

Becoming a leader in sustainable building:
Organizational change and issue framing in a public school district

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Abstract

The sustainable building movement faces individual, organizational, and institutional challenges (Hoffman and Henn 2008), which are exacerbated in public institutions by concern about constituent opinion and fiscal responsibility. Yet, in the past decade, one public school district in the U.S. has built six high performance buildings (two LEED certified), won numerous awards for energy conservation and sustainability, and became a local and national leader in green building design and maintenance. Drawing from semi-structured interviews with district staff and document analysis conducted in 2009, we present a case study on how this district used appropriate issue framing and a team approach to overcome the obstacles to organizational sustainability. We argue that the district's frame extension from "green buildings" to "high performance buildings" accommodated many, sometimes contradictory, individual motivations and values. The new team approach supported the frame extension by addressing the conflicting motivations and individual resistance to sustainability, while also increasing staff participation, environmental literacy, professionalization, and accountability. This article provides a novel integration of social movement framing and organizational change theory to explain the successful sustainable building initiative in a public school district.

Introduction

Green schools cost less to operate, freeing up resources to truly improve students' education. Their carefully planned acoustics and abundant daylight make it easier and more comfortable for students to learn. Their clean indoor air cuts down sick days and gives our children a head start for a healthy, prosperous future. And their innovative design provides a wealth of hands-on learning opportunities. (U. S. Green Building Council 2010)

With over 130,000 schools nationwide and 20% of the U.S. population school-age, the numerous green building benefits mentioned above are supplemented by the massive environmental benefits achieved if districts across the United States changed the way they construct and operate their infrastructure. Following political support from the U.S. Conference of Mayors, the National School Boards Association, and the U.S. Congress, greening schools has gained national attention (U. S. Green Building Council 2010). However, generating support for green building faces obstacles of individual values, beliefs, and motivations. In organizations, these obstacles are compounded by organizational and institutional structures and norms that limit sustainable innovation and adaptation (Al-Homound 2000; Bazerman and Hoffman 1999; Doppelt 2003a; Hoffman and Henn 2008). Public organizations such as school districts, face even more obstacles including bureaucratic stagnation, fiscal responsibility, and the perceived political risk associated with green or sustainable construction (Johnson 2000; Pearce, Dubose, and Bosch 2007). These obstacles stall sustainable changes for most school districts, leading us to wonder how one particular school district overcame these obstacles, turned resistance into broad-based support, and became an early adopter and national leader in green building.

To understand how support for green building was built in this school district, we turned to the literature on organizational transformation, but found that generating *buy-in* for green building was often assumed away or simple overlooked in most models of organizational

transformation (Doppelt 2003a; Kotter 1995). Cebon (1992), for example, discussed the role of either persuading or forcing employees to participate in organizational environmental goals and other authors highlight the importance of incentives for individual compliance and participation (Al-Homound 2000; Doppelt 2003a; Fernandez and Rainey 2006; Hoffman and Henn 2008; Kotter 1995). Through interviews with school district personnel, we found that *framing*, as described in the social movement literature, goes hand-in-hand with organizational transformation to engender individual buy-in for the adoption of new green building practices.

Our argument for framing integrated with organizational transformation developed from interviews in a school district in the Rocky Mountain West region of the United States that serves over 20,000 students and operates over 50 educational buildings. In the late 1990s when green building and high performance design were nascent concepts in the mainstream construction industry, this district was planning for a \$175 million bond in which they wanted to do something different in the construction process. The bond passed in 2000 and six new schools were built including one elementary and one high school that were certified LEED Gold and Silver, respectively. In 2009, 32 schools in this district received ENERGY STAR labels (ENERGY STAR 2010), and the district has won numerous sustainability and energy awards at the state and federal levels. The district's green building success is remarkable – a new elementary school with air conditioning cost only \$100 per square foot to build and costs only \$0.43 per square foot for gas and electric use, compared to the district average of \$0.57 for elementary schools *without* air conditioning. The new elementary design also uses about one-third of the water that schools built just 10 years before use.¹ In previous bond cycles, the district resisted sustainability changes proposed by its energy manager and other concerned staff. With

¹ This energy use data was gathered from district sources for fiscal year 2003.

the 2000 bond, the district transformed from a victim of the numerous individual and organizational obstacles preventing green construction into one of the earliest adopters of green school construction – we set out to find out how.

In this paper, we discuss the role of framing and organizational transformation in the district's green building success. We begin with a brief discussion of the individual and organizational obstacles to green building. Then, we discuss organizational change and its application for sustainability, followed by a review of social movement framing. After outlining our methods, we present our results in two sections: the first discusses the importance of organizational frame extension and the second focuses on the district internal structure changes. We conclude with suggestions for further research and the implications for sustainable building.

Literature Review

Green building describes “the strategies, techniques, and construction products” used to create less resource-intensive and pollution generating buildings than regular construction (Hoffman and Henn 2008: 392). The purpose of this study was to explore how this school district transformed itself for successful energy conservation and efficiency initiatives with green building. The interviewee's discussions of resistance to these changes drew our attention to the organizational literature on sustainability practices. This literature details the obstacles organizations face, as well as the benefits, in terms of cost reduction, public perception, and employee morale and health for green building (Doppelt 2003a; Hoffman and Henn 2008; Johnson 2000; U. S. Green Building Council 2010).

Individual and Organizational Obstacles to Sustainability

Environmental sociologists and organizational researchers discuss the structures that shape individuals' perception of the environment and their resulting environmental behaviors.

