THESIS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

Sustainability roles in the making

Exploring the work and agency of sustainability professionals in the Swedish construction industry

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CHALMERS UNIVERSITY OF TECHNOLOGY

Gothenburg, Sweden 2025

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ISBN 978-91-8103-334-2

Acknowledgements, dedications, and similar personal statements in this thesis, reflect the author's own views.

Doktorsavhandlingar vid Chalmers tekniska högskola
Ny serie nr 5791
ISSN 0346-718X
DOI: https://doi.org/10.63959/chalmers.dt/5791

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Cover: *A visual metaphor for how sustainability professionals must constantly sort, structure, and make sense of an ever-shifting sustainability agenda*

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Printed by Chalmers digitaltryck
Gothenburg, Sweden 2025

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Abstract

The aim of this thesis is to understand the ongoing professionalization of sustainability by problematizing the role and work of sustainability professionals in the Swedish construction industry. Building on a practice lens, the research is based on a qualitative research design, including interviews with sustainability professionals and an in-depth case study of a large infrastructure project.

The findings show that although sustainability roles have existed in the industry for about 30 years, a stable and clearly defined foundation for their work is still lacking. This is demonstrated by the way their work constantly changes direction depending on the sustainability issue "in fashion", and by how they adapt their roles and practices depending on the situation and with whom they interact. This contributes to the fragmented and continually evolving nature of sustainability roles. Sustainability professionals also take on significant responsibility for trying to create clarity around "who should do what" in sustainability work. This is demonstrated through their boundary work, aimed at influencing the boundaries between different professional groups' practices. In doing so, however, they are continuously reshaping their own role, which risks reinforcing the lack of clarity regarding what sustainability professionals actually do, and should do, within the company or in construction projects.

This thesis contributes by developing an empirical and theoretical understanding that builds on practice, that is, what professionals *do*, as a way to understand the ongoing professionalization of sustainability by problematizing the role and work of sustainability professionals in the Swedish construction industry. To theory, this thesis contributes by providing rich details about what it means to work as a sustainability professional, their roles, and daily work practices. To practice, this thesis contributes by providing knowledge that may support the future development of sustainability roles.

Keywords: boundary work, construction industry, institutional entrepreneurship, institutional logics, interviews, practice, professionalization processes, roles, shadowing, sustainability professionals, work.

LIST OF APPENDED PAPERS

This thesis is based on the work in the following papers:

Paper I:

Månsson, S. (2019). Reviewing the role of sustainability professionals in construction. In *Emerald Reach Proceedings Series* (Vol. 2, pp. 393–399). Emerald Publishing Limited.

The paper was peer-reviewed and published as a conference paper and presented at the 10th Nordic Conference on Construction Economics and Organization in Tallinn, 7–8 May 2019. This volume of proceedings comprises selected papers presented at the conference. All selected papers have undergone a rigorous, double-blind, peer review process under the auspices of a scientific committee of internationally recognized researchers.

Paper II:

Gluch, P., & Månsson, S. (2021). Taking lead for sustainability: Environmental managers as institutional entrepreneurs. *Sustainability, 13*(7), 4022.

Both authors contributed equally to the design of the study and to writing the paper. Månsson collected the empirical data and conducted the analysis of interviews, while Gluch collected and analyzed the secondary data (document study of research reports). Both authors reviewed and approved the final version of the paper.

An earlier version of this paper was peer-reviewed and presented as a working paper at a conference: Månsson, S., & Gluch, P. (2020, July 15–17). *Taking lead for sustainability: Environmental managers as institutional entrepreneurs*. Paper presented at the 26th annual International Sustainable Development Research Society (ISDRS) Conference, Budapest, Hungary.

Paper III:

Gluch, P., & Hellsvik, S. (2023). The influence of multiple logics on the work of sustainability professionals. *Construction Management and Economics*, *41*(11-12), 893-909.

The study was initiated and designed jointly by Gluch and Hellsvik, with data collection conducted by Hellsvik. Both authors contributed to the data analysis. The first draft was primarily written by Hellsvik, with editing and support from Gluch. Gluch conducted main revisions and conducted the final editing of the manuscript. Both authors jointly wrote the introduction, theory, findings, and methods sections, while Gluch wrote the literature review developed the analytical model as well as discussion/conclusion sections. Both authors reviewed and approved the final version of the paper.

Paper IV:

Hellsvik, S., & Bosch-Sijtsema, P. (2025, September 1–3). Supportive hero and troublemaker? Diverging environmental work expectations in construction. In *Proceedings of the 41st Annual ARCOM Conference: Building Regenerative Cities, Dundee, UK*. Association of Researchers in Construction Management.

This paper was peer-reviewed and published as a conference paper. The study was designed by Hellsvik. Hellsvik collected and analyzed the data, and wrote most of the introduction as well as the theory, methods, findings, and discussion sections. Bosch-Sijtsema wrote part of the introduction, edited the manuscript, and provided supervisory guidance. Both authors reviewed and approved the final version of the paper. For the purpose of this thesis, the appended paper has undergone minor editorial amendments.

Paper V:

Hellsvik, S., & Gluch, P. (2025). Thriving through? Exploring the configurational boundary work of environmental managers [Submitted manuscript].

The study was designed by Hellsvik and Gluch. Hellsvik collected the data and performed the analysis. Hellsvik wrote the findings and methods sections. Both authors jointly wrote the introduction and discussion sections. The conceptualization of the paper was initiated by Hellsvik with guidance from Gluch, who wrote the theory section. Both authors edited the final manuscript.

An earlier version of this work was peer-reviewed and presented as a working paper at a conference: Hellsvik, S. (2024, September 2–4). *Boundary work in a Swedish infrastructure project: Shadowing an environmental manager*. Paper presented at the 40th Annual ARCOM Conference, London, United Kingdom.

ACKNOWLEDGEMENT

I would like to express my deepest gratitude to my supervisors, Pernilla Gluch and Petra Bosch-Sijtsema. Thank you for your unwavering support, your insightful guidance, and for being two steady rocks and true role models for a young researcher who stumbled, fell, got back up, and ultimately returned to finish this thesis. Thank you for being there and for believing in me.

A special thank you to Pernilla, my main supervisor, for welcoming me into your research team all those years ago. I am sincerely grateful for your encouragement, your trust, and for the many writing retreats in your wonderful home in Skärhamn – cherished moments I will carry with me as I move on.

I would also like to thank Ida Gremyr, my examiner. I am deeply grateful for your support and for all the time we have spent working together on what I believe is one of the most important parts of the university: education and meeting our students. Working with you in this area has been both fun and inspiring. Thank you.

I would also like to extend a big thank you to the three stars who have been part of my journey all these years and who have become wonderful friends: Anna af Hällström, Daniella Troje, and Ingrid Svensson. Coming back after my time away, you were my greatest inspiration. Without you, I would not have made it, and for that I am truly grateful. Thank you.

Thank you to all my colleagues at SML and IRDM. You have each contributed to my journey and to the researcher I am today. A special thank you goes to Lisa Bastås and Amanda Bankel. Thank you for helping me cross the finish line with all our sprints together. You are a big part of why I made it in the end, and for that I am truly grateful.

I have also been fortunate to share my time here with wonderful roommates. From the very beginning, seven and a half years ago, you made me look forward to coming to work every day: Jessica, Sara, Daniel, Anna, Gabriella, and Lisa. Thank you.

I would like to thank FORMAS, CMB, and SBUF for financing this research. I am also grateful to each and every one of the interviewees for sharing their stories, and a special thank you goes to the environmental manager whom I had the opportunity to shadow. Without you, this thesis would not have been possible. Thank you.

Finally, I would like to thank my family and friends for all your emotional support and encouraging spirits. I could not have done this without you. And now that this is over, I look forward to spending more time with you.

To end this acknowledgement, I want to express my greatest gratitude and love to the man and the poodle who have loved me, helped me, and carried me (and in Jarl's case, dragged me) through the toughest of times: Staffan and Jarl. Words cannot describe how much you mean to me and how much you have supported me in finishing this thesis. Thank you – I love you.

Stina Hellsvik, Styrsö

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1 INTRODUCTION

"Working as a sustainability manager, I would say, means constantly being a change leader—one who never stops wanting to drive change. I always want to take the next step, and then the next and the next—I am never satisfied!"

The quote from the sustainability manager above illustrates how these professionals see themselves as persistent drivers of change, motivated by a strong inner commitment to advance sustainability. This resonates with previous literature portraying them as champions, actively working to implement and legitimize new sustainability practices (e.g., Argento et al., 2019; Buhr et al., 2023; Lahtinen & Yrjölä, 2019; Schaltegger et al., 2023; Thakhathi et al., 2019). Such literature often highlights their success in advancing change, showing how they manage to convince key stakeholders, mobilize organizational members, and institutionalize sustainability practices despite significant challenges. This message produces an idealized and heroic narrative of sustainability professionals as change agents, which risks overlooking the complexity, ambiguity, and emotions involved in their work. For sustainability professionals, such narratives may also create expectations that are difficult, if not impossible, to meet. At the same time, other research points to how they frequently encounter internal resistance and organizational inertia (Wright et al., 2012; Hoppmann et al., 2023; Loos & Spraul, 2024), enduring a continuous struggle for their role and identity (Carollo & Guerci, 2017; Gluch, 2009).

In this thesis, I use the term *sustainability professionals* to describe professionals who work with and are responsible for sustainability as a primary component of their jobs – for example, environmental and sustainability experts, managers, coordinators, consultants, and strategists. Sustainability professionals often navigate ambiguous roles, torn between competing demands (Carollo & Guerci, 2018; Gluch & Bosch-Sijtsema, 2016; Hunoldt et al., 2020). Research has also shown that uncertainties arise regarding who is actually responsible for sustainability work. As a result, sustainability professionals may find themselves in what Boucher et al. (2018) refer to as "imaginary silos", where they become disconnected from decision-making and the wider organization, which in turn hampers sustainability efforts. The academic literature further illustrates how sustainability professionals struggle to define their role in

relation to the continuously changing sustainability agenda (Augustine, 2021; Borglund et al., 2023), in relation to other people within organizations, and in relation to traditional roles such as financial officers and project managers (Akotia & Opoku, 2018; Gluch & Bosch-Sijtsema, 2016; Loos & Spraul, 2024; Risi & Wickert, 2017; Troje & Gluch, 2020).

This raises important questions for both practice and research. If sustainability transitions are to succeed – as both society and the industry claim they must – we need a deeper understanding of the professionals driving these changes: not only in terms of what they do, but also how they do it and how their roles evolve as part of their everyday work and interactions. However, despite the increasing importance of sustainability, the professionalization processes of sustainability roles remain highly underexplored (Brès et al., 2019).

A seminal work on professions is Andrew Abbott's *The System of Professions* (1988). It addresses the ways in which different professional groups define their work and compete for jurisdiction over specific tasks. From this perspective, professional groups are characterized by their specialized skills, abstract knowledge, and the right to carry out particular types of work and address specific problems. For example, architects may see themselves (and be seen by others) as responsible for designing buildings in ways that are not only functional but also aesthetic and culturally appealing. Engineers, by contrast, focus on the structural and technical performance of these buildings. Although Abbott's work at the time challenged the prevailing functionalist view of professions as stable and unchanging by offering a perspective of them as contested and dynamic, this framework is best suited for studying change within already established professions (Abbott, 1991).

To better understand emerging professions, such as in sustainability, scholars have instead called for alternative conceptualizations of professions and professionalization (e.g., Anteby et al., 2016; Brès et al., 2019; Muzio et al., 2011; Muzio et al., 2013; Suddaby & Viale, 2011). These scholars suggest that professionalization should be understood as the creation of shared principles for how to do things, based on the competences, skills, and experience acquired "on the job" (Gherardi, 2009). This tells us that professions and processes of professionalization cannot be separated from their organizational and institutional context. Importantly, an established knowledge domain is not always a prerequisite for professionalization. Instead, other factors, such as

companies' need for new competences and roles (Muzio et al., 2011), how knowledge is applied in a professional manner (Anteby et al., 2016), or the unifying force of common normative goals and collaborative practices among networks of stakeholders (Brès et al., 2019), play a part in how professions emerge and evolve.

1.1 Research interests, context and focus

The growing urgency of addressing environmental and social challenges has made sustainability a central concern for companies. Within these organizations, sustainability professionals have become important actors responsible for translating broad sustainability ambitions into concrete practices. The construction industry is a particularly relevant context for studying this, as it significantly contributes to environmental challenges as well as holds substantial potential to shape sustainable cities and communities (Adamec et al., 2021; Fei et al., 2021).

The construction sector exerts a major influence on environmental conditions, social well-being, and long-term economic development, and therefore plays a central role in shaping a more sustainable society in line with the 17 Sustainable Development Goals (Adamec et al., 2021; Fei et al., 2021). However, the way buildings and infrastructure are currently planned, designed, and delivered makes the industry a major contributor to environmental degradation and climate change, for example through extensive consumption of raw materials and the resulting waste, pollution, and greenhouse gas (GHG) emissions (Kadefors et al., 2020). If managed differently, however, the construction industry holds significant potential to contribute positively to many of the sustainability goals (Adamec et al., 2021; Fei et al., 2021), particularly as it provides the foundation for developing sustainable cities and communities (United Nations, n.d.). In Sweden, for example, Boverket (2020) outlines how the construction sector can contribute to sustainability by applying a life-cycle perspective to buildings' environmental impacts, integrating greenery and ecosystem services, improving resource efficiency, and moving toward a circular economy with non-toxic material flows. It also stresses the importance of adapting the built environment to climate change and ensuring that people are not exposed to harmful pollutants, chemicals, noise, or other health and safety risks. Achieving such a reorientation, however, depends not only on technological innovation but also on the professionals who translate sustainability goals into everyday construction practices.

My main research interest therefore is to understand the ongoing professionalization of sustainability "in the making" by problematizing the role and work of sustainability professionals in the Swedish construction industry. This includes developing an understanding of their everyday work, how they drive change, and how their roles evolve within a construction project context.

The construction industry is characterized by its project-based nature, meaning that most operations are carried out in individual projects, each involving multiple actors and professionals who work together to coordinate and perform activities sequentially in order to deliver a final product (Dubois & Gadde, 2002b). Professionals in the construction industry operate in an inter-organizational and inter-professional context, where different firms and professions engage in a form of competitive collaboration to achieve the project's goals while also remaining competitors in the market (Winch, 2010). These projects are characterized by a strong focus on cost, time, and the need to carry out activities in a specific order. This emphasis on cost and time reinforces the pursuit of efficiency, which favors immediate and decentralized decision-making to handle unpredictable environments and to enable local adjustments (Dubois & Gadde, 2002b).

The delivery of buildings and infrastructure is a complex process that requires the involvement of multiple professionals with specialized skills and expertise across different stages of project delivery (e.g., design, planning, and construction). In construction projects, however, the same team seldom works together from one project to the next. Instead, institutionalized construction practices enable professionals to collaborate effectively without having worked together before (Kadefors, 1995; Lieftink et al., 2019). A consequence of this high degree of institutionalization is that the industry becomes slow and less receptive to change. New roles entering projects can therefore be perceived by others as a disruption, and professionals occupying such roles may experience a sense of being "in between" viewed as part of the project when they conform to established practices yet positioned outside of it when they challenge traditional ways of working in production (Gustavsson, 2018).

A further characteristic of the construction industry is managing the tension between the short-term demands of delivering individual projects and the long-term goal of learning across projects (Sydow et al., 2004), which may in turn slow down sustainable development. In addition, the norm of immediate and decentralized decision-making

(Dubois & Gadde, 2002b) further reinforces short-term rather than long-term thinking. Together, these tensions between the temporary and the permanent, the short-term and the long-term, combined with a constant inflow and outflow of people across projects, make it difficult to drive and improve sustainability work. Attempts to alter established practices add further complexity, a challenge that sustainability professionals have to manage when pushing for a sustainability agenda in construction (Gluch & Bosch-Sijtsema, 2016; Gluch & Räisänen, 2012; Knoth et al., 2022).

Hence, although sustainability professionals are widely recognized as key actors in the sustainability transition (e.g., Buhr et al., 2023; Schaltegger et al., 2023), they often face uncertainty about what they should do, who is responsible for sustainability, and how their work fits into the company or the project (Akotia & Opoku, 2018; Augustine, 2021; Borglund et al., 2023; Boucher et al., 2018; Gluch, 2009; Gluch & Bosch-Sijtsema, 2016). However, previous research has paid relatively little attention to what sustainability professionals actually do on a day-to-day basis. This calls for research that studies sustainability professionals not only in terms of what their work consists of, but also how they carry it out and how their roles develop through day-to-day practices, which require theoretical perspectives that capture ongoing, context-dependent, and dynamic processes of change. To accomplish this, a practice perspective (Feldman and Orlikowski, 2011; Gherardi, 2009; Nicolini, 2013) is applied in this thesis, specifically drawing on the theoretical concepts of institutional entrepreneurship, institutional logics, and boundary work. These perspectives provide conceptual and analytical tools that place the work of sustainability professionals at the center of analysis. Such an approach frames professional roles as emerging through situated, everyday activities rather than as predefined or static (Nicolini, 2013). Using a practice lens makes it possible to acknowledge both institutional and organizational contexts as well as individual agency, offering a dynamic view for studying evolving roles, one that understands them as continually shaped and reshaped through human actions and interactions.

1.2 Aim, scope and research questions

The aim of this thesis is to understand the ongoing professionalization of sustainability by problematizing the role and work of sustainability professionals in the Swedish construction industry. This entails investigating how sustainability professionals' roles

and work influence the institutional and organizational context they are embedded in, and how this context in turn influences their roles and work, and the reciprocal dynamic in between.

Addressing these questions, I have explored how sustainability professionals, as carriers of an environmental sustainability agenda, have actively contributed to the development of a sustainability profession since the early 1990s. I have further investigated how the institutional field of sustainable construction shapes sustainability professionals' work and roles and how these are developed in relation to other professional roles within the construction industry. I have further examined sustainability professionals' roles and work within an infrastructure project, and how their work both shapes and is shaped in interactions with other project participants. The professionals studied in this thesis have primarily worked with environmental sustainability in roles as sustainability and environmental managers, coordinators, and specialists. Regardless of their specific title and position, they are part of populating a sustainability profession and are therefore referred to as sustainability professionals.

1.3 Outline of the thesis

The introductory chapter is followed by a review of previous research on sustainability professionals, which forms the foundation for the discussion. After the chapter on previous research, the theoretical lenses of institutional theory and boundary work are introduced, through which the empirical data are understood and analyzed. This is followed by the methodology chapter, which describes the studies and explains how and why they were selected. Next comes the discussion chapter, in which the research questions are discussed. Finally, the thesis concludes with implications for theory and practice, as well as suggestions for future research. In addition, five appended papers inform the thesis.

2 PREVIOUS RESEARCH ON SUSTAINABILITY PROFESSIONALS

In this chapter, I review previous research on sustainability professionals in order to situate my study within the existing field of knowledge. My focus has been on highlighting how the literature describes sustainability professionals, their work, and their roles, as well as how role expectations and contextual conditions shaping their roles have been problematized. It should also be acknowledged that this overview is not exhaustive, as the very nature of the sustainability professional role is diverse and continually evolving.

2.1 Labelling their roles: Who are they?

Literature labels individuals working with sustainability in different ways, ranging from "sustainability professionals", "sustainability managers", and "CSR managers" to "environmental professionals" and "environmental experts". This variety, illustrated with examples from the literature in Table 1, reflects the fragmented nature of the role as well as the field of study, with little cross-referencing between different streams of literature. It also suggests that the construct of a "sustainability professional", and the various sustainability roles they occupy, is defined empirically within each study rather than derived from a shared understanding of what a sustainability profession actually entails. As a result, the distinctions between the labels are fluid, with terminology often used interchangeably across individual studies.

The description of sustainability professionals in Table 1 on the next page is drawn from a wide range of empirical studies conducted across industries and countries. In the construction industry specifically, research has examined sustainability professionals at the organizational level (e.g., Opoku et al., 2015), the project level (e.g., Gluch, 2009; Akotia & Opoku, 2018), and in relation to the link between micro-level practices and industry-level institutional dynamics (e.g., Gluch & Bosch-Sijtsema, 2016). Outside the construction industry, scholars have investigated professionals in large corporations across multiple sectors in Australia (Wright & Nyberg, 2012) and Sweden (Borglund et al., 2021), as well as in Germany and Switzerland (Risi & Wickert, 2017; Loos & Spraul, 2024), the UK (Dahlmann & Grosvold, 2017), and Spain (Argento et al., 2019).

Other studies focus on public organizations, such as Canadian municipalities (McDonald, 2020), or on higher education in the United States (Augustine, 2021). Finally, some take a global perspective, either through surveys of sustainability professionals worldwide (Lespinasse-Camargo et al., 2024) or through international interview studies (Mitra & Buzzanell, 2017, 2018).

Table 1. *Labels, definitions, and literature examples describing sustainability professionals*

Label	Definition/Description	Example
Sustainability professionals	Individuals explicitly responsible for some aspect of their organization's sustainability performance; professionals developing sustainable strategies; sustainability specialists, strategists, consultants and managers; professionals belonging to a profession directly related to sustainability; self-identified practitioners in the emerging profession of sustainability	E.g., Archer (2021); Opoku et al. (2015); Wright and Nyberg (2012); McDonald et al., (2020); Lespinasse-Camargo et al. (2024); Mitra and Buzzanell (2017); Mitra and Buzzanell (2018)
Sustainability managers	Professionals with specific responsibility for sustainability; managers holding sustainability-dedicated roles; professionals responsible for strategizing, making decisions, and executing sustainability initiatives; practitioners managing sustainability aspects including environmental issues; defined as a specific occupational group	E.g., Borglund et al. (2023); Carollo and Guerci (2017); Lahtinen and Yrjölä (2019); Akotia and Opoku (2018); Augustine (2021)
CSR (corporate social/sustainability and responsibility) managers	Professionals with competences in corporate sustainability; professionals responsible for promoting socially and environmentally sound business practices; professionals responsible for integrating sustainability principles (e.g., environmental aspects) into the organization's operations and decision-making	E.g., Argento et al. (2019); Risi and Wickert (2017); Wickert and de Bakker (2018); Loos and Spraul (2024)
Environmental professionals	Professionals explicitly tasked with responding to environmental issues; environmental experts; environmental managers	E.g., Dahlmann and Grosvold (2017) Gluch (2009); Gluch and Bosch-Sijtsema (2016)

Although the labels differ, the literature highlights several similarities in how sustainability professionals are described. They are typically portrayed as individuals working on certain aspects of their company's sustainability performance (e.g., Archer, 2021; Augustine, 2021), often in dedicated roles such as sustainability specialists, strategists, consultants, or managers (Carollo & Guerci, 2017; McDonald et al., 2020). These roles are commonly discussed as part of an emerging sustainability profession (Lespinasse-Camargo et al., 2024; Mitra & Buzzanell, 2017, 2018), and those occupying them are often described as "organizational professionals" (Argento et al., 2019; Borglund et al., 2021; Risi & Wickert, 2017), that is, professionals whose professionalism lies in organizational expectations and mandates, while simultaneously promoting sustainability within their companies. Being organizationally bound suggests

that their roles and work are shaped more by organizational structures than by those of an independent profession, one that typically entails greater autonomy, a distinct body of knowledge, and clearly defined jurisdictional boundaries (Abbott, 1988). Sustainability professionals are often expected to lead sustainability initiatives and to integrate sustainability principles into operations and decision-making (e.g., Opoku et al., 2015; Lahtinen & Yrjölä, 2019; Thakhathi et al., 2019). They are often portrayed as devoted professionals, united by a belief that their work contributes positively to society and by a shared objective of institutionalizing sustainability practices (e.g., Archer, 2021; Brés et al., 2019; Dahlmann & Grosvold, 2017), whether within their own companies or in specific contexts such as construction projects (Akotia & Opoku, 2018; Gluch & Bosch-Sijtsema, 2016).

Having outlined how sustainability professionals' roles are described, the following section reviews what previous studies reveal about their work, that is, the strategies they employ and the traits that characterize this work.

2.2 Work strategies and traits: What are they doing?

Several studies focus on the work strategies and traits employed by sustainability professionals as they drive organizational change and implement sustainability practices (e.g., Argento et al., 2019; Gallagher et al., 2020; Lahtinen & Yrjölä, 2019; Thakhathi et al., 2019). This body of research shows how sustainability professionals actively collaborate with actors outside their companies, often with the aim of influencing public opinion and shaping broader debates on sustainability (e.g., Mitra & Buzzanell, 2018; McDonald et al., 2020). In the literature, their work is often described as being driven by an inner motivation or personal commitment, which enables them to strategically convince, persuade, and influence others within their companies to implement sustainability practices (Argento et al., 2019; Thakhathi et al., 2019). For example, drawing on a five-year longitudinal case study of a Spanish electricity company, Argento et al. (2019) examined the implementation of new sustainability practices that were largely driven by the company's CSR manager. Based on interview material, documentary data, and an exhaustive reconstruction of the Integrated Report implementation process, the authors attributed the successful legitimization of these practices to the manager's persistence, intrinsic motivation, and extensive networking, through which the manager demonstrated both humility and patience. The study showed

that the CSR manager's persistent legitimizing activities became effective when supported by influential internal actors and favorable external conditions, which together enabled the institutionalization of new corporate reporting practices.

While Argento et al. (2019) highlight the role of individual persistence and credibility in driving sustainability change, Thakhathi et al. (2019) focus on the collective and strategic dimensions of sustainability professionals' work. Using a set of predefined influencing strategies as an analytical framework, they examined how a sustainability department in a large commercial organization applied these strategies in practice to implement sustainability initiatives. The study identified seven influencing strategies that were used to drive strategic change, including sharing best practices, involving employees in decision-making, and promoting change messages both inside and outside the company. These efforts were found to help persuade organizational members, disseminate change through knowledge-sharing forums, and institutionalize it by adapting tasks, processes, and structures. The study concludes that by employing these influencing strategies, sustainability professionals can drive large-scale organizational and institutional change, thereby contributing to more ethical and sustainable business practices.

Other studies highlight the multifaceted nature of sustainability professionals' work, emphasizing how they operate across organizational levels and boundaries to promote change (Lahtinen & Yrjölä, 2019; Troje & Gluch, 2020). For example, Lahtinen and Yrjölä (2019), in their interview study of sustainability managers from different sectors in Finland, examined how managers make sense of their actions, roles, and purposes in managing sustainability. They found that these professionals perceived their work as both strategic and operational. This meant that they worked analytically and intuitively across organizational silos, management levels, and organizational boundaries to mobilize change, foster collaboration, and challenge the status quo. Their study concluded that sustainability managers work both broadly and deeply within the company in their efforts to drive sustainability change and implement sustainability practices. Similar findings were reported by Troje and Gluch (2020) in a study of sustainability managers seeking to diffuse new practices within social procurement in the Swedish construction industry. Here too, sustainability managers were found to operate at both strategic and operational levels, being directly involved in solving

problems, communicating information, sharing knowledge, and creating collaborative spaces across organizational boundaries.

Sustainability professionals' work within the construction industry is found to be closely linked to project delivery and the development of sustainable construction practices (Akotia & Opoku, 2018; Opoku et al., 2015). For example, they may work with sustainable design, procurement, waste management on site, and the efficient use of materials and resources (Opoku et al., 2015), or provide expertise on the reuse of building materials (Knoth et al., 2022). The literature also notes that sustainability professionals have a role in ensuring that other actors, such as client representatives, are aware of their responsibilities regarding sustainability in construction projects (Akotia & Opoku, 2018).

However, not all work by sustainability professionals leads to change, which was demonstrated in a study from the Swedish construction industry (Gluch & Bosch-Sijtsema, 2016). Based on multiple cases, the study showed that even though environmental experts wanted to change industry practice, they had to adapt their change efforts in a way that reinforced existing project practices rather than transforming them (ibid.). This meant that environmental professionals' ambitions to work in a visionary and future-oriented way clashed with the immediate and reactive demands of their job, leading to stress and a sense of not being able to do a "good job".

Having reviewed what previous studies reveal about the work of sustainability professionals – the strategies they employ and the traits that characterize this work – the following section examines how they are expected to perform these roles and the contextual conditions that affect their ability to do so.

2.3 Role expectations and contextual conditions: How can they do it?

The literature highlights how external demands, conflicting goals, and shifting agendas influence expectations of the role and work of sustainability professionals. Much of this research suggests that the need for specific sustainability roles has emerged in response to companies' growing need to manage issues related to sustainable development (e.g., Augustine, 2021; Carollo & Guerci, 2018; Dahlmann & Grosvold, 2017; Gluch, 2009; Loos & Spraul, 2024). As a result, sustainability professionals have been hired (Augustine, 2021; Carollo & Guerci, 2018; Dahlmann & Grosvold, 2017) to manage

the triple bottom line – the ecological, economic, and social dimensions of sustainability – which entails navigating multiple and often conflicting demands. Dahlmann and Grosvold (2017), for instance, demonstrate how sustainability professionals are simultaneously expected to address concerns of environmental protection while responding to market-based pressures for growth and profit maximization – an expectation that other scholars (Carollo & Guerci, 2018; Guix & Petry, 2024) have found gives rise to a hybridity characterized by conflicting expectations about who to be and what to do. In an interview study, Carollo and Guerci (2018) further identify three types of conflicting expectations that sustainability professionals encounter in their role, relating to a business versus values orientation, an insider-outsider perspective, and a short-term versus long-term view. Similar tensions are found in the construction industry (Gluch, 2009), where different worldviews between environmental work and project practice lead to environmental experts experiencing a limitation to their agency as they must adapt to the rules of the game of construction management practice.

In a more recent interview study, Loos and Spraul (2024) explored issues of limitations in sustainability professionals' agency. They noted that sustainability professionals often struggle to achieve internal legitimacy and, consequently, face difficulties to realize their objectives of implementing sustainability initiatives. The authors therefore sought to understand why, how, and when sustainability professionals work to establish legitimacy within their organizations. Drawing on 30 interviews with sustainability managers from companies and public organizations of varying sizes in Germany, they found that sustainability managers draw on a repertoire of legitimizing strategies to navigate a range of organizational challenges. These challenges included attitudinal barriers towards sustainability among organizational members, difficulties in engaging stakeholders, structural challenges related to organizational support, and practical challenges associated with implementing initiatives under conditions of limited resources, where sustainability managers must work to increase colleagues' willingness to help. To legitimize themselves, sustainability managers would, for example, provide benefits, exert coercion, establish commitment based on people's emotions, create comprehensibility, or demonstrate professionalism by showcasing their expertise. The study also found that the managers' choice of legitimizing strategy depended on how they perceived their own role, whether as a strategist, change agent, collaborator, or facilitator, which also shaped the types of challenges they encountered in their work.

Recent research has turned attention to the ambiguities that accompany conflicting expectations placed on sustainability professionals. Based on an interview study with environmental managers, Borglund et al. (2023), for instance, identified several ambiguities that they argue are inherent features of the sustainability manager role – ambiguities that sustainability professionals must continually navigate and manage. One such ambiguity, according to Borglund et al. (2023), relates to the evolving nature of the sustainability field itself, as new issues are continually added to the agenda. They argue that, as a consequence, each new issue brings additional actors who need to be engaged, and this constantly changing network of people makes the work particularly complex and challenging to manage.

Expectations of the role can also change over time, something that Augustine (2021) investigated by examining the formation of the occupational group of sustainability managers in higher education in the United States. She found that the managers' jurisdiction gradually drifted from the original mandate and expectations of the role that were derived from the social movement that had initiated their appointment. Augustine described this jurisdictional drift as a process in which the managers first faced jurisdictional ambiguity, having to determine what their work should entail. In this process, they traded external politics (i.e., the visions of the social movements) for internal politics (i.e., the organizational realities) and values for workable standards. Consequently, this ultimately led them to perform tasks that diverged from those originally envisioned.

The ambiguity characterizing sustainability professionals' roles also extends to how their work is perceived by others within companies. For example, Boucher et al. (2018) conducted a series of case studies in which they interviewed environmental managers, top managers, middle managers, and employees from seven companies within different sectors, including the construction industry. They found that no one within the company took full ownership of environmental performance and that the role of the environmental manager in relation to other employees was often ambiguous. Many employees were unsure about what the environmental managers actually did or where their responsibilities began and ended. For the environmental managers, this created an unclear role without clear boundaries, which in turn hampered their work to improve environmental performance.

Based on this review, it is evident that few studies have focused on the ongoing professionalization of sustainability and sustainability roles “in the making”. In the next chapter, I will introduce the theoretical framework I have used to study this.

3 THEORETICAL LENSES

In this chapter, I present the main theoretical concepts I have used in my thesis to investigate the empirical phenomenon studied. More detailed descriptions of chosen theoretical concepts as well as additional reference frameworks applied in individual studies are discussed in appended Papers I-V.

A main assumption underpinning this thesis is that achieving sustainable development requires a shift in how we organize and carry out our activities. In other words, sustainable development entails changes to the norms and cultural prescriptions that define what is considered legitimate, appropriate, or acceptable, and shape how individuals interpret their roles – that is, their work. Thus, by adopting a practice lens, my focus is to problematize the role and work of sustainability professionals in the Swedish construction industry. In other words, I apply complementary theoretical concepts to understand how something *is*, rather than how something *should be done*.

A practice lens brings "work" back into the study of organizations by placing what people do at the core of explaining organizational outcomes, such as sustainability roles "in the making" (Feldman & Orlikowski, 2011; Gherardi, 2009; Nicolini, 2013;). From this perspective, professions emerge through situated, everyday activities rather than as predefined or static entities. Overall, this thesis draws on two main theoretical frameworks: institutional theory (Lawrence & Suddaby, 2006; Thornton & Ocasio, 2008) and boundary work (Langley et al., 2019). Both theoretical lenses support practice-based studies, providing conceptual and analytical frameworks that place the work of sustainability professionals at the center of analysis. Through the chosen theoretical approach, it is possible to acknowledge both institutional structures and individual agency, which offers a dynamic view of professionalization processes that enables me to understand the ongoing professionalization of sustainability by problematizing the role and work of sustainability professionals in the Swedish construction industry.

3.1 Institutional theory

At the heart of institutional theory lies "the idea that there are enduring elements in social life – institutions – that have a profound effect on the thoughts, feelings and

behavior of individual and collective actors" (Lawrence & Suddaby, 2006 p. 216). However, institutions are not external to human actions but are constituted through the more or less conscious actions of individuals and collective actors. Hence, institutions are materialized in reoccurring patterns of social actions, i.e., practices, which rely on the action of individuals and collective actors for their reproduction over time. Thus, individuals are both influenced by and influencing institutions, a mechanism referred to as *embedded agency* (Battilana & D'Aunno, 2009). Here, agency refers to individuals' capacity to act within institutional structures rather than upon them. In the context of this thesis, *agency* is therefore understood as professionals' ability to act within socially prescribed sustainability roles, such as those of sustainability experts or environmental managers. With this perspective, sustainable development implies a need to change existing institutions, which influence what actions are seen as legitimate, appropriate, or expected within a given context.

