices, the managers' efforts often did not align with broader organizational strategies and priorities. Consequently, they often built on their professional networks to draw attention to these initiatives and increase collaboration. This approach facilitated the development of projects and shared insights, aiming to align sustainability efforts more closely with operational realities**.** Several of the environmental managers we have talked to were engaged in different inter-organizational projects and research networks concerning WM. Some of the examples included development projects related to the recovery of plastic pipes, global trade item numbers, and packaging as well as the possibility of recycling specific materials such as glass, gypsum, or concrete. These projects aimed to overcome the barriers associated with WM and gather participants from all the large contractors together with architects, demolition, recycling and consultant companies, and most often included research institutes.

> *"It is easy to make progress right now because it's impossible to meet the upcoming demands if you're not managing this [WM]. This makes collaboration a lot easier, both internally and externally" - Environmental manager, Contractor*

These collaborations establish networks and shape a common space for creating and sharing new knowledge and practices mostly related to the recycling of material. Their work is also recognized with prizes for sustainability efforts within the sector and are awarded by professional associations. These efforts legitimize the environmental managers' position both within their own organization and in the industry. These networks contribute to defining the joint effort to improve CDWM, such as the development and introduction of the recycling system of transportation pallets in the industry. There were also examples from both the contractors and demolition companies where representatives actively attended trade conferences and seminars on the topic, presenting their new business model and best practices.

One of the respondents in the contractor organization also reflects on the current state in the construction industry, particularly related to changes in waste management demands and the need for companies to align with the proposed transition. She acknowledges that the upcoming demands are likely to be translated into regulations, standards, and explicit expectations related to waste management practices within the industry, which makes her job easier. She is questioning some of the assumptions that actors can continue to be prosperous by relying on established practices. The expectation of forthcoming requirements is creating a sense of urgency and obligation for actors in the industry to improve their waste management processes. The notion seems to be that the shared goal of meeting upcoming demands acts as a catalyst for collaboration.

Given the existing gaps in the expertise of small and medium-sized companies in managing CDW, some actors in the demolition and recycling sector have started to offer their expertise as a service. The offering includes CDWM training by utilizing their knowledge to support clients in improving and optimizing their on-site waste management practices. There is also a notable trend involving the entering of new actors in the field, who had similarly offered services and training that specifically address the shift towards a Circular Economy in construction. These actors include research institutes, professional associations, architects and civil engineering companies exploring opportunities in the emerging market related to sustainable practices. They provide seminars and training sessions related to the topics of waste handling, circular construction, and the future of waste management. This influx of new actors not only constructs new identities but also reshapes the traditional division of tasks among stakeholders in the field.

5.2.3 Organizational barriers

However, despite numerous initiatives aimed at challenging prevailing practices and reframing waste management, the actual transformation of practices at the project level appeared to be constrained. Here, it is argued that waste management often becomes down-prioritized as more pressing issues appear on-site during the production phase. This is recognized by one of the managers responsible for waste management in a large contractor organization. She faces challenges in both aligning the company efforts and keeping them at a constant level. She also argues that it has become a siloed effort where some of the business units are doing well, whilst others fall behind. But as the environmental department in the contractor organizations act as advisors to the board and do not have the mandate to impose directives, strategies is needed to mobilize a form of internal political and regulatory support to exert pressure.

> *“Because I don’t have the power to …., I can just help them, so I have asked my boss, who is the sustainability manager in Sweden, to talk to the highest line manager. Because now they need to take the pressure from the line. We can’t have goals that one department just doesn’t care about. It’s not fair to the others.”*
>
> *- Environmental manager, Contractor.*

A recurring challenge noted by environmental managers is their difficulty in illustrating the tangible advantages of adopting sustainable CDWM practices in projects. One environmental manager from a contractor company expressed this dilemma by stating that:

> *"It would have been good, but I cannot demonstrate that with improved WM, the projects would actually save money." - Environmental manager, Contractor*

The inability to demonstrate the economic benefits of enhanced WM practices poses a substantial challenge. This hampers the potential for change, as the inability to emphasize economic advantages makes it difficult to gather support for sustainable CDWM practices. In an industry where cost considerations often take precedence, its absence therefore leads individuals to deprioritize these practices.

Each of the three major contractors has engaged in test and development projects aimed at designing and constructing buildings using reused or recycled materials. At the national level, they have each delivered one or two buildings incorporating circular economy principles. While these projects have often resulted in high-profile showcases that illustrate the potential of circular construction, they have struggled to transition beyond isolated examples into mainstream practice.

Rather than signaling a fundamental shift in organizational strategy, these showcases seem to emerge from localized collaborations between clients and project managers who are enthusiastic about innovation. The projects reflect an ambition to push boundaries, but their implementation remains largely experimental and dependent on the commitment of individual actors rather than institutionalized policies.

A key challenge in scaling up these efforts is the fragmented nature of project management within large contractor companies. Since these projects are managed by independent business units operating at the regional level, there is limited cross-organizational learning and integration of circular construction principles into standard practices. Moreover, the absence of direct involvement from sustainability managers in many of these initiatives suggests that circular economy goals have not yet been embedded into the companies' broader strategic frameworks.

However, the large contractors have also engaged in other sustainable initiatives targeting better resource efficiency for water, carbon, material and energy and promoting new production modes such as prefabricated modules, which could reduce substantially the production of waste. In doing so, they also contributed to defining new models for the sectors.

Rethinking construction waste and challenging assumptions

A consistent theme that appeared in the interviews, irrespective of organizational affiliations, is the tension between the business-as-usual attitude of the work in the sector and the recognition of the substantial environmental impact that the construction and demolition industry has on the climate. This collective awareness has led to a widespread understanding that the existing CDWM practices are inherently unsustainable. Some of the respondents from the contractor organizations express a growing sense of urgency and responsibility. They recognize the need for proactive measures, and stress that they, both as companies and individuals in the organization, have the possibility to make change happen.

Within the contractor organizations, project managers call to action, urging for the central role they believe they can play in steering the industry toward sustainable practices. Being responsible for the organization of CDWM on site, and their responsibility for the execution of work in the construction phase, they are a central actor in the reshaping of the construction industry's impact on the environment. These respondents assert that, as individuals within their respective organizations, they have the possibility to initiate and drive positive transformations but at a smaller scale only.

"What I can do is to move leftover insulation material or gypsum from one of my sites to another if I have a surplus. Since I manage the sites myself, I have the freedom to organize this transfer without it showing in the accounting reports. It's something I can arrange on my own, making sure the materials can be use without needing formal approval or documentation … otherwise it is too complicated"

- Project manager, Contractor

Their perspective goes beyond mere recognition of the problem, extending to a sense of urgency, where they see themselves as catalysts for change within the broader framework of CDWM practices. This sentiment underlines a growing commitment to corporate and individual responsibility as important forces in reshaping the industry's environmental footprint.

"I have two kids and the climate issue is really at stake right now. I can really feel that I have to contribute with my part, everyone has to do at least what they can"
- Site manager, Contractor.

Sorting waste as much as possible is a key principle of CDWM, reinforced by both laws and industry standards. The industry widely follows this practice, believing it helps maximize reuse and recycling. The general agreement is that proper waste sorting plays a determinant role in environmental sustainability by reducing the need for new raw materials. At the same time, many in the industry assume that, despite continuing current production and consumption methods, virgin materials will remain available in the future, with various suppliers responsible for providing them. So, even though these managers succeeded in optimizing CDWM on-site, their initiatives rarely went beyond the legal demands. And they struggle to challenge the existing market driven practices of the sector and to apply the necessary transformation in their daily work.

One company, a subsidiary of a major Swedish contractor, stands out for its very different approach to waste management. The company offers a broad range of materials and services to the construction and civil engineering industries, including concrete, gravel, rock crushing, transportation, and recycling services such as land remediation and water treatment. What sets this company apart is its direct challenge to conventional waste management practices. They argue that the financial sustainability of current models is questionable and advocate for a shift toward **"***controllable, traceable, and uniform batches of waste."* And one of the managers continued:

"There is no point in collecting 20 kg of plastics and a few electric cables on a building site. These pieces cost too much energy and time to collect, transport, and recycle. It is neither sustainable nor financially profitable for anyone"

– Business developer, Contractor subsidiary

Their method prioritizes collecting large quantities of pure, high-quality materials with clear traceability, ensuring that the recycling process maintains the integrity of the materials. Instead of relying solely on waste management companies, they propose that material producers themselves take responsibility for recovering and recycling their products. This shift in responsibility challenges traditional roles within the industry but also presents an opportunity for producers to play a more active role in sustainable waste management.

"To adopt circular principles in the construction sector, we need to restructure the supply chain and change the distribution of risk and responsibilities among partners... But we are still very far from that …" – Business developer, Contractor subsidiary

One of the contractors' environmental managers goes in the same direction. She emphasizes that large contractors can have a significant influence over the supply chain. By prioritizing and demanding recycled materials in their projects, they can pressure material producers to adopt more sustainable practices. As key customers, large contractors hold the power to reshape industry norms by insisting on environmentally responsible alternatives. This approach transforms demand-driven change into a strategic tool for advancing circular economy principles.

In practice, a handful of subcontractors, such as electricians and suppliers of plastic flooring, carpet, or insulation, have started reclaiming leftover materials from construction sites. Some even go a step further, offering to return after renovations or demolitions to manage the recycling or disposal of their products. These initiatives are often driven by long-term business relationships rather than immediate financial incentives, as companies see value in fostering trust and reliability with their clients. However, these efforts remain relatively small in scale, primarily focusing on specific materials, and do not yet address the full scope of waste generated by the construction industry.

Most of the environmental managers we have talked to insist on their responsibility as change agents and the necessity for all actors in the industry to question the current way of working as well as the distribution of tasks amongst the actors, However, there is so far a large gap between what they advocate for and what is actually carried out in practice.

5.3 CBM WORKSHOPS

After having obtained a broad overview of the activities carried out in different construction companies to improve CDWM, the following section goes more in depth and focuses on how three smaller companies discuss and analyze the potential of developing circular business models.

5.3.1 Context of the study

With the launch of the *European Green Deal* (2019) and the *Circular Economy Action Plan* (2020), the EU has positioned businesses as key drivers of the transition to a circular economy. Recognizing their market influence and capacity for innovation, the EU aims to exploit the private sector's potential to accelerate sustainable development and contribute to long-term environmental goals. One of the tools to accelerate this shift is circular business models, which are promoted as more resilient, adaptable, and future-proof compared to traditional linear models. These models encourage companies to rethink how they design, produce, and distribute goods and services, focusing on strategies such as product longevity, reuse, remanufacturing, and recycling. The idea is that by integrating circular principles, businesses could not only reduce waste and resource dependency but also unlock new revenue streams, increase competitiveness, and strengthen their market position.

This transition also aligns with broader policy objectives, including climate neutrality, resource efficiency, and economic resilience. By adopting circular business models, companies are not only complying with evolving regulations but should also position themselves as leaders in sustainability, capable of shaping industry standards and driving systemic change in their respective sectors.

This is further supported by the EU through the integration of circularity into various aspects of policy, regulation, and support mechanisms such as the creation of a market aimed at shaping public procurement. Arguments aligning with the EU framework are repeated among individuals within organizations who emphasize the need to generate profit from their sustainable management of waste. They also assert that companies must adapt to the growing demand for circularity to remain competitive, as business demands and client expectations are expected to increasingly align with future EU proposals.

The following section is based on study D and relies on insights from three different companies. Thereby allowing for a more in-depth understanding of how the development of circular value propositions is framed within small and medium -sized organizations. The focus on this group of actors is due to their potential to adapt quickly as their organizational size allows them to be more flexible and responsive to changing market demands. Additionally, individuals within these companies often have decision-making power, enabling them to drive change and influence the transition toward circular business models. This combination of adaptability and internal influence makes it easier to capture and analyze their efforts in adopting more sustainable practices.

Their development efforts are achieved through a series of workshops, strategically bringing together participants from diverse parts of their organizations. These sessions are thought as dynamic forums, providing participants with the opportunity to openly discuss their goals, capabilities, and approaches to achieving more sustainable business models by relying on the principles of the circular economy. The goal here is to intricately examine their processes in formulating circular business models. Thereby allowing us to examine the dynamic process within these organizations and understand how language is used to frame the understanding of individuals. It identifies the arguments that these actors rely on to either promote or dismiss the developments. It thereby helps us to understand the role of these discussions in shaping these organizational efforts.

Throughout these workshops, two facilitators have guided the process without intending to exert control. This has allowed for a detailed study of the processes and interactions among participants. This approach helps us understand how these discussions develop by examining the types of arguments and counter-arguments mobilized, and how this interaction can either facilitate or hinder the creation of new business models.

The upcoming section provides detailed insights from three specific organizations, two contractors and one architectural firm. Each case is accompanied by a brief introduction to the companies, outlining their fields of operation, and a concise description of how these organizations have structured their efforts to enhance environmental performance.

5.3.2 Case company A – Attempts toward sustainability

The first case is based on a company that is part of a larger construction group operating within residential and commercial construction, including both new built and renovation projects. The company's core business is centered on the management and execution of construction projects in the Gothenburg region. The company was founded in the early twentieth century, and in recent years, its workforce has grown from 20 to 70 employees to support its operations. According to the company, its main goal is to become one of the preferred provider for constructing schools and multi-family housing, renovating apartments, and transforming public spaces, office environments, and healthcare facilities.

The company states that it is experiencing steady revenue growth and strong profitability, providing a solid foundation for continued expansion. These financial developments are seen as both a prerequisite and a catalyst for further growth, with an increasing emphasis on improving environmental and sustainability performance. Here, sustainability is not only regarded as a responsible business practice but also as a strategic necessity to meet evolving expectations from both current and future clients. The company views its financial stability as important for strengthening its commitment to sustainability, aligning economic success with broader corporate social and environmental objectives

Their sustainability efforts are centered on the three overlapping dimensions of environmental, social, and economic sustainability, where they claim that all three are crucial for conducting responsible business. They also explain that they systematically work to reduce their environmental impact, addressing crucial environmental aspects during production such as waste management, product selection, energy consumption, and control and testing. Their control includes the monitoring through measurements of waste generated, where the goal is to remain below 25 kg/sqm.

This subsection draws on material gathered from four workshops and observations of four internal meetings covering the topic of sustainable developments. During the workshops, two participants were actively involved throughout the entire process. One of them held the position as business developer within the company and had previously served as the CEO for a period. The second participant is an external consultant with a particular focus on assisting the company in their environmental work, including internal reviews, standardizing routines, ensuring legislative compliance, and defining goals. On one occasion, a representative from the HR department also participated. Additionally, the material includes observations from a meeting dedicated to the development of sustainability-related aspects. During these meetings, the two participants mentioned earlier were joined by two site managers.

Aligning sustainability with organizational and business development goals

During the first workshop, setting the agenda, the business developer suggests a clear and intentional commitment by the company to prioritize sustainability as a specific area for the organization to focus on:

> *"I would say it's one-third, and that number I take out of the areas we have said that we really must focus on this year. And those are three, and sustainability is one of them." – Business developer*

Among the company's identified priorities, sustainability is recognized as an important area of focus. The expression conveys a sense of urgency, indicating that sustainability is considered a key element of the company's strategic agenda. This suggests an alignment between sustainability efforts and broader business objectives.

The company has developed a corporate culture centered on precision and quality, often referred to as a Zero-defect culture. This approach aims to deliver construction projects that meet or exceed quality standards. By emphasizing precision, efficiency, and resource optimization, this culture is thought of as aligning with principles that can support sustainability efforts.

The zero-defect mindset should encourage attention to detail, process accuracy, and resource efficiency. When applied to sustainability, this approach should contribute to minimizing

environmental impact and optimizing resource utilization. Rather than treating sustainability as a separate initiative, it appears to be integrated into the company's broader operational framework.

> *"So, we want to improve. And when people think of [Company name], yeah, that's the contractor who's always delivering zero-fault projects, and they have come with a good environmental standard also." – Business Developer*

This alignment is particularly evident in efforts to reduce waste generation, lower energy consumption, and enhance operational efficiency. For example, reducing defects and errors in the construction process can lead to less material waste, improved resource conservation, and lower energy use. Additionally, the company's culture of continuous improvement encourages employees to identify inefficiencies and explore more sustainable practices and technologies. One example is its involvement in developing a waste management software platform in collaboration with a supplier. The company is also exploring the integration of environmentally friendly materials and systems to assess and document material use in projects.

> *"So, we said that in the future, and I hope it's a decision this year, that in all projects, we will always perform these material journals and hand them over to our clients."*
>
> *– Business Developer*

By integrating sustainability principles within its commitment to quality and efficiency, the participants reinforces the idea that sustainability is part of its overall business operations. The connection between quality control and sustainability may contribute to longer product lifespans and reduced environmental impact by minimizing the need for replacements.

While the zero-defect approach reflects a commitment to continuous improvement and environmentally sustainable solutions, its current focus remains within the company's existing operational framework. So, there is no ambition to expand this approach to incorporate new production modes such as using recycled construction materials.

Integrating sustainability: Gathering internal competencies

The company has implemented a structured sustainability strategy centered around a dedicated team comprising three internal members and an external environmental consultant. This group includes the business development manager and two representatives from the production side, each contributing specific expertise relevant to developing and implementing new sustainability goals.

Regular interdisciplinary meetings, known internally as "*Octopus meetings*", are created to facilitate open dialogue and the sharing of best practices across departmental boundaries. A notable aspect of these sessions is the active involvement of the external consultant, who contributes with her expert insights drawing from experiences outside the organization. While maintaining confidentiality regarding other clients, her input introduces broader industry perspectives and new ideas, enriching the company's sustainability approach.

The strategy also focuses on enabling all departments to build internal expertise continuously. Employees are encouraged and inspired to actively contribute to future initiatives, drawing from their own experiences and knowledge to support the company's long-term sustainability goals.

Attendance to the Octopus meetings is entirely voluntary and consistently rotated, achieving a double objective. This voluntary rotation not only introduces new colleagues to relevant topics but also

actively incorporates new insights and diverse perspectives by gathering participants with specialized experience and knowledge on related topics. It serves as an example of the organizational willingness to ongoing learning and to develop through the exploration of new perspectives.

> *"So the people in the group they vary over time … we try to gain more knowledge within those areas, that's basically what the discussion within the groups is about" – Business developer*

Negotiating the barriers

In the context of construction and demolition waste management, common barriers such as financial constraints, time limitations, and resistance to change are frequently cited as obstacles to investing in development initiatives. While these challenges are genuine, they are often used as convenient justifications for deprioritizing CDWM rather than as issues to actively address.

However, in Company A, workshop participants appear to adopt a different perspective. Rather than using these barriers as excuses to disengage, they acknowledge them as challenges to be tackled. Their approach involves openly discussing these obstacles to explore how they can be managed within their specific context.

A business developer illustrates how the company is actively questioning these barriers. By framing the discussion in a way that challenges prevailing assumptions about the construction industry's rigidity, he encourages a shift in perception. He draws comparisons to other industries that have successfully developed tools and technologies for producing and delivering sustainable products. His use of the phrase, *"If they can, why can't we?"*, serves as a direct challenge to the notion that change in the construction sector is unfeasible. By referencing successful transformations in other industries, he aims to reshape perspectives and demonstrate that progress is not only possible but has already been achieved in comparable contexts.

In their attempts to overcome some of the barriers specified within the industry, the employees have developed an attitude that encourages experimentation, development, and exploration related to the specific areas outlined in their strategic framework. This culture extends to testing within projects, even in instances where client specifications may not explicitly request it, which is supported by the argument that a first step is to explore its potential. An example of this relates to building certification; in projects involving public clients, the need for certifications is uncommon, leading to opportunities to trial new solutions, practices, or technologies, and assess their impact. This method fosters an environment where team members feel empowered to explore new boundaries and deepen their understanding, enabling them to better support the strategic objectives:

> *"Even if they don't ask for it, we see it as a first step to elaborate and get more knowledge about it" – Business developer*

Several key initiatives emerged from these Octopus meetings, offering insights into the company's efforts to enhance environmental performance. One such initiative focuses on developing an energy classification system for site huts, enabling a better understanding of their energy efficiency and potential improvements. Another area of exploration during these meetings has involved supplementing energy measurements, not only for mobile offices but also to gain a broader understanding of overall energy consumption on-site. This analysis of energy use is seen as foundational groundwork, facilitating more informed decision-making. It is positioned as an initial

step in a broader, ongoing effort to minimize environmental impact through optimized energy use, starting with site huts but gradually extending to other areas of the construction site. Although these initiatives do not adhere to circular principles, they illustrate a commitment to integrating sustainable solutions, improving efficiency, and increasing productivity, reflecting their willingness to innovate that could align with circular strategies in the future.

Engaging in a pilot program, and collaborating with end-users to co-create a portal in collaboration with waste management companies is a noteworthy example of fostering collaborative relationships. The initiative focuses on actively involving stakeholders in the development process, ensuring that the end product aligns with the practical needs and expectations of those directly engaged in waste management practices.

Sharing information to establish benchmarks is a collaborative effort encapsulated in the discussions, with the intent of creating a collective understanding of industry standards and best practices. The company recognizes the value of collaborative knowledge and seeks to contribute to and benefit from a shared knowledge pool. The development of an in-house system, categorized into bronze, silver, and gold levels, illustrates a structured approach toward creating a framework that acknowledges and rewards varying levels of environmental sustainability achievements. This system not only provides a framework for self-assessment but also serves as a motivational tool, encouraging continuous improvement and progression toward higher levels of sustainability. Their involvement in a project labeled *ECO Online* illustrates their ambition to leverage technology for environmental stewardship. Engaging with the ECO online project suggests a dedication to exploring digital solutions and platforms that can enhance the efficiency and effectiveness of the company's environmental management practices.

These examples represent tangible outcomes of the collaborative efforts of the organization's reflecting a broader approach to innovation, information sharing, and systematic development in the pursuit of a more sustainable future.

Measuring results

The company seems to regard sustainability not just as an abstract concept but as a central strategic goal to deliver value to its customers. They have implemented precise metrics to articulate organizational goals for improving their sustainability performance. This has been previously outlined in other contractor organizations, but instead of creating an internal competitive environment between functions to boost performance within individual projects, the measurements are designed to illustrate the collective efforts of the entire company. This approach aims to cultivate a collaborative environment that fosters teamwork and shared goals across various functions. The focus shifts from isolated achievements to a holistic view of the company's overall performance that emphasizes cooperation that benefits the organization as a whole.

The company bonus program is an attempt to foster a deeper engagement from the employees. The management has also taken the initiative of translating some of these metrics into a points system. One of them is connected to the overall waste volumes related to their specific projects. This incentive structure not only aligns individual efforts with broader sustainability objectives but also serves as a tangible recognition of contributions toward the company's overarching environmental goals.

The liberated setting of octopus meetings allows participants to escape the mundane practicalities of their day-to-day projects. Here, they are encouraged to explore alternative paths and values, providing a creative space where innovative ideas should flourish. However, a curious paradox surfaces – upon returning to their usual work context, the enthusiasm related to these ideas often dissipates, suggesting a challenge in translating the innovative concepts generated in these meetings into practical, everyday applications.

The business developer is recognizing the role of knowledge in addressing challenges associated with the integration of sustainability practices within the company, competence development is therefore viewed as a strategic priority. The company insists on the importance of building on internal competencies to shape their sustainability efforts. To achieve this, they actively develop skills through interaction and reflection on their existing environmental practices, as demonstrated by how their environmental work is organized. This approach utilizes their established expertise to promote knowledge transfer and skill-building among employees.

Recruiting the right people

Alternatively, the company considers strategic recruitment as a means of acquiring individuals who already possess the requisite knowledge of sustainability. This approach aims to tap into external expertise, with the goal of assimilating knowledge from individuals who have a proven track record in sustainable practices. The recruited individuals should be tasked with translating their specialized knowledge into the specific organizational context of their company. By doing so, the company aims to create a dynamic knowledge exchange environment that contributes to the development of its internal competencies related to sustainability and, at the same time, also inspires individuals to engage in sustainability development.

> *"We see that we must gain knowledge, one way is to learn by ourselves, but another way is to bring in new colleagues that are very skilled within this area." – Business developer*

The atmosphere in the company seems to create an optimistic and open-minded attitude toward the potential of adopting sustainable practices within the company, encouraging stakeholders to view change as both necessary and achievable.

Defining their role: one step forward two steps back

However, despite the articulated commitment to prioritize sustainability among the identified key areas, fully transcending the established norms and assumptions tied to their current roles within the field appears to be a challenge. While the participants acknowledge the importance of sustainability, they see obstacles and limitations to how much they can achieve linked to their position in the decision process.

> *"The parts that we really affect or can affect within our role as a construction contractor. Because we don't develop projects on our own. As we said, we are a contractor." – Business developer*

This reflects how they interpret the challenge of turning ideas into action. They perceive a gap between their creative discussions and actual implementation, attributing it to the fact that decision-making ultimately rests with the customer. From their perspective, this external control limits their

ability to act on ideas, making it difficult to translate creativity into tangible outcomes. Whether this gap truly exists or not, their interpretation highlights a sense of frustration or powerlessness when their innovative efforts depend on external approval. The environmental sustainability arm of the organizational octopus thus becomes not just a symbol of innovation but also underlines the ongoing challenges to integrate these groundbreaking ideas into the organization's daily operations.

Aware of this situation, the environmental consultant underlines that they can exercise some influence over actors within their network, even if they don't fully control the decision-making process. She actively attempts to leverage this influence by voicing the need for action during one of the octopus' meetings. By emphasizing the importance of acting and creating a sense of urgency or motivation, she aims to encourage participants to take initiative. This suggests a strategic effort to mobilize others despite external constraints, reflecting a proactive approach to generating momentum within their network.

The argument here is that if the company starts to ask questions or make explicit demands, it will push the suppliers to take action. If there is a demand, suppliers are likely to respond and strive to meet it, she claims. It is important that they take on the role of generating motivation for suppliers by clearly expressing needs and expectations.

> *"Yes, but I just think that asking this question will give your suppliers a bit of a boost, because otherwise, nothing happens. That's just how it is, if there's a demand, then it will come, and people will want to meet it, of course." – Environmental consultant*

With the intent of reshaping their supplier chain, the company is actively trying to encourage and incentivize their suppliers to provide more sustainable materials. They claim to do so by adopting repetitive statements as a communication strategy to strengthen their influence. The strategy involves clearly expressing the need for materials or products that are more environmentally sustainable, such as those made from recycled or reused materials or, in other ways, other sustainable qualities. They adopt a position that involves actively requesting and promoting sustainable materials from their suppliers, using incentives and expressing a clear interest in environmentally friendly options.

The following example emerged during the second workshop. It illustrated how they decided to engage in discussions with their supplier to explore ways to encourage the delivery of more energy-efficient site huts. The contractor argued that the suppliers were more likely to make changes if there was a demand for such sustainable products. Emphasizes the importance of actively asking for these sustainable options and showing interest, as suppliers may not take action unless there is a demand.

> *"But it will surely probably change if this is asked for, I think, because that's kind of what this is about. Of course, they won't do anything if it's not asked for, so I think it would still be good if you went out and asked this question and showed that there is an interest because otherwise, it's just boring to do something."*
>
> *– Environmental consultant*

Through their commitment to enhancing their environmental practices, they actively engaged in establishing classification levels for energy usage in site huts. They also sought to involve their suppliers in discussions regarding this classification, requesting additional information about the energy efficiency standards for huts used in their projects. However, the response they encountered was less than enthusiastic.

"Yes, but [the supplier] was quite upset overall. They had not been involved in this, and it's not sanctioned within the industry. So, it's too early to introduce these criteria, and he was a bit angry at [us], so it's very challenging to gauge the internal response."

– Environmental consultant

The enthusiastic environmental manager's proposal was abruptly rejected by the supplier, who expressed a lack of interest and provided arguments against continuing the developments. The supplier's reasons included misalignment with established industry standards and concerns regarding the project's timing, which in turn also demotivated the manager

Role of the business developer – Embracing development to meet future demands

The company's involvement in our four workshops was primarily facilitated through contact with their business developer. His role was to ensure alignment with the perspectives of the company's management board. This alignment is illustrated in how the company approaches forthcoming requirements, selectively dismissing elements they deem outside their scope while actively promoting those that align with their interests:

"If you are about to build a school, then the CO2 impact on the project is limited to a certain level. In this context, the company doesn't determine the overall program of the building. Instead, we focus on those areas that we're able to directly influence. It may be what we can change directly on site, such as waste management, energy consumption related to heating, fuel consumption, and other related aspects."

– Business developer

The business developer thereby emphasizes the strategic focus in areas where they can make a direct and meaningful impact. This form of communication illustrate the business developers' efforts to divide or deconstruct the barriers they face into manageable parts. It supports the team by adopting discourse that allows the participants to engage in the transformation of practices related to their own line of work.

However, referring to the program of the building and the use of the term requirement suggests that there are predetermined standards or regulations that dictate certain aspects related to sustainability. The framing in the statement implies that the company perceives its ability to influence as constrained by external factors, excluding aspects that fall outside the predetermined scope of requirements or program decisions. It implicitly communicates an acceptance of the organization's limited ability to influence the project and a recognition that there are boundaries to what the company can actively control or change.

The company is distancing itself from the decision-making processes related to the fundamental aspects of the building, such as its purpose and design. This contributes to a perception that the company's role is primarily execution-oriented, with limited involvement in shaping the foundational elements that impact sustainability. The purpose is to focus on what the company "*can change directly on site*", emphasizing a narrower scope of influence that revolves around immediate, on-site practices like waste management and energy consumption. This can potentially limit the broader application of sustainability solutions, which extends to include upstream decisions and project planning.

