THE ORGANIZATIONAL NEXUS OF CHANGING MANAGEMENT PRACTICES FOR SUSTAINABLE RENOVATION

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Ambitiously set governmental sustainability targets together with a run-down building stock in need of renovation force public construction client organisations to find sustainable and new ways to renovate. Besides technology development, these challenges require that sustainability targets are embedded in decision making practices. Focusing on organising processes and management practices related to sustainable renovation of public buildings in Sweden this paper outlines a future research proposal that acknowledges the intertwined relationship between multi-levelled processes in sustainable renovation, i.e. unveiling the organisational nexus of renovation management practice. Findings from an ongoing case study were analysed by applying an analytical lens inspired by the theoretical framework of institutional work. Focusing on organization processes and management practices the case concerns a 'strategy development process' for renovation of public pre-schools in Gothenburg, Sweden. In total six meeting observations and eleven interviews were conducted. A conceptual model describing the organizational nexus of changing management practice for sustainable renovation is presented, from which a set of critical research questions for further investigation is derived.

Keywords: construction client organisations, institutional work, management practice, multi-level analysis, public buildings, sustainable renovation

INTRODUCTION

In Sweden, many buildings were built between the years 1950-1975, including public buildings such as hospitals, schools and preschools. Now both the buildings and the technical systems are reaching their technical life span, thus need to be renovated or even demolished and replaced. The building sector in Sweden (like the EU) is, compared to 1995 levels, aiming at a 20% reduction in energy use by 2020 (Thollander *et al.*, 2011). Since the public sector is stated to have a role-model position in energy reduction, the large building stock in need of renovation together with ambitiously set sustainability goals, will demand for public organisations to find new and sustainable ways to renovate and manage their building stock. However, a vast amount of studies show evidence of institutional, organizational, as well as psychological/individual barriers to sustainable construction that slow down and obstruct the mainstreaming of sustainable construction (Andrews and Johnson 2015; Henn and Hoffman 2013; vanBueren *et al.*, 2013). In addition, public organizations

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face bureaucratic structures including risk aversion and conflicting fiscal responsibility (for an overview see Meyer *et al*., 2013).

According to Hoffmann and Henn (2008) research on environmental sustainability in businesses, including construction, requires consideration of three levels of analysis, individuals in organizational context, the behavioural and social characteristics of organizations themselves and the institutional structures, rules, norms and networks that influence their activity. Individual- or behavioural barriers include personal values and beliefs toward environmental issues as well as the tendency to rely on so called cognitive heuristics. Organizational barriers to green construction include communication failures and power shifts associated with evolvement of new roles initiated by new "green" technology and vocabularies (Hoffmann and Henn 2008). Institutional barriers include rules, norms, beliefs and logics embedded in the organizations larger institutional context (Andrews and Johnson 2015) as well as governmental regulations, policies and programs (Palm and Thollander 2010).

Research on organizations and social structures is found to be an understudied dimension for understanding and examining human dimensions in the field of green and sustainable buildings (Henn and Hoffman 2013). However, in a review of research on energy behaviour in business and organizations Andrews and Johnson (2015) found that organizational behaviour research has just recently begun to address energy efficiency and sustainability issues in building construction. Nevertheless, organisational behaviour research that investigates the intertwined relationship between the micro (individual) level, the organizational level and the macro (institutional) level is still underdeveloped. In addition, according to Janda and Topouzi (2015) there is a need for an increase of research where sustainability protagonists are seen as 'normal' employees who need to respond to changes in sustainable building policies. In line with these claims this paper develops a research proposal that acknowledge the intertwined relationship between micro and macro processes in (ecological) sustainable renovation, i.e. unveiling the nexus of sustainable renovation.

In order to investigate the intertwined relationship above mentioned we apply an analytical lens inspired by the theoretical framework of institutional work (Lawrence *et al*., 2011), hence taking interest in the "day-to-day" change work done by the "ordinary" employees as these relate to institutional change processes. Building on Crittenden's (2014) three level change framework a conceptual model describing the organizational nexus of changing management practices for renovation of public buildings is developed, from which a set of critical research questions for further investigation are outlined. Studies, taking into account other levels of analysis than the organization field level have been less common within institutional theory research. Thus, adopting a multi-level model of analysis answers the call for research contributing to a better understanding of intra-organizational change processes (Greenwood *et al*., 2013). This paper further contributes to an increased understanding of the specific case of renovation processes of public buildings, moving toward a resolution of the (expected) barriers to sustainable renovation in public organizations.