A concept that addresses key actors in institutional change processes is *institutional entrepreneurship.* Institutional entrepreneurship can be defined as "the activities of actors who have an interest in particular institutional arrangements and who leverage resources to create new institutions or to transform existing ones" (Maguire et al., 2004, p. 657). This concept offers an actor-centered perspective within institutional theory, reintroducing agency into the study of institutional change. The related concept of *institutional entrepreneurs* are thus actors who both initiate "divergent change" and work to implement it, for example by creating visions, mobilizing resources, and building alliances (Battilana, 2006; Rothenberg 2007; Argento et al., 2019). In this thesis, the concept of institutional entrepreneurship is used to analyze the interplay between field-level changes and the actions of environmental pioneers in their efforts to introduce and establish sustainability practices within the construction industry as part of a professionalization process. See Paper II for more details.

Research on institutional entrepreneurship highlights the importance of enabling conditions, that is, factors that increase the likelihood that individuals will initiate changes deviating from dominant institutional logics. These include social position, both formal (within hierarchies) and informal (through networks), with individuals at the organizational periphery often seen as more likely to act as institutional entrepreneurs (Battilana, 2006). Other enabling conditions include a perceived sense of urgency and external events such as scandals, accidents, or crises (Battilana et al.,

2009). The timing and context of such events further shape whether they open opportunities for institutional change (Hoffman & Jennings, 2011).

Previous empirical research has illustrated how institutional entrepreneurship and change unfolds in practice. For example, Etzion and Ferraro (2010) show how the Global Reporting Initiative (GRI) promoted sustainability reporting by employing discursive strategies, such as drawing analogies to financial reporting, to gain legitimacy. Similarly, Rothenberg (2007) found that environmental managers acted as boundary spanners between technological and environmental discourses, reframing environmental performance as operational efficiency to gain support from technically oriented colleagues.

Acknowledging the importance of contextual conditions, the *institutional logics perspective* is used in this thesis to provide a lens for analyzing the work and agency of sustainability professionals within the institutional field of sustainable construction. This field is characterized by the coexistence of multiple logics that professionals must navigate and combine in different ways (see appended Paper III for an overview of these logics in construction).

Institutional logics perspective is an evolution within institutional theory and 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 & Ocasio, 2008, p. 101). This definition highlights the interplay between individual agency and broader institutional environments, linking situated practices to underlying beliefs, values, and rules. Institutional logics can therefore be understood as the "rules of the game" that guide individuals' actions and shape what is perceived as legitimate or appropriate ways of doing things (Thornton et al., 2012). Thus, institutional logics guide sustainability professionals in their work (Borglund et al., 2023) making this a relevant theoretical concept for this thesis.

Research has increasingly examined how institutional logics interact within *institutional fields*, defined as communities that partake of a common meaning system and whose participants interact more frequently with one another than with actors outside the field (Scott, 1995). Institutional fields are often characterized by institutional complexity, where multiple logics coexist (Greenwood et al., 2011). Studies of logic

multiplicity show that such logics can coexist within the same organization (Besharov & Smith, 2014) or co-evolve within a profession over time (Dunn & Jones, 2010). A central question in this stream of research is how actors interpret and enact multiple institutional logics (Glynn & D'Aunno, 2023). For example, professionals may interpret and enact multiple logics on the ground (Currie & Spyridonidis, 2016). Other studies highlight how individual responses to conflicting logics may differ and lead to internal divisions within a profession (Adams, 2020), or how reconciling conflicting logics can give rise to hybrid professionals (Blomgren & Waks, 2015; Guix & Petry, 2024).

3.2 Boundary work

While the boundary spanning role of professionals, i.e., the occupational function that bridge and/or broke across boundaries, have been widely studied in a project-based setting (see for example Bosch-Sijtsema and Henriksson, 2014; Brion et al., 2012; Fellows and Liu, 2012; Satheesh et al., 2024), less studies have focused on boundary work. In this thesis, the concept of *boundary work*, and specifically configurational boundary work, is applied to understand the role and agency of sustainability professionals as they work with other professionals in construction projects to achieve a well-functioning collaboration around environmental work.

Boundary work can be defined as the "purposeful individual and collective effort to influence the social, symbolic, material, and temporal boundaries, demarcations, and distinctions affecting groups, occupations, and organizations" (Langley et al., 2019, p. 704). From this definition it follows that *boundaries* are (re)created in human interactions. Boundary work is therefore important because of its consequences for collaboration among professionals, for example by determining the division of work – who is doing what, and also who is included or excluded – which in turn influences organizational practices, both within and across organizations (ibid.). Boundary work involves some degree of intentionality, meaning that there is a reason why individuals or groups try to influence boundaries. In this thesis, the intentionality in boundary work refers to the everyday work of sustainability professionals as they seek to ensure effective environmental management work together with other professionals in construction projects.

Research on boundary work highlights that individuals and groups often engage in boundary work for different reasons. For example, some individuals are creating,

protecting, or expanding boundaries to distinguish themselves and their practices from others (e.g., Bos-de Vos et al., 2019; Gibassier et al., 2020). Here, boundaries serve as a source of legitimacy and self-protection between professional groups (Bos-de Vos et al., 2019), or as a means of creating a professional domain (Gibassier et al., 2020). Other individuals realign boundaries to enable collaboration (Stjerne et al., 2019). Here, boundaries serve as points of alignment, where learning between professional groups can take place, or tensions between organizations can be resolved (ibid.).

A type of boundary work is what Langley et al. (2019) refer to as *configurational boundary work* in which individuals use boundaries as a way of differentiating and integrating groups to ensure that certain activities are brought together while others are kept apart. In this case, individuals are designing a new boundary landscape in which boundaries are used as instruments for (re)structuring interactions and facilitating desired outcomes. This can be done in different ways, for example by arranging boundaries of other groups to refocus interactions in order to do new things or the same things differently, buffering boundaries between groups with competing interests or different worldviews, or coalescing existing activities and thereby reshaping the boundaries among groups. A more extensive account of the concept of boundary work is provided in Paper V.

4 RESEARCH METHODOLOGY

In this chapter, I provide an overview of the methodological approach taken in the thesis. I outline the research approach, overall research design, data collection and analysis, ethical considerations, and reflections on research quality and process. Detailed descriptions of each study are presented in appended Papers I–V.

4.1 Research approach

To better understand the ongoing professionalization of sustainability by problematizing the role and work of sustainability professionals, a qualitative research approach was adopted. I selected a qualitative approach because it enables the generation of rich, contextualized data, well suited for interpreting and understanding social phenomena, such as social interactions and practices, and individuals' experiences within a social context and the meanings they invest in such experiences (Flick, 2014). Qualitative data from interviews and observations are often emphasized as a fruitful approach when exploring the underlying practices involved in institutional logics (Thornton & Ocasio, 2008), institutional entrepreneurship (Maguire et al., 2004), and boundary work (Langley et al., 2019).

The qualitative research in this thesis is grounded in a constructionist view of social reality, which holds that social phenomena are not objective and independent entities but are instead created through human interactions (Bryman & Bell, 2012). This means that social reality does not simply exist "out there" to be discovered; rather, it is socially constructed through shared meanings and practices that both shape and are shaped by how individuals perceive and engage with the world. From this perspective, there is no universal, objective truth, but rather multiple subjective "truths" or perspectives that depend on situated contexts, historical events, and the theoretical lenses through which reality is interpreted. Accordingly, my research aligns with an interpretivist epistemology, which assumes that knowledge of social phenomena is inherently subjective and shaped by context-specific interpretations and theoretical concepts (Bryman & Bell, 2012). This means engaging with individuals' perceptions and experiences and attempting to see the world through their eyes (Bryman & Bell, 2012).

4.2 Research design and process

The research design consisted of four studies: one literature study and three empirical studies, each contributing to the investigation of sustainability professionals' work within the Swedish construction industry (see Table 2 for an overview of the studies and their resulting papers). It has previously been suggested that professionals' roles and work can be studied through what professionals do, that is, through their social interactions and actions (Anteby et al., 2016), for example by examining their work tasks, how these tasks change over time, and how they relate to those of other professions. In designing this research, I have taken this into account and therefore chosen to mainly base my research on interviews and participant observations through shadowing. The focus has been on investigating how sustainability professionals perceive and do their work.

Table 2. *Summary of studies and their resulting papers*

Studies	Data collection methods	Year(s)	Papers
Study 1	Systematic literature review	October 2018 (literature search)	Paper I
Study 2	Interviews	March 2019 – April 2019 (n=8)	Papers II and III
Study 3	Interviews	October 2019 – February 2020 (n=23)	Paper III
Study 4	Shadowing Interviews Workshop	2021 (40 h) & 2023 (40 h) 2021 (n=2) & 2023 (n=18) April 2024	Papers IV and V

The first study (Study 1), a systematic literature review, was conducted at the beginning of my doctoral studies. Its purpose was to identify the current "state of the art" on sustainability professionals and their roles in the construction industry, as well as to familiarize myself with the literature and create a research space. Study 1 resulted in a conference paper later published in a proceeding (Paper I), which was presented at an academic construction management conference. The conference was valuable, as it provided an opportunity to familiarize myself with the academic side of the industry and to discuss my preliminary research questions with a broader community of researchers at an early stage.

This systematic literature review also informed the design of the first empirical study (Study 2), an interview study with environmental pioneers who have long experience of working with sustainability issues in the industry, which resulted in Paper II of the appended papers. From these first interviews, I learned that sustainability issues have become increasingly important for the industry as a whole, and that sustainability work has grown in both scope and complexity, with increasingly specialized roles.

Study 3 was a second interview study in which I interviewed sustainability professionals with varying years of work experience and job titles, and from different types of companies across the Swedish construction industry. These interviews complemented the first empirical study by providing a broader perspective on what it is like to work with sustainability issues across the construction industry. Together with Study 2, Study 3 formed the basis for Paper III of the appended papers. Overall, the interviews highlighted that sustainability professionals often perceived their work as dependent on others, which raised further questions about how sustainability professionals' roles and work relate to those of other professionals, which informed the decision to conduct a case study (Study 4). In this case study, it was possible to investigate how sustainability professionals working for the contractor in a construction project collaborated with other project professionals.

Study 4 began in June 2021 and ended in April 2024 (with a break from November 2021 to September 2023). The purpose of this study was to explore the everyday and practical realities of sustainability professionals' work and to examine their role in relation to other professionals. In doing so, this study complemented the overall thesis project by offering an in-depth look at the day-to-day work of an environmental manager within a large infrastructure project. This part of the research design provided detailed insights into how sustainability professionals are able to drive sustainability issues in practice, and how they are both shaped by and shape the work they engage in. The study resulted in Papers IV and V of the appended papers.

As for the general research process, it was an iterative process, moving between data collection and analysis, between empirical data and theory, and between interpretation and reflection. Rather than following a linear path, the research design evolved over time with new insights and questions emerging throughout the process (Dubois & Gadde, 2002a).

4.3 Literature studies

The aim of the initial systematic literature review was to explore what was currently known in the body of literature on sustainability professionals in the construction industry. Details of how this review was conducted can be found in Chapter 5 (Summary of Papers) and in appended Paper I. Since then, I have continuously reviewed the literature throughout the research process as a way to develop the theoretical frame of

reference and to situate the findings in relation to previous research. Developing the frame of reference was an iterative process, shaped abductively alongside my empirical studies. A substantial part of this work involved reviewing reference lists in relevant articles as well as examining the citations of those articles. Over the course of the research, I found that the literature on sustainability professionals is fragmented across different disciplines and research communities that are disconnected from one another. I therefore conducted a second literature review aimed at integrating studies across these different research communities. Unlike the initial review, which was conducted to provide a foundation for the thesis by focusing on sustainability professionals in organizational contexts within the construction industry, this review sought to identify studies on sustainability professionals within any organizational, professional, or institutional context, regardless of industry. The search string was therefore broader in scope but had a more specific focus on sustainability professionals' roles and work. This review contributed to the framing of Paper V and to the previous research section (chapter 2) of this thesis by providing examples of empirical studies on sustainability professionals.

4.4 Data collection

Primary data in this thesis were collected through interviews with environmental pioneers and sustainability professionals from various parts of the construction industry. In addition, a case study was conducted, which involved shadowing an environmental manager in her day-to-day work, interviews with project professionals, a review of project documents, and a workshop.

4.4.1 Interviews with environmental pioneers

To better understand sustainability roles and work in relation to the broader field level change of sustainability within the construction industry, I conducted interviews with eight environmental pioneers between March and April 2019. These individuals were specifically selected because of their extensive experience in environmental management and their recognized status as "environmental pioneers" within the Swedish construction industry. They were known from previous research projects and identified as being frontrunners of environmental sustainability progress through industry-specific news media, conferences, and innovation projects. Each of the eight interviewees was contacted via email and invited to participate in the study. See Table

3 for an overview of participants, the roles they had, their educational background, and the types of organizations they have worked in. The role and type of organization at the time of the interview are presented in bold.

Table 3. *Background information of interview participants in Study 2*

No.	Role	Education	Work experience	Type of organization
1	**Sustainability consultant** Sustainability manager Environmental manager Environmental coordinator	Civil engineering and Environmental science	21 years	**Consultancy** Construction clients Contractor
2	**Environmental consultant** Sustainability manager Environmental manager Environmental coordinator	Civil engineering	25 years	**Consultancy** Contractor
3	**Environmental strategist** Environmental manager	Technical upper secondary education	39 years	**Contractor**
4	**Sustainability manager** Environmental manager Quality, environment, health & safety manager	Technical upper secondary education	19 years	**Contractor**
5	**Business development** Consultant Line manager Environmental manager	Civil engineering	25 years	**Architecture firm** Contractor Real estate company
6	**Sustainability specialist** Environmental manager Quality & environmental coordinator Environmental engineer	Chemical engineering	29 years	**Architecture firm** Real estate
7	**Sustainability manager** Quality & environmental manager Environmental coordinator	Civil engineering	24 years	**Construction client** Contractor
8	**Sustainability manager** Environmental manager Environmental coordinator	Chemical engineering	34 years	**Contractor**

The eight interviews were conducted either face-to-face (six interviews) or via Skype (two interviews), and each lasted between one and two and a half hours, resulting in a total of 11 hours of interview material. All interviews were semi-structured (Kvale, 2007), allowing participants to freely elaborate on the questions. This approach enabled follow-up questions and supported a more natural flow, where topics could be addressed in the order that felt most natural. All interviews were audio-recorded and transcribed verbatim.

Topics in the interviews included their career stories, their perceptions of how their roles had changed in relation to the development of sustainability, and their views on how the profession might evolve in the future. The interviews also explored specific

milestones during which they perceived a shift in their roles or in how environmental sustainability work was practiced. These milestones were probed for in the interviews to capture how their roles and work had evolved over time.

4.4.2 Interviews with sustainability professionals

Additional to the interviews with the environmental pioneers, and to better understand sustainability professionals' role and work, I conducted interviews with 23 sustainability professionals who were working in the Swedish construction industry at the time, representing a broad set of environmental and sustainability consultants, managers, experts, coordinators, and specialists.

These interviews were conducted between October 2019 and February 2020. Participants were selected based on their various experiences, roles, and lengths of professional experience. The aim was to capture a wide range of perspectives to ensure a rich and varied data set. Participants were identified through sustainability-related news media, company websites, and a list of attendees from a 2018 conference on sustainable construction. The list of attendees helped identify professionals who working in sustainability roles that are not visible to the outside. Seven participants were contacted based on referrals from previous interviewees. In total, 33 individuals were contacted via email and invited to participate in the study, of whom 23 agreed to participate. See Table 4 for an overview of participants.

The interviews were conducted in a semi-structured manner (Kvale, 2007), either face-to-face (21 interviews) or via Skype (2 interviews), and each lasted between one and one and a half hours. All interviews were audio-recorded and transcribed verbatim. In these interviews, the participants were asked to elaborate upon how they perceive their role and how their role has developed over time. They were also asked to describe their own day-to-day work, including both typical tasks and more challenging conditions. Topics included what they perceived as the most engaging, challenging, and least interesting aspects of their work. Participants were also asked to provide examples of situations from their daily work and to elaborate on what they did in those situations. This approach yielded rich insights into perceptions of sustainability professionals' personal experiences and everyday work.

Table 4. *Background information of interview participants in Study 3*

No.	Role	Education	Work experience	Type of organization
1	Environmental consultant	Industrial ecology	3 years	Construction engineering consultancy
2	Sustainability manager	Political science	12 years	Property developer/ Construction client
3	Sustainability consultant	Civil engineering	9 years	Construction engineering consultancy
4	Sustainability manager and project leader	Civil engineering	6 years	Construction engineering consultancy
5	Project leader	Environmental science	13 years	Construction engineering consultancy
6	Environmental accountant	Macroeconomics	19 years	Construction engineering consultancy
7	Environmental consultant	Industrial ecology	5 years	Construction engineering consultancy
8	Sustainability manager	Civil engineering	4 years	Contractor
9	Sustainability manager	Environmental law	20 years	Contractor
10	Strategic sustainability advisor	Civil engineering	12 years	Architecture
11	Environmental manager	Civil engineering	15 years	Property developer/ Construction client
12	Sustainability strategist	Civil engineering	25 years	Architecture
13	Sustainability manager	Civil engineering	9 years	Contractor
14	Quality, environment, health & safety manager	HVAC engineering	10 years	Contractor
15	Environmental specialist	Civil engineering	19 years	Architecture
16	Environmental coordinator	Civil engineering	9 years	Construction engineering consultancy
17	Sustainability manager	Environmental science	12 years	Property developer/ Construction client
18	Environmental coordinator	Industrial ecology	1 years	Contractor
19	Sustainability expert	Civil engineering	30 years	Construction engineering consultancy
20	Sustainability manager	Civil engineering	11 years	Property developer/ Construction client
21	Environmental coordinator	Environmental coordinator (Vocational diploma)	3 years	Construction engineering consultancy
22	Quality, environment, health & safety manager	Geology	15 years	Contractor
23	Sustainability manager	Environmental science	15 years	Property developer/ Construction client

4.4.3 Case study

To gain a deeper understanding of the everyday work of sustainability professionals in projects, I conducted a case study within an environmentally ambitious infrastructure project. In this case, data was collected through 80 hours of empirical field observations based on shadowing an environmental manager, 20 semi-structured interviews with 18 project participants, a review of project-specific documents, and a workshop.

The study was conducted within a large-scale and complex infrastructure project in a densely populated Swedish city. The construction phase of the £300-million project began in 2018 and is scheduled for completion in 2025. It involves both bridge and railway construction. The project's environmental requirements were subject to a decision by the environmental court, and project participants described it as a project operating under strict environmental demands.

To manage environmental issues, the contractor had an assigned environmental management team within the project organization. The team was responsible for monitoring environmental compliance and escalating issues when necessary. The team included two environmental managers, who worked proactively with overarching environmental management, such as developing procedures and training programs, updating key environmental plans, and communicating with the client on environmental matters. Two environmental coordinators who worked at an operational level, supporting production professionals, monitoring compliance, and reporting to the environmental managers.

The construction client had a full-time environmental specialist assigned to the project, responsible for auditing the contractor's activities, reviewing environmental documentation, and reporting to the authorities. The client's environmental specialist and the contractor's environmental managers collaborated closely, maintaining regular contact and conducting joint site inspections.

The case was selected primarily based on convenience but was deemed relevant because it offered the opportunity to shadow an environmental manager working full-time in an infrastructure project with high environmental demands. How this choice of case may have influenced the findings is discussed later in the section on reflections (in Chapter 4.9). For a more detailed description of the case, see appended Papers IV-V.

Observations through shadowing

Shadowing is a suitable method for studying situated practices and interprofessional interactions as they occur in everyday work (Czarniawska, 2007), and it has been described as a promising method for exploring practice-oriented concepts such as boundary work (Langley et al., 2019). In total, I conducted 16 days of shadowing the same environmental manager across four periods between October 2021 and August 2023, amounting to approximately 80 hours of observation.

The environmental manager was identified with the help of a contractor participating in the research project, who assisted in finding a suitable participant. She was selected because she worked full time as an environmental manager on a large infrastructure project and was involved both with the construction client and with production professionals. This made her role particularly relevant for studying the environmental manager role and work in relation to other roles and practices. Her work intersected with several other professionals, such as the client representative and site managers. Shadowing this manager therefore enabled an understanding of the environmental manager role and responsibilities in relation to other roles in the infrastructure project, all of which are affected by increasing environmental requirements and follow-up demands in infrastructure construction projects.

The shadowing took place in a variety of settings, including the office, construction sites, and online meetings, and covered a broad range of activities such as meetings, informal interactions, computer-based work, site inspections, handling environmental deviations, a chemical audit, water sampling, and the development of environmental training. Table 5 provides an overview of the observation periods, their duration, and the main activities observed.

Table 5. *Overview of on-site shadowing sessions*

Period	Number of days	Total hours	Activities observed
October 2021	6	40	Meetings and informal interactions; computer work; environmental site inspection; handling environmental deviations; chemical audit; development of environmental training
May 2023	3	12	Meetings and informal interactions; computer work; handling environmental deviations
June 2023	5	20	Meetings and informal interactions; computer work; environmental site inspections; handling environmental deviations; water sampling
August 2023	2	8	Meetings and informal interactions; computer work; environmental site inspection

To complement the observations, I held short conversations with the environmental manager throughout the observation sessions and at the end of each day. These conversations helped clarify what was happening, deepen my understanding of the reasoning and meaning behind certain actions, and avoid misinterpreting routines, relationships, or events. They also contributed to building trust and maintaining an ethically transparent research relationship.

My role during the observations was to shadow the environmental manager in her daily work, which meant following her around as she carried out her tasks. In the office, I sat next to her desk, from where I could observe what she was reading, writing, or otherwise working on. Outside the office, I accompanied her as she moved around, and during meetings I sat beside her. I sought to keep a low profile and not disturb the field, and I did not actively participate in the activities taking place. My primary task was to translate what I observed and heard into written notes, including not only visual impressions but also auditory, spatial, social, atmospheric, and contextual aspects. To do so, I used an observation schedule to structure my observations (see Table 6) and a set of symbols to organize my notes and facilitate later stages of analysis (see Table 7).

Table 6. *Observation schedule*

Observation focus	Explanation
What happens	What is the environmental manager doing? (e.g., reviewing documents, writing reports, checking lists, attending meetings, conducting inspections, answering questions, discussing problems, etc.)
When it happens	At what time and for how long (e.g., noting start and end times)
Where it happens	At what location (e.g., in the office, corridor, break room, construction site, or meeting room)
By/with whom	Who is involved in the interaction?
How it happens	How are they interacting? (e.g., spoken or written, joking or serious, tone, facial expressions, body language)
Why it happens	Based on informal interviews with the people involved

In practice, I took notes in three steps. First, I wrote shorter notes during the observations in a field diary (a paper notebook), leaving space between entries so that I could return to them later. Second, I elaborated on these notes at the nearest possible moment when there was less activity. For example, I sometimes took a short break to expand on what I had written while it was still fresh in my memory, prioritizing more detailed notes over being constantly present (Aspers, 2007). Third, after each observation day, I elaborated the field notes from my diary into a more detailed account in Word, where I included as much as I could recall from the day. Because this was time-consuming, I sometimes recorded myself retelling the day, which I later transcribed. I also took photographs to support my observations.

Table 7. *Symbols used in field notes*

Symbols	Usage
“ ”	Verbatim quotation
‘ ‘	Paraphrase (not word-for-word)
( )	Parentheses with my own annotations
< >	First order constructs (codes)
/ /	Second order constructs (themes)
{ }	My own comments (e.g., if I said something during fieldwork, such as asking questions)

Interviews with project participants

Interviews were conducted as part of the case study to complement the observations and to understand why certain practices and interactions occurred. I conducted semi-structured interviews (Kvale, 2007) with 18 project participants, most of whom were part of the environmental management team or production management. The client’s environmental specialist was also interviewed. See Table 9 for an overview of the participants.

The interview participants were selected because their work and responsibilities were interrelated with those of the shadowed environmental manager and the environmental management team. In total, 21 individuals were invited to participate, of whom 18 agreed to be interviewed. The interviews were conducted face-to-face and lasted between 45 minutes and one and a half hours each. All interviews were audio-recorded and transcribed verbatim.

In the interviews, the participants were asked about their role and daily work, and how they perceived environmental work in the infrastructure project. Topics included their main challenges, the most enjoyable aspects of their work, and the least interesting aspects. They were also asked to draw the project organization as they perceived it, explain how they thought environmental work was organized, and reflect on collaboration around environmental issues. During the interviews, participants were also probed for concrete examples of situations that illustrated their reflections and experiences.

Table 8. *Interview participants in Study 4*

No.	Roles in project	Actors	Interview occasions	Time and duration of interviews
1	Environmental manager (shadowed)	Contractor	3	70 min, Sep 2021 2x60 min, Nov 2023
2	Environmental specialist	Contractor	1	75 min, Sep 2021
3	Staff manager	Contractor	1	50 min, Nov 2023
4	Project manager	Contractor	1	80 min, Nov 2023
5	Production manager	Contractor	1	45 min, Nov 2023
6	Environmental coordinator	Contractor	1	50 min, Nov 2023
7	Environmental coordinator	Contractor	1	70 min, Nov 2023
8	Environmental manager	Contractor	1	50 min, Nov 2023
9	Environmental coordinator	Contractor	1	55 min, Nov 2023
10	Block manager	Contractor	1	65 min, Dec 2023
11	Block manager	Contractor	1	45 min, Dec 2023
12	Environmental specialist	Client	1	75 min, Dec 2023
13	Site manager	Contractor	1	65 min, Dec 2023
14	Quality coordinator	Contractor	1	45 min, Dec 2023
15	Health and Safety manager	Contractor	1	90 min, Dec 2023
16	Site manager	Contractor	1	90 min, Dec 2023
17	Environmental specialist	Client	1	130 min, Dec 2023
18	Site manager	Contractor	1	70 min, Dec 2023

Note: Interviewees 2, 9, and 12 provide support in demand; the others work full time in the project. Interviewees 1, 6, 7, and 8 formed the environmental management team.

Project documents

A document review was carried out to gain contextual and organizational insights into the infrastructure project. The reviewed materials included both internal project documents and publicly available information. Internal project documents were accessed and reviewed on-site during fieldwork but were not collected as data. In reviewing the documents, I took detailed notes. These documents included the Environmental Control Plan, Environmental Procedures, Environmental Training materials, Environmental Tertiary Report, Material lists, Non-Conformities, Environmental Plan, and Work Preparations and organizational charts.

To complement, publicly available project-related information was reviewed from the client's and contractor's official websites and recorded into a filed diary. The document study served to contextualize field observations, triangulate data gathered through other methods and provide background on environmental management and organizational processes within the project.

Workshop

To corroborate preliminary findings and collect additional data, I conducted a workshop in April 2024 together with two other researchers (my supervisory team), the shadowed

environmental manager, one environmental coordinator, the staff manager, and the contract manager from the project.

The workshop lasted for three hours and was divided into two parts. The first part (60 minutes) focused on preliminary findings from my case study. This session provided an opportunity for the invited project participants to respond to and provide feedback on. My role in this part was to facilitate the discussion, while my supervisors took notes. In the second part of the workshop (120 minutes), the group was asked to discuss the topic of environmental responsibility and collaboration around environmental work in construction projects, with a focus on expectations and tensions related to the environmental manager/coordinator role. The discussion questions were as follows:

- What makes the role important?
- In what areas does the role need improvement?
- How can the role be developed in the future?

Participants were first given five minutes to reflect individually and write down their thoughts on post-it notes. This was followed by an open group discussion. The post-it notes were also collected afterwards and recorded. The workshop discussions were not audio-recorded but were documented through detailed note-taking by the research team.

4.5 Secondary data

To understand the context in which sustainability professionals work, secondary data were continuously collected throughout the thesis project. This included reviewing grey literature, such as trade reports, to trace the development of sustainability practices in the Swedish construction industry over time. This literature helped me contextualize the career stories shared by the environmental pioneers in the first interview study.

Secondary data were also gathered from various media sources: (1) daily news media covering environmental or sustainability issues or developments in the construction industry; (2) industry-specific newspapers (e.g., *Byggindustrin*); (3) sustainability-focused newspapers (e.g., *Aktuell Hållbarhet*); and (4) LinkedIn posts from professional groups such as Sustainability Professionals, Climate Change / ESG Professionals Group, and *Hållbarhetsgruppen* (Sustainability Group).

In addition, job advertisements on a career website targeting sustainability professionals (*Aktuell Hållbarhet*) were read twice a month between October 2018 and June 2020. These advertisements provided insights into how companies' expectations of sustainability roles were framed and reframed over time, which helped me anchoring my phenomenon in practice.

Insights from these various sources were primarily documented in a research diary, where I recorded reflections and observations over time. Particularly relevant articles or LinkedIn posts were occasionally saved in full for future reference. This ongoing engagement in the professional discourse supported the identification of potential interviewees, helped maintain the relevance and timeliness of the study, and contributed to the informal validation of my findings.

4.6 Empirical data analysis

The empirical data analysis was an iterative process that involved moving back and forth between data and theory in search of patterns across the data set. For a detailed description of the respective data analyses, see appended Papers II–V. In Paper II, the focus of the analysis was on how environmental managers have perceived changes to their roles and practices over time, and how they had led the development of sustainability practices. In Paper III, the analysis focused on how sustainability professionals perceived their work under different conditions and how they responded to those conditions. In Paper IV, the analysis focused on how environmental managers' work expectations were shaped by spatial and temporal perspectives within a construction project. In Paper V, the analysis focused on the day-to-day practices and interactions of an environmental manager within the construction project.

In general, the data analysis involved using thematic analysis, which is a fundamental method for qualitative analysis that can be used across a range of theoretical and epistemological approaches (Braun & Clarke, 2006). It is a flexible and useful research tool that can provide a rich and detailed, yet complex, account of data (ibid.). Thematic analysis is a method for identifying, analyzing, and reporting patterns (or themes) within data.

In line with the guidelines outlined by Braun and Clarke (2006), I first familiarized myself with the data. This process began already during data collection, as I wrote

memos about aspects I found interesting during interviews or while shadowing the environmental manager in the field. Familiarizing myself with the data continued as I transcribed interviews and checked the transcriptions against the original audio recordings. I also read and reread the entire data set in an active way, searching for possible patterns and noting down insights or ideas about how to code (sort) the data.

I began generating initial codes as I tried to organize the data into different groups. This was done inductively, as I sought to make sense of the material. In this step, I coded (or sorted) extracts of texts from the interview transcripts and field notes into different groups. Initially, this process was messy, and the same data extracts could be assigned to several codes. Once I felt satisfied with the initial coding, I began searching for overarching themes and sub-themes among the codes to make sense of how the extracted data within each theme cohered while remaining distinct from other themes. This was an iterative process in which I would code and re-code the data in the search for coherent patterns.

I also used theoretical lenses as tools to help organize, interpret, and conceptualize the data, which meant moving back and forth between the empirical material and theoretical concepts in an abductive manner (Van Maanen et al., 2007). Thereafter, I presented the findings in written form, often using narratives or vignettes to provide contextual details and rich, layered descriptions of the data, allowing others to assess the transferability of the findings to different contexts (Langley, 1999; Treharne & Riggs, 2015).

Although the description above might sound straightforward, the data analysis was in fact an intuitive and iterative process, with different steps unfolding simultaneously and informing one another. Identifying coherent and distinct themes was particularly challenging, since the work of sustainability professionals is an entangled phenomenon, with practices that overlap and intersect – sometimes without clear boundaries. The defining of themes also required considering both individual actors' agency and structural constraints, as their work depends on their roles, yet there are no roles without their work. Here, the theoretical concepts were particularly helpful as tools for organizing and interpreting the data. Moreover, the analysis benefited from ongoing discussions with supervisors and colleagues, whose perspectives helped refine interpretations, challenge assumptions, and strengthen the overall analytical rigor

4.7 Ethical considerations

In the research conducted for this thesis, all participants provided their informed consent to participate in the studies. During the interviews, participants were also asked for permission to record the interview, as well as to transcribe and use quotations in the papers and the thesis.

Consideration was given to the General Data Protection Regulation (GDPR) and the storage of data, which was handled systematically to ensure data privacy and participant anonymity. For example, interview transcripts and observational notes were stored separately from any personal information. Personal information deemed unnecessary for the purposes of the study was either not collected or removed. All data were stored securely and pseudonymized to further protect participants' identities. Only generic quotations have been used in the papers and in the thesis to ensure participants' anonymity. Quotes that could potentially identify a particular interviewee, such as detailed work-related information or highly personal expressions, have not been included in any of the texts.

In the editing of this kappa, Microsoft Copilot and ChatGPT were used to enhance clarity, coherence, and overall language quality. All ideas and content are entirely my own; the AI was used solely for language refinement, and I take full responsibility for the writing.

The following section discusses the measures taken to ensure the quality and trustworthiness of the research.

4.8 Research quality and trustworthiness

In qualitative research, the concept of trustworthiness has been proposed as a framework for ensuring research quality (Bryman & Bell, 2012). It encompasses four key criteria: credibility, transferability, dependability, and confirmability – originally developed by Lincoln and Guba (1985) and subsequently widely adopted in qualitative research since then.

Credibility refers to the extent to which the findings are believable and accurately reflect the participants' experiences and perspectives (Bryman & Bell, 2012). Because words have different meanings for different people, interviews are socially and

linguistically complex situations (Alvesson, 2003), and there is always a risk of misunderstandings and, in the long run, incorrect interpretations of the interviewees' experiences, feelings, and thoughts.

To minimize misunderstandings, the interviews were conducted in the interviewees' mother tongue, Swedish. Quotations have since been translated into English. Participants were asked to elaborate on and clarify the meanings of specific words or expressions, for example, by providing examples or describing situations that illustrated what they meant.

Similarly, after each observation session during the shadowing process, I conducted informal conversations with participants to hear their reflections on specific events and clarify my interpretations. Preliminary findings were also continuously discussed with my supervisor team and presented to a reference group, and I engaged in ongoing interaction with the field, for example, through participation in a network on climate leadership, which served as an additional forum for reflection and informal validation.

Transferability refers to the extent to which findings can be transferred to other social contexts (Bryman & Bell, 2012). In the work of this thesis, I have aimed to provide thick descriptions of the empirical context and data, for example through vignettes and narratives, to enable readers to assess the potential transferability of the findings to similar organizational or professional settings.

Dependability refers to the extent to which the research process is well documented and clearly described (Bryman & Bell, 2012). In qualitative research, this criterion corresponds to the concept of reliability in quantitative approaches, emphasizing transparency and consistency in the research process so that others can follow how interpretations were reached, rather than replication. Throughout this thesis, I have strived to carefully document the selection of data sources, data collection procedures, interview guides, and analytical steps to support this.

Confirmability refers to the extent to which the findings are grounded in the data and not shaped by researcher bias (Bryman & Bell, 2012). Reflexivity therefore becomes important, not only for minimizing researcher bias but also because reflections on field observations, impressions, intuitions can themselves be valuable and contribute to the development of interpretations (Flick, 2014).