The observation of the Octopus meetings revealed clear possibilities of empowerment for the employees, where they could actively engage in defining development goals within their specific work areas. This not only contributed to shaping the frame of how work should be organized but also exemplified the collaborative approach of the company. The structure of these sessions not only allowed individuals to contribute with their own suggestions but also underlined a collective sense of ownership and responsibility for its development. Through their active role in shaping development goals, the team members demonstrated a heightened sense of accountability, fostering an environment where each participant contributes to the overarching improvements of the organization.

> *"Well, what do you think, because we have actually been given the task to formulate an environmental goal based on this?" – Environmental consultant*

The environmental consultant also seems convinced that knowledge development, together with a '*zero defect strategy,'* has the greatest impact on delivering value that satisfies customers' expectations. Coupled with this, these are also the types of projects that are most beneficial in economic terms.

Outcomes

The company has developed an internal structure to facilitate its aim of developing its environmental performance. The two main participants of the workshops argued for the potential of delivering sustainable developments, and perhaps exceed, the future demands from clients.

While the company expresses an intention to enhance their environmental performance, the current development appears to be more focused on incremental improvements closely aligned with the optimization of existing processes. The company's ambition to develop its environmental performance, particularly through the optimization of existing processes, aligns well with the principles outlined in Swedish legislation on construction and demolition waste. The legislation similarly encourages a proactive and sustainable approach to waste management by emphasizing the need for companies to optimize their processes to minimize their environmental impact.

This approach seems to fall short of embracing a transformative paradigm, such as the principles outlined in the circular economy. The company's environmental aspirations seem to be constrained by the boundaries set by their existing organizational culture. This cultural framework shapes the scope of their environmental performance, creating limitations on the possibilities for more profound and innovative changes. To embrace the potential of sustainable practices would require the company to reconsider a more radical shift in its approach, embracing broader and more visionary strategies that extend beyond the confines of their current ambitions. Only by transcending these limitations can the company truly align themselves with the transformative goals of a circular and sustainable future.

5.3.3 Case company B – Gradual adaptation

The company describes itself as founded in the mid-20th century; their initial operations started on a smaller scale in a town along Sweden's west coast. Today, they consider themselves a modern second-generation enterprise, which throughout the years has multiplied their workforce several times, today consisting of around 60 employees. These individuals are engaged in various activities, including contracting, environmental, and recycling works. They claim to continue to invest in the future,

steering their operations towards growth. This involves initiatives such as integrating eco-friendly machinery, expanding our workforce, and fostering collaborations with both existing and new clients.

As a customer-centric entity, the priority has been to deliver according to agreements with their clients continuously. This commitment is upheld by service-oriented and skilled personnel, coupled with an extensive fleet of machinery. Their offering aims to cater to a spectrum of contracting and construction projects, ranging from small to large-scale endeavors, offering comprehensive turnkey solutions.

Occupying a total area of approximately 2500 square meters, their premises encompass offices, storage facilities, a large machinery warehouse, and an environmentally friendly washing hall. The warehouse primarily serves as workshops for their in-house machinery, facilitating swift service, repairs, and preventative maintenance. This ensures the machines are readily available for the next job, benefiting both the clients and the company's operational efficiency.

This subsection is based on materials gathered from four workshops, each session featuring different participants, with the exception of the environmental manager who took part in all of them. In an organization with 60 employees, a review of their organizational chart indicates that approximately 6 people are part of the management team, with all of them participating on at least one occasion. A few additional individuals are responsible for the execution of work.

The methodology chapter provides a comprehensive list of participants for each workshop. Notably, the environmental manager attended all sessions. Additionally, the CEO, a Quality and Communication manager, HR manager, a Finance and Administration manager, and the Operations manager participated in at least one session.

Integrating sustainability: Aligning with customer demands

In this company, the responsibility for developing sustainability seems to be devoted to a single individual, the environmental manager. This employee takes the lead in championing new sustainability initiatives and encourages its integration within the company's operations. By holding the official title of environmental manager, she is entrusted with a multifaceted role encompassing quality, environmental concerns, and occupational safety. Her role does not only consist of conceptualizing the strategic vision for sustainability within the organization but also to play a central role in translating these propositions into actionable plans within the company.

However, the potential weakness inherent to this strategy should be acknowledged, as the company is significantly dependent on this sustainability champion. Relying on a single individual to drive the circularity agenda may pose challenges, particularly in terms of sustainability continuity and resilience. The success of the circularity initiatives becomes intricately tied to the ability, longevity, and aspirations of the environmental manager.

> *"Yes, I ensure that we set sensible goals that drive the company forward, but my imagination is somewhat limited. And I'm really glad to get some better input on how we can establish sensible goals, not just to satisfy some auditor but for the company to truly benefit from our work here." – Environmental manager*

The company's participation in our workshops is thereby part of the organization's ambition to distribute the responsibilities and knowledge associated with circularity initiatives across multiple

roles within the company, together with creating inspiration for the topic. The environmental manager describes the goal of this collaborative approach. She wants to involve multiple team members already active in sustainability, who could significantly improve the organization's capacity to adapt and increase the company efforts over the long term. While having a dedicated sustainability champion is undoubtedly beneficial, fostering a culture in which sustainability responsibility is shared across the team can establish a more resilient and enduring foundation for circular practices within the company. However, in the initiation phases of the workshops, the CEO quickly narrows down the scope of responsibility and function attributed to the environmental manager. Thereby downplaying his own responsibility for these types of developments. But it also frames it in a very personal manner:

> *" I'm married to the environmental manager, luckily, because she is the one who sets the goals for the company, setting clear goals, so I get good help from her when needed" - CEO*

From the discussions, the ambitions of the company could be described as focusing on ensuring that they just exceed the minimum requirements in relation to their clients' environmental demands. This suggests a struggle that the environmental manager is facing within the company. She encounters challenges in promoting higher ambitions within the management team, where improvement goals are limited. Despite expressing strong personal motivation to improve the company's internal practices during the interviews, organizational constraints seem to impede her progress. Therefore, in an effort to encourage her colleagues to at least engage at a minimum, she adopts a coping argument. The argument is that they don't have to be '*the best at everything*'. That they should instead work towards and appreciate the improvements that they are able to make.

> *"... maybe you don't need to invest continually here, but you can make sure to at least stay away from worst behaviors,*
> *- Yes, yes, yes, good enough.*
> *- Yes, that's possible, aim not to be the worst. Not being the worst in terms of the environment can be a goal for me." – Environmental manager*

As articulated by the environmental manager, participating in our project holds a deeper purpose for the company. One significant aspect is the intention to create a collaborative common space where knowledge can be shared, thereby fostering inspiration among the participants. But the company not only sees itself as a contributor but as a source of motivation and innovative ideas within this collaborative effort. The environmental manager explicitly emphasizes the importance of inspiring colleagues, especially those who may not view sustainability as either particularly central to the business or as something important for themselves.

Beyond mere inspiration, the environmental manager expresses a need to translate sustainability efforts into tangible financial results. This approach reflects a pragmatic understanding of the interplay between sustainable practices and financial outcomes. The environmental manager hopes to garner better insights, seeking input from both the project participants and also the facilitators of the workshops on how to develop and formulate meaningful business models and achievable goals.

Our project workshops serve as a platform not only for developing sustainable solutions but also for integrating employees new to this process. By actively engaging and seeking input from participants, the company aims to enhance the overall quality of its environmental performance, leveraging diverse perspectives to hopefully formulate objectives that are both ambitious and feasible. Thereby creating

a broader commitment to contribute to the organization's development. Rather than viewing the companies' environmental efforts solely as client-imposed necessities dictated by management decisions, the linking of these initiatives to financial improvements and individuals' ambitions, views, and values can serve as a source of inspiration and motivation for participants.

> *"I am somewhat skeptical about certain decisions and encourage others to think differently … even when trying to convince that one often saves a lot of money, we have fuel-efficient machines, so it is also economically beneficial. You have to twist and turn so that even the interests of others are satisfied." – Environmental Manager*

From their perspective, the company shares a rich history of managing material resources through collaborative efforts with the local municipality, particularly in the context of being responsible for the operations at local recycling centers. Over the years, the scope of their activities has evolved, expanding to include private actors in addition to municipal partnerships. The environmental manager argue the significant role the company played in the positive development of recycling facilities. She particularly highlighted the period when they worked to obtain an ISO certification. The certification not only acted as a regulatory compliance mechanism but also served as a catalyst for improvements in environmental management, safety practices, and overall efficiency. During the initial stage of the collaboration, the facilities, including the outdoor spaces and container setups, underwent substantial improvements initiated by the company, ultimately resulting in more organized and aesthetically pleasing recycling centers to the satisfaction of the client. However, despite their internal drive to improve recycling centers, the company faced the challenge of convincing clients, especially municipalities, to embrace these changes. This necessitated an effort to alter the attitude of clients and convince them to participate in the transformative process. The CEO claims to have assumed an essential role in this undertaking, actively engaging with individuals at municipality offices.

The relation to customers is strongly emphasized during the workshops. The CEO's approach involved physically driving the municipality officers around to different locations, providing firsthand examples of the potential outcomes of their proposed transformations. Through the proactive efforts of the company, including site visits and showcasing successful models from other locations, the officers began to apprehend and appreciate the potential benefits. This hands-on approach not only facilitated a change in perspective but also paved the way for informed and constructive decision-making. The CEO is proud of telling the story where the company representatives portray themselves as committed actors who are not only following to regulatory standards but actively engaging in influencing the perceptions of their clients. The pursuit of ISO certification served as a formalized mechanism for compliance.

The company has historically been involved in both construction projects and demolition processes. However, as expressed by the CEO, the nature of the demolition work has evolved significantly and the dynamics of the demolition process have changed, becoming more intricate and demanding due to increased regulatory requirements. He compares it to earlier times when tasks were simpler and where decision-making was more straightforward. This has resulted in them stopping their involvement in the demolition work because of the complexity and increased legislative demands. The process has become more cumbersome he says, and the company finds it challenging to navigate the evolving regulatory landscape. Based on the interviews, what the company perceives as a strategic shift, or its envisioned future business focus is a continued commitment to recycling and reuse as essential components of its value proposition. This transition is not just a conceptual shift but reflects

a substantial evolution in its core activities. Recycling and reuse have not only become prominent aspects of the business but are also recognized as key contributors to its overall growth. This strategic alignment demonstrate the company's adaptation to evolving industry dynamics, driven by increasing customer demand for circular business solutions. This shift appears to stem from growing societal and environmental concerns, reinforcing the integration of recycling and reuse as core business components. By embedding circular principles into its operations, the company not only meets market expectations but also strengthens its long-term competitiveness. The identified trajectory toward recycling and reuse reflects both the current business landscape and a forward-looking approach to sustained growth within the circular economy. By positioning itself as a key local player in resource recovery, the company seeks to leverage expanding opportunities in this sector. However, the strategic emphasis appears to be driven primarily by market potential rather than a fundamental acknowledgment that circular business models represent the future of sustainable enterprise rather than a passing trend. Nonetheless, this strategic direction aligns well with broader transitions toward circularity and responsible resource management. By actively investing in circular initiatives, the company not only aims to remain relevant but, as stated by the environmental manager, aspires to play a proactive role in shaping responsible and sustainable practices within its industry.

Approaching the barriers: Sustainability and finance should go hand-in-hand

During the workshops, the discussion about the barriers primarily centers on three key points. The first concerns transforming their supplier network to meet environmental specifications. This entails not only ensuring that suppliers adhere to specific environmental standards but also fostering a culture of sustainability throughout the supply chain. It involves collaborating with suppliers to source materials and products that are eco-friendly and align with the company's environmental goals.

Secondly, there is the challenge of converting these environmental efforts into financial returns. Implementing sustainable practices often requires a significant investment of both time and money to develop and align processes with environmental demands. This includes expenses related to research and development of eco-friendly technologies, training employees on new practices, and implementing infrastructure changes to support sustainability initiatives. Additionally, there may be costs associated with obtaining certifications or meeting regulatory requirements related to environmental standards. Despite their ability to see the potential long-term benefits of sustainability, such as reduced operational costs and reduced competition in tendering processes, the participants are carefully considering these costs to ensure that their investments yield tangible financial returns in the future.

Lastly, there is a recurring concern regarding the clients' willingness to pay for these investments and whether they will perceive the added value. While companies may be eager to implement sustainable practices, the ultimate success of these initiatives often hinges on the client's willingness to support environmentally responsible practices. There is also ambiguity about future market trends and whether sustainability will remain, or even if it is, a priority for clients in the long term. As they currently claim to see a discrepancy between the formal discourse on sustainable practices, and the actual practices in prioritizing sustainability initiatives amongst their clients.

From this, the ability to address these multifaceted challenges requires a broader approach that not only encompasses internal processes but extends to include supplier networks and external market forces together with industry-wide collaborations.

Although they are committed to engaging in a key part of the circular economy, materials recycling, some company representatives express difficulties in influencing the broader network of actors they interact with. They recognize that, as a relatively small entity, it can be challenging to assert stringent requirements on their suppliers. The environmental manager, for instance, describes the difficulty of imposing demands on suppliers as their market part is quite limited. She also emphasize the practical challenge of finding alternative suppliers, even if they are not entirely satisfied with the current ones. The way the industry operates makes decision-making a complex and delicate balancing act. Companies often need to weigh different priorities, such as maintaining high product quality while also minimizing environmental impact. These factors are closely connected and improving one can sometimes come at the expense of the other. As a result, the process involves ongoing compromises, shaped by the specific conditions and demands of the sector.

> *"But who should one choose instead, it becomes a bit of a compromise, now we only set quality requirements, but it doesn't get any easier when we also raise the bar with environmental standards." – Environmental manager*

This awareness extends to the practicalities of controlling and assessing numerous suppliers, acknowledging the difficulty in locating viable alternatives, even if the current suppliers may not meet all expectations. The inherent complexity in supplier relationships involves a careful tradeoff between quality, environmental standards, and the feasibility of identifying alternative sources. The company currently focuses on maintaining quality standards but faces the realization that increasing the environmental requirements poses an additional layer of difficulty.

The company representative claims that the company's environmental efforts are not just ethical considerations but also strategic business decisions with long-term benefits. The environmental manager emphasizes the importance of aligning sustainability goals with business objectives, ensuring that environmental improvements do not compromise financial results. According to her, she continuously repeats that these goals and the development of their environmental efforts need to go hand-in-hand with their business. This means that the environmental benefits should not be at the cost of their financial result. A view which seems to be shared across the organization.

> *”So, the important thing is that we want to get paid for.” – Business area manager*

This sentiment is consistently reiterated throughout the workshops: the importance of receiving compensation for their environmental services, which is to be achieved by aligning with the needs of the client through their value proposition. Other participants in the group also argue for another important notion, that the transformation of practices to reduce their environmental impact is an investment that is associated with a cost. Therefore, they need to minimize other expenses to be able to invest and maintain a viable business.

> *"Yes, we wait a bit and see what happens in the future, and then we'll figure out the best possible way to do it, so it doesn't become too costly. After all, you also need to be able to survive" – Quality manager*

The developments within the company align with the content of the tendering documents. They claim to be sensitive to the types of demands defined by different clients. If they can identify a trend in how demands are articulated in the tendering documents, they want to respond promptly.

> *"But in the beginning, you always get paid if it's something others can't provide."*

– Environmental manager

Here, the environmental manager advocates for the benefits of distinguishing themselves by aligning with these demands. She anticipates that such alignment will be valued in the future, prompting them to proactively adapt to forthcoming demands. This proactive stance would not only reduce competition during the tendering process, as some competitors may struggle to align themselves, but also increases the likelihood of clients being willing to pay for their services. But this viewpoint elicits varied reactions.

> *"Well, at least as long that they have money for it, after that, it becomes business as usual" - CEO*

Nevertheless, as the client's demands shape the company's future course, the allocation of resources for environmental initiatives becomes increasingly critical.

To add to this, one participant expresses a sentiment that the demands from clients are becoming overwhelming and continuously shifting. Her perspective highlights the extensive demands placed on the company, particularly in regard to certification requirements, which involve meeting various new criteria. During the workshop, she cites her experience attending an information session with one of their clients:

> *"I attended [the client's] lecture, not the one you and I attended, but the one before, about how to even get on the list as eligible suppliers. Yeah, you have to get certified. There were some other requirements as well. Requirements for a certain percentage, like for a number of electrified cars, so it was a lot." – Quality manager*

This remark indicates an overwhelming feeling, that it becomes too challenging for the company to meet all the necessary criteria whilst continuing to remain competitive in the market. The environmental manager, therefore, voices her discomfort with the client. From her view, the company is putting a lot of effort into changing work processes and practices in an attempt to align their business towards the expected forthcoming demands. She sees navigating the possibilities for environmental improvements as a challenge, as the role of environmental managers is faced with a myriad of complexities and uncertainties. On the topic of sustainability, the quest for the '*best*' choice is often laden with ambiguity, as divergent perspectives, technological advancements, and evolving regulations converge to shape the discourse where the path forward is far from clear.

> *"Or one invests in the right things because we don't have them yet, it's very difficult. Like they say, a new machine is better than an old one that you repair for the sake of the environment, right? No one really knows the answers, and all this is just a lot of discussion about battery-powered cars when you think about how lithium is produced. Is it really better when you take the holistic perspective? I can't say yes or no. The customer doesn't think so either, so I don't know which direction to push in. What is really right or wrong?" – Environmental manager*

As municipalities and other clients fail to incorporate sustainability demands into the tendering process and follow up on the few requirements that are imposed, our participants feel demotivated. As it suggests that there is little incentive to meet, or exceed, these requirements. During the workshop, company representatives shared anecdotes to illustrate why it might be better not to engage at all. These stories typically involve instances where companies have been awarded contracts

despite being clearly unable to fulfill the requirements, without facing any consequences. Alternatively, they illustrate how client behavior shapes the organizational discourse. This sentiment is captured by the environmental manager's statement:

> *“No, if you invest in that or get ISO certified, it was almost a mockery”*
>
> *– Environmental Manager*

In another instance, the business area manager shares a similar resigned and frustrated attitude towards the municipality's efforts to realize the client's ambition of transitioning the region to circular economy. Despite claims of making efforts, the argument presented suggests that these ambitions often fail to produce tangible results, indicating a lack of motivation or incentive for the company to actively participate in such initiatives. The mention of past attempts by the municipality to promote reuse initiatives include a sense of skepticism or doubt regarding the feasibility of such attempts.

> *"It was some municipal politician who tried to promote some reuse and these kinds of things, but it never amounts to anything, and he, what was his name? But it never amounts to anything." - Business area manager*

Role of the CEO – Dismissing ideas without compelling financial motives

The CEO sees himself as playing the role of an umbrella, responsible for setting overarching goals for the business and ensuring continuous progress in operations, without getting too involved in the detailed management and control. He maintains a strong interest in the company’s progress toward sustainability, which is described not only as being aligned with their internal strategic ambitions but also as a significant opportunity to position the company as a preferred partner. Sustainability is further emphasized for its potential to reduce costs, generate new revenue streams, and support the development of compelling value propositions for clients. While he is able to clearly articulate the intended benefits of the company’s sustainability initiatives, he also emphasizes that, despite considerable efforts and progress, these actions have not yielded the expected returns. He illustrates this by referencing recent setbacks where sustainability efforts appeared to have had a counterproductive effect:

> *“Yes, so, it has been really great, because we have really been working towards the environment and to be the first in, and to be part of the obvious choice. But that went against us in the last procurement, as we did not get it because we were too expensive” - CEO*

Despite their advancements in environmental initiatives and aspirations to be the preferred choice, they encountered challenges or setbacks during the tendering process.

The client demands are influencing the company’s decisions, as already indicated by the CEO. The financial manager shared the following story: Previously, the company had received bid deductions, meaning that their offer was evaluated more favorably or received a price reduction advantage in the tendering process as they met higher environmental standards. With those standards now removed, the company’s added efforts no longer provided a competitive edge. In response, the CEO suggested rethinking the company’s strategic direction by distancing itself from this client segment. This alternative path appears to resonate with the speaker, either as a natural response or as an appealing shift in approach.

”But maybe we should go another way, to move away from them. Spontaneous, it feels like that actually” - CEO

He claims that the difficulty in transforming their business into becoming more sustainable resides in their inability to influence and communicate their efforts to their customers. While they acknowledge the potential for implementing sustainable solutions for their own ateliers, they find it significantly harder to do so when addressing clients directly. This difficulty arises from their limited influence over client decisions, he claims and the difficulty of persuading them to adopt practical solutions within their operations. Here, he goes back to the integration of electric vehicles as an example:

“We have a bit of difficulty because we find it very hard to always find time to explain to our customers, that's the thing. The workshop is one thing, where we could do something because it's our own workshop and we can develop to save energy or anything else, it could be like a project. But, when we work for a customer, we find it very difficult.” - CEO

During the discussions, the CEO expressed a genuine interest in exploring the transition to more environmentally friendly vehicles, specifically showing curiosity about the potential for adopting electric machinery as an alternative to diesel in order to reduce the company’s carbon footprint. At the same time, however, he firmly articulated his own skepticism, questioning the feasibility of such alternatives:

“And it will be a bit fun to hear if, as someone working with electricity, there is something that can replace it. I don't think there is, actually” - CEO.

This strong resistance presents a significant barrier for others in the organization, hindering further exploration and progress toward more sustainable practices. As the environmental manager noted,

“No, because the CEO is so against it, with charging times, you know. You can't charge a battery for 24 hours" - Environmental Manager.

Within the same dialogue, a recurring pattern emerges in which certain participants repeatedly raise similar arguments and counterpoints concerning the feasibility of using electric vehicles. This behavior is manifest in their tendency to reference extreme cases, such as situations where electric machinery may be insufficient to meet critical power demands or where remote geographical locations present substantial obstacles to establishing adequate charging infrastructure.

“Now we're talking about these machines with 1200 horsepower that we travel to maybe three different locations in a week. And I don't know what 1200 horsepower converts to in kilowatts or, well, it becomes a lot, and there are no facilities with electricity available. There is nothing. We could easily install an electric motor in such a machine, that's not a problem, as long as we have a cable and plug in when we arrive at the site, but there's no one with that power supply. So, that's the challenge." - CEO

These types of arguments have implications for the employees who do not even engage in exploring alternative avenues that are not aligned with the CEO perspective. For instance, the environmental manager states that she does not bother opening the discussion on some of the parts related to electric machinery as ‘*the CEO is so much against its operability*’.

Despite the company's declared commitment to further develop their recycling activities, its current ambitions seem limited to material downgrading. The recycling process involves crushing materials, with a significant portion ultimately destined for incineration rather than aiming at resource recycling. When challenged to reconsider and expand this proposition to include soil recycling or repurposing crushed materials, the CEO mobilizes the argument that their industry is evolving too rapidly creating a barrier to implementation. An illustrative example concerns soil handling within the industry. What was previously regarded as a routine task, such as soil excavation, has now become heavily regulated and is increasingly framed by authorities as a high-risk activity. This shift is perceived by our participants as contributing to unnecessary alarm and overreaction"

> *"I think we can see that it's going too fast as well, and then it hits the wrong way, like in our industry, we can take such a simple thing as, for example, when we dig up a load of soil, ordinary soil. Then it has become so hysterical because it's considered totally dangerous, according to the authorities" – CEO*

There appears to be a shift in the company's approach to identifying targets for new business models, possibly driven by limited internal resources. Instead of pursuing more transformative or long-term sustainability innovations, the focus has turned toward addressing immediate client demands and aligning with ISO certification requirements. This reorientation involves more incremental and operationally grounded initiatives, such as implementing software to track and compile fuel consumption data, evaluating the use of alternative bio-oils and low-emission fuels, upgrading the HVAC system, and replacing existing lighting with energy-efficient LED alternatives.

During a session focused on the company's capacity to influence client behavior, participants offered varying perspectives on the feasibility of such influence. Some cited examples of prospective clients expressing interest in investing in more sustainable machinery, while others pointed to specific locations where electric equipment could be effectively utilized. However, somewhat unexpectedly, the CEO began sharing an unrelated anecdote:

> *"Yes, but then I have to share a bit of a story that happened as I was waiting for the sandwiches for half an hour. He obviously knew me, but I didn't know him; it was some supervisor in the construction team..." - CEO*

This shift in the conversation appears to function as a rhetorical strategy, diverting attention away from the ongoing discussion. The storytelling moment effectively interrupted the dialogue on sustainability, redirecting the group's focus toward other, less related topics. This incident also illustrates the CEO's influence and authority within the organization, where his narratives can not only shape the direction of conversations but also signal when a topic has been exhausted or deprioritized.

Outcomes

During the workshops, throughout the ongoing company dialogue, many proposed initiatives consistently face resistance, often being dismissed or overlooked. The transformative framework envisioned by some is perceived as demanding substantial changes to existing practices and processes, which generates skepticism among participants. In contrast, the environmental representative promotes more pragmatic solutions that align with current operations, emphasizing their ease of integration and minimal disruption or financial burden.

When alternative courses of action are proposed, a discernible pattern of redirecting the discussion often emerges. This redirection typically involves introducing examples that preserve the status quo while addressing specific operational issues faced by the company. Such examples include the switch from conventional to more environmentally friendly engine oil in machinery, or inquiries into systems capable of calculating CO_2 emissions based on fuel consumption.

> *"Do I have to manually calculate everything; for example, from Preem, I have to Google for half an hour to find out how much CO2 is emitted per liter. Then, with Shell and others, there's something else, and they are more efficient; they have less fossil fuel." – Environmental manager.*

This avoidance strategy raises questions about the CEO's ambition, suggesting a deliberate effort to avoid commitment to a particular course of action or to express dissatisfaction with the current organizational development.

Consequently, it seems as though the established practices will persist, and the company's efforts to improve their performance, rather than driving substantial change, result in incremental improvements over time that will have minimal improvements to their environmental impact. The reluctance to embrace more transformative initiatives and the preference for maintaining the status quo poses significant challenges to achieving a transformation towards environmental sustainability within the organization.

5.3.4 Case company C – Adopting sustainability concepts for business benefits

For this last case, the company positions itself as a "*distinguished*" architectural firm renowned for delivering cost-effective housing solutions. They emphasize their remarkable success in competitive tenders and various projects, showcasing according to the CEO, a steadfast commitment to functionality, design excellence, and sustainability, all within specified budgets.

The company describes itself as a leader in seamlessly merging innovative concepts with long-standing building traditions, a blend where heritage meets modernity. Situated in one of the larger cities along Sweden's west coast, the company prides itself on maintaining a deep respect for traditional craftsmanship while actively embracing contemporary methods and technologies. According to the company, this unique approach has positioned them as a market leader, particularly known for developing cost-efficient and energy-saving solutions within residential areas. They emphasize their success in consistently delivering high-quality, sustainable projects, which they believe demonstrates their ability to balance efficiency with creativity and innovation. Established in 2015, the company employs around a dozen persons, they describe their size as sufficiently small to foster personal relationships yet large enough to tackle complex architectural challenges effectively. Despite not competing in terms of employee numbers, the company proudly asserts its productivity dominance. Beyond residential designs, the company extends its expertise to diverse building types, particularly focusing on elderly care facilities, preschools, schools, and offices. They emphasize that their team size allows them to remain agile and client-focused while still possessing the expertise and resources necessary to tackle challenging and sophisticated construction projects.

This sub-section draws on materials gathered from two workshops, highlighting the interaction and exchange of ideas between the two participants during both sessions. The workshops brought

together the CEO and one of their architects, providing an opportunity for direct dialogue and collaboration between leadership and design expertise.

Integrating sustainability: Conditional sustainability

The company emphasizes that delivering value depends on their ability to produce buildable projects. They argue that their extensive experience and expertise is crucial in determining what works in practice, to understand structural requirements, selecting appropriate machinery, and ensuring efficient construction processes. This knowledge helps them avoid waste and minimize errors in volume calculations, ultimately reducing costs by minimizing the need for excess building materials. Their strength is portrayed as their ability to adapt various buildings and designs to suit specific contexts. This adaptability relies heavily on knowing both who the client is and understanding the needs of the end-users. Creating a 'buildable building' requires aligning technical requirements with practical, user-oriented solutions. According to the company, this tailored approach is a key factor in why clients repeatedly choose to work with them.

The organization's strategy for developing sustainable practices seems significantly lacking compared to the two previous cases. Unlike those instances, this company lacks a designated group explicitly assigned to the task of creating sustainability-focused initiatives. Historically, these efforts relied on individuals in the organization who had a personal interest in such topics. Unfortunately, as these key individuals left the company, the momentum behind these initiatives disappeared, resulting in a noticeable gap in sustained efforts toward sustainability within the organization.

The underlying idea of developing sustainability within the organization is through knowledge sharing. In this company, it revolves around collaborative efforts, and where knowledge is disseminated through collaborative projects involving employees. However, due to the scarcity of sustainability initiatives, such collaborative ventures seldom occur, or involve only a select few employees, resulting in a gradual erosion of knowledge over time, particularly as individuals depart from the organization. Consequently, there is a pressing need to explore alternative avenues for actively sharing this specialized knowledge. It is argued that alternative routes are imperative to ensure the preservation of expertise among individuals, thereby facilitating its continuity within the organization.

An alternative approach that has been developed to facilitate the sharing of information related to sustainability is through organization information sessions, where organizational members are to present on various themes related to their respective fields. These presentations encompass diverse topics such as legislative updates, ongoing projects, innovative design solutions, and matters related to sustainability and occur 3-4 times a year. However, it seems as though the CEO is not totally convinced by the need to organize these sessions, at least not on the topic of sustainability. Even though the organization has defined an informal goal that one of these sessions should primarily be dedicated to topics related to sustainability, such discussions and presentations on sustainability related topics remain relatively rare.

> *"We try to have one sustainability project a year that we are looking at more thoroughly, together … But we have just made it once or twice, but we are trying to do that." – CEO*

The reason for this seems to be rooted in the fact that there is a cost associated with each participant attending these sessions. Instead, there seems to be a strong belief that it would be better, as it is

more cost efficient, to develop knowledge through projects, where they are also able to charge the client for it. This is illustrated by providing examples of knowledge production for other topics, such as handicap adaptations, different software, and fire and acoustics demands, claiming that it is the same type of knowledge that is required and can be developed in the same manner. By doing so, he also dismisses the need to put any further efforts that go outside the ordinary scope of '*business-as-usual*". And argues that since we've learned all this other stuff in other projects, there is no need to invest further to facilitate the development of sustainability-related knowledge.