Hoffman and Henn (2008) and other organizational researchers have categorized obstacles to environmental change into three levels: individual, organizational, and institutional. These three levels interact to affect organizational choices about green building. We focus specifically on the individual and organizational obstacles that the district addressed through framing and structural reorganization.

Hoffman and Henn (2008) identified six individual-level obstacles: 1) Individuals often over-discount the future by focusing on immediate rather than lifetime costs, 2) Individuals are often egocentric by overlooking the aggregate consequences of their individual actions such as buying a suburban home that, in aggregate, encourages sprawl, 3) Individuals hold positive illusions about their personal actions – thinking they do more for the environment than their actual behavior supports, and 4) Individuals make incorrect associations with green, such as assuming energy-efficient buildings are uncomfortable or that green equates radical environmentalism. The final two obstacles, mythical-fixed pie mindsets and environmental illiteracy are often intertwined: 5) Mythical fixed pie indicates the assumption of a zero-sum relationship where environmental action creates a negative tradeoff elsewhere (personal comfort, choice, or cost), and 6) In terms of green construction, a mythical fixed pie mindset often stems from environmental illiteracy, or a lack of green knowledge, as many products or practices are new. Organizations confront these individual obstacles as they attempt to recruit and foster support for environmental behavior changes.

At the organizational level, internal structure, language, rewards, and inertia interplay with individual-level biases to further stall adoption of green technology (Cebon 1992; DeCanio 1993; Doppelt 2003a; Hoffman and Henn 2008). First, most public and private organizations are hierarchal, which centralizes decision-making power and information while interrupting

feedback loops and departmental information flows (Cebon 1992; Doppelt 2003a; Hoffman and Henn 2008; Kulakowski 1999). For example, public institutions construct and operate their buildings with different budgets, limiting the information feedback on energy use and cost (Hoffman and Henn 2008). Hierarchical structure also allows departments to be risk averse. Kulakowski (1999) found that a university operations department believed invisibility equaled success, so being risk averse to new technology became a strategy to prevent being 'visible'. Construction projects, especially, face routine linear structures that limit interaction between building users and the construction team; such projects cause individuals difficulty in accepting new knowledge, assimilating new with existing knowledge, and applying new knowledge to real projects (Bresnen, Edelman, Newell, Scarbrough, and Swan 2003).

Second, the novel language used for green products or practices is often unfamiliar to organizations, and requires extensive research and training to understand (Hoffman and Henn 2008). Successful green building requires that new environmental language be translated to fit with organizational understanding. As Bazerman and Hoffman discussed (1999: 54), "The environmental management staffs often take for granted that the value of their strategic environmental programs is apparent. Yet, they fail to adopt the business metrics and lexicon that are employed by other parts of the organization in communicating that value."

Third, employee rewards can conflict with organizational goals, thus researchers argue that rewards for environmental behavior should be targeted at and relevant to employees (Doppelt 2003a; Hoffman and Henn 2008). Rewards are also important to understanding power structure. In support, Cebon (1992) stated that energy managers must enlist cooperation from all potential sources of resistance to successfully adopt green technology either by aligning the project with individual interests or coercing compliance with rewards or disincentives. Finally,

set structures, rewards, and language encourage organizational inertia. This inertia can result from a host of factors such as habitual routines, fear of the unknown, resource limitations, and set power structures (Hoffman and Henn 2008: 403). Additionally, inertia is often a barrier for public bureaucracies (Fernandez and Rainey 2006). With these obstacles in mind, Hoffman and Henn (2008: 399) stated, “Information available to individuals regarding the viability of green building options becomes a reflection of subjective organizational goals, routines, and cultures as much as objective facts.” Thus, we now turn our attention to the organizational transformation literature—a central area for research on greening organizations.

Organizational Transformation

There are several models of organizational change in the literature (Armenakis and Bedeian 1999; Fernandez and Rainey 2006; Galpin 1996; Judson 1991; Kotter 1995) that address issues with planned change efforts such as how to combat resistance and how to prepare an organization for the change. Building on general organizational change models, Doppelt (2003a) designed a model addressing sustainability obstacles through seven steps: 1) change the dominant mindset to sustainability, 2) rearrange the parts through a team approach, 3) change the goals with a new sustainability vision, 4) restructure the rules of engagement, 5) shift information flows, 6) correct feedback loops by encouraging learning and innovation, and 7) adjust the system to align with sustainability. Al-Homound (2000) also addressed organizational change for sustainability in his model of *Total Productive Energy Management*. His four objectives are similar to Doppelt’s (2003a) seven steps: 1) change corporate culture, 2) involve many departments, specifically operations and maintenance, through feedback and frequent information exchanges, 3) get participation of every employee, and 4) promote energy management through awareness, training, and incentives. Al-Homound’s (2000: 26) model also

specifically includes the motivations for sustainability, which are saving resources, financial savings, environmental protection, and occupant comfort or the “national good” referring to benefits for the entire community and future populations.

