

Concern and confidence. Architects making sense of climate adaptation

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Abstract

Drawing on the analytical concept of ‘sensemaking’ as defined by Weick [1995, *Sensemaking in Organizations* (Sage, Thousand Oaks, CA)], and on scholarship concerning discourses on architect identity and the regulatory context of architecture, in this paper I examine how architects make sense of the issue of climate adaptation. I found that discourses on architects’ identity and context appeared to shape the way climate adaptation was made sense of, rather than the other way around. Also, architect identity and contextual factors were more important in architects’ sensemaking than features of the climate adaptation issue itself. Most important among the identity-related element of architects’ sensemaking was the conception of architects’ expertise as holistic—encompassing both aesthetic-creative and technical-craft-related dimensions. Among contextual factors in architects’ sensemaking, national building regulations and the industry’s focus on cost efficiency were the most central.

Keywords: climate adaptation, architecture, professions, sensemaking, identity, discourse, regulation, organizational theory

Introduction

Do professionals’ identity and practice shape the way new concerns—like climate adaptation—are and can be made sense of? And vice versa: do new concerns change architects’ view of themselves, their practice, and their responsibilities? March (1984) argues that “organizational life is as much about interpretation,

intellect, metaphors of theory, and fitting our history into an understanding of life as it is about decisions and coping with the environment” (quoted in Weick, 1995, page 8). In this paper, I examine how architects make sense of climate adaptation. Climate adaptation can be argued to be a ‘new concern’ since it is a concept which has come to the fore lately as an important issue to consider for many people, including those involved in designing and constructing the built environment. Furthermore, climate adaptation is a concept with many meanings and definitions, divergent in the conceptions of who and what adapts, what to, and how (Smit et al, 2000), so that we cannot take the meaning of ‘climate adaptation’ to architects as a given.

Thus, it is relevant to examine architects’ ‘interpretive work’ (Berkhout et al, 2006) of making sense of climate adaptation if we are to understand if, and in what ways, climate adaptation is and can be done. However, it is also relevant to use climate adaptation as a window to study current concerns and challenges facing architects’ work. Examining how architects incorporate climate adaptation into their existing practice and their ideas “of what architecture is for and how it happens” (Cohen et al, 2005, page 793) might also give us insight into architects’ reasoning about practice, context, and identity.

The theory of organizational sense-making proves an interesting way of studying the interrelationship between architects, their context, and new concerns. Earlier research shows that identity, practice, and context are central to processes of climate adaptation (e.g., Berkhout et al, 2006; West and Hovelsrud, 2010), and they are factors shown to be central in organizational sense-making (Weick, 1995). In the following section, I will outline some earlier and particularly interesting research on architect identity that points out some contextual factors considered to be of crucial importance in shaping architectural work at present. After a brief presentation of the methods, I will examine how architects make sense of climate adaptation, with emphasis on the role that (1) identity discourses, (2) contextual factors, and (3) the climate issue itself play in their sense-making.

Sense-making, architect identity, and context

Identity, language, ideas about others, rules, and routines shape the way people perceive, make note of, interpret, and act on phenomena (Weick, 1995). This amalgam of perception, noticing, interpretation, and action (or non-action) is what Weick terms ‘sense-making.’ According to Weick, sense, cut to the bone, consists of three elements: (1) a something—be it an event, an issue, an action, an observation, an assignment, or a question; (2) something bigger out there that it can be connected to—for example, climate science, weather observations, an identity discourse, past experiences; (3) and the link between them. “The combination of a past moment + connection + a present moment creates a meaningful definition of the present situation” (page 111).

Identity is one such possible frame in which a new something, a new issue—such as climate adaptation—can be understood. Identity can help stabilize something new and unknown, but it may also be in need of stabilization. Weick writes: “[d]epending on who I am, my definition of what is ‘out there’ will also change,” and that, vice versa, “to define it is also to define self” (1995, page 20).

However, sense-making also always happens in a given context—sense-making is what happens when an activity is interrupted by something new that needs to be interpreted, acted upon, accommodated, or disregarded. Sense-making never happens in a vacuum. Thus, it is important to examine both identity and context in order to understand what is going on. In the following I will first lay out relevant literature on architect identity, and follow up with recent research that examines the context of architect work, with particular emphasis on the role of regulations, auditing, risk, and cost efficiency.

In light of the fact that “[n]o single actor or institution can dominate social life” (Imrie and Street, 2011, page 22), it may seem strange to choose to take architect identity as a starting point for studying how architects make sense of the issue of

climate adaptation, when other things may play just as important roles in both sense-making and influencing design outcomes. However, although processes of sense-making (and coproduction) do not have definite beginnings and ends, we need to start our investigation somewhere, and identity is one such possible starting point.¹ It was chosen because it seemed fruitful: my interview data were rich in information concerning architect identity and, more importantly, interesting things had been written about architect identity that do not take architect identity as a given, but which rather examine the discursive space in which architects can negotiate their identity.² An example is Cohen et al.'s (2005) work on architects' 'identity discourses'—architecture as creative endeavor, architecture as business, and architecture as public service.