THERETICIAL FRAMEWORK

Sustainable renovation research

A key for increased energy efficiency of public buildings forwarded by for example Person and Bratt (2010) is increased collaboration with stakeholders and informative measures within organizations regarding benefits from new sustainable technologies. However, in a study of a Swedish public housing company's energy efficient renovation process, Palm and Reindl (2016) found, by applying a practice theory framework, focusing on routines, technology, meanings, and knowledge, that for example project meetings as information channel did not provide opportunities for creativity and innovation. Instead, existing technical infrastructure largely determined what issues came up for discussion and most meetings were spent discussing technical details of 'old' technology. It was also found that theoretical knowledge tended to be overlooked at the advantage of practical "know-how". Moreover, other studies have shown that new constructions often are normative in determining construction practices (Mjörnell *et al.*, 2014) which not always cohere with a (sustainable) renovation process where different, and sometimes conflicting, knowledge areas, values and objectives needs to be accounted for (Thuvander *et al.*, 2012). Insufficient organizational structures (and culture), short term political decision-making horizons and lack of standardized routines focusing on sustainable and energy efficient renovation processes are other key aspects forwarded as barriers for sustainable and energy efficient renovation (Person and Bratt 2010, Olsson *et al.*, 2015).

As a consequence, renovation processes tend to repeat themselves. Simultaneously to problems of breaking old habits and structures, and according to Angeuloviski and Carmin (2011) building renovation is a domain were (mitigation) institutions are emerging. Similarly, Gluch *et al.*, (2014) argue that, driven by various environmental management systems, energy and environmental work is becoming institutionalized in the Swedish construction industry. The examples provided above witness of a highly complex and institutionalized construction industry, including public building clients, and the problems of disrupting these existing institutions as well as creating new ones (Bresnen 2013; Gluch and Bosch-Sijtsema 2016).

Thus, sustainable renovation faces several challenges in disrupting old and creating new institutions. These challenges, which are governmental, organisational, technological and behavioural, need to be understood at a close range of practices within their context and set in relation with the challenges framed on an industry-field level. This leads us to the institutional work framework which studies institutional dynamics from an agentic and practice-oriented perspective (Lawrence and Suddaby 2006). Examining institutional work in the context of emergent institutional processes, points at actions of those who affect, or attempt to affect, institutional processes at both general and local levels.

Theoretical lens of institutional work

Institutional work is a field of study that refocus institutional studies of organisation to the level of individual and collective actors (Lawrence *et al.*, 2011). The concept of institutional work describes "the purposive action of individuals and organisations aiming at *creating*, *maintaining* and *disrupting* institutions" (Lawrence and Suddaby 2006, p.215). Many studies applying institutional theory has foremost focused on the macro-dynamics and macro-perspectives of organizations and change and by doing so overlooked the everyday work of individual actors within the organizations (Lawrence

et al., 2011). In the institutional work framework, an agency perspective with focus on actors (agents) *within an organization* is recognized and researchers are encouraged to alternate the focus on large-scale social transformation and instead focus on the relationship between institutions and the actors who populate them (Lawrence *et al*., 2011).

An agentic and practice-oriented perspective of institutional work may enable an understanding of how interaction between actors, structures, and artefacts shape institutional practices in a specific organizational setting. The research interest lies not in the great accomplishments done by outstanding individuals but rather in the complex, reflexive and recursive relationship the "ordinary" individual expose between themselves as individuals and the institution (s) they encounter or are part of (Lawrence *et al*., 2011). Accordingly, interest is taken in how and why actors work to interpret and translate institutions, and how these actions lead to institutional consequences, where change can be one option but status quo another (Lawrence *et al*., 2011).

A three-level process model to examine institutional change

To introduce a multi-level perspective on institutional change related to management practice for renovation of buildings we draw on the work of Crittenden (2014). Although Crittenden do not explicitly use the term institutional work, his model relates to the key concepts of institutional work and can as such be placed within that field of research. Examining a case of changing energy management practices in Australia, Crittenden has developed a multi-level model of institutional analysis that links individual, organisational and field-level analysis and examines the dynamic process of change over time. The model was developed in response to two main calls; 1) a need for a research design that "bring people back in institutional research", and 2) a need for multi-level studies, thus studies linking micro processes with macro processes, highlighting the links between individual, organisations and the field in institutional research.