Two points in both general organizational change models and sustainability specific models are important to our study: the team approach and generating employee support. General change models, such as Kotter’s (1995) and Galpin’s (1996), emphasize the importance of creating team infrastructures or guiding coalitions, which Doppelt (2003a) referred to as rearranging the parts and Al-Homound (2000) addressed with increased involvement. Such teams or coalitions should include representatives from many levels and departments of the organization, especially those directly involved in implementing changes in terms of green construction; namely, facilities and maintenance staff. Creating teams also changes interaction patterns and perspectives, restructures the rules of engagement by diversifying the decision-making power, and increases communication and feedback loops to support innovation and learning (Al-Homound 2000; Doppelt 2003a). Berkhout and Rowlands (2007) found that businesses that had formalized environmental decision-making with environmental departments, managers, or committees were more likely to have adopted sustainability measures than those without formalized structures. Etzion’s review (2007) also indicated that the number of team members engaged in knowledge transfer and information gathering is positively correlated with the adoption of pro-environmental behaviors.

Generating buy-in, creating and communicating a vision, and combating resistance to the change process are also crucial components of organizational change models, such as those by Kotter (1995), Judson (1991), Galpin (1996), Armenakis and Bedeian (1999), and Fernandez and Rainey (2006), and are key components for Doppelt (2003a) and Al-Homound (2000) related to

sustainability. Generating buy-in and overcoming resistance to change can be accomplished by creating and communicating an appropriate vision for green building, then motivating employees to support this vision through positive and negative incentives, compulsion, negotiation, and increased participation (Al-Homound 2000; Cebon 1992; Doppelt 2003a; Fernandez and Rainey 2006; Kotter 1995). As Kotter (1995: 5) argued, change leaders should develop a “picture of the future that is relatively easy to communicate and appeals to customers, stockholders, and employees.” Doppelt (2003b: 3) stated that having a clear vision of sustainability, not just for regulatory compliance, is important to motivating environmental change: “...compliance is a back-ward-oriented, negative vision focused on what *not* to do. It depresses human motivation. Sustainability is a forward-looking vision that excites people and elicits their full commitment and energy.” Al-Homound (2000) also addressed motivation calling for group activities to generate awareness and excitement about energy use.

One gap in these organizational change models is the lack of attention to the processes of contestation involved in vision development and generation of individual buy-in. Some researchers have discussed vision development as a straightforward process: “Sometimes the first draft comes mostly from a single individual. It is usually a bit blurry, at least initially. But after the coalition works at it for three or five or even 12 months, something much better emerges through their tough analytical thinking and a little dreaming” (Kotter 1995: 5). When organizational change models do address resistance, it is often seen as dependent upon generating awareness or appropriate knowledge (Al-Homound 2000; Doppelt 2003a; Hoffman and Henn 2008), and providing appropriate coercion through rewards, compulsion, or disincentives (Al-Homound 2000; Doppelt 2003a; Fernandez and Rainey 2006; Hoffman and Henn 2008; Kotter 1995), or building upon a real or even manufactured crisis to compel support

for change (Fernandez and Rainey 2006; Kotter 1995). Understanding resistance and building genuine employee support for organizational change is especially crucial for sustainability, because of its link to the politically-contested issues of environmental protection and climate change (Hulme 2009). Interviews with school district staff drew our attention to the contestation when the district was generating a vision and motivating sustainability changes. We noticed a variety of individual motivations for green building supported the same sustainability practices; and these motivations were often contradictory, leaving some motivations to be interpreted as resistance. These contradictions raised the question of how the district generated support and led us to the social movement literature on framing (Benford and Snow 2000; Snow, Rochford, Worden, and Benford 1986).

Social Movement Framing

The vast literature on social movement framing helps us to understand the contestation during the development of an organizational vision and shines necessary light on a specific area of organizational transformation. We argue that generating individual support for green building works hand-in-hand with organizational transformation, and that organizations' internal framing processes provide a previously unexplored avenue for overcoming some of the obstacles discussed above.

A frame is “an interpretive scheme which renders social movement issues and goals meaningful to individuals and groups” (Cornfield and Fletcher 1998: 1306). Framing is the ongoing process of negotiation to develop a useful interpretive scheme. The social movement literature describes framing as part of the “meaning work” actively practiced by social movement agents to motivate supporters, persuade bystanders, and combat antagonists (Benford and Snow

2000: 613). We refer to the social movement literature for framing because of its emphasis on affecting change in individuals – both those who support the goal and those who are resistant.

Social movement framing addresses three basic questions: what is the problem and who is responsible (diagnostic framing); what are the solutions (prognostic framing); and how to encourage action (motivational framing) (Benford and Snow 2000; Cornfield and Fletcher 1998; Snow, Rochford, Worden, and Benford 1986). Diagnostic framing is a contentious act for social movements – naming the problem and the culprits will limit the solutions projected and the possible motivations for member action. For example, the environmental movement became divided in the 1980s and 1990s over including environmental justice in their diagnostic framing. Many traditional environmental organizations maintained a focus on loss of wilderness as the problem, but this diagnostic frame ignored pollution and toxic facilities in minority and low income neighborhoods and limited the solutions to national parks and endangered species protections (Gottlieb 2005). Leaving environmental justice out of the diagnostic frame also led to accusations of elitism and racism, limited their support from minorities and the poor, and generated resistance to their environmental goals (Gottlieb 2005).

Prognostic framing can also affect public support for a social movement. For example, some environmentalists will support a prognostic frame that defines the solution as legislative, while not supporting organizations whose prognostic frame defines the solution as limiting economic growth. Thus, both diagnostic framing and prognostic framing shape the motivations for participant action – what becomes the rhetoric of the problem and solution will narrow the options for individual action. Using the same example, the legislative solution motivates such actions as writing your congressional representatives, while limiting economic growth calls for tree sits or potential destruction of industrial property.