In the architecture-as-creative-endeavor discourse, as described by Cohen et al (2005), creativity is seen as the legitimate and legitimating core of architecture—with creative– aesthetic sensibility and skill as the characteristic that differentiates architects from other actors in the building industry.³ However, creativity is not the

¹ Other starting points for examining sensemaking are: to examine how people evaluate what they have done and said when dealing with something new (the retrospective aspect of sensemaking); what people do about something (the enactive aspect of sensemaking); how socialization and relating to other actors (real or imagined) play a role; how sensemaking changes over time; what cues actors extract and focus on; and how they construct sufficient and plausible understandings of their situation and the new things or interruptions that have to be dealt with. Each of these seven starting points are properties of sensemaking which set it apart from other explanatory processes, such as understanding, interpretation, and attribution. Weick (1995) argues that each of the descriptive properties of the sensemaking process (grounded in identity construction, retrospective, enactive, social, ongoing, focused on and by extracted cues, concern with plausibility rather than accuracy) are by themselves self-contained sets of research questions which relate to the other six—each incorporating action and context, which are key aspects of sensemaking.

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³ This understanding of architect identity plays a central role in many other scholars' accounts of

only, nor necessarily the most important, way in which architects understand themselves and their professional role. In Cohen et al.'s (2005) account, understandings of architecture as business or as a public service are just as important identity discourses. In these two latter discourses, creativity is seen as one among many facets of architecture, not as the one, defining feature. In the business discourse, for example, financial management, technical know-how, and market sensitivity are just as important as parts of an architects' skill set as creativity, whereas in the public service discourse the ability to listen and enter into equal-footing partnerships with clients and other actors in the building industry is considered just as important as creative ability, since the goal of architecture—in that discourse—is to contribute to the public good by employing the creativity of architects.

The business identity discourse and the public service identity discourse are more inclusive than the creativity discourse with regard to what can be deemed to lie within the domain of architects' responsibilities ["activities considered to be outside of the boundaries of architecture are still part of the business" (Cohen et al., 2005, page 786)]. Thus, these two discourses show more sensitivity to the social context in which architecture is embedded and, to a larger degree than for the creativity discourse, reflect the settings in which architectural work takes place. Where the creativity discourse cuts across organizational contexts, the architecture-as-business discourse was mainly drawn on by practitioners working in private-sector firms and the architecture-as-public-service discourse was used by practitioners working in the public sector. All the identity discourses were used to make sense of architects' (changing) role in specific contexts, for instance, to maintain a sense of identity, account for practice, or defend or negotiate status. As seen above, the business discourse—being more inclusive of what counts as 'proper' things for an architect to do—could help architects working in the business sector to defend the noncreative

architecture. It is perhaps especially visible among those who take a critical stance on an architect's self-understanding centered on creativity and aesthetics (eg, Habraken, 2005; Owen and Dovey, 2008; RIBA, 2005; Ryghaug, 2003; Till, 2009).

work they do by defining it as part of their work. The creativity discourse, on the other hand, could be—and often was—used to defend architects’ autonomy and status, since “within the creative discourse, the architect is seen as expert” (Cohen et al, 2005, page 784).

In the light of Cohen et al’s (2005) descriptions of how architects draw on different identity discourses to make sense of, negotiate, and accommodate changes to their profession and the context around them (see also Imrie and Street, 2011; Jones and Livne-Tarandach, 2008), we might expect that identity will also be a central factor in architects’ sense-making with respect to climate adaptation. How can this take place? Which identity discourses are relevant to making sense of climate adaptation? Does the (potentially) new concern of climate adaptation change or influence their identity negotiation? Is climate adaptation experienced as a threat to an architect’s work, identity, or status, or as an opportunity? And how is the way architects make sense of the issue of climate adaptation influenced and shaped by architect identity discourses?

The next aspect of this theoretical part of the paper concerns the context of architect work. Context plays a key role in sense-making. Two contextual factors commonly singled out as important to architects’ practice and status are the increased focus on cost efficiency. and time economy, and the increase in risk management and regulation (see, e.g., Imrie and Street, 2011). The first of these has been feared to lead to a minimization of ‘pure design’ in project work; fear that the creative dimension of building processes—and of architects—will be increasingly and more easily sidelined so that the status and professional autonomy of architects is threatened (see RIBA, 2005; 2011). The second factor, the increased focus on risk, regulation, and risk management by building industry actors and national authorities alike, has led to a situation that Imrie and Street (2011) describe as ‘regulatory overload’. As nation-states increase and broaden the scope of regulatory control in an attempt to address societal concerns like climate change, safety, quality, and sustainability, the traditional focus of architects—aesthetics and building design—