In his study Crittenden (2014) adopted a distributed view of agency were focus was on the actors involved in making a decision on whether to support or reject a proposed energy efficiency project. It was found that these decisions were effected by project-, organisational- as well as field-level contexts. Crittenden (2014) therefore argues that a multi-level model is needed to provide insights into the notion of distributed agency as well as provide explanations for the complex nature of organisational fields and the process of change within these fields. The field-level highlights effects from multiple government policies and inter-organisational influences on actions for sustainability management in organisations. As such the model give account for the interactions between multiple stakeholders as they influence institutional change. The organisational level encompasses where sustainability practices are primarily applied. At this level existing practices are disrupted and new practices are developed and maintained. The project level is where the benefit from practices are implemented to deliver tangible outcomes for sustainable development. To support multi-level analysis, the model also exposes skills and strategies of individuals (as agents for institutional work) that influence across the three levels.

METHOD AND CASE DESCRIPTION

A case study method is applied in this paper. Case studies have been shown to capture the process under study in a very detailed and in-depth way and suggested as

suitable for studying complex structures (Dubois and Gadde 2002). In this case study, both a retro perspective and longitudinal perspective will be applied, since we want to explore events in the past as well as investigate the on-going process of change in order to find "triggers" for change at different levels of the organizations and at different times in the change process. The organizational context and analytical unit is the municipal Premises Management Office (PMO) in the City of Gothenburg, Sweden, where a "development-strategy" for renovation is currently being implemented.

The PMO with its 415 employees build, manage and amend municipal premises, including, schools, preschools, housing for elderly and housing for people with special needs. The organization is divided into three divisions: facilities management, maintenance, and building project management. PMO has a staff consisting of functions for HRM, public relations and communication, finance and R&D (including sustainability). The PMO provide premises for public administration in 10 different City Areas (CA) in Gothenburg, which each has separate budgets to follow. The Premises Secretariat (PS), with 7 officials, is responsible for the strategic planning of municipal premises. The Municipal Facilities Board (MFB), which consist of laymen politicians, is deciding focus, goals, policies and directions that governs both PS and PMO's operations. With a four-year budget horizon PS are given investment funding from the MFB which they thereafter allocate to PMO depending on investment needs. For reinvestments into existing buildings PMO get funding directly from the MFB. For the budget period 2016-2019 the size of investment funding was 640 million EUR to be compared with 120 million EUR for reinvestments.

In 2015 MFB assigned the PMO with the task to develop a long-term strategy for renovation of premises built in the 50's, 60's and the 70's. The strategy was sought to be developed together with the stakeholders and include common goals and directives regarding renovation and energy-efficiency in current premises. When fully implemented, the strategy is supposed to, on an annually basis, actively be used in the long-term "plan for maintenance of premises". Maintenance planning will also be made on the basis of the total building stock in the city, hence shifting focus from individual needs of the different City Areas to a having a "city as a whole" perspective. A pilot project was initiated in early winter 2016, in which the strategy will be developed in one City Area. In this Area the strategy is planned to be implemented in autumn 2016.

Empirical data is collected during 2016. At this point (June 2016) data consists of observations of six meetings related to the strategic development plan process. During these meetings, extensive field notes were taken. Additionally, eleven one-hour semi-structured interviews with nine different persons involved in the strategy development process have been conducted. Eight of these interviews were recorded. In addition, the empirical material includes printed material from the presentations, policy documents, written descriptions of the strategy development process and pilot project, organization websites, photo documentation and relevant public documents. Additionally, one of the authors attended a national conference on "Strategic planning of premises" together with representatives from the case organization. Gathered data was converted into text, stored in NVivo and analysed by both authors. For the purpose of this paper, thematic analysis following a multi-level perspective on institutional change was used for analysing the data. As the research is in an initial stage additional interviews and observations are planned for late summer and autumn 2016 and follow-up interviews in 2017.