In my case, I have worked with research diaries, in which I recorded thoughts, observations, and reflections throughout the research process. I have also used analytical memos, mind maps, and visual sketches to trace the development of interpretations. Moreover, regular discussions with my supervisors provided critical feedback and helped challenge assumptions, thereby supporting reflexive awareness and grounding interpretations in the data.

4.9 Reflections on my research process

The reflections below are intended to clarify the methodological conditions under which the findings were generated, in keeping with the interpretivist approach of this thesis. The qualitative, interpretivist approach adopted entails recognizing that the subjectivity of both the researcher and the participants is an integral part of the research process (Flick, 2014). My own interpretations of sustainability professionals' work have been shaped by my personal background, the theoretical lenses used, and the evolving nature of the research process.

I originally come from a natural science background in bioengineering, but I changed direction when it was time to choose my master's degree. Although I knew in my heart that I wanted to study sustainability, I took a year off and studied business administration, which was my first encounter with organizational theory, something I found both unfamiliar and intriguing. Thereafter, I returned to pursue a master's in Industrial Ecology. Before starting my doctoral studies, I worked for a year in the chemical industry. This meant that I initially had few preconceptions about what it means to work in the construction industry and how it operates. Over time, this understanding has gradually evolved. A strength of coming from outside the industry is that I was able to observe it with fresh eyes. At the same time, my background in Industrial Ecology enabled me to understand and communicate with sustainability professionals who work practically with these issues.

Interviews as a data collection method have been useful for capturing the perceptions of sustainability professionals on their role and work, but they are somewhat limited in what they can reveal about what people actually do in practice. To balance this, I asked for practical examples of situations during the interviews. Who I interviewed also influences what can be said. In my case, it is primarily the sustainability professionals'

own perspectives on their role and work that form the basis of my findings, along with the perspectives of the production team in the urban infrastructure project in Study 4.

In terms of Study 4, shadowing as a data collection method was well suited to capture what professionals actually do in practice and in context. However, it is important to consider how one's presence influences the field. I mitigated this by being transparent about who I was and why I was there, and by asking whether events were normal or out of the ordinary – for example, "Was this a normal meeting?" or "Is this how you usually talk to each other?" – as well as by taking notes when I suspected that people were acting differently because of my presence.

The shadowing was limited to one manager and one project, which makes the findings case-specific and influenced by the unique circumstances of this particular project. What was specific about this infrastructure project was the size and complexity of the project and the strict environmental requirements. The project itself was described by its participants as a special and ambitious one, where environmental issues were taken very seriously. Environmental requirements were followed up carefully, and the contractor had an unusually large team dedicated to environmental work, including two environmental managers and two environmental coordinators. This differs from more typical construction projects, where one person often combines quality, environment, and health and safety (QHSE) responsibilities, although in projects of a similar scale this is more common.

Lastly, the research process rarely unfolds exactly as planned. For me, this meant an unplanned interruption in my studies during the data collection for the case study, which explains the gap between the first and second periods of shadowing and between the initial and later interviews. However, when I returned to the project after the break, I noticed that my presence felt more natural and that the people around me were more relaxed, which is beneficial when observing actual practices. Reflecting back, I could have made better use of the temporal gap between fieldwork periods – for example, by focusing more explicitly on changes in the interrelationships between roles. Although I noticed such changes anyway, I did not explicitly investigate them. In sum, these reflections are important for understanding how the findings came to be. The next chapter provides a summary of the appended papers and shows how the findings are presented in each study.

5 SUMMARY OF PAPERS

5.1 Paper I: Reviewing the role of sustainability professionals in construction

Purpose: To support the formulation of research questions for my studies, the aim of Paper I was to explore what was known in the body of literature on sustainability professionals in the construction industry.

Method: A systematic literature review was conducted using the databases *Scopus* and *Web of Science*, using the keywords (sustainability OR environmental) AND professional* AND organization* AND roles AND (construction industry" OR "AEC industry). The literature search returned 1,012 journal papers published between January 2000 and October 2018. Of these journal papers, 88 papers were selected for closer examination and were read completely, whereof 22 papers were selected for inclusion in the focused review because of their relevance to the topic of sustainability professionals in the construction industry.

Findings: The findings indicate that while research on sustainability professionals within the construction industry is emerging, it still remains limited in terms of in-depth studies on what these professionals actually do. Most studies focused on environmental assessment tools or sustainable project management, acknowledging that sustainability professionals play an important role in implementation but offering little detail on *how* they do so. Some studies described sustainability professionals as key actors in sustainable construction projects – often referred to as "green consultants", "LEED consultants", or "environmental auditors" – but portrayed their roles in vague terms, often lacking clear articulation of their specific contributions. With few exceptions, the review shows that the literature tends to treat sustainability professionals as relatively hidden and underexplored actors within the industry, either by not mentioning them or by not giving their roles sufficient analytical attention. In particular, there is a lack of in-depth studies examining sustainability professionals' roles.

Conclusions: Based on the identified gaps, the paper concludes that further research is needed to better understand the roles of sustainability professionals. In particular, it

suggests a need to explore professionalization processes as mechanisms of institutionalization towards enhanced sustainability within the construction industry.

Contributions: This paper contributes with a systematic review of the literature on sustainability professionals in the construction industry. For the thesis, Paper I provides a state-of-the-art overview of the literature available at the outset of the research project. It served as a foundation for the thesis by highlighting the need to explore sustainability professionals' roles and what they actually do, especially if sustainability is to be achieved in practice. The paper also informed the design of Study 2, which explored the professionalization process of sustainability work in the Swedish construction industry from the perspective of environmental pioneers.

5.2 Paper II: Taking lead for sustainability: Environmental managers as institutional entrepreneurs

Purpose: Paper II aims to explore how the sustainability profession has developed, by identifying critical events that have affected the practices of sustainability professionals when leading sustainability work in the continuously changing sustainability field.

Method: This was done based on semi-structured interviews with eight pioneering environmental managers who have extensive experience introducing new sustainability practices in the Swedish construction industry since the mid-1990s. Their career stories were analyzed and interpreted through the theoretical lens of institutional entrepreneurship, and a literature and document study was conducted to contextualize the development of sustainability practices in the construction industry, as presented in Swedish research reports.

Findings: The findings illustrate a professionalization process in six episodes, in which both the focus of environmental managers' work and the expectations on their role shifted over time. From starting with a critical event, the Halland's ridge accident in 1997, which became an enabling condition for the start of a new professional role, later changes such as the introduction of different assessment instruments, the reintroduction of an energy dialogue, social sustainability and sustainability reporting, and climate change and Agenda 2030 have all influenced how these professionals work with sustainability.

Conclusion: A conclusion from the paper is that environmental managers continuously engage in institutional entrepreneurship to create and establish sustainability practice through interorganizational mobilization, finding internal ambassadors, creating organizational structures, changing position within and between organizations, and seizing opportunities for going beyond environmental compliance requirements. Yet temporary selective discourses in society and reorganizations that disrupted established networks were found to be critical disabling events that led to a contested and or temporarily "lost" agency to act for change.

Contributions: This paper provides insights into how critical events, both enabling and disabling conditions, shape how these professionals engage in institutional entrepreneurship. It also shows that individuals and professionals at the micro level can engage in field-level organizational change. Specifically, it demonstrates how environmental managers can act as institutional entrepreneurs in introducing sustainability practices into the construction industry.

In the context of this thesis, Paper II contributes by showing that the work and agency of sustainability professionals are closely connected to a shifting sustainability agenda, which requires a flexible approach to sustainability challenges. The paper further shows that as the scope of sustainability has grown, the work has become increasingly complex to manage. This raises questions about how sustainability professionals navigate and maintain agency within the institutional complexity of sustainability in their everyday work, which became the focus of Paper III.

5.3 Paper III: The influence of multiple logics on the work of sustainability professionals

Purpose: The aim of Paper III is to investigate the intrinsic influence of multiple institutional logics on the work and agency of sustainability professionals.

Method: The paper draws on semi-structured interviews with 31 sustainability professionals from various parts of the industry and with various experiences of working with sustainable development. Their experiences of working with sustainable development were analyzed through the theoretical lens of institutional logics.

Findings: The findings show that sustainability professionals perceive their everyday work as a mix of three types of work, each of which describes how they cope with different conditions in which multiple logics coexist.

In *thankless work*, the primary logics that play out are project and governance logics. The primary mission in this sort of work is to inform and control. Here, sustainability professionals detect ignorance and compensate for lack of compliance, aligning sustainability work with situated project management, attending to immediate needs, handling a "miscellaneous bin" of tasks, and continually reminding others of their responsibilities. To maintain agency in these situations, sustainability professionals negotiate and create the meaning of missions, adapt sustainability work to a project logic to make it tangible, act in symbolic roles as proxies for sustainability work, and channel authority via regulations, certification schemes, and clients' demands. Altogether, this work is described by sustainability professionals as a continuous fight.

In *rewarding collaborative work*, the primary logics that play out are project and sustainability logics. In these situations, sustainability professionals find counterparts, often in construction projects, with whom they can create joint goals for sustainability and construction work. The primary mission in this work is to communicate and collaborate on how to manage the complexity of sustainable construction by developing the work beyond clients' demands in individual projects. Here, sustainability professionals participate in decision-making processes, manage different temporal perspectives and topics in flux, interweave sustainability and project practices, set shared sub-goals, solve problems, and make sustainability relevant for multiple actors. To maintain agency in such situations, sustainability professionals gain legitimacy based on highly valued expertise, influence decisions, collaborate on shared problems, pursue joint ambitions, enhance project performance to achieve project success, and alternate between generalist and expert roles.

In *visionary work*, the primary logics that play out are corporate and sustainability logics. The primary mission in this work is to set the agenda and justify future actions. In this type of work, sustainability professionals set the agenda for sustainability, identify mechanisms for transition, increase the relevance of sustainability issues, support transitions to long-term sustainability, solve industrial challenges, set and implement goals, act proactively, forecast future conditions, and constantly aim for change. They maintain agency by ensuring that environmental sustainability is always

topical, taking ownership and acting as the “project leader of sustainability,” using diverse sources of accountability and credibility to sustain legitimacy, and capturing the overall picture and challenges of sustainability as a driver for creating business value.

Conclusions: Taken together, these three forms of work illustrate how sustainability professionals do not merely respond to coexisting institutional logics but actively combine and integrate them in practice. One conclusion made from the findings is that sustainability professionals continuously combine and integrate logics in order to satisfy multiple institutional expectations. In doing so, they create situated hybrid logics that are flexible and dynamic enough to adapt to different situations, whether they call for hands-on project support or long-term corporate strategic work.

Contributions: This paper contributes to the emerging research on sustainability professionals' work in the construction industry by showing how such professionals cope with institutional contexts defined by multiple, coexisting logics, as exemplified in sustainable construction. By describing the role of sustainability professionals as navigators of multiple institutional logics, the paper extends earlier work by demonstrating how they must reconcile and combine conflicting practices in order to maintain agency and move sustainability work forward.

For the thesis, Paper III explains the complexity involved in managing the vastness and ambiguity of sustainability and shows how this requires individuals to remain flexible and sensitive to multiple logics in their immediate work context. It underscores that the role of sustainability professionals is situational and depends on the people with whom they interact. These insights raise questions about boundaries between professional roles and tasks in sustainability work, which informed the design of the next study (Study 4) and Papers IV and V, where the day-to-day work of sustainability professionals is investigated in relation to the work and roles of other professionals.

5.4 Paper IV: Supportive hero and troublemaker? Diverging environmental work expectations in construction

Purpose: Given that sustainability and environmental requirements in infrastructure projects are likely to increase, and that clarity around responsibilities, practices, and roles is essential for delivering projects accordingly, this research aims to explore why

environmental managers/coordinators often have difficulties performing their work in relation to other professionals in projects with high environmental ambitions.

Method: The paper draws on Study 4, a case study of a large-scale infrastructure project in Sweden, characterized by high environmental demands, complex construction processes, and a dense urban setting. The data collection is based on 20 semi-structured interviews and 80 hours of field observations from shadowing an environmental manager in the contractor's environmental team.

Findings: The paper identifies spatial and temporal tensions that environmental managers and coordinators must navigate in their work. Here, "tension" refers to contrasting activities and meanings that different project actors invest in the practices of space and time. In this context, space refers to the physical space – specifically the construction site and its spatial boundaries – while time concerns temporal dimensions, that is, the pacing of activities. These tensions, in turn, contribute to diverging expectations regarding the environmental work that environmental managers and coordinators are expected to perform.

First, spatial tensions arise from contrasting ways of using the construction site: the client treats space as regulated through controlling activities, whereas the contractor treats space as immediate, temporary, and a flexible resource for production – prioritizing progress over order. Second, temporal tensions arise from contrasting ways of pacing activities: from the client's perspective, environmental requirements dictate the pace of production activities, while the contractor paces production through continuous rescheduling.

For environmental managers and coordinators, whose work overlaps with both production and the client, this means being caught in the middle – trying to satisfy both the client's regulatory expectations and the contractor's need for adapting the construction process.

Conclusions: One conclusion of the paper is that environmental managers and coordinators are working between contrasting spatial and temporal perspectives: one that values flexibility and immediate responsiveness, and another that demands foresight, planning, and control. Navigating these expectations requires both technical competence and relational sensitivity and strategic timing.

Contributions: Paper IV contributes to research on sustainability professionals' work in construction by showing how contrasting spatial and temporal perspectives between the contractor and the client organization give rise to diverging expectations on environmental managers and coordinators' work.

For the thesis, Paper IV contributes by demonstrating how environmental managers and coordinators end up in a role where they act as a bridge between the client and the contractor. While this bridging helps sustain environmental management, it may lead to role conflict for the professionals holding these roles. They perceive themselves as both "the supportive hero who clears the way and lays the groundwork so we can build" and "the troublemaker who throws a wrench in the works for our colleagues".

5.5 Paper V: Thriving through? Exploring the configurational boundary work of environmental managers

Purpose: The aim of Paper V is to investigate environmental managers' configurational boundary work and how it influences their role and agency.

Method: This was done based on a case study of a large-scale urban infrastructure project. Data were collected through 80 hours of empirical field observations while shadowing an environmental manager, 20 semi-structured interviews, and an analysis of project-specific documents. The environmental manager's daily interactions with other project participants were analyzed through the theoretical lens of configurational boundary work and interpreted in relation to the interview material.

Findings: By studying the interactions between the environmental management team, the production team, and the client representative, our findings suggest that sustainability professionals reshape the boundary landscape to create and mobilize for effective environmental management by arranging, buffering or coalescing boundaries. For example, they *arrange the boundaries* of others by temporarily positioning themselves outside the production team, as seen when they instruct others on what to do, return tasks, or refuse to perform work that belongs to others. In other situations, sustainability professionals take on tasks that fall outside their formal responsibilities, such as managing documentation for the production team or even cleaning up after them on site, as seen when *buffering boundaries*. In yet other situations, they gain openings

where they are *coalescing boundaries* by working alongside the production team, jointly addressing environmental issues as they arise.

Conclusions: A conclusion is that through configurational boundary work, the environmental manager role is continuously reshaped, which in turn creates unclear boundaries, role ambiguity, and an uncertainty about who is responsible for doing what. The ambiguity in turn, may hinder the enactment of environmental work in the temporary organization and the work of environmental managers becomes reactive.

Contributions: Paper V advances previous understanding of the consequences of role ambiguity by showing how sustainability professionals employ different forms of configurational boundary work to ensure that environmental work is enacted and sustained in a temporary organizational setting. For practice, the study offers an enhanced understanding of inter-professional collaboration, aiding professionals working in multi-boundary environments and those responsible for managing boundary activities.

To the thesis, Paper V contributes with an in-depth perspective on the work and agency of sustainability professionals within construction projects, particularly how they are maintaining agency in a landscape of ambiguous and changing responsibilities.

6 DISCUSSION

One of the conclusions reached in Paper I is that further theorizing is needed regarding the role of sustainability professionals, with particular emphasis on research at the intersection of professionalization and institutionalization. This thesis contributes to that need by developing an empirical and theoretical understanding that builds on practice – that is, what professionals do – as a way to understand the ongoing professionalization of sustainability by problematizing the role and work of sustainability professionals in the Swedish construction industry. Rather than viewing professionalization as a predefined or linear process with a fixed end, I conceptualize it as an ongoing accomplishment that is enacted in professionals' work practices. In their work practices, sustainability professionals contribute to defining and legitimizing their roles – work that, in turn, forms part of the broader institutionalization of sustainability within the construction industry.

6.1 Work strategies sustainability professionals employ to influence context

Paper II shows that, because of temporarily dominant sustainability discourses in society, sustainability professionals' ability to engage in institutional entrepreneurship (Maguire et al., 2004) has often revolved around "one issue at a time", meaning that the long-term agency of these professionals to act on certain environmental questions has been limited. From initially focusing on risk management related to chemicals and hazardous waste in the late 1990s, the environmental focus "in fashion" shifted to quality management and environmental management systems in the following years, where setting environmental goals became increasingly important for companies. Later, the focus shifted again toward energy efficiency which became the next "hot topic" in the early 2010s, followed by an emphasis on sustainability reporting and social sustainability in line with new legislation. Today, the focus is largely centered on climate change and the integration of the 17 Sustainable Development Goals. To "survive" when a new "sustainability fashion" sweeps across society, sustainability professionals seek to develop a more stable foundation for their work. To do this, they employ a number of work strategies, which are discussed in Papers II–V from various points of view.

One strategy is to mobilize allies across organizational boundaries and build internal alliances (Battilana, 2006). Sustainability professionals identify and mobilize internal ambassadors, including those in top management roles, line managers, site managers, and other construction professionals, as a means to facilitate implementation and legitimize sustainability practices. Prior research similarly highlights the decisive role of influential actors in helping to legitimize sustainability practices (e.g. Argento et al., 2019; Loos & Spraul, 2024). This becomes evident, for instance, in how sustainability professionals in the home organization develop guidelines to be followed in construction projects. However, for these guidelines to be put into practice, they need to build friendly relationships with production professionals who hold influence within each construction project.

When successful, this is perceived as rewarding collaborative work, as described in Paper III, where they jointly create goals for sustainability and construction work. In these situations, sustainability professionals gain legitimacy based on highly valued expertise and by contributing to improved project performance and overall project success. When this fails to happen, this is perceived as thankless work, where sustainability professionals have to try to channel authority through regulations, certification schemes, or clients' demands.

Sustainability professionals also collaborate with colleagues from competing firms to secure professional legitimacy and develop shared practices for sustainability management. Prior research highlights the importance of such cross-organizational collaboration, for example in diffusing new practices in sustainable procurement (Troje & Gluch, 2020) and influencing sustainability discourses more broadly (Mitra & Buzzanell, 2018; McDonald et al., 2020). Paper II shows that such cross-organizational collaboration is not only instrumental for disseminating practices and shaping discourses, but also for building networks that provide emotional support, guidance, and opportunities to collaboratively develop industry manuals and standards on how to handle various environmental issues. This indicates that the development of sustainability roles is not only an intra-organizational process but is also shaped through inter-organizational professional networks, complementing research that has primarily adopted an intra-organizational perspective. Moreover, this underscores the importance of sustainability professionals' having access to such networks.

A further strategy is to take control over how sustainability is organized by engaging in the creation of sustainability departments and specialist roles. In doing so, sustainability professionals establish structural conditions that later legitimize and reproduce their work. This aligns with research showing that dedicated sustainability departments are important for the collective and strategic dimensions of sustainability professionals' work (Thakhathi et al., 2019), for example by supporting the implementation of sustainability initiatives, facilitating the sharing of best practices, and enabling the dissemination of change across the company. As part of this organizing, sustainability professionals may also strategically reposition themselves by moving within or across organizations, for instance, by seeking new positions or resigning when they lack the organizational support needed to advance sustainability initiatives. Paper II demonstrates how such mobility can strengthen professionals' social position within formal hierarchies and informal networks (Battilana, 2006), underscoring their entrepreneurial agency (Maguire et al., 2004) in driving change.

Additionally, sustainability professionals mobilize resources and legitimize sustainability by drawing on global sustainability frameworks, such as Agenda 2030, and by linking sustainability to established practices like quality management. In line with Etzion and Ferraro (2010), such analogies help to normalize sustainability management by connecting it to familiar organizational practices. To accomplish this, sustainability professionals must span multiple disciplinary discourses, as acknowledge by (Rothenberg, 2007). This suggests that sustainability roles lack a single disciplinary "home"; unlike architects or engineers, they do not build their professional and organizational identity on one stable knowledge base but on the capacity to move between different disciplines. Doing so requires them to understand how others think, their assumptions and values, and to communicate sustainability in ways that make sense to them. This, in turn, makes sustainability professionals work complex to navigate and manage. The complexity is further intensified by the continually expanding sustainability agenda as described earlier (Borglund et al., 2023), and by ongoing changes within disciplines driven by technology, regulation, and client demands. As new issues are added, sustainability professionals must engage with new actors, and this constantly shifting network of people further increases the complexity and demands of sustainability work.

A similar relational complexity is evident in construction project environments, where each project brings together a new constellation of actors, client demands, and individuals who enter and exit the project over time to perform specialized work. This dynamic is further elaborated in Papers IV and V, which examine how sustainability professionals are working together with other project actors in a large infrastructure construction project. For example, sustainability professionals employ different forms of configurational boundary work to ensure that the client's environmental requirements are sustained in the temporary organization. In doing so, they are reshaping the boundaries within which environmental responsibilities are enacted. Findings, however, show that sustainability professionals are caught in the middle, as they attempt to satisfy both the client's regulatory expectations and the and the contractor's need for adapting environmental requirements to the construction process. Navigating these expectations, they rely on technical competence, but also relational sensitivity and strategic timing.

6.2 The context's influence on the role and work of sustainability professionals

Paper III investigates how sustainability professionals navigate contexts characterized by the coexistence of multiple institutional logics (Greenwood et al., 2011; Glynn & D'Aunno, 2023), exemplified by sustainable construction. Paper III demonstrates that these professionals actively combine and integrate institutional logics to address diverse institutional demands, that is, what is perceived as legitimate or appropriate ways of doing things (Thornton et al., 2012).

Anchored primarily in a governance logic, they define both the means and ends of long-term sustainable development to meet environmental and societal goals and develop new sustainability practices that are primarily informed by a sustainability logic. At the same time, they adapt these practices to align with project delivery requirements and broader corporate business models, thereby engaging with logics of project and corporate management.

While previous research has shown that sustainability professionals operate in multiple logics context (e.g., Dahlmann & Grosvold, 2017; Guix & Petry, 2024), Paper III extends this understanding by showing that sustainability professionals cultivate a capacity to shift and rebalance their work practices depending on which institutional logics are most salient within a given context. For example, in some situations, they act

as specialists anchored in deep sustainability expertise, while in others they adopt a generalist orientation, drawing on a wide repertoire of skills to integrate sustainability into organizational and/or project contexts. This continual shifting between work practices gives rise to a hybrid professional identity, described here as that of "specialist-generalists", which corroborates emerging views of sustainability roles as hybrid (e.g., Carollo & Guerci, 2018; Guix & Petry, 2024). A consequence of this hybridity is that it risks leading to role fragmentation, making the role difficult to define.

A conclusion in Paper III, is that sustainability professionals create situated hybrid logics that are flexible and dynamic enough to adapt to different situations, from hands-on problem-solving in projects to more future-oriented strategic development. This also means that sustainability professionals must learn how to shift between different institutional logics on a continual basis instead of transitionally. Unlike prior research that characterizes sustainability professionals' logic shifts as transitional in change processes (Dahlmann & Grosvold, 2017), this study demonstrates how they continuously rebalance multiple logics on a day-to-day basis. This in turn leads to the role becoming fluid, with shifting boundaries, and a possible consequence of this is that different people will hold different expectations about the work that sustainability professionals should perform.

Paper IV investigates this further by examining the tensions that shape sustainability professionals' work expectations in relation to production and the client in an infrastructure project. In this case, diverging work expectations stemmed from contrasting spatial and temporal perspectives of environmental work between production and the client, which sustainability professionals had to reconcile, assuming a role similar to that of a broker (Bosch-Sijtsema and Henriksson, 2014). It also meant that sustainability professionals shifted between being present in day-to-day production and being more distanced and aligned with external, formal environmental requirements. This reinforces the view of the role as fluid, with shifting boundaries, which in turn may lead to ambiguity regarding what sustainability professionals actually do. This resonates with Boucher et al.'s (2018) investigation of how sustainability professionals' roles are perceived by others within organizations, which shows that sustainability professionals' roles in relation to other employees are often ambiguous, and that many employees tend to be unsure about what sustainability professionals actually do or where their responsibilities begin and end.

Paper V continues to examine how context influences the role and work of sustainability professionals by showing that sustainability professionals' practices in construction projects are fluid and situational. Complementing previous research that characterizes sustainability professionals as boundary spanners (e.g., Mitra & Buzzanell, 2018; Rothenberg, 2007; Wright & Nyberg, 2012), this paper conceptualizes their work as boundary work (Langley et al., 2019), thereby contributing to an understanding of how sustainability professionals actively work to shape and influence boundaries.

6.3 The reciprocal dynamic between sustainability professionals' roles and work and context

By studying the work between environmental professionals, production professionals, and a client representative, Paper V demonstrates how environmental professionals engage in arranging, buffering, or coalescing boundaries within environmental work. This boundary work allows them to shape the practices of other professionals, meaning that they enact change *through others* (Langley et al., 2019). For example, in arranging boundary work, sustainability professionals are shifting environmental responsibility to the production team and positioning themselves outside it while aligning with the client, environmental managers prompt production management to assume ownership of environmental requirements. In doing so, they encourage production management to develop environmental practices and expand their boundaries of responsibility. In this configuration, the environmental manager's role becomes more advisory and supporting, which allows them to focus on oversight and strategic guidance rather than operational work. In other situations, sustainability professionals take over work from the production team to bridge the gap between the client's expectations for environmental work and the production team's practices; in doing so, they engage in buffering boundary work (Langley et al., 2019). In these cases, their work becomes reactive, positioning the environmental manager in a semi-production role focused on "cleaning up" or addressing unattended tasks.

This dynamic echoes previous findings that it is difficult to change institutionalized construction management practices (Gluch & Bosch-Sijtsema, 2016), as it risks reinforcing environmental management roles as proxies for environmental work rather than as drivers of change. In yet other situations, sustainability professionals work alongside the production team to jointly address environmental issues as they arise,

engaging in coalescing boundary work (Langley et al., 2019). In these situations, environmental managers temporarily step into the construction workflow, not to take over production tasks, but to collaborate in resolving the issue and shaping the environmental solution together. As environmental and production practices are combined, the environmental manager becomes more embedded within the project team, strengthening their position and increasing their influence – not through formal authority, but through participation in shared decision-making and problem-solving.

Paper V advances understanding of the consequences of role ambiguity previously identified by Boucher et al. (2018) by showing how sustainability professionals employ different forms of configurational boundary work to ensure that environmental work is sustained in construction projects. While arranging boundaries can clarify roles and responsibilities in environmental work, buffering boundaries may blur these same boundaries by temporarily taking over others' tasks, thereby risking the persistence of role ambiguity for sustainability professionals in relation to other project actors. This suggests that the ongoing professionalization of sustainability roles is not merely a matter of defining responsibilities and spanning boundaries (Mitra & Buzzanell, 2018; Rothenberg, 2007; Wright & Nyberg, 2012), but also of reshaping the boundaries between practices within which those responsibilities are enacted.

7 CONCLUSION AND FUTURE RESEARCH

This thesis set out to understand the ongoing professionalization of sustainability by problematizing the role and work of sustainability professionals in the Swedish construction industry. By applying a practice perspective and investigating what sustainability professionals do in their day-to-day work, the thesis contributes to current research and practice to the empirical fields of sustainability and construction management as well as organizational studies with new knowledge about what sustainability professionals do, how they do it, and how their roles evolve through everyday work and interactions.

Although sustainability professionals contribute to institutional change, they are also constrained by the institution they are part of (Battilana & D'Aunno, 2009). This is evident in how their agency is closely connected to the sustainability discourses that are "in fashion", which are temporary and unilateral in focus. As a consequence, change tends to revolve around "one issue at a time", affecting sustainability professionals' agency in two ways: on the one hand, a strong discursive focus can help initiate institutional change by allowing them to leverage momentum around a dominant sustainability issue; on the other hand, it generates frustration when their ability to act is challenged or temporarily "lost" due to a unilateral discourse that prioritizes one issue over others.

As a result, the role becomes structurally fragile: mandates, priorities, and sources of influence are repeatedly redefined in response to discursive cycles rather than consolidated through the profession itself. When sustainability work is intertwined with evolving discourses, the development of the role becomes co-evolving rather than cumulative. For example, the role of implementing environmental management systems is different from working with energy efficiency, which in turn differs from working with sustainability reporting. This dynamic may also help explain why sustainability professionals experience jurisdictional drift (Augustine, 2021), as they must repeatedly redefine what their work entails, what counts as expertise, and on what basis they claim legitimacy.

Another conclusion is that sustainability professionals continuously combine and integrate institutional logics on a day-to-day basis in order to satisfy multiple

institutional expectations. The continuous shifting between different work practices gives rise to a hybrid role identity. Consequently, sustainability roles become fluid, which makes them difficult to define with blurred boundaries as a result.

However, sustainability is not a one-person job; it requires collaboration, the development of new practices, and that everyone involved takes responsibility for doing their part. This thesis shows how this is not easy, especially in situations where it is unclear who is responsible for what. In these situations, the sustainability professionals take on significant responsibility by trying to create clarity. In this thesis, this is demonstrated through their boundary work, aimed at influencing the boundaries between different groups' practices. However, in doing this work, sustainability professionals are also continuously reshaping their own role, which risks reinforcing a lack of clarity regarding what sustainability professionals actually do, and should do, within the company or construction project. In turn, this further contributes to the fragmented and continually evolving nature of sustainability roles, and risks establishing roles that are not sustainable over time.

To make sustainability roles more sustainable, this thesis also urges that both time and organizational support must be allocated for the development of sustainability roles and their work practices. This entails clarifying expectations and ensuring that these professionals have the proper mandate to do their job. If sustainability professionals are dependent on the willingness and "kindness" of others to perform their mission, there will always be a risk that sustainability work will be deprioritized.

Although this thesis has contributed to knowledge about what sustainability professionals do, it has not explicitly examined questions of leadership. Since the work of sustainability professionals depends a lot on getting others on board, their specific role as leaders and how they enact leadership skills and traits within organizations could be an interesting area for future investigation.

Another area that warrants further investigation concerns career pathways and how these pathways reciprocally shape the power and status of sustainability roles. To explore this, future scholars first need to examine whether clear career trajectories exist and, if so, what they look like – and if not, why they are absent.

Questions of career pathways also relate to the role of higher education. Although research exists on how to design sustainability education and specific degree programs or courses, there still appears to be a discrepancy between what graduating students expect to work with and what they actually do once employed. Future research could therefore further investigate this discrepancy, both from the perspective of students and from that of companies.

A further research direction concerns the identity work of sustainability professionals. As the workforce becomes more sustainability-oriented, what will this mean for sustainability professionals' identity and distinctiveness? Who will they become when "everyone" is expected to work with sustainability? While identity work has only been briefly touched upon in this thesis, it is central for continuing to understand sustainability roles in the making; which is why this represents a fruitful avenue for future research, particularly since a fragmented identity may contribute to unnecessary and unsustainable work-related stress. Future studies could also explore sustainability professionals' psychosocial health and work environment.

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Paper I

Reviewing the Role of Sustainability Professionals in Construction

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Abstract

Purpose – This paper aims to explore what is known in the body of literature on sustainability professionals in the architecture, engineering and construction (AEC) industry to support the formulation of research questions for future studies.

Design/Methodology/Approach – This was done through a systematic literature review in Scopus and Web of Science. In the literature search, 22 journal papers were selected to be included in the review because of their relevance to sustainability professionals, professional roles and environmental practices in the AEC industry.

Findings – Key characteristics of the papers such as methodology and theory are mapped, followed by main findings on how the sustainability profession and sustainability professionals' roles are studied within the body of literature. The review shows that the topic of sustainability professionals in the AEC industry is currently under-researched and under-theorised. Specifically, there is a lack of in-depth studies on sustainability professionals' roles and agency.

Research Limitations/Implications – By providing an overview of the current literature on sustainability professionals in the AEC industry, it is possible to identify research gaps to formulate research questions for future studies.

Practical Implications – This is important as collaboration between professions, including sustainability professionals, is believed to be the key for a successful shift towards sustainability; furthering the understanding of sustainability professionals' role is, therefore, central.

Originality/Value – This paper is the first systematic literature review on sustainability professionals in the AEC industry.

Keywords Professionalization, Sustainability professionals, Experts, Roles, AEC Industry, Literature review

All papers within this proceedings volume have been peer reviewed by the scientific committee of the 10th Nordic Conference on Construction Economics and Organization (CEO 2019).

1. Introduction

Increasing demand on sustainability has led to the emergence of sustainability professionals in the architecture, engineering and construction (AEC) industry who challenge traditional practices and ways of reasoning within the organisation (Hughes and Hughes, 2013). However,

Emerald Reach Proceedings Series
Vol. 2
pp. 393–399
Emerald Publishing Limited
2516-2853
DOI 10.1108/S2516-285320190000002021

even though sustainability professionals are receiving higher influence, organisational aspects such as unclear roles and different time-perspectives between construction projects and the line organisation complicate the work of sustainability professionals (Gluch, 2009, Gluch and Räisänen, 2012). This, in turn, leads to tensions between different professions such as environmental professionals and other built-environment professionals, e.g. site managers.

This gives rise to a dilemma as collaboration between professions including sustainability professionals is believed to be key for a successful shift towards sustainability (Jaradat *et al.*, 2013, Bresnen, 2013). The success of implementing the sustainability agenda is, thus, dependent on how sustainability professions are received and established within the project organisation as well as how traditional roles adapt to this change. Therefore, it is of interest to explore professional roles and professionalization of sustainability professionals in the AEC industry.

Today, there are several papers focusing on the implementation of environmental management systems, environmental assessment tools and project management practices (e.g. Campos *et al.*, 2016, Ortiz *et al.*, 2009, Ferenhof *et al.*, 2014). However, there is less focus on professionalization and professional roles, and currently, there is no systematic literature review on sustainability professionals in the AEC industry. To support the formulation of research questions for future studies, the aim of this study is therefore to explore what is known in the literature on sustainability professionals in the AEC industry.

This is done by reviewing the role of sustainability professionals in the body of literature. The paper is structured as follows; firstly, a brief overview of the concept of professionalization is presented; then, the literature search and selection of literature for the review is described, followed by main findings on how the sustainability profession and sustainability professionals' roles are studied within the body of literature, ending with some suggestions for future research questions.