may be supplanted by prosaic and pragmatic tasks related to risk management and regulation, as well as the development, delivery, and implementation of building projects. Risk management and regulation are also commonly responded to with large, more complex project teams where architects increasingly work in partnership with other professionals and do not have claim to any special status. Some of these issues have been seen in the light of a broader set of societal changes that have been interpreted as destabilizing the status of traditional professional occupations (Dent and Whitehead, 2002). My concern here, however, is to examine in detail how architects negotiate, accommodate, and deflect such apparent wholesale change in the manner of Imrie and Street (2011) and Cohen et al (2005). Cohen et al, for example, showed how architects experienced a need to address outside pressures and threats, which then played important parts in how architects used identity discourses to negotiate and make sense of their situation. Which contextual factors influence how architects make sense of the issue of climate adaptation? Are the contextual factors reviewed above relevant to architects' sense-making with respect to climate adaptation? If so, how?

I have started by asking how professionals' identity and practice shape the way climate adaptation is made sense of, and whether climate adaptation may have an influence on architects' view of themselves, their practice, and their responsibilities. Identity, practice, and context have been shown to be interrelated (Cohen et al, 2005; Imrie and Street, 2011) in what Imrie and Street describe as a process of coproduction, and I have argued that this interrelationship can be studied using the framework of organizational sense-making. I have asked whether the emergence of climate adaptation as an issue has an effect on these elements, and how they, in turn, play a part in how the issue of climate adaptation is understood. Of course, there is a third frame that can play a pivotal role in the sense-making of climate adaptation. It may be that neither identity nor context are the most central factors in the understanding of climate adaptation, and that the central factors are features of the issue of climate change itself. Is that the case, or are local context, practice, and identity more important?

The case: Norwegian architects and climate adaption: context and methodology

My case is to examine these questions in relation to Norwegian architects. Although Norwegian society is, in general, believed to be ‘weatherwise’—that is, familiar with extreme weather conditions (Aall et al, 2009; Lisø et al, 2003)—and Norway is generally considered to have high adaptive capacity, it does not necessarily follow that this will lead to successful adaptation (O’Brien et al, 2004). Even though Norway’s varied climatic conditions, which are caused by rugged topography, have historically caused variations in building practice throughout the country (Lisø et al, 2003, page 207), external climatic impact causes more than 75% of Norwegian building defects (Ingvaldsen, 2008). This makes it reasonable to doubt the ability of the Norwegian building industry to deal with climatic stressors. With regional scenarios for climate change in Norway over the next fifty years indicating increased risk of extreme weather and intense precipitation (RegClim, 2005), there is reason for concern about the building industry’s ability to respond to the challenge of climate adaptation (Lisø et al, 2003, page 207).

Previous research on climate adaptation in the building industry in Norway gives several potential reasons for poor building quality: the ever-present demand for cost effectiveness in the construction industry (Lisø et al., 2003, pages 206–207); the reform of the legal framework (Groven, 2005; Lisø, 2006; Øyen et al., 2005), which has increased the complexity of the rules making them “more difficult to enforce or easier to evade” (Lisø, 2006, page 5); and inadequate governmental supervision of the building industry’s internal control (Groven, 2005; Øyen et al., 2005). Furthermore, Norwegians’ self-image of being weather-wise—that is, capable of dealing all types of (Norwegian) weather—might in itself be a problem. With the 1997 reform of the building regulations to a performance-based system, the responsibility for quality standards is given to the responsible applicant—the designers or the contractors (Øyen et al., 2005). This makes these building industry actors’ interpretation of climate adaptation very central to how, and indeed whether, climate adaptation can and will happen.

Øyen et al. (2005, page 7) express concern about the fact that “[m]ost companies are confident that they are fully adapted; [even though] the degree of adaptation varies greatly within the small sample of cases examined.” Øyen et al are concerned that building industry actors may be overrating their own adaptation and adaptive capacity. This concern is backed by findings in other studies of Norwegian actors’ interpretations of their own adaptive capacity (e.g., Aall et al., 2009; West and Hovelsrud, 2010). If actors judge their own resilience and capacity to adapt to be strong, this may be a possible barrier to climate adaptation, so studying their sense-making processes will be central to gaining understanding into how climate adaptation can happen.

My analysis of architects’ sense-making regarding climate adaptation builds on thirty-six qualitative interviews with Norwegian architects from a sample of different sized private sector firms with various regional backgrounds (see tables 1, 2, and 3).

Table 1. Number of interviewees by region.

Region	Number
Western Norway	12
Eastern Norway	6
Southern Norway	2
Central Norway	11
Northern Norway	5

Table 2. Number of interviewees by size of firm.

