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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

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.
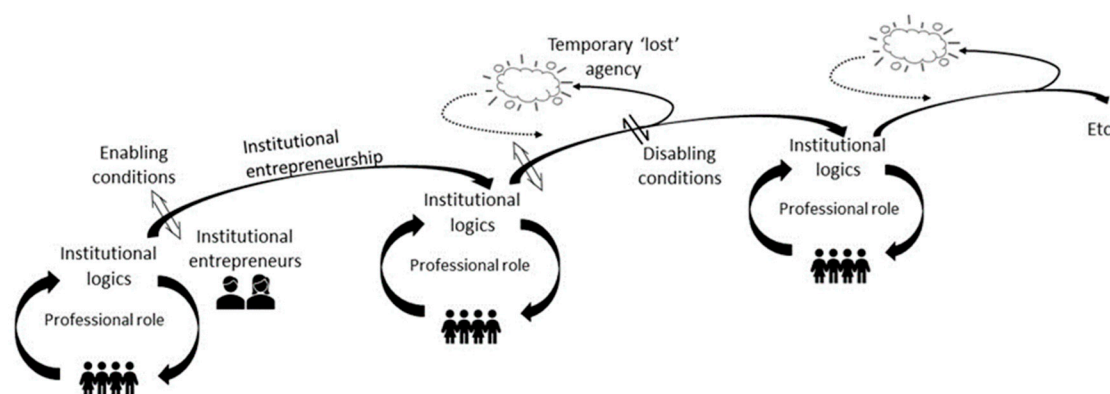

Figure 1. The professionalization of sustainability.

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.