2. Professionalization

In a study by Mieg (2009) on excellence and professionalism of environmental professionals, professionalism is related to the commitment in a profession and the support it holds by its professionals, for example, by the presence of professional roles, norms, standards and educational training. Therefore, professionalization in this study refers to how the sustainability profession is received and established within the organisation and the industry in terms of above-mentioned aspects. In this review, sustainability professionals (or environmental professionals) are people who, in their job description, work with environmental sustainability, i.e. environmental experts, specialists or sustainability managers.

3. Method

The review followed the process of a systematic review. The reason for applying a systematic approach is because it provides an overview of the body of literature in a non-biased way (Bryman and Bell, 2007).

3.1. Screening process

The following keywords were decided upon in Scopus; (sustainability OR environmental) AND professional* AND organization* AND roles AND ("construction industry" OR "AEC Industry"). This returned 1,012 articles published in journals from January 2000 up until October 2018. An initial screening of papers was done based on titles in combination with publishing journal. Papers that seemed to address professionalization, professional roles or environmental management in journals related to construction, management or sustainability were selected. In this case, the initial screening returned 100 articles. From

reading the abstracts of these articles, 57 papers were then selected. The same procedure was then applied in Web of Science, and after reviewing the abstracts and removing those already found in Scopus, three additional articles were added to the list of relevant papers. The reason for doing the literature search in Scopus and Web of Science was to obtain a cross section of the body of literature and to ensure articles of quality.

Two references (Gluch and Bosch-Sijtsema, 2016, Gluch and Räisänen, 2012) were found extra relevant because of their focus on environmental professionals and roles and, thus, used for further reviewing of references and citations for a more exhaustive search. This added 28 papers to the list of relevant papers. In the end, 88 papers were read and 22 papers were selected to be included in the focused literature review because of their relevance to sustainability professionals, professional roles and environmental practices in the AEC industry.

3.2. Analysis of literature

The review was synthesised into a database where each paper was mapped across five dimensions: 1. type of study (i.e. research paper, review paper, etc.), 2. focus of study (i.e. aim of study), 3. theory, 4. methodology (i.e. research strategy, research design and methods) and 5. main contribution. The data base then served as basis for further analysis.

4. Literature review

Key characteristics of the papers in terms of type of study, methodological approach (research strategy, research design and methods) and theories used are listed in Table 1. Some of the papers apply more than one method and are therefore listed more than once. In general, a qualitative approach is the most common research strategy and the most used research design is the case study design. However, some papers did not specify their research strategy or research design. In the review, papers using theories tend to have a qualitative approach, and they often apply data triangulation, i.e. combination of interviews, observations and document analysis (five papers). Other combinations of methods found in the review are literature review, interviews and questionnaires (two papers), interviews and questionnaires (two papers), interviews and document analysis (one paper) and literature review and questionnaires (one paper).

4.1. Sustainability professionals in the literature

Studies vary from briefly mentioning sustainability professionals to in-depth analysis of sustainability professionals' roles and identities. The majority of papers, however, mention

Type of study	Research paper (20)	Review paper (1)	Conceptual paper (1)	
Research strategy	Qualitative (12)	Quantitative (4)	Qualitative and quantitative (4)	Unspecified (2)
Research design	Case study (11)	Longitudinal (1)	Cross-sectional (1)	Unspecified (9)
Method	Interviews (16)	Surveys/ questionnaires (9)	Document analysis (6)	Field observations (5)
	Other (e.g. literature review) (5)			
Theory	Institutional theory (2)	Practice theory (2)	Activity theory (1)	Social interactionist theory (1)
	Sensemaking (1)	Social learning theory (1)	Systems theory (1)	Translation theory (1)

Table 1. Key Characteristics of Papers Included in the Review (N=22)

sustainability professionals very briefly. Instead focus is on improving environmental sustainability through the implementation of environmental tools or green managerial techniques. For example, there are several papers studying the adoption of sustainable construction management practices or LEED (i.e. Hwang and Ng, 2013, Hwang and Tan, 2012, Robichaud and Anantatmula, 2011, Senaratne and Hewamanage, 2015). In these papers, sustainability professionals are referred to as green consultants, LEED consultants or environmental auditors external to the project organisation. Their roles are viewed as necessary for "green" practice but not researched any further. Other papers focus on companies' sustainability strategies (de Paula *et al.*, 2017), or why some procedures are hard to change to more sustainable ones (Palm and Reindl, 2016). However, the role of sustainability professionals in this is not researched.

Then there are papers that focus on the adoption of "green" knowledge. For example, the social learning process of how to design green buildings (Hojem *et al.*, 2014), project managers' adoption of LEED (Kientzel and Kok, 2011) or how environmental assessment methods such as BREEAM influence construction professionals skills and knowledge (Schweber, 2013). However, these papers do not focus on sustainability professionals *per se*; instead, their focus is on built environment professionals in general and how they develop their professional role to improve their environmental knowledge and skills.

There are some papers that involve professionalization of the sustainability profession in terms of investigating the presence of environmental managers in top management, the recognition of environmental aspects as important issues within the organisation, the knowledge and application of environmental tools, and how environmental work is being valued (e.g. Gluch *et al.*, 2014, Rodriguez *et al.*, 2011, Wallhagen *et al.*, 2016). Other papers study the higher educational training of built professionals and sustainability. For example, how higher education programs may enhance the knowledge and the skills on sustainable development in the built environment (Korkmaz and Singh, 2012, Opoku and Egbu, 2018) and, thereby, increase the importance of the profession.

There are some studies that focus on building professionals as change agents towards sustainable development (Janda and Parag, 2013) or as institutional entrepreneurs (Klein Woolthuis *et al.*, 2013). Then, there are studies in which the role of sustainability professionals is more researched; even if main focus is on environmental management practices, environmental communication or leadership styles (Gluch and Räisänen, 2009, Gluch and Räisänen, 2012, Ludvig *et al.*, 2013, Opoku *et al.*, 2015). In these studies, sustainability professionals are present in both the empirical data and the analysis. Only a few papers study the role of sustainability professionals in-depth. The exceptions are Gluch (2009) and Gluch and Bosch-Sijtsema (2016), which, in contrast to other studies, explore environmental experts' roles, identities and agency in the context of their everyday work.

5. Conclusions

The review shows that research on sustainability professionals and the sustainability profession in the AEC industry is currently missing. Specifically, there is a lack of in-depth studies on sustainability professionals' roles and agency. There is also room for theorising the research, which is raised by other scholars as well. For example, Sunding and Ekholm (2015) who argue that construction research would benefit from more influences from the social sciences, Mogendorff (2016) who claims that a performative turn perspective is currently missing when researching expertise in the construction sector and Muzio *et al.* (2013) who argue that there is much to be gained from research in the intersection of professionalization and institutionalisation. Further, Bresnen (2017) points to the lack of

institutional theory and its subsets of theories in the construction management research when comparing to business research in general.

Because of this, it would be interesting to study sustainability professionals by exploring professionalization processes, professional roles and practices as mechanisms of institutionalisation towards enhanced sustainability. For example, to better understand how sustainability professionals influence the implementation of the sustainability agenda in terms of changing institutions, practices and norms. As a starting point, four research questions are suggested that may serve as basis for further development to be used in future studies.

(1) What is known in the body of literature on the sustainability profession and professionalization processes for sustainability in other industry segments?

(2) How are sustainability professions and sustainability professionals' roles framed, created, challenged and reformed as organisations are adapting to the sustainability agenda?

(3) What strategies, agency and practices do sustainability professionals employ for institutionalisation towards sustainability?

(4) How do other built environment professionals respond to the introduction of sustainability professionals?

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Paper II

sustainability

MDPI

Article

Taking Lead for Sustainability: Environmental Managers as Institutional Entrepreneurs

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Abstract: Over the past two decades, sustainability professionals have entered the architecture, engineering, and construction (AEC) industry. However, little attention has been given to the actual professionalization processes of these and the leadership conducted by them when shaping the pace and direction for sustainable development. With the aim to explore how the role of sustainability professionals develops, critical events affecting everyday sustainability work practices were identified. Based on a phenomenological study with focus on eight experienced environmental managers' life stories, and by applying the theoretical lens of institutional entrepreneurship, the study displays a professionalization process in six episodes. Different critical events both enabled and disabled environmental managers' opportunity to engage in institutional entrepreneurship. The findings indicate how agency is closely interrelated to temporary discourses in society; they either serve to support change and create new institutional practices towards enhanced sustainability or disrupt change when agency to act is temporarily "lost". To manage a continually changing environment, environmental managers adopt different strategies depending on the situated context and time, such as finding ambassadors and interorganizational allies, mobilizing resources, creating organizational structures, and repositioning themselves.

Keywords: professionalization; professional roles; environmental managers; sustainability professionals; institutionalization theory; sustainability; construction; Sweden

Citation: Gluch, P.; Månsson, S. Taking Lead for Sustainability: Environmental Managers as Institutional Entrepreneurs. *Sustainability* **2021**, *13*, 4022. https://doi.org/10.3390/su13074022

Academic Editor: Bart A. G. Bossink

Received: 22 February 2021
Accepted: 1 April 2021
Published: 4 April 2021

1. Introduction

Over the years, increased demands on sustainability have put pressure on companies to properly manage environmental and sustainability issues. This has led to a growing need for expertise and practice, which in turn has led to new professional roles such as environmental managers, experts, auditors, and specialists. Tasked with framing the sustainability challenge, these professionals play a key role for a successful shift towards sustainable development [1–4]. Based on the view that "professional projects carry within them projects of institutionalization" [5] (p. 424), this paper is concerned with the development of a sustainability profession within the architecture, engineering, and construction (AEC) industry. The AEC industry is a highly institutionalized industry with vast sustainability challenges, such as climate change and the extensive use of natural resources [6,7]. Although various environmental roles have entered the industry over the past two decades, little attention has been given to understand the actual professionalization processes that these actors, in a reciprocal manner, have been part of when shaping and realizing an environmental sustainability agenda. With the aim to explore how the sustainability profession has developed, this paper identifies critical events that have affected the everyday work practices of sustainability professionals when leading sustainability work in the continuously changing sustainability field.

By applying institutional entrepreneurship [8] as the theoretical lens, this paper builds on a phenomenological study of eight experienced environmental managers' life sto-

ries. With a combined experience of more than 200 years working with environmental sustainability, these eight managers were specifically selected because of their status as "environmental pioneers" within the Swedish AEC industry. In interviews, the environmental managers elaborate on how they have perceived the development of environmental work and the development of their professional role in relation to this work. On the basis of their professional life stories, changes to their role and work practices were identified by using a critical incidents technique [9]. By collecting their lived experiences of developing a professional role in relation to the institutionalization of sustainability in the AEC industry, and by identifying incidents perceived by them as critical for this development, we can capture a "meta-story" that depicts the professionalization and the institutionalization of the sustainability profession [10]. Capturing such a "meta-story" means identifying tightly nested, ongoing, and dynamic processes of change that are affected by the way these actors navigate within an institutional environment, including how they work to influence others and how others influence them. Thus, it is not a successful institutionalization project nor is it a study of a failed one, rather, it is the study of an ongoing process that historically has been, and continuously is, driven by individuals that purposefully work to introduce and sustain an environmental sustainability ambition within the industry [3,4]. In that way, a deeper insight into how individuals and professionals on a microlevel can engage in field-level organizational change is given [5,10,11]. Specifically, it is shown how environmental managers can act as institutional entrepreneurs in bringing a sustainability agenda into the AEC industry. Further, the paper shows how critical incidents, both as enabling and disabling conditions, affect how these actors can engage in institutional entrepreneurship.

2. Theoretical Frame of Reference

On the basis of a practice perspective on professions, in which professionalism is considered as "doing in practice" [12,13], professionalization in this paper is understood as the institutionalization of practices, i.e., patterns of action that include the "correct way" of using tools, objects, and technologies, as well as rules, norms, values, and habits [13]. Thus, sustainability professionals in this paper refer to professionals who are practicing sustainability, and who are considered by themselves or by others as experts in this area. Consequently, the environmental managers—whose life stories the study builds upon—are professionals who are practicing environmental management and sustainability.

2.1. Institutionalized Practices in the AEC Industry and Sustainability Professionals

The AEC industry is characterized by its project-based nature, in which multiple professions collaborate to deliver buildings and infrastructure. Traditionally, construction professionals have worked in relatively stable role structures with a shared understanding of who does what [14]. Institutionalized project practices thus enable professionals to work in construction projects without previously have worked together [15]. However, highly institutionalized project practices also make the industry "slow" and less receptive to change [15,16], which complicates the work of sustainability professionals [17–19].

Previous research has shown that sustainability professionals struggle to find a place within the institutionalized role structures of the AEC industry, and they are often navigating between conflicting and/or contradictory practices. In a study of environmental managers and coordinators in the Swedish construction industry, they were found to develop both formal and informal roles, as they had to balance environmental management with construction management practice [18]. Often, they had to adapt to the "rules of the game" in construction projects, which hampered the development of an environmental practice. In a study on interorganizational leadership for promoting sustainable construction projects, Opoku, Cruickshank, and Ahmed [4] found that the development of sustainability practices got a better place in an organization when there was active leadership to champion a sustainability agenda. Similarly, it was found that sustainability professionals need to be strategic and transformational in their leadership to promote sustainability practices [3].

Thus, to speed up sustainable development, it is important to understand the leadership conducted by sustainability professionals and how these can shape the pace and direction of the industry's environmental sustainability transition through acts of institutional entrepreneurship.

2.2. Institutional Entrepreneurship and Institutional Work

Institutional theory builds on the idea that the social world consists of "enduring elements" or institutions that strongly influence organizational and individual behavior [20]. Institutions are materialized in social actions, meaning that institutional pressures both effect and are affected by individuals, a mechanism named embedded agency [21]. That mechanism emphasizes a need to focus on individuals' social position in the organizational field [22] and the reflexivity of individuals as they navigate in the institutional environment they are embedded in [11]. As a branch within institutional theory, institutional entrepreneurship offers an actor perspective to explain institutional change [8]. Suggested as a way of reintroducing agency to the institutional analysis of organizations [23], institutional entrepreneurship is understood to be the "activities of actors who have an interest in particular institutional arrangements and who leverage resources to create new institutions or to transform existing ones" [24] (p. 657). Institutional entrepreneurs are thus actors that both initiate "divergent change" and actively work for the implementation of that change, for example through the mobilizing of resources and allies to support a new "vision" or a new institutional arrangement [8].

Initiating divergent changes refers to actors' reflexivity [11] and ability to "break free" from the institutional pressures (that otherwise determine the organizational behavior) and the ability to introduce new, alternative practices that deviate from the dominant institutional logic for organizing [8]. In the institutional entrepreneurship literature, it is suggested that enabling conditions enable actors in the periphery of the institutional field to more easily break with the dominant institutional logic [8,23]. Other enabling conditions can be a sense of emergency, accidents, scandals, or crises. In regard to environmental sustainability, there is evidence of all these types of enabling conditions, meaning environmental management and sustainability practices, are well-suited objects when studying institutional change. The lens of institutional entrepreneurship can further help us understand the struggle actors engage in as they pursue activities informed by a logic that deviate from the dominant one(s), and the work they do as they try to change the status quo [23].

Previous research has found that the context and timing of accidents, scandals, or crises often have an effect when and if institutional entrepreneurs manage to change institutions [25]. Other studies have focused on actors' agency in the institutionalization of environmental practices. For example, Etzion and Ferraro [26] studied how the organization Global Reporting Initiative (GRI) engaged in institutional entrepreneurship when promoting sustainability reporting practices. By studying the discursive strategies used by the organization, they found that analogies to existing practice (in this case the similarities to financial reporting) were used to gain legitimacy for the new sustainability reporting practice. In another study, Rothenberg [27] examined the role of individuals as institutional entrepreneurs; in particular, she studied how environmental managers engaged in institutional change through their position as "boundary spanners" between the technical environment and environmental regulations. By having access to both discourses, she found that the environmental managers framed environmental issues as operational efficiency to gain recognition and enhance the organization's environmental performance beyond regulatory pressures [27]. In a longitudinal interview study, Gluch and Bosch-Sijtsema [19] investigated how environmental experts in the construction sector perform institutional work [20]. They found that environmental experts created new institutions related to green building by teaching their colleagues in the organization about environmental sustainability and by finding internal ambassadors, as well as through using artefacts, such as graphs and assessment methods, to trigger change. They maintained

institutions related to project management by displaying their role as less authoritative, and by taking on a service role. They disrupted the taken-for-granted practice of only achieving minimum compliance of environmental regulations through insistent nagging, pushing to move beyond the minimum. Similarly, Dahlmann and Grosvold [28] investigated how environmental managers engage in institutional change over time. They found that environmental managers, through institutional work, redefined the institutional arrangement for their professional role and agency to introduce environmentally responsible business practices. The environmental managers were no longer the "sole carrier" of environmental practice in the firm, rather they were supported by a broader organizational engagement in environmental sustainability [28]. The above-mentioned studies have in common that they demonstrate professionalization as an endogenous source to institutional change. Our study builds on this by displaying how a sustainability profession has developed over time and led to institutional change in the Swedish AEC industry.

3. Research Methodology

With the aim to explore how a sustainability profession has developed, a phenomenological study of eight experienced environmental managers' life stories was conducted, building a collective narrative of a professionalization journey, i.e., a "meta-story".

The individual life stories were collected through semi-structured interviews [29]. Semi-structured interviews are a suitable method for collecting individuals' lived experiences [20,29]. The selection of environmental managers followed the tradition of purposive sampling in qualitative research [30,31], in which interviewees are selected on the basis of their ability to provide narratives of the studied phenomenon. In this study, the interviewees were selected on the basis of two criteria: (1) their long experience of working with environmental management and sustainability in the AEC industry, and (2) their nationwide status as "environmental pioneers". To be defined as an environmental pioneer, the interviewees must have experience introducing new environmental practices in the Swedish AEC industry. Moreover, they must have worked with environmental issues for a long period of time and been part of the development of a sustainability profession in the industry, cf. [32]. Further, they should be considered as trailblazers for environmental management by others within the industry, for instance through nominations for environmental awards, and/or through attention of their work in the media and at industry conferences, and as such, they should be prominent actors within the institutionalization process of sustainability. The interviewees were identified through media sources, industry conferences, and through being widely known among practitioners as key environmental experts in the Swedish AEC industry. All the interviewees had an educational basis within engineering, were active from the early 1990s onwards, and had a combined experience of more than 200 years working with environmental management and sustainability. During this time, on an individual basis, they were employed by different organizations of various sizes, both private and public.

The interviews were conducted in 2019, both face-to-face (six interviews) and via Skype (two interviews) and lasted 1–2.5 h. In the interviews, the environmental managers were asked to elaborate on: (1) their personal career journey, (2) how they have perceived the development of their professional role in relation to the development of sustainability, and (3) how they believe their professional role will develop in the future. Open-ended interview questions allowed for them to tell their life stories as they had experienced them [29]. It also gave them the opportunity to raise issues and events that they perceived as important. The interviews were recorded and transcribed in verbatim. For an overview, see Table 1.

Table 1. Overview of interviews and interviewees.

Environmental Manager	Length of Interview	Years of Experience [1]	Types of Organizational Employers
EM1	90 min	21	Construction, construction clients
EM2	150 min	25	Construction
EM3	100 min	39	Construction
EM4	90 min	19	Construction
EM5	60 min	25	Construction, real estate, architecture
EM6	60 min	29	Real estate, architecture
EM7	60 min	23	Construction, construction clients
EM8	60 min	34	Construction

[1] Years of professional experience working with environmental sustainability management.

Complementary to the interviews, a literature study was conducted to capture the context of the development of a sustainability practice in the Swedish AEC industry as presented in research reports. In total, 30 Swedish research reports were selected to inform the study. The descriptions of contemporary sustainability challenges in the reports were aligned with the life stories told in the interviews, which together provided a rich description of the development of sustainability practices over time.

The analysis was inspired by the critical incidents technique to capture critical events that have affected the everyday work practices of environmental managers when leading sustainability work in the continuously changing sustainability field. The critical incident technique, developed by Flanagan [9], is a method that is used to identify critical incidents regarding a specific phenomenon. The method has been widely used in service research, e.g., for studying customers' service experiences [33]. It has also been used for studying interprofessional relationships as experienced by different professionals [34]. In our study, the phenomenon of interest was the professionalization and institutionalization of a sustainability profession from a microlevel institutional perspective. Accordingly, the unit of analysis when capturing critical incidents was sustainability practice. The sustainability practice in turn was identified through the collective narratives describing how environmental managers have perceived changes to their professional roles and practices over time, and how they have taken the lead in developing sustainability practices. In particular, interest was paid to how the life stories coincided around specific incidents, and from those incidents, shared patterns in terms of professional role development and institutional change were detected. For an event to be regarded as critical, it had to shift the focus of their work and lead to a changed expectation on their role, expertise, and/or knowledge of the institutional environment they acted within.

In the analysis, the life stories were mapped along individual timelines and then coded. The coding was based on key features from the institutional entrepreneurship literature to capture changes to their work as well as their reactions to those changes and the strategies they adopted to advance environmental sustainability practice. The sustainability challenges described in the Swedish research reports were also mapped along the timeline and by synthesizing the individual "stories" or timelines into a "meta-story"; it was possible to identify six episodes in which the roles and practices of the environmental managers changed.

4. Findings: A Professionalization Process in Six Episodes

In the findings, we take you along the career journey of eight environmental managers. Their everyday working lives are unfolded, showing how they engaged in institutional entrepreneurship as they took the lead by advocating for sustainability measures and by developing new practices. Their journey shares a number of "emergency stops" or critical incidents that have impacted their professional journey and the development of a sustainability profession; here, they are sorted into six different chronologically ordered episodes.

4.1. Episode 1: Increased Environmental Control and the Starting Point for a New Professinal Role

The professional journey begins in the mid-1990s with the introduction of environmental regulations on waste management and increased control on the handling of materials and chemicals [35]. Previously, the industry's image of itself (in terms of being an environmental polluter) was mainly as a "problem solver doing good for the environment", with no one specifically devoted to working with environmental issues [36]. However, the new regulations suddenly put the industry in the environmental spotlight as a major polluter. The industry was nicknamed the 40% sector and pointed out as being responsible for 40% of man-generated waste and 40% of the total material used [37,38]. One of the interviewees expressed it as:

> "Back then some questions were very high priority and spoken of, such as the waste issue, and that's the issue that got the construction sector to start driving environmental issues overall." (EM8)

One specific environmental accident that involved one of Sweden's largest construction companies was highlighted by several interviewees as a major awakening and a starting point for their professional role, the "Halland's ridge scandal" [39]. The use of a sealant in a tunnel project led to the leakage of toxic chemicals into the surrounding water, which severely harmed the environment and people living close by [40]. The interviewees expressed the scandal's widespread mass media coverage as being a major trigger for construction companies to realize the need to have a person with appointed expertise who could specifically work with environmental issues in order to avoid similar incidents:

> "It was such a wake-up call for them, realizing that we can't continue like this, we need to know what we are doing." (EM4)

Thus, the Halland's ridge accident became an enabling condition for the start of a new professional role. In the aftermath of the accident came an increased focus on risks and a perceived need to gain better control over construction projects' environmental impacts. To prevent incidents and law-breaking, companies decided to implement environmental programs and include environmental demands in the project delivery requirements [41].

However, at the time, no one knew how to frame and manage the new environmental demands and programs, since the knowledge in the AEC industry on how to work with hazardous waste and materials was absent. It was therefore up to those assigned to work with environmental issues to suggest solutions and define tasks. They were often the sole assignee in their organization, and to manage that challenge and induce change, they started to organize themselves across the industry. As a result, enthusiasts from different organizations came together and created shared practices on how to handle hazardous waste:

> "People were using trial and error and had ideas on how to handle it. That's where the journey began where we worked together in the construction sector to bring these things forward..." (EM4)

Partakers of this self-organized movement were so-called "environmental geeks" (in Swedish "miljötomte") with a high level of personal commitment and passion. In line with a growing task characterized by emergency, the environmental role transformed into a strategical expertise role, and one that oftentimes pushed for going beyond regulations and minimum compliance. As one interviewee expressed it:

> "And the thing is . . . that was when my thinking about environmental issues and climate change and how my role in driving my work was formed. Already in my thinking I needed to have an end goal [in mind] and then use back casting to . . . know what 'do I need to do today' but also what kind of [construction] projects are available and 'how can I use those projects to meet this end goal'." (EM1)

The above quote exemplifies how the environmental managers made use of available resources (for example a construction project) to challenge taken-for-granted practices

and to move actors towards their vision of a sustainable industry. However, the initial repercussions of pushing a new green perspective on the AEC industry are reflected in how they perceived their professional role; a professional who was inconvenient and bothersome to the delivery of the project:

> "(. . .) according to my memory you had to drive things very hard, you had to push it forward. These things were not something that was taken as a granted and given thing, or something that was high on the top managers' agenda. You always had to fight for your cause. I worked with both environment and quality, and who likes routines and writing papers? (. . .) and what I felt like was that environmental or sustainability questions were a constant nagging." (EM5)

Disrupting taken-for-granted practices requires constant work and a continuous engagement to both maintain momentum and change the status quo.

4.2. Episode 2: The Arrival of Environmental Management and Assessment Systems

With an increased focus on risks and a need for control over construction projects' environmental impact, as well as to legitimize the company business, concepts like "corporate greening" became important [35]. Many organizations, starting in the early 2000s, decided to implement environmental management systems (EMS) and utilize environmental assessment tools [42–44]. Between 2002 and 2006 the number of AEC companies that adopted EMS increased from 46% to 70% [37,45], indicating an institutionalization of environmental management within the industry. With the increase came a new set of tasks that needed to be taken care of and coordinated. Oftentimes, the responsibility to implement EMS was put on existing roles without the removal of other tasks:

> "So, a lot of individuals felt that those [new tasks] were extra tasks on top of their current tasks. Not a separate role, nor an extended role, these tasks were just dumped upon an existing workload." (EM4)

Most companies had recently implemented quality management systems (QMS) and had already been through a change process related to this. To simplify a new change process, the environmental managers found it useful to use QMS as a basis when implementing EMS. The assignment of new tasks was therefore given to someone already responsible for quality assurance. Often, these individuals had an extensive construction management background and were oriented in the quality management standard ISO9001, but they did not have any specific environmental training. At the time, EMS was mainly developed for manufacturing companies, securing environmental work in stationary plants. With the construction projects being temporary, in terms of project participants and mobility, many of the interviewees started their environmental manager careers by adapting EMS to a construction management practice. Although different in terms of outcome (QMS at that time mainly focused on customer satisfaction, and EMS focused on process performance), this gave a sense of recognition and trust for the projects. Thus, analogies to quality were used to gain momentum for environmental practices. However, there was a communicative tension between construction management practices and environmental management that had to be overbridged, especially with environmental work being administrative and text-based, while construction management work is practice-driven and face-to-face [17]. As a result, environmental issues were considered secondary tasks that were not part of construction management practice, and the responsibility of managing environmental issues was given to someone for the sake of it:

> "It was common back then that you didn't have a specific environmental manager. Someone had the responsibility, basically because someone had to have it." (EM1)

With the entrance of new environmental management roles, new support functions in terms of environmental coordinators were also introduced to manage the increased administration related to EMS. Sometimes contrary to the environmental managers, several of the coordinators had an environmental education without knowledge of construction, a contrast to the usual employee background profile in the AEC industry:

> " . . . but if you look at the environmental/sustainability role. Well you could say that back when I started, we had environmental coordinators and such that started popping up, and this would have been at the end of the 1990s or something like that. And then it was quite common to hire an environmental coordinator that took care of the environmental program and he or she was pretty much given only that . . . " (EM2)

The environmental coordinators, working across many construction projects, were often seen as burdensome to the delivery of the project as they were asking taxing questions and wanting information that was not readily available. Environmental managers as well as environmental coordinators were also rather alone in their respective organizational context. Besides finding "colleagues" with similar work tasks in other (sometimes even competing) companies, they all adopted a strategy to find ambassadors in their organizations. The ambassadors were used as a proxy, helping to spread environmental practice within the organization:

> " . . . and that was so nice because someone in the group would say something [laughter] and then word would spread, and I noticed in the following days that when I was educating the other groups it was so much easier. So, it's important to find those ambassadors, the ones that can help get your message spread." (EM5)

Similarly, because of a common perception in the organization that environmental issues were a "necessary evil", the need for environmental managers to have ambassadors that could be their extended arm was stressed:

> "I didn't have top management with me from the start, so I was out and about in the country a lot just talking to people and trying to make a change from the outside in so to speak. You got to push and shove a little here and there, you know 'where is the window open', find it and jump through it. I can't go in a straight line from A to B, I have to find my ambassadors and others to say the same things I am saying, think the way I think, and find the little things and the examples, all to increase confidence in this. So, it's kind of an advanced way of working." (EM7)

Finding supporting ambassadors was forwarded as a deciding factor between staying in the organization or leaving it for one where the environmental manager and environmental work could be better positioned. This shows how they actively pursued positions from where they could better engage in institutional entrepreneurship.

4.3. Episode 3: Staffing a Powertrain towards Sustainability

With a wider implementation of environmental practices through EMS came less of a focus on risk and more of a focus on organizational structure. The previously ad hoc assigned environmental managers started to create organizations around them to specifically work with environmental issues, with environmental departments emerging [44–46]. As such, they engaged in institutional entrepreneurship by working on their social position and increasing the openings for initiating environmental change. Simultaneously, environmental issues were given increased focus in construction projects and became visible in corporate goals. There was also a perception that governmental demands on environmental sustainability were insufficient, and that a growing diversity of environmental issues needed consideration. Thus, the combination role covering quality and health and safety was now seen as insufficient for the more diverse tasks, and a more specialized role was needed. With a new emphasis, companies saw business opportunities in going green. The status of the sustainability profession increased in line with environmental issues becoming a competitive factor on the market. The competitive factor in turn created a position of power for the environmental managers, who were now given a place on the corporate executive boards, where they represented a specific domain of knowledge in analogue with finance and HR:

> "So, I think that environmental managers entered the executive office during the 2000s, . . . and that was when it became a profession since that's when we started to notice competition in this." (EM4)

However, in hindsight, the interviewees reflected on this as being more symbolic than executive, because informally they were still not part of the business models. Instead, environmental issues were just a veneer on the surface, not actually permeating the core business.

On the positive side, they perceived that the assessment methods' need for dialogue enabled increased collaboration with the construction project members, with representation of "reality" in measurements being a shared "language" enabling communication on environmental issues. Being rationality providers, they perceived that the assessment tools made environmental issues more tangible and easier to understand, also for the uninvited. Once again, the quality analogy was utilized to gain legitimacy:

> "The environmental assessment systems helped to raise these issues since it is more or less a quality system for environmental issues, meaning requirements can be set in a way that a dialogue can be started. That one can agree on the meaning instead of just throwing together something fluffy and unclear in a document." (EM2)

Springing from the high interest in environmental assessment, companies decided to certify buildings according to different types of assessment systems: Building Research Establishment Environmental Assessment Method (BREAM), Leadership in Energy and Environmental Design (LEED), and the Swedish assessment system "Miljöbyggnad" [47]. Thus, environmental certification systems for buildings became more common, which helped with the furthering of environmental practice and legitimizing environmental issues in the sector, including the role of sustainability professionals.

4.4. Episode 4: Speeding up the Pace through the Means of Energy Efficiency

In mid-2000s, the earlier intensity around the implementation of EMS and new environmental practices had lost its momentum, with the industry going back to business as usual [48]. To gain back momentum, environmental managers started information campaigns in their organizations. This included arranging specific "environmental days" for all employees, where invited environmental champions and/or decision-makers gave plenary speeches, and where, for example, Al Gore's movie "An Inconvenient Truth", released in 2006, was shown. Although the movie focuses on climate change, it was the energy aspect that took root within the Swedish AEC industry, specifically in the operational use of buildings [49]. In addition, new demands on national building energy standards arrived [50,51]. As one interviewee expressed it:

> "We have not really talked about climate change up until the last couple of years, we have gone from talking waste, to chemicals, and to an energy dialogue." (EM4)

Energy efficiency measures were close to the heart of the environmental managers, with many of them having deep expertise on energy efficient buildings. A raised general interest on the topic presented an opportunity to accelerate the environmental work. Energy efficiency was at this time perceived as a technical question, e.g., building design and energy technology [40,45], as opposed to other environmental issues that were considered as rather "fuzzy" [52]. The perception of energy efficiency as a technical question helped make sustainability issues more tangible and easier to communicate to a broader mass audience. Thus, in the late 2000s and early 2010s, the environmental discourse in the AEC industry revolved around energy, and specifically, how to build energy efficient buildings [51,53,54]. Energy efficiency could also very easily be connected to cost savings, and cost calculus methods such as life cycle costing (LCC) were developed and used as a means to persuade people of its importance and to gain recognition [41,55]. Some of the interviewees perceived that the energy dialogue boosted environmental issues within the

industry, and they perceived an elevated status of their role. The interviewees expressed that the broad interest in energy efficiency was a cornerstone in how and why their roles changed, helping them to escape the backdrop and re-enter the limelight as well as the executive management board. The broad interest provided a sturdy foundation to deepen and normalize the environmental work by making it everybody's responsibility to care for. By diffusing knowledge regarding energy issues, they made use of the technical knowledge that was already existent within the companies.

The environmental managers' status as member of the executive corporate board was raised along with the argument of cost savings, which created an opportunity to seize R&D funding related to energy efficient buildings. This also gave them a closer connection to research communities, for example, by becoming adjunct professors and initiating research projects on energy efficient buildings. Again, they broadened their perspective beyond the individual company, instead cooperating across the industry sector to serve the sector and society as a whole:

> " . . . you have this combination of a specific company and the entire industry that are always [difficult]... you can do some things yourselves but then these issues have to be brought forward by the entire industry to have effect." (EM8)

However, with an interest to serve the sector and the society, the environmental managers felt that they were often ahead of their time, pushing for a proactive environmental management that could generate new business opportunities. In construction projects, the efforts were initially often met with resistance, but as the question matured, their agency to act increased:

> "Already back then we had a closed loop perspective, but we had a lot of backlash in the form of 'no we can't do it that way, there is no point since we're never going to disassemble this' etc., but now it's a main point of concern for the planner to know what will happen in the next life cycle step. So . . . things have happened the past 25 years and that is always something..." (EM2)

Thus, timing and context, as well as the maturity of an issue, matter for the institutionalization of environmental practice.