Size of firm	Number	Initial letter of alias names
Small (1–5 employees)	12	A–G
Medium-sized (5–15 employees)	12	H–L
Large (more than 15 employees)	12	M–V

The interviewees were chosen from a list of 805 firms derived from a search for architect firms in the Yellow Pages, restricted to the largest cities in five regions of Norway: West, East, South, Central, and North. Three interviews were conducted by

my colleague Robert Næss, the rest by myself. Initial contact with the chosen firms was by e-mail, whereas the interviews were conducted by telephone, except the three interviews conducted by Robert Næss which were face-to-face. The interviews were carried out in 2008, lasted between 10 and 40 minutes, were recorded with the interviewees' consent, and transcribed verbatim for the analysis. I translated the interviews from Norwegian into English.

Table 3. Status of interviewees within their firm.

Status	Number
Manager	22
Partner	8
Partner + manager	3
Employee	3

The interview guide consisted of four topics of interest: (1) how the architects considered climate change would affect their line of business, (2) what they considered to be important sources of knowledge about climate change, (3) what they perceived would help or hinder climate adaptation, and (4) how they dealt with weather and natural hazard issues in their daily practice. In line with a grounded theory approach (Corbin and Strauss, 2008), the interview questions were altered as the parallel interview-analysis process progressed, in order to refocus the line of inquiry and elaborate on interesting features from earlier interviews.

Through a qualitative content analysis, I first categorized the interviewees' different interpretations of climate change, their attributions of responsibility for climate adaptation, and their reasons for concern or confidence about their ability to handle climate adaptation. Secondly, I used concepts drawn from relevant literature—identity, context, and issue—to create larger categories of 'sources of reasons'.

First I examine what role architect identity played in the way in which architects made sense of climate adaptation. I go on to examine the role of contextual factors and aspects of the issue itself.

Climate adaptation and architect identity

Cohen et al's (2005) description of how architects use identity discourses to make sense of, negotiate, and accommodate changes to their profession and the context around them, suggests that how architects make sense of new concerns may not be straightforward. How did the architects interviewed make sense of climate adaptation, and what role did identity discourses play in this sensemaking? Did the architects dismiss climate adaptation as outside their area of concern or did they argue that this issue could be integrated easily into standard practice?

Most of the interviewees pursued the latter line of reasoning and expressed confidence about architects' ability to handle the demands of climate adaptation. This confidence was based on a generally shared conception of adaptation to current local climatic conditions as an integral part of 'good building' and a good design process. Many of the interviewees explained how "we always work on climate adaptation ⁴when designing a building;"⁵ "it is engrained in the building regulations and in good building tradition and experience;"⁶ "it is already integral, almost second nature."⁷ The fact that climate adaptation was "part of the picture the whole time"⁸ supported faith in architects' ability to address the concerns of climate adaptation: "The houses should in principle be water tight, so I don't know if it [climate change] will be that important."⁹

Nygaard put it like this:

⁴ Andersen, Berg, Christensen, Dahl, Johannessen, Larsen, Lund, Nielsen, Nygaard, Paulsen.

⁵ Larsen.

⁶ Paulsen.

⁷ Christensen.

⁸ Andersen.

⁹ Christensen.

All physical challenges—the outdoor environment, climate—will influence the building process. You evaluate the situation: where is it good to place a building on this site with regard to wind, snow, geotechnical considerations? ... We are used to doing local studies in an area and on the site where the building will be, on the plot, and I do not think there will be any other ways of gaining knowledge about such things. ... And when the climate changes, all these parameters will change too.”

Nygaard’s description of the way architects ‘evaluate the situation’ and ‘gather knowledge’ about the climatic conditions of a building site, leads her to conclude that architects will adapt almost automatically because—as she sees it—climate change will influence parameters to which architects, through their practice, are sensitive and responsive. Thus, it should follow that, by conforming to good practice, architects will be able to detect relevant local climatic changes and adjust their building designs to adapt to these changes.¹⁰

Such a definition of good design process, as being responsive to the local environmental and climatic conditions, was central to the architects’ self-understanding of their ability to adjust to climatic conditions and changes. This self-understanding differs from the identity discourses described by Cohen et al (2005). Rather than being centered on creativity and its role as the central, or one of the central, factors of good architecture, the identity discourse found here centered on the idea that architects, as opposed to other actors in the building industry, have the ability to consider the building ‘as a whole’. I have called this identity discourse ‘holistic’, and it was the central identity discourse articulated in architects’ sensemaking with respect to climate adaptation. The holistic identity discourse was what substantiated the architects’ confidence about their ability to handle climate adaptation, and it was also the reason why some architects argued that architects have a particular responsibility for ensuring that climate adaptation concerns were addressed in the design and building process.¹¹

¹⁰ Danielsen, Nygaard.

¹¹ Johannessen, Larsen.

Another argument the architects used to substantiate why they could deal with climate adaptation was that they are used to harsh weather,¹² with comments such as “we are used to shitty weather here in Bergen. ... It cannot become worse here.”¹³ As Norwegians, in general, often view themselves as used to bad weather (e.g., Aall et al, 2009; Lisø et al, 2003), the interviewees’ claim to weatherwiseness might stem from being Norwegian rather than from being architects. However, given the interviewees’ depiction of a good design process as encompassing sensitivity to climatic conditions, architects can just as well claim weatherwiseness on the basis of their practice-based experience with local climates.