Developing a frame is an on-going process (Rohlinger 2002; Snow, Rochford, Worden, and Benford 1986), which is built upon the discursive practices occurring among social movement members and between the movement and outside groups. In this process, emerging frames are contested by opposing groups, the media, or even group members (Rohlinger 2002; Snow, Rochford, Worden, and Benford 1986). Contestation of certain frames leads social movements to employ various strategic framing practices, particularly frame extension, to broaden their support network and combat resistance. Frame extension,

[Extends] the boundaries of [the movement's] primary framework so as to encompass interests or points of view that are incidental to its primary objectives but of considerable salience to potential adherents. In effect, the movement is attempting to enlarge its adherent pool by portraying its objectives or activities as attending to or being congruent with the values and interests of potential adherents. (Snow, Rochford, Worden, and Benford 1986: 472)

Frame extension is important because it opens the movement to supporters who originally disagreed with the diagnostic and prognostic framing. For example, Bagdonis, Hinrichs, and Schafft (2009) described how distinct frames for farm-to-school lunch programs can be complementary within one broad frame. They identified three distinct frames including redressing poor food options, improving student health, and revitalizing farming communities – all which supported farm-to-school programs as the prognostic framing. Frame extension as a continuous process is exhibited by Snow, Rochford, Worden, and Benford (1986) who discussed how a peace group extended their frame to include racism and sexism as an effort to broaden their support base and by Rohlinger (2002) who showed how strategic frame extension can fail and lead to renegotiation in the pro-life movement.

Appropriate framing is particular important to environmental issues because the link between environmental concern, knowledge, and behaviors is inconsistent and depends upon

which behaviors are studied and whether the environmental behavior is high-cost to the individual (Diekmann and Preisendorfer 2003; Stern 2000). Also, many values besides environmentalism can support positive environmental behavior including “frugality, luxury, waste, or the importance of spending time with family” (Stern 2000: 417). Environmental and social movement researchers highlight that while based in empirical science, values play a large role in the social construction of environmental problems (Hulme 2009; Myers and Macnaghten 1998). As Myers and Macnaghten (1998: 335) stated, pro-environmental strategies often “assume scientific realism, in which environmental problems are ‘out there’ objectively for all to see...It assumes instrumentalism, in which people will act when they see the problems, and the role of communication is to draw attention to them.”

Finally, framing is particularly important in environmental issues since efforts to curb energy use now face declining public belief in anthropogenic climate change, and conservative groups have successfully framed climate change as either not happening, providing eventual benefits, or too costly to the economy (Dunlap and McCright 2008; McCright and Dunlap 2000). With these concerns in mind, our study adds to the organizational literature on sustainability by describing how successfully framing green building can incorporate numerous individual values, combat resistance, and support larger organizational change, and how framing and internal restructuring to a team-approach are *both* required to support organizational sustainability.

Methods

Study Design

This case study was designed to examine how one public school district became an early adopter and national leader in green building. In particular, we sought to understand the process of overcoming individual and organizational barriers to green building construction and

operations. Case studies differ from other qualitative data research designs based primarily on the focus of the study—to develop an in-depth description of a process or phenomenon within a bounded system or setting, (i.e. an organization, or a school district) (Creswell 2007; Lincoln and Guba 1985). Case studies can take a variety of forms, and ours is an *instrumental case study*—the examination of a single issue (organizational change for sustainable buildings) within a single case to illustrate the issue (Stake 1995).

As described above, this school district is an apparent leader in sustainable building construction and operations. It was selected as a case to illustrate how public institutions can become innovators and adopters of green building practices. Indicators of this district’s status as an early adopter include: LEED certification of two newly constructed schools, participation in ENERGY STAR programs since 2000, and numerous state and federal awards for energy efficiency and sustainable practices. Currently less than 1% of all schools in the United States have received the ENERGY STAR label, whereas two-thirds of the schools in this district have earned the ENERGY STAR label. Understanding the practices adopted by this district will provide an example for other public institutions interested in constructing and operating sustainable buildings.

Data Collection

Case study research is characterized by the collection of multiple sources of data to illustrate the case, which typically include: documents in archival records, interviews, direct observations, and physical artifacts (Stake 1995; Yin 2003). The primary data for this study were semi-structured interviews. Interviews were conducted using an interview guide that was tailored for each group of participants (e.g. employees in the operations department, school district administrators, and non-district personnel). The interviews were semi-structured, allowing the

researchers to gather similar information from each participant and simultaneously allow for interviewees to initiate topics of discussion that the researchers may not have considered (Lofland, Snow, Anderson, and Lofland 2006). Three researchers conducted the interviews. The first several interviews were conducted by pairs of researchers in order to ensure that all three interviewers had the same understanding of the essential questions and significant topics that should be probed with follow-up questions. Following the initial interviews, we discussed and made minor revisions to the interview guide and individual researchers conducted subsequent interviews. All interviews were recorded digitally and later transcribed verbatim. Interviews lasted from 45 minutes to two hours and resulted in written transcriptions averaging 15 single-spaced pages.

The interviews were supplemented with observations and analysis of documents. Three researchers observed a PowerPoint presentation given by the Executive Director of Operations, which described the processes and outcomes related to high-performance buildings. Numerous documents related to sustainability plans and awards received by the district were referenced by the participants during the interviews. These and other documents were reviewed by the researchers and are available on the school district and other websites (e.g. ENERGY STAR, news outlets). Other documents analyzed include the ENERGY STAR database of labeled schools (Energy Star 2010); documents about the building process; Green Team communication; district energy reports; and news articles about the LEED certified buildings.