CASE STUDY FINDINGS

Below, findings from the case study are presented as illustrations on the need to adopt a multi-level and agentic-practice view in understanding purposeful actions of agents in changing renovation management practices for public buildings. From our data we see several interrelations between institutional changes on various levels (examples are illustrated in Figure 1). For example, national as well as local sustainability and energy goals and regulations were found to play a role as an important initial trigger for the idea to develop a "strategic development plan" within a targeted PMO team containing the director, a coordinator (later assigned project-leader), a sustainability official and a consultant. To comply with these requirements, the PMO were forced to reconsider their renovation management practices in several ways. Interesting is that once the idea on a new plan had become a 'reality' the sustainability and energy efficiency aspects seem to be set aside as key issue and goal of the plan and other persuasive aspects were taking over. Thus, just studying "the strategic development plan" on a project level would not have captured this triggering aspect in the change process. Moreover, through a web of influential actions by the targeted PMO team the coordinator at PMO were assigned as project leader. This included to investigate and develop the proposal for a long-term planning process for maintenance of their premises. Once implemented "the strategic development plan" is predicted to have a major impact on every renovation project in the city and as such also renovation management practices within PMO.

Figure 1: Findings analysed according to a multi-dimensional view on agency for renovation of public buildings

To manage the assignment two new (project) teams were formed, a key project team, responsible for the development plan and a pilot-project team, investigating the new way of working during spring 2016. The idea behind the pilot was "to pave the way" and lay ground for a new renovation management practice. Several interviewees emphasize, wise from previous change processes, the importance of creating legitimacy for the new way of working but also to build organizational trust in that the new way is robust and has enough staying power to last over time, i.e. "keeping the idea alive long enough". The selection of participants in the key project team were done on basis of previous collaboration and people which were seen as 'sensible collaborators', i.e. 'supportive people' that 'understand why this is a much needed action'. The pilot-project team consists of one representative from PMO, one from PS, a 'trustworthy' consultant that for many years been working with both PS and

PMO, and representatives from the city area where the pilot will take place. Within these groups and as potential agents for the initiated change process we have identified three actors performing institutional work across various levels: the coordinator/project leader (of "the strategic development plan" as well as driver of the pilot-project), the director of PMO, and the external consultant. These actors take different agentic roles in the change process; the coordinator as stage-setter and contender of institutional order, the director as supportive provider of organisational space, and the consultant as 'rationality' provider (in terms of graphs and numbers) through the means of an economic simulation system (technology). In his stage-setting within PMO the coordinator used animated power-points with schematic illustrations showing (hoped for) benefits from a changed renovation management practice as well as showing the 'pitfalls' if not acting. At this stage the sustainability official has an "invisible background role", acting through the proxy of the organisation's sustainability goals. As a consequence, sustainability and energy efficiency aspects seem to have become a silent discourse in the project conversations as the close pilot-project team individually' promote their self-interests.

Another example driven by larger institutional changes related to the holistic and long term view of sustainability is the perception of a need to find renovation management practices that counteract the prevailing short term decision culture within PMO. On an organisational level this would entail a shift of focus from having separate plans for different City Areas towards having a 'grand plan' for the city's total public building stock. For the project level this would mean going from a short-sighted 'patch up and mend' practice to a long-term strategic investment view on renovation needs. In addition, one proposition of the 'strategic development plan' is that reinvestments and investments shall be decided on in a combined investment plan, which enforces for an enhanced collaboration between PMO and PS. The suggestion also may imply a reallocation of action as well as power to centrally located construction project managers in PMO. Thus, strategic decisions, previously made by officials at PS, will when (and if) the strategy is realized fully be made by professional construction project managers. In addition, maintenance practitioners, today involved in 'simple patch up and mend' activities will also lose their decision making autonomy as the today's role are suggested to be diminished. Thus, when fully implemented the role of practitioners involved in renovation are believed to change from urgency driven ad hoc fixers to strategic planners and skilled building technicians. All this indicates that shifting institutional logics might take place as a result of the change.

Seen from a field-organisational level the actions taken within PMO are supported by national movements concerning a universal need to reconsider maintenance practice in public building offices. Spaces and places for knowledge exchange, e.g. conferences aimed for public client organisations, is created and give direction for legitimate routes to take. The project-leader, for example, saw here an arena for support and also potential for collaboration with other municipalities facing similar challenges, attend conferences and increase his professional network. In addition, in his rhetoric he used the participation in a conference to internally justify the timely importance of the strategic plan and also to prove "how far they have come" in relation to others.