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References

1. Hagbert, P.; Malmqvist, T. Actors in transition: Shifting roles in Swedish sustainable housing development. *Neth. J. Hous. Environ. Res.* **2019**, *34*, 697–714. [CrossRef]
2. Woolthuis, R.K.; Hooimeijer, F.; Bossink, B.; Mulder, G.; Brouwer, J. Institutional entrepreneurship in sustainable urban development: Dutch successes as inspiration for transformation. *J. Clean. Prod.* **2013**, *50*, 91–100. [CrossRef]
3. Opoku, A.; Ahmed, V.; Cruickshank, H. Leadership style of sustainability professionals in the UK construction industry. *Built Environ. Proj. Asset Manag.* **2015**, *5*, 184–201. [CrossRef]
4. Opoku, A.; Cruickshank, H.; Ahmed, V. Organizational leadership role in the delivery of sustainable construction projects in UK. *Built Environ. Proj. Asset Manag.* **2015**, *5*, 154–169. [CrossRef]
5. Suddaby, R.; Viale, T.P. Professionals and field-level change: Institutional work and the professional project. *Curr. Sociol.* **2011**, *59*, 423–442. [CrossRef]
6. World Economic Forum. *Shaping the Future of Construction: A Breakthrough in Mindset and Technology*; World Economic Forum: Geneva, Switzerland, 2016. Available online: https://www.weforum.org/reports/shaping-the-future-of-construction-a-breakthrough-in-mindset-and-technology (accessed on 22 February 2021).
7. Boverket. *Miljöpåverkan från bygg- och fastighetsbranschen 2014*; 2014:23; Boverket: Karlskrona, Sweden, 2014. Available online: shorturl.at/huxEG (accessed on 22 February 2021).
8. Battilana, J.; Leca, B.; Boxenbaum, E. How actors change institutions: Towards a theory of institutional entrepreneurship. *Acad. Manag. Ann.* **2009**, *3*, 65–107. [CrossRef]
9. Flanagan, J.C. The critical incident technique. *Psychol. Bull.* **1954**, *51*, 327–360. [CrossRef] [PubMed]
10. Muzio, D.; Brock, D.M.; Suddaby, R. Professions and institutional change: Towards an institutionalist sociology of the professions. *J. Manag. Stud.* **2013**, *50*, 699–721. [CrossRef]
11. Suddaby, R.; Viale, T.; Gendron, Y. Reflexivity: The role of embedded social position and entrepreneurial social skill in processes of field level change. *Res. Organ. Behav.* **2016**, *36*, 225–245. [CrossRef]
12. Pratt, M.G.; Rockmann, K.W.; Kaufmann, J.B. Constructing professional identity: The role of work and identity learning cycles in the customization of identity among medical residents. *Acad. Manag. J.* **2006**, *49*, 235–262. [CrossRef]
13. Gherardi, S. Knowing and learning in practice-based studies: An introduction. *Learn. Organ.* **2009**, *16*, 352–359. [CrossRef]
14. Vos, M.B.-D.; Lieftink, B.M.; Lauche, K. How to claim what is mine: Negotiating professional roles in inter-organizational projects. *J. Prof. Organ.* **2019**, *6*, 128–155. [CrossRef]
15. Lieftink, B.; Smits, A.; Lauche, K. Dual dynamics: Project-based institutional work and subfield differences in the Dutch construction industry. *Int. J. Proj. Manag.* **2019**, *37*, 269–282. [CrossRef]
16. Dubois, A.; Gadde, L.-E. The construction industry as a loosely coupled system: Implications for productivity and innovation. *Constr. Manag. Econ.* **2002**, *20*, 621–631. [CrossRef]
17. Gluch, P.; Räisänen, C. What tensions obstruct an alignment between project and environmental management practices? *Eng. Const. Arch. Manag.* **2012**, *19*, 127–140. [CrossRef]
18. Gluch, P. Unfolding roles and identities of professionals in construction projects: Exploring the informality of practices. *Constr. Manag. Econ.* **2009**, *27*, 959–968. [CrossRef]
19. Gluch, P.; Bosch-Sijtsema, P. Conceptualizing environmental expertise through the lens of institutional work. *Constr. Manag. Econ.* **2016**, *34*, 522–535. [CrossRef]
20. Lawrence, T.; Suddaby, R. Institutions and institutional work. In *The Sage Handbook of Organization Studies*, 2nd ed.; Clegg, S., Hardy, C., Lawrence, T., Nord, W., Eds.; Sage: London, UK, 2006; pp. 215–254.
21. Battilana, J.; D'aunno, T. Institutional work and the paradox of embedded agency. In *Institutional Work: Actors and Agency in Institutional Studies of Organizations*; Lawrence, T., Suddaby, R., Leca, B., Eds.; Cambridge University Press: New York, NY, USA, 2009; pp. 31–58.
22. Battilana, J. Agency and institutions: The enabling role of individuals' social position. *Organization* **2006**, *13*, 653–676. [CrossRef]
23. Greenwood, R.; Oliver, C.; Suddaby, R.; Sahlin, K. Institutional entrepreneurship. In *The SAGE Handbook of Organizational Institutionalism*; SAGE Publications: SAGE Business Cases Originals: London, UK, 2008; pp. 198–217.
24. Maguire, S.; Hardy, C.; Lawrence, T.B. Institutional entrepreneurship in emerging fields: HIV/AIDS treatment advocacy in Canada. *Acad. Manag. J.* **2004**, *47*, 657–679.
25. Hoffman, A.J.; Jennings, P.D. The BP oil spill as a cultural anomaly? Institutional context, conflict, and change. *J. Manag. Inq.* **2011**, *20*, 100–112. [CrossRef]
26. Etzion, D.; Ferraro, F. The role of analogy in the institutionalization of sustainability reporting. *Organ. Sci.* **2010**, *21*, 1092–1107. [CrossRef]
27. Rothenberg, S. Environmental managers as institutional entrepreneurs: The influence of institutional and technical pressures on waste management. *J. Bus. Res.* **2007**, *60*, 749–757. [CrossRef]

28. Dahlmann, F.; Grosvold, J. Environmental managers and institutional work: Reconciling tensions of competing institutional logics. *Bus. Ethic. Q.* **2017**, *27*, 263–291. [CrossRef]

29. Kvale, S. *Doing Interviews*; SAGE Publications: London, UK, 2007.

30. Silverman, D. *Interpreting Qualitative Data*, 2nd ed.; SAGE Publications: London, UK, 2001.

31. Flick, U. *An Introduction to Qualitative Research*, 3rd ed.; SAGE Publications: London, UK, 2006.

32. Månsson, S. Creating an Environmental Sustainability Profession. Technical Report no L2021:125. Licentiate Thesis, Chalmers University of Technology, Gothenburg, Sweden, March 2021.