What appears to be evident for the two participants of the workshop is an anticipation of changing customer demands in the future, which could alter the requirements imposed on them. Sustainability emerges as a notable example, and their involvement in this research project seems to be rooted in an acknowledgment of this potential development amongst customers. There is a recognition that failing to meet these expectations might result in missed business opportunities. Consequently, they are proactively seeking to identify potential pathways to align with these anticipated demands. As one participant argued, maintaining a strong customer base involves adapting one's professional approach to meet the evolving expectations of customers who value expertise in specific areas.

> *"if you have a lot of customers who likes you coming back because they think you are experts in something. Of course, you will not lose them. So, you have to adapt your own profession to the customers." – CEO*

However, despite expressing a willingness to adapt to client demands, perhaps this is not one of the main reasons as to why clients are coming back to them. Instead, it appears that many clients seeking their services do so primarily because of their affordability rather than the value they offer. This suggests that clients approach them for cost-effective solutions, and where their discourse suggests that they seldom challenge the client's preferences. The architect articulates feeling pressure from both the management side and clients to expedite the early development stages of projects as the project framework is often predetermined.

> *"I often feel like we copy paste projects that we know work in terms of plan, and then we just put it on a site. We make it fit within the general plan for that area, and then we make a nice facade for it, and it's sort of just generalized." - Architect*

Similarly, another architect conveyed a sentiment that they should not be responsible for advocating alternative solutions to clients. Instead, they believe in adhering strictly to the client's requests, as they view the client as the ultimate authority due to being the ones who pay for the services. This perspective reflects a mindset centered on efficiency, where the focus is on staying within the predefined boundaries of the project specifications. As one architect puts it:

> *"It's this building that we're going to use, and we're going to do it like this. And you're just going to make sure it fits." – Architect*

This attitude illustrate a tendency to prioritize client directives over the development of innovative solutions, leaving little room for discussion or input, thereby streamlining the project, providing little room for interpretation.

Approaching the barriers: Translating existing business model into sustainability

While there are instances where architects have attempted to propose alternative solutions and question client demands, they often express a sense of powerlessness, feeling ill-equipped to

challenge these requirements directly. Instead, they feel compelled to align themselves with the client's preferences, sensing a lack of agency in the decision-making process.

This results in frustration by the architect who makes attempts to advocate for sustainable design practices. Despite their efforts to propose environmentally friendly alternatives, they encounter resistance from clients who prioritize superficial aspects like color over sustainability. The architect emphasizes the importance of sustainability, promoting its benefits and the minimal cost involved for the client. However, despite their explanations, the clients remain unwilling to deviate from their preferences, leading to a sense of resignation and disappointment for the architect.

> *"I've never proposed that we do wooden load bearing structure instead of steel and concrete, for example. But it's been minor things, like me wanting to put a green roof on just small sheds, so we're talking really small areas. And I've had clients going, 'Well, you can get a green paper roof if you want, if it's the color it's about'. And it's just like it's not about the color, it's about sustainability. And you're trying to explain to them that it's good for everyone and the cost for them is really small, but then they're still like, 'No, but that's not what we're going for, so thank you and goodbye'" – Architect*

So, instead of facing the need to challenge or question both the clients' demands and the management teams' request for conformity, many of the employees seem to adopt a form of coping argument. Here, they argue for their existing business model, and explain why their existing business model is already sustainable '*enough*'. In a sense claiming that they are already doing enough related to sustainability by contributing to social sustainability through affordable buildings, the incorporation of circular principles by opting for the increased life span of products by producing buildings that lasts, and through the incorporation of existing building certifications.

The architect emphasizes a perspective on sustainability that focuses on creating durable, long-lasting construction projects. This approach prioritizes building quality and resilience, arguing that structures designed to stand the test of time are inherently more sustainable by reducing the need for frequent repairs, renovations, or replacements. The speaker believes that by prioritizing high architectural quality in rental apartments, they can encourage occupants to appreciate and care for the building, thereby extending its lifespan. This approach aligns with the idea that sustainable practices involve not only environmental considerations during the production of the building such as promoting material longevity and reducing the need for frequent renovations or replacements.

> *"I think my strongest view on sustainability is that once you build something, you want it to last as long as possible. And so especially when we make rental apartments, I try to just go for as high architectural quality as possible because my philosophy is that if people like the building, if they like the apartment, they will take better care for it, and it will last a lot longer." – Architect*

She also claims to adopt a broader interpretation of sustainability that goes beyond traditional environmental concerns. Instead, the focus is on social and economic sustainability, particularly in the context of developing affordable housing. The speaker emphasizes the importance of creating housing solutions that are financially accessible to people, addressing social and economic inequalities. This perspective recognizes that sustainability encompasses not only environmental stewardship but also considerations of equity, affordability, and community well-being. By prioritizing affordable housing,

she argues that they already contribute to a more sustainable society in terms of both social equity and economic stability.

> *"For me, I would say that the sort of major aspect of the way we work with sustainability is not the traditional material environmental sustainability but rather social and economic sustainability in sort of the sense that we help develop housing that is actually affordable." – Architect*

She maintains that all the employees share this broader view of sustainability, emphasizing that their efforts are primarily directed toward achieving social and economic goals rather than adhering strictly to traditional environmental criteria. This approach suggests a shared understanding of the sustainability in the company.

> *"…that the sort of major aspect of the way we work with sustainability is not the traditional material environmental sustainability but rather social and economic sustainability in sort of the sense that we help develop housing that is actually affordable." – Architect*

But by relying on these arguments, she is dismissing the need to improve their sustainability efforts by claiming that their existing business model is already sustainable by building resilient buildings that will last over time.

However, while they do align with client demands by adhering to established building certifications such as LEED or BREEAM and argue that these frameworks contribute to improving environmental performance, they also express criticism of their content. They acknowledge that meeting certification standards is often necessary to satisfy client expectations and market requirements. Yet, they argue that these certifications can be limited or overly rigid, sometimes focusing more on meeting predefined criteria than genuinely enhancing sustainability. This critical comment reflects their desire to go beyond ticking boxes and instead pursue more meaningful, context-specific improvements in environmental performance.

> *"Sometimes it's just like you can get a point for putting the little insect hotel thing, even though if you put it in the middle of a parking lot, you still get a point for it, because it's sustainable and it's just like-- I guess the certification process is good as a basis, but not everything in it is the most logical thing to do" – Architect*

In another one of her statements, she is expressing concern about this and the organization's current approach to sustainability, particularly in the areas of material sustainability and the overall construction process. She points out that the majority of their projects still heavily rely on materials like concrete and steel, which, in her opinion, are not considered sustainable in the long term. She therefore emphasize the need for the organization to reevaluate and potentially shift its focus toward more sustainable materials and processes to align with more long-term environmental goals. But even though there is a sense of willingness to also contribute to sustainable resource management, it still seems that their existing efforts are used as an excuse that validates their existing practices by being '*enough*'.

When discussing sustainability with the CEO, the same kind of arguments arise. Indicating that these forms of arguments are resonating from the CEO's perception on the matter.

"I think many of our products are sustainable because we are doing products so that they are, in general, quite affordable. We are not in general designing products for rich people or for the ordinary people. So in that perspective, we are sustainable."

– CEO

The CEO makes that claim that what they offer, and what they are good at, is to design efficient buildings. Where they reduce the amount of space needed for the people living in their buildings.

"In a society's perspective, efficiency is always good. It's like not driving an SUV car. It's better to be efficient in all perspective because then, if you are making" – CEO

Role of the CEO – Providing arguments for not to engage

During the discussions in the workshops, the CEO emphasizes that advancements should be prompted by clients' sustainability demands. He is unwilling to take the risk of investing in the development of new value propositions without a clear revenue stream. Therefore, he adopts a strategy where competence development evolves organically through engagement in existing projects driven by client demands. According to him, all knowledge stems from projects, stating,

"The reason I know things is because I have done lots of projects, and that's why we know about acoustics. For me, the only reason I can, 5% of this is that I recently had a project talking about it, and so now I know that you can reduce, for example, concrete carbon footprint by 50% using eco concrete. So that, I think, is knowledge through projects. I think it's better." – CEO

Through the workshop, the CEO appears to prioritize financial gain and emphasizes the importance of making money quickly. They seem reluctant to allocate significant time and resources to initiatives that do not yield a clear return on investment. This perspective may be influenced by a perceived lack of urgency, necessity, or personal interest in sustainability topics, potentially shaped by his own viewpoint on the matter.

During the workshop, instances arise where the young architect enthusiastically conveys her eagerness to go further in developing sustainable elements, expressing a genuine desire to expand her knowledge in this area. This shows how one of the individuals wishes to take a more proactive approach towards incorporating sustainable practices into her architecture and reflects a keen interest in acquiring a deeper understanding of eco-friendly design principles.

"I mean there are several things that I think we would like to be better at, or learn more about. But I also think that it's not only because of the demands that are getting higher, it's also because we want to" – Architect

However, though the CEO agrees, he also suggests that having personal interests is one aspect, but for the well-being of the business, individuals need to adapt these interests to the business context.

"Of course. But that is more-- I think you have to develop. If you don't have a business as a person, you can have an interest, of course. And I think we all have as an architects. Now you have to adapt it to a business. You can have lots of interest and things like that, but you have to adapt it to business. That's the way we have to do it."

– CEO

In the conversation, the architect suggests that the increasing emphasis on sustainability is not solely driven by external demands but is also motivated by a personal desire to develop within the profession. To thereby contribute to sustainable development within the industry. The CEO acknowledges this perspective but emphasizes the need for individuals to align their personal interests with the demands of their business. It is emphasized that there is a necessity to align personal interests with the practical requirements of running a business. This reflects a viewpoint that it is not sufficient to merely have personal interests or values, individuals must integrate these aspects into a business framework for them to be effectively realized.

However, the architect challenges this idea by suggesting that the company could benefit from including some form of education or workshop focused on sustainability. This is argued for by claiming that not all employees are involved in these kinds of projects, but that they are expected to be involved in the future. Therefore, they advocate for preparatory training or workshops to equip employees with the knowledge and skills needed for these forms of future sustainability initiatives.

> *"I think as a company it would be good with some kind of-- I don't know a course is maybe not the right thing, but some kind of education at least or just a workshop or something because not all of us are involved in these kind of projects but we will be eventually. And it's good to have something before you end up in a project like that." – Architect*

However, this is continuously downplayed by the CEO, arguing that there is no need for formal training or certificates as:

> *"Well, we have certificates for accessibility consultants and stuff like that. It's not more complex than that … So I mean, this is just a copy of the concept" – CEO*

> *"I think it's enough because, as I said before, this is not more complex than the other stuff we have to deal with every day. You come from [university] and you know a lot now, but how did you learn it? You have to talk to people all the time. So I think that's the way it works. And I mean, you know about the rules, acoustic rules, stuff like that in some general way, don't you?" – CEO*

At another instance, the architect expressed a desire to enhance her knowledge to effectively promote the use of recycled and reused materials by acquiring the appropriate vocabulary and persuasive arguments. She argues that the development in recent years is a reason for them to engage more and claiming the potential for them in their business, yet acknowledging a lack of familiarity. Stressing the importance of learning about various recycled materials and their potential applications, she emphasized the need for architects to equip themselves with this knowledge to advocate it more effectively to their clients.

> *"So I think one thing is recycled materials, for example, because that is something that we-- or at least I don't think we know very much about it because it's just coming up very quickly in the last couple of years. And it's a business that is growing very fast. So I don't think we haven't really had time to learn about when it is possible or suitable to use the recycled materials and when it's not. Because if we know that and if we learn about different materials that are recycled and could be used for different kinds of products then it's also easier to argue about it for the client or to try to get them to use recycled materials instead. So that's one thing."*

– Architect

Here, the CEO appears reluctant to delve deeper into the topic, seeking new arguments to dismiss further engagement. Familiar industry arguments resurface, such as concerns about the quality of recycled products and their ability to meet certification requirements for energy, fire, and acoustics. As the discussion continues, examples of other companies successfully integrating circular elements into their business portfolios are cited. However, attention quickly shifts to the unique aspects of their own business area, with claims suggesting why only other companies are capable of such initiatives, rather than their own.

Though the company is interested in engaging more with circularity. This interest seems to stem from the possibility that it might be a future business opportunity. Some of the organizational members seem to have identified that there are more changes coming in the future legislation that might push their clients to increase their demands on them, in terms of the services that they are supposed to be able to provide.

The ambition is therefore to try to meet these future demands that are coming from the clients, by developing competences, or at least value delivery methods in order to meet those demands. This aligns well with the idea of the CEO, that if the demand comes directly from the clients, then they are also in a better position to charge them money for it. However, as expressed by one of the architects, she believes that the company is taking on too much of a passive approach, waiting for the clients to come up with the demands. She expresses a sense of frustration and resignation regarding the decision-making process, particularly with their contractors. She feels that there is often a predetermined stance from them, and where there is little room for open discussion.

Despite her own conviction of them, as architects, having a responsibility to address and advocate for sustainable practices, she openly admits that they often end up conforming to the contractors' preferences because it's a familiar and cost-effective approach. Though she acknowledges a lack of assertiveness in pushing for more sustainable alternatives, such as using wood or other eco-friendly materials. There's also a recognition that the organization may not be challenging the existing practices enough or engaging in the necessary battles to bring about meaningful change.

> *"…of course, we have responsibility to pick up the subject and sort of take the fight, but we don't really do that either. … we don't get into all the battles we kind of should if we want to make a change" – Architect*

Overall, there's a sense of uncertainty about how much impact their efforts to promote sustainability would have in the current organizational context.

Outcomes

As the company, and perhaps especially the management team of the company seem unwilling to delve into the developments of sustainable business models, as it would require efforts, both in terms of time spent and especially money, the company is relying on a strategy of offering environmental services without the necessity of challenging the existing practices. Instead, the focus is on aligning their existing model for sustainability. By relying on existing elements of their business, they try to translate it to fit within established frameworks or standards rather than innovating or taking proactive steps to improve environmental performance.

"So usually we have sustainability consultant who figures out all the common-- or which aspects need to be which classification in order to come out to silver. And then in my experience, most of the actual changes happen with the energy consultant. Yeah. So it's not so much that we have to change in our design." – Architect

The outcome from the workshops only seems to succumb to the exploration of a possibility to incorporate sustainability into their existing business offer. This is particularly through the role of an external LCA consultant. The idea is to go beyond the development of internal knowledge about how decisions impact the life cycle of a building and, instead, offer a service where the company provides LCA calculations to their customers via an external consultant. This would involve providing expertise as consultants and delivering a new service, thereby expanding their business proposition to include sustainability consultancy in a more hands-on and practical manner.

This consideration of this additional new business proposition promotes practical services, such as assisting with calculations, filling out forms, and navigating regulatory changes. By doing the, them as architects may extend their business proposition and actively contribute to the practical aspects of LCA assessments and regulatory compliance, without the need to challenge the existing practices, or to develop new internal competences, whilst still aligning themselves with the forthcoming regulatory demands. This approach fits well with the general discourse of the CEO as there is no need for additional investment. They may just rely as a connection between the client and the consultant, thereby dismissing the idea of challenging existing practices.

However, whilst this new business proposition might operate independently, there's also a hope that over time, this possibility might integrate within the same project or across different projects. This diversification would allow for the company to cater to a broader range of services and clients that would value and embrace a more inclusive approach to sustainability.

5.4 ACTORS RELYING ON CIRCULAR BUSINESS PROPOSITION

The two preceding sections have provided insights into organizations struggling to integrate sustainable and circular principles into their businesses. Within these groups, the range of ambition has varied, with some demonstrating a strong commitment to transformative initiatives while others appear less engaged in such pursuits.

In contrast, this final section shifts the attention to a select group of frontrunners that, at least from an external standpoint, have incorporated circularity as part of their business value propositions. This section builds on the interaction with companies throughout Study F. The circular performance of these companies has been covered in industry media, often focusing on their involvement in development projects, pilot initiatives, and public commitments to circular practices. Through strategic communication and showcasing tangible results, they are presented as forward-thinking leaders dedicated to integrating circularity into their operations. This visibility contributes to their legitimacy as frontrunners. By promoting their circular efforts, they hope to contribute to shape industry standards and inspire others to adopt comparable approaches. In total, 15 interviews were conducted across 8 companies representing various segments of the construction and real estate sector. The aim of this study was to capture two or three perspectives within each organization, by including both sustainability-focused roles and more operational ones, such as project managers. Only

one interview was conducted with the contractor environmental manager, as we had already talked to more than ten of their project managers.

- **Suppliers**: Two companies were interviewed, with three respondents in total, including a CEO, a sustainability manager, and a sales manager.
- **Contractors**: One company participated with one respondent, a sustainability manager.
- **Architects**: One company contributed three respondents, all holding combined roles as environmental managers and architects.
- **Consultants**: One company was represented by two environmental consultants.
- **Property owner**: Three companies participated, providing a total of seven respondents. These included sustainability managers, environmental specialists, and project managers. The aim was to capture diverse roles within the same organization.

With this distribution we hoped that the data would reflect a range of insights, from strategic sustainability work to day-to-day project execution, thereby showing how circularity was understood and implemented across different functions within the organizations.

The group assembled for this study includes a diverse range of actors who hold key roles throughout various stages of the construction process, potentially providing insights across a broad spectrum of the industry. However, it's important to acknowledge that their participation does not represent the overall development of the sector. Instead, they were selected based on their perceived progress in advancing circular value propositions. While the group's diversity in roles and expertise is extensive, their experiences and practices may not accurately reflect the broader construction industry's typical approaches or levels of progress. While these companies are often presented publicly as having successfully implemented circular business models, the internal view may differ. In one interview, a sustainability manager responded to the question of whether their business model could be considered circular by saying:

> *"I don't know if I even consider them to be, but we are trying to make them more circular." – Sustainability manager, Property owner*

Through the discussions with respondents, it became clear that many of them share the view that the concept of circular economy is closely linked to sustainability and sustainable development. It is viewed as a subordinate concept to sustainability and is described as particularly appealing for its ability to couple environmental challenges with economic opportunities, whilst responding to the current and future environmental expectations of consumers and regulators.

The concept of circular economy is framed by most of the respondents as part of their overarching work to improve their environmental performance and align themselves with external sustainability demands. The concept shares the common goal of sustainability by promoting responsible and environmentally conscious practices. It thereby seems to be considered as a viable path towards the realization of their organizations' sustainability goals by emphasizing the efficient use of resources, reduction of waste, and minimizing their environmental impact. As such, as mentioned by one of the environmental managers in one of the supplier organizations, the introduction of the concept has transformed their view on the sustainability concept:

"… the idea of circular economy and that you can actually drive business and do it in a sustainable way … this had a huge impact on the company and our own view on sustainability" – Environmental manager, Supplier

Amongst some of the other respondents who have embraced these concepts, we encounter architects who perceive circularity as an integral aspect of their sustainability-driven business proposition. In doing so, they present circularity principles as a crucial element in realizing sustainable designs for their clients. Similarly, for a property owner, the incorporation of circularity becomes an essential component of their efforts to mitigate environmental impact. This strategic integration not only aligns with their commitment to environmental sustainability but also enhances their ability to attract potential investors. They have already defined ambitious environmental targets related to circularity with the aim that all their material sourcing and waste management should be circular.

The contractor explained that sustainability has become a core part of their operations, both locally and globally. They recognized early on that it would be key to the future of their business. He sees a dual responsibility: contributing to society and future generations, while also ensuring the company remains competitive. Managing sustainability, he said, is no longer optional, it's essential for long-term success.

The following subsection presents the efforts to introduce the concept of the circular economy and incorporate activities in the organization building on its principles. Though these efforts should be shared by different actors, they are most often carried out by the environmental managers within the organization.

To sharpen the argument and structure the empirical material, I grouped organizational activities into two main categories: internal and external. Internal activities involve what happens within the organization, interactions among colleagues and teams, as well as mechanisms like policies and performance monitoring. External activities, on the other hand, focus on influencing outside actors such as clients, suppliers, customers, and other stakeholders, aiming to shape their assumptions, values, and beliefs. The following section is organized according to this categorization.

5.4.1 Internal activities

Defining circular economy

Circularity is generally understood as creating closed-loop systems where resources are used, reused, and recycled to reduce waste and environmental impact. However, when discussing the concept with interviewees, their definitions and interpretations diverged. While most shared a basic understanding of circularity, their views on how it should be implemented and tailored to their specific contexts varied significantly.

Some try to grasp it from a linear standpoint, making the comparison with a linear economy that has a clear beginning and a clear end, i.e. where a product or a building has a lifecycle with a definitive start and end of life:

'… circularity, well I mean, in a linear, it's a bit easier if you start off with the linear thing, the linear thing is something that has a start of life and an end of life, but with circularity, when you come to end of life your sort of go back to a new start, so you

never really get to the end, of course that's the sort of idealized, you always make losses along the way, but that's the pure definition I would say of circularity."

– Consultant, Consultancy firm

Others point out some of the various elements of circularity, with reuse often becoming central. Stressing that circularity is fundamentally about reusing, over and over again:

"So I think that's how I perceive circularity, that it goes in a circle, that you reuse a product and then you reuse it again." – Leasing Manager, Property owner

For one of the architects, circularity is closely linked to the cradle-to-cradle model. She conceptualizes two distinct cycles: a biological cycle that operates within the natural environment and a technical cycle related to human-made systems. In a circular system, the aim is to keep these cycles separate and prevent them from negatively impacting one another. This involves striving for closed-loop value chains, where the technical cycle does not harm the biological one, and both cycles remain self-contained. The overarching aim is to reduce the extraction of virgin resources and adopt methodologies across industries that lead to a balanced convergence of these cycles, avoiding planetary imbalances. One of her colleagues envisions a circular economy where these cycles intersect harmoniously, promoting sustainability and ecological equilibrium.

A third architect describes circular architecture in a way she says is common within the profession. She defines it broadly as an approach that not only avoids depleting the planet's resources but also aims to have a positive impact. The goal is to restore the biological cycle and harmonize the technical one. In this context, circularity involves minimizing the extraction of virgin materials, reusing resources, ranging from molecular elements to large building components and repurposing existing built environments**.** Additionally, the shift towards primarily using biobased and circular materials is emphasized. This definition aligns with sustainable practices that aim to create architecture with a positive impact on ecological systems.

While the architects in the study generally agree on the definition of circularity, the concept appears more ambiguous and complex among other actors, particularly the contractors. Within contractor organizations, there is evident confusion and a lack of clarity surrounding what '*circularity*' actually means in the context of construction projects. One environmental manager notes that, both at the project level and among individuals, people often do not fully understand what circularity entails.

Stakeholders across different organizations interpret the circular economy in varied ways. Some express frustration, citing poor internal communication of the concept as a reason for their limited engagement. This illustrate a broader challenge, the difficulties of achieving a shared understanding and consistent implementation of circular principles across organizational settings. Uncertainty remains around what circularity means in practice, which principles should be applied, and what specific goals organizations are striving to achieve in their day-to-day operations.

He raises questions about the meaning and practical application of key concepts related to circularity, such as "*reuse*", "*recycling*", and "upcycling". To illustrate this ambiguity, he refers to the example of carpets, questioning whether reuse means reinstalling an entire carpet in a new location, reusing parts of it, or breaking it down into raw materials for other purposes. This example demonstrate the lack of shared understanding around terminology, which in turn complicates efforts to implement circular practices consistently across projects and organizations.

"Is it that we take the carpet and place it in the next premises in the same building? Is it that we lift the carpet, store it somewhere, and reuse it within our own premises? Or is it that we sell the carpet or leave it to someone like CC Build or another organization that handles reuse, and then someone else can buy the carpet? Or is it that we buy new carpets made from fishing nets that have been collected somewhere in some sea? Yes, it's like that, it's so damn wide in some way, and we need to decide what we consider some kind of minimum level in that context."

– Project manager, Property owner

This statement illustrate the complexity and diverse interpretations surrounding the concept during discussions and decision-making processes.

Another person responsible for integrating sustainability initiatives within one of the property-owning organizations explains that they are still in a learning phase. As a result, they continue to grapple with questions about terminology and the core concepts of circularity. Her statement reflects the complexity and evolving nature of both the language and the organizational efforts tied to sustainability and circular practices. These efforts are described as part of an exploratory phase focused on understanding and defining what circularity entails. The organization is experimenting with various terms and definitions in an attempt to clarify its sustainability goals and practices. This work is described as important for aligning sustainability projects with the organization's day-to-day operations. This seems to stem not only from the concept of circularity, but from the various sub concepts that the term encompasses. This includes both concepts commonly associated with circularity such as reuse, recycling, and regeneration and more specific elements like how a "cycle" is defined.

One manager in the property owner provides an example involving a manufacturer that labels the recycling of glass in windows as "reuse." She disagrees with this usage, arguing that reuse should refer to using the same window multiple times in different locations, thereby avoiding the production of new products from virgin materials. In this case, however, only the glass is recovered, melted down, and made into a new product. The example is used by the interviewee to illustrate the existing confusion around terminology within the industry.

The interview with the contractor representative indicates that managers show considerable confusion surrounding key concepts, both within the industry at large and within their own organization. She attributes this confusion to the rapid development of the field and the frequent use of fashionable or vague terminology. She argues for the potential benefits of establishing clear and consistent definitions and also draws a parallel between the current discourse on circularity and earlier experiences with the term sustainability, noting that similar uncertainty and ambiguity emerged when sustainability was first introduced in the industry a few years ago.

One of the property owner's sustainable managers describes the circular economy as a broad and somewhat ambiguous concept, which can make it difficult to translate into concrete actions. She observes that its open-ended nature allows for varying interpretations, which can lead to inconsistencies in how organizations approach it. She notes that this carries certain risks, particularly when stakeholders operate based on different assumptions, potentially working at cross purposes and reducing the overall effectiveness of circularity initiatives.

One of the architects expresses ambiguity about the evolving nature of architecture in light of sustainability concerns and emphasizes the importance of redefining traditional practices. She claims that they not only need to explain the concept of circularity to clients but also provide practical guidance on how to implement it. There is a recognition of the shifting role of architects in this context and the necessity of developing new approaches and typologies to be able to embrace circular principles.

> *"Like the question about, like, what does it mean to be an architect now like, it means something different. You need to think differently, and that's also something that we're discussing a lot. Like what is the new typology of circularity? It is a new typology." – Architect*

Similarly, the environmental manager at one of the property-owning organizations emphasized the importance of translating circularity into clear, relatable language a '*native language*'. Rather than using abstract sustainability jargon, the aim is to communicate in terms that resonate with people across the organization, making the concept more tangible and easier to connect with in practice.

One of the sustainability managers from a property-owning organization takes a similar approach by breaking down the idea of the circular economy into more tangible, manageable elements. She explains that the organization hasn't formally defined what the circular economy means for them. Instead, they concentrate on practical concepts like reuse, preservation, and resource efficiency. By doing this, she intentionally avoids broader narratives and grand terms tied to global development, as she feels such abstract ideas might be too difficult for the organization to fully understand and implement.

> *"I would phrase it like this, that we haven't defined it [circular economy] yet, we're not really discussing it in that way. Instead, we talk more about reusing, preserving, thinking resource-efficiently. So, we're more into that and haven't fully integrated the whole circular perspective. And it's probably a bit intentional on my part so that the organization can grasp and focus on handling these questions and thereby start working with them." – Environmental manager, Property owner*

She illustrates her point with an example from their internal discussions, showing how using practical scenarios makes the concept more relatable. The example is presented as a typical situation during renovations, where a new tenant wants everything removed even though many components like kitchens and toilets are still fully functional. As a result, most of it ends up being incinerated as waste. In these cases, she argues that it would be much easier for the clients to engage with specific ideas like preservation and waste reduction, rather than trying to apply the broader and more abstract concept of circularity.

A further concern raised is the potential for greenwashing. The respondent points out that the flexibility of the term circularity may enable organizations to claim alignment with circular principles without making substantial changes, thus misleading consumers about the environmental impact of their products or services.

However, some respondents also argue for the potential advantages of the broadness and flexible nature of the concept. While the development of shared language and frameworks is seen as important for fostering collaboration and ensuring that circular practices are clearly defined and

effective, the vagueness of the term can also be beneficial. It allows organizations to interpret and adapt the concept of circularity to fit their specific contexts, enabling them to take ownership of its meaning and tailor their strategies accordingly.

> *" I think that the circular economy is a rather large and somewhat fluffy term that can be quite difficult to understand what it means ... It is not so clearly defined, so you can use it a bit as you wish, so I think it's probably better to try to make it a bit more concrete." – Sustainability manager, Property owner.*

An example of this flexibility in practice comes from an architecture company known for its environmental profile. According to the interviewee, many clients approach them specifically for their expertise in environmental sustainability. While the architects may not always have ready-made answers or predefined solutions, they are skilled at navigating the ambiguity of the field. Through close collaboration with clients, they help shape and develop more sustainable approaches tailored to each project. In doing so, they take an active role in defining what circularity means within the context of architecture and construction, rather than simply applying fixed standards.

> *So now we can start talking to our clients about how you can do it, you know through digital methods or whatever methodologies that we've done. But now the next step I think is the speculative design (- approach to design focusing on imagining and exploring possible futures-). So, I'm hoping next we can go to our clients and start saying, look at this amazing city plan or this amazing neighborhood or this amazing building. Ohh, and by the way, it's circular." – Architect*

Reframing circular solutions

The interviews suggest that the lack of clearly defined practices for incorporating circularity in construction is a significant issue. One architect emphasized this gap, noting the absence of established processes and procedures in her field. Rather than seeing this as a limitation, she expressed a strong interest in helping to shape what circularity could mean within architectural practice.