4.5. Episode 5: The Sustainability Crossing—Adding Social Sustainability to the Repertoire

When financial institutions started to demand sustainability reports and the global reporting initiative arrived, the broader concept of sustainability overtook corporate greening and social sustainability was added. In the 2010s, the focus therefore turned away from energy efficiency and toward a broader sustainability concept. Consequentially, many of the environmental managers were tasked with taking the lead on social sustainability in addition to environmental sustainability because no one else in the organization had the relevant knowledge:

> "Social sustainability became a thing in 2012/2013 and was one of those 'oh where to put it' things. And in this organization, it was put on me." (EM8)

The environmental managers started to work with global reporting initiatives and sustainability reports. Social sustainability needed to be aligned with environmental sustainability, and words like holistic and corporate social sustainability (CSR) became key terms describing their work [56]. In addition, a strong environmental leadership became more important as a response to financial institutions' environmental demands:

> " . . . there is a breakthrough when the financial world starts to make demands, then it becomes natural to include someone with environmental expertise from the beginning." (EM2)

At this time, environmental managers became sustainability managers. Also, many companies reorganized and the "new" sustainability manager with a growing staff, randomly, ended up in either HR, business development, or in a communications office:

> "Then you renamed the environmental manager to sustainability manager but didn't really understand what it involved (. . .), we talked about sustainability, but it was for a while more focused on social sustainability. And therefore, a lot of the sustainability roles were placed within HR." (EM4)

During this shift, environmental managers were removed from the top management of organizations. Instead, the HR manager often represented both personnel issues and sustainability on the board. Being removed meant that environmental sustainability issues lost their position on the business agenda, because there was no one in the top management who had advocacy over them: "it was like the questions ended up lost somewhere in space. It just wasn't his [the HR manager] strong area" (EM2).

Another side of the introduction of the broader concept of sustainability was that the broadening of perspective gave environmental managers more mandate, in the sense that their responsibility increased. They tied new competencies to themselves with the help of sustainability reporting. Since companies did not have any environmental data available on emissions, they could use the sustainability reporting as a way of engaging others in environmental work. The introduction of social sustainability made the work more strategic, long-term, and less operative, which some with a strategical mindset liked, while others who were more ideologically-driven disliked, since their key motivator was to make direct impact on construction management practices. The discrepancy between strategic visions and actual actions in practice created frustration among environmental managers, as stated by one of the interviewees (EM7):

> "You have to look at it from a holistic perspective or else it's going to backfire completely. But it's also really frustrating when everyone is walking around in a sort of collective incompetence and think you can just set a bunch of climate goals and achieve sustainability through that when that isn't going to happen." (EM7)

In situations where the environmental managers perceived that they had completely lost their agency, they chose to quit their jobs, and often acquired new positions with more hands-on work where they could see progress and make a difference for the environment. Besides the wish to influence the environmental work, there existed a deep ambition to speed up the sustainability transition. In case of resistance, or if better opportunities to do so elsewhere presented themselves, they would seek other career paths. Thus, they purposefully navigated the professional field to improve their social position from which they could better support the sustainability transition of the industry.

4.6. Episode 6: Global Sustainable Development Goals (SDGs) and the Holistic Turn

The environmental managers' professional life journey changed focus again in 2015, when the Paris agreement consolidated climate change on the agenda along with the declaration of 17 Sustainable Development Goals (SDGs) that advocate for an integrated view on sustainability, including the environmental, social, and economic dimensions. In Sweden, the Paris agreement led to the creation of a governmental Climate Act and a climate policy framework with the goal of reaching net zero emissions of greenhouse gases into the atmosphere by 2045 [57]. Furthermore, an investigation of energy consumption in the built environment showed that the construction process had a major impact on greenhouse gas emissions [58]. The findings from the investigation changed the focus from energy efficiency of buildings back to emissions from construction and a life cycle perspective on buildings. Areas that had been the focus for research since the 1990s (for example life cycle assessment (LCA) and LCC), started to reappear in the sustainability discourse and became a suggested route forward within the AEC industry, with topics such as cradle-to-grave and the circular economy [59,60]. The increased focus in mass media on climate change and environmental impacts made their work easier:

> "Another big difference is that back in 2000, when I started, there were no articles in the newspapers on the environment. If I were to try and find one, I would

> have to spend weeks until I'd find one in the daily newspapers. Today you can find articles on the state of the environment, the climate and the planet daily. I don't think there are any major newspapers who don't cover that these days." (EM4)

When sustainability became public commons, the environmental managers' role became more tangible, as they could use the momentum from the Paris agreement and Agenda 2030 to guide their work, which focused on climate change mitigation and the incorporation of the 17 SDGs. With the largest construction companies in Sweden taking the lead, a group of environmental champions came together yet again to create a common strategy for the industry on how to reach net zero greenhouse gas emissions by 2045 [61]. The interviewees described that sustainability became intrinsically important for companies to stay legitimate, and how their main task in this change was to advocate for a long-term, holistic perspective on sustainability, integrating, as well as legitimizing, sustainability within the core business of companies:

> "One big difference is that back then I had to spend more effort explaining why we had to do things. Today, most people know we have to do these things, and why it's needed. Nowadays it's more of a how than a why. The why we answered in the past, now it's more: well how the heck are we going to do this?" (EM7)

As a result of a holistic sustainability focus, the environmental managers, now as sustainability managers, re-entered the top management, and more specialist roles were created so that they could act as ambassadors for furthering sustainability practice within the industry.

5. Discussion

The environmental managers' life stories presented in the findings show how sustainability professionals' agency to engage in institutional entrepreneurship is closely connected to a contemporary sustainability discourse. Moreover, the ability to act for environmental change revolves around different emergency-driven episodes triggered by specific events. The findings also show how sustainability professionals use different strategies to create a sustainability profession and practice, and how they pursue acts of institutional entrepreneurship in this creation.

5.1. Critical Incidents as Enabling and Disabling Conditions

Similar to what has been found in other studies (e.g., [8,25]), the right enabling conditions in combination with actors' social positions, set in relation to a specific context, alongside the timing of certain events or incidents, influence the institutionalization process of a sustainability profession. In Sweden, one critical event, the Halland's ridge accident, became an enabling condition for the start of a new professional role, while a contemporary and ever-changing sustainability discourse in society has continuously enabled the initiation and implementation of institutional change. Our findings and analysis suggest that because of temporarily dominant sustainability discourses in society, sustainability professionals' ability to engage in institutional entrepreneurship has revolved around "one issue at time", meaning that the long-term agency to act for certain environmental questions has been lost at times.

To "survive" when a new sustainability fashion sweeps across society, sustainability professionals need a stable foundation where they can use the power of discursive strategies when creating new institutions or transforming existing ones [24]. This can be through expertise as well as relational power in a certain context. Previous research has found that discursive strategies have been used by both environmental managers [27] and by sustainability organizations [26] to implement institutional logics that deviate from the dominant ones, or as Battilana et al. [8] observed, "institutional entrepreneurs must craft a vision for divergent change in terms that appeal to the actors needed to implement it" (p. 79). Our findings suggest that a sustainability discourse can be used to appeal to other

actors in implementing change, but it can also be a hinder for implementing change towards enhanced sustainability. Further, and similar to the results by Hoffman and Devereaux Jennings [25], the findings indicate that the maturity of environmental issues are important. For example, our study indicates that the reintroduction of an energy dialogue elevated the status of sustainability professionals at later stages in the professionalization process. Moreover, the agency to act for environmental change seems to revive over time as they continuously work for change, and as the maturity of environmental questions grows [25].

In addition to temporarily selective discourses in society, reorganizations with broken networks as a result were found to be critical and disabling events that led to a contested and/or temporarily lost agency to act for change. In other words, disrupting taken-for-granted practices requires constant work, and although institutional pressures are hard to change, sustainability professionals continually engage in changing the status quo. The continuous engagement is similar to what Gluch and Bosch-Sijtsema [19] found in their study on the institutional work environmental experts do to change construction management institutions, and it supports the findings by Opoku, Cruickshank, and Ahmed [4] on the importance of active leadership to champion a sustainability agenda.

5.2. Environmental Managers' Strategies for Institutional Entrepreneurship

To pursue institutional entrepreneurship, environmental managers adopt different strategies when advocating for sustainable change depending on the resources available to them at a specific time. Our findings present some main strategies that they use to challenge the taken-for-granted construction management institutions and to introduce alternative sustainability ones.

One important strategy has been the creation of a shared practice through both intraorganizational and interorganizational engagement. On the basis of the findings, we can see how environmental managers mobilize allies within and across organizations. Mobilizing allies have been pointed out as an important part of engaging in institutional entrepreneurship [8]. We saw how sustainability professionals collaborate with colleagues from competing organizations to get professional support, and how they together create a shared practice on how to manage sustainability.

Another strategy is to create an informal crew of internal ambassadors that assist with the implementation of a sustainability practice within their organization, cf. [52]. For example, our findings suggest that sustainability professionals use different "instruments" to tie new competences to them. For example, environmental certification systems and sustainability reporting were used to create new networks and to engage others in environmental work, i.e., creating new sustainability institutions [19]. The interviewees also stressed the importance of having ambassadors when legitimizing environmental work and to open "windows of opportunities" for engaging in institutional entrepreneurship. Here, a selection of construction projects as illustrative best practice projects was used as a way of permeating environmental practice into construction management.

The environmental managers also made room for sustainability and engaged others by redefining institutional arrangements [28]. By establishing sustainability departments and creating organizational structures around them, they could form new specialist roles as a means for expanding an environmental sustainability practice. However, with more issue-specific focused specialists, there is also a risk of creating interdisciplinary silos, where different sustainability aspects compete for getting attention, with suboptimization as a result. A possible consequence from this is that it might evoke intraorganizational activism, where different branches of sustainability professionals are fighting for their cause at the expense of a holistic perspective on sustainability.

Furthermore, environmental managers act as institutional entrepreneurs by changing employment positions within and between organizations when agency to influence the organization is perceived as low. An individual's social position has been proven to be important for an individual's ability to engage in institutional entrepreneurship [22]. Our findings show that they purposefully navigate to improve their social position to

better support sustainably change, mostly because of a deep ambition to speed up a sustainability transition.

The last strategy that environmental managers deploy to create a sustainability profession and practice is to mobilize resources and seize opportunities for going beyond environmental regulations by using the "power of examples" or by using analogies to established practices. Our findings show that sustainability professionals use umbrella concepts, for example, Agenda 2030 and the 17 SDGs, to integrate sustainability into the core business of the AEC industry. The way that sustainability professionals, due to their access to multiple disciplinary discourses, can act as boundary spanners between technology and regulation has been acknowledged by Rothenberg [27], and a similar skill to employ discursive power was also found in our study. By the means of tools that advocate a performance prerogative familiar to construction project practices, for example, environmental certification systems and EMS, they could advance environmental practice and legitimize environmental issues in the sector. Similar to what Etzion and Ferraro [26] found, the environmental managers in our study used analogies to an established practice as a way to legitimize environmental management, for example, by making analogies to quality management.

6. Conclusions

A practice- and actor-oriented lens of institutional entrepreneurship and institutional work [8,20] has provided an increased understanding of environmental managers as potential institutional entrepreneurs [10,26,27] and how they have taken the lead for sustainability in the industry. Retrospectively, we can observe how the development of a professional role has led to institutional change and how professionalization processes may lead to wider field-level changes, cf. [5,10,11]. This was conceptualized in a model of the professionalization of sustainability (see Figure 1). The model displays how environmental managers engage in institutional entrepreneurship and in the institutionalization of a sustainability profession.

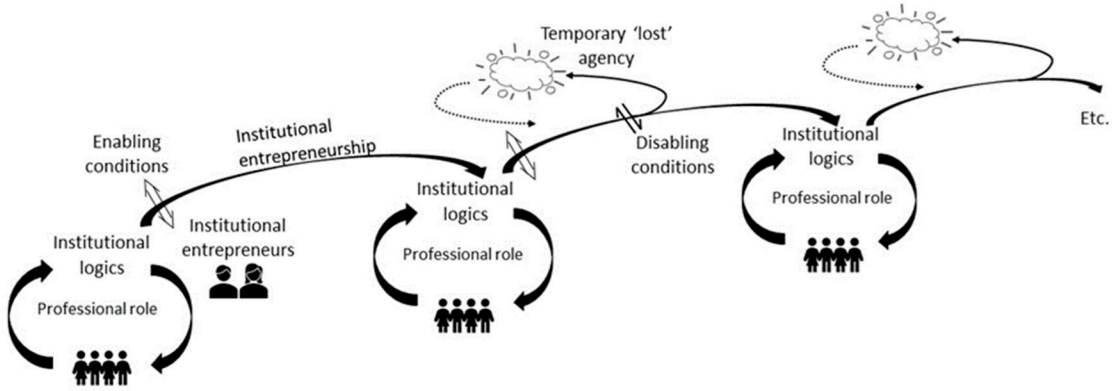

Figure 1. The professionalization of sustainability.

We uncovered a number of episodes that have influenced the direction, as well as redirections, of the development of a sustainability profession. We displayed a professionalization process in six episodes, where the professional role in each episode took a new direction. Starting with a combination of regulations and an environmental accident, which led to the introduction of a new professional role, later exogenous incidents, such as the introduction of new environmental assessment tools, the reintroduction of an energy efficiency dialogue, social sustainability, and the Agenda 2030, have influenced the professional life of sustainability professionals and what they do in their everyday work. Additionally, endogenous incidents such as reorganizations have affected their position within organizations, their access to resources, and their agency to push for environmental sustainability.

It was also shown how sustainable professionals actively engage in the development of the institutionalization of a profession. Through institutional entrepreneurship, they actively seek "windows of opportunities" to advocate for sustainable change depending on the resources available to them at a certain time. For example, construction projects were used to permeate environmental practice into construction management practice. As such, they were able to engage in institutional entrepreneurship, but they were also enabled by others. Moreover, as sustainability grew in scope, sustainability departments and specialist roles were created that, in turn, could act for further engagement in institutional entrepreneurship. To conclude, sustainability professionals' agency revives over time as they continuously engage in institutional entrepreneurship to create and establish environmental sustainability practices through:

1. Interorganizational mobilization to create shared sustainability practices;
2. Finding internal ambassadors that can support the diffusion of sustainability practices;
3. Creating organizational structure and redefining institutional arrangements;
4. Changing positions within and between organizations;
5. Mobilizing resources and seizing opportunities for going beyond environmental compliance requirements.

However, while we can observe how sustainability professionals have contributed to institutional change from a retrospective perspective, our findings also showed how they are constrained by the institution that they are a part of. This was displayed by how their agency has been closely connected to the sustainability discourses that are "in fashion", which are temporary and unilateral in focus. As a consequence environmental change revolved around "one issue at a time", which affects the sustainability professionals' agency to act in two ways: on the one hand, a strong focus serves as a way of initiating institutional change as they can use the momentum of the sustainability discourse; on the other hand, it causes frustration when agency to act is challenged or temporarily "lost" because of a discerning discourse.

For future research, it would be interesting to study how sustainability professionals maintain agency to act for environmental issues when sustainability is growing in scope and complexity. Further, additional studies on sustainability professionals from institutional contexts other than the AEC industry would benefit a broader generalization of the results. Taking a retrospective perspective, starting 20 years back, the professional journey of sustainability professionals described in this paper departed from the role of environmental managers. However, with a contemporary outlook, it would be interesting to see if there are alternative career patterns leading to the role of sustainability professionals. With an increased focus on social sustainability, there are indicators that this might be the case [62]. On the basis of our empirical material, we displayed the development of a professional role in six episodes. We chose train metaphors to describe these, and looking at a current challenge, there might be a new "station" arriving that could become a seventh episode: the aftermath of the COVID-19 pandemic and its connection to the sustainability agenda. Does this pose new questions, new challenges, and yet another discipline to master for sustainability professionals? If so, what actions will sustainability professionals take? Will they be able to seize the COVID-19 pandemic as a catalyst for changing business, taking into account the long-term challenge of climate change and environmental sustainability that we continue to face, or will their actions be constrained? How will this in turn affect their profession? This is something for future research to address.

Author Contributions: This paper was written by P.G. and S.M. S.M. conducted the interviews. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by FORMAS, grant number 2015-01372.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Acknowledgments: We would like to thank all the environmental managers who generously shared their stories with us. Additionally, we would like to thank three anonymous reviewers for their constructive feedback on earlier drafts of this paper.

Conflicts of Interest: The authors declare no conflict of interest.

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Paper III

CONSTRUCTION MANAGEMENT AND ECONOMICS
2023, VOL. 41, NOS. 11–12, 893–909
https://doi.org/10.1080/01446193.2023.2214252

Routledge
Taylor & Francis Group

The influence of multiple logics on the work of sustainability professionals

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ABSTRACT

Organizational aspects, rather than technological ones, often represent the greatest barrier in the transition toward sustainable construction. However, despite sustainability professionals' recognized role in sustainable development, few studies have focused on such professionals' work. To understand the intrinsic influence of multiple institutional logics on the work and agency of sustainability professionals, we conducted 31 semi-structured interviews with sustainability professionals in Sweden's construction industry. Building on the theoretical framework of institutional logics, the findings show how sustainability professionals' everyday work, depending on the work conditions, is a blend of thankless, rewarding collaborative, and visionary work. In the organizational context of sustainable construction, characterized by dynamism and ambiguity, different institutional logics are combined in different ways to respond to shifting demands and problems. To maintain agency, sustainability professionals need to shift and balance their work depending on which logics are temporarily central. Showcasing how professionals cope with institutional contexts defined by multiple logics, the paper highlights the complexity involved in managing the vastness and ambiguity of sustainability and how it requires individuals to be both flexible and sensitive to the existence of multiple logics in their immediate context.

ARTICLE HISTORY
Received 19 April 2021
Accepted 10 May 2023

KEYWORDS
Sustainability professionals; sustainable construction; agency; everyday work; institutional logics; multiple logics; ideal types

Introduction

That sustainability is an imperative for today's construction industry is undisputed, and sustainability measures stipulated by clients and other stakeholders are frequent in construction projects (Montes *et al.* 2021). Sustainable construction builds on multiple logics stemming from a high level of complexity that requires interdisciplinary collaboration across several fields and organizational levels (Goh *et al.* 2020).

At the center of sustainable construction is a growing group of actors: *sustainability professionals* (Opoku *et al.* 2015, Gluch and Månsson 2021, Dahlmann and Grosvold 2017). However, because introducing, developing, and practicing sustainability work is often a time-consuming, complicated task, with many in-built tensions regarding the balance of time, scope, and power (Chan and Cooper 2010, Gluch and Räisänen 2012, Månsson 2021), sustainability professionals often experience limitations in their agency. Gluch (2009), for instance, observed that construction project management both framed and constrained the work of sustainability professionals by requiring them to adapt, which limited their scope of work and negatively affected their job motivation. In the same vein, Murtagh *et al.* (2018) found that building control surveyors tasked with performing environmental audits experienced limited agency given their role's close association with building regulation compliance. This left them with a sense of a lack of influence on the projects' direction towards environmental sustainability. In another study on key practitioners' involvement in projects for sustainable regeneration in the United Kingdom, Akotia and Opoku (2018) discovered that the involvement of practitioners with sustainability-oriented tasks assigned to their roles—for example, sustainability managers—was consistently low at all stages of the delivery processes of those projects (i.e. design, construction and post-construction). The reason proposed was that sustainability issues were not prioritized by other key practitioners involved (e.g. the client representative and construction project manager) and, in turn, went largely overlooked in relation to the outcomes of the projects and thus limited the agency of the sustainability actors.

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Along similar lines, in Gluch and Bosch-Sijtsema's (2016) study, environmental experts explained how their work was judged according to the imperative of being knowledgeable about on-site construction work. As a result, instead of developing and/or disrupting old unsustainable practices, they were found to maintain and thus reinforce the practices that they were supposed to change. The same tendency also emerged in a study on sustainable entrepreneurs, who, while endeavoring to promote sustainability and adapt it to a commercial logic, instead reproduced the logic that they had sought to transform (Arenas *et al.* 2020). Moreover, in a longitudinal study of 55 firms in the United Kingdom, Dahlmann and Grosvold (2017) observed how environmental managers were prone to embed the logic of sustainability into an existing market (i.e. corporate business) logic. Their findings additionally showed that this involved managing competing logics and that the managers continually redefined the institutional basis on which their professional roles and work rest. Consequently, despite following a similar approach to implementing sustainability, their work generated a wide range of outcomes. For some firms, environmental sustainability was fully incorporated into managerial practices with new behaviors as a result, whereas in others the effect was the reverse, with existing patterns of behaviors only further reinforced.

The above examples demonstrate how the work of sustainability professionals, and the sustainability performance of firms are affected by multiple logics. That dynamic underscores the need to increase current understandings of how organizations can manage hybrid organizational settings, which are far from stable, characterized by dynamism and ambiguity and, over time, can be combined in different ways to respond to shifting demands and problems (Gottlieb *et al.* 2020). Therefore, assuming that multiple institutional logics can coexist, and that this coexistence affects the work and agency of sustainability professionals, our research aims to deepen the understanding of the work and agency of sustainability professionals in an organizational context defined by multiple logics. Thus, the objective of our study is not to define a certain institutional logic but to understand the intrinsic influence of multiple institutional logics on their work.

We have applied the theoretical lens of institutional logics, a perspective proposed to be useful for explaining how professional work is conducted (Blomgren and Waks 2015). Thornton and Ocasio (2008, p. 101) define *institutional logics* as "socially constructed, historical patterns of material practices, assumptions, values, and beliefs, and rules by which individuals produce and reproduce their material subsistence, organize time and space, and provide meaning to their social reality". That definition proposes a link between individual agency and institutional structures as well as emphasizes situated practices in which institutional logics are embedded in a social and institutional context that both regulates and provides opportunities for change. In that context, *agency* refers to the capacity to act within a socially prescribed role (e.g. sustainability manager) that directs focus to the work of individuals within a structure, not on the structure itself (Hitlin and Elder 2007). Adopting a practice perspective means that professionals are defined by what they do (Pratt *et al.* 2006). By extension, the term *sustainability professionals* in this paper describes any professionals who work with and are responsible for sustainability as a primary component of their jobs—for example, environmental and sustainability experts, managers, auditors, coordinators, consultants, and strategists. In construction, sustainability professionals typically have a background in engineering or environmental sciences, are perceived as experts on environmental sustainability and professionally engaged in the field of sustainable construction (Månsson 2021).

In the remainder of this paper, Section "Frame of reference: institutional logics" presents key concepts related to institutional logics, after which Section "Methods" describes the research process and methods used to gather and analyze the empirical data. Following an abductive logic of discovery, logics were identified from the literature on sustainable construction. These are described in Chapter 4 leading to an analytical model showing the characteristics of four logics present in sustainable construction: sustainability logic, project logic, corporate business logic and governance logic. Section "Three narratives describing the work of sustainability professionals" presents key findings from our study in three examples describing work that sustainability professionals adopt to cope with different types of conditions in which multiple logics coexist. Thereafter, Section "Analysis and discussion" maps our analytical model with our empirical observations, discussing implications for sustainability work. Last, the paper closes by articulating our conclusions and suggestions for future research.

Frame of reference: institutional logics

Institutional theory offers a powerful perspective for studying processes that take place in complex organizations in various institutional fields (Greenwood *et al.*

2008). According to Scott (1995), an *institutional field* is a community that "partakes of a common meaning system and whose participants interact more frequently and fatefully with one another than with actors outside the field" (p. 56). In our study, the institutional field was sustainable construction. Therein, we assumed that sustainability professionals work in observance of principles aligned with sustainable construction. In assuming the broad acceptance of those principles, we also assume that all construction projects regulated by demands of sustainability belong to the institutional field of sustainable construction.

For practitioners to recognize shared principles, professional work need to be institutionalized, a process that occurs based on how work is performed by practitioners (Gherardi 2009). A central concept is the *paradox of embedded agency*, which refers to how individuals' actions are not only influenced by but also able to influence the institutions that otherwise regulate the institutional field in which they operate (Battilana and D'Aunno 2009). In that sense, *institutions* have been defined as cultural prescriptions and norms and as enduring elements that strongly influence organizational and individual behavior (Lawrence and Suddaby 2006).

Friedland and Alford (1991) first conceived the notion of institutional logics to explore the interrelationships between individuals, organizations, and society. As a meta-theory, institutional logics take strength from the capacity to facilitate the development of theory and research across multiple levels of analysis (Thornton and Ocasio 2008). An institutional logics approach bridges the macro and micro levels of analysis in the sense that situated practices are linked with beliefs, values and rules in wider institutional environments (Thornton *et al.* 2012). In their view, institutions are patterns of activities rooted in practice that give individuals and organizations motivation, a sense of identity and principles for how to act. Guiding what is perceived as the accepted way of doing things, institutional logics are the underlying actions of institutions that affect cognitive patterns, values and the ways in which regulations are formed (Thornton and Ocasio 2008). In turn, the interrelationships between different levels (e.g. individual, organizational and societal) are viewed as an interinstitutional system and as a mechanism for institutional change. For example, Bévort and Suddaby (2016), in their ethnographical study on how managers in professional service firms make sense of contradictory logics, found that the successful integration of a new logic was an important element in the process of change.

When institutional logics have been applied to study the implications of logic multiplicity, scholars have found that multiple logics can indeed coexist at the organizational level (Besharov and Smith 2014). Different professional groups, for instance, act upon different professional logics (cf. Dunn and Jones 2010)—that is, interpret realities differently due to being trained in different ways of thinking. Scholars have also found that professionals can be influenced by multiple logics (Jones and Livne-Tarandach 2008) and can learn how to mediate between them (Currie and Spyridonidis 2016). Research has additionally revealed that professionals not only mediate between logics but can also hijack a logic not belonging to their professional background and use it as a tool in for example negotiation (McPherson and Sauder 2013). Although individuals can influence institutional logics, because the means and ends of their ambitions and agency are embedded in the institutional setting, both are therefore enabled as well as constrained by institutional logics (Thornton and Ocasio 2008). Thus, individuals shape responses to institutional logics by either strengthening or weakening the embeddedness of a peripheral logic (Lawrence *et al.* 2013). Research on professional roles in contexts defined by a high degree of institutional complexity have acknowledged how some roles, as response to conflicting logics, become hybrid (Blomgren and Waks 2015, Adams 2020). This hybridity occurs when professionals blend elements from conflicting logics (Noordegraaf 2007). Adams (2020) conclude, based on a study on engineers becoming managers, that the hybridization may undermine professional unity leading to intra-professional division and conflict.

In summary, applying the theoretical lens of institutional logics allows us to explain how professional work is conducted (Blomgren and Waks 2015). Offering a link between individual agency and institutional structures together with its emphasis on situated practices in which institutional logics are embedded (Thornton and Ocasio 2008) make it a suitable lens to study the work and agency of sustainability professionals in an organizational context defined by multiple logics.

Methods

Qualitative methods and data have been recommended for capturing logics because logics are inevitably expressed in language and practices and manifested in symbols and materials (Reay and Jones 2016). Thus, in our research, studying logics and their

influence on sustainability professionals' work required grounding insights and abstractions within the context being studied by using quotations and thick descriptions. To investigate sustainability professionals' work and agency, we conducted in-depth interviews from March 2019 to February 2020, which provided an opportunity to capture rich, explanatory data suitable for understanding the professionals' real-life experiences, what they do and the meaning that they invest in their work.

Interview study

Interviewees were selected given their professional experience in environmental sustainability. The selection followed purposive sampling for qualitative research, in which participants are chosen based on their ability to provide insights into a studied phenomenon (Silverman 2001). The interviewees were identified from construction- and sustainability-oriented magazines and websites and from a list of companies represented at an annual industry conference on sustainable construction. Unlike companies' websites, which often indicate only the sustainability manager, the magazines and the list of companies at the conference allowed identifying individuals deep within organizations who are otherwise invisible to outsiders. Such individuals were chosen and contacted based on their years of work experience, job titles and representation of different types of business: architecture and/or building engineering consulting ($n = 13$), contractors ($n = 10$) and construction clients ($n = 8$). The sampling strategy yielded a mix of sustainability professionals, and 31 individuals working in 24 Swedish firms were interviewed (see Table 1), all of whom were working as environmental and/or sustainability experts, managers, and coordinators, at the time of data collection. Their education was in civil engineering, architecture, natural sciences or environmental science, and the length of their experience working with sustainability issues ranged from 1 to 35 years.

The sustainability professionals interviewed were responsible for sustainability work at the corporate or project level, if not both. Part of their work was to coordinate various sustainability tasks ranging from documentation and waste management to life cycle management and long-term strategic work. All interviewees perceived themselves as being experts in environmental sustainability but also as being tasked with managing tasks related to social sustainability, safety and/or quality assurance. In supporting construction projects with expertise, they established and followed up on environmental management routines and/or certification schemes or provided documents and guidelines to meet the clients' requirements for sustainability. Beyond that, they advised top management in formulating sustainability goals.

During the interviews, considerations were made regarding the sensitivity of the method selected, among which semi-structured interviews (Kvale 2007) have been suggested as being appropriate for collecting the experiences of individuals and understanding patterns of action from a micro-level institutional perspective (Lawrence and Suddaby 2006, Thornton and Ocasio 2008).

Twenty-seven interviews were conducted face-to-face, along with four via Skype, and each lasted between 45 min and 2.5 h. The interviewees were informed that the purpose of study was to examine sustainability professionals' role and work and that no preparation was needed in advance. All interviewees provided informed consent to participate, and they were informed that their identities would be protected from disclosure. In the interviews, performed in an open manner (Kvale 2007), the sustainability professionals were asked to elaborate upon how they perceive their role and how their role has developed over time. They were also asked to describe their own day-to-day work, in terms of both typical and more challenging conditions. They were additionally asked to provide detailed examples so that the different nuances in their work could be captured, especially regarding situations in which they confronted multiple interests and what actions they performed to cope with them. Other questions addressed power and agency with particular focus on their ability to influence the

Table 1. Overview of the interviewees by job title and type of firm.

Job title	Type of firm	*n*
Sustainability manager	Contractor	7
	Construction client	8
	Architecture and building engineering consultancy	1
QEH&S manager	Contractor	3
Environmental coordinator	Contractor	3
	Architecture and building engineering consultancy	4
Sustainability expert	Architecture and building engineering consultancy	8

organizations' business. Interviewees were encouraged to freely elaborate on the different topics, which gave us rich information about the sustainability professionals' everyday work. All interviews were conducted in Swedish, as the language used by the interviewees at work, and thus captured not only what they said but also nuances in expression and speech. We audio-recorded all interviews, transcribed them verbatim with the permission of the interviewees, coded the transcripts to ensure anonymity, and translated quotations into English. The interview data were stored according to the General Data Protection Regulation, and in reporting quotations in the findings, we have eliminated all information that can be traced to specific individuals. Referring to the Swedish law on ethics in research on human beings the research conducted was not object for an ethical review.

Analysis

Analysis followed an abductive logic of discovery (Edwards *et al.* 2014) in three steps. First, our thematic analysis of the empirical data focused on how the sustainability professionals perceived their work under different conditions and how they responded to those conditions. In that step, we sorted initial themes as draft conceptualizations based on patterns that we identified while transcribing the interviews. Those conceptualizations served as a coat hanger, so to speak, to hang and re-hang our analysis on. In that process, we focused on identifying representative situations describing the work of the professionals.

Second, we applied Thornton and Ocasio's (2008) analytical framework of *ideal types of institutional logics*, which they suggest using as a method of "interpretive analysis to understand the meaning that actors invest their actions with" (p. 110). In providing the meanings of actions, ideal types can be used as a formal analytical approach to explain empirical observations of interrelationships between the individual, organizational and societal levels. For that reason, ideal types should be developed at least in pairs. Based on a review of literature on sustainable construction, four field-level logics were identified—project logic, sustainability logic, corporate business logic and governance logic—as detailed in Section 4. Those logics should not be viewed as all-inclusive, for both complementary and overlapping logics could have been used in our analysis. However, the aim of our study was not to define a certain institutional logic but to understand the intrinsic influence of multiple institutional logics on the work and agency of sustainability professionals, and the four logics chosen were deemed to serve that purpose. Structuring the logics identified in the literature in accordance with the *ideal types of institutional logics* resulted in an analytical model that describes the multiple-logic context of sustainable construction. To describe the different elements of the four logics, we were inspired by the characteristics of logics as presented by Thornton and Ocasio (2008), which are neither exclusive nor inclusive but serve as guidelines for mapping a logic. Of Thornton and Ocasio's 12 original key characteristics, we used six judged to be useful for illustrating the multiple-logic context of sustainable construction: source of identity, source of legitimacy and source of authority, along with basis of mission, basis of attention and basis of strategy.

Third, after mapping the empirical observations with the analytical model, we were able to investigate how different coexisting institutional logics influence the work and agency of sustainability professionals in construction. To that end, the work of the sustainability professionals was recoded in an iterative process, which yielded three narratives describing how the professionals cope with different types of conditions in which multiple logics coexist. Employing narrative analysis allowed rich descriptions of the lived experiences of the interviewees and illuminated the contextual meanings of the stories told (Wang and Geale 2015).

The institutional field of sustainable construction

In this section, we describe the basic characteristics of the four primary institutional logics present in the institutional field of sustainable construction identified in the literature. Each logic also represents an ideal type of logic according to Thornton and Ocasio's (2008) analytical framework, and, together, the logics give structure to an analytical model describing the multiple-logic context of sustainable construction.

Sustainability logic

Sustainability logic rests on three pillars of sustainability: environmental sustainability, social sustainability and economic sustainability. Environmental sustainability continues to dominate in construction, whereas social sustainability receives less attention in both research and practice (Troje 2020, Udomsap and Hallinger 2020). A particularly prominent area within sustainable construction relates to developing conceptual frameworks and assessment methods, which tend

to reduce sustainability to environmental considerations (Berardi 2013, Lima *et al.* 2021). Sustainability logic is further subject to instrumental approaches with a mindset oriented toward processes involving materials, waste, management systems, energy measures and the use of natural resources (Silva and Figueiredo 2017, Udomsap and Hallinger 2020).

A central element in sustainability logic is life cycle thinking, which supports a holistic long-term approach toward sustainable development (Goh *et al.* 2020). Capturing the embedded dimensions of sustainability requires an integrative mindset (Kurucz *et al.* 2017), one that enables reflecting on and understanding the connections and consequences of underlying assumptions. That view stresses scientific research, expertise and education as important elements of sustainability logic (cf. O'Connor *et al.* 2021), from which a source of identity can follow (Månsson 2021). Strategies for work range from creating visions to implementing tools and methods to performing consolidative work by spreading knowledge via networking, communication and training (cf. Mazutis and Abolina 2019). The identity narrative also builds on the idea of the hyper-agency of heroic individuals as change agents who can single-handedly solve environmental challenges (Heizmann and Liu 2018).

Project logic

Construction projects are typically initiated by a client, and different firms participate in a sort of competitive collaboration to achieve the project's goals while also remaining competitors on the market (Winch 2010). To increase the predictability and coordination of tasks, the various roles and practices involved in the project are institutionalized (Kadefors 1995), meaning that construction professionals collaborate in relatively stable role structures with a shared understanding of who does what (Bos-de Vos *et al.* 2019). Various techniques of project management, including schedules, milestones and meetings, are used to coordinate and reconcile conflicting temporalities. Often, the routines of project management follow processes formalized by bodies such as the Project Management Institute (Lundin *et al.* 2015). With a shared project mission and institutionalized roles and standardized practices, membership in a project becomes a strong source of professional identity (Styhre 2012). As a result, career development is based on mobility across sequential projects instead of vertical movement in the permanent organization (McKevitt *et al.* 2017). Thus, legitimacy as well as authority are practice-based and tied to personal experiences gained in construction projects (Chan and Cooper 2010, Löwstedt *et al.* 2021).