Generally, the architects interviewed claimed to be able to cope professionally with climate adaption. What varied was the degree to which the interviewees considered that they—or architects in general—do in fact adhere to ‘good design practice’ in which climate adaptation is central. The degree to which the architects practice what they preach varied. Some architects emphasized how *their* firm takes this issue particularly seriously,¹⁴ with some contrasting their firm’s practice with that of others who, in their opinion, do not take the issue seriously enough.¹⁵

“I can’t make a comment about architects [in general], because I feel that most don’t think along those lines, but I can say something about our small office. We live on the West coast, and we have not designed a single house with a flat roof, because we—even before the climate change [concern]—considered it irresponsible” (Berg).

Others upheld that climate adaptation was important, but that it did not require particular consideration in, for example, urban areas or areas where no-one had experienced special climate adaptation needs.¹⁶ For instance, Mathiesen explained how “in an ordinary project in the middle of a city, I don’t think it has that much to say. When there are houses there already, and things work out OK, I don’t think it

¹² Arntzen, Berg, Christensen, Dahl, Iversen, Johannessen, Nielsen.

¹³ Christensen.

¹⁴ Arntzen, Berg, Dahl, Johannessen, Iversen, Nielsen.

¹⁵ Berg, Dahl, Johannessen.

¹⁶ Gundersen, Mathiesen.

will be given much consideration today.”¹⁷ However, these actors, too, included climate adaptation in their depiction of a good design process, but in a more convoluted form. They viewed the consideration of whether climate adaptation was necessary as part of good design process, allowing for the fact that in many, even most, cases it was not.

Did the interviewees see a connection between potential challenges for climate adaptation and architects’ way of thinking and working? As noted, adaptation to current climatic conditions was considered to be an element of good design practice, although its attributed importance and the degree to which architects lived up to this ideal varied. Some of the respondents who emphasized their own firms’ climate adaptation efforts, criticized mainstream architecture for its lack of consideration for climate, and feared that the knowledge of architects in general of how to adapt buildings to climatic conditions was deteriorating:¹⁸

“When the sheathing felt [insulating paper] came, everybody believed houses could be built anywhere and they forgot the old principles, where they [Norwegians] used to build *between* hills and mountains and not on top of them. ... If there is to be more and rougher weather ... you should at least think about where they used to place houses in the landscape, and not necessarily court disaster” (Dahl).

Several respondents noted that issues of waterproofing, humidity, wind, and other climate- related concerns had been neglected lately,¹⁹ though who in particular the interviewees held responsible for this neglect was not easy to assess from the interviews. Johannessen explicitly placed a large portion of the blame on the architectural training which, in his opinion, focused too much on form to the detriment of knowledge about climate adaptation. Nielsen argued that the globalization of the industry was a potential threat to climate-adapted buildings. He feared the loss of local knowledge, which might result from not using local architect firms.

¹⁷ Mathiesen.

¹⁸ Berg, Dahl, Johannessen.

¹⁹ Arntzen, Berg, Dahl, Eliassen, Johannessen, Nygaard, Svendsen.

In general, however, the architects' concern for the profession's ability to deal with climate adaptation was less tied to concerns about shortcomings in the profession, and more tied to contextual factors. What contextual issues were mobilized in their accounts?

Climate adaptation and the context of architect work

The architects pointed out potential economic or institutional barriers to carrying their shared 'ideal building process' into effect as the most relevant challenges to climate adaptation. The most dominant reason for concern about the ability of architects to address climate adaptation properly was the cost-reduction focus of the building industry.²⁰ Henriksen described how "what it boils down to in projects is costs. ... We can propose whatever we want, but in reality, that is what counts."²¹ Cost restrictions were seen as tied to a range of different phenomena that made current buildings poorly adapted to climatic stresses, for instance: the proliferation of minimum solutions;²² poor craftsmanship due to, among other things, time pressures in the building phase;²³ and neglect of local climate adaptation needs.²⁴

Since climate adaptation efforts might add extra qualities to a building and therefore extra costs—"they are extra qualities that have to be added, you know," Johannessen explained—the cost-efficiency focus of the industry was seen as a major obstacle to ensuring buildings better adapted to a future climate.²⁵ Solheim gave an example:

"Some of my architects tell me that when they try to introduce a climate focus, the builder is interested initially, but when he or she discovers that it has a cost, it gets dropped."

²⁰ Gundersen, Hansen, Henriksen.

²¹ Henriksen.

²² Dahl, Hansen.

²³ Nielsen.

²⁴ Arntzen, Eliassen, Olsen, Svendsen.

²⁵ Gundersen, Henriksen, Johannessen, Larsen, Mathiesen, Solheim.