Motivated by this opportunity, she and a group of colleagues initiated a collaborative effort aimed at strategically promoting circularity. In the early stages, their work focused on interpreting and communicating the concept to clients, encouraging them to consider circular approaches. Over time, their efforts evolved beyond conceptual discussions, integrating practical project experiences into their communication and marketing. Today, the team draws on several completed projects as concrete examples of how circular principles can be applied in practice, using these cases to support and inspire clients.

An environmental manager working for a property owner strongly emphasizes the need for effective communication with clients to promote sustainability initiatives, and provide an example of how they tried to achieve it in one of their recent workshops:

> *"…how we can translate our ideas into terms that resonate with them, whether it's through car journeys or public transportation. How do they want the information presented to sell it to customers? How can we quantify the importance of these considerations?" – Sustainability manager, Property owner*

One architect described a workshop conducted with clients, aimed at exploring how sustainability concepts can be communicated in ways that resonate more effectively. According to the interviewee, the discussion centered on adapting the language used when addressing environmental impact, including asking clients how they prefer to understand and conceptualize their footprint.

A key topic was how to make abstract measures, such as CO_2 emissions, more tangible by translating them into relatable comparisons, such as the number of car or public transport journeys. The team also explored methods for quantifying environmental impacts, for example by comparing the carbon footprint of reuse versus non-reuse strategies. These discussions encouraged clients to reflect on the environmental consequences of their decisions, such as relocating an office, demolishing structures, or redesigning interior layouts.

The interviewee noted that such conversations often involved challenging clients to evaluate the necessity of certain actions, questioning whether the environmental cost, such as emissions linked to demolition and rebuilding, was justified in relation to the intended outcomes.

According to the interviewee, the goal of these efforts is to communicate the importance of sustainability-related concepts in a way that clients find both understandable and engaging. She emphasized the importance of presenting ideas that prompt clients to reflect on the environmental implications of their actions and to support more conscious, sustainability-oriented decision-making in their projects.

The environmental manager in one of the supplier organizations emphasizes the importance of building a team of dedicated and knowledgeable salespeople who can effectively communicate and advocate for sustainability in their interactions with customers. The approach involves not just providing one way internal training but fostering a deeper understanding among the sales team. Instead of relying on a brief elevator pitch, the emphasis is on comprehensive training, discussions, and engagement.

The goal here is to equip the sales team with a thorough understanding beyond what's presented in brochures or on the website and encourage ongoing learning and active engagement in sustainability discussions within the company. This internal training is considered crucial for a deeper understanding and equips the team with the vocabulary to effectively promote sustainable solutions. Thereby contributing to the development of a team with dedicated and knowledgeable salespeople that are able to tell the stories and argues for sustainability in their interaction with the customers.

> *"I think the internal training to get a deeper understanding has been the most important one" – Environmental manager, Supplier*

This has become implemented in their organization through various initiatives, including smaller sessions, forums with engaged salespeople, and monthly calls to discuss sustainability topics.

When discussing circularity within their business, one of the property owner respondent gives a more nuanced perspective on the degree of circularity within their organizations' business models. She acknowledges that most of the materials used in project development and property management are not sourced from circular or renewable origins and recognizes that the dominant practices within her company are not aligned with circular economy principles. As she summarizes it herself, there is room for improvement in making their projects more circular and creating a more substantial commitment to improve their circular practices in future projects.

However, she also seems to adopt a strategy commonly found among other property owner companies claiming business models grounded in circular principles. This approach involves describing their existing operations as "fairly circular" by emphasizing how their leasing-based model aligns with certain aspects of circular economy definitions. Specifically, they argue that by focusing on renting rather than selling products, their business model supports circularity by promoting resource efficiency, extending product life cycles, and facilitating reuse or refurbishment. This framing allows them to position their current practices as compatible with circular economy ideals, even if they are not changed anything in their core business or implemented circular principles across their activities.

> *"You can say that our entire property management business, or whatever you call it, the existing properties, one could say, are quite circular in themselves. Because when we talk about definitions and such, some include the aspect of renting out instead of selling products as part of the circular economy. And that is after all, our entire foundational business" – Environmental manager, Property owner*

Similarly, others may choose to adopt a foundational circular business model approach, where the nature of buildings themselves is considered inherently circular. For one of the architect companies, the argument is that buildings, due to their long lifespan, multiple ownership transitions, and ability to serve different purposes over time, can be viewed as circular systems by default. From their perspective, the enduring and adaptable nature of buildings aligns with circular economy principles, making the building itself a circular business model.

Translating circularity into organizational practice and value

In organizations that recognize the business potential of circularity, sustainability managers are actively involved in integrating these principles into core operations. Rather than treating circularity as an abstract concept, they are engaged in ongoing processes of defining and shaping sustainability goals that align with their business values. This reflects a broader realization that meaningful sustainability efforts must be embedded within existing organizational structures and tied to strategic objectives to be effective.

One architect underlines the importance of making sustainability tangible by translating it into key performance indicators that resonate with business goals. This approach emphasizes the practical need to convert environmental values into operational language:

> *"Much sustainability work is indeed about figuring out how to translate these kilograms of carbon dioxide into measurable goals in the business."*
>
> *– Architect*

In contractor organizations, formalization is seen as a critical strategy for making environmental goals actionable. One environmental consultant describes the need for structured decision-making processes, in which sustainability initiatives are approved at the management level. This formal backing provides employees with clear direction and enhances organizational alignment. Importantly, it also counters the prevailing logic that the cheapest alternative should always be chosen, regardless of its environmental cost:

"When there is a decision from management, individuals are more likely to align their actions accordingly. This makes it significantly easier to monitor progress since everyone is aware of the expectations for doing things correctly."

– Environmental consultant, Contractor

However, despite the growing institutional support for sustainability, organizations face persistent challenges in the practical implementation of circularity. These challenges are particularly evident in the early stages of projects, such as design and planning, where environmental ambitions are often difficult to translate into concrete practices. Project managers and architects frequently report a disconnection between strategic sustainability objectives and the realities of construction work. As one architect notes:

"I can't say which projects we've worked on here, but I've heard we have some projects ... I'm not on the construction site to see what is happening there."

– Architect

In response to these implementation gaps, some environmental managers are leveraging new regulatory frameworks to strengthen their internal influence. For instance, they hop that the EU-level proposals around taxonomy and sustainability reporting will offer a common language and provide legitimacy to environmental efforts. One sustainability manager points out how such policies both support existing internal work and serve to push less engaged actors into action:

"[The taxonomy] acts as a statement that I can rely on internally to show that our work is valorized... It also enforces other actors that have not yet become engaged and pushes them to act." – Environmental manager

These policies also help bridge communication gaps between sustainability departments and executive management by offering a shared framework for reporting emissions, resource use, and other environmental metrics. As she explains, having an external mandate provides not only coercive pressure but also access to capital and strategic legitimacy:

"[It] provides me with a vocabulary that speaks to the board and management."

– Environmental manager

In addition to external pressure, many organizations are involved in internal translation work to make circularity relevant and actionable. This often means selecting and adapting aspects of circular economy principles that align with their specific business model or environmental agenda. Among frontrunner companies, this has led to the creation or reformulation of internal sustainability goals that are concrete, measurable, and tied to daily operations. The aim is to ensure that employees across departments, whether in leasing, property management, or construction, can relate to and engage with these goals.

An environmental manager who transitioned from a business-focused role to sustainability offers a strategic perspective, emphasizing how environmental initiatives can be aligned with commercial goals. His shift from a business background to sustainability enables him to frame environmental challenges in economically viable terms, promoting solutions that balance profitability with sustainability as he stated that:

"In today's world, there is no way to solve the climate crisis if we don't make it economically beneficial."

– Environmental manager, Property owner

Economic viability is a recurring theme in discussions about integrating circularity. One of the business developers stresses the need for *robust* business models that support circular practices. He suggests that while legal frameworks are often cited as barriers, many challenges are rooted in financial concerns and profit margins. Pilot projects, according to both developers and environmental managers, are key tools for exploring and demonstrating the financial feasibility of circular models.

However, these initiatives are still confronted with dominant economic narratives. As one business developer notes, cost remains a major barrier to sustainable alternatives:

"Virgin material is very much cheaper than recovered."

– Business developer, Recycling company

Emotion and changes

At the same time, interviewees point out that sustainability work must also address emotional and cultural dimensions within organizations. Beyond financial logic, several actors stress the importance of fostering internal pride and collective purpose. Sustainability is framed not just as a strategic initiative but as a unifying force that can strengthen organizational identity:

"We talk a lot about creating internal pride among employees... There aren't many aspects within a company where the entire organization can unite around a shared issue and feel a sense of accomplishment. If we become truly proficient in this, it's something we can proudly say, 'Yes, we excel in this.'"

– Environmental manager, Property owner

A similar approach is evident in efforts to align sustainability with individual-level values and workplace experiences. One environmental consultant describes how she advocates for solutions that yield dual benefits such as improving work environments while contributing to energy efficiency:

"When you have such temperatures that it becomes a workplace environment issue in the summer, having external sun protection... could be entirely realistic to include... Because then it becomes an energy-saving measure as well."

– Environmental manager, Contractor

By framing sustainability initiatives in ways that resonate with employees' experiences and discussing them in terms such as comfort, efficiency, and professional pride, organizations can more effectively secure broad engagement and motivation across teams.

Other managers emphasize the importance of making the value associated with sustainability initiatives visible in everyday operations. One example comes from a property owner, who argues for the operational benefits of a circular approach to maintenance:

"We stock old appliances from renovation projects, when something breaks for a tenant, they can be there within half an hour to replace a refrigerator; they don't need to order from Elon, where it takes two weeks. This allows us to excel in customer

service. The added values, creating a sense of pride within the organization, go beyond the environmental aspects."

– Environmental manager, Property owner

Such examples show how circularity can be translated into efficiency gains, service quality, and employees' satisfaction, factors that resonate beyond the environmental agenda and tap into broader organizational values. Still, not all organizations demonstrate the same level of commitment. A business developer from a recycling contractor notes that while environmental awareness is growing, some clients continue to treat sustainability as a secondary concern, something to be prioritized only in times of financial stability. Claiming that environmental concerns are often "*a luxury issue*" with engagement increasing during prosperous times and declining in periods of economic uncertainty.

This observation suggests that without practices becoming embedded or routinized, sustainability practices may remain vulnerable to shifting economic conditions. While translation efforts and new policy frameworks are valuable, long-term transformation requires embedding sustainability into the core values and operations of organizations, making it an enduring commitment rather than a discretionary one.

Questioning assumptions and reframing professional roles

A recurring theme across the interviews is a growing awareness among industry actors that longstanding assumptions and practices in the construction sector must be questioned and re-evaluated in light of sustainability and circularity goals. This shift is particularly evident in the recognition that climate change is no longer just an environmental issue, but a central concern for the future of the industry.

"One day, I had an awakening, and that's when I realized that there is actually no issue that will have greater significance for the development of our industry than the climate issue, especially from a business perspective."

– Environmental manager, Property owner

This statement illustrates a shared feeling among practitioners: climate and circularity are not peripheral challenges but strategic priorities. This sentiment is echoed by several interviewees who suggest that business-as-usual models, especially those based on linear thinking and material consumption are no longer viable. As one architect puts it:

"Like the architect of yesterday is not the architect of today." – Architect

Another architect challenges the assumption that new construction is the default solution to societal needs, advocating instead for the conversion of existing buildings, in doing so, she also challenges architecture as a profession:

"What I believe, and what has already been claimed by many others, is that we might have enough built environment, we just need to convert it." – Architect

Despite such economic pressures, some actors actively challenge industry norms. A common assumption is that gypsum boards cannot be reused which was successfully contested in practice. A project team tested reuse methods of gypsum boards using simple tools and found the outcome not only feasible but preferable:

"They had used a magnet to locate the screws and then unscrewed everything... it turned out to be cheaper and provided a better working environment."

– Project manager, Property owner

This example reflects how testing and experimentation can lead to new understandings and debunk long-held beliefs about cost, feasibility, and material performance. These practices contribute to reshaping professional norms through lived examples, rather than abstract ideals.

In addition to rethinking materials, several actors are reassessing the roles and responsibilities of professional groups, particularly architects. One development manager argues for expanding architectural competence to include knowledge about building maintenance and reuse, traditionally held by a niche group known as "*preservants*":

"We are spreading the knowledge about what circular architecture is... It's not something everyone has done before."

– Development manager, Architect company

This marks a significant shift from the traditional focus on new construction to a broader understanding of the building lifecycle. Circular architecture requires a new mindset, one that incorporates material reuse, lifecycle thinking, and adaptive use as central components of the design process.

This rethinking also extends to how sustainability is organized within organizations. A project manager from a property owner organization questions the widespread assumption that sustainability should be the responsibility of a dedicated team alone. Instead, she argues that such compartmentalization can lead others to assume they are exempt from environmental responsibility:

"Just because sustainability work is organized in a certain way doesn't mean that others are free to act in environmentally unfavorable ways."

– Project manager, Property owner

Accordingly, several organizations are moving toward integrating sustainability expertise across the project organization. One architect describes efforts to embed environmental knowledge directly into ongoing projects to avoid isolated efforts and enable real-time feedback and learning. This approach also enhances the visibility and legitimacy of sustainability concerns by integrating them into everyday project decisions, rather than treating them as add-ons or externalities.

In sum, the interviews reveal a collective effort to question industry norms, challenge dominant cost narratives, and rethink professional roles in light of sustainability. Whether through testing gypsum reuse, reinterpreting architectural practice, or integrating environmental responsibility across departments, these actors demonstrate how industry transformation is being driven not just by regulation or top-down mandates, but through bottom-up questioning, learning, and redefinition.

Organizing for circularity

The interviews reveal a range of organizational strategies being employed to embed sustainability and circularity within architectural and construction practices. These strategies extend from project-level

initiatives to broader structural reforms and research programs, reflecting diverse understandings of how to organize for environmental goals across the industry.

A key theme that emerges is the deliberate integration of sustainability functions across different parts of the organization. One architectural firm, for example, disperses its sustainability team across multiple units while also maintaining a dedicated group. In one team that combines project management, sustainability, and cost estimation, proximity between disciplines supports continuous learning and collaboration. This setup is particularly valuable for project managers, who gain the cross-functional expertise needed to lead sustainability-oriented projects. As a business developer in the firm explains:

> *"We are organized in different... well, the sustainability group itself is spread across various teams, in addition to being its own group, of course."*
>
> *– Business developer, Architect company*

The arrangement underlines a broader organizational commitment to embedding sustainability into everyday work structures, enabling more fluid collaboration and reinforcing sustainability as a long-term strategic focus.

This multi-scalar integration is further reflected in internal capacity-building efforts. One such example is an internal sustainability school, developed to disseminate the knowledge of environmental specialists across the organization. The initiative not only enhances general awareness but also helps professionals in other roles understand how sustainability can be integrated into their specific responsibilities.

Similarly, an architect overseeing circularity transformation at another firm describes their R&D focus area titled "*Transformation and Circularity*", which ranges from restoration arts to systemic change in construction. The naming and resourcing of this area signals the firm's commitment to innovation in sustainability. The architect emphasizes the value of combining sustainability expertise with project management and cost planning, thereby enabling more informed, practical decision-making across disciplines.

Other actors stress the importance of sharing best practices internally. A sustainability manager at a property owner organization stresses that showcasing successful examples across business units can inspire broader uptake and reinforce a culture of learning around sustainability.

Finally, organizing for circularity also involves shaping early-stage project mindsets. One environmental manager notes the importance of encouraging more flexible and open-ended formulations at the conceptual stage of construction projects. She advocates questioning the necessity of new builds and instead promoting alternatives such as preservation, maintenance, and incremental development. These softer framings, introduced early in the process, support a shift toward more circular thinking before design and procurement paths become locked in.

5.4.2 External activities

Engaging clients and customers

External engagement is another central strategy for advancing circularity, particularly in influencing clients' and customers' perceptions. Clients are seen as key decision-makers whose buy-in is critical

for circular business models to succeed. Several interviewees note that while some clients may lack internal expertise or initial motivation, external factors such as legislation, financial considerations, and market trends serve as drivers for more sustainable practices.

One architect promotes the opportunity to align sustainability with business development by understanding client goals and co-creating solutions. Another business developer argues that many organizations already have sustainability goals embedded in their policy documents, and the role of professionals is to activate and support those ambitions:

> *"It's not that difficult today because most companies already have the policy documents and such... we can help you... There are possibilities. The technology is there, but we just have to work a little differently."*
>
> *– Business developer, Architect company*

To support client engagement, companies often invest in internal research projects to generate compelling arguments for circular practices. One firm conducted a cost analysis of circular buildings, which provided concrete examples to persuade clients based on cost, aesthetics, and time efficiency.

However, challenges remain. Environmental managers note a recurring skepticism among clients regarding reused materials, assuming they are inferior or aesthetically unappealing. While proponents argue that reused materials can often match or exceed the appeal of virgin materials, these assumptions still shape client expectations.

> *"The tenant might think, 'Yes, but it should result in a much lower rent because there is so much reuse.' However, it's not certain that it will be cheaper..."*
>
> *– Environmental manager, Property owner*

To combat this, some companies focus on managing expectations through transparent dialogue, while others invite clients to visit reference projects where reused materials have been successfully incorporated:

> *"We can take customers to locations where we have undertaken reuse projects and demonstrate how it looks in reality, that it turns out very, very nice."*
>
> *– Environmental manager, Property owner*

Despite these efforts, some actors deliberately avoid foregrounding circularity when engaging with clients. An architect describes how architectural quality is emphasized first, with circularity presented as a secondary, supporting value:

> *"We should assert that this is a remarkable building, and incidentally, it incorporates circular elements." – Architect*

Similarly, a project leader argues that unless sustainability contributes directly to the customer's comfort and performance, it should not be central to the discussion:

> *"We property owners have no disclosure obligation to tell the customer that roof tiles are recycled... The important thing is that we can offer good premises."*
>
> *– Head of projects, Property owner*

This reflects a strategic reframing of circularity, not as the main selling point but as an embedded, value-adding feature that supports broader client needs without triggering cost-based objections.

Working with suppliers, subcontractors, and networks

Although less detailed in this section, interviewees also describe the importance of engaging suppliers and subcontractors in the circular transition. This includes encouraging the adoption of more sustainable materials, sharing best practices, and advocating for new solutions. Industry networks and collaborations are also seen as vital arenas for knowledge-sharing and normative alignment, helping to resist institutional pressures that favor short-term economic choices over long-term sustainability.

The shift toward a circular economy demands a fundamental transformation of the traditional linear supply chain, including sourcing strategies that prioritize reused, recycled, or renewable materials. Several respondents emphasized that sustainable procurement is a critical component of this transition. However, challenges remain in sourcing suitable reused materials, as many suppliers are not yet positioned to offer circular products that meet industry standards.

One environmental manager from a property owner organization argues that suppliers are crucial to the circular transition, not only because of their technical expertise but also due to their position in relation to quality assurance and regulatory compliance. She sees engaging suppliers in the shift as essential and tries to convince them of the untapped business potential:

> *"One can buy used cars with a warranty... it's typically the manufacturer or someone knowledgeable who assesses them ... But that's where I'd like to see the development, manufacturers realizing that they are missing out on a huge business opportunity here." – Environmental manager, Property owner*

By comparing reuse in construction to second-hand car markets where used products are sold with warranties and trusted assessments, she encourages suppliers to view circular products as legitimate, marketable goods. This analogy extends to other consumer products, such as clothing platforms, where continuous exchanges ensure a steady market for second-hand goods. She envisions similar mechanisms for reused building materials, with accessible and traceable marketplaces to encourage circulation.

Subcontractors: Inclusion, learning, and co-Creation

For many actors, subcontractors are seen as key collaborators in the transition to circularity due to their practical expertise and influence over on-site processes. Several interviewees describe efforts to include subcontractors through capacity building, active dialogue, and shared experimentation.

One contractor display a deliberate strategy to develop competence together with subcontractors by framing circularity as a collective learning process. While initial resistance and skepticism were common, sustained engagement led to a shift in attitudes. Subcontractors, a coding to the interviewee, eventually became enthusiastic participants, contributing positively to reuse initiatives and expressing pride in the outcomes.

These collaborations were seen as mutually beneficial: subcontractors gained new knowledge and skills, while contractors accessed practical insights at no additional cost. The contractor emphasized the transformative potential of such co-learning processes and described the resulting motivation as both environmental and intergenerational.

Another contractor stresses the importance of taking greater control over demolition processes, an area historically overlooked. The sustainability manager acknowledges past shortcomings and emphasizes the need to revise procurement practices to include explicit demands related to reuse and material handling. The aim is to exert greater influence over the full lifecycle of building materials, especially in their end-of-life phase.

A project manager from a property owner firm similarly underlines the importance of clarifying reuse in procurement documentation. Defining the term in tender documents helps ensure that all actors, especially subcontractors, understand its implications and can align their practices accordingly.

This clarity is operationalized through interactive forums where reuse practices are introduced, examples from previous projects are shared, and challenges are openly discussed. These discussions explore practical scenarios, such as the relocation of doors or the identification of reusable material surpluses. Participants are encouraged to brainstorm solutions, test materials through small-scale pilots, and explore alternatives collaboratively. The process is described as iterative and dynamic, requiring continuous engagement with suppliers and subcontractors across the supply chain.

Repositioning suppliers: From product providers to strategic partners

The transition to a circular economy in construction demands a systemic rethinking of traditional supply chains. For many interviewees, sustainable sourcing is not just a technical requirement but a strategic necessity. They emphasize the importance of prioritizing materials that minimize environmental impact, such as reused, recycled, or low-carbon alternatives. However, despite widespread agreement on the environmental benefits of reuse, respondents frequently claim a lack of available suppliers offering suitable circular products.

This limitation is not simply a market gap but reflects deeper questions of supplier engagement and responsibility. A sustainability manager from a property owner organization stresses that suppliers possess unique knowledge about product performance and regulatory frameworks, making them essential actors in advancing circularity. She advocates for their deeper involvement, not only in supplying goods, but also in rethinking business models to accommodate reuse:

> *"One can buy used cars with a warranty, expecting them to function properly again … It's typically the manufacturer or someone knowledgeable who assesses them... That's where I'd like to see the development, that manufacturers realize that they are missing out on a huge business opportunity here." – Environmental manager, Property owner*

She uses analogies from the second-hand car market and peer-to-peer clothing platforms to advocate for a similar infrastructure for reused construction materials: a functioning, trusted, and quality-assured circulation system, supported by manufacturers and suppliers rather than left to informal or ad hoc exchanges.

In this vision, suppliers are not passive intermediaries but active enablers of circular systems, equipped to guarantee material performance, ensure compliance, and reduce uncertainty for clients and contractors. The challenge, however, lies in shifting their role from linear delivery agents to strategic circular partners. As a sustainable manager confirms regrettably:

> *"We have so far no agreement with any suppliers, but we reuse and repurpose our own material, we circulate internally." – Environmental manager, Property owner*

Subcontractors as change agents: Learning, resistance, and collaboration

Subcontractors also occupy a central role in realizing circular practices, especially given their proximity to material handling, demolition, and on-site implementation. Across interviews, respondents describe a range of approaches to engage subcontractors, where some emphasize on collaboration and pedagogical, and others more formal or contract-based.

Several organizations are investing in co-creation processes with subcontractors to develop shared understandings of circularity. One contractor describes initial resistance among subcontractors, who viewed reuse as impractical or risky. Over time however, sustained engagement through dialogue, examples, and hands-on experience led to a significant attitudinal shift. Subcontractors, he claims, became motivated contributors to reuse initiatives, finding the process not only instructive but also rewarding.

These engagements are framed as mutually beneficial learning relationships. Subcontractors gain exposure to new techniques and sustainability goals, while contractors benefit from increased innovation and reduced material waste. The transformation is not described by the respondents as top-down enforcement, but as an evolving, relational process built on trust, shared experimentation, and a growing sense of environmental and intergenerational responsibility.

Alongside capacity-building efforts, organizations are also looking inward to reassess how demolition is specified and managed. A property owner's sustainability manager reflects on how demolition has long been neglected, both within her own organization and across the industry. In response, her team is now revisiting procurement strategies for demolition work, introducing explicit criteria around reuse and material recovery, with the goal of gaining greater control over end-of-life processes and aligning them with circular economy principles.

This development is supported through interactive knowledge-sharing forums, where project teams' present case studies, discuss examples, and invite subcontractors to reflect on their own experiences. These sessions allow participants to address real-world challenges such as the logistics of relocating doors or sourcing reused materials, and collaboratively explore viable solutions. The discussions also include creative brainstorming, considering material scarcity and abundance, and proposing small-scale pilots to test reuse options before full-scale implementation.

The process is described as dynamic, iterative, and relationship-driven, reflecting a broader shift toward learning-centered project environments. Rather than treating subcontractors as passive recipients of instructions, organizations aim to involve them in shaping circular practices, with knowledge exchange and practical exploration as central tools for mutual adaptation.

6 ANALYSIS

In this chapter, the findings from the research are analyzed to address the core research questions. Through a combination of data presentation and interpretation, key patterns and relationships are explored, offering insights into the implications of the results.

This chapter investigates the process of change within construction and demolition waste management through the lens of institutional theory. The theory provides framework for understanding how regulative, normative, and cultural-cognitive elements shape the behaviors of individuals and organizations. It reveals how the formal and informal structures governing CDWM practices contribute to stability within the industry, while simultaneously presenting barriers to transformation.

Central to institutional theory is the dynamic interplay between structure and agency. While institutional frameworks establish boundaries and provide guidance, actors within these frameworks are not mere recipients of institutional pressures. They exercise agency, the capacity to challenge norms, reinterpret rules, and even disrupt established practices. This duality illustrate how institutional arrangements are both constraining and enabling, allowing actors to engage in processes of innovation and change.

Central to this analysis is the concept of institutional work, which captures the deliberate efforts of actors to create, maintain, or disrupt institutional structures. By focusing on institutional work, this chapter examines how industry actors engage in purposeful actions to challenge established norms, advocate for more sustainable practices, and facilitate a transition toward circular economy models. These actors are not solely bound by existing frameworks; rather, they actively strive to reshape them, opening up new avenues for transformative change.

The chapter unfolds in three parts. First, it examines how the institutional field of CDWM structures practices, establishing boundaries and reinforcing traditional, linear approaches to waste management. Second, it explores how actors engage in institutional work to challenge these established norms and promote circular principles. Finally, the chapter considers how these efforts contribute to embedding circular economy principles within CDWM, demonstrating how actors' agency serves as a crucial driver for transforming industry practices.

6.1 RQ1 - HOW DOES THE CDWM INSTITUTIONAL FIELD SHAPE FIELD MEMBERS' BEHAVIOR?

6.1.1 Structuring the CDWM field

The CDWM field is defined by shared practices, rules, norms, and meanings that organize behavior within a particular area of activity (Scott, 2014). It encompasses regulative frameworks, professional standards, and collective cultural understandings that establish common expectations and conventions. Institutional fields are dynamic and continuously evolving, shaped by changing regulations, societal values, and shifting cultural-cognitive frameworks. They often reflect tensions between established norms and emerging logics, contributing to both stability and potential transformation (Scott, 2014). The CDWM field can be seen as a domain of interaction in which actors

are not only shaped by formal regulations and shared beliefs but also engage in ongoing institutional work to maintain, create, or transform prevailing logic. The emergence of circular economy principles and EU directives has intensified this dynamic by introducing new expectations around reuse, recycling, and resource efficiency, which intersect with existing construction routines and WM practices.

6.1.2 Transformation of the CDWM field

The analysis describes the construction and demolition waste management field in Sweden as an evolving field, shaped by shifting regulations, actor constellations, and the gradual diffusion of circular economy principles. The findings reveal how institutional work has unfolded across three overlapping phases: field stabilization, incremental creation, and emerging disruption. These phases reflect how the legislative framework impose new demands on industry and slowly how new meanings and tools have been introduced, and how current pressures are stretching and reconfiguring institutional boundaries.

Phase I: Stabilization Through Sector Norms and Field Structuring (2007–2013)

The early structure of the CDWM field was characterized by a relatively stable constellation of actors and a strong orientation toward regulatory compliance and material logistics. Clients, contractors, demolition, waste and recycling companies, and regulators occupied central positions. Roles were clearly delineated: clients set contractual expectations, contractors managed site-level waste processes, and waste handlers ensured downstream compliance.

Institutional work during this phase was largely oriented toward maintenance (Lawrence and Suddaby, 2006). Organizations focused on aligning with legal requirements, minimizing landfill volumes, and coordinating material flows. Sectoral guidelines, such as the 2007 *Waste Management during Construction and Demolition*, offered industry-driven standardization that translated regulatory requirements into operational routines. These guidelines helped stabilize expectations without fundamentally challenging the linear model of construction and disposal.

Importantly, this phase reinforced a narrow framing of the field. Waste management was seen as a technical and logistical challenge to be addressed at the end of the construction process. Actors like architects, upstream suppliers, or designers were largely peripheral, as early-stage design and procurement decisions were not perceived as directly influencing waste outcomes. The field was effectively bounded around the construction site and defined by short-term, project-based interactions.

This period thus reflects a mature but static field, marked by clearly institutionalized routines, low ambiguity, and minimal experimentation. Environmental sustainability was present but largely understood through the lens of efficiency and compliance, rather than innovation or transformation.

Phase II: Incremental Creation and the Reframing of Waste as Resource (2013–2019)

A second phase emerged as policy ambitions and discursive shifts began to alter the framing of construction and demolition waste. This was catalyzed in part by revisions to the EU Waste Framework Directive and growing policy attention to circular economy strategies. In Sweden, the 2013 revision and rebranding of the sectoral guidelines to *Resource and Waste Guidelines* marked a symbolic and cognitive reframing of waste as a resource, rather than a problem.