The institutional logic of construction projects is captured in the concept of the iron triangle, meaning the typical project goals of time, cost and quality (Ogunlana 2010). The overarching imperative of any project is to solve complex problems for the client—that is, to fulfill a client's needs as stipulated in contractual agreements between firms involved in the project (Winch 2010). At the same time, the processes involved in projects are linear, transitory, sequential and often governed by formal stage–gates. Therein, the occurrence of iterations, especially between stages, is preferably minimized, and the norm is immediate, decentralized decision-making (cf. Dubois and Gadde 2002), which nurtures short-term decision-making. Research has also shown that project members tend to settle for processes that are good enough when handling new organizing needs (Eriksson and Kadefors 2017)—for example, ones related to achieving sustainability. However, the strong orientation to tasks and the project's schedule can be difficult to reconcile with long-term but slower, organization-level learning (Eriksson 2013, van Berkel *et al.* 2016), which may decelerate sustainable development.

Corporate business logic

The decentralized nature of projects implies a decoupling of temporary projects and the permanent organization (Dubois and Gadde 2002), the latter of which follows a corporate business logic. Although large projects may have specific sustainability staff on-site, most sustainability professionals belong to centrally located sustainability functions in the permanent organization (Gluch *et al.* 2014). The economic system of the firms (permanent organization) builds on managerial capitalism (Thornton and Ocasio 2008), wherein the economic imperative dominates and profit-making motives guide decision-making (Chan and Cooper 2010). Management provides a source of identity and representation on the corporate board that is important from the perspective of power and for symbolic reasons. With its primary operations manifested in construction projects, corporate business logic in construction relates to the given project's logic in term of a focus on efficiency and profitability. However, at the corporate level, competitiveness is a more immediate concern (Chang *et al.* 2017). To make their sustainability work visible, establish credibility and win new tenders, many firms have opted for certification methods (Montes *et al.* 2021). Top-down goal-setting and

strategic work are two means used to develop a sustainable business, in which different key performance indicators are established to follow up and measure stated goals (Chan and Cooper 2010). Integrated management systems, including environmental management systems and audits, serve as a structural backbone for work geared toward environmental sustainability (Gluch *et al.* 2014).

Governance logic

The construction industry faces numerous challenges related to sustainability that affect society at large (Leiringer 2020). For example, the industry consumes an estimated 40% of all raw materials worldwide (World Economic Forum 2016), and nearly 11% of the world's energy and process-related CO_2 emissions derive from construction (Global Alliance for Buildings and Construction 2019). The industry is also involved in both the restoration and adaption of the built environment to cope with the consequences of climate change, including damages caused by flooding, hurricanes and other natural hazards (World Economic Forum 2016, Mazutis and Abolina 2019). Representing approximately 50% of the capital invested in assets annually, construction is an important way for societies to create new value (Winch 2010). The large environmental, societal and financial impact of construction and the industry's highly regulated work imply that sustainable construction embodies a logic of governance. Because the sector's sustainability transition can be expected to tremendously effect sustainable development, it is a governmental interest governed by law and other policy instruments, including the Sustainable Development Goals issued by the United Nations. Governments thus have broad powers of control over construction work, which is regulated by extensive statutory systems aiming to protect societal and environmental interests (Hughes *et al.* 2015). Here, audits serve as important instrument to assess firms' compliance with those regulations giving sustainability professionals a source of identity (Murtagh *et al.* 2018). Beyond that, different construction associations provide templates and professional standards that regulate work (Ashworth and Perera 2018). Last, an important source of legitimacy in sustainability is accountability in reaching targets and goals (Bowen *et al.* 2017). Demonstrating such accountability in sustainable construction is often governed by voluntary normative instruments, including various assessment methods, with LEED and the BREAM being among the earliest, most widely applied tools (Brown *et al.* 2016).

Analytical model

The four primary institutional logics described in the previous section coexist in sustainable construction, and sustainability professionals have to relate to all of them in their work. In a field with multiple logics, logics may be contradictory, paradoxical, competing or conflicting and usually contribute to institutional complexity at one time or another (Greenwood *et al.* 2011). For example, sustainability logic would have a long-term perspective by default, whereas project logic tends to have an embedded short-term perspective, according to which benefits should be immediate and tangible. Added to that, personal experience gives someone authority in project logic, whereas corporate business logic values managerial mandates, which may cause role conflicts for sustainability professionals. Different logics can also amplify each other. For example, resolutions of environmental challenges may boost a project's success, while forecasting methods based on sustainability logic may go hand in hand with corporate strategic work. Along similar lines, the use of building certification schemes, which are based on governance logic, may align well with methods in project management but may also clash if based on disparate principles regarding cost allocation.

Table 2 present elements of different characteristics related to each ideal type of institutional logic in sustainable construction. The schematic overview serves as an analytical lens to gain a deeper understanding of how those institutional logics play out in the everyday work of sustainability professionals and how it affects their agency. Attempts to alter a set of established practices add to that complexity, which puts pressure on the various actors involved to prioritize their focus when operating in the field. Such nonconformity is what sustainability professionals typically face when pushing for a sustainability agenda in construction.

Three narratives describing the work of sustainability professionals

The findings are presented in three narratives, each of which describes how sustainability professionals cope with different conditions in which multiple logics coexist.

Thankless work: constantly swimming against the current

> The most boring thing? Well, the most boring, or rather difficult, thing is when you feel that you're

Table 2. Analytical model of field-level logics in sustainable construction, based on Thornton and Ocasio's (2008) framework of ideal types of institutional logics.

Characteristics	Sustainability logic	Project logic	Corporate business logic	Governance logic
Source of identity	Change agent	Project member	Management member	Auditor
Source of legitimacy	Expertise	Experience	Credibility	Accountability
Source of authority	Science Formal education Expertise knowledge	Personal experience Contractual agreements	Managerial mandate	Regulatory frameworks (e.g. laws, norms and standards)
Basis of mission	Long-term sustainable development	Fulfilment of client's needs Problem-solving Efficiency	Competitive business Profitability	Sustainability compliance
Basis of attention	Resolving environmental challenges	Completing successful projects	Developing profitable businesses	Meeting environmental and societal goals
Basis of strategy (action)	Forecasting, measurement of environmental impact Networking Communication and training	Project management practices and methods	Goal-settingKey performance indicators Management systems Strategic work	Standardization Building certification schemes

> constantly swimming against the current. Like when you just think "Yeesh, does this even make a difference? Here I am, working hard, and no one cares". (Environmental coordinator)

The interviewees described how even when sustainability was elevated as important in client demands or corporate policy documents, the status quo of the business seldom change. For instance, the environmental coordinator reported encountering managers, site managers and subcontractors who were unconsciously or even deliberately working against environmental requirements. That tendency typically characterizes situations in which sustainability professionals perform work without receiving any response to or assessment of their work, or what we call "thankless work". One of the interviewees, an environmental coordinator who has long worked with environmental certification schemes, ranked such unresponsiveness as the worst thing about their work:

> You know that something won't turn out well … and you can fight tooth and nail and not even get a response on certain issues that you raise flags about. (Environmental coordinator)

Owing to that lack of oversight, one sustainability manager reflected on how easy it is to bypass environmental considerations in construction projects:

> There are a lot of concerns that easily fall into the category of "out of sight, out of mind" if people go around thinking that someone else handles them. Especially if there's a sustainability manager or someone similar, then they might think that a lot more falls under their scope of responsibility than actually does. (Sustainability manager)

In the same vein, an environmental coordinator described the stress of speculating whether sustainability had been considered when they were not invited to engage on a project:

> I think that's the most difficult aspect: understanding what questions will come and when. Because it isn't like you're always invited; you have to step up and take initiative yourself. A lot of work is that way … thinking that, you know, "Oh, now I have to be here and in this and that or gather this together". (Environmental coordinator)

Consequently, many of the interviewees described resorting to nagging, or as one of the interviewees explained it:

> Now I've been nagging about this [a sustainability issue] so many times, and still nothing has happened. And it's frustrating. I mean, don't you want to feel that you're making a *real* difference? (Sustainability expert)

A sustainability expert similarly described how lonely and demoralizing it can be to perform a job that no one seems to need:

> The scariest thing, I think, is when you invest time and energy into something, and then you get no response to it, no engagement, and what happens then is that you lose that engagement from and within yourself. (Sustainability expert)

When communication failed, many of the interviewees described having to remind other project members about the client's demands or resorting to using higher-order certification schemes and corporate sustainability goals to provide a source of authority and advocate for the engagement of project members in sustainability-focused work:

> If it goes against the certification scheme, then you can use it. Or if it goes against a higher goal in the company, then you can use that. Otherwise, it's hard to do anything. (Environmental coordinator)

With limited resources and no authority to enforce sustainability practices, the sustainability professionals reporting often opting to adapt their work to

construction project management. Doing so involves a process of continually negotiating and creating meaning of their mission in order to make sustainability issues tangible for project members. At the same time, the interviewees claimed that making the mission more approachable also diluted both their role and mission and reduced sustainability work to requiring only the bare minimum in terms of scope and effort. Furthermore, given the ambiguity surrounding the concept of sustainability and the lack of knowledge in organizations about what sustainability work really entails, the sustainability professionals also found themselves dragged down by tasks beyond the immediate scope of their work:

> [There are] things that you might think you shouldn't have to take responsibility for. Even if the term *sustainability* is very broadly defined and understood, sometimes [*laughs*] things fall under it that maybe shouldn't. (Sustainability manager)

One of the sustainability managers also described how adding social sustainability to the already broad scope of environmental management has diminished overall attention to sustainability in their organizations. As another interviewee put it, assigning tasks that clearly involve social science to individuals with a background in natural science signaled that sustainability is not especially important. The interviewee reported having to spend time to learn about social sustainability and manage it as best as possible, which had precluded opportunities to stay updated about issues related to environmental sustainability due to various trade-offs made to balance the workload. In the end, the interviewee stated that neither social nor environmental sustainability has benefited from the combination. In the same vein, a sustainability manager from a construction client reflected on their previous role as an environmental coordinator in construction projects, which "became somewhat of a miscellaneous bin" of various tasks. That meant that the manager had to do what no one else in the project wanted or had the time to do. Accordingly, the work was bound not only by a tight time frame stipulated by the delivery of the construction project but also by how other tasks were distributed across the project team. Thus, due to traditional, highly institutional roles in construction projects, the vague definition of the role of sustainability manager and the vastness of the concept of sustainability, other members of the organizations came to consider the sustainability professionals as extra resources for projects, not as experts with their own professional domain.

Rewarding collaborative work: being invited and influential

> When it [sustainability] is not a side activity but part of what's important—to be invited and influence the projects and be able to answer, "Okay, how could we improve this, you who know sustainability?"—that's a boost. (Sustainability expert)

Contrary to doing thankless work, and illustrated in the quotation above, the sustainability professionals also described situations when their competence was needed and/or when they felt that sustainability work was considered to be essential to the delivery of a construction project. Under those circumstances, even if their mandate was the same as in other projects, the interviewees described experiencing increased inclusion in all parts of the projects, more invitations to meetings and greater authority and influence over the projects' outcomes. In those situations, they perceived being able to contribute to the success of projects by providing expertise and, in turn, doing rewarding collaborative work.

As part of joint decision-making processes, they also perceived that they could take advantage of the situation and influence decisions so that the sustainability ambition and the result of the project would exceed the client's demands:

> Driving those issues through a process is the most fun part of the work: to go from goals to creating something, to break down and concretize. (Sustainability expert)

Common in those situations was that the professionals had found at least one counterpart, from another organization or unit, who shared their view on what sustainable construction entails. In light of such mutual sustainability-oriented ambitions, the need for more collaboration with sustainability professionals was evident given their knowledge, which had become a highly valued resource. In that position, the sustainability professionals could act as both full-scale project members and as the sustainability experts that they were trained to be.

With shared problems to handle, the sustainability professionals and the counterpart developed collaborative agency. One of the interviewees explained it as a game-changing experience:

> When you meet such a person, you realize it very quickly because you'll notice how easy it [your work] has become and how smoothly it's gone. You talk about sustainability, and you make decisions, and you feel that you're not alone. (Sustainability expert)

That example illustrates that sustainability work can be done without becoming thankless work when

sustainability knowledge is valued. In that light, sustainability professionals can act by not only setting goals but also by breaking down holistic environmental and societal goals (e.g. Sustainable Development Goals) and making them tangible and applicable in the context at hand:

> My role is to identify how to make the project go slightly further than by just following the usual routines. That's when the global goals come in handy. They're a way to make it [sustainability] tangible: what we should do and how we should do it, to communicate that we're doing in relation to the global goals. (Environmental coordinator)

By engaging in solving complex problems—a virtue on projects—and contributing to sustainable business, which is important for a firm's credibility, sustainability professionals felt that they could contribute to a sustainable future and a better society through their work.

Even so, a challenge that the sustainability professionals reported facing in their work was the feeling of not sufficiently enough being able to manage the vastness of sustainability and its disparate environmental, social and economic dimensions with respect to different scientific disciplines. The social dimension was perceived as being especially cumbersome because most sustainability professionals lack experience and training in it:

> I did have some critiques about social aspects. … That's an entirely different science. That's social science; that's behavior. … The environment is natural science. My background is in natural laws and science, so I think it's became a mishmash. (Sustainability manager)

The interviewees further described how the focus of their work was in constant flux due to, for example, new governmental regulations, environmental incidents, clients' shifting demands and/or altered corporate business strategies. Moreover, the open definition of *sustainability* has amplified the ambiguity and vastness of the work of sustainability professionals, who confront various interpretations of sustainability and tackle sometimes unreasonable expectations of what can be expected of their expertise and included in their assignments. However, even if sustainability has broadened in scope, such broadening has seldom been reflected in how sustainability is organized, and, as several interviewees explained, new responsibilities imposed on them had not resulted in more resources. In response, to meet expectations of knowing the entire field of sustainability and simultaneously furnish expertise perceived as being relevant for multiple construction projects, sustainability professionals had to alternate between being a specialist and a generalist. That work involved managing different temporal perspectives to make it relevant to multiple actors, which entailed reflecting on the past, conforming to the present and predicting subsequent moves to prepare for future visionary work.

Visionary work: looking out to find keys to accelerate transition

> I think that we've changed our business model slightly, but it's not transformed. So that's something that I think about. What are the keys to accelerate that transition? (Sustainability expert)

Several of the interviewees reflected on how to initiate the transition toward sustainability, as the above quotation represents. To accelerate that transition, the sustainability professionals described the importance of continually challenging current project management and/or business practices. With the ambition to capture the overall picture and challenges related to sustainability, they engaged in visionary work, and several professionals described their role as being to always drive the sustainability agenda forward. That ambition relates to their perception that they should constantly aim for change and that their role and tasks are intrinsic factors of such change.

For cases in point, the interviewees described situations of sustainability work in which they had supported top management with setting sustainability goals and thereafter being tasked to ensure that the goals were acted on:

> We don't want sustainability-related questions and aspects to be separate; we want them to be a part of everything that we do. We say that it's supposed to be a normal part of our everyday life. It's not supposed to be separate. … [I make sure] that our management doesn't say a bunch of things that aren't implemented throughout the organization. … It's my job to minimize that gap but also to support and help. (Sustainability expert)

To improve the sustainability performance of construction projects and firms, the professionals proposed fulfilling global sustainability goals as a means to boost a company's credibility and reputation. In turn, they pursued those goals to push the ambitions of projects beyond the clients' needs. In their effort to make business models more sustainable, they sought to set goals and corporate strategies aligned with sustainability goals, or as one sustainability manager explained:

> Sustainability could play a defining role in how we should shape our [future] business models or how we

> organize ourselves to get synergistic effects. Sustainability, as I see it, can be a clear and excellent driving force. However, I don't think that companies are fully aware of how we can contribute. Or that's what it feels like anyway. (Sustainability manager)

Another strategy for improving a project's performance was to advocate for new ways to solve the industry's sustainability-related challenges, as one sustainability manager stated:

> It's easy to fall back on the explanation that "This is how it is". We [sustainability professionals] don't have that luxury because we have to think outside the box if we are to overcome our [the industry's sustainability] challenges. … I often say, "We haven't fixed any of our problems by doing it this way, so we have to do something else". (Sustainability manager)

Even if the interviewees recognized the need to think "outside the box" and act proactively, much of their work concerns, as one of the interviewees expressed it, "Keeping one's head above the surface" and staying ahead of the organization by keeping abreast of the latest scientific advice and news regarding sustainability, both nationally and internationally. Or, as another of the interviewees said:

> An important part of my work is trying to find ways to always stay a couple steps ahead of the organization on certain questions: forecasting the future, figuring out what aspects will come up next. Because, in a way, it [sustainability work] never ends. You'll never be finished with it. There are always new things and challenges to face. (Sustainability manager)

When involved in visionary work, the professionals identified primarily as experts. By building their agency on expertise in sustainability, they could stay ahead of the game. In their visionary work, they stated that they paid close attention in order to identify future challenges in sustainable construction and predict the next move. In parallel, to maintain credibility, they had to continually develop their competence in various areas of knowledge and follow up-to-date scientific advice. With a sustainable future in sight, they defined their agenda in line with their personal idea of that future, as stated by one sustainability manager:

> It often ends up that I'm writing my own agenda in a way. And there are tons to do, so the agenda becomes quite full. (Sustainability manager)

In turn, that dynamic nurtured the idea of sustainability professionals as change agents able to define the sustainability agenda and single-handedly make people follow it, which they perceived as negatively affecting their work in terms of stress and lack of time. Nevertheless, the broad scope of sustainable construction has also meant that they have had to continuously make knowledge about sustainability relevant for corporate business and ensure that it follows governing regulations and guidelines. Moreover, tasks perceived as being fuzzy or unclear by other built environment professionals have often been assigned to sustainability professionals. As a result, and similar to when they do thankless work, the interviewees described how sustainability professionals could easily become so-called fuzzy subject professionals and the role a catch-all for miscellaneous tasks.

The different aspects captured under the umbrella of sustainability have also increased over time. Coping with a mishmash of disparate areas in their work, whether social aspects or issues of quality and/or safety, was a struggle shared among the interviewees. For a remedy, the interviewees emphasized the importance of taking ownership of both the issue and their own role in the organization, including defining both the agenda and goals for their and the organizations' sustainability work. Adopting the discourse of project management, an environmental coordinator described their role as "being the project leader of sustainability". Taking ownership of sustainability, according to the interviewees, sustained the relevance of their work and role and was reported to grant them agency. However, on the flip side, as expressed by a sustainability expert, "free frames" and undefined boundaries provide the freedom to define the tasks involved but also create role ambiguity and the perception that one's work is not enough and never will be:

> There's ambiguity in what I'm supposed to deliver and the time frame in which I'm supposed to do it. I have free frames but also a very limited amount of time. (Sustainability expert)

Analysis and discussion

The aim of our research was to investigate the intrinsic influence of multiple institutional logics on the work and agency of sustainability professionals. In our findings, their efforts were captured in three sorts of work that they adopt to cope with different conditions in which multiple institutional logics coexist. The primary elements of that work are summarized in Table 3.

What we have labeled as thankless work in our study seems to coincide with work that aligns closely with the construction project's logic. The primary mission of that sort of work is to inform and control. The primary logics that play out are project and

Table 3. Sustainability professionals' mission, work tasks and agency in sustainable construction.

	Thankless work	Rewarding collaborative work	Visionary work
Primary logics	Project and Governance	Project and Sustainability	Corporate and Sustainability
Mission	Inform and control	Communicate and collaborate	Set agenda and justify future action
Work tasks	Attend to immediate needs Detect ignorance and compensate for lack of compliance Align sustainability work with situated project management Remind and nag Handle a "miscellaneous bin" of tasks	Identify counterparts Facilitate collaboration Manage different temporal perspectives and topics in flux Interweave sustainability and project practices Participate in decision-making processes Set shared sub-goals Solve problems Make sustainability relevant for multiple actors	Increase relevance of sustainability issues Support transitions to long-term sustainability Solve industrial challenges Search for keys to transition Set the agenda for sustainability Constantly aim for change Set and implement goals Be proactive Forecast
Maintain agency by:	Playing symbolic roles as proxies for sustainability work Channeling authority via regulations, certification schemes and/or clients' demands Adapting sustainability work to a project logic to make it tangible Negotiating and creating the meaning of missions	Collaborating on shared problems Pursuing joint ambitions to resolve challenges beyond clients' demands Enhancing project performance and achieving project success Gaining legitimacy based on highly valued expertise Influencing decisions Alternating between generalist and expertise roles	Ensuring that environmental sustainability is always topical Taking ownership of sustainability and acting as the "project leader of sustainability" Using various sources of accountability and credibility to sustain legitimacy Capturing the overall picture and challenges related to sustainability as a driver for creating business value

governance logics. Sustainability professionals need to adapt to a project logic focusing on short-term problem-solving and efficiency (Gluch 2009). That focus requires being attentive to organizational and/or project members' immediate needs but also detecting ignorance and compensating for noncompliance with sustainability issues. They channel authority through the means of governing instruments such as regulation, certification schemes and clients' demands, which typically aligns with governance logic. Altogether, such work is described as a continuous fight. Similar to what Murtagh et al. (2018) observed in their study on building control surveyors assigned to perform environmental audits, our findings highlight the struggle of sustainability professionals to make their roles as well as missions relevant to a project logic by continuously seeking for invitations to situations where they sense that they can make a difference. However, as observed by Akotia and Opoku (2018), such involvement is difficult to achieve if sustainability is not prioritized and professionals assigned sustainability-focused tasks are excluded from project meetings. Consequently, the advocacy for sustainability either becomes unrecognized or fails to spur engagement from others, thus leaving the professionals to perceive that their agency is more symbolic than operative. In turn, a rather lonely role is created, one designed to execute work that nobody seems to appreciate. Subordinating sustainability work under a project logic increases attention to sustainability issues but also risks limiting the depth of the work; at the same time, it gives it an even broader scope that makes the work a miscellaneous bin of tasks. As a result, not only do competing logics risk limiting work on sustainability in an effort to appeal to project management (Gluch and Bosch-Sijtsema 2016), but others in organizations might also neglect sustainability due to a false sense of security that it is being fully handled by sustainability professionals. To avoid being captured on a symbolic level and used as proxy for not doing sustainability work, much of the sustainability professionals' thankless work entailed negotiating and creating meaning of their mission—for example, through various types of client-stipulated documents and governing schemes. In that way, our findings elaborate what Murtagh *et al.* (2018) found by clarifying why sustainability professionals perceive that their power to promote practices of sustainability is limited to assuring compliance with building regulations.

Contrary to thankless work, rewarding collaborative work is based on both project and sustainability logics, such that the two logics seem to coexist (Besharov and Smith 2014, Gottlieb *et al.* 2020) in a way that sustainability work can blossom. On occasion, sustainability professionals have met counterparts, often in construction projects, with whom they can create joint goals for sustainability (and construction) work. The mission of the professionals in such work is to communicate and collaborate the means to handle the complexity and vastness of sustainable construction by developing the

work beyond the clients' demands in individual projects. When involved in collaborative work, the professionals had to balance their actions to the different logics to various extents depending on the context. Although not specifically covered by Dahlmann and Grosvold's (2017), that ability to handle dynamic contexts may explain why some of the environmental managers in their study succeeded in incorporating sustainability into their firm's managerial practices better than others. However, a challenge for sustainability professionals in doing rewarding collaborative work is that they continuously have to move between a specialist and a generalist role causing role fragmentation and a sense of being overwhelmed by the role expectations. In collaborative work, the professionals felt they were invited as a natural part of the project team, which allowed them to mingle sustainability work with project management on an equal footing. As such, they could not only remain attentive to regulatory demands but also influence decisions leading to the development of business models and the success of projects. Perceiving that their expertise was valued, the professionals understood that their supportive work can be rewarding as long as collaborative agency is fostered. Thus, our findings underscore how the role of sustainability professionals depends on the situation and the people with whom they interact.

The preceding example shows how sustainability work may become visionary work when sustainability professionals get enough space to act proactively. Agency supporting visionary work builds on sustainability professionals' being perceived by others as knowledgeable, credible and open to a multiple-logic view so that their work remains highly relevant to multiple groups over time and thus achieves continuity. Key missions in their visionary work include setting the agenda and justifying future actions by pushing the sustainability agenda forward and contributing to the development of a sustainable future. In such visionary work, authority is based on a combination of policy instruments and sustainability expertise. The professionals' agency is thus formed by their acting as project leaders of sustainability and positioning themselves as being credible. Their expertise and challenge-focused drive provide a shared basis of attention to transitioning toward sustainability, ways of making business models more sustainable and ways of contributing to business success by setting and implementing goals, forecasting future scenarios and solving industry challenges. Their visionary work shows elements of corporate business logics combined with sustainability logics. In that way, they not only mediate between logics but also hijack a logic outside their professional background (McPherson and Sauder 2013) and use a corporate business logic and deliberately advocating for the creation of business value.

However, similar to previous studies (Dahlmann and Grosvold 2017, Arenas *et al.* 2020) on coping with multiple logics, our study revealed that visionary work can also have the opposite effect: that instead of integrating sustainability and transforming other logics, it risks developing a peripheral logic and reinforcing prevailing logics. That dynamic manifested in the example of sustainability professionals' becoming the "fuzzy subject professionals" made to be responsible for all kinds of tasks not categorized within the framework of traditional project management. The vastness and ambiguity of both the tasks and objective (i.e. sustainability) complicated our interviewees' ability to maintain agency. Another risk is that the direction of sustainability work, due to limited resources and an unreasonable scope, is limited to primarily following the personal preferences of the few sustainability professionals involved.

Because our study focused on sustainability professionals, we cannot answer whether our findings are unique to their work or indicate a widespread dynamic among other professional groups in the construction industry. Most likely, other individuals with roles based on expertise may perform, for example, thankless work because they either support other professionals or encounter organizational actors who are unconsciously or deliberately opportunistic. However, in managing a continuously shifting subject instead of people (e.g. construction workers) or a rather stable knowledge domain (e.g. building physics), what seems to be unique is the broad variety of stakeholders and the vastness of the area they are responsible for, which forces them to constantly shift perspectives—for example, from the project to the firm to governance—and time frame, from the short to long term and between the past, present and future.

Conclusions and directions for future research

This paper contributes to an emerging field of research on sustainability work in the construction industry, first by showing how professionals cope with institutional contexts defined by multiple logics, herein exemplified by sustainable construction. Describing the role of sustainability professionals as navigators of multiple institutional logics, we have elaborated past findings about such professionals in the construction

industry (cf. Gluch 2009, Troje 2020) by showcasing how they have to reconcile conflicting practices. Our findings show how the professionals not only negotiate but also continuously combine logics in order to satisfy multiple institutional logics. That observation confirms the dynamic view on how multiple logics coexist in construction suggested by Gottlieb *et al.* (2020) and Gluch and Bosch-Sijtsema (2016). Supported primarily by a governance logic, sustainability professionals define the means and ends of sustainability as well as create new sustainability practices largely defined by the logic of sustainability. They further adapt those practices to contribute to the successful delivery of projects and comply with overall corporate business models, with those following a project or corporate business logic. Our research adds to current knowledge suggesting that professionals create hybrid logics (Blomgren and Waks 2015, Adams 2020) and learn how to mediate between them (Currie and Spyridonidis 2016) by showing how sustainability professionals, depending on the work conditions, learn how to shift and balance their work depending on which logics are central to their work at the moment. In our study, multiple logics simultaneously existed on an equal basis—for example, in performing rewarding collaborative work—which contrasts previous findings showing the dominance of one logic in certain phases of a change process (cf. Blomgren and Waks 2015). Findings from other contexts have additionally shown that professionals often operate according to two competing logics or else blend them into a new hybrid logic (Currie and Spyridonidis 2016, Dahlmann and Grosvold 2017). In our study, by comparison, the examples of collaborative and visionary work stage how sustainability professionals strike such balances in their everyday work.

Second, by extending current knowledge with rich empirical examples of the everyday work of sustainability professionals, the paper highlights the complexity involved in managing the vastness and ambiguity of sustainability and how it requires individuals to be both flexible and sensitive to the existence of multiple logics in their immediate context. The findings show how sustainability professionals' everyday work is a blend of thankless, rewarding collaborative and visionary work that they need to master and shift between in order to maintain agency in transitions toward sustainability. In that dynamic, they are pressured to deliver time and cost-efficient construction projects while at once ensuring that environmental sustainability is not bypassed. To those ends, they need to become specialist–generalists who constantly work for change in contexts that may call for their support with sustainability in some instances but disregard and/or undermine their work in others. Sustainability professionals thus create situated hybrid logics that are flexible and dynamic enough to adapt to different situations, whether they call for hands-on project support or long-term corporate strategic work. They also have to learn how to shift between different logics on a continual basis instead of transitionally. For example, we found that when sustainability logic did not work as a strategic basis, the professionals temporarily adopted the logic of governance for support. However, the frustration by sustainability professionals stating that others see them as "fuzzy subject professionals" handling a "miscellaneous bin of tasks" tell us that the hybridization of their role undermines their professionality and professional unity (Adams 2020), which firms need to consider when organizing sustainability work.

Third, to support our analysis, we developed a schematic overview of the primary characteristics of four institutional logics that coexist in sustainable construction and that sustainability professionals have to relate to: sustainability logic, project logic, corporate business logic and governance logic. Although the overview is indeed a contribution of our research, a more systematic review might allow a comprehensive picture of the institutional field of sustainable construction.

Agency involves dimensions of power that we merely touched upon in our study by describing sustainability professionals' authority and legitimacy to act. An interesting continuation of our study would be to examine the implications of power structures and individual agency at the institutional level. However, doing so would necessitate including actors in the analysis that sustainability professionals interact with. A related question concerns how the role of sustainability professional adheres to or possibly conflicts with other roles, which raises another question about who is included in the sustainability profession and who is not. Because sustainability professionals depend on interactions with other professionals, future research should also investigate what happens at the boundaries between professional groups. That dynamic also relates to the question of how professions become hybrid (e.g. Blomgren and Waks 2015, Adams 2020), a topic that remains underexamined in construction.

Moreover, the corporate business logic, at least as described by our interviewees, did not reveal any commercial side of sustainable construction, despite its emphasis in studies in other industrial fields when

addressing contrasting logics in sustainability (Arenas *et al*. 2020). That dynamic could add a fifth logic to the institutional field and thus further increase the complexity of sustainable construction. However, it might also indicate that sustainability professionals are either excluded from that discussion in their companies or that sustainable construction in its current form lacks a commercial dimension. The latter could mean that sustainability is not embedded in current business models and thus potentially presents an untapped opportunity for the construction industry. What also does not seem to fit into sustainable construction is logic of social sustainability. Neither literature not the interviewees capture social sustainability as part of sustainable construction, contrary our interviewees perceive social sustainability as problematic and describes it as a struggle. If social sustainability should truly be included in sustainable construction, it needs a totally different organizational approach than what we have seen so far in both industry and research, since current trend only limits the agency and work of sustainability professionals leading to a slower transition toward sustainability.

Acknowledgements

We would like to thank three anonymous reviewers for their valuable comments on previous versions of this paper. We also thank all the sustainability professionals who generously shared their stories with us.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was supported by FORMAS under Grant 2015-01372 and CMB Grant no 178.

Data availability statement

The data that support the findings of this study are available on request from the corresponding author, PG. The data are not publicly available due to their containing information that could compromise the privacy of research participants.

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Paper IV

SUPPORTIVE HERO AND TROUBLEMAKER? DIVERGING ENVIRONMENTAL WORK EXPECTATIONS IN CONSTRUCTION

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Despite being key agents in the transition toward a more sustainable built environment, environmental experts often struggle with unclear responsibilities and ambiguous work expectations—hindering their ability to drive meaningful change. This paper explores how everyday dynamics in construction projects shape environmental experts' work expectations. Drawing on 20 semi-structured interviews and 80 hours of observational fieldwork from a large Swedish infrastructure project, the study analyses how project actors invest different meanings and activities into the use of space and time, using a practice lens. The findings suggest that diverging work expectations emerge from conflicting spatial and temporal understandings between the production and client organisations—tensions that environmental experts must continuously navigate. This research contributes to the literature on environmental experts in construction management and offers new insight into the spatial and temporal dimensions of environmental work that they are navigating.

Keywords: environmental experts, environmental work, practice, tensions, work expectations.

INTRODUCTION

Infrastructure in terms of systems, networks, and structures (road, railway) are important foundations for society and enable social and economic development (Davies et al., 2019). Especially, in large infrastructure projects, there are technical, regulatory, and organizational dependencies that make these projects complex (Geraldi et al., 2011). Complexity can be perceived as structural (i.e., size, variety), dynamic (changes), uncertainty, pace (urgency or criticality of time), and socio-political complexity (Geraldi et al., 2011). Large infrastructure projects have a major societal impact and require both public and political support and often require public funding and ownership (Walsh et al., 2022). Furthermore, the construction and maintenance of infrastructure is often expensive and has large environmental implications like CO2-emissions, pollution, and noise (Davies et al., 2019). In many of these projects, there is a strong focus on sustainability and environmental requirements both during the construction but also after construction. While there is abundant literature on governance and project management of large and complex projects (Davies et al., 2019), and research on sustainability assessment during and after infrastructure construction, there is hardly any research on how these projects organize their environmental work and how environmental experts interact with production and construction client professionals.

Hellsvik, S., & Bosch-Sijtsema, P. (2025, September 1–3). Supportive hero and troublemaker? Diverging environmental work expectations in construction. In *Proceedings of the 41st Annual ARCOM Conference: Building Regenerative Cities, Dundee, UK.* Association of Researchers in Construction Management.

The lack of research on environmental roles within highly environmentally complex projects poses a problem, as the delivery of such projects partly depends on clear role structures (Bechky 2006) that provide clarity into the responsibilities, practices, roles, and relationships of the actors involved. Existing research on environmental roles has found that these professionals often struggle with unclear responsibilities and ambiguous role expectations, which hinders their ability to drive meaningful change (Gluch and Bosch- Sijtsema 2016). For example, Akotia and Opoku (2018) found that sustainability professionals are often involved too late in the delivery process, even in projects explicitly framed as sustainable regeneration. Similarly, other studies have highlighted how environmental management frequently clashes with the more immediate demands of construction work (Gluch and Räisänen 2012), resulting in environmental experts struggling to find their place among more established roles in construction projects (Gluch 2009, Gluch and Bosch- Sijtsema 2016).

Given that sustainability and environmental requirements in infrastructure projects are likely to increase, and that clarity around responsibilities, practices, and roles is essential for delivering projects accordingly, this research aims to explore why environmental experts often have difficulties performing their work in relation to other professionals in projects with high environmental ambitions. To explore this, we conducted a case study of a large-scale infrastructure project in Sweden, characterised by high environmental demands, complex construction processes, and a dense urban setting. More specifically, we ask the following research question: How do everyday dynamics in construction projects shape environmental experts' work expectations?