Analysing the material, also various artefacts emerged as influential non-human agents playing a central role in the ongoing change of renovation management practices, triggering actions. Besides the consultant's simulation system, as mentioned before, the following are two other examples where artefacts/concepts are attributed with rhetorical agency to support change; the run-down building stock and

temporary rented pavilions (i.e. not owned by the city and not under the responsibility of PMO). Both 'objects' dominated the discourse during meetings and were used by the team participants as key arguments for the change. As one project-member describes the building stock: *"[current] renovation-bulge […] is a ticking bomb"*. Another member referred to the problem with a run-down building stock in terms of *"a massive explosive mountain… [*and it is*] an awakening that we cannot shove this mountain in front of us any longer"* and "[now] *comes hell"*. Similarly, the rented pavilions (existing and presumed-planned) became a shared (unwanted) object that helped unifying the pilot project team in their change mission. According to the project members in both the key project team and the pilot project team, the local politicians (which were not members of the groups) were claimed to have a view on pavilions as an attractive alternative to the strategic development plan since the pavilions are rented and do not include investment costs in the short term perspective. Thus, these unwanted objects risk jeopardizing the 'grand plan', as it was said: *"The alternative that we must avoid, is pavilions. It is a challenge to convince the City Areas not to choose pavilions as an option". "We need to present an alternative to pavilions that the politicians can't reject"*. The above examples indicate the importance of not only focusing on human actors as agents of change but also see the role various artefacts play.

CONCLUDING REMARKS AND RESEARCH PROPOSAL

The findings have implied that a consequence from the change process might be increased professionalization within the organization. To assess, plan and decide when a building have to be renovated (or replaced) the practitioners involved in renovation were believed to change from today's urgency triggered ad hoc fixers to trained building technicians, which for some might contest their current professional identity. At the same time our study also indicated a strengthened role for construction project managers within the organization. Changing roles and increased professionalization within the construction industry has, due to an emerging sustainability agenda, been the focus in a few previous studies (e.g. Gluch and Bosch-Sijtsema, 2016: Hughes and Hughes, 2013) but there are still questions to be investigated. Changing professional roles and renovation management practices also raise questions regarding what shifts in institutional logic that underpin change in public construction client organizations? What are the consequences of this professionalization on an organizational-field, organizational, project and individual level?

Findings also indicated that the key project team involved in the strategy project mobilised legitimacy for the new renovation management practice across multiple organisational levels. It also showed that the change was triggered by multiple sources on various levels. This raises questions on how ongoing organising and policy processes on various levels influence and drive sustainable renovation. Thus, the role of various actors' for changed renovation management practices are an interesting aspect for further studies. Herein lies a need to investigate who these actors are and why they are involved? Who are included (and who are excluded)? In our case study we could see that sustainability and energy efficiency aspects in spite of being forwarded as a key stakes from the strategic change process became a 'silent' issue in the 'strategy plan project'. Studying only the strategy plan on a project level would not have captured the sustainability aspect in the change process. Insights on actors' roles raises questions such as how actors negotiate, integrate or collaborate between multiple institutional logics in a public organisation (cf. Bosch-Sijtsema and

Gluch, 2016). How do they collaborate and interact to influence institutionalized practices?

Construction management research articles have so far not studied the agentic role of artefacts and technological objects for institutional work, which is an issue worth further inquiry. Herein lies a need to take into consideration that seemingly stable artefacts can be open to multiple interpretations by different users in the same or different settings (Schweber and Harty 2010). If one focuses only on the role individuals play in a change process, or have a presumption that a tool necessarily and always have a certain role, one fails to see how change is enabled and how institutions are challenged through a socio-technical process involving both actors and artefacts as agents for institutional work. In our study various mediating objects (artefacts) were identified as possible non-human agents, for example simulation tools and unwanted building types. Thus, artefacts are included on the same basis as actors in the conceptual framework suggested (Figure 1). Here socio-technical network approaches could be a viable complementary analytical lens to understand artefacts' agentic role in institutional work. Questions for research might be: Do non-human agents (artefacts) perform institutional work in changed renovation management practice? What active (strategic) roles can these artefacts play in shaping 'purposive action'? Since tools can play different roles in different settings and is largely influences by those using them (Georg 2015), it is important to study effects from tools and other devices at closer range, for example through observations.

The set of critical research issues raised in this discussion and the conceptual model will be in focus for an on-going research project related to sustainable renovation management practices in public construction client organisations.

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