A concern for their loss of influence appeared to underlie architects' criticism of how all-encompassing the cost-efficiency focus has become in the industry. In the opinion of my interviewees, the cost-reduction focus was largely responsible for current buildings being of insufficient quality and poorly adapted even for current climatic conditions. Thus, the concern voiced by architects about their professions' ability to deal with climate change can be interpreted as concern tied to their declining influence over the building process. The experience and expectation of the situation described by Solheim appeared so common that many architects did not even suggest extra-cost measures.

The interviewees' reasoning about where responsibility for climate adaptation lies centered pragmatically on the actors who were considered to hold sufficient power to propel change. Such actors were not seen, in general, to be architects: "It depends on the authorities and the builders, really. I do not think it depends that much on architects anymore," Rasmussen conceded. The actors powerful enough to drive, or stall, change were considered to be the builders and developers and the national authorities.

The power that architects considered national authorities to have can be illustrated by the fact that several architects indicated that 'changes in the building regulations' might be among the most important drivers for changes to their practice and for the building industry more generally.²⁶ National authorities were seen as the only actors powerful enough to counter the cost-reduction focus of the building industry. Several of the interviewees held that climate adaptation will only come about if building regulations are changed to include demands for particular climate adaptation measures.²⁷

"I do feel that ... people are a little careful and a little afraid to take initiatives which are difficult to defend cost-wise. If there were to be governmental requirements, it would be much easier to

²⁶ Antonsen, Eliassen, Eriksen, Gundersen, Henriksen, Nygaard, Paulsen, Solheim.

²⁷ Gundersen, Johannessen, Rasmussen, Larsen.

heed, because they *have* to be fulfilled. ... Building projects are heavy affairs with much prestige and money involved If we try to bring about [too] much that is not prevalently accepted, that can be hard. ... The authorities, for instance guidelines or regulatory amendments, will be important” (Larsen).

Thus, beyond what architects could address through good design practice and based on local assessments, climate adaptation was seen as the responsibility of the authorities,²⁸ particularly authorities at the national level in charge of making and updating building codes and regulation.²⁹ In contrast to builders and developers, national authorities generally appeared to be trusted, both in a short-term and long-term perspective. For example, Andersen displayed trust in the adequacy of the current regulatory system’s control mechanisms when he explained how he reckoned that “there are so many control mechanisms ... that it will be discovered if there are any problems.”³⁰ With respect to a more long-term perspective, confidence in national authorities was shown through a belief that relevant knowledge of large-scale climate-change challenges would be “reflected in the regulations.”³¹ This indicated a trust in the ability of the national authorities to bring about necessary climate adaptation at a ‘higher level’. This view was shared by other interviewees.³²

This trust in national authorities and in the adequacy of building codes, together with the lack of inclusion of drastic climate adaptation measures in building regulations, appeared to confirm the architects’ reading of the situation as something they could address using their traditional ways of working, thus endorsing architects’ confidence in their own ability to address climate adaptation. To use sense-making jargon, the architects appear to look to the building regulations and codes for ‘cues’ which can then be used as input to help them determine what climate adaptation might mean for them and how it should be addressed. Examples of such reading-for-sense-making-cues are how some interviewees described changes to the regulations, for

²⁸ Andersen, Hansen, Johnsen, Mathiesen, Nygaard, Rasmussen.

²⁹ Andersen, Hansen, Nygaard, Rasmussen.

³⁰ Andersen.

³¹ Nygaard.

³² Andersen, Hansen, Mathiesen, Nygaard.

instance, with respect to wind and snow loads, as ‘climate impacts’ for the architect profession.³³“ What happens in our business, how it [climate change] will affect us, is something we primarily discover when new regulations hit us,” is how Nygaard put it. Moreover, a few interviewees even indicated that ‘impacts’ from changes in regulations might be the most relevant ones for the industry and the profession.³⁴

As such, regulations played an important role in architects’ sense-making not only in the organizational context but also as a repository of cues about what climate adaptation should mean for architects and the building industry. Thus, regulations play a double role in architects’ sense-making as both tools and sense-giving ‘text’. This dual-role feature of codes and regulations was noted by Moore and Wilson (2009, page 2617; see also Imrie and Street, 2011, page 284).

The issue itself: how important for sense-making?

So far, we have observed how the interviewed architects made sense of climate adaption, above all through a holistic identity discourse which gave rise to confidence in their ability to address the concerns of climate adaptation. The architects’ confidence in their own ability to address climate adaptation appeared to be intimately tied up with their view of the issue itself, that is, their view of how climate change would impact local Norwegian climatic conditions. I have referred to several interviewees expressing confidence in their own weatherwiseness along the lines of “we are used to it.”³⁵ Implicit in such confidence in the relevance of experience, with and knowledge, of current local climatic conditions is a view of climate change as slow and governable. For example, a couple of interviewees expressly assumed that the frequency of extreme weather events might increase, but not their severity:³⁶

“A hurricane is a hurricane. There are several places where the

³³ Johannessen, Holm, Nygaard, Henriksen.