To address this question, we adopt a practice lens which emphasizes that environmental work is empirically grounded in what people actually do in practice rather than through formal documents and predefined descriptions. By centring on people's actions (practices), we gain insight into how everyday dynamics in construction projects shape environmental work expectations, and how these expectations, in turn shape the work environmental experts do. A key advantage of a practice lens is that it allows us to highlight tensions and contradictions as they play out on the ground, offering a more nuanced understanding of why environmental experts may struggle to establish themselves within projects. It also provides nuanced insights into how the industry might better organize environmental work in the future.

PRACTICE PERSPECTIVE ON ROLE EXPECTATIONS

By adopting a practice lens (Feldman and Orlikowski 2011), this study focuses on the micro-dynamics of everyday actions and interactions through which construction outcomes are produced. More specifically, we are interested in what individual actors actually do when working in projects (Blomquist et al., 2010), and how these practices shape expectations around their work. Work expectations emerge through ongoing social interactions that are continuously shaped and negotiated in practice—using tools, discourse, and embodied engagement. It emphasizes that action is not merely individual or cognitive, but situated within social, material, and temporal contexts. Rather than viewing the work of professionals as fixed, we conceptualize it as enacted in ongoing practices, shaped by shared understandings, material artefacts (e.g., plans, schedules, tools, environmental requirements), and the relational dynamics of construction projects. This implies a bottom-up analysis of actions and interactions in situ—that is, as they unfold in real time—along with the meanings and motivations that underpin them (Blomquist et al., 2010).

Since projects involve multiple actors sharing time and space, we focused on how environmental work expectations are shaped by differing temporal and spatial understandings as actors work towards achieving the project's objectives. These are influenced by temporal and spatial norms, as well as related structures that orient the ongoing activities of project actors—such as activity plans, time schedules, deadlines, and spatial regulations. Actors in interorganizational projects often hold differing understandings of space and time (Maaninen-Olsson and Müllern 2009), which must be negotiated and aligned in the course of project work (Dahlgren and Söderlund 2001, Stjerne et al., 2019). From this follows that environmental work, in time and space, should be viewed as socially constructed and practiced, and not just managed.

METHODS

This study follows a qualitative research design. Data was collected through 20 semi-structured interviews with 18 project participants and 80 hours of field observations, conducted by shadowing an environmental manager within the contractor's environmental organisation, 40 hours in 2021 and an additional 40 hours in 2023.

The first phase of fieldwork involved shadowing the environmental manager full-time, for one week, to gain a comprehensive overview of the construction project and its organisational context. This initial period enabled the researcher to observe a wide range of daily activities, offering a broad understanding of the field. These early insights informed the selection of specific situations and interactions for more focused observations in the second phase. While the first round served as an immersive phase to familiarise the researcher with the overall context, culture, and dynamics of the project, the second round was more targeted, allowing for closer examination of specific practices and interactions identified as analytically relevant through earlier data collection.

Activities involving meetings or direct collaboration with either client representatives or the production team were prioritised for focused observation. During these sessions, detailed notes were recorded in a field notebook based on the following dimensions: (1) what was being done and said; (2) when it occurred; (3) where it occurred; (4) who was involved; (5) how it was done or communicated; and, later, (6) why it occurred—an aspect clarified through both informal and formal interviews.

The formal interviews were conducted in 2021 (n = 2) and 2023 (n = 18), involving members of the environmental management team (n = 4), support staff (n = 3), site management (n = 4), production professionals (n = 3), and representatives from the client organisation (n = 2). Participants were asked about their daily work in the project and their perceptions of collaboration around environmental issues. Each interview lasted approximately one hour, was audio-recorded, and transcribed verbatim. The transcripts provided detailed insights into the project context as well as the shared understandings and expectations surrounding environmental work in the construction project. All participants provided informed consent prior to their involvement in the study.

The combination of observations and interviews enabled a deeper understanding of how environmental work expectations were enacted and interpreted in practice. While the interviews offered reflective accounts and explanations, the observations captured everyday practices and assumptions that participants often took for granted or did not articulate explicitly. In this way, the two methods complemented each other

analytically. Both interview transcripts and field notes were included in the thematic analysis.

The data was analysed thematically (Braun and Clarke, 2006), meaning that patterns of activity and perspectives related to environmental work were inductively grouped into themes through an iterative process, see table 1. This involved interpreting practices and the meanings that different project actors invested in them, with particular attention to how environmental work expectations were shaped by contrasting spatial and temporal understandings within the construction project. The analysis revealed a set of spatial and temporal tensions that environmental experts must navigate, which in turn contribute to diverging environmental work expectations.

Table 1: Coding table.

Empirical Examples	Code / Sub-theme	Theme
"Noise pollution regulations dictate when and how much construction work can be carried out." (*Observation*) "If you plan your activities in advance, then there's time—we can be involved as a kind of think tank." (*Interview*)	Time is "fixed"	Temporal tensions
"He answers the phone and runs out of the meeting to fix a problem." (*Observation*) "In a perfect world, we would know a month in advance… but the schedule changes." (*Interview*) "If the timing is wrong, then that's just how it is..." (*Interview*)	Time in flux	Temporal tension
"We moved through the site to ensure that materials were stored in their designated places, and that all chemicals and vehicles on the construction site were approved." (*Observations*)	Space is "fixed"	Spatial tensions
"The construction site was largely empty, except for one area where activity was in full swing." (*Observation*) "We have a wheel loader just to move things around." (*Interview*) "space on site follows 'djungelns lag'—the law of the djungle" (*Interview*)	Space in flux	Spatial tensions

Case description

The case study examines a large-scale and highly environmentally complex infrastructure project in a dense Swedish city, valued at £300 million, involving bridge and railway construction. The project was subject to strict environmental requirements, partly due to an environmental court decision, and partly because the

client—the Swedish Transport Administration—is expected to fulfil environmental goals set by the government. As a result, the contractor faced high demands regarding how to organise its environmental management.

For the contractor to meet these expectations, more resources to comply with the environmental requirements compared to previous projects were required. Two years into the construction phase, the environmental department expanded, appointing a dedicated manager to handle "softer" issues previously managed by the production manager. The environmental roles were also restructured: instead of having a single QHSE manager responsible for quality, occupational health and safety, and environment, the responsibilities were split into three distinct roles.

A new environmental manager was hired with extensive experience in managing environmental issues during the construction phase, supported by a deputy environmental manager and three environmental coordinators, who were working within the different production blocks. This restructuring clarified responsibilities: the environmental managers focused on overarching environmental issues at the project level, while the environmental coordinators handled day-to-day problem-solving at the construction site.

RESULTS

Our study of how everyday dynamics in construction projects shape environmental experts' work expectations identifies several spatial and temporal tensions that contribute to diverging environmental work expectations. Here, "tension" refers to the different activities and meanings that project actors invest in the practices of space and time. Space refers to physical space—i.e., the construction site and its spatial boundaries—and time refers to temporal aspects—i.e., the pacing of activities. In the following sections, we examine how these tensions unfold in practice and how they shape the work expectations of environmental experts.

Spatial tensions

The first set of tensions is associated with the different activities and meanings that the client and the contractor invest in the use of space—i.e., the construction site. Here, the client practices space through controlling activities, which trickle down to the contractor's environmental experts. For example, the client's environmental specialists conduct weekly environmental inspection rounds to ensure that the construction site complies with environmental requirements. In this way, the environmental specialists are auditing space—grounded in a legal environmental responsibility:

> *"Our main task from the Swedish Transport Administration is to monitor our operator responsibility in environmental matters—to make sure we are fulfilling the responsibility we're required to take under environmental law and our permits and everything else we're bound by." (Environmental Specialist, Client)*

For the contractor's environmental experts, however, auditing space is a more delicate, day-to-day activity—one that involves ongoing interactions with colleagues in production. As one environmental coordinator reflected:

> *"We're an internal auditing function… it's a pretty thankless role, and I think you really need to be the right kind of person to want to*

do it. Because it can easily feel like we're… putting spokes in the wheels for our colleagues, or that it's perceived that way. So it's always a bit of a balancing act in how you present things." (Environmental Coordinator, Contractor)

Part of this balancing act involves accommodating production and ensuring the continuity of the building process. For production, practicing space is not only about identifying problems, but also about being actively involved in solving them. As one site manager put it:

"Like our environmental guy—he's out there looking at things. Like, how should we divert the water? And he'll go, 'Well, we could do it this way,' and bring other ideas—'Let's do this instead, what's the easiest way?' When I'm out on site and he's there, he brings other suggestions and shows that he's engaged in both progress and production." (Site Manager, Contractor)

In contrast to the client, who practices space through controlling activities, this quote also illustrates how the contractor's site managers practice space through construction activities, prioritising progress over order. As another manager described it, space on site follows "djungelns lag"—the law of the jungle—where space is up for grabs and must be claimed. Here, space becomes a resource for building—perceived as immediate and temporary—which significantly differs from the client's understanding of space as "fixed" and regulated.

These contrasting spatial understandings—between space as regulated and space as a resource—create tensions that environmental professionals must continuously navigate in their daily work.

Temporal tensions

The second set of tensions is associated with the different activities and meanings that the client and the contractor invest in the use of time—i.e., the pacing of activities. Although construction activities are planned according to deadlines and the overall production schedule, they are often adjusted in practice due to unexpected events and discoveries that arise during the construction process. The contractor practices time through scheduling, which may or may not involve environmental experts. Yet the overarching purpose remains the same: to create a continuous flow of construction activities on-site and to ensure that workers have the right conditions to do their jobs well. As one site manager explained:

"I work in a very straightforward way in my role as site manager and with my scheduling, so that everything flows smoothly. It might not need to flow quite as well in here, but out there with the workers, it's important to ensure that things run without interruptions, so it doesn't become frustrating or irritating for them. If the workflow remains continuous and there are always tasks to be done, then everyone stays happy." (Site Manager, Contractor)

In contrast, much of the work of environmental experts involves trying to keep up with the pace of production—by checking the three-month construction plan, asking around to find out what is happening, and being present on-site.

"The schedule is also ever-changing, so whatever happens, happens. In a perfect world, of course, we would have such well-planned work that we would know a month in advance how to handle all the environmental issues that might arise. But often, documents arrive late, or... the schedule changes, and suddenly there is an opportunity to do something that was not initially planned, and then the focus is simply on solving that problem." (Environmental Coordinator, Contractor)

The client's environmental specialists, however, expect a more proactive approach from the contractor's environmental team and explained how this would improve collaboration. As one of them noted:

"If you're proactive in your work—if you plan your activities, if you have clear working methods, and if you're not constantly chasing urgent issues or reacting at the last minute—then there's time. If you plan things in advance and present proposals, then we can always be involved as a kind of think tank." (Environmental Specialist, Client)

Moreover, they reported that they often feel they can only intervene once a mistake has already occurred—or is about to occur. Although they would prefer a more collaborative role, they feel the structure of the contract limits their ability to engage earlier:

"We probably would have preferred to serve as more of a sounding board over the years. That there had been more room for discussions on proposals and approaches instead of... simply pointing fingers. Saying: 'This is wrong. This requirement hasn't been met. We see a significant risk that this won't be fulfilled or that mistakes will happen.' We have essentially become just a compliance control function." (Environmental Specialist, Client)

The challenge for project work arises when certain environmental requirements dictate the pace of construction activities—for example, environmental tests that must be analysed before work can proceed, or noise regulations and permits that restrict operating hours and the use of machinery. For environmental experts, it becomes a question of timing the construction process: "You constantly have to stay alert and actively look for potential problems"(Environmental Coordinator, Contractor). By delivering this kind of information, however, environmental professionals often become the ones who disrupt ongoing construction activities. As one interviewee described:

"I rarely bring good news. It's not like people stand up and applaud when I point out issues that both cost money and take time." (Environmental Coordinator, Contractor)

For site managers, disruptions to the construction process can be a source of frustration, and they acknowledge that the environmental role can be a thankless one. While they recognise that environmental feedback is generally valid, they see timing as a critical factor. As one site manager reflected:

"Sometimes, during particularly stressful periods, many probably perceive those in the environmental role as being difficult rather than as being there to help." (Site Manager, Contractor)

Upon further reflection, he added that the issue often lies not in the feedback itself, but in when it is delivered:

"If the timing is wrong, then that's just how it is. But what they say is always wise. It's just that sometimes, it's the wrong moment. There are right and wrong times to receive information, depending on the phase we're in and so on." (Site Manager, Contractor)

These examples illustrate how temporal tensions in project work give rise to diverging expectations around environmental roles. While site managers prioritise maintaining a continuous production flow, environmental experts must adapt to frequent changes while ensuring that environmental requirements are respected, often without fully knowing what is coming next. At the same time, the client expects the environmental team to act proactively, even when the conditions for doing so are limited.

DISCUSSION AND CONCLUSIONS

The aim of this paper was to explore how everyday dynamics in construction projects shape environmental experts' work expectations. Our findings suggest that environmental experts are acting between competing spatial and temporal understandings: one that values flexibility and immediate responsiveness, and another that demands foresight, planning, and control. Navigating these expectations requires not only technical competence, but also relational sensitivity and strategic timing. Consequently, the environmental experts perceived their work as being both "the supportive hero who clears the way and lays the groundwork so we can build" and "the troublemaker who throws a wrench in the works for their colleagues".

As previous research on temporal and spatial tensions in projects has shown (e.g., Maaninen-Olsson and Müllern 2009, Stjerne et al., 2019), different actors tend to have different temporal and spatial norms that must be negotiated to enable collaboration. In our case, however, the client and the contractor never seemed to fully reconcile their differing temporal and spatial understandings of environmental work. Instead, it was the environmental experts in the project who acted as a bridge between production and the client organisation—shifting between being present and embedded in day-to-day production, and being distanced and aligned with external, formal environmental requirements. This dynamic contributed to diverging work expectations rather than clarity. For individuals, this meant trying to fulfil expectations that do not fully align, which in turn could lead to work ambiguity and role conflict.

While this paper has identified some of the tensions that shape environmental experts' work expectations, future research could further explore how environmental experts manage these tensions in practice—for example, through boundary work or boundary-spanning activities. Such studies could provide valuable insights into how environmental experts are collaborating with other professionals in projects.

By shedding light on how environmental experts' work expectations are shaped through spatial and temporal dynamics in construction projects, this paper contributes to a more nuanced understanding of interorganisational collaboration in environmentally complex construction projects—highlighting the need to better support environmental experts in their work.

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Paper V

Thriving through? Exploring the configurational boundary work of environmental managers

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Abstract

This paper aims to deepen the understanding of how sustainability professionals perform boundary work and how this shapes their roles and agency. Using a major urban infrastructure project as a case study, data were collected through 80 hours of shadowing an environmental manager, 20 interviews with project participants, and a review of project documents. Analysing interactions between the environmental management team, the production team, and the client representative suggests that sustainability professionals reshape the boundary landscape to create and mobilise for effective environmental management through arranging, buffering, or coalescing boundaries. The study reveals that reshaping their roles via configurational boundary work leads to role ambiguity and uncertainty about responsibilities. While arranging boundaries clarifies roles, buffering boundaries can blur them, generating a duality that both facilitates and hinders collaboration. Coalescing boundaries offers opportunities to embed environmental practices through joint work. However, the reactive nature of boundary work, coupled with limited formal authority, often constrains environmental managers' agency and compels them into compensatory rather than proactive roles. The temporary and fluid project setting further compounds these challenges, requiring ongoing boundary work that may undermine the establishment of stable environmental practices. This study contributes to theory and practice by showing how environmental managers as boundary configurators actively reshape boundary landscapes to enable and mobilise effective environmental management across organisational groups in temporary organizational settings. For environmental managers, this means their role and agency extends beyond defining responsibilities and bridging boundaries; since it also involves actively reshaping those boundaries to ensure that environmental obligations are maintained in a context that implies addressing varied demands.

Keywords

boundary work, sustainability professionals, environmental management, inter-professional collaboration, practice studies, temporary organization, infrastructure project

1. Introduction

In line with an increasing demand for sustainable businesses development, different types of corporate sustainability roles has increased both in number and content leading to a distinctive professional domain (Gluch, 2009; Wright & Nyberg, 2012; Argento et al., 2019; Lahtinen & Yrjölä, 2019; Gluch & Månsson, 2021; Gond et al., 2024), encompassing a variety of roles that work with and are responsible for sustainability as a primary component of their jobs—for example, environmental and sustainability experts, managers, auditors, coordinators, and consultants. Bridging across both organizational and disciplinary boundaries, sustainability professionals are often expected to create space for multi-vocal collaboration (Lahtinen & Yrjölä, 2019; Fohim et al., 2024) and act as boundary spanners (Rothenberg, 2007; Wright & Nyberg, 2012), weaving together a complex web of stakeholders as well as managing 'wicked problems' (Lönngren & Van Poeck, 2021), which are characterized by layers of complexity and unclear pathways to solutions. Hence, their role is continuously shaped by an evolving nature of environmental sustainability, presenting challenges in managing ever-changing tasks (Gluch & Månsson, 2021; Gluch & Hellsvik, 2023) with conventional management practices being ill-suited as support (Lahtinen & Yrjölä, 2019). The high interdependencies inherent in corporate sustainability initiatives has been found to create lock-ins and inertia (Hoppmann et al., 2023), which limits sustainability professionals' ability to drive transformational change, since their work and agency depend on their relational power within organizations (Rothenberg, 2007). A power and agency that these professionals do not always have (Akotia & Opoku, 2018; Gluch & Hellsvik, 2023; Dahlmann & Grosvold, 2017; Loos & Spraul, 2024).

While individual practice and agency are linked to broader trends in institutional change regarding environmental sustainability, only a limited body of prior research has investigated the role and work of sustainability professionals (eg., Gluch & Bosch-Sijtsema, 2016; Gluch & Hellsvik, 2023; Olesson et al., 2023; Corbett et al., 2018; Dahlmann & Grosvold, 2017). This research indicates that these professionals often face resistance from individuals with more established roles and role identities, which tends to reinforce traditional practices rather than transforming them. However, when practices are aligned with logics that respond to stakeholder expectations, individuals with more established roles can serve as enablers for sustainability. For instance, sustainability-related actions of others may be positively influenced by environmental managers' use of reflexivity to frame environmental management as endogenous to the company (Lahtinen & Yrjölä, 2019) or through initiatives aimed at reforming individuals' cognitive frames and role identities so that sustainability is perceived as integral to their roles (Hoppmann et al., 2023). Also, if these sustainability professionals learn to mediate between hybrid logics, and are able to shift and balance their work depending on which logics are central to the work of others at any given moment, it may lead to collaborative efforts that benefit environmental sustainability actions (Gluch & Hellsvik, 2023). Thus, promoting sustainability and getting people onboard is not only a matter

of legitimacy but also one of collaboration and shared responsibility. In other words, people need to understand both what to do and why, as well as who is responsible for what. The day-to-day work of an environmental manager is therefore likely to involve boundary work. These insights highlight the importance of examining what happens in the boundary landscape of different professional groups and practices.

Situating environmental managers as sustainability professionals, several previous studies that have identified these as boundary spanners that cross multiple boundaries; that bridge various organisational and institutional fields or multiple discourses within a field (e.g., Rothenberg, 2007; Mitra & Buzzanell, 2017; Wright & Nyberg, 2012). However, despite environmental managers' importance as boundary workers surprisingly little is known about how they influence these boundaries. This paper shifts the focus from environmental managers working across boundaries, to focus on their work aimed at reshaping the boundary landscape to create and mobilize for their role and agency.

Thus, building on research on the role and agency of sustainability professionals (Rothenberg, 2007; Gluch & Bosch-Sijtsema, 2016; Mitra & Buzzanell, 2017; Corbett et al., 2018; Argento et al., 2019; Wright & Nyberg, 2012; Gluch & Månsson, 2021), this study seeks to deepen the understanding of environmental managers' boundary work and how this influences their professional role and agency. This is done through the theoretical lens of boundary work (Langley et al., 2019), defined as the "purposeful individual and collective effort to influence the social, symbolic, material, and temporal boundaries, demarcations, and distinctions affecting groups, occupations, and organizations" (Langley et al., 2019, p. 704). This perspective conceptualizes boundaries as socially constructed and enacted through practice, aligning with the practice turn in organization studies (Nicolini, 2012). Adopting a practice perspective means that boundaries are junctures where different professional practices meet (Langley et al., 2019). Hence, boundaries define the set of legitimate practices within a group. This means that boundary work is both inherently part of different professional roles and practices as well as the purposive work by individuals aimed at influencing the boundaries between different professional practices. For our study this means that boundaries are constantly changing and influenced by the work that the environmental managers do to perform effective environmental management. Embracing relational and processual views of agency, a strength of the boundary work perspective is its attention to the fluid and open-ended nature of organizing (Langley et al., 2019), which makes it a suitable perspective for studying the work of environmental managers in an infrastructure project.

Data was collected through 80 hours shadowing of an environmental manager in a large urban infrastructure project in Sweden. Additionally, the study was informed by 20 interviews with project members as well as project-specific documentation. The infrastructure project was situated in a dense urban area and involves constructing multiple road bridges and a double-track railway section. The size and location as well as having a governmental construction client (the Swedish transport administration) mean that the project was controlled

by extensive environmental regulations and requirements. For example, managing groundwater, wastewater, land masses, contaminated soil, noise pollution, chemicals, materials, and ensuring the use of environmentally friendly vehicles and machinery. To reduce uncertainty the temporal nature of construction project necessitates institutionalized and stable project roles (Sydow and Braun, 2018). Hence, project participants know what to do, why, and by whom it should be done. This often means little space for new roles to develop (Gluch & Bosch-Sijtsema, 2016; Kadefors, 1995) why project participants continuously negotiate their roles and practices, opening for configurational boundary work. For example, for each construction project there are boundaries between the permanent and the temporal, between stakeholders involved belonging to different disciplines, between multiple practices as well as boundaries related to time and space. These conditions may cause tensions between environmental sustainability practices and project practices, with different worldviews leading to sustainability managers experiencing limited agency as they must adapt to the rules of the game of construction management which affects their legitimacy (Loos and Spraul, 2024; Gluch and Räisänen, 2012; Gluch, 2009).

Studying boundary work in temporal organizational settings is valuable for both theoretical and practical reasons. For theory, the study advances understanding of the consequences of role ambiguity by showing how sustainability professionals employ different forms of configurational boundary work to ensure that environmental work is enacted and sustained in a temporary organizational setting. The study suggests that the role and agency of sustainability professionals is not merely a matter of defining responsibilities and spanning boundaries (Mitra & Buzzanell, 2018; Rothenberg, 2007; Wright & Nyberg, 2012), but also of reshaping the boundaries within which those responsibilities are enacted. For practice, the study enhances the understanding of inter-professional collaboration, aiding professionals working in multi-boundary environments and those responsible for managing boundary activities.

2. Theoretical framework

This research aims to investigate environmental managers' boundary work and how this influences their professional role and agency. The concept of boundary work has been defined as the "purposeful individual and collective effort to influence the social, symbolic, material, and temporal boundaries, demarcations, and distinctions affecting groups, occupations, and organizations" (Langley et al., 2019, p. 704). From the definition four key aspects are important for our study:

Firstly, it involves *intentionality*, meaning that actions are carried out for a specific purpose. This purpose can be strategic but may also involve the mundane every-day work of professionals, for example conducting preventive measures for sustainability.

Secondly, it is *socially constructed*, meaning that it is created by human interaction. Thus, social boundaries arise from group identities that include some members and exclude others. Construction projects require a large set of different professional groups working together. To study boundary work of environmental managers in a construction project therefore entails that the interaction with site management and production staff as well as with the construction client are in focus and observed.

Thirdly, the becoming of boundaries in the work by its practitioners implies a *temporal* dimension where boundaries are always in flux as practices change (Leonardi et al., 2019). Temporal boundaries define time, speed, and sequences of activities. This dimension of boundary work is essential for our study of environmental managers in a construction project since not only the boundaries are temporary, also the project organization in itself are temporary in nature. This means that the context is dynamic with more fluid interactions and roles changing from one project to the next (Bos-de Vos et al., 2019). It also means that project actors use temporal boundary-spanning practices to resolve temporal tensions associated with inter-organizational projects (Stjerne et al., 2019). To counterbalance the uncertainty that comes with collaboration in continuously changing settings, temporary organizations are structured around defined role systems, with specific nuances negotiated in situ (Bos-de Vos et al., 2019; Bechky, 2006). With increased complexity and new roles entering, for example environmental managers, the traditional roles and role system is being contested (Bos-de Vos et al., 2019). Actor must not only work across boundaries they also have to cope with continuously changing boundaries. Boundary work is therefore proposed as a valuable approach for examining the temporary–permanent dialectic, as it enables the exploration of the relational dynamics between the temporary and the permanent as an inherently social process (Lamont & Molnár, 2002).

Fourthly, boundary work causes *organizational effects*, either on the organization itself or for individuals and groups. This mean that boundaries and boundary work have consequences for the dynamics of collaboration (Langley et al., 2019) and that it influences agency, professional roles, and practices (Lindberg et al., 2017; Zietsma & Lawrence, 2010). As such, it also has effects on either the maintenance or the disruption of relationships in groups and organizations (Barrett et al., 2012; Bucher et al., 2016). Thus, boundary work is to be explored as a collective, ongoing work unfolding over time at, through and across boundaries. Exploring boundaries and how individuals engage in boundary work is particularly important for interorganizational collaborations, where various boundaries such as organizational, team, temporal, and geographic are salient (Beck et al., 2024).

2.1 Studies on boundary work of relevance for our study

In this paper, we investigate the practices of environmental managers as they engage in work aimed at influencing boundaries that shape their roles and their work as they interrelate with

production staff and construction client representatives. Viewing environmental managers as middle managers, the study by Azambuja et al. (2023) provides valuable parallels for our research. Drawing upon ethnographic fieldnotes and 155 formal interviews, they illustrate how middle managers employ boundary work as to create forms of agency in their everyday practice. The study demonstrates how middle managers fluidly manipulate the visibility and permeability of boundaries to achieve specific objectives, and how different configurations of these elements gave rise to various boundary work practices. Instead of treating boundaries as fixed environmental constants to be reinforced, crossed, or eliminated, managers actively designed and adjusted boundaries with varying degrees of visibility and permeability based on local conditions and temporary agreements. The dual orientation of middle managers' boundary work—both obstructing and facilitating boundary-crossing depending on the purposes—emphasizes agency and plasticity as key issues in boundary work.

Several previous studies have identified sustainability professionals as boundary spanners who cross multiple boundaries, navigate both technical and institutional environments, and bridge various institutional fields or multiple discourses within a field (e.g., Rothenberg, 2007; Mitra & Buzzanell, 2017; Wright & Nyberg, 2012). However, within research on environmental management work and sustainability transition the numbers of studies focusing on boundary work are scarce. One example is Braun et al. (2023) who used the boundary work concept to understand innovation processes in an emerging value chain of actors. They conclude that configurational boundary work for value chain collaboration involves not only the co-creation of domain knowledge but also the development of local market knowledge as well as negotiation of strategic collaboration in the value chain. In the context of emerging roles and practices, Gond et al. (2024) examined how sustainability consultants influence and shape contemporary sustainability transformations from an outside-in perspective. By unpacking various roles of consultants, whereof one as boundary workers, they demonstrate how sustainability consultants can empower and legitimize sustainability transitions but also supplant or undermine them. Similarly, Gibassier et al.'s (2020) rich empirical study of the birth of a "carbon profession" focuses on how various actors are involved in the professionalization process through creative and sabotage work, including counterwork or the absence of work. Defining this sabotage work as a form of boundary work, they highlight the complexity of professionalization in a dynamic field of engineering and accounting, illustrating how global and local forces interact and collide within this process.

Despite the prominence of boundaries in temporal, project-based organizing, the number of studies on boundary work remain relatively scarce, with a few exceptions. By examining temporary project-based organizations in Danish film production, Stjerne and Svejenova (2016) provide insights into the relationship between temporary and permanent organizing, highlighting how ongoing work at various boundaries influences the connectedness and outcomes of both forms of organizing. Similarly, focusing on the transition from working in short-term, single projects to long-term, inter-organizational programs, Vosman et al. (2024)

studied three change initiatives and examined how the project organizations navigated the boundaries that emerge when organizing work within programs. This shift presents challenges due to project autonomy, temporary bracketing, and the extensive involvement of various external actors. Vosman et al. (2024) demonstrate that boundaries are interdependent and that addressing them requires integrated actions to facilitate flow across these boundaries. Consequently, boundary work in a project-based setting involves practices aimed at managing differences and coordinating actions of various actors with diverse knowledge and interests (Vosman et al., 2024; Kellogg et al., 2006). Knowledge and learning are also central in a study by Bosch-Sijtsema and Henriksson (2014). Focusing on how practice-based and distributed knowledge is shared during the design phase of interorganisational projects, they emphasize the project leader's role as a boundary spanner. This role involves integrating information, connecting with all stakeholders, establishing and maintaining a supportive and stable work environment, facilitating communication through various means, and supporting the knowledge community.

Another set of research related to project-based contexts focuses on role boundaries. Drawing on 33 in-depth interviews with architects in the Netherlands, Bos-de Vos et al. (2019) investigated how architects negotiate role boundaries in inter-organizational projects to avoid marginalization. By studying professionals working in inter-organizational settings —a context shared with the environmental managers in our study —they demonstrate how professionals' perceptions of opportunities and constraints can lead to different forms of boundary work, which, in turn, affect the subsequent dynamics of the project. Related to this study, the lack of employee and stakeholder commitment was raised in the study of Boucher et al. (2018). Based on a series of case studies in which they interviewed environmental managers, top managers, middle managers, and employees from seven companies they found that the role of the environmental manager in relation to other occupations appeared ambiguous with blurred boundaries related to tasks and responsibility with the result that no one within the organisations took ownership of the corporate environmental performance, which hampered the environmental managers' work. Moreover, Jeschke et al. (2021) examine the establishment of collaborative safety practices between construction site managers and workers through the lens of boundary work. Their study focuses on managers' and workers' complaining practices and their impact on manager-worker relations. By conceptualizing complaining as a form of boundary work, they empirically analysed how managers' and workers' verbal expressions either diminished (collaboration) or reinforced (demarcation) role boundaries.

2.2 Research streams on boundary work

There are different streams of research on boundary work. In a literature review, Langley et al. (2019), identified three distinct types of boundary work—*competitive, collaborative,* and

configurational—based on who the boundary workers are, their positions relative to boundaries-in-the-making, and the purpose of their boundary work.

Competitive boundary work involves mobilizing boundaries to gain an advantage over others. Studies in this category examine how individuals and groups are working *for* boundaries by creating, protecting, or expanding them to distinguish themselves and their practices, often by establishing exclusive domains. Research on competitive boundary work is prominent in studies professions and professionalization processes, (e.g., Bos-de Vos et al., 2019; Gibassier et al., 2020). Typically, this form of boundary work focuses on professionals either raising boundaries to protect their domain or excluding others from entering it.

In contrast to competitive boundary work, *collaborative boundary work* focuses on aligning boundaries to facilitate collaboration, meaning working *at* boundaries. Studies in this category recognize that while boundaries can support coordination, they also require efforts to bridge or align differences. This research stream includes studies on boundary objects and boundary spanning with the work of Carlile (2002, 2004) and Levina and Vaast (2005) as seminal examples. Also, the studies by Bosch-Sijtsema and Henriksson (2014), Vosman et al. (2024), Rothenberg (2007), and Stjerne and Svejenova (2016), as discussed earlier, also contributes to the literature on collaborative boundary work.

Configurational boundary work focuses on differentiation and integration among groups to ensure that certain activities are brought together while others are kept apart, i.e., working *through* boundaries (Langley et al., 2019). Thus, boundaries serve not only as source of legitimacy and self-protection (as in competitive boundary work) or as points of alignment (as in collaborative boundary work) but as instruments for structuring interactions and facilitating various outcomes. This is achieved by selectively separating or bringing together individuals, objects, and ideas into new configurations. Hence, configurational arrangements can either separate activities (creating isolation) or consolidate them (creating interaction), thereby opening new spaces for action and collaboration. Examples on research related to environmental transition can be found in the work of Braun et al. (2023) and Gond et al. (2024). Studies in this category often focus on how managers or leaders work to reshape the boundary landscape of others to orient emerging patterns of competition and collaboration, often combining elements of both. Thus, configurational boundary work involves altering spaces and boundaries for organized activities, as illustrated in the studies by Jeschke et al. (2021) and Azambuja et al. (2023) discussed above.

Moreover, an individual can belong to several different groups; for example, a person may be part of both the production team and the environmental staff. At the same time, subsets of these groups can temporarily form a new group focused on environmental issues. Environmental managers collaborate closely with the client at times, while at other moments, they may align with the production team, distancing themselves from the client. This fluidity underscores the temporary and constantly shifting of boundaries in project settings. To capture evolving, temporary boundaries within a project context, we apply the theoretical framework

of configurational boundary work, which shifts focus from the state of boundaries to the potentialities of the temporal spaces bounded by them.

In our research, boundary work relates to the practices and efforts involved in environmental management within a project-based setting, exemplified by a large infrastructure project. Within this context, we interpret environmental managers' efforts to organize environmental work alongside and across groups representing the construction client, the production block, and the environmental staff as configurational boundary work, as it both separate different groups and merge them through collaboration.

2.3 Modes of configurational boundary work

Langley et al. (2019) identify three modes of configurational boundary work: arranging, buffering, and coalescing. These modes inform our study of how environmental managers reshape the boundary landscape to create and mobilize effective environmental management in a large infrastructure project.

The first mode, *arranging* boundaries, concerns work that are refocusing interactions to do new things or do the same things differently. It adopts an inside-outside perspective, where configurational boundary work directly or indirectly influences the boundaries of others. In our case, the environmental manager acts from outside the production domain, albeit the locus of control lies between the two groups: production personnel and environmental staff. This work may involve creating temporary boundaries and spaces that enable acting "outside the box" (Langley et al., 2019: Zietsma & Lawrence, 2010). As Stjerne and Svejenova (2016) suggest, configurational boundary work is essential in project-based organizations, where boundaries are constantly shifting. It ensures the autonomy and effectiveness of projects while maintaining connection to the larger organization.

The second subcategory, *buffering* boundaries (Langley et al., 2019), concerns work shaping boundaries to facilitate collaboration among organizations and groups with diverse interests. In this form of boundary work, dedicated spaces mediate relationships, enabling collective action while maintaining distinct boundaries. Focusing on configurational boundary work as an everyday activity rather than as a highly strategic one (Langley et al, 2019), this type of boundary work is carried out through the establishment of new meeting formats, where the participation of different groups is managed by the environmental manager. As such, new patterns of interaction can emerge, leading to the creation of a collaborative space for developing environmental practices. This work is inherently challenging, requiring the management of collaborative-competitive tensions (O'Mahony & Bechky, 2008; Perkmann & Schildt, 2015), which involves handling multiple boundaries and adapting practices (Mørk et al., 2012).