This period saw the introduction of new concept such as source sorting, reuse, material recovery, and lifecycle thinking into sector discourse. While these concepts were not entirely new, their institutional embedding within professional norms and guidelines signaled the beginning of a slow but deliberate transformation. The 2019 update of the guidelines further aligned with EU policy by emphasizing on-site sorting and stronger reuse targets, thereby extending the responsibilities of contractors and waste handlers.

The form of institutional work during this phase was one of institutional creation through layering (Mahoney and Thelen, 2010). Rather than abandoning old practices, actors began integrating new elements into existing routines. Certification systems such as ISO 14001, Miljöbyggnad, and BREEAM helped formalize expectations and standardize how sustainability was to be measured, reported, and demonstrated. These certifications acted as carriers of new logics, facilitating adoption by embedding environmental considerations into procurement, reporting, and reputational frameworks.

However, the uptake of circular practices remained uneven. The operationalization of reuse and lifecycle management was still more aspirational than concrete for many actors. Contractors and demolition companies experimented cautiously, often driven by specific clients, sustainability champions, or pilot projects. The field was no longer static, but the change was slow, project-based, and fragile, relying on voluntary initiatives and symbolic compliance rather than structural transformation.

This phase thus reflects a moment of discursive innovation and soft restructuring. The boundaries of the field began to stretch, but its dominant logic of linear production, efficiency, and cost control remained largely intact.

Phase III: Disruption, Institutional Complexity, and Field Reconfiguration (2020–Present)

The current phase is marked by a significant urge for change, driven by new regulatory instruments, emerging digital tools, and the increasing entanglement of environmental and financial governance. EU policies such as the Circular Economy Action Plan (2020), revisions to the Waste Framework Directive, and especially the EU Taxonomy for Sustainable Activities, have introduced powerful new pressures that are disrupting established roles, logics, and practices.

These new instruments extend the governance of waste well beyond the construction site. They demand that actors think in terms of entire product life cycles, climate disclosures, and circular value retention. Tools like life cycle assessments (LCAs), environmental product declarations (EPDs), and digital material passports introduce new performance metrics and visibility across the value chain. This shifts authority away from traditional field incumbents (e.g., contractors and waste handlers) toward new actors: sustainability consultants, digital service providers, ESG analysts, and investors.

The field is no longer governed by one institutional logic, but by competing and overlapping ones. This institutional complexity (Greenwood et al., 2011) creates challenges for coordination, legitimacy, and identity. Actors must now navigate conflicting expectations, reconcile fragmented knowledge systems, and often make sense of ambiguous requirements. Smaller demolition companies, for instance, may struggle to meet digital reporting demands, while larger contractors invest in internal sustainability systems or LCA capacity.

Yet within this complexity lies opportunity for institutional entrepreneurship. Some actors are reimagining their roles, forming new alliances, and building new capabilities, especially those who can mediate between different logics, such as consultants translating taxonomy requirements into project level decisions, or contractors testing new reuse protocols that meet both design and regulatory criteria.

This phase reflects a moment of field-level reconfiguration, where roles are renegotiated, responsibilities are redistributed, and the meaning of sustainability itself is contested. The CDWM field is expanding in scope and becoming more hybrid in composition, with new tools, metrics, and actors coexisting with established routines.

Legal framework as institutional carriers

The field is strongly shaped by the legislative framework at multiple governance levels, particularly EU directives and national legislation. The Waste Framework Directive (2008/98/EC), revised in 2018, and the EU Circular Economy Action Plans (2015, 2020) have introduced not only technical regulations but expands its ambition to include elements such as extended producer responsibility, life-cycle thinking, and creation of markets for secondary raw materials.

These frameworks function as institutional carriers (Scott, 2001), spreading circular economy principles across member states while reinforcing a collective European commitment to environmental sustainability. By mandating sorting, traceability, and recovery targets, the regulations enact coercive requirements through rule-setting and monitoring, aimed at aligning member states with supranational ambitions.

At the Swedish national level, the 2020 waste ordinance (2020:614) and the Circular Economy Action Plan (2021) similarly aim to shape industry practices by setting requirements for field actors. The requirement for on-site sorting of specific fractions represents a shift from soft to hard governance, while Sweden's longstanding policies on resource efficiency provide a foundation for policy legitimacy. Nevertheless, as noted by several respondents, enforcement mechanisms, especially at the municipal level, are under-resourced. The infrequent inspections reported by contractors and demolition companies reflect a gap between institutional ambition and regulatory capacity, illustrating how institutional fragility can undermine compliance and field coherence.

Institutional disruption

While many actors engage in maintenance work, the field also exhibits signs of disruptive institutional work, particularly as circular economy discourses gain position. These disruptions emerge from top-down (e.g. EU policy revisions) and bottom-up (e.g. new design practices or supplier strategies) sources. The emphasis on reuse, design for disassembly, and material passports challenges the dominant linear logic of "*build-use-demolish-dispose*" that has historically been synonymous for construction.

Actors who advocate for early-stage interventions such as integrating waste considerations into architectural design or procurement contracts, are engaging in the redefinition of roles. By promoting preservation and reuse over new construction, these actors seek to reframe what is considered as legitimized behavior within the field.

Similarly, the evolution of the EU Circular Economy Action Plan, that shifts from a focus on waste management to a broader strategy aiming for the creation of secondary markets, serves as a driving force for change by promoting new perspectives on value, responsibility, and exchange.

Field Interdependence

Overall, the CDWM field can be understood as a multi-level, multi-actor system in transition. The presence of regulatory frameworks, technical standards, operational routines, and economic imperatives demonstrates the complexity of institutional fields (Thornton et al., 2012). Within this system, actors are constantly balancing maintenance and the pressure for change, often resulting in actions reinforcing established practices while selectively experimenting with new ones.

The findings suggest that institutional change in the CDWM field is incremental and negotiated, occurring through the interplay of legal mandates, professional routines, and strategic translation of circular economy principles. The EU's efforts to redefine the rules of the game combined with national adaptations and local implementation practices, illustrate how fields evolve through adaptive, contested institutional work.

6.1.3 The industry level: Guidelines, standards, and the translation of circularity

Within the CDWM field, the industry level plays a crucial role in translating regulatory frameworks into operational norms. While formal legislation at EU and national levels sets the foundation for circularity ambitions, it is through industry associations, standard-setting bodies, and frontline actors such as contractors and demolition companies that these ambitions are materialized in practice. These actors engage in varied forms of institutional work, from maintenance and incremental creation to, in some cases, disruption helping shape the practices of the field.

Industry guidelines as vehicles of incremental change

A central example of industry-led institutional work is the development and revision of Sweden's guidelines for construction and demolition waste, issued by the national recycling council. Originally launched in 2007 to promote landfill reduction, the guidelines were continuously updated in response to legislative changes, culminating in a notable 2013 revision that rebranded the document from *Waste Management to Resource and Waste Guidelines*. This shift reflects an intentional discursive reframing of waste, from an unwanted byproduct to a potentially valuable resource, mirroring broader transitions toward circular economy principles.

The 2019 update further aligned the guidelines with EU circular economy strategies by introducing more stringent expectations for source sorting and advocating for reuse and material recovery. These revisions exemplify institutional creation work (Lawrence and Suddaby, 2006), whereby new meanings and practices are introduced through soft regulation. While not legally binding, these guidelines function as norm-setting tools that stabilize field expectations and support the gradual embedding of circularity principles within project routines.

Industry associations thus act as institutional intermediaries, translating complex regulatory goals into accessible, practitioner-oriented frameworks. Their ability to align professional norms with evolving policy expectations gives them a central role in both the maintenance and transformation of the CDWM field.

Certifications and Standardization as Stabilizing Mechanisms

Complementing industry guidelines are formal certification systems, such as ISO 14001, ISO 9001, BREEAM, and Miljöbyggnad, which serve to stabilize and standardize environmental management practices across the construction sector. These systems offer a shared vocabulary and performance benchmarks, helping actors align with sustainability expectations in ways that are auditable and often contractually required.

Such bodies perform normative and symbolic institutional work. They provide legitimacy to environmental claims, support procurement decisions, and provide tools for managing reputational risk. Importantly, they also act as institutional carriers (Scott, 2001), diffusing sustainability logics across diverse organizational and geographical contexts. However, their standardizing may also influence and inadvertently reinforce conservative practices, particularly when they fail to evolve in pace with more radical visions of circularity.

When at the beginning of our study, while roles appear clearly distributed with clients setting procurement frameworks, contractors managing compliance, and recycling companies ensure material treatment, this distribution does not imply institutional coherence. Instead, the field is marked by institutional complexity (Greenwood et al., 2011), where actors navigate multiple, sometimes conflicting logics, such as cost efficiency, environmental responsibility, and project delivery timelines.

Institutional maintenance and field stabilization

Much of the work within the field can be characterized as institutional maintenance work (Lawrence and Suddaby, 2006), aimed at stabilizing practices through compliance with established rules and coordination among actors. The definition of responsibilities for example, contractors' accountability for on-site waste management, or demolition companies' role in material separation, reflects efforts to ensure predictability and operational order. These roles are underpinned by regulatory and contractual frameworks, many of which are routinized and embedded in professional practices. The requirement for audits, on-site sorting, and documented handover of waste fractions to recycling companies are all examples of how actors participate in reproducing these expectations.

The maintenance work also has a relational dimension to it. As coordination among actors such as contractors, demolition companies, and recycling companies, often depends on interpersonal trust and build on shared understandings about informal rules and established practices. This relational structure helps to stabilize the field, even as new environmental requirements begin to question existing routines.

Contractors and demolition companies as translators and enactors

While industry associations and certification bodies provide frameworks and tools, it is the industry actors who translate these prescriptions into organizational practice. They are responsible for implementing source sorting, managing waste flows, and reporting performance, making them critical agents in the operationalization of institutional change.

Yet, findings suggest that much of this work corresponds to institutional maintenance, marked by vague contractual requirements, reactive waste handling, and limited proactive engagement with

circularity principles. This pattern doesn't reflects deliberate resistance, but rather the effects of institutional inertia and a lack of enabling conditions, such as clear incentives, robust monitoring, or integrated reuse strategies during design.

At the same time, there are examples of creative and adaptive responses to this inertia. Some companies initiate pilot projects, experiment with material reuse, or explore how circularity can be integrated into their business models. These activities reflect early forms of creation efforts aimed at exploring the possibility to integrate circularity in their organizations.

This dual role where actors both reproduce and selectively challenge field logics illustrates the relational and contested nature of field-level change. Demolition companies and contractors do not passively implement policy; they actively negotiate its meaning, feasibility, and implications within the constraints of their daily work.

This section has illustrated a broader point: institutional change is not driven by legislation, but rely on the often-invisible practices of translation, adaptation, and norm-setting that occur within the field. Understanding this work, and the conditions that support or constrain it is critical for fostering meaningful transitions in the CDWM field.

6.2 RQ2 - How do actors within the construction industry engage in institutional work to shape CDWM practices?

In study M the transformation of construction and demolition waste management practices remains a contested and complex process. While increasing attention has been paid to sustainability, interviews across the field reveal that, despite growing awareness, changes in on-site practices are difficult to achieve. In many cases, waste management becomes a secondary concern during the production phase of construction projects. Environmental managers, particularly in large contractor organizations, emphasize the ongoing struggle to maintain internal alignment and to avoid fragmented or siloed efforts across departments. Their advisory roles limit their power to enforce compliance, and instead they must rely on mobilizing internal political support to push sustainability agendas.

> *"Because I don't have the power to …., I can just help them, so I have asked my boss, who is the sustainability manager in Sweden, to talk to the highest line manager. Because now they need to take the pressure from the line. We can't have goals that one department just doesn't care about. It's not fair to the others."*
>
> *– Environmental manager, Contractor*

A central challenge identified by these actors is the difficulty of demonstrating the financial benefits of improved CDWM. In a sector where economic concerns dominate, this absence weakens the case for change:

> *"It would have been good, but I cannot demonstrate that with improved WM, the projects would actually save money." – Environmental manager, Contractor*

While several contractors have completed demonstration projects using reused or recycled materials, these remain isolated cases driven by enthusiastic individuals rather than embedded within organizational strategy. The fragmentation of project management and the limited integration of

sustainability managers into mainstream operations further restrict the institutionalization of circular practices. In contrast, some large contractors have supported more systemic resource efficiency initiatives, including prefabrication and digitalization, which may serve as enablers of future circular transitions.

6.2.1 Institutional work to shape CDWM practices

Maintenance work

Institutional maintenance work is widespread across the field and helps uphold established routines. This includes mundane but essential actions such as compliance with safety protocols, adhering to project timelines, and fulfilling administrative tasks. Such routines stabilize the institutional infrastructure and support the status quo.

Maintenance efforts are particularly associated with conservative actors who reiterate the industry's risk aversion, financial limitations, and time constraints. In meetings and public discussions, these actors invoke their experience to dismiss circular economy principles as unrealistic or infeasible. This rhetorical strategy is supported by a mythologizing discourse invoking tradition and "*how things have always been done*" to sustain existing practices. Table 13 below provide examples of maintenance work identified.

Actor	Form of Work	Description
Municipalities	Enabling work	Provide legislative frameworks but lack enforcement mechanisms
Certification bodies, Clients, Contractors	Policing	Reinforce practices through evaluations focused on cost, time, and quality
Clients, Contractors	Embedding and routinizing	Evaluate demolition on traditional metrics (experience, equipment) rather than sustainability
Contractors	Policing	Enforce work rules that sustain established routines
Clients, Contractors	Enabling work	Pass responsibility down the chain, diffusing accountability
Clients, Contractors, Demolition companies	Mythologizing	Reiterate assumptions and traditions to legitimize resistance to change

Table 13 - Maintenance work

Creation Work

Creation work within CDWM is primarily driven by environmental managers who develop inter-organizational networks, launch pilot projects, and offer internal training. These actors attempt to redefine normative expectations and create new templates for action. However, the lack of embeddedness of these practices within broader organizational routines limits their transformative potential.

Examples of successful strategies include using internal competition to drive performance improvements and providing sustainability training to clients and subcontractors. Creation work often involves theorizing and re-labelling, such as promoting terms like "*deconstruction*" instead of "*demolition*", or viewing waste as a "*resource*" rather than a liability. Table 14 below provide examples of creation work identified.

Organization	Function	Form of Work	Description
Large contractor	Environmental manager	Advocacy	Use role and experience to define new CDWM norms
Demolition company	Environmental manager	Theorizing	Challenge common terms to shift meaning
Contractors	Project manager	Educating	Communicate sustainability on-site
Contractors, Demolition companies	Environmental manager	Constructing networks	Create internal/external collaborations to improve CDWM
Demolition company	Management board	Advocacy	Integrate sustainability into corporate strategy

Table 14 - Creation work

Disruption Work

Disruptive work is carried out by actors who challenge both existing and proposed models of CDWM. Some contractors and demolition companies propose alternative paradigms focused on traceability, standardized material flows, and shifting responsibility back to producers. Their arguments critique the inefficiencies and unsustainability of current models, while also contesting circularity approaches that do not align with operational or market logic.

Such disruption includes moral reframing, arguing that responsibility for future generations requires abandoning linear models and undermining assumptions about the inferiority or costliness of reused materials. Table 15 below provide examples of disruptive work identified.

Organization	Function	Form of Work	Description
Large contractor	Production	Disassociating moral foundations	Appeal to long-term well-being over short-term gain
Demolition company	Company	Undermining assumptions	Showcase viability of circular models
Large contractor subsidiary	Business developer	Disassociating moral foundations	Promote alternative economic frames for CDWM

Table 15 - Disruptive work

6.2.2 Mechanisms reinforcing the status quo

The persistence of existing practices is reinforced through weak contractual obligations, symbolic compliance, and a culture of deflected responsibility. Vague language in contracts suggesting sorting "*ought to be done*" permits interpretation and non-enforcement. Clients evaluate tenders based on cost, not environmental performance, while contractors selectively exclude demolition waste from performance reporting.

Responsibility is pushed down the chain, with each actor assuming the next will handle waste appropriately. Subcontractors often face little scrutiny, and enforcement mechanisms remain underfunded. This structure enables a cycle of passive maintenance and symbolic alignment with sustainability without substantial changes.

Mythologizing resistance to change is common, with traditions cited as barriers to development. Compliance with minimal legal and certification standards is used to claim legitimacy, allowing actors to avoid deeper engagement with sustainability goals.

6.2.3 Institutional theory and challenges to CDWM practices

Institutional theory helps to explain how shared assumptions, norms, and structures shape CDWM behavior. Waste is often constructed as inherently inferior and circular models as economically risky, making them less legitimate within current institutional logics.

Disruption occurs when these logics are challenged, such as when companies showcase the profitability of circular models or question the viability of current approaches. However, such examples remain limited and face challenges scaling beyond niche innovations.

However, one of the conclusions of Study M is that institutional change would require a shift in the supply chain, responsibilities, and how legitimacy is attributed in the field. Currently, the field remains fragmented, with competing logics and low coherence. Circularity remains an aspirational discourse rather than a routinized practice.

Overall, institutional work in the CDWM field reveals the tensions between maintenance, creation, and disruption. While actors across the field are engaging in activities that could reshape the institutional order, structural inertia, cultural myths, and weak incentives continue to uphold the status quo. Sustainable transformation will require stronger integration of circular goals into routinized practices, clearer roles and responsibilities, and a revaluation of waste as a resource.

6.2.4 Case company A, B, and C

Institutional logics and the embedding of sustainability

Drawing on institutional theory the three case companies in study B illustrate diverse ways institutional work shapes the integration of sustainability (Thornton et al., 2012, Scott, 2014). Each company demonstrates distinct organizational responses, reflecting the organizational members understanding and enactment of sustainability.

Company A demonstrates institutional creation work (Lawrence and Suddaby, 2006), actively making attempts to embed sustainability into its organization. Institutional actors engage explicitly in developing new structures and routines, such as interdisciplinary "*octopus meetings*", strategic metrics, and employee-driven sustainability initiatives. These active forms of institutional work positions a more sustainability oriented logic as a central within the organization, shaping both internal and external perceptions.

In contrast, Company B reflects a coexistence of competing institutional logics: traditional economic rationality and emerging sustainability concerns. Institutional work primarily involves cautious institutional maintenance aimed at sustaining existing economic practices while incrementally accommodating external pressures for sustainability. Actors in Company B manage the complexity by embedding sustainability by aligning them with existing practices, responding reactively to institutional pressures rather than proactively reshaping their core business processes.

Company C is characterized by explicit institutional maintenance work, reinforcing dominant economic logics that prioritize cost-efficiency and short-term profitability. Sustainability is perceived

largely as an external imposition rather than an internal strategic imperative. Consequently, actors engage in institutional work that explicitly defends existing organizational practices, limiting sustainability initiatives to minimal compliance or superficial adjustments.

Leadership and patterns of institutional work

The comparative analysis also reveals that leadership practices seems to influence the developments in each company, particularly how sustainability is legitimized or resisted within organizational structures.

In Company A, leadership enacts proactive actions by framing sustainability as strategically beneficial and legitimate. Leaders actively articulate sustainability narratives that encourage innovative and collaborative sustainability practices, shaping employee perceptions and behaviors. Such institutional work facilitates the integration of sustainability into daily organizational routines and supports its broader institutionalization.

Company B exhibits ambivalent institutional work, with leadership playing a crucial role in shaping sustainability practices through selective support and resistance. The environmental manager conducts considerable institutional work aimed at gradually incorporating sustainability practices, but leadership's emphasis on short-term economic viability often restricts broader institutional change. Thus, institutional work in Company B navigates carefully between modest improvement and conservative maintenance of established practices.

Leadership within Company C engages primarily in institutional maintenance work. The CEO, as a central actor, consistently frames sustainability initiatives as financially risky or strategically unnecessary, effectively preventing substantial change in organizational practices. Institutional work within Company C involves maintaining and legitimizing existing routines, limiting employee attempts to integrate sustainability. Thus, leadership practices reinforce existing institutional arrangements rather than facilitating transformation.

Negotiating institutional barriers through institutional work

Each company rely on different forms of institutional work to address or reproduce institutional barriers, perceived constraints such as resource limitations, financial risks, supplier networks, or client demands (Zietsma and McKnight, 2009).

Company A actively engages in institutional creation work to reframe and overcome barriers. Actors within the organization routinely question established industry practices, framing perceived limitations not as overwhelming barriers but as manageable challenges. This proactive institutional work fosters a culture of experimentation and knowledge-sharing, enabling continuous integration of sustainability despite external complexities.

Company B's institutional work primarily revolves around cautious negotiation and incremental adaptations to barriers. Rather than actively reframing institutional constraints, actors selectively align practices to external expectations. Sustainability initiatives are enacted through careful and measured steps, reflecting institutional work aimed at incremental alignment rather than substantial institutional restructuring.

In Company C, institutional barriers are actively mobilized by management to reinforce institutional maintenance. Actors engage in institutional work that leverages perceived barriers, such as financial risk or market uncertainty to justify minimal engagement with sustainability. This reinforces the stability of existing institutional practices and inhibits organizational transformation toward sustainability.

Responding to external institutional pressures

Institutional theory emphasizes that organizations are influenced significantly by external institutional pressures, such as regulatory frameworks, client expectations, and societal norms (Scott, 2014). Institutional work enacted by each company demonstrates differing responses to these external pressures.

Company A strategically anticipate and respond to external sustainability pressures. Driven organizational members are able to intentionally position themselves as leaders in sustainability, utilizing external pressures as opportunities for organizational development. The institutional work involves aligning internal practices proactively with anticipated externally imposed demands.

Company B's represents a predominantly reactive response to external pressures. Sustainability practices emerge primarily as incremental reactions to external demands, such as client requirements or regulatory mandates. Actors in Company B employ institutional maintenance work that allows minor adjustments while maintaining core economic priorities, balancing compliance with existing institutional logics.

Company C demonstrates passive institutional work in response to external pressures, focusing primarily on minimal compliance. Leadership clearly presents external demands as burdensome, utilizing institutional maintenance practices to resist significant changes. Sustainability measures are thus narrowly implemented, and institutional work actively reinforces established organizational norms.

In analyzing the three companies, it becomes evident that discussing circularity in isolation proves challenging. Conversations about their development often drift toward broader concepts like sustainability or energy efficiency. This overlap suggests that, for these companies, circularity is not yet fully established as a distinct framework but rather intertwined with general sustainability goals or more familiar efficiency measures.

The tendency to conflate circularity with sustainability or energy efficiency could indicate a lack of clarity about what truly defines circular practices. It may also reflect a strategic choice to frame circularity in more established terms to align with existing market demands, regulatory requirements, or client expectations. By doing so, companies might be attempting to position themselves as environmentally responsible without fully committing to the deeper systemic changes that a pure circular economy approach would entail.

This blending of concepts could suggest that circularity is perceived more as an extension of current sustainability practices rather than a transformative paradigm shift. It raises questions about whether circularity is genuinely understood and implemented as a separate concept or if it is being adapted to fit within pre-existing sustainability frameworks. Understanding how these companies navigate and

reconcile these overlapping concepts could provide valuable insights into their strategic priorities and the extent to which circular principles are truly integrated into their business models. Table 16 is a comparative summary of the three cases.

Dimension of Institutional Work	Company A	Company B	Company C
Dominant Institutional Logic	Sustainability logic, proactively embedded	Economic logic dominant, moderate sustainability adaptation	Economic logic dominant, minimal sustainability integration
Leadership role in institutional work	Active promotion and support	Ambivalent: selective support and cautious resistance	Active resistance, maintaining existing arrangements
Reaction to institutional barriers	Active reframing and overcoming of barriers	Negotiation, cautious incrementalism	Active utilization of barriers to maintain status quo
Response to external pressures	Proactive anticipation and strategic adaptation	Reactive incremental adjustments	Passive compliance, reinforcing institutional inertia

Table 16 - Comparative summary of case company A, B and C

Concluding reflections

The comparative analysis demonstrate the significant role institutional work plays in shaping sustainability practices across Companies A, B, and C. Institutional work emerges not only as an effort of creating and maintaining institutional arrangements but also as a strategic response to internal and external complexity. This analysis provides insights into how organizations use institutional work to navigate, reinforce, or transform institutional expectations. It further demonstrates that organizations vary significantly in how institutional logics, leadership practices, perceived barriers, and external pressures interact through institutional work, shaping distinct pathways towards or away from sustainability.

6.3 RQ3 - How do the actions of individuals and groups within institutional settings promote the development and spread of circular economy principles in the construction industry?

The empirical material reveal that integrating circular economy principles within organizations is not a straightforward process but the result of ongoing, strategic institutional work. Drawing on Lawrence and Suddaby's (2006) framework, sustainability managers, architects, environmental consultants, and business developers actively contribute to shape organizational routines and values through their actions.

Professionals in the construction sector engage in varied forms of institutional work, confronting the tensions between traditional industry practices and emerging demands for sustainability. Rather than

treating sustainability as a fixed policy goal, actors question dominant logics, redefine professional roles, and challenge established norms, contributing to institutional change. External regulations, such as the EU taxonomy and forthcoming reporting requirements, serve as tools to legitimize internal sustainability efforts, creating shared language across organizations and pressuring less engaged actors. These regulations simultaneously support sustainability efforts and drive further action.

Ultimately, the transition to circularity in the construction industry is shaped not only by policy or technology but by purposeful efforts to embed sustainability within both internal structures and external stakeholder relationships. These actions can be understood as institutional work i.e. strategic efforts to create, maintain, or disrupt existing institutional logics (Lawrence and Suddaby, 2006). The empirical material reveals a multi-layered process of institutional work, from internal organization and competence-building to navigating external industry relations.

6.3.1 Internal efforts to shape the adoption of CE principles

Translation work

One of the most prominent forms of institutional work in the empirical material is *translation work*, as ideas and models are adapted to local contexts (Lamb and Currie, 2011, Wæraas and Nielsen, 2016), where actors mediate between abstract circular economy concepts and the practical realities of their organizations. This process helps make sustainability tangible and understandable for various departments by selecting elements of circularity that fit existing operations and offering relatable, concrete examples. These examples bring the sometimes complex and distant concept of circularity down to an operational level, making it more actionable and relevant for everyday work.

Translation work also extends beyond operational changes to how sustainability is communicated throughout the organization. For instance, sustainability managers modify their language and approach based on their audience, using regulatory and financial terms when addressing boards and investors, while emphasizing emotional values like professional pride or service improvements when engaging with operational staff. This flexible communication not only ensures alignment with organizational priorities but also helps bridge institutional complexity, translating high-level circular economy goals into terms that resonate with different logics and roles within the organization. In this way, translation work plays a crucial role in making the concept of circularity more understandable and relatable across all organizational levels.

Defining goals

The integration of circularity into organizational practice is a dynamic process shaped by the institutional work of actors at various levels. Similarly to the above-mentioned, it also involves a translation process, such as translating sustainability into measurable KPIs, aligning environmental goals with emotional values, and formalizing strategies through top-down decisions. These actions help make circular economy principles more tangible and actionable, as they offer clear, operationally relevant targets and processes for employees to follow. This translation work turns abstract sustainability concepts into concrete goals that can be incorporated into daily operations.

Frontrunner companies often redefine their internal sustainability goals to align circular economy principles with their business models, providing a practical roadmap for how sustainability should be understood and practiced within the company. This internal goal-setting process makes circularity

more concrete by establishing measurable expectations and behaviors, helping employees see how sustainability ties into their specific roles and responsibilities. Over time, this helps to formalize and institutionalize circular practices within the organization, embedding them into routine operations.

A key example of this is the translation of sustainability goals into measurable business indicators. For instance, one architect explained how environmental impacts, such as CO_2 emissions, are made comprehensible in terms of business performance. This kind of translation work helps embed environmental considerations within existing management systems and strategic processes, making sustainability more operationally relevant and understandable across the organization. It provides employees with clear, measurable ways to engage with circularity, helping them see how it directly relates to their work and organizational objectives.

Questioning assumptions and beliefs

Institutional work also involves challenging and reshaping assumptions that underpin organizational practices and logics. A central theme in the empirical material is how actors foster internal pride and a shared sense of accomplishment around sustainability. By positioning sustainability not only as a business imperative but also as a source of meaning and collective identity, organizations reinforce its value and embed sustainable practices more deeply into their cultural fabric. Cultivating pride helps legitimize these practices, making them integral to the organization's identity and enhancing internal engagement.

At the same time, institutional work frequently involves disrupting dominant norms, particularly the prevailing focus on short-term economic efficiency. Sustainability advocates question the assumption that lowest cost should always be the deciding factor, instead promoting a value-based logic that encompasses longer-term benefits. These include reputational, emotional, and strategic gains that go beyond immediate profit margins. By doing so, actors expand the evaluative criteria used in decision-making, integrating ethical and long-term strategic dimensions.

These efforts are not purely discursive but are enacted through practice. Experimenting with alternative materials, testing new methods, and integrating sustainability into daily workflows are all examples of how institutional change becomes grounded in routine organizational activities. This performative dimension of institutional work demonstrates how change is materialized through action, by doing, testing, and sharing, which helps sustain momentum for alternative approaches.

A prominent example of institutional disruption involves questioning long-held industry assumptions, such as the primacy of new construction, the unaffordability of renovation, or the non-reusability of certain materials. For instance, when a project team successfully reuses gypsum boards by manually dismantling them, they not only challenge the technical assumption of non-reusability but also the economic logic that recovery is necessarily more expensive. This act of institutional work introduces new material evidence and embodied knowledge, shifting how feasibility, cost, and environmental performance are evaluated. Such experiences demonstrate how institutional work can undermine taken-for-granted practices and drive the creation of new norms within the industry.

Challenging cost-driven logics

Another significant form of institutional work is the introduction of emotional and experiential values such as improved working environments or faster service for tenants which disrupts cost-driven logics. By reframing sustainability from a cost or burden to a source of added value, these narratives help

organizations and individuals see sustainability as contributing to both organizational success and personal fulfillment. This approach shifts perceptions and encourages the broader integration of circularity into organizational practices.

Actors also promote new values that elevate the moral and strategic importance of sustainability, positioning the climate crisis as central to the future of the industry. These efforts reflect broader attempts to redefine what is considered rational and appropriate within the field, encouraging a shift from purely cost-benefit analyses to one that incorporates ethical considerations and long-term viability. This revalorization of environmental concerns is essential for reshaping the logic by which decisions are made and embedding sustainability more deeply into organizational culture.

Organizing for circularity

A key form of institutional work in integrating circularity is boundary work, which redefines responsibility for sustainability across the organization. This involves challenging the compartmentalization of sustainability and advocating for a distributed model where responsibility extends beyond dedicated teams. It includes reorganizing sustainability roles, developing knowledge infrastructures, and integrating environmental perspectives into processes like project management and cost estimation. For example, cross-functional teams with sustainability specialists ensure that environmental perspectives are embedded into core activities. Internal "sustainability schools" further institutionalize circularity by equipping staff with the necessary tools and knowledge, making sustainability a shared responsibility. This boundary work signals a commitment to long-term change and helps stabilize new environmental logics within the organization, aligning with broader field-level changes.

Institutional change also involves the reconfiguration of professional roles. Architects, traditionally focused on design and new construction, are increasingly adopting a lifecycle perspective that includes reuse, maintenance, and long-term sustainability. This shift challenges traditional views of architecture and requires both technical adaptation and a cultural reframing of professional identity. Development managers and architects are working to integrate preservation knowledge and sustainability into mainstream architectural practice, expanding the boundaries of their roles to accommodate circularity.

The redistribution of responsibilities reflects institutional complexity. Critics argue that sustainability is often confined to specialized teams, with some actors, such as project managers, advocating for a more holistic governance model that integrates sustainability across departments. This argues for a need for internal restructuring to manage competing institutional logics, such as specialization versus integration.

Knowledge diffusion and capacity building are also essential for scaling circular practices. Sharing lessons from pilot projects, integrating sustainability knowledge across teams, and establishing new training structures are key to embedding circularity within organizations. These efforts help create and maintain new norms, supporting the ongoing institutionalization of sustainability, even as the broader field remains contested.

6.3.2 External efforts to shape the adoption of CE principles

Clients

Externally, a key form of institutional work is also translation, making the abstract principles of circularity meaningful and relevant to clients and end-users. Instead of framing circular economy principles in purely ideological or abstract terms, actors focus on presenting them as solutions that align with the clients' strategic, aesthetic, or financial objectives. This involves preparing tailored proposals, conducting research to demonstrate cost-efficiency, and emphasizing sustainability as a value-adding feature rather than an external moral agenda. By aligning circularity with client needs, actors make the concept more tangible and practical for the client, fostering its acceptance and integration into projects.

This translation work addresses institutional complexity by reconciling competing logics of economic, aesthetic, and environmental within a single offering (Greenwood et al., 2011). For instance, actors strategically highlight the design excellence of a building and later reveal that it incorporates reused materials, sidestepping initial resistance to circular elements. This selective disclosure allows architects to maintain their architectural legitimacy while advancing circular goals. As one architect stated, "*We should assert that this is a remarkable building, and incidentally, it incorporates circular elements*".

This pragmatic approach to institutional work helps navigate competing logics without forcing an outright replacement of traditional values with circular ones. Instead, it reflects a layering of logics, where actors blend design quality, economic goals, and sustainability, creating institutional bridging that allows circularity to coexist with existing client expectations (Thornton et al., 2012). By reframing circularity as an integrated part of client offerings, actors make it more understandable and accessible, contributing to the gradual institutionalization of circular principles.

Relational and boundary work

Externally, boundary work is also crucial in how actors engage with clients. Instead of targeting client organizations as a whole, actors often focus on individual champions within client companies, those with formal or informal influence over sustainability agendas. By analyzing client policy documents and aligning proposals with the client's language and frameworks, environmental managers tailor circularity to fit existing organizational priorities. This relational work builds coalitions and leverages influence, reflecting relational institutional work that adapts circular proposals to resonate with different organizational cultures.

However, actors also face friction between symbolic adoption and practical implementation. Some clients publicly endorse sustainability but resist circular practices due to internal fragmentation or concerns over cost, leading to tensions between their stated environmental goals and their operational decisions. For instance, tenants have rejected reuse-based solutions despite their company's environmental commitments. This tension illustrate the limits of institutionalization when sustainability is not embedded across all organizational functions and illustrate the gap between rhetoric and practice.

Disrupting value assumptions

A nuanced aspect of institutional work involves challenging clients' assumptions about value, particularly the perception that reused or recycled materials are less desirable or should be cheaper. Environmental managers frequently encounter clients who expect circular buildings to come at a discount or worry about the aesthetics of reused elements. Rather than avoiding these conversations, some actors confront these concerns head-on through demonstration work. By inviting clients to see completed projects and using reference buildings as examples, they offer tangible proof that circularity does not compromise quality or value. This symbolic and embodied institutional work reshapes client perceptions, presenting reused materials as legitimate and desirable within architectural and real estate value systems.

In this context, material and aesthetic experiences play a powerful role in reshaping client expectations. By allowing clients to see and experience the quality of circular buildings, actors actively disrupt assumptions about the inferior value of reused materials, promoting circularity as a legitimate choice that meets high design and quality standards.

Strategic silence and subtle influence

Interestingly, the analysis reveals that some actors adopt a strategy of strategic silence, where they avoid emphasizing circularity in their discussions with clients. Instead, they focus on delivering "*good spaces*" that meet client expectations without drawing attention to reuse or sustainability. This approach reflects strategic accommodation to institutional constraints, reducing the risk that discussing circularity will lead to price concerns or diminish perceived value. While this strategy may seem counterproductive, it demonstrates an important aspect of institutional work. That it isn't always about open confrontation, instead it often involves subtle influence, selective engagement, and institutional navigation (Hallett, 2010).

By strategically navigating institutional constraints and adapting their approach based on the audience and context, actors can still advance circular principles without triggering client resistance. This nuanced approach allows them to foster gradual acceptance of circular practices while maintaining client satisfaction, balancing the need for institutional change with practical business realities.

Through these external institutional efforts, actors engage in pragmatic translation, boundary redefinition, and relational work, making circularity more tangible and understandable for clients. This external work plays a crucial role in embedding circular principles into the broader industry, even when faced with resistance or institutional barriers.

Suppliers and subcontractors

The integration of suppliers and subcontractors into circular practices involves significant institutional work, including reframing assumptions, co-creating knowledge, clarifying expectations, and shifting roles in the construction value chain. These efforts reshape institutional norms that define what is possible and desirable in the transition to circularity. However, the study reveals institutional fragility, as some clients view sustainability as a "luxury" pursued during economic booms but deprioritized during downturns, indicating that sustainability is not yet fully embedded in all organizations.

Much of the institutional work centers around formalization. Environmental consultants within contractor organizations seek top management approval for sustainability strategies, ensuring

consistency, clarifying expectations, and legitimizing initiatives despite economic pressures to prioritize cost over environmental concerns. This formalization helps reinforce sustainability practices, counteracting financial arguments that prioritize cheaper options.

Reframing and translation work with suppliers

Efforts to engage suppliers in circular practices involve reframing and translation work. Rather than confronting resistance, actors shift the meaning of reused and recycled materials in ways that resonate with suppliers' business models. For example, comparing circular construction to the second-hand car market, where used items are sold with warranties by trusted professionals, normalizes the idea that reused materials can have economic and quality value. This reframing moves the logic of reuse from informality and low value to reliability, profitability, and mainstream market potential, positioning circularity as a business opportunity rather than a moral obligation.

However, institutional inertia within supply networks remains, as many suppliers are entrenched in linear production and procurement logics. Despite this, by framing circularity as a market opportunity, actors aim to incentivize suppliers to adopt circular practices and expand the adoption of the circular economy across the supply chain.

Collaboration with subcontractors: Institutional maintenance and creation

Collaboration with subcontractors represents both institutional maintenance and creation. While developing new practices aligned with circularity, actors build on existing routines and relational trust. Competence development efforts, such as workshops, pilot projects, and reuse initiatives, help gradually shift subcontractors' mindsets and embed new expectations regarding circular practices. This process is dialogic and experiential, rather than top-down. Initially skeptical, subcontractors adopt more positive attitudes toward reuse strategies through exposure to practice, eventually internalizing circular practices as part of their professional identity.

This collective sense-making contributes to normative institutionalization, where circularity becomes an internally valued norm, not just an external requirement. As subcontractors view circular practices as interesting, rewarding, and aligned with their professional pride, they are more likely to participate voluntarily, reflecting deep institutional embedding.

Boundary work with suppliers and subcontractors

Suppliers and subcontractors are also engaged through boundary work, which redefines professional responsibilities and relationships. For suppliers, boundary work recasts their role from material providers to strategic actors capable of supporting reuse markets. For subcontractors, boundary work involves clarifying roles and expectations within procurement documents. Specifying reuse requirements and facilitating presentations and dialogue forums help translate abstract circular goals into tangible tasks, reducing ambiguity in projects involving diverse stakeholders with varying levels of sustainability maturity. A key example of disruptive institutional work is the push to regain control over demolition processes. Traditionally excluded from strategic oversight, demolition is being reevaluated, with a focus on post-use material tracking and emphasizing its importance within the circular economy. By challenging the boundary between construction and waste management, actors aim to create a new institutional space where demolition is seen as a critical phase for value recovery and sustainable decision-making.

6.3.3 Concluding remarks

This study reveals that architects, project managers, and sustainability professionals are actively shaping the construction industry's institutional landscape, rather than simply responding to external pressures or complying with policy. Their efforts involve disrupting outdated assumptions, reconfiguring roles, reframing values, and embedding new practices to enable lasting transitions toward circularity.

Circularity is not a fixed blueprint, but a dynamic process negotiated and enacted through individuals' strategic efforts within complex organizational realities. Internally, actors create new structures and competencies to integrate circularity, while externally, they adapt practices to align with the expectations of clients, tenants, and industry partners, navigating competing institutional logics.

The analysis shows that institutional change is not linear but complex and strategic, involving everyday efforts of alignment, reframing, and negotiation. It demonstrates how actors in the construction industry are shaping the sustainability landscape through each dialogue, project, and organizational redesign at a time.

7 DISCUSSION

The aim of the discussion is to demonstrate how my research builds upon, expands on, as well as challenges some of the previous research on construction and demolition waste management.

7.1 INSTITUTIONAL STABILITY AND CONDITIONS OF THE CDWM FIELD

Institutional theory provides a comprehensive lens to understand how the CDWM field evolve and persist (Scott, 2014, Lawrence and Suddaby, 2006). Initially, the CDWM field exhibited strong institutional stability, characterized by clearly defined roles, predictable interactions, and compliance-oriented behaviors. Institutional maintenance dominated this first phase, where contractors, demolition companies, recycling companies, and clients operated within strictly defined regulatory boundaries, primarily focused on hazardous waste handling, sorting practices, and landfill reduction (Andersson, 2020). Compliance with regulations was achieved through established routines, formal contracts, and embedded professional norms that effectively minimized deviations and secured operational predictability (Kadefors, 1995).

This stability was reinforced through regulative mechanisms, including the coercive power of national legislations and the EU Waste Framework Directive (2008/98/EC), setting minimal standards rather than incentivizing innovation or profound environmental transformation (Scott, 2014). Thus, while stability facilitated compliance and efficiency, it simultaneously created strong institutional rigidity, which subsequently hindered rapid adaptation to the emerging circular economy discourse (Hinings et al., 2017).

7.1.1 Institutional complexity in the field

With the integration of circular economy principles into the European and national policy frameworks (European Commission, 2015, 2020), it introduced a shift in expectations on the field. As such, the complexity arose from the coexistence and partial conflict of traditional linear economy practices and emerging CE expectations, and the CDWM field thereby entered a second phase marked by increased institutional complexity (Greenwood et al., 2011). As a result, the field saw the gradual entry of new actors, including architects, consulting engineers, research institutions, and specialist material suppliers, drawn into the field by opportunities linked to sustainability discourses (Wooten and Hoffman 2016). This entry of new actors significantly reshaped the constellation of the field, introducing novel professional norms and expertise, and beginning to challenge established cognitive and normative boundaries of waste management.

During this second phase, actors began more actively to engage in institutional creation work (Lawrence and Suddaby, 2006), using their positions, expertise, and professional legitimacy to advocate new circularity concepts, such as design for deconstruction, reuse-oriented procurement, and life-cycle assessments (Lim et al., 2024, Arranz and Arroyabe, 2023). Industry associations and certification bodies further reinforced these new norms, albeit primarily through soft regulation and guidelines rather than binding legislation (Greenwood et al., 2015). Yet, while these developments introduced new ideas and potential pathways for transformation, actual field-level change remained

incremental and limited to optimization of existing practices rather than systemic. This could partly be ascribed to the ambiguity in policy implementation and weak enforcement mechanisms, contributing to institutional inertia (Domenech and Bahn-Walkowiak, 2019).

7.1.2 Circular economy ambitions and institutional tensions

In the third phase, intensified EU and national regulatory ambitions increased pressures on field actors to transition from waste management towards a more encompassing circular economy adoption (Swedish Parliament, 2020, Arranz and Arroybe, 2023). These regulatory frameworks, with explicit recycling targets and mandatory sorting demands, represented stronger coercive pressures, aiming to embed circularity principles more firmly into industry practices (Scott, 2014). Nevertheless, despite clearer regulatory intent, significant tensions remained.

One key source of these tensions is the persistent gap between policy ambition and practical implementation. Municipal enforcement capacities remained insufficient, weakening the coercive force of regulatory frameworks and allowing actors to strategically interpret rules to fit existing routines (Zietsma and McKnight, 2009). Thus, even though institutional disruption and creation activities intensified with actors challenging traditional definitions of waste, advocating circular business models, and experimenting with secondary markets, these innovative practices struggled to achieve legitimacy in the broader institutional field due to structural, regulatory, and cultural constraints (Hinings et al., 2017).

7.1.3 Shaping and being shaped: actor-field interdependencies

The institutional fields shape actors' behaviors through regulative, normative, and cognitive elements (Scott, 2014). Simultaneously, actors actively shape the field through institutional work, either maintaining, creating, or disrupting existing structures or meanings (Lawrence and Suddaby, 2006). This mutual shaping was particularly evident as environmental managers, industry associations, and new actors such as architects and consultancies increasingly engaged in strategic institutional creation and disruption activities to reframe waste as a resource and embed circular economy principles within industry practices (Geissdoerfer et al., 2017, Oluleye et al., 2022).

However, entrenched field-level norms, coupled with ambiguous contractual obligations and weak enforcement, continued to reinforce maintenance behaviors among many actors, reproducing existing linear models (Kadefors, 1995). For instance, the narrative of the construction sector's "*conservative nature*" frequently used by actors provided justification for inertia, exemplifying mythologizing as a powerful institutional maintenance strategy (Lawrence and Suddaby, 2006). Consequently, institutional change remains fragmented and incremental rather than transformational.

7.1.4 Institutional work: interactions and contradictions

The findings highlight inherent contradictions and tensions between different forms of institutional work. While policy-driven disruptions aim to destabilize linear economy practices, institutional maintenance work, such as routine compliance, symbolic adherence, and embedded industry

narratives acts as a counterforce, continuously reinforcing established norms (Lawrence and Suddaby, 2006). Institutional creation efforts by actors introducing novel practices, vocabulary, and professional standards simultaneously compete with deeply entrenched routines and economic logics that favor stability and predictability (Greenwood et al., 2011).

This creates a contested field environment where stability and change are negotiated. As actors continue to balance maintaining legitimacy within existing systems while advocating novel circular practices, institutional outcomes depend heavily on actors' abilities to reconcile these tensions (Zvolska et al., 2019).

7.2 ACTORS ATTEMPTS TO SHAPE THE INSTITUTIONAL FIELD

The aim has been to identify how the actors' behaviors are constrained by the institutional setting, as well as to identify their attempts to reshape the established ways of managing construction and demolition waste. The following section aims to address how these efforts may contribute to shaping the institutional field.

7.2.1 Institutional work, fragmented change, and limits of transformation

This initial section illustrates how the transformation of CDWM practices in Sweden remains partial, uneven, and often constrained, despite the growing awareness of the environmental imperative for change. Drawing on institutional work (Lawrence and Suddaby, 2006), the findings have revealed a field caught between the maintenance of established norms, the emergence of inventive experiments, and the disruptive questioning of the established logic. While the concept of a circular economy offers an aspirational vision, its realization is hampered by fragmentation, institutional ambiguity, and the inability to embed sustainability initiatives.

Institutional maintenance and the power of status quo

One of the most prominent themes in the empirical material of study M is the institutional maintenance work, which reinforces existing CDWM practices across the field. Maintenance manifests not only through regulatory compliance or adherence to procedural norms, but also through symbolic commitments, vague contractual language, and the redistribution of responsibility across the supply chain. These findings align with earlier research suggesting that institutional maintenance is not merely passive but actively sustained through discourse, routines, and structural elements (Zilber, 2009, Lok and De Rond, 2013).

The repeated arguments about industry constraints, such as lack of time, client disinterest, or space limitations for on-site sorting functions as a rhetorical device to justify continuity over change. What becomes clear is that these justifications are not only operational concerns but serve to legitimize and preserve the dominant linear logic of construction. The mythologizing of tradition "*we've always done it this way*" and the tendency toward symbolic compliance e.g., excluding demolition waste from sustainability reports, show how deeply embedded beliefs about what counts as "*realistic*" or "*cost-effective*" continue to shape action. This helps explain why even formal legislative shifts, such as Sweden's 2020 Waste Ordinance, have had limited impact when enforcement is weak and field members are uncertain about their practical implications.

Creation work: Localized improvements without institutional embedding

Despite these constraints, several forms of creation work has been identified, particularly among environmental managers. Their efforts manifest themselves in the form of educating internal stakeholders, developing training and measurement systems, redefining terminology, and building inter-organizational networks for knowledge sharing and experimentation. These efforts reflect a commitment to aligning with broader circular economy goals and represent promising attempts at reframing field-level norms.

However, the analysis shows that many of these innovations remain rather limited, isolated and locally bound. Often tied to specific projects, individuals, or localized collaborations, they struggle to scale up or influence the broader field. As Lawrence et al. (2002) have noted, successful institutional creation depends not only on the intensity of collaborative efforts but also on their embeddedness in the wider field. Without integration into core strategies, procurement practices, or accountability structures, these initiatives risk becoming showcases rather than catalysts for transformation.

This lack of embedding is particularly visible in the test projects on circular construction initiated by large contractors. While valuable in showcasing potential, these projects have not (yet) resulted in a broader shift in practices. Instead, they rely on enthusiastic individuals or client-driven initiatives, suggesting that the dominant institutional logics focusing on cost, schedule adherence, and efficiency remain dominant.

Disruption work and the fragmentation of logics

Some actors have engaged in more disruptive institutional work. By questioning the economic and environmental sustainability of current practices, and advocating for traceable, high-quality material flows, they challenge not only how CDWM is performed but how it is fundamentally understood. This includes attempts to shift responsibility upstream to material producers and to reconfigure supply chains to better support circular practices.

However, these efforts are not yet cohesive enough to constitute a new dominant logic. Rather, they reveal a fragmented field in which multiple and sometimes contradictory logics coexist. This complexity is referred to as institutional plurality (Greenwood et al., 2011), where different actors operate with different assumptions, goals, and understandings of what constitutes legitimate or desirable action. What is emerging, therefore, is not a linear shift from one institutional order to another, but a field in contestation where maintenance, creation, and disruption coexist and compete. While some actors push for sustainability and circularity, others reinforce existing norms, and many operate somewhere in between, open to change but constrained by practical, cultural, and institutional inertia.

Study M illustrates that while circular economy principles have entered the discourse, the dominant practices has remained deeply rooted in linear, cost-driven models. Though elements of change are identified, it is slow, uneven, and demonstrates contradictions.

7.2.2 Sustainability transitions in the case companies

The analysis of the empirical material gathered in Study B explores how institutional work materializes within the context of sustainability transitions in three companies within the AEC industry. The empirical cases demonstrate how such institutional work is not a linear or straightforward process,

but a complex and context dependent interaction of organizational structures, managerial agency, and broader institutional pressures.

First, the study illustrates that institutional work is multidimensional and inherently embedded within organizational practices. Company A illustrate this clearly by actively making attempts to integrate sustainability into their operational routines and strategic objectives, resulting in incremental yet meaningful institutional creation. Their activities, such as cross-departmental sustainability meetings and efforts to embed sustainability in quality management practices, align well with the description of institutional creation (Lawrence and Suddaby, 2006), highlighting how new meanings and practices gradually become institutionalized. However, even in this proactive context, sustainability practices remain bounded by the existing organizational culture and logic of incremental improvement, illustrating how institutional creation remains heavily influenced by field conditions (Scott, 2014).

In contrast, Company B presents a scenario characterized by institutional complexity (Greenwood et al., 2011), reflecting an organizational setting where competing logics, aiming for financial profitability and emerging sustainability demands, must be continuously negotiated. In this company, institutional work largely manifests as institutional maintenance, where actors primarily engage in navigating tensions and accommodating incremental sustainability measures within established business practices. This complexity often results in sustainability advocates encountering internal resistance or ambivalence from managerial actors who prioritize financial logics over sustainability. Such findings reinforce the importance of understanding institutional work as not merely proactive but also as responsive and adaptive, frequently emerging from the friction between conflicting institutional logics within the organization (Thornton et al., 2012).

Meanwhile, Company C provides a distinct perspective by emphasizing institutional resistance or defensive institutional work. Here, the managerial framing and rhetoric actively serve to uphold and preserve existing institutional practices by justifying the absence of deeper sustainability engagements. The managerial discourse is strategically mobilized to portray sustainability initiatives as costly, unnecessary, or beyond the scope of the current business model. As a result, institutional work in this company takes the form of deliberate resistance through discourse, aligning with previous research indicating that institutional actors can employ narratives and cognitive framing to reinforce stability and resist change (Maguire and Hardy, 2009, Levy and Scully, 2007).

A critical contribution of this study, therefore, lies in demonstrating how institutional work within sustainability transitions is profoundly influenced by managerial agency as well as discursive framing Zilber (2017). Across all cases, senior management emerges as pivotal actors whose attitudes, perspectives, and decisions shape the organization's approach to sustainability (Radoynovska et al., 2020). For instance, the proactive stance in Company A reflects managerial discourses explicitly supportive of sustainability, while Company C’s resistance corresponds to managerial skepticism about the economic viability of sustainability initiatives. Company B illustrates a scenario where managerial agency appears fragmented, with sustainability advocates striving to reconcile conflicting institutional logics, thus underscoring the inherently relational nature of institutional work (Fuenfschilling and Truffer, 2016).

Additionally, these cases highlight institutional complexity as an important factor shaping the potential for change within sustainability transitions. All three companies face competing institutional demands, including economic pressures, client expectations, and regulatory developments. The way

each company navigates these complexities significantly impacts the character and extent of their institutional work. Company B particularly demonstrate the difficulty of reconciling contradictory institutional logics, thus showing how institutional complexity can serve as a critical barrier to deeper institutional change. Company A navigates this complexity by embedding sustainability within the dominant quality and efficiency logic, thus demonstrating how complexity can be addressed strategically. In contrast, Company C leverages complexity rhetorically as justification for resisting transformative practices, reinforcing the idea that institutional complexity is actively negotiated rather than passively encountered (Greenwood et al., 2011).

Furthermore, the study highlights the significance of internal conditions, such as the presence of dedicated sustainability champions or internal advocates, as well as external pressures, including regulatory frameworks and client expectations, as key factors in the process of institutional work. Companies A and B demonstrate how sustainability champions or advocates, despite constraints, can shape institutional trajectories, whereas Company C shows how the absence or marginalization of such advocates can limit institutional change. Thereby reflecting the significance of internal actor networks and managerial alignment as determinants of the potential for successful institutional creation and change (Hinings et al., 2017).

Finally, this empirical analysis provides insights into the nature of agency within structural constraints. The relational understanding of agency (Thornton et al., 2012) emerges clearly, illustrating that the actors' decisions and actions are both shaped by and shape the institutional context. For instance, Company A's actors exercise agency in ways that reshape organizational routines to embed sustainability, thus gradually transforming organizational structures. Company B demonstrates how agency can be limited by organizational structures and competing logics, while Company C explicitly uses managerial agency to preserve existing structures. This illustrates that agency within institutional work is neither entirely autonomous nor fully constrained but inherently relational, constantly interacting with institutional pressures and organizational contexts (Scott, 2014).

In conclusion, this integrated analysis of Companies A, B, and C offers theoretical contributions by empirically grounding institutional work theory. The study confirms that institutional work encompasses a diverse range of actions, from creation and maintenance to active resistance. It portrays managerial agency, discursive framing, and institutional complexity as central to understanding the dynamics of institutional change in sustainability transitions. Moreover, it emphasizes the relational nature of agency and the critical role internal and external conditions play in shaping institutional trajectories. These contributions enrich institutional theory by providing a more complex, empirically informed understanding of how organizational actors actively engage with and navigate sustainability transitions within their respective institutional fields.

7.3 INTEGRATION OF CIRCULAR BUSINESS

Study F contributes to a growing body of research examining how organizations in the construction sector engage with the circular economy, not merely through compliance with policy mandates but a variety of forms of institutional work to enact change (Lawrence and Suddaby, 2006, Maguire and Hardy, 2009). The findings demonstrate that the transition towards circular business practices often requires more than technical adaptation; it require a reshaping of values, routines as well as organizational structures, in ways that are context-sensitive to become institutionally embedded.

7.3.1 Embedding circularity

Organizations that demonstrate active commitment to circular economy principles move beyond symbolic sustainability efforts by embedding circularity into their activities and practices. These companies' share the common ambition by distributing sustainability roles across departments, implement governance structures such as "*sustainability schools*" and often develop KPIs that link environmental objectives with business performance. As these initiatives diffuse the formerly peripheral logic of sustainability seems to become more broadly integrated throughout the organization, making environmental managers better equipped to manage competing tensions between financial and environmental goals. By embedding circularity, rather than treating it as an isolated effort, companies align with Dahlmann and Grosvold's (2017) observation that sustainability gains traction when integrated into the structures and practices of the organization.

7.3.2 Managerial agency and strategic framing

Managerial agency, as shown in our findings, has been central to embedding circular economy principles within organizations. In line with Greenwood et al. (2015), upper management plays a crucial role in enabling and driving organizational change, not merely as passive enforcers of external demands but as active institutional actors. They are able to frame circularity as an internal strategic value, aligning it with business priorities, allocating resources, and shaping cultural narratives that position sustainability as integral to the organization's identity and legitimacy. This investment in both discourse and resources is essential to shifting circularity from the margins to the core of organizational decision-making.

7.3.3 Translation work and institutional complexity

Translation has been repeatedly shown in the study to be an important form of institutional work in the context of circularity. Circular principles do not enter organizations as clear, ready-made frameworks but must be adapted into relevant language, metrics, and practices that align with the company's operations. Sustainability managers act as intermediaries, bridging abstract regulatory standards with the varied goals of procurement teams, designers, operational staff, and even external actors such as suppliers and clients. This translation work helps navigate institutional complexity by making circularity understandable, practical, and appealing to both internal and external stakeholders (Zietsma and McKnight, 2009, Greenwood et al., 2011).

7.3.4 Relational and boundary work

Another recurring feature of successful circular integration is the performance of relational and boundary work (Zietsma and Lawrence, 2010). This includes redefining internal roles, such as architects adopting lifecycle perspectives and extending responsibilities across departments, fostering greater collaboration within the organization. Externally, actors engage with clients, suppliers, and subcontractors, building relationships through both formal contracts and informal dialogue. These interactions help create a shared understanding and commitment to circular goals, emphasizing that the success of circular ambitions not only depends on internal alignment but also on the active coordination of expectations across organizational boundaries. This relational approach highlights the importance of engaging a network of actors beyond the organization to effectively implement circular economy principles.

7.3.5 Disruption of industry assumptions

In contrast to incremental adaptation, several organizations engage in institutional disruption work by directly challenging entrenched industry assumptions. This includes questioning the logic that reused materials are inferior or economically unviable and offering alternative metrics for value such as social, environmental, and reputational. As Lim et al. (2024) suggest, the construction industry share deeply embedded norms, rules, and values that shape actors' perceptions and behaviors in certain homogeneous ways. By engaging in pilot projects, demonstrations, and reference buildings, these organizations actively revalue materials, practices, and priorities, laying the groundwork for new norms to emerge. Such efforts do not merely respond to institutional pressure but constitute deliberate attempts to redefine field assumptions, reflecting Guarnieri et al. (2023) argument that practices often respond to the rules, beliefs, and conventions of the broader environment.

7.3.6 Strategic navigation and incremental embedding

Finally, the findings suggest that successful organizations approach institutional change strategically, combining bold, disruptive efforts to challenge existing norms with practical, gradual steps that allow for smoother integration of new practices over time. Many begin with incremental embedding, integrating circularity into existing systems such as quality assurance or procurement templates. Others adopt strategic silences, downplaying sustainability discourse in client interactions while embedding circularity "*by stealth*" into project outcomes. These tactics reflect the realities of operating in a field marked by institutional plurality, where overt confrontation of dominant logics may be counterproductive (Greenwood et al., 2011).

7.4 INSTITUTIONAL WORK AND ITS INFLUENCE ON CDWM PRACTICES

The shift in viewing waste as a valuable resource rather than a byproduct to be discarded is noticeable and seems to be an outcome of ongoing transformations driven by both internal and external pressures. Companies are influenced by evolving regulatory frameworks, sustainability norms, and increasing demands for environmental accountability, are re-evaluating their roles within the broader field. As noted by Simpson (2012), organizations respond to pressure based on their understanding of their role in the field, which in this case includes a growing recognition of their responsibility to manage resources more effectively. This shift also reflects a broader change in attitudes, where waste is no longer seen as a liability but as a potential source of value, aligning with circular economy principles. The transformation is also driven by the increasing difficulty of controlling actors upstream and downstream in the supply chain, making it more critical for companies to manage the materials they are responsible for. Consequently, this shift in value recognition is not just a reaction to external pressure, but part of an ongoing transformation in how waste is conceptualized and managed across the industry.

The adoption of the institutional work perspective contributes by providing an explanation for the varied responses of different actors in dealing with the conflicting demands set by the institutional framework. In this setting, actors simultaneously contribute to shaping the institution (Smets and Jarzabkowski, 2013). This perspective illustrates how actors, particularly environmental managers, are capable of making independent actions that go beyond the institutionally prescribed behaviors. It also demonstrates how the pluralistic environment offers actors multiple behavior patterns and

opportunities to engage in strategic efforts aimed at shaping the institutional field (Lawrence et al., 2009).

Attributing the identified changes occurring in the field of waste management solely to the institutional work conducted by individual actors is challenging. Nevertheless, the concept allows us to observe the gradual reorganization of the CDW practices and the slow emergence of circularity. The progress achieved through these efforts is noteworthy. New business models have emerged, showcasing a diverse array of approaches, from niche suppliers specializing in specific materials like bricks and lamp fittings to more large-scale implementations. These changes are occurring not only within individual organizations but also across networks of organizations and influential actors operating within this institutional field. It is possible to identify a collaborative approach, gathering multiple actors of the field, who participate in various test and reference projects. These networks contribute to the diffusion of knowledge and shared practices amongst the actors in the whole value chain. Where they also use these networks to gain legitimacy and influence government agencies and secondary stakeholders (Daudiegos, 2011). The inter-organizational projects include e.g. recovery of plastic pipes, global trade item number, packaging films and projects related to specific materials such as gypsum, glass and concrete and also the potential to increase recycling of CDW in the construction process. However, though they seem to contribute by displaying the potential of CE to industry actors, their ability for these principles to be successfully translated into business benefits and emanate into organizational practices is still very limited. Though inter-organizational projects are described as a vehicle for producing and advancing institutional change, it doesn't seem to have gained the momentum needed to do so (Tukiainen and Granqvist, 2016, Lieftink et al., 2019).

Among most of the individuals participating in the study, there is a growing recognition of the importance of actively engaging in and adapting to the evolving landscape of sustainable practices to remain relevant. However, despite this advancement, progress has been slow, and only limited changes in CDWM practices on-site have been observed, signaling persistent challenges in fully translating circular principles into business practices. This highlights the need for ongoing collaborative efforts and innovative solutions to address these challenges and drive sustainable development forward. Much of the developments identified amongst the actors in the field seems to be attributed to the organization's ambitions to align with the expectations on the forthcoming demands on the industry. These forthcoming demands are not solely attributed to the legislative framework but also to a shift in customers' valuation of circular value propositions. Customers are increasingly prioritizing sustainability, which in turn links circular business practices to financial sustainability. This coupling emphasizes that meeting these new expectations can lead to both environmental and economic benefits for the organization.

While my research focuses on efforts contributing to the diffusion of the emerging circular economy in the field, the concepts of institutional work and logic facilitate the exploration of the work undertaken by actors to uphold existing institutions. Consequently, they offer valuable insights into explaining the current situation regarding construction and demolition waste management in Sweden, particularly its challenges in achieving higher levels of recycling and reuse.

Much of the improvement towards more sustainable construction and demolition waste management practices seems to be limited to waste minimization or recycling activities (Adams et al., 2017, Gallego-Schmid et al., 2020, Leising et al., 2018). Indicating a coping mechanism amongst the individuals in the organizations, where sustainability demands are accepted as long as it does not impose on the

underlying values, assumptions and beliefs of the established logic (Dahlmann and Grosvold, 2017). Our findings reveal that environmental managers employ a range of strategies, including creation, maintenance, and disruption efforts, to navigate the complex institutional environment. However, these institutional work efforts do not consistently result in a successful blend between the logics within the organization. Perhaps the lack of positive outcomes can be attributed to the incompatibility of institutional prescriptions, which may hinder the bridging or blending of competing logics. The effectiveness of this process also depends on the degree to which individual actors perceive support from their organizations to adapt to the requirements of the peripheral logic. It involves their assistance in disseminating its values, assumptions, rules, and beliefs throughout their organizations via various forms of institutional work. However, the lack of alignment among organizational members risks reinforcing existing patterns of behaviors, norms, and beliefs in the field (Dahlmann and Grosvold, 2017).

Though these efforts seem to have resulted in tangible outcomes, they are still very limited in terms of scope and the degree to which these propositions have penetrated the field (Andersson and Buser, 2022). It includes a small number of actors in the field, for the property owners and contractors, it only makes up a small part of their project portfolio, and for the suppliers, it only accounts for a smaller part of their product portfolio and turnover. What we can hope for is that the progress made has facilitated the establishment of new structures and processes, allowing for environmental management to become ingrained and ultimately perceived as the new standard or norm (Dahlmann and Grosvold, 2017). Perhaps also that over time, as organizations are commonly converging towards their core identity and underlying institutional logic, the organizations may be bound to change and adapt towards the exogenous change aligned with the forthcoming societal demands on sustainability (Kraatz and Block, 2008).

7.5 Reflection on the framework in studying field developments

Institutional work is a concept that has emerged within the broader theoretical frame of institutional theory, motivated by an interest in understanding why organizations enact change that deviates from traditional economic logic (Suddaby et al., 2016, Bévort and Suddaby, 2016, Lawrence and Suddaby, 2006). The concept provides valuable insights into how institutional actors make attempts to shape behavior and structure within the field (Lawrence and Suddaby, 2006).

Throughout the different studies, insights have emerged regarding the development made among organizations in realigning their practices to adhere to the principles of a circular economy. The study indicates conflicting outcomes in the transformation of practices relative to the efforts made by organizational members. While it's possible to recognize the creation of new roles, rules, and networks underlining the changes taking place within the field, much of the established practices still remain unchanged. It is possible to identify efforts corresponding to the three categories of institutional work. Actions that aim to maintain existing institutions, create and support the development of a new institution of resource management, and disruption of the old. However, while some organizations have showcased significant developments in aligning with circular economy principles, others appear to be entrenched in their established construction and demolition waste management practices. It seems that even though many actors are engaged in similar forms of institutional work, their effectiveness in transforming organizational practices varies. Consequently, attributing the transformation of practices solely to individual actions becomes challenging. Therefore, while the

concept of institutional work provides a useful framework for identifying the diverse efforts contributing to the existing situation, it does not fully capture the intricate dynamics at play in driving organizational change. It doesn't fully explain how change unfolds. Institutional change is central to a wide array of environmental governance issues, especially in today's complex, interconnected, and ever-evolving environment, where new concepts are introduced and priorities shift. This may help explain why, despite extensive research into the meanings and impacts of institutions, scholars still struggle to grasp the full complexities of institutional change (Beunen and Patterson, 2019).

Within the context of this field, it further sheds light on a complex environment and illustrates how individuals respond to the tension inherent in a pluralistic environment that provides contradictory schemas for behaviors (Lawrence, 2011). The organizations should not be viewed as unitary and stable entities; instead, they consist of multiple political coalitions and sub-groups, each with its own goals and interests. This diversity makes it challenging to capture both their responses and interactions among actors as they shape individual practices. However, understanding these complex internal conditions is crucial for better understanding how organizational practices evolve and how change is unfolding (Radoynovska et al., 2020). From the empirical material, challenges arise in understanding the specific factors driving changes in organizational practices. Though it is possible to provide accounts as to why certain companies are able to transform organizational practices, it doesn't illustrate the myriad of efforts that together contribute to its developments. Where the combination of these actions does have an impact on the institutional setting, but often results in unintended institutional consequences (Lawrence et al., 2011, Hampel et al., 2017). However, reflecting on some of the critiques directed towards the concept, the ambitions to encompass the numerous forms of efforts that may be categorized as institutional work comes at a cost. So, as previously mentioned, while the broad scope of the construct may appear impressive, its explanatory power risks diminishing. Leading to a broad catch-all terms that illustrate almost anything and yet nothing (Alvesson and Spicer, 2018).

Perhaps, as put forward in some of the criticism from Aksom and Tymchenko (2020), the more recent developments of the '*new*' institutional theory have resulted in the loss of its explanatory and predictive power. It has done so by departing from the former focus on institutional isomorphism and repositioning itself as a theory of institutional change and complexity. They therefore argue that it fails to accomplish the task of explanation and prediction, and becomes reduced to what they claim to be reality description and reporting (Aksom and Tymchenko, 2020). It thereby becomes a form of tool to merely categorize the efforts undertaken by actors, without providing causal relationships between the efforts and their implications.

An alternative view argues that it may be due to how the actors' capacity to drive change within their institutional context is dependent on their positioning within the field and the inherent characteristics of the field itself (Battilana and D'aunno, 2009). Organizations frequently encounter resistance to change, underscoring the challenging nature of transformation efforts. While institutional theory sheds light on the mechanisms of change, it may fall short of capturing the complexities of resistance and its effects on the transition process. Organizations are depicted as multifaceted entities shaped by diverse factors like norms, regulations, and organizational culture, collectively creating conditions for change. However, comprehending the entirety of these dynamics empirically remains elusive. Despite efforts to consider contextual factors such as industry trends and socio-political environments, nuances in their influence on change initiatives may be overlooked. Overall, whilst the concept of

institutional work provides valuable insights into the actors' efforts to shape organizational behavior and allow us to explore the dynamic scenery accounting for institutional stability or change, it may need to be complemented with other theoretical approaches to fully understand the complexity associated with processes of change. Furthermore, as noted by various scholars, the institutional change process often yields emergent properties, leading to unforeseen consequences that transcend institutional theory's explanatory scope. These emergent properties result from both internal and external forces, making it even more difficult to understand the dynamics of change processes (Beunen and Patterson, 2019).

8 CONCLUSION

The final chapter of this thesis is the conclusion. It begins by presenting the outcomes of the project, providing a summary of findings and their relevance. This is followed by three key sections. The first section outlines the contributions of the research. The next part discusses the personal research contribution, followed by practical implications. Finally, it concludes with suggestions for future research.

My PhD. set out to explore how the institutional field of construction and demolition waste management shapes the behaviors of field members, how actors engage in institutional work to influence field-level arrangements, and how individual and collective actions promote the uptake of circular economy principles within the construction industry. Drawing on rich empirical material and informed by institutional theory, particularly the concept of institutional work (Lawrence and Suddaby, 2006), the findings offer several interrelated insights into the transitions to the circular economy in a field marked by complexity, fragmentation, and gradual transformation.

8.1.1 Responding to RQ1: Influence of the CDWM institutional field on actor behavior

The result reveals that the CDWM field exerts a powerful structuring influence on what actors perceive as legitimized practices through a constellation of formal and informal coercive requirements. The legal frameworks, such as the EU Waste Framework Directive and national waste ordinances, act as coercive pressures, setting minimum compliance requirements. However, actors' behavior is equally shaped by softer, more diffuse institutional elements such as professional norms, organizational routines, supply chain expectations, and contractual practices. These mechanisms reinforce a dominant logic that treats waste management less as an essential strategic concern integrated into design and procurement decisions, and more as a downstream technical issue that companies handle as a compliance matter.

The perspective suggests that waste management is most often not seen as crucial to long-term business success but rather as something that may be beneficial to consider, depending on how individual organizations perceive its value. Thereby depending on whether waste management is viewed as strategically important for the company's future prosperity, and how well sustainability requirements are translated into concrete expectations by clients and other stakeholders in the value chain.

Despite the increased regulatory ambition and the emergence of a circular economy discourse, field members often encounter a mismatch between legislative ideals and the actual practices within organizations. The institutional complexity, marked by overlapping, and at times contradictory logics places actors in a situation where they must reconcile efficiency, cost, compliance, and sustainability ambitions. In response, many engage in institutional maintenance, sustaining established routines through routinized roles, symbolic commitments, and rhetorical references to perceived constraints, such as client demands or time pressures. Thus, the field both enables and constrains action, shaping behavior through interlocking expectations, roles, and norms.

8.1.2 Responding to RQ2: Shaping CDWM through institutional work

Actors in the construction industry engage in diverse forms of institutional work to navigate, reproduce, and sometimes transform the existing arrangements that govern construction and

demolition waste management. This work includes maintenance efforts often corresponding to the dominant logic of the field, attempts at incremental creation of new practices, and less frequent disruption of the existing norms, values and beliefs. Rather than acting as passive implementers of top-down policy, these actors strategically interpret, adapt, and reframe institutional expectations in ways that fit their organizational realities, professional norms, and economic constraints.

Therefore, much of the institutional work observed aligns with institutional maintenance as activities aimed at reproducing existing routines, logic, and structures. This includes interpretation to comply with regulations, following contractual templates, and upholding the dominant linear logic of construction. Even in the face of a circular economy discourse, many field actors maintain the status quo by invoking operational constraints, cost concerns, or client preferences as justifications for their inability to align with the practices associated with the emerging logic of CE. Symbolic compliance and vague sustainability language in contracts often support this form of maintenance, allowing actors to appear aligned with environmental goals without engaging in substantive transformation.

Alongside maintenance, some actors engage in institutional creation work through localized experimentation and reframing of CDWM practices. This includes efforts to redefine materials as resources rather than waste, to introduce new metrics and standards (e.g., life-cycle assessments), and to advocate for more circular design practices. However, these initiatives often remain fragmented and project-bound, facing challenges in scaling or embedding across the wider industry. The lack of strong enabling structures, such as supportive procurement policies, client incentives, or stable secondary material markets seems to limit the institutionalization of these developments.

More disruptive forms of institutional work that actively challenge dominant assumptions, roles, and boundaries are rare but do exist. They involve questioning the economic logics of demolition, advocating for upstream responsibility in design, or reframing material value to include environmental and social dimensions. However, these efforts are often confined to '*one-off showcase projects*' with ambitious goals like net-zero emissions or high rates of material reuse and recycling. While these isolated projects, initiated by visionary clients, architects, or demolition companies aiming to create a secondary market for reused materials, offer promising glimpses of change, they often remain peripheral. The broader field resists such shifts, as entrenched professional norms, organizational silos, and fragmented accountability structures maintain the status quo, limiting the systemic impact of these efforts.

Taken together, the study reveals that institutional change in CDWM is not driven by a singular logic or actor, but is instead the outcome of multiple, overlapping efforts to sustain, adapt, or reconfigure institutional arrangements. These efforts are relational, often incremental, and shaped by how actors negotiate institutional complexity and ambiguity in practice.

8.1.3 Responding to RQ3: Promoting Circular Economy principles in construction

The study demonstrates that individuals and groups within organizations play a central role in the promotion and development of circular economy principles, not as passive recipients of policy or top-down mandates, but as active agents who engage in translation, adaptation, and negotiation of institutional expectations. Sustainability managers, architects, project managers, and environmental coordinators mobilize institutional work by translating abstract CE concepts into operational language, aligning circular goals with internal strategies, and building relational 'bridges' across departments and organizational boundaries. These actors mediate between conflicting logics and construct new

meanings, metrics, and practices that render circularity tangible and actionable within their organizational settings.

Importantly, institutional work promoting CE is often performative and relational. It is enacted through pilot projects, experimentation with reuse, internal "*sustainability schools*" and informal networks that diffuse emerging practices. Successful institutionalization depends not only on individual commitment but also on supportive structural conditions, such as managerial endorsement, availability of resources, and internal governance that allow actors to embed circularity within routine practices. Rather than representing a linear process, the promotion of CE principles emerges as an iterative and negotiated effort that is shaped by internal organizational culture, professional norms, and external regulatory and client expectations.

Notably, however, the study show that successful implementation of circular business models most often occurs when actors concentrate on their own material flows and operational boundaries, rather than attempting to reshape broader supply chains. This inward focus allows organizations to achieve meaningful circular outcomes without taking on the complexity, cost, and coordination challenges associated with systemic supply chain transformation. By reusing materials they already control, or optimizing internal design and waste processes, actors are able to circumvent the lack of readiness or capacity among suppliers and subcontractors. While this limits the scope of systemic CE transformation, it reflects a pragmatic strategy that advances circular goals within manageable institutional constraints.

8.2 CONTRIBUTION TO THE FIELD OF CONSTRUCTION MANAGEMENT

This thesis offers a contribution to construction management research by reframing sustainability not as a matter of technical innovation or policy compliance alone, but as an institutional challenge. It demonstrates how construction and demolition waste management is shaped by field-level characteristics that go beyond the boundaries of individual projects or organizations, highlighting the importance of the institutional context, logics, and practices in shaping decision-making.

Furthermore, the study reveals that successful circular business integration is not primarily driven by technical solutions, but by organizational adaptations, internal structuring, and inter-organizational alignment which are all important concerns in construction management. It offers a view with the need for construction management to expand its analytical lens, embracing an institutional perspective to understand how sustainability transitions unfold in complex, multi-actor systems.

By grounding these insights into empirical investigation, the study responds to growing calls within construction management scholarship to move beyond normative calls for change, offering instead a critical and empirically grounded account of how change is enacted and constrained in everyday practice.

8.3 PERSONAL RESEARCH CONTRIBUTION

Through the course of this Ph.D., I have developed a deeper, situated understanding of how institutional work unfolds in the everyday practices of construction and demolition waste management. Moving beyond theoretical abstraction, I have engaged directly with the complexities of actors negotiating institutional maintenance, creation, and disruption in a field rooted in traditional

practices. These practices operate within a highly constrained, cost-sensitive environments, where long-established norms and economic pressures shape decision-making. This research has also allowed me to bridge institutional theory with the field of construction management. In doing so, I have practiced the craft of conducting qualitative research and gathered field-level insights to critically engage with and refine existing conceptual frameworks. Furthermore, I have advanced my ability to work with complex, multi-level qualitative data and to navigate between structural element and actor-centered perspectives to address the tension between being constrained by institutional norms while also exercising agency to enact change

However, conducting this kind of work has also come with significant challenges. One of the most persistent difficulties lies in accessing the everyday decision-making logics of organizations that are often driven by implicit routines, time constraints, and economic pressures. Capturing nuanced forms of institutional work, especially when they are informal, tacit, or disguised as "*business as usual*" required careful attention, iterative engagement, as well as reflexive interpretation to manage the amount of empirical material. Balancing closeness and critical distance with field actors was also a methodological tension, especially in collaborative workshop settings where my role as researcher occasionally intersected with facilitation and sensemaking. The interpretive challenge of making sense of ambiguous and sometimes contradictory statements, especially in relation to sustainability commitments, demanded both patience and sensitivity.

Despite these complexities, this research process has helped me clarify my own analytical stance. One that recognizes the strategic and often ambivalent nature of change, the power of narratives and relational work, and the importance of subtle shifts in practice over grand transformations. In this sense, the study has contributed not only to the field, but also to my own development as a qualitative, critical, and reflexive researcher.

8.4 PRACTICAL IMPLICATIONS FOR CDWM TRANSFORMATION

This study explores the slow and uneven transformation of the construction and demolition waste management field toward circularity. Achieving meaningful change would require shifts across the entire value chain, but so far, efforts appear largely confined to individual organizations' initiatives rather than fostering broader systemic transformation.

First, a more supportive legislative framework is needed, not only to enforce circular practices but to empower environmental professionals. Clearer regulations, combined with adequate resources and monitoring, can legitimize sustainability work internally and reduce ambiguity in implementation.

Second, internal translation work is crucial. Circularity must be made understandable and actionable within organizational routines. Defining relevant KPIs, embedding goals into existing processes, and aligning sustainability with business logic seems to be successful examples by lowering resistance and fosters ownership across departments.

Third, isolated efforts will not suffice. Cross-organizational initiatives such as shared guidelines, competence development, and industry collaboration are essential to diffuse circular norms and reduce fragmentation in practice. However, such efforts must be coordinated and strategically integrated into field-level expectations.

Fourth, circularity does not yet function as a strong marketing narrative. Clients often evaluate circular options based on aesthetics or cost, sometimes expecting reused materials to be cheaper. This calls for a reframing of circularity as part of quality, resilience, and long-term value rather than novelty or cost reduction.

Finally, upper management support remains a key driver. Leadership must allocate resources, set strategic direction, and legitimize sustainability work across the organization. Without their support, even motivated professionals struggle to embed change in meaningful and lasting ways.

Together, these implications point to the need for stronger institutional support and organizational commitment to push the transition toward a circular economy in the construction sector.

8.5 FUTURE RESEARCH DIRECTIONS

This study has explored how institutional dynamics shape the development and diffusion of circular economy principles within the construction and demolition waste management field. It has focused on the interplay of field-level conditions, organizational responses, and the institutional work performed by actors across different roles. While these findings contribute to advancing both institutional theory and the understanding of sustainability transitions in construction, several avenues for future research emerge.

1. Understanding of field dynamics and development

While this thesis has offered a temporal and layered perspective on the transformation of the CDWM field, future studies could more systematically investigate the long-term development of field boundaries, actor configurations, and institutional logics. This includes examining how newer actors, such as digital platform providers, ESG investors, and material passport developers reshape the field and potentially challenge incumbent power structures. Longitudinal studies or comparative analyses across national contexts could provide further insight into how regulatory shifts, market pressures, or cultural frames alter institutional trajectories over time.

2. Expanding the focus on translation and boundary work

This research has highlighted the importance of translation work and boundary-spanning efforts in mediating between abstract circular principles and organizational realities. However, more research on how these practices scale up, diffuse across organizations, or generate institutional change beyond the local or project level would be needed. Ethnographic or processual studies could capture how knowledge infrastructures (e.g., sustainability schools, LCA tools, procurement means) evolve and influence field-level norms.

3. Examining the role of resistance and strategic silence

A particularly interesting contribution of this study lies in identifying subtle forms of resistance and "*strategic silence*" as forms of institutional work. These tactics complicate assumptions about agency and change. Future research could explore how such practices influence or delay sustainability transitions, especially in relation to client-facing or market-driven pressures. This also invites further investigation into the ethical and political dimensions of institutional inaction or quiet negotiation.

4. Investigating supply chain transformation

While this study shows that successful circular business models often emerge when companies focus on internal practices, thus avoiding the complexity of reshaping the supply chain, future research could investigate what it takes to engage more fully with supplier networks and industry partners. This includes exploring governance models, incentives, and contractual tools that could support more collaborative and systemic forms of circularity. Studies focusing on value chain interdependencies and new procurement strategies would be particularly valuable.

5. Reassessing the role of clients and public procurement

Given the persistent finding that client expectations heavily influence the scope of circular practices, more targeted research is needed on the demand side of construction projects. How do clients, particularly public procurers, interpret, operationalize, and follow up on circularity requirements? What forms of institutional work do client-side actors engage in to either advance or undermine circular goals? Comparative studies across public and private clients could reveal critical leverage points for policy and practice.

6. Methodological innovation in studying institutional work

Finally, this thesis has relied on qualitative interviews and workshop material to access the micro-dynamics of institutional work. Future research could explore more participatory or collaborative methodologies, such as action research, field experiments, or design interventions to both study and contribute to institutional change. Such approaches could foster mutual learning among researchers and practitioners and open new possibilities for impactful scholarship in construction management and sustainability transitions.

9 REFERENCES

Abdelnour, S., Hasselbladh, H. & Kallinikos, J. 2017. Agency and institutions in organization studies. *Organization studies,* 38**,** 1775-1792.

Adabre, M. A., Chan, A. P., Darko, A. & Hosseini, M. R. 2022. Facilitating a transition to a circular economy in construction projects: intermediate theoretical models based on the theory of planned behaviour. *Building Research & Information***,** 1-20.

Adams, K. T., Osmani, M., Thorpe, T. & Thornback, J. Circular economy in construction: current awareness, challenges and enablers. Proceedings of the Institution of Civil Engineers-Waste and Resource Management, 2017. Thomas Telford Ltd, 15-24.

Agency, E. E. 2020. Construction and demolition waste: challenges and opportunities in a circular economy.

Ajayi, S. O. & Oyedele, L. O. 2017. Policy imperatives for diverting construction waste from landfill: Experts' recommendations for UK policy expansion. *Journal of cleaner production,* 147**,** 57-65.

Ajayi, S. O., Oyedele, L. O., Akinade, O. O., Bilal, M., Owolabi, H. A., Alaka, H. A. & Kadiri, K. O. 2016. Reducing waste to landfill: A need for cultural change in the UK construction industry. *Journal of Building Engineering,* 5**,** 185-193.

Aksom, H. 2022. Entropy and institutional theory. *International Journal of Organizational Analysis*.

Aksom, H. & Tymchenko, I. 2020. How institutional theories explain and fail to explain organizations. *Journal of Organizational Change Management,* 33**,** 1223-1252.

Álvaro Conde, A. B. S.,

Alex Colloricchio 2022. The Circularity Gap Report Sweden.

Alvesson, M., Hallett, T. & Spicer, A. 2019. Uninhibited institutionalisms. *Journal of Management Inquiry,* 28**,** 119-127.

Alvesson, M. & Spicer, A. 2018. Neo-Institutional Theory and Organization Studies: A Mid-Life Crisis? *Organization Studies***,** 0170840618772610.

Andersson, R. 2020. Public policies as obstacle to sustainable CDWM practices. *IOP Conference Series: Earth and Environmental Science,* 588**,** 022009.

Andersson, R. 2021. *Institutional changes in construction waste management.* LicEng, Chalmers.

Andersson, R. & Buser, M. 2022. From waste to resource management? Construction and demolition waste management through the lens of institutional work. *Construction management and economics,* 40**,** 477-496.

Andrews-Speed, P. 2016. Applying institutional theory to the low-carbon energy transition. *Energy Research & Social Science,* 13**,** 216-225.

Arenas, D., Strumińska-Kutra, M. & Landoni, P. 2020. Walking the tightrope and stirring things up: Exploring the institutional work of sustainable entrepreneurs. *Business Strategy and the Environment,* 29**,** 3055-3071.

Arranz, C. F. & Arroyabe, M. F. 2023. Institutional theory and circular economy business models: The case of the European Union and the role of consumption policies. *Journal of Environmental Management,* 340**,** 117906.

Barnes, J., Durrant, R., Kern, F. & Mackerron, G. 2018. The institutionalisation of sustainable practices in cities: how initiatives shape local selection environments. *Environmental Innovation and Societal Transitions,* 29**,** 68-80.

Battilana, J. & D'aunno, T. 2009. Institutional work and the paradox of embedded agency. *Institutional work: Actors and agency in institutional studies of organizations,* 31**,** 58.

Battilana, J., Leca, B. & Boxenbaum, E. 2009. *How Actors Change Institutions: Towards a Theory of Institutional Entrepreneurship*.

Bell, E., Bryman, A. & Harley, B. 2018. *Business research methods*, Oxford university press.

Benachio, G. L. F., Freitas, M. D. C. D. & Tavares, S. F. 2020. Circular economy in the construction industry: A systematic literature review. *Journal of Cleaner Production,* 260**,** 121046.

Bertels, S. & Lawrence, T. B. 2016. Organizational responses to institutional complexity stemming from emerging logics: The role of individuals. *Strategic Organization,* 14**,** 336-372.

Beunen, R., Patterson, J. & Van Assche, K. 2017. Governing for resilience: the role of institutional work. *Current Opinion in Environmental Sustainability,* 28**,** 10-16.

Beunen, R. & Patterson, J. J. 2019. Analysing institutional change in environmental governance: exploring the concept of 'institutional work'. *Journal of Environmental Planning and Management,* 62**,** 12-29.

Bévort, F. & Suddaby, R. 2016. Scripting professional identities: How individuals make sense of contradictory institutional logics. *Journal of Professions and Organization,* 3**,** 17-38.

Binz, C., Harris-Lovett, S., Kiparsky, M., Sedlak, D. L. & Truffer, B. 2016. The thorny road to technology legitimation—Institutional work for potable water reuse in California. *Technological Forecasting and Social Change,* 103**,** 249-263.

Blomsma, F. & Brennan, G. 2017. The emergence of circular economy: A new framing around prolonging resource productivity. *Journal of Industrial Ecology,* 21**,** 603-614.

Bocken, N. M., De Pauw, I., Bakker, C. & Van Der Grinten, B. 2016. Product design and business model strategies for a circular economy. *Journal of Industrial and Production Engineering,* 33**,** 308-320.

Bocken, N. M. P., Schuit, C. S. C. & Kraaijenhagen, C. 2018. Experimenting with a circular business model: Lessons from eight cases. *Environmental Innovation and Societal Transitions,* 28**,** 79-95.

Bosch-Sijtsema, P. & Gluch, P. 2021. Challenging construction project management institutions: the role and agency of BIM actors. *International journal of construction management,* 21**,** 1077-1087.

Bovea, M. D. & Powell, J. 2016. Developments in life cycle assessment applied to evaluate the environmental performance of construction and demolition wastes. *Waste management,* 50**,** 151-172.

Bozkurt, Ö., Xheneti, M. & Vicky 2022. On the Front Line of the Circular Economy: The Entrepreneurial, Identity and Institutional Work of a Female Entrepreneur towards the Circular Transition. *Work, employment and society,* 36**,** 156-166.

Braun, V. & Clarke, V. 2006. Using thematic analysis in psychology. *Qualitative research in psychology,* 3**,** 77-101.

Bresnen, M. 2017. Being careful what we wish for? Challenges and opportunities afforded through engagement with business and management research. *Construction Management & Economics,* 35**,** 24-34.

Brown, R. R., Farrelly, M. A. & Loorbach, D. A. 2013. Actors working the institutions in sustainability transitions: The case of Melbourne's stormwater management. *Global Environmental Change,* 23**,** 701-718.

Carter, C. & Spence, C. 2019. For social reflexivity in organization and management theory. *The production of managerial knowledge and organizational theory: New approaches to writing, producing and consuming theory.* Emerald Publishing Limited.

Chan, P. 2018. Change and Continuity: What Can Construction Tell Us About Institutional Theory? *In:* SAGE, D. J. & VITRY, C. (eds.) *Societies under Construction: Geographies, Sociologies and Histories of Building.* Cham: Springer International Publishing.

Charef, R. & Lu, W. 2021. Factor dynamics to facilitate circular economy adoption in construction. *Journal of cleaner production,* 319**,** 128639.

Coenen, L. & Truffer, B. 2012. Places and spaces of sustainability transitions: geographical contributions to an emerging research and policy field. *European Planning Studies,* 20**,** 367-374.

Corvellec, H., Stowell, A. F. & Johansson, N. 2022. Critiques of the circular economy. *Journal of Industrial Ecology,* 26**,** 421-432.

Crawford, R. H., Mathur, D. & Gerritsen, R. 2017. Barriers to improving the environmental performance of construction waste management in remote communities. *Procedia engineering,* 196**,** 830-837.

Creswell, J. W. & Poth, C. N. 2016. *Qualitative inquiry and research design: Choosing among five approaches*, Sage publications.

Dahlmann, F. & Grosvold, J. 2017. Environmental managers and institutional work: Reconciling tensions of competing institutional logics. *Business Ethics Quarterly,* 27**,** 263-291.

Daudiegos, T. P., Marko 2011. Bringing institutional change inside the organization: structural nomadism of staff professionals as the key enabler. *Academy of Management Annual Meeting Proceedings,* 2011**,** 1-6.

Daudigeos, T. 2013. In their profession's service: how staff professionals exert influence in their organization. *Journal of Management Studies,* 50**,** 722-749.

De Jesus, A. & Mendonça, S. 2018. Lost in transition? Drivers and barriers in the eco-innovation road to the circular economy. *Ecological economics,* 145**,** 75-89.

Debenedetti, A., Philippe, D., Chaney, D. & Humphreys, A. 2021. Maintaining legitimacy in contested mature markets through discursive strategies: The case of corporate environmentalism in the French automotive industry. *Industrial Marketing Management,* 92**,** 332-343.

Di Maria, A., Eyckmans, J. & Van Acker, K. 2018. Downcycling versus recycling of construction and demolition waste: Combining LCA and LCC to support sustainable policy making. *Waste Management,* 75**,** 3-21.

Dimaggio, P. J. & Powell, W. W. 1983. The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American sociological review***,** 147-160.

Dobbin, F. 2010. Review of Institutional Work: Actors and Agency in Institutional Studies of Organizations, Thomas B. Lawrence, Roy Suddaby, and Bernard Leca, Eds. *Lawrence, Roy Suddaby, and Bernard Leca, Eds*.

Domenech, T. & Bahn-Walkowiak, B. 2019. Transition Towards a Resource Efficient Circular Economy in Europe: Policy Lessons From the EU and the Member States. *Ecological Economics,* 155**,** 7-19.

Dover, G. & Lawrence, T. B. 2010. A Gap Year for Institutional Theory: Integrating the Study of Institutional Work and Participatory Action Research. *Journal of Management Inquiry,* 19**,** 305-316.

Ellen Macarthur Foundation 2013. Towards the circular economy. *Journal of Industrial Ecology,* 2**,** 23-44.

Ellen Macarthur Foundation 2015. Towards a circular economy: Business rationale for an accelerated transition.

Eppler, M. J. & Hoffmann, F. 2012. Does method matter? An experiment on collaborative business model idea generation in teams. *Innovation,* 14**,** 388-403.

Esposito, M., Tse, T. & Soufani, K. 2018. Introducing a circular economy: new thinking with new managerial and policy implications. *California Management Review,* 60**,** 5-19.

European Commission 2008. Directive 2008/98/EC of the European parliament and of the council. Brussel: Official Journal of the European Union.

European Commission 2015. Closing the loop–an EU action plan for the circular economy. *COM (2015) 614 final [Internet]*.

European Commission 2018. Directive (EU) 2018/851 of the European Parliament and of the Council of 30 May 2018 amending Directive

2008/98/EC on waste.

European Commission 2020. A new circular economy action plan - For a cleaner and more competitive Europe. Brussels.

Fehrer, J. A. & Wieland, H. 2021. A systemic logic for circular business models. *Journal of Business Research,* 125**,** 609-620.

Fischer, A. & Pascucci, S. 2017. Institutional incentives in circular economy transition: The case of material use in the Dutch textile industry. *Journal of Cleaner Production,* 155**,** 17-32.

Flick, U. 2014. *An introduction to qualitative research*, Sage Publications Limited.

Fuenfschilling, L. & Truffer, B. 2014. The structuration of socio-technical regimes—Conceptual foundations from institutional theory. *Research Policy,* 43**,** 772-791.

Fuenfschilling, L. & Truffer, B. 2016. The interplay of institutions, actors and technologies in socio-technical systems — An analysis of transformations in the Australian urban water sector. *Technological Forecasting and Social Change,* 103**,** 298-312.

Gabriel, Y. 2018. Interpretation, reflexivity and imagination in qualitative research. *Qualitative Methodologies in Organization Studies: Volume I: Theories and New Approaches***,** 137-157.

Gallego-Schmid, A., Chen, H.-M., Sharmina, M. & Mendoza, J. M. F. 2020. Links between circular economy and climate change mitigation in the built environment. *Journal of Cleaner Production***,** 121115.

Galvan, M. G., Cuppen, E. & Taanman, M. 2020. Exploring incumbents' agency: Institutional work by grid operators in decentralized energy innovations. *Environmental Innovation and Societal Transitions,* 37**,** 79-92.

Geels, F. W. 2020. Micro-foundations of the multi-level perspective on socio-technical transitions: Developing a multi-dimensional model of agency through crossovers between social constructivism, evolutionary economics and neo-institutional theory. *Technological Forecasting and Social Change,* 152**,** 119894.

Geissdoerfer, M., Morioka, S. N., De Carvalho, M. M. & Evans, S. 2018. Business models and supply chains for the circular economy. *Journal of Cleaner Production,* 190**,** 712-721.

Geissdoerfer, M., Pieroni, M. P. P., Pigosso, D. C. A. & Soufani, K. 2020. Circular business models: A review. *Journal of Cleaner Production,* 277**,** 123741.

Geissdoerfer, M., Savaget, P., Bocken, N. M. & Hultink, E. J. 2017. The Circular Economy–A new sustainability paradigm? *Journal of cleaner production,* 143**,** 757-768.

Genus, A. 2016. Sustainability transitions: a discourse-institutional perspective. *Handbook on Sustainability Transition and Sustainable Peace***,** 527-541.

Ghaffar, S. H., Burman, M. & Braimah, N. 2020. Pathways to circular construction: An integrated management of construction and demolition waste for resource recovery. *Journal of Cleaner Production,* 244**,** 118710.

Ghisellini, P., Cialani, C. & Ulgiati, S. 2016. A review on circular economy: the expected transition to a balanced interplay of environmental and economic systems. *Journal of Cleaner production,* 114**,** 11-32.

Gidley, D. & Palmer, M. 2021. Institutional Work: A Review and Framework based on Semantic and Thematic Analysis. *M@n@gement,* 24**,** 49-63.

Giorgi, S., Lavagna, M., Wang, K., Osmani, M., Liu, G. & Campioli, A. 2022. Drivers and barriers towards circular economy in the building sector: Stakeholder interviews and analysis of five European countries policies and practices. *Journal of cleaner production,* 336**,** 130395.

Gluch, P. & Bosch-Sijtsema, P. 2016. Conceptualizing environmental expertise through the lens of institutional work. *Construction Management & Economics,* 34**,** 522-535.

Gluch, P. & Svensson, I. 2018. On the nexus of changing public facilities management practices: purposive and co-creative actions across multiple levels. *Construction Management and Economics,* 36**,** 259-275.

Glynn, M. A. & D'aunno, T. 2023. An intellectual history of institutional theory: Looking back to move forward. *Academy of Management Annals,* 17**,** 301-330.

Gottlieb, S. C., Frederiksen, N., Koch, C. & Thuesen, C. 2020. Hybrid organisations as trading zones: responses to institutional complexity in the shaping of strategic partnerships. *Construction Management and Economics***,** 1-20.

Government Offices of Sweden 2021. Cirkulär ekonomi – Handlingsplan för omställning av Sverige.

Graf, P. & Jacobsen, H. 2021. Institutional work in the transformation of the German energy sector. *Utilities Policy,* 68**,** 101107.

Greenwood, D. J. & Levin, M. 2006. *Introduction to action research: Social research for social change*, SAGE publications.

Greenwood, R., Jennings, P. D. & Hinings, B. 2015. Sustainability and organizational change: An institutional perspective. *Leading sustainable change: An organizational perspective***,** 323-355.

Greenwood, R., Raynard, M., Kodeih, F., Micelotta, E. R. & Lounsbury, M. 2011. Institutional complexity and organizational responses. *Academy of Management annals,* 5**,** 317-371.

Grin, J., Rotmans, J. & Schot, J. 2010. *Transitions to sustainable development: new directions in the study of long term transformative change*, Routledge.

Guarnieri, P., Bianchini, A., Rossi, J., E Silva, L. C., Trojan, F., Lizot, M. & De Oliveira Vieira, B. 2023. Transitioning towards a circular economy under a multicriteria and the new institutional theory perspective: A comparison between Italy and Brazil. *Journal of Cleaner Production,* 409**,** 137094.

Guerra, B. C., Shahi, S., Mollaei, A., Skaf, N., Weber, O., Leite, F. & Haas, C. 2021. Circular economy applications in the construction industry: A global scan of trends and opportunities. *Journal of Cleaner Production,* 324**,** 129125.

Hampel, C. E., Lawrence, T. B., Tracey, P., Greenwood, R. & Oliver, C. 2017. Institutional work: Taking stock and making it matter. *The Sage handbook of organizational institutionalism***,** 558-590.

Haveman, H. A. & Gualtieri, G. 2017. Institutional logics. *Oxford research encyclopedia of business and management.*

Hermerén, G., Gustafsson, B. & Petterson, B. 2011. Vetenskapsrådet.(2011). *God forskningssed,* 2011**,** 1.

Heshmati, A. & Rashidghalam, M. 2021. Assessment of the urban circular economy in Sweden. *Journal of Cleaner Production,* 310**,** 127475.

Hinings, C., Logue, D. & Zietsma, C. 2017. Fields, institutional infrastructure and governance. *The Sage handbook of organizational institutionalism*.

Jain, S., Singhal, S., Jain, N. K. & Bhaskar, K. 2020. Construction and demolition waste recycling: Investigating the role of theory of planned behavior, institutional pressures and environmental consciousness. *Journal of Cleaner Production,* 263**,** 121405.

Jarvis, J. 2013. Lectures are bullshit. *Hacking the Academy: New Approaches to Scholarship and Teaching from DH***,** 66-68.

Jin, R., Yuan, H. & Chen, Q. 2019. Science mapping approach to assisting the review of construction and demolition waste management research published between 2009 and 2018. *Resources, Conservation and Recycling,* 140**,** 175-188.

Kabirifar, K., Mojtahedi, M., Wang, C. & Tam, V. W. 2020. Construction and demolition waste management contributing factors coupled with reduce, reuse, and recycle strategies for effective waste management: A review. *Journal of Cleaner Production,* 263**,** 121265.

Kadefors, A. 1995. Institutions in building projects: Implications for flexibility and change. *Scandinavian Journal of Management,* 11**,** 395-408.

Kirchherr, J., Piscicelli, L., Bour, R., Kostense-Smit, E., Muller, J., Huibrechtse-Truijens, A. & Hekkert, M. 2018. Barriers to the Circular Economy: Evidence From the European Union (EU). *Ecological Economics,* 150**,** 264-272.

Kirchherr, J., Reike, D. & Hekkert, M. 2017. Conceptualizing the circular economy: An analysis of 114 definitions. *Resources, Conservation and Recycling,* 127**,** 221-232.

Korhonen, J., Honkasalo, A. & Seppälä, J. 2018a. Circular Economy: The Concept and its Limitations. *Ecological Economics,* 143**,** 37-46.

Korhonen, J., Nuur, C., Feldmann, A. & Birkie, S. E. 2018b. Circular economy as an essentially contested concept. *Journal of Cleaner Production,* 175**,** 544-552.

Korstjens, I. & Moser, A. 2018. Series: Practical guidance to qualitative research. Part 4: Trustworthiness and publishing. *European Journal of General Practice,* 24**,** 120-124.

Kraatz, M. S. & Block, E. S. 2008. Organizational implications of institutional pluralism. *The Sage handbook of organizational institutionalism,* 840**,** 243-275.

Kucukvar, M., Egilmez, G. & Tatari, O. 2014. Evaluating environmental impacts of alternative construction waste management approaches using supply-chain-linked life-cycle analysis. *Waste Management & Research,* 32**,** 500-508.

Lawrence, T., Suddaby, R. & Leca, B. 2011. Institutional Work: Refocusing Institutional Studies of Organization. *Journal of Management Inquiry,* 20**,** 52-58.

Lawrence, T. B., Hardy, C. & Phillips, N. 2002. Institutional effects of interorganizational collaboration: The emergence of proto-institutions. *Academy of management journal,* 45**,** 281-290.

Lawrence, T. B. & Suddaby, R. 2006. Institutions and Institutional Work. *In Stewart R. Clegg, Cynthia Hardy, Thomas B. Lawrence & Walter R. Nord (Eds.) Sage Handbook of Organization Studies, 2nd Edition: 215-254.*

Lawrence, T. B., Suddaby, R. & Leca, B. 2009. *Institutional work: Actors and agency in institutional studies of organizations*, Cambridge university press.

Lehmann, J., Graf-Vlachy, L. & König, A. Forms of Institutional Work: A Systematic Review. Academy of Management Specialized Conference, Bled, Slovenia, 2019.

Lehmann, J., Weber, F., Waldkirch, M., Graf-Vlachy, L. & König, A. 2022. Institutional work battles in the sharing economy: Unveiling actors and discursive strategies in media discourse. *Technological Forecasting and Social Change,* 184**,** 122002.

Leising, E., Quist, J. & Bocken, N. 2018. Circular Economy in the building sector: Three cases and a collaboration tool. *Journal of Cleaner Production,* 176**,** 976-989.

Levy, D. & Scully, M. 2007. The institutional entrepreneur as modern prince: The strategic face of power in contested fields. *Organization studies,* 28**,** 971-991.

Lieftink, B., Smits, A. & Lauche, K. 2019. Dual dynamics: Project-based institutional work and subfield differences in the Dutch construction industry. *International Journal of Project Management,* 37**,** 269-282.

Lim, B. T. H., Oo, B. L., Mcleod, C. & Yang, P. 2024. Institutional and actor network perspectives of waste management in Australia: is the construction industry prepared for a circular economy? *Sustainability,* 16**,** 617.

Liu, Y. & Bai, Y. 2014. An exploration of firms' awareness and behavior of developing circular economy: An empirical research in China. *Resources, Conservation and Recycling,* 87**,** 145-152.

Lok, J. & De Rond, M. 2013. On the plasticity of institutions: Containing and restoring practice breakdowns at the Cambridge University Boat Club. *Academy of Management Journal,* 56**,** 185-207.

Lu, W., Chi, B., Bao, Z. & Zetkulic, A. 2019. Evaluating the effects of green building on construction waste management: A comparative study of three green building rating systems. *Building and Environment,* 155**,** 247-256.

Lu, W. & Yuan, H. 2011. A framework for understanding waste management studies in construction. *Waste Management,* 31**,** 1252-1260.

Lüdeke-Freund, F., Gold, S. & Bocken, N. M. 2019. A review and typology of circular economy business model patterns. *Journal of Industrial Ecology,* 23**,** 36-61.

Löhr, M., Chlebna, C. & Mattes, J. 2022. From institutional work to transition work: Actors creating, maintaining and disrupting transition processes. *Environmental Innovation and Societal Transitions,* 42**,** 251-267.

Maguire, S. & Hardy, C. 2009. Discourse and deinstitutionalization: The decline of DDT. *Academy of management journal,* 52**,** 148-178.

Mahalingam, A. & Levitt, R. E. 2007. Institutional Theory as a Framework for Analyzing Conflicts on Global Projects. *Journal of Construction Engineering and Management,* 133**,** 517-528.

Mahpour, A. 2018. Prioritizing barriers to adopt circular economy in construction and demolition waste management. *Resources, Conservation and Recycling,* 134**,** 216-227.

Malaurent, J. & Avison, D. 2017. Reflexivity: A third essential 'R' to enhance interpretive field studies. *Information & Management,* 54**,** 920-933.

Mangialardo, A. & Micelli, E. Rethinking the construction industry under the circular economy: Principles and case studies. International conference on Smart and Sustainable Planning for Cities and Regions, 2017. Springer, 333-344.

Mantere, S. & Ketokivi, M. 2013. Reasoning in organization science. *Academy of management review,* 38**,** 70-89.

Markard, J., Raven, R. & Truffer, B. 2012. Sustainability transitions: An emerging field of research and its prospects. *Research policy,* 41**,** 955-967.

Meyer, R. E., Jancsary, D., Höllerer, M. A. & Boxenbaum, E. 2018. The role of verbal and visual text in the process of institutionalization. *Academy of Management Review,* 43**,** 392-418.

Milios, L. 2018. Advancing to a Circular Economy: three essential ingredients for a comprehensive policy mix. *Sustainability Science,* 13**,** 861-878.

Modell, S. 2022. Accounting for institutional work: a critical review. *European Accounting Review,* 31**,** 33-58.

Moscati, A., Johansson, P., Kebede, R., Pula, A. & Törngren, A. 2023. Information exchange between construction and manufacturing industries to achieve circular economy: A literature review and interviews with Swedish experts. *Buildings,* 13**,** 633.

Müller, M. & Frandsen, S. 2020. Counter-narratives as analytical strategies: Methodological implications. *Routledge Handbook of Counter-Narratives.* Routledge.

Närvänen, E., Mattila, M. & Mesiranta, N. 2021. Institutional work in food waste reduction: Start-ups' role in moving towards a circular economy. *Industrial Marketing Management,* 93**,** 605-616.

Oberle, B., Bringezu, S., Hatfield-Dodds, S., Hellweg, S., Schandl, H. & Clement, J. 2019. Global Resources Outlook 2019: Natural Resources for the Future We Want. United Nations environment programme.

Ocasio, W. & Radoynovska, N. 2016. Strategy and commitments to institutional logics: Organizational heterogeneity in business models and governance. *Strategic Organization,* 14**,** 287-309.

Oluleye, B. I., Chan, D. W. M., Saka, A. B. & Olawumi, T. O. 2022. Circular economy research on building construction and demolition waste: A review of current trends and future research directions. *Journal of Cleaner Production,* 357**,** 131927.

Osmani, M. & Villoria-Sáez, P. Current and emerging construction waste management status, trends and approaches. Waste, 2019. Elsevier, 365-380.

Osterwalder, A., Pigneur, Y., Oliveira, M. a.-Y. & Ferreira, J. J. P. 2011. Business Model Generation: A handbook for visionaries, game changers and challengers. *African journal of business management,* 5**,** 22-30.

Park, J. & Tucker, R. 2017. Overcoming barriers to the reuse of construction waste material in Australia: a review of the literature. *International Journal of Construction Management,* 17**,** 228-237.

Patterson, J. J. & Beunen, R. 2019. Institutional work in environmental governance. *Journal of Environmental Planning and Management***,** 1-11.

Patton, M. Q. 2002. *Qualitative research & evaluation methods*, Sage publications.

Phillips, N., Lawrence, T. B. & Hardy, C. 2004. Discourse and institutions. *Academy of management review,* 29**,** 635-652.

Phillips, N. & Malhotra, N. 2017. Language, cognition and institutions: Studying institutionalization using linguistic methods. *The SAGE handbook of organizational institutionalism,* 15**,** 392-445.

Polletta, F., Chen, P. C. B., Gardner, B. G. & Motes, A. 2011. The sociology of storytelling. *Annual review of sociology,* 37**,** 109-130.

Poulikakos, L. D., Papadaskalopoulou, C., Hofko, B., Gschösser, F., Cannone Falchetto, A., Bueno, M., Arraigada, M., Sousa, J., Ruiz, R., Petit, C., Loizidou, M. & Partl, M. N. 2017. Harvesting the unexplored potential of European waste materials for road construction. *Resources, Conservation and Recycling,* 116**,** 32-44.

Purchase, C. K., Al Zulayq, D. M., O'brien, B. T., Kowalewski, M. J., Berenjian, A., Tarighaleslami, A. H. & Seifan, M. 2022. Circular Economy of Construction and Demolition Waste: A Literature Review on Lessons, Challenges, and Benefits. *Materials* [Online], 15.

Purtik, H. & Arenas, D. 2019. Embedding social innovation: Shaping societal norms and behaviors throughout the innovation process. *Business & Society,* 58**,** 963-1002.

Radoynovska, N., Ocasio, W. & Laasch, O. 2020. The emerging logic of responsible management: Institutional pluralism, leadership, and strategizing. *Research Handbook of Responsible Management.* Edward Elgar Publishing.

Ranta, V., Aarikka-Stenroos, L., Ritala, P. & Mäkinen, S. J. 2018. Exploring institutional drivers and barriers of the circular economy: a cross-regional comparison of China, the US, and Europe. *Resources, Conservation and Recycling,* 135**,** 70-82.

Reed, M. & Burrell, G. 2019. Theory and organization studies: The need for contestation. *Organization Studies,* 40**,** 39-54.

Reike, D., Vermeulen, W. J. V. & Witjes, S. 2018. The circular economy: New or Refurbished as CE 3.0? — Exploring Controversies in the Conceptualization of the Circular Economy through a Focus on History and Resource Value Retention Options. *Resources, Conservation and Recycling,* 135**,** 246-264.

Rennstam, J. & Wästerfors, D. 2015. *Från stoff till studie-Om analysarbete i kvalitativ forskning*, Studentlitteratur AB.

Riedy, C., Kent, J. & Thompson, N. 2019. Meaning work: reworking institutional meanings for environmental governance. *Journal of Environmental Planning and Management,* 62**,** 151-171.

Romero-Hernández, O. & Romero, S. 2018. Maximizing the value of waste: From waste management to the circular economy. *Thunderbird International Business Review,* 60**,** 757-764.

Rossoni, L., Poli, I. T., Fogliatti De Sinay, M. C. & Aguiar De Araújo, G. 2020. Materiality of sustainable practices and the institutional logics of adoption: A comparative study of chemical road transportation companies. *Journal of Cleaner Production,* 246**,** 119058.

Ryan, G. W. & Bernard, H. R. 2003. Techniques to identify themes. *Field methods,* 15**,** 85-109.

Sáez, P. V. & Osmani, M. 2019. A diagnosis of construction and demolition waste generation and recovery practice in the European Union. *Journal of Cleaner Production,* 241**,** 118400.

Salmi, A., Jussila, J. & Hämäläinen, M. 2022. The role of municipalities in transformation towards more sustainable construction: the case of wood construction in Finland. *Construction Management and Economics***,** 1-21.

Schmidt, V. A. 2010. Taking ideas and discourse seriously: explaining change through discursive institutionalism as the fourth 'new institutionalism'. *European Political Science Review,* 2**,** 1-25.

Scott, W. R. 2005. Institutional theory: Contributing to a theoretical research program. *Great minds in management: The process of theory development,* 37**,** 460-484.

Scott, W. R. 2014. *Institutions and organizations,* Thousand oaks: CA, Sage publications.

Silva, M. E. & Figueiredo, M. D. 2017. Sustainability as practice: Reflections on the creation of an institutional logic. *Sustainability,* 9**,** 1839.

Silverman, D. 2013. *Doing qualitative research: A practical handbook*, SAGE publications limited.

Simpson, D. 2012. Institutional pressure and waste reduction: The role of investments in waste reduction resources. *International Journal of Production Economics,* 139**,** 330-339.

Skelcher, C. & Smith, S. R. 2015. Theorizing hybridity: Institutional logics, complex organizations, and actor identities: The case of nonprofits. *Public administration,* 93**,** 433-448.

Smets, M. & Jarzabkowski, P. 2013. Reconstructing institutional complexity in practice: A relational model of institutional work and complexity. *Human Relations,* 66**,** 1279-1309.

Stål, H. I. 2015. Inertia and change related to sustainability – An institutional approach. *Journal of Cleaner Production,* 99**,** 354-365.

Stål, H. I. & Corvellec, H. 2018. A decoupling perspective on circular business model implementation: Illustrations from Swedish apparel. *Journal of Cleaner Production,* 171**,** 630-643.

Suárez-Eiroa, B., Fernández, E., Méndez-Martínez, G. & Soto-Oñate, D. 2019. Operational principles of circular economy for sustainable development: Linking theory and practice. *Journal of Cleaner Production,* 214**,** 952-961.

Suddaby, R. 2010. Challenges for institutional theory. *Journal of management inquiry,* 19**,** 14-20.

Suddaby, R., Viale, T. & Gendron, Y. 2016. Reflexivity: The role of embedded social position and entrepreneurial social skill in processes of field level change. *Research in Organizational Behavior,* 36**,** 225-245.

Svensson, I. & Gluch, P. 2022. Materiality in action: the role of objects in institutional work. *Construction Management and Economics,* 40**,** 41-55.

Swedish Environmental Protection Agency 2012. From waste management to resource efficiency. Bromma.

Swedish Parliament 2020. SFS2020-614 Avfallsförordning [Swedish Waste Ordinance].

Teece, D. J. 2010. Business models, business strategy and innovation. *Long range planning,* 43**,** 172-194.

Thomas, E. & Magilvy, J. K. 2011. Qualitative rigor or research validity in qualitative research. *Journal for specialists in pediatric nursing*.

Thornton, P. H. & Ocasio, W. 1999. Institutional logics and the historical contingency of power in organizations: Executive succession in the higher education publishing industry, 1958–1990. *American journal of Sociology,* 105**,** 801-843.

Thornton, P. H., Ocasio, W. & Lounsbury, M. 2015. The institutional logics perspective. *Emerging trends in the social and behavioral sciences: an interdisciplinary, searchable, and linkable resource***,** 1-22.

Tukiainen, S. & Granqvist, N. 2016. Temporary Organizing and Institutional Change. *Organization Studies,* 37**,** 1819-1840.

Tuominen, T. M. & Lehtonen, M. H. 2018. The emergence of transformative agency in professional work. *Organization Studies,* 39**,** 1601-1624.

Urup, L. 2016. *Integrated Design-build Management: Studying Institutional Processes to Understand Project Coordination & Performance*, Chalmers University of Technology.

Van Doren, D., Runhaar, H., Raven, R. P. J. M., Giezen, M. & Driessen, P. P. J. 2020. Institutional work in diverse niche contexts: The case of low-carbon housing in the Netherlands. *Environmental Innovation and Societal Transitions,* 35**,** 116-134.

Van Ewijk, S. & Stegemann, J. 2016. Limitations of the waste hierarchy for achieving absolute reductions in material throughput. *Journal of Cleaner Production,* 132**,** 122-128.

Wang, J., Wu, H., Tam, V. W. & Zuo, J. 2019. Considering life-cycle environmental impacts and society's willingness for optimizing construction and demolition waste management fee: An empirical study of China. *Journal of cleaner production,* 206**,** 1004-1014.

Wu, H., Zuo, J., Zillante, G., Wang, J. & Yuan, H. 2019. Status quo and future directions of construction and demolition waste research: A critical review. *Journal of Cleaner Production,* 240**,** 118163.

Yngfalk, A. F. & Yngfalk, C. 2020. Modifying markets: Consumerism and institutional work in nonprofit marketing. *Marketing Theory,* 20**,** 343-362.

Yuan, H. & Shen, L. 2011. Trend of the research on construction and demolition waste management. *Waste Management,* 31**,** 670-679.

Yuan, H., Shen, L. & Wang, J. 2011. Major obstacles to improving the performance of waste management in China's construction industry. *Facilities*.

Zhang, A., Venkatesh, V., Liu, Y., Wan, M., Qu, T. & Huisingh, D. 2019. Barriers to smart waste management for a circular economy in China. *Journal of Cleaner Production,* 240**,** 118198.

Zheng, L., Wu, H., Zhang, H., Duan, H., Wang, J., Jiang, W., Dong, B., Liu, G., Zuo, J. & Song, Q. 2017. Characterizing the generation and flows of construction and demolition waste in China. *Construction and Building Materials,* 136**,** 405-413.

Zietsma, C., Groenewegen, P., Logue, D. M. & Hinings, C. R. 2017. Field or fields? Building the scaffolding for cumulation of research on institutional fields. *Academy of Management Annals,* 11**,** 391-450.

Zietsma, C. & Lawrence, T. B. 2010. Institutional work in the transformation of an organizational field: The interplay of boundary work and practice work. *Administrative science quarterly,* 55**,** 189-221.

Zietsma, C. & Mcknight, B. 2009. Building the iron cage: institutional creation work in the context of. *Institutional work: Actors and agency in institutional studies of organizations,* 143.

Zilber, T. B. 2008a. The SAGE Handbook of Organizational Institutionalism. London: SAGE Publications Ltd.

Zilber, T. B. 2008b. The work of meanings in institutional processes. *The SAGE handbook of organizational institutionalism***,** 151-168.

Zilber, T. B. 2009. Institutional maintenance as narrative acts. *Institutional work: Actors and agency in institutional studies of organizations***,** 205-235.

Zilber, T. B. 2013. Institutional logics and institutional work: should they be agreed? *Institutional logics in action, Part A.* Emerald Group Publishing Limited.

Zilber, T. B. 2017. The evolving role of meaning in theorizing institutions. *The 2nd Sage handbook of organizational institutionalism***,** 651-678.

Zvolska, L., Palgan, Y. V. & Mont, O. 2019. How do sharing organisations create and disrupt institutions? Towards a framework for institutional work in the sharing economy. *Journal of cleaner production,* 219**,** 667-676.