Sample

We used a purposive sampling strategy—subjects were identified based on a defined characteristic—for recruiting participants (Patton 1990). The selection criteria were people who participated in the change and/or who were seen as important contributors to the process of

designing, building, and operating green buildings in the school district. We began with two individuals noted as being key participants in the changes within the operations department. We then used a snowball sampling technique to develop a list of individuals that met the selection criteria (Patton 1990). The first two participants created a list of other potential participants, who were employees of the school district or other involved organizations. The original list consisted of about two dozen names and was expanded as each interviewee was asked to name any others not on the current list whom they felt were key contributors to helping design, build, and operate high-performance buildings. The complete list of key participants in the process of change included 44 names, but only 25 were available and agreed to be interviewed. Those who were not interviewed included: retirees and others who are no longer associated with the district and not available to participate, those who saw their own role as insignificant and refused, and others, like school board members who saw their role as supportive rather than substantive.

The sample of participants included 16 men and 9 women, with ages ranging from 33 to 62. Nine participants were from outside the district, and 16 were district employees currently or previously. Most district employees have worked for the school district for a decade or two; the average length of full-time employment among district employees was 20 years, with a range of 1 to 35 years. School district participants included the Executive Director of Operations, Director of Planning, Design, and Construction, various department heads—e.g. mechanical, facilities, security, electrical, HVAC (heating, venting, and air conditioning)—as well as administrators, a board member, and teachers. Non-school district employees included an architect, employees of the local utility companies, and engineering consultants.

Data Analysis

Data were analyzed using the grounded theory approach—data is coded and recoded in stages, first searching for categories or themes in the data, then examining relationships between the general categories and themes, and finally identifying a core concept or process and recoding the data in relationship to this idea (Charmaz 2001; Strauss and Corbin 1990). These stages of coding are called open, axial, and selective coding, respectively. In the first stage of open coding, the data were coded for general themes regarding motivations for supporting green buildings. In this stage, themes related to resistance to the goals of “green building” and discussions of the language used in the frame (i.e. “green buildings” versus “sustainable buildings” versus “high-performance buildings”) became apparent. In the second round of axial coding, the relationship between personal motivations, resistance to particular language, and preferences for one frame over another were examined. Finally, selective coding was used to examine the processes of framing as a key component of organizational change. During this final round of coding, analysis focused on the processes of framing that engaged personal motivations and combated various sources of resistance.

Results

Frame Extension from Green to High Performance

There are numerous reasons to support building design called “green”, “sustainable”, or “high performance” (Johnson 2000). Regardless of the name used, each of these names or “frames” for green buildings identify buildings that consume fewer environmental resources, are more comfortable and healthier for occupants, and have lower lifetime maintenance and utility costs than regular construction (Johnson 2000). Our study shows that the language used to define green building—the organizational frame—affects the internal support for implementing these

changes. The high performance buildings concept was just entering the lexicon in the late 1990s as this school district began preparing for their construction bond. School district employees had distinct motivations for supporting the district's green building efforts including environmental, financial, educational, and professional. Below, we discuss how the district began with a green frame that instigated resistance, and how frame extension to high performance buildings created an umbrella that incorporated all four motivations and promoted support instead of resistance. Our discussion also shows how frame extension allowed individuals to define their own distinct diagnostic frames that called for high performance buildings as the solution and motivated individuals to do the "right thing" by building "better" schools.

Green Buildings Frame

Those in the district who were motivated by environmental concern identified environmental degradation as the problem or diagnostic frame. An environmental motivation was expressed in a variety of ways including conservation of resources, preservation of natural areas, sustainability, and an ethical commitment to the non-human world. Eleven of the 16 district interviewees mentioned the environment in one manner or another as a personal motivation for supporting the change, and seven of the 11 indicated strong environmental motivations. These environmental motivations varied from self-described "old hippies" who evoked the 1960s environmental movement, to those who identified the problem as wasting natural resources, too much pollution and greenhouse gas emissions, or loss of clean recreation areas.

A group of interviewees described themselves as "old hippies" as reflected by one employee: "I don't want to have a huge footprint. I want a place for my kids and the future. So to me it makes sense that you tread lightly, that you recycle what you can, that you be as

responsible as you can, reuse what you can.” Environmental footprint reduction was mentioned by many employees. Others also referred to the outdoor lifestyle of the Rocky Mountain West –

We’re all a bunch of hippies... We live in [the Rocky Mountain West]. There are a lot of great things to look at, to do and recreate and everything else. You start looking at how do we conserve all that and save it for other people? It really does parallel what the late 60s were about. It was like, back to nature. This is ten-fold that.

As simply stated by another employee, “Probably the biggest thing is just conserve our natural resources, for me. I don’t want to waste resources.” Environmentally motivated individuals identified curbing natural resource consumption, cutting greenhouse gas emissions, and reducing pollution and product inputs as the main reasons for supporting sustainable buildings. Noting the future focus in environmental movements, some employees identified with legacy: “We can’t keep doing this; we’re going to leave a legacy of problems for someone else to clean-up.” Others saw the green changes as an opportunity to encourage environmental consciousness in students. These environmental motivations permeate the district through posters about carbon footprints and in press releases about the new building.