33. Gremler, D.D. The critical incident technique in service research. *J. Serv. Res.* **2004**, *7*, 65–89. [CrossRef]

34. Kvarnström, S. Difficulties in collaboration: A critical incident study of interprofessional healthcare teamwork. *J. Interprofessional Care* **2008**, *22*, 191–203. [CrossRef]

35. Stenberg, A.-C.; Räisänen, C. The interpretative "green" in the building: Diachronic and synchronic. *Int. Stud. Manag. Organ.* **2006**, *36*, 31–53. [CrossRef]

36. Gluch, P. Building Green-Perspectives on Environmental Management in Construction. Report serie: Doktorsavhandlingar Ny serie no 2411. Ph.D. Thesis, Chalmers University of Technology, Gothenburg, Sweden, December 2005.

37. Baumann, H.; Brunklaus, B.; Gluch, P.; Kadefors, A.; Stenberg, A.C.; Thuvander, L. *Miljöbarometern för byggsektorn 2002*; Report ESA 2003:02; Chalmers University of Technology: Gothenburg, Sweden, 2003.

38. SBUF Byggsektorns betydande miljöaspekter; SBUF Informerar, no 01:10: Stockholm, Sweden. 2001. Available online: shorturl.at/tAI39 (accessed on 22 February 2021).

39. Sjölander-Lindqvist, A. In Understanding aspects of environmental stigma: The case of Hallandsås, Foresight and Precaution. In *Proceedings of the ESREL 2000 and SRA-Europe Annual Conference, Edinburgh, UK, 14–17 May 2000*; Cottam, M.P., Harvey, D.W., Pape, R.P., Tait, J., Eds.; CRC Press: Edinburgh, UK, 2000; pp. 1053–1060.

40. Stenberg, A.-C. The Social Construction of Green Building: Diachronic and Synchronic Perspectives. Report serie: Doktorsavhandlingar Ny serie no 2442. Ph.D. Thesis, Chalmers University of Technology, Gothenburg, Sweden, April 2006.

41. Sterner, E. Green Procurement of Buildings: Estimation of Environmental Impact and Life-Cycle Cost. Report 2002:09. Ph.D. Thesis, Luleå Tekniska Universitet, Luleå, Sweden, 2002.

42. Lundberg, K. Monitoring as an Instrument for Improving Environmental Performance in Public Authorities: Experience from Swedish Infrastructure Management. Report serie: Trita-LWR. Ph.D. Thesis, Kungliga Tekniska Högskolan, Stockholm, Sweden, April 2009.

43. Malmqvist, T. Fastighetsförvaltning med miljöproblemen i fokus: Om miljöstyrning och uppföljning av minskad miljöpåverkan i fastighetsförvaltande organisationer. Report serie: TRITA-INFRA. Licentiate Thesis, Kungliga Tekniska Högskolan: Stockholm, Sweden, February 2004.

44. Brunklaus, B. Organising Matters for the Environment: Environmental Studies of Housing Management and Buildings. Report serie: Doktorsavhandlingar Ny serie no 2894. Ph.D. Thesis, Chalmers University of Technology, Gothenburg, Sweden, December 2018.

45. Gluch, P.; Brunklaus, B.; Johansson, K.; Lundberg, Ö.; Stenberg, A.C.; Thuvander, L. *Miljöbarometern för bygg- och fastighetssektorn 2006—en kartläggning av sektorns miljöarbete*; CMB-report; Chalmers University of Technology: Gothenburg, Sweden, 2007.