³⁴ Eliassen, Johannessen, Paulsen.

³⁵ Arntzen, Bakken, Christensen, Nielsen, Vik.

³⁶ Bakken, Lund.

houses are tethered to the ground today, as they were a hundred years ago, and where people will keep doing that. I don't think there will be that much change" (Bakken).

Others explicitly stated that they believed that (relevant) changes in weather and climatic conditions would happen slowly³⁷ or at least sufficiently slowly for architects to be able to pick up the signals and adapt in time. For instance, Orheim said he did not think the profession would change much due to climate change. He believed the architect's role and practice—their "way of handling things"—would stay the same, even though the climate might change. A view of climate change as being gradual and relatively slow was central to such confidence.

Another aspect of the issue also appeared to be important for architects' sense-making: their perception that there are scientific uncertainties inherent in predictions of the climate impacts for a particular locality. This appeared to them to be an important problem, mainly because it was exacerbated by the cost-efficiency focus. Of course, scientific uncertainty could also be an obstacle to architects' climate adaptation sensemaking. For example, Gundersen expressed a belief that climate adaptation in a long-term perspective would not be a major concern for architects since "it is so unpredictable", and Larsen expressed worry that the lack of certain knowledge might impact architects' ability to "solve the problem" of climate adaptation "properly."³⁸ By that he meant that currently available knowledge failed to clarify what architects ought to adapt to and pay attention to:

"We are supposed to build houses that can take more weather strain, but how much more weather strain, and what kind of weather strain? We are dependent on knowing that if we are to solve this properly" (Larsen).

Scientific uncertainty does not have to be a problem. People make decisions based on 'good enough' science all the time (eg, Oreskes, 2004). When extra expenses have to be defended, however, scientific uncertainty can become a major obstacle to the implementation of climate adaptation measures because it becomes more difficult

³⁷ Christensen, Holm, Mathiesen, Orheim.

³⁸ Gundersen, Hansen, Henriksen, Larsen, Mathiesen.

to defend such measures.³⁹ Larsen described how the cost considerations of builders necessitate that someone with sufficient authority substantiates or renders probable the need for extra qualities to ensure climate adaptation. This need for ‘proof’, induced by the cost-efficiency focus, results in the exploitation of scientific uncertainties to brush aside suggestions that robust climate-enhancing qualities should be added:

“I think there is enough knowledge to ... turn things up a notch, but I don’t think we have enough knowledge to evaluate what’s realistic—what we should design and plan for. That brings us back to the distribution of responsibility in a building process, because this will generally have some form of economic consequence for the building, ... and that quickly brings us to someone having to render probable that we pick the right level [of prudence]—that the builders’ expenses are what they should be” (Larsen).

In short, as Henriksen put it, “as of today ... there is too much back and forth about these issues for people to commit themselves to this a hundred percent.”

The two aspects of the issue of climate adaptation itself that played a part in architects’ sense-making—the view of the climatic system as relatively slow-changing and of scientific uncertainties regarding climate change—were important mainly because of the way they were linked to identity and context-related factors. The view that the effect of climate change on local weather is a slow process was central to the architects’ trust in both their own ability to address climate adaptation and the ability of the national regulatory systems to handle it. Likewise, the main reason architects worried about scientific uncertainty was because of a context where builders were looking for reasons to dismiss cost-increasing suggestions. The assumption that climate change is scientifically uncertain could be an argument against adding robustness-enhancing qualities to buildings. Thus, architects’ identity and practice appeared to have a greater influence on the way climate adaptation was made sense of than on the way climate adaptation challenges changed how architects

³⁹ Hansen, Henriksen, Johannessen, Larsen, Mathiesen.

saw themselves, their practice, and their responsibilities. How should we understand the implications of this?

Confidence under siege? Climate adaptation and the ebb of holism as design regime

I suggested in the introduction that when architects made sense of climate adaptation, they would draw on their identity discourses. This has proven to be true. However, rather than employing the creativity or business discourses that Cohen et al (2005) described, the architects I interviewed mobilized an identity discourse that I have called holistic. In this holistic identity discourse, architects' expertise was seen as encompassing both aesthetic–creative dimensions and dimensions related to the technical–craft-related sides of building, and architects' distinctive expertise springs from their ability to see the building as a whole. 'Good design practice', in this conception, includes detecting and identifying the climatic conditions of a building site and adapting the building to those conditions. This idea (1) of 'good practice' was used as an argument as to why architects are used to bad weather and sensitive to changing weather conditions. In turn, these two skills—weatherwiseness and climate sensitivity—together with the definition of 'good design practice' were used as arguments for why architects were able to take in and adapt to climate changes.