Originally, the district used a “green” frame based on the above motivations, but this frame was contested by antagonists, resisters, and bystanders. Most environmentally motivated individuals identified with this diagnostic framing as environmental problems, but even those who enjoyed nature were resistant to the strong green frame for the problem. As stated by one employee:

I’m not one that buys into the whole global warming thing... We know people can have an effect on their environment. We like clean water, clean air, good forests. We want to protect those things. [But] I think there’s some things we have to be careful of. Rachel Carson pretty much turned out to be wrong.

Operations leadership noticed early that an appropriate frame for green building was key to overcoming resistance and encouraging participation. As discussed by an initiator of the Green

Team:

There were a lot of political issues... I remember we had problems with the lexicon. We said “green buildings” and folks thought that this meant we had something to do with Greenpeace and saving whales... back then, there were green parties and the radical elements that used the word green, and we were just talking about doing something that again was a better building... So we had to start being careful about how we used language, and that’s where terms like “high performance buildings” and “sustainability” came in... If we said “green” [people] thought “you’re some radical environmentalist, you’re gonna burn something down.”

In the late 1990’s, the Rocky Mountain West had been affected by some high-profile radical environmental actions including the burning of a Vail, CO resort expansion into the national forest by a radical environmental group (Smith 2006), which fostered incorrect assumptions about “green” efforts.

Interviewees noted that, at the time gasoline and electricity were affordable so many people over-discounted the future and assumed green building would only benefit environmental extremists. Mentioned by two interviewees, “green” in the late 1990s was, “almost like global warming today, a very political thing.” The school board in 1999 was politically split and one administrator noted resistance from political conservatives on the board: “...just as they are today fighting global warming, trying to say it doesn’t exist, [they] were trying to do the same thing with this kind of green movement.” These presumed associations and over-discounting the future (Hoffman and Henn 2008) created resistance from district staff, administration, and the local community to a “green” frame. To combat this resistance and encourage more support operations leadership extended the frame to highlight other motivations for sustainable building design, such as financial, educational, and professional.

High Performance Buildings Frame

As described by an operations employee, “high-performance buildings” extended the original “green buildings” frame to encompass other motivations and diagnostic frames of the problem:

We want a building that is light on the environment, using recycled materials, doesn't smell like a new car when you walk in, is non-toxic to people, has delightful interiors, is day-lit, is energy-efficient, is acoustically well-designed, is a place where people want to be, uses less water – all this great stuff... Actually, saving money is a consequence, is an outcome of designing this high-performance building. And isn't that wonderful?

The district's frame extension not only increased support for and combated resistance to green buildings, but individuals could maintain their own diagnostic frame for the problem while working towards a unified prognostic frame in “high performance buildings.” Figure 1 identifies the four diagnostic frames that the high performance building frame encompassed and the resistance it overcame.

Financial motivations. Budgetary constraints provided an early catalyst for changes in the district as a whole, which was evident during the interviews – 14 of the 16 district staff mentioned cost savings from energy efficiency or reduced maintenance as a reason to support the organizational changes. Furthermore, five of the 14 indicated that the high cost of inefficiency was their diagnosis of the problem that high performance buildings solved. A budget audit in the mid-1990s focused the district's attention on costs not directly related to education. As one administrator noted, “I was being directed to contribute to budget savings... and one of them was the energy budget. So this energy conservation piece was a budgetary issue.” When asked if energy ever became more important than the budget, this administrator answered “no,” not from the administrative level. Some operations employees also saw cost as central: “Money gets

wasted a lot of times. We see buildings that are just a waste, and it's sad, because it doesn't have to be." Others clearly identified the motivation for cost reduction in a school district: "It's a lot about budget, because the more we tame energy costs, the more we have to go into classrooms."

The ability of energy efficiency and conservation to reduce costs throughout the life of the building was important to the financially motivated:

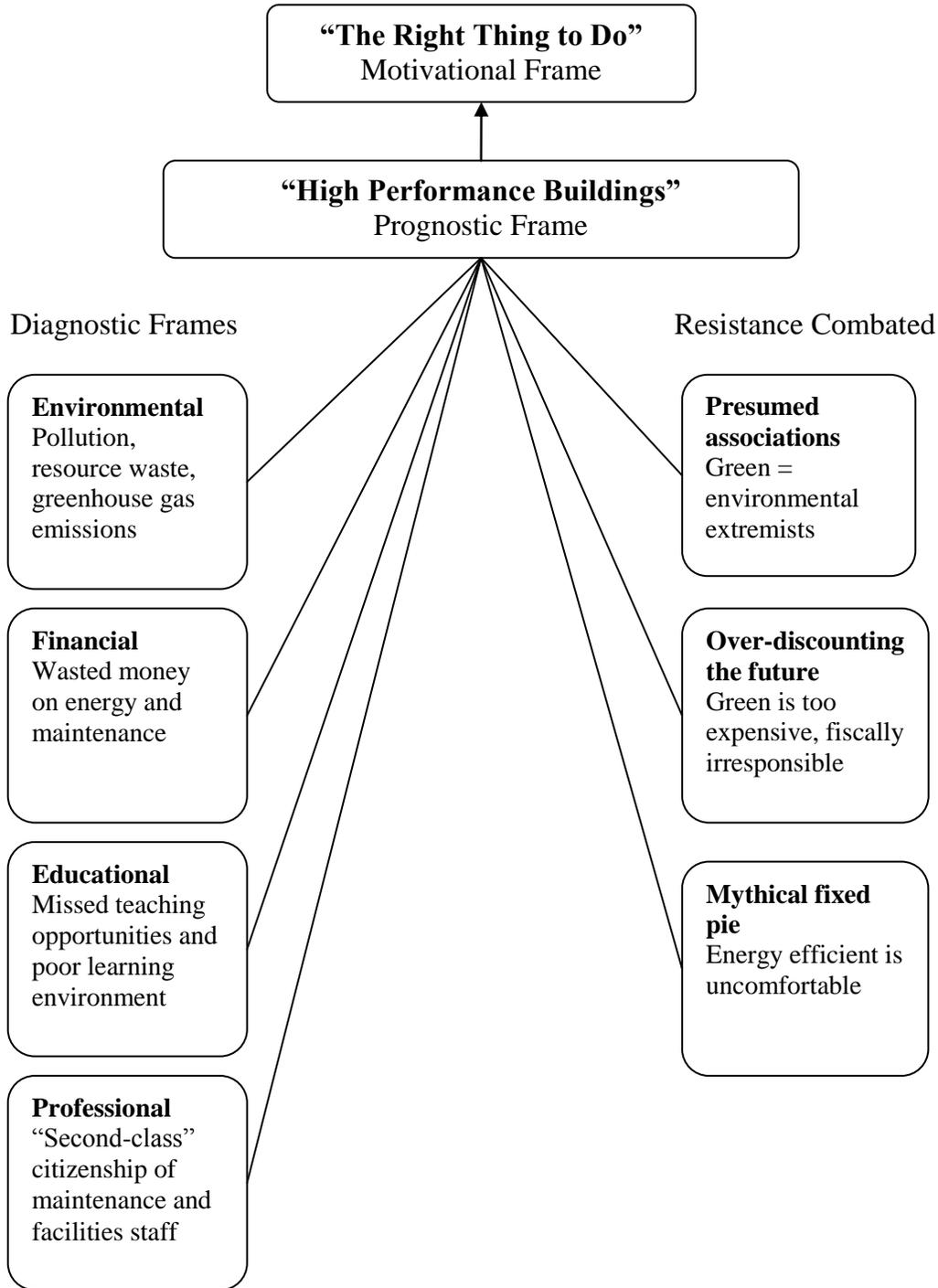
...at the end of the day, there is a financial savings for being more efficient. And like we said, there might be some initial costs, but you do the planning, calculate through those numbers and in five years, if you're ahead, that's a no-brainer when you buy that equipment.

Life-cycle cost reduction included less maintenance, fewer replacements, and fewer man-hours for repair: "I think the basic bottom line is cost. But there are costs people don't see when they think about energy conservation. The day-to-day operating cost is of course bottom line to our budget." Conservation—turning systems off when not in use—was seen as financially responsible because it saves energy and reduces the stress on the system as a whole – making purchases last longer. The incorporation of lifetime costs, maintenance, and resources were a key component of the high performance frame:

There's a lot more to it [than just energy savings]. If you look at my total budget over the last 10 years and you look at the square footage ... and my budget for repair and maintenance it's almost the same... We've doubled square footage, and my budget has not doubled. It's been pretty much flat.

Saving money and justifying the costs of green building was important because costs were an individual-level obstacle. District employees identified resistance to the proposed changes in the late 1990s from individuals who discounted the future or held mythical fixed-pie associations (Hoffman and Henn 2008). Prior to changes, the district focused on getting the

Figure 1: Frame extension to High Performance Buildings



most building for the least up-front cost. Resistance, touted as fiscal responsibility to the taxpayer, described green technology as a “fad” or something the public would see as a waste of their money. As a public entity, the fear of political backlash was ever-present in the district: “It was taxpayer money... if it hadn’t worked, there would never be a bond issue passed in this district for the foreseeable future.” One administrator acknowledged that the biggest criticism from inside and outside the district was the assumed expensiveness of green design. The focus on low up-front costs angered many operations employees who were, over the long run, forced to maintain inefficient buildings and equipment, and saw first-hand the lifecycle costs of poor initial, up-front investments in equipment and design. Acknowledging this financial resistance, the district successfully used high performance design to discuss the long-term cost savings of the buildings *while* insisting on maintaining the budget: “You have a budget, and you’re not increasing your budget to do this... everything came in on or below budget, and all of it was energy savings.”²

The advocates for high performance buildings also proved that their accounting of costs worked better than those who discounted the future costs by emphasizing longevity over immediate cost-savings: “Our budget was a couple hundred million every year... If we get this right, this building will serve these kids for 75 to 100 years.” The high performance frame extension allowed the district to extend their cost savings motivations to include the community in terms of fiscal responsibility to taxpayers or reducing the need for a new power plant:

For me personally, it was when the public goes into the schools, and they say we’re doing a good job with the tax money, that we’re

² For example, the district budgeted \$111 per square foot for the first elementary school constructed. Average low bids were \$115-\$120, but the final construction costs were \$99.55 per square foot proving that “green” is not automatically more costly.

being accountable to the public that pays our salaries, but also pays for the schools with their taxes.

The extension of the district's frame from green to high performance, therefore, made the changes more congruent with financial motivations *while also* deterring resistance and overcoming assumptions that green design is more expensive or would lead to tradeoffs in expense elsewhere (Hoffman and Henn 2008).