46. Hyödynmaa, M. Miljöledning i byggföretag: Motiv, möjligheter och hinder. Report serie: TRITA-IEO. Licentiate Thesis, Kungliga Tekniska Högskolan, Stockholm, Sweden, March 2002.

47. Malmqvist, T.; Glaumann, M.; Svenfelt, Å.; Carlson, P.-O.; Erlandsson, M.; Andersson, J.; Wintzell, H.; Finnveden, G.; Lindholm, T.; Malmström, T.-G. A Swedish environmental rating tool for buildings. *Energy* **2011**, *36*, 1893–1899. [CrossRef]

48. Gluch, P.; Gustafsson, M.; Thuvander, L.; Baumann, H. Charting corporate greening: Environmental management trends in Sweden. *Build. Res. Inf.* **2013**, *42*, 318–329. [CrossRef]

49. Wallhagen, M.; Glaumann, M.; Eriksson, O.; Westerberg, U. Framework for detailed comparison of building environmental assessment tools. *Buildings* **2013**, *3*, 39–60. [CrossRef]

50. Nässén, J.; Sprei, F.; Holmberg, J. Stagnating energy efficiency in the Swedish building sector—Economic and organisational explanations. *Energy Policy* **2008**, *36*, 3814–3822. [CrossRef]

51. Högberg, L.; Lind, H.; Grange, K. Incentives for improving energy efficiency when renovating large-scale housing estates: A case study of the Swedish million homes programme. *Sustainability* **2009**, *1*, 1349–1365. [CrossRef]

52. Gluch, P. *Hållbart Byggande och projektbaserad organisering: En studie av organiskatoriska flaskhalsar*; Research Report 2009:3; Construction Management, Chalmers University of Technology: Gothenburg, Sweden, 2009.

53. Thoresson, J. Omställning–Tillväxt–Effektivisering: Energifrågor vid renovering av flerbostadshus. Ph.D. Thesis, Linköping University, Linköping, Sweden, December 2015.

54. Hagbert, P.; Femenías, P. Sustainable homes, or simply energy-efficient buildings? *Neth. J. Hous. Environ. Res.* **2015**, *31*, 1–17. [CrossRef]

55. Gluch, P. Managerial Environmental Accounting in Construction Projects, Technical report. Licentiate Thesis, Chalmers University of Technology: Gothenburg, Sweden, May 2000.

56. Petersen, D. Let the Right Ones in? Employment Requirements in Swedish Construction Procurement. Technical report no. L2018:093. Licentiate Thesis, Chalmers University of Technology, Gothenburg, Sweden, January 2018.

57. Ministry of the Environment. The Climate Policy Framework. Available online: https://www.government.se/articles/2017/06/the-climate-policy-framework/ (accessed on 22 February 2021).

58. Westlund, P.; Brogren, M.; Hylander, B.; Kellner, J.; Linden, C.; Lönngren, Ö.; Nordling, J.; Strömberg, L.; Winberg, F. *Klimatpåverkan från byggprocessen*; Kungl. Ingenjörsvetenskapsakademien (IVA): Stockholm, Sweden, 2014. Available online: https://www.iva.se/publicerat/klimatpaverkan-fran-byggprocessen/ (accessed on 22 February 2021).

59. Ejlertsson, A.; Green, J.; Ahlm, M. *Cirkulär ekonomi i byggbranschen*; Svenska Miljöinstitutet IVL: Stockholm, Sweden, 2018.

60. Malmqvist, T.; Nehasilova, M.; Moncaster, A.; Birgisdottir, H.; Rasmussen, F.N.; Wiberg, A.H.; Potting, J. Design and construction strategies for reducing embodied impacts from buildings–Case study analysis. *Energy Build.* **2018**, *166*, 35–47. [CrossRef]

61. Sverige, F. *Färdplan för fossilfri konkurrenskraft bygg- och anläggningssektorn*; Fossilfritt Sverige: Stockholm, Sweden, 2018.

62. Troje, D.; Gluch, P. Populating the social realm: New roles arising from social procurement. *Constr. Manag. Econ.* **2020**, *38*, 55–70. [CrossRef]