Given how previous literature (eg, Cohen et al, 2005; Habraken, 2005) described the creativity identity discourse as the most prevalent among architects, and how concerns like sustainability have been (discursively) excluded from the core of architect practice by the creativity–aesthetic identity discourse (eg, Owen and Dovey, 2008; Ryghaug, 2003), it is perhaps surprising that climate adaptation appeared to be considered a natural concern for architects. However, discussions about climate adaptation—as opposed to, for instance, highly standardized responses—may be an example of “conflict about professional remit ... hidden within apparent conflict over technical issues” (Fischer and Guy, 2009, page 2590). When the interviewed architects ascribed to a holistic identity discourse and at the same time argued the importance of climate adaptation, they were also claiming

the need for renewing architects' status and influence in building processes. Thus, when architects voice concern about their professions' ability to deal with climate change, they are also expressing concern about their declining influence on building processes.

The interviewees' reasoning about where responsibility for climate adaptation lies, centered pragmatically on the actors considered to hold sufficient power to propel change. In general, the powerful actors able to drive—or stall—change were considered to be builders and national authorities, not architects. In particular, the perceived power of builders was evident from the interviewees' references to the pervasive focus on cost efficiency in the industry. In the opinion of my interviewees, the cost-reduction focus was largely responsible for current buildings being of insufficient quality and poorly adapted even for current climatic conditions.

The national authorities were seen as the only actors powerful enough to counter the cost-reduction focus of the building industry. Thus, intervention by the national authorities in the form of new regulations was proposed by some interviewees as a potential way of countering the neglect of climate adaptation that the cost-reduction logic caused. Stricter regulatory requirements could provide legal redress for concerns that architects wish to pursue. These two contextual factors—national building regulations and cost-efficiency concerns—played an important part in the architects' process of making sense of climate adaptation. The above description indicates that architects are willing to help with climate adaptation, but that contextual constraints make them doubt whether they are able to.

What can this tell us about the larger context of architect work? From the architects' accounts of their confidence and concerns regarding the issue of climate adaptation, two ideals for the management of building processes can be gleaned: one regime in which concerns are balanced with a view to the building as a whole and one regime where costs are the governing factor. In the first of these regimes, where many concerns are considered simultaneously, expert judgment is the only possible way

of making decisions, since it is impossible to quantitatively optimize more than one factor at a time. In this regime architects, with their holistic approach to buildings, can make claim to being at the center of the decision-making processes. In the second regime, statutory regulatory requirements are fulfilled, and beyond that, one single variable—profit—is optimized. With the increase in risks “knowable only with the aid of science” (Jasanoff, 2010, page 235), which means that specialist input is needed to manage them properly, the ideal of the single human in charge of an entire building process may become harder to sustain. Furthermore, a system based on expert judgment is nontransparent and hard to audit, and hence vulnerable to distrust.

Imrie and Street (2011, page 177) argue that the involvement of architectural firms in risk-based regulation provides them with “opportunities to demonstrate their capabilities as ‘self-reflective and self-improving’ organizational actors that can be trusted.” However, if one of the defining characteristics of architect practice is, as I have implied here, its reliance on the architects’ expert judgments based on seeing the building as a whole, architects’ practices are hard to audit. This makes it harder to demonstrate trust-worthy behavior than Imrie and Street suggest. With an increasing focus on risk, measurability and auditability become more important. If trust is the exception and distrust the norm, a system based on trust becomes difficult to defend and the auditability of a regime becomes paramount. Cost-focused management regimes are auditable, because they are based on the optimization of one single variable: the profit. Since distrust seems to be the order of the day and, consequently, auditing systems are the current trend in social and institutional development (Dent and Whitehead, 2002; Imrie and Street, 2011; Power, 1997; 2004), the holistic model may become difficult to sustain. This, then, might be a reason why the cost-efficiency-centered system of managing the building process is as pervasive as it appears to be.

In making sense of climate adaption, the interviewed architects expressed ambivalence. On the one hand, they thought they could manage the issues fairly well as a continuation of current practices. Importantly, this made them invoke the

holistic identity discourse rather than talking about creativity or business pragmatism. The architects made suggestions about how they—by virtue of being architects—could help climate adaptation along. This would require that they either regained a responsibility for the building as a whole or received legal backing for considerations they held to be important. Also, they needed to be empowered as holistic professionals and relieved from the pressure of building as cheaply as possible.

On the other hand, because they felt on the defensive with respect to power and influence in the building industry, the interviewees were uncertain if the context of their work would really allow climate adaptation concerns to be taken into consideration. Thus, the issue of climate adaptation brought forward a critique of present practices, with particular emphasis on the problems associated with the focus on cutting costs. The interviewed architects' description of their position may be interpreted as a warning about a situation where cost-efficiency singularly prevails, that is, a situation which impedes any form of change. In this way, the architects adopted the issue of climate adaptation—or at least the interview conversation about climate adaptation—as an opportunity for discussion about how architects could (re)gain a powerful conductor role in building processes.

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