Educational motivations. As with environmental and financial motivations, there were myriad ways in which employees evoked an educational motivation. As discussed above, some environmental motivations including educating children about environmental impacts, and many financial motivations implicitly focused on children – "... My philosophy was there isn't a dime that comes into this district that is not put there to help kids. Period..." Beyond an implicit inclusion of students, providing the most conducive building for learning, educating kids about science and technology through the buildings, and inspiring children about the possibility for innovation and change motivated many individuals to support the organizational changes. Fourteen of the 16 district employees mentioned the benefits of green design for students, and eight of the 14 clearly identified occupant comfort or missed educational opportunities as the problem high performance buildings would solve.

Sustainable buildings improve occupant comfort and productivity, and lead to a more conducive learning environment than traditional school designs (Johnson 2000). Day-lighting, passive/active design³, comfortable temperature, lighting and acoustics that work for lectures, and better air quality (U. S. Green Building Council 2010) – all motivated interviewees to

³ In active/passive design, classrooms (passive areas) face away from active areas like playgrounds to help students focus.

support high performance buildings. Creating the “best environments” which put “people first” in terms of comfort while supporting the educational mission was central to many employees:

Now, a student and teacher in a high performance building really doesn't say everyday, “Oh we're saving energy, we're saving dollars.” What students and people suddenly understand is that, “I like being here. I'll stay here longer. This is a good place to be. I'm not getting as sick as much as I used to. I don't have as much stress as I used to have.”

As with cost, children and occupant comfort was particularly salient to operations employees who maintained the inefficient buildings designed and built in previous bond cycles. Employees fielded complaints from occupants of inefficient buildings; for instance, occupants on one level of a particular building opened windows to keep cool while those on another level were using space heaters to keep warm. Once built, the maintenance staff knew they had little opportunity to address such complaints, which was very important to one interviewee – “If something is using energy efficiently and done right, people are more comfortable. That's the big thing.”

Others evoked educational motivations through actual teaching opportunities. A former board member and parent noted that before the high performance building initiative, parents and teachers requested renovations that could “teach” students. They asked about see-through walls to teach about plumbing and electricity but initial requests were ignored in the early 1990s due to cited reasons such as high costs and that they were not a “normal” part of design. But the new high performance building frame encompassed these teaching ideas and the new buildings incorporated educational components such as see-through walls and worm composters. As one board member and parent indicated:

I wanted a place for kids to learn that was conducive to leaning but also a place that they could learn about their lives there. I didn't want them to just go to the building. I wanted them to be part of the building and to be able to understand and learn more about what their environment, their daily environment, means to them

and what they can do to be careful about it. That's what I was hoping for.

The high performance buildings created other learning opportunities – students conducted LEED building tours and teachers are currently working on curriculum changes to incorporate the building components and energy data.

Finally, two interviewees stated an interesting educational motivation: to inspire children to be innovative and work for change, whether environmental or in some other area. One operations employee noted that after the financial reasons coalesced with the environmental reasons,

...all of the sudden you started looking at your kids and all those things that happen in your life, and you start going, 'Wow, it would be kind of cool to leave that legacy of not only this belief, but how you can make a change.

Inspiring children to keep learning and make a difference was an interesting addition to the educational motivations. Through diagnostic framing of the problem as one of missed educational opportunities and a motivation for better buildings that educated children, the individuals with educational motivations also supported the prognostic frame of high performance buildings.

Professional motivations. The final category of motivations differed from the previous three and was not highlighted through institutional channels as a reason for high performance buildings. Yet, eight of the 16 employees mentioned a lack of the professional status of maintenance and operations staff and three of the eight saw it as a crucial issue that high performance design could improve. Before design and construction changes, one interviewee noted that the operations and maintenance employees were “second-class citizens” – only called when something went wrong. Even though, maintenance staff received all the complaints about

comfort and energy waste from occupants in the older inefficient schools, they had no voice in previous building and design processes, which were controlled by administrators with educational (not facilities) backgrounds and outside contractors. The new team approach, which we discuss in more detail below, and the framing of high performance buildings was motivated by a desire to empower maintenance staff, remove the status of second-class citizen, and build better buildings by incorporating their expertise into the design stage. As discussed by one leader, focusing on high-performance buildings created:

...the opportunity to involve all these staff members and recognize them for the qualities that they bring, the skill, the professional level that they bring, the experience, to the table when you design a school. So now we had this opportunity to really cross-connect with the professionals, the engineers, and the architects.

What could appear as somewhat selfish reasons for wanting improvement in building design, such as reducing maintenance workloads, fit with the high-performance frame, because incorporating maintenance expertise on technology choice allowed them to vie for the options that reduced their maintenance load and the number of complaints they would receive. The high performance frame created buy-in for the team approach, which created opportunities for many facilities employees to provide input in the integrated design process. The Green Team and the integrated design process required facilities and operations staff to do their best work, and the high performance frame provided the justification for increasing participation and professionalism.

The district's framing shows the ability of frame extension to incorporate other values for pro-environmental behavior change and thus increase support for change and dissuade resistance (Snow, Rochford, Worden, and Benford 1986). High performance design became the district's official position. In June 2000, the superintendent released a letter on the district's ethic of

sustainability, which said, in part, “We believe that by working together in an integrated approach, we can build higher-performance schools that provide superior learning environment while reducing life cycle costs through conservation of energy and natural resources.” This letter helped to frame the new process that the district would require of architects and builders: “Once that came out and we were having bidding on the architectural firms, they all knew that we were looking at something different.”

When talking with district employees, we noted that many saw one unified goal or vision for the organizational and behavioral changes. Discursive framing