Thirdly, *coalescing* boundaries involves the process of establishing new domains or spaces by combining existing activities. The focus is on developing and mobilizing spaces

(physical, social, symbolic). This entails less focus on the boundary in itself and more on the "potentialities of the 'spaces' bounded by them to serve collective purposes" (Langley et al., 2019, p. 721). Unlike the other two forms, which use boundaries and spaces to orient existing activities, coalescing boundaries integrate or merge existing domains into new or expanded ones (Granqvist & Laurila, 2011; Suddaby et al., 2015). This perspective highlights how configurational boundary work can unite groups with potentially divergent or conflicting perspectives and objectives by merging established boundary definitions and creating new domains. However, sustaining cohesion among groups with different and potentially competing viewpoints may require the upkeep of flexible and ambiguous boundary constructions, which can be fragile and temporary. In our study, this means focusing on the interactions between the construction client's environmental specialist, the production blocks, and the environmental team. Thus, the emphasis is on understanding the environmental manager's work in creating and mobilizing effective environmental management, rather than on the boundaries around the environmental work itself.

3. Research setting and methods

This study is based on a case study of a large-scale urban infrastructure project. This infrastructure project was chosen as case study because of the extensive environmental regulations and requirements stipulated in the contract with the client, which deemed an organizational structure with a specifically appointed environmental management team working full time on environmental sustainability issues allowing focused observations.

3.1 Case study description

The study was conducted within a large-scale infrastructure project in Sweden, involving the construction of road bridges and a railway. The contract between the client and the contractor was valued at approximately £300 million, with start in 2016 and scheduled for completion in 2025. The project organization comprised around sixty managers on the contractor's side, mirrored by a similar structure on the client's side. Additionally, the contractor engaged subcontractors for specialized tasks, leading to a continuous influx of construction workers moving in and out of the project. The project's environmental requirements were subject to an environmental court decision, Swedish legislation, the client's (Swedish Transport Administration) commitment to environmental stewardship, and the contractor's own ambitions to advance environmental efforts within the sector. The primary environmental challenges included managing groundwater, wastewater, land masses, contaminated soil, noise pollution, chemicals, materials, and ensuring the use of environmentally friendly vehicles and machinery. Thus, the need for thorough follow-ups and extensive documentation of environmental requirements posed challenges for the contractor's project organization, which operated under tight schedules and a strict budget.

Due to the contract form, responsibility for environmental compliance rested with the contractor's site manager, who was accountable for ensuring adherence to Swedish law and contractual agreements. This included providing necessary resources and overseeing planning and execution of construction activities. However, being a large-scale construction project, the site manager was heavily burdened with multiple coordination and production related tasks and under significant pressure to control costs and meet project deadlines. To support the production management team, the project had two environmental managers. Acting as an extension of the site manager, the environmental managers provided environmental expertise and were accountable for ensuring the project's adherence to environmental requirements and escalating issues to site management when necessary. In this role they were assigned to work proactively with environmental management, such as establishing environmental procedures, developing educational materials, conducting workshops and training programs, as well as reviewing and updating the project's environmental plan, environmental control plan, and production method statements. They also had formal responsibility for auditing environmental compliance, providing specialist support to environmental coordinators, and serving as the primary point of contact with the construction client on environmental matters, including environmental reporting and follow-up meetings. The environmental management team also included two coordinators who worked at an operational level on-site, serving as the environmental managers' eyes and ears on the ground. Their tasks included auditing environmental compliance, reporting to the environmental managers, and supporting the production staff in environmental matters.

The construction client had a full-time environmental specialist assigned to the project who was formally responsible for auditing the contractor's on-site activities, ensuring environmental compliance, and reporting to authorities. This role also involved reviewing all environmental documentation from the project. The client's environmental specialist and the contractor's environmental managers collaborated closely, maintaining frequent contact and holding regular meetings to follow up on environmental matters and conduct joint site inspections.

3.2 Data collection

Data was collected through 80 hours of empirical field observations, 20 semi-structured interviews, and a review of project specific documents, see Table 1 for details. Initially, the focus was on understanding the field context, including the atmosphere, jargon, and interpersonal relationships. Over time, attention shifted to the nuances of interactions and the (boundary) work of the environmental manager.

Table 1. Sources of data

Sources of data	Use in analysis
Observations 80 hours of shadowing an environmental manager resulting in 125 pages of diary notes. The field observations were conducted in 2021 (40 hours) and 2023 (40 hours).	Construct descriptive narratives and identify boundary work practices and how it influences the environmental role and agency.
Interviews 20 semi-structured interviews. The interviews were conducted in 2021 and 2023 with members of the environmental staff, site management, production staff, and representatives from the construction client.	Support and contextualize the field observations to construct descriptive narratives.
Documents Project documents: Environmental Control Plan, Environmental Procedures, Environmental Training, Environmental Tertiary Report, Incoming Inspections, Material lists, Non-Conformities, the Environmental Plan, Work Preparations. Organisational charts Public project information from the client's and contractor's websites	Support and contextualize the field observations.

The field observations were conducted by one of the authors, who shadowed an environmental manager within the contractor's environmental team for 40 hours in 2021 and another 40 hours in 2023. Shadowing as method for observations is particularly suitable for studying practices in situ to provide valuable insights into the practice-oriented concept of boundary work (Czarniawska, 2007; Langley et al., 2019).

Table 2. Overview of observation sessions

Period	Number of days	Total hours	Activities observed
October 2021	6	40	Meetings and informal interactions; computer work; environmental site inspection; handling environmental deviations; chemical audit; development of environmental training
May 2023	3	12	Meetings and informal interactions; computer work; handling environmental deviations
June 2023	5	20	Meetings and informal interactions; computer work; environmental site inspections; handling environmental deviations; water sampling
August 2023	2	8	Meetings and informal interactions; computer work; environmental site inspection

The shadowed environmental manager's daily activities involved interactions with the client's environmental specialists, the environmental management team, production management and construction workers. Her main activities included reviewing documents, managing email correspondence, attending meetings, conducting inspection rounds at the construction site, and supporting the environmental coordinators. By shadowing an environmental manager, we were able to observe routine activities and social interactions as they naturally unfolded in the project (cf. Czarniawska, 2007). This included observing on site meetings, environmental site

inspections, and conversations with production staff and site management, as well as routine computer work such as email correspondence, and ad-hoc interactions in the site office. Table 2 provides an overview of the observation periods, their duration, and the main activities observed. Given the nature of the environmental manager's interactions, shadowing provided a strong basis for investigating environmental managers' boundary work and its influence on their professional role and agency. To gain a deeper understanding of the observational data, informal conversations were conducted with the environmental manager at the end of each observation session, providing an opportunity for the environmental manager to freely elaborate on the observed activities.

During the shadowing process, the researcher took detailed field notes, either written or audio recorded, which were documented in a diary to facilitate thick data descriptions. The recording of field notes was done in three steps. First, shorter notes were instantly documented in a field diary. Second, these notes were elaborated as soon as time was given during observation sessions, prioritising more detailed notes over being constantly present (Aspers, 2007). Third, in the end of each observation day, field notes from the diary were transcribed and recorded digitally. Additionally, photographs were taken to support recollection. To structure the observations the observing researcher used an observation schedule was used as presented in see Table 3.

Table 3. Observation schedule

Observation focus	Explanation
What happens	What is the environmental manager doing? (e.g., reviewing documents, writing reports, checking lists, attending meetings, conducting inspections, answering questions, discussing problems, etc.)
When it happens	At what time and for how long (e.g., noting start and end times)
Where it happens	At what location (e.g., in the office, corridor, break room, construction site, or meeting room)
By/with whom	Who is involved in the interaction?
How it happens	How are they interacting? (e.g., spoken or written, joking or serious, tone, facial expressions, body language)
Why it happens	Building on conversations with the people involved

Additionally, twenty semi-structured interviews were conducted with eighteen project members (see Table 4). The interviewees were selected because their work interrelated with those of the environmental team. All interviews were conducted face to face, audio-recorded and transcribed verbatim. The interviewees were asked to describe their tasks, how environmental work is organized, their role, motivation, and interactions with others. Topics included their main challenges, the most enjoyable aspects of their work, and the least interesting aspects. They were also asked to draw the project organisation as they perceived it, explain how they thought environmental work was organised, and reflect on collaboration around environmental issues. During the interviews, participants were also probed for concrete examples of situations that illustrated their previous experiences of environmental issues. A semi-structured approach (Kvale, 2007) allowed participants to elaborate their answer while

enabling the researcher to ask follow-up questions. All participants provided oral consent before taking part in the study which was recorded and documented.

Table 4. List of interviewees

No.	Roles in project	Actors	Interview occasions	Time and duration of interviews
1	Environmental manager (shadowed)	Contractor	3	70 min, Sep 2021 2x60 min, Nov 2023
2	Environmental specialist	Contractor	1	75 min, Sep 2021
3	Staff manager	Contractor	1	50 min, Nov 2023
4	Project manager	Contractor	1	80 min, Nov 2023
5	Production manager	Contractor	1	45 min, Nov 2023
6	Environmental coordinator	Contractor	1	50 min, Nov 2023
7	Environmental coordinator	Contractor	1	70 min, Nov 2023
8	Environmental manager	Contractor	1	50 min, Nov 2023
9	Environmental coordinator	Contractor	1	55 min, Nov 2023
10	Block manager	Contractor	1	65 min, Dec 2023
11	Block manager	Contractor	1	45 min, Dec 2023
12	Environmental specialist	Client	1	75 min, Dec 2023
13	Site manager	Contractor	1	65 min, Dec 2023
14	Quality coordinator	Contractor	1	45 min, Dec 2023
15	Health and Safety manager	Contractor	1	90 min, Dec 2023
16	Site manager	Contractor	1	90 min, Dec 2023
17	Environmental specialist	Client	1	130 min, Dec 2023
18	Site manager	Contractor	1	70 min, Dec 2023

Note: *Interviewees 2, 9, and 12 were situated centrally of the contractor organization providing support on demand from the project; the others worked full time in the project. Interviewees 1, 6, 7, and 8 formed the environmental team in the project.*

The document review was conducted to provide context for the project. Table 1 lists the documents examined, including internal project materials as well as publicly available information from the official websites of the client and contractor concerning the project and involved organizations. The document review was used to contextualise field observations, corroborate data collected through the other methods, and supply background on environmental management and organisational processes relevant to the project.

3.3 Data analysis

Data analysis began during data collection, which is typical in ethnographically informed studies (Aspers, 2007). Initially, the focus was on constructing rich descriptions of the environmental manager's day-to-day work. Field notes from shadowing the environmental manager were used as anchor points for structuring the data into descriptive narratives (Langley, 1999). These narratives were later triangulated with interview data to gain deeper insights into the meaning behind the work. Writing narratives helped us become familiarized with the data, identify early patterns, and record memos on identified themes and interesting issues (Braun & Clarke, 2006).

In the first phase of analysis, the search for patterns was inductive and open-ended, guided only by a general interest in the environmental manager’s interactions with other actors

and stakeholders. During this process, two aspects stood out as particularly noteworthy. First, there was ambiguity in the division of responsibilities for environmental work between the environmental management team and the production management team, with the environmental manager making efforts to clarify responsibilities. Second, the environmental manager struggled between fulfilling the client's environmental expectations and the production team's preferences. These initial insights led to the adoption of boundary work (Langley et al., 2019) as a theoretical lens for further analysis.

Drawing on the concept of boundary work (Langley et al., 2019), the second phase of analysis focused on the practices of the environmental manager (Environmental manager 1) and her direct and indirect interactions with others, with particular attention to the spatial and temporal context of these interactions. In this phase, we inductively coded the environmental manager's day-to-day activities into rich descriptions.

Using sentences and paragraphs as coding units, we grouped similar interactions together. For example, the indirect interaction of sending an email with a question "Have you prepared a method statement for this activity?" and the direct interaction of asking a question "Have you received the compliance documentation for the crane?" were both categorized under the code 'asking environmental questions' Depending on the context or the purpose of the question, these interactions were further grouped under the codes 'checking environmental compliance' or 'reminding the production team of environmental tasks'.

In the third phase of analysis, the relationships between the codes and common themes among them were identified (Braun & Clarke, 2006). For example, we examined how activities such as 'reminding the production team of environmental tasks' and 'taking over work for the production team' relate to practices of shaping and influencing boundaries. The search for common themes was conducted iteratively, involving a continuous back-and-forth process between the data and the boundary work literature. During this phase, we sensed that the environmental manager's boundary work could not fully be explained by the concept of competitive boundary work (protecting boundaries), nor the concept of collaborative boundary work (aligning boundaries). We therefore turned to configurational boundary work, which emphasizes both differentiation (i.e., keeping things apart) and integration (i.e., bringing things together), as a more suitable framework for explaining the dynamics of the environmental manager's boundary work.

In a fourth phase of analysis, the data was revisited through the lens of three features of *configurational boundary work* (Langley et al., 2019): *arranging boundaries*, *buffering boundaries*, and *coalescing boundaries*. This process led to a refined analysis and the selection of illustrative stories that captured the environmental staff's configurational boundary work. This approach was designed to provide contextual details and thick descriptions, allowing others to assess the transferability of the findings to different contexts (Langley, 1999; Lincoln & Guba, 1985; Treharne & Riggs, 2015).

4. Findings

In the following six vignettes, you will meet the contractor's environmental managers Lisa (interviewee 1, the shadowed environmental manager) and Victor (interviewee 8), the contractor's environmental coordinators David (interviewee 6) and Marie (interviewee 7), the construction client's environmental specialist Ludvig (interviewee 17), and the site manager Albert (interviewee 18). All names are fictious. Each vignette explores their respective day-to-day boundary work in achieving effective environmental management.

4.1 Arranging boundaries to meet environmental requirements

This section focuses on how the environmental managers are influencing the production team's boundaries to ensure that environmental requirements are met in the project. In this boundary work, environmental managers reshape how the production team engages with environmental work by posing environmental responsibility onto them. In doing so, they influence the boundaries of the production team by acting from the outside in. By positioning themselves outside the production team, they separate their respective responsibilities and activities, prompting the production team to take ownership of the project's environmental requirements, as illustrated in the vignettes below.

Vignette 1: Are you considering the environmental requirements?

This vignette describes how the environmental manager Lisa and the environmental coordinator Marie systematically participate on production team meetings, providing them the opportunity to remind them about environmental requirements, keeping sustainability on the production agenda and as such making this a way to influence the production team's boundaries:

> *Every week, Lisa and Marie attend the production team's internal meeting to share updates on ongoing and upcoming activities. Marie is the first to speak, providing updates on both health and safety as well as the environment. She sits among the site supervisors, who joke with her as she discusses the latest environmental inspection. Balancing seriousness with a lighthearted tone, she brings up observations and reminds them of the environmental requirements in the project. Lisa's role in the meeting is mostly to support Marie and to stay informed about ongoing production activities. She finds this attendance more effective than trying to identify activities from the construction planning document. By being present, Lisa can quickly identify environmentally critical activities and proactively ensure these are considered by the production team. As the discussion shifts to upcoming groundwork activities, Lisa raises her hand. "Have you thought about the levels of drainage water?" she asks, her tone calm but inquisitive. "We must stay within the limits of the maximum allowable water level," she adds. The supervisors exchange glances and respond hesitantly. Lisa nods encouragingly, maintaining a neutral expression. "We can take a*

closer look at it when the time comes," she suggests, inviting them to revisit the topic with her later. "But keep it in top of your minds," she encourages them.

Vignette 2: Can't keep bailing them out

This vignette focuses on how the environmental managers Lisa and Victor are reviewing and returning environmental documentation to the production team as a way of influencing the team's boundaries:

Lisa opens an email from Victor containing an environmental deviation report written by a site supervisor who, in Victor's words, had "messed it up." She notices that the report has gone back and forth between Victor and the site supervisor responsible for the deviation. Lisa and Victor believe that site supervisors need to face the consequences of their actions to truly learn from their mistakes. For 'pedagogical reasons', they insist that site supervisors write their own reports to help prevent similar errors in the future. However, a recurring issue is the poor quality of these reports, which often need significant improvement before handed over to the client. Lisa had barely skimmed the text when Victor appeared at her desk. His expression—a mix of frustration and resignation—told her everything she needs to know. "Yep, I know. And I even gave him a template this morning—spelled out exactly what he needed to include," he says. Lisa returns to the e-mail, furrowing her brow. "Why did he list the environmental coordinator as the contact person? He's supposed to put himself there!" she exclaims. "Everyone should know by now how the client wants the deviations written." Victor lets out a weary sigh, running a hand through his hair. "You should've seen it this morning. Believe it or not, this is an improvement," he says, his tone tinged with dry humour. "I guess I'll just have to make the best of it." She looks up at him, her expression firm. "We can't keep bailing them out every time," she says. Victor nods with a deep sigh. "You're right. I'll send it back with comments (paus) again," he says. "Good. Let's hope this time it sticks," Lisa says, leaning back in her chair.

Vignettes 1 and 2 illustrate how environmental managers arrange boundaries to ensure that environmental requirements are met. In the first vignette, the environmental management team refocus the production team's interactions and shift environmental responsibility onto them by reminding the team of their environmental commitments. The environmental coordinator Marie, for instance, brings attention to environmental deviations at the construction site, pointing out what the production team needs to focus on and address. Similarly, the environmental manager Lisa encourages the production team to take ownership of the project's environmental requirements. Through thoughtful questions and subtle encouragement, she invites the team to seek advice and recommendations from her when needed. In this example, the environmental management team shape the boundaries of the production team as part of their mundane, day-to-day work.

This outside-in boundary work becomes more strategic in the second vignette. Here, Lisa and Victor deliberately distance themselves from the production team by asserting their

position and returning tasks with comments. In doing so, they ensure that the production team carries the consequences of environmental deviations and assumes full responsibility for environmental work. In this way, they strategically delineate their respective responsibilities and activities.

By shifting environmental responsibility and positioning themselves outside the production team while aligning with the client, they prompt the production team to take ownership of the client's environmental requirements. In doing so, they encourage the production team to develop environmental practices and expand their boundaries of responsibility. In this boundary work, the environmental manager role becomes more supervisory and advisory. Thus, rather than ensuring that environmental tasks are carried out by the production team, their influence is increasingly centred on shaping *how* environmental work is performed, rather than *what* is done.

4.2 Buffering boundaries to maintain a strong relationship between production and the client

This section highlights how environmental managers actively shape boundaries to enable collaboration between the production team and the client. Through this boundary work, they adapt and configure boundaries in ways that allow production activities to continue while simultaneously fostering collaboration by accommodating the client's environmental expectations.

Vignette 3: Being blamed for other people's mistakes

This vignette illustrates how environmental managers Lisa and Victor, in their weekly meeting with the environmental management team, encourage the team to assume responsibilities held by the production team. Their goal is to ensure that client expectations are fulfilled, and the production process receives effective support:

> *During a meeting with the environmental management team Lisa connects her laptop to the projector, displaying a document outlining the contracted environmental checks ups required for the project. She repeats their assignments. "I'll take chemical checks with David," she says, typing their names into the list. "The client's audit on chemical storage is coming up, so we need to inspect it ourselves first. That'll give the production team time to fix any issues." David, the environmental coordinator, attempts to insert a snus but fumbles. He looks tired. Moments later, his phone buzzes, and he rushes out to handle an urgent issue on-site. Returning to the agenda, Lisa reach the meeting's main topic: the material lists. "As you know, the production team is behind updating the material lists because the quality coordinator left the project six months ago, and they have been working in shifts for weeks to just stay on schedule with the production. To assist them, we are helping them to complete the list." She pulls up an inspection report from the client,*

highlighting key issues with the material list. "These are the comments we need to address," she explains. Marie, another environmental coordinator, sighs audibly. "I've started collecting the certificates," she says, with her frustration apparent. Lisa notices the tired look on Marie and responds gently. "What we need are verified documents, not just self-written certificates." Victor adds, "Exactly. Self-assessments are not enough in this case." Lisa nods affirmatively. "No, they wouldn't pass an audit. We need documented proof." Marie 's shoulders slump. "It's hard to get these for work done two years ago. Subcontractors that have left the project couldn't care less." She looks around the room. "We need to tackle this now, or it'll just get worse." Victor tries to reassure her. "That's the hardest part—figuring out what happened long after it actually happened." Lisa adds, "Especially when it's not even one's responsibility." Marie asks, "Is it certain the client will ask for verification? Couldn't a self-assessment suffice?" Lisa shakes her head firmly. "Based on the client's history, they'll insist on fulfilling every requirement." A discussion breaks out in the group about how unfair it is to be blamed and held responsible for other people's mistakes.

Vignette 4: Cleaning up after others

Instead of the production team cleaning the construction site as expected, the environmental managers Lisa and Victor take on the activity themselves. This vignette focuses on how they are cleaning up after the production team to strengthen the relationship between the production team and the client:

"It is what it is…" Lisa sighs. Lately, she and Victor have been spending a couple of hours every week cleaning up the construction site. Site supervisors are supposed to do it, but they're too busy with the production work. David, one of the environmental coordinators, refuses to join, calling it a "matter of principle." He argues that it's not their responsibility. "Which is true," Lisa says to Victor, "but he doesn't have to explain to the client why nothing ever changes." Victor nods, "We've spent two years trying to get people to put plastic in the plastic container, but no matter how much we remind them, it hasn't improved." He adds, "People tend to throw waste into the first container they see—the one that's closest." Victor picks up some cardboard waste and, in a hopeful tone, says, "If it's nice and tidy, maybe people will feel less inclined to leave things on the ground." He tosses the cardboard into the correct container, notices some plastic among the cardboard waste, and pulls it out. Lightening the mood, he jokes, "A never-ending wrestling match." Lisa chuckles, "That's a good way to describe it."

Vignettes 3 and 4 illustrate how environmental managers buffer boundaries to maintain a strong relationship between the production team and the client. For example, in vignette 3, Lisa and Victor guide the environmental team in taking over activities from the production team that have been left unattended for too long. By doing so, they intentionally accommodate both the

client's oversight responsibilities and the construction process by relieving the production team of administrative work.

Accommodating both the client and the production team to uphold a good relationship with the client is further exemplified in vignette 4, where Lisa and Victor cover for the production team by cleaning up on the production site. Neither of these activities fall under the formal responsibilities of the environmental team, yet by taking over work and covering for the production team, they assume responsibility for these activities. This is reinforced by the fact that environmental managers are responsible for reporting environmental compliance to the client and are also the ones who receive client feedback when environmental issues arise, further concentrating the burden of environmental responsibility on them. However, since they lack the formal authority to enforce compliance directly with the production team, their ability to drive change remains constrained, which is shown in the vignettes.

Hence, to ensure that environmental standards are upheld and to maintain a strong relationship with the client, environmental managers take over work from the production team to bridge the gap between the client's expectations and the production team's practices. In doing so, they expand their role through the engagement in new production-focused activities, which limits their ability to integrate environmental practices among the production staff, as their work becomes more about compensating for unattendance rather than embedding environmental practices within the traditional production practice.

4.3 Coalescing boundaries by creating joint environmental practices and sense of responsibility

This section focuses on how new domains and spaces for environmental management is created by the environmental managers Lisa and Victor. In this boundary work, existing environmental compliance activities is integrated in production activities in a way that amplifies not environmental and production performance, thereby coalescing boundaries between the environmental management team and the production team and fostering the development of joint practices. Through these joint practices, members of both teams develop a shared understanding of their roles, cultivating a collective sense of environmental responsibility.

Vignette 5: Everything is Set Up for Success

The environmental manager Lisa and the environmental coordinator David discovered contamination in the runoff water, forcing production to halt. Now, they must quickly find a solution. Lisa tells David to call a water technology consultant, while she in turn informs Ludvig, the client's environmental specialist. This vignette focuses on how David and Albert, the site manager, are solving an environmental problem together to prevent further delay of production:

David is on the phone with the water technology company, while Lisa and Albert hover in the doorway, eagerly awaiting the outcome of the call. When David hangs up, he shares the update: "They'll be here today, and we'll have the water treatment in place tomorrow." A collective sigh of relief follows. Turning to Albert, David explains that he'll need help preparing for the installation. Albert responds with a reassuring smile, "We'll figure it out." Then he asks, "Do we need to do it right away, or can it wait?" David shakes his head firmly. "It's very important to get it done immediately. We'll have more drainage water as soon as they start building again." Albert nods thoughtfully and repeats, "We'll figure it out," then adds, "We'll get a wheel loader to help make some space." They exchange determined looks. David claps his hands on his thighs and stands up with renewed energy. Together, he and Albert agree to start preparations immediately. Lisa heads back to her office to call Ludvig and gather additional support for the proposed solution. A bit later, David stops by, now dressed in full gear—high-visibility clothing, a helmet, and sunglasses—radiating excitement. "Hey," he says, dropping into a chair next to her desk. Lisa's face brightens with his cheerful appearance. "How did it go?" she asks. David's eyebrows dance with enthusiasm. "Everything is set up for success," he says. Exhaling a relieved sigh, he adds, "Think about the problem we had–now it feels like it's already solved."

Vignette 6: A shared sense of pride

David, the environmental coordinator, together with site managers from production, has solved an environmental problem together in a new way that saves money for the project, creating a shared sense of pride about the solution in hand. This vignette focuses on how the environmental team is sharing a joint sense of pride in a new solution:

The two environmental managers Lisa and Victor meet the environmental coordinators David and Marie, and the client's environmental specialist, Ludvig, on the construction site. They assess together whether the production site meets the client's environmental standards for the project. Lisa takes notes on any observations that suggest otherwise. They peek into excavations, examine waste containers, and inspect chemical storage areas as they walk past stacks of building materials and scaffolding. Eventually, they arrive at the construction site's temporary water treatment system. David climbs a ladder on a large container to check the pre-sedimentation process. Lisa exchanges a glance with Ludvig, acknowledging his pleased expression. Thanks to the water treatment system, a significant environmental problem in the construction project is finally under control. A site manager joins the group, patting the container affectionately. "This is my little baby," he says with a big smile. David returns the smile and proudly adds "Just think about how much money we save every month by putting in a little extra effort to find old parts and assemble them ourselves." Jumping down from the ladder, David takes out his phone and holds it up to show a photo of a glass filled with murky water. "This is what the water looks like before treatment," he explains, swiping to the next image. "And this is how it looks after!" he exclaims, holding up a photo of a glass of crystal-clear water.

Vignettes 5 and 6 illustrate how environmental managers coalesce boundaries by creating joint environmental practices and fostering a shared sense of responsibility. For example, vignette 5 shows how Lisa and David integrate environmental compliance activities with construction activities by bringing an environmental observation to the attention of the site management, thereby halting the construction process. In doing so, they create a temporal space in which David, the environmental coordinator, and Albert, the site manager, can address the environmental issue together. Within this temporal space, David and Albert interact in a new way: David drafts a solution to maintain the construction process, while Albert takes on a supportive role—listening and contributing suggestions. Together, they materialize the solution on-site, enacting a collective sense of environmental responsibility through their joint work. At the same time, David develops a deeper understanding of Albert's work, as illustrated in vignette 6, where they enact a shared sense of pride in the solution—not only in terms of its environmental impact but also in the cost savings achieved.

In other words, David and Albert recombine their activities into a new practice, exemplified by the implementation of a new water treatment system. Through this process, they also develop a shared understanding of their roles and foster a collective sense of responsibility. As a result, David's role becomes more embedded within the production team, as his engagement in joint practices strengthens his position in the construction process. At the same time, his ability to influence environmental work increases, not through formal authority but through his growing participation in shared decision-making and problem-solving.

5. Discussion and conclusion

Complementing previous research that portrays sustainability professionals as institutional entrepreneurs (Argento et al., 2019; Gluch & Månsson, 2021) and boundary spanners (Mitra & Buzzanell, 2017; Rothenberg, 2007; Wright & Nyberg, 2012), this study highlights the less-examined, mundane everyday work of sustainability professionals. Building on the assumption that promoting sustainability and 'getting people on board' is not only a matter of legitimacy but also of collaboration and shared responsibility, we studied what happens in the boundary landscape of different professional groups and practices in a large infrastructure project, focusing on environmental managers' configurational boundary work and how this influences their professional role and agency.

By studying the interactions between the environmental management team, the production team, and the client representative, our findings suggest that sustainability professionals reshape the boundary landscape to create and mobilize for effective environmental management by either arranging, buffering or coalescing boundaries. For example, they *arrange the boundaries* of others by temporarily positioning themselves outside the production team, as seen in how they tell them what to do, and in how they return tasks or refuse to do others' work for them. Although on a smaller scale, this is similar to the 'absence

of work' in Gibassier et al.'s (2020) study, suggested as a form of boundary work by used as means to professionalize a carbon profession.

In other situations, sustainability professionals take over work from others, as seen when *buffering boundaries*, such as handling documentation for the production team or cleaning up after them on the construction site. Thus, while environmental managers are clarifying roles and responsibilities when arranging boundaries, they may blur the very same roles and responsibilities when buffering boundaries. A similar effect on their role was identified when they buffered boundaries to strengthen ties with the client. This created a semi-production team role that not only blurred their professional role but also affected their agency, as they were perceived as an additional resource for the production team. Moreover, buffering boundary work aimed at pleasing the client might also affect environmental managers' relationship with the production team, leading to perceptions of them as mere proxies for the client. This duality, similar to the findings of Azumbuja and Islam (2024) in their study on middle managers' boundary work, may both hinder and facilitate collaboration. It may also impede efforts to integrate environmental management practices with production practices, as the production team may not prioritize the development of new practices.

However, in some situations, sustainability professionals get an opening where they are *coalescing boundaries* by working alongside the production team, jointly addressing environmental issues as they arise. In these situations, environmental managers temporarily step into the production workforce, not to take over production tasks, but to collaborate in resolving the issue and shaping the environmental solution together. When environmental and production practices are combined, the environmental manager becomes more contextually embedded, strengthening their position and influence—not through formal authority, but through co-creation and shared decision-making and problem-solving.

Concluding, the findings suggest that through configurational boundary work, the role of the environmental manager is continuously reshaped, leading to role ambiguity and uncertainty about who is responsible for what. This ambiguity, in turn, hinders the enactment of environmental work, as the production team lacks clarity on how to engage with the environmental requirements in practice. For environmental managers, this increases the complexity of their work (Gibassier et al., 2020), as they must navigate and compensate for environmental practices that fail to materialize. This complexity is further amplified by their lack of mandate to make decisions regarding the production processes and personnel. The lack of authority constrains their agency, forcing them to rely on persuasion and informal influence rather than direct decision-making. In practice, this means that they must spend time encouraging, complaining, reminding, or even taking on parts of the environmental work themselves. This, in turn, makes environmental work more reactive than proactive, reinforcing a pattern where environmental considerations are addressed too late in the process (Akotia & Opoku, 2018). Relying on persuasion and informal influence also means that their ability to drive environmental work is highly dependent on the willingness of others, a dynamic that

Hoppmann et al. (2019) also identified in their study. This dependency further reinforces role ambiguity, as environmental managers must continuously negotiate their position and legitimacy within each local project. Moreover, similar to the workers' and managers' in Jeschke et al.'s (2021) study, they also must rely on verbal expressions to diminish or reinforce boundaries rather than on formalized authority. However, relying on informal influence through talk can blur role boundaries, obscuring who is responsible even further.

In a project-based setting, previous literature has highlighted that temporary inter-organizational collaboration requires stable role structures to facilitate the coordination of specialized activities and collaboration among diverse groups and professionals (Bechky, 2006; Bos-de Vos et al., 2019; Sydow & Braun, 2018;). In such settings, the dynamic and flexible boundaries between the professional practices necessary for managing continuously changing environmental work, may become particularly problematic, as the boundaries between roles are often indistinct. This ambiguity may lead to confusion, miscommunication, and potential errors in coordinating activities, resulting in certain responsibilities being neglected or overlooked. What our findings display is that the dynamic context of project-based organizations (cf. Bos-de Vos et al., 2019) evokes temporary boundary work as means to resolve temporary tensions between the client's practices and the production's practices. As a result, the environmental managers practices become an in situ and fluid practice balancing temporal tensions through configurational boundary work (cf. Stjerne et al., 2019). In the long run, adapting to continuously shifting and locally determined project conditions and temporary agreements (Azambuja & Islam, 2024) may undermine the establishment of environmental practices.

Managing differences and navigating between diverse interests are necessary in temporary project setting (cf. Vosman et al., 2024; Kellogg et al., 2006) and in inter-organisational collaborations (Stjerne & Svejenova, 2016; Bos-de Vos et al., 2019, Sydow and Braun, 2018). Thus, since contracts and actors change from one project to the next (Bos-de Vos et al., 2019) it is likely that the configurational boundary work will continue. Through this ongoing boundary work, the action of reminding or taking over others' work risk becoming a habitual practice that shapes how various roles engage with environmental work as well as the expectations on the role. This resembles what Gond et al. (2024) found in their study on sustainability consultants, who, similar to the environmental managers in our study, face and navigate various context in which they are simultaneously legitimizing and undermining practices. The multiple orientation of the environmental manager's boundary work emphasizes the importance to acknowledge agency and plasticity as key issues in boundary work.

The environmental managers in our case adopted responsibilities and tasks of other roles to ensure environmental compliance. This work tended to be reactive, positioning the environmental manager in a semi-production role with focus on "cleaning up" or addressing unattended tasks. For environmental managers, this resulted in reduced time and agency to work proactively with environmental issues, leading to a more marginalized role. Previous

research has indeed forwarded the challenges environmental managers face in establishing themselves among professionals with more established roles and professional identities (Gluch & Bosch- Sijtsema 2016; Corbett et al. 2018; Loos & Spraul, 2024). This study has contributed with a deeper understanding on why this is happening by unfolding the double-swarded edge of configurational boundary work.

Overall, by framing the work of environmental managers as configurational boundary work, our study contributes to previous literature by providing rich empirical insights into how this process unfolds in temporal organizing. Specifically, our study highlights that sustainability professionals not only act as boundary spanners, crossing multiple boundaries to drive institutional and organizational change (e.g., Rothenberg, 2007; Mitra & Buzzanell, 2017; Wright & Nyberg, 2012), but also as 'boundary configurators,' actively making attempts to reshape the boundary landscape to enable and mobilize effective environmental management. For environmental managers, this work often implies addressing varied demands, resulting in a workload that quickly becomes overwhelming and difficult to control, undermining their ability to focus on proactive and strategic environmental management. In conclusion, our study suggests that a continuously changing role in practice, creates unclear boundaries, role ambiguity and an uncertainty about who is responsible for doing what.

This paper is not without limitations. While shadowing an environmental manager in a single case study in Sweden has provided rich descriptions of the day-to-day boundary work of environmental managers in a project-based setting, it raises questions regarding the generalisability of the results to other contexts. We therefore encourage further case studies on the boundary work of sustainability professionals in other contexts. For example, in other types of organizational forms, industries, and countries.

For practitioners working with environmental work and projects, this paper highlights the need of clarifying roles in environmental work. A discussion on the future of the sustainability profession is needed, in which the industry should consider actively defining the role and enhancing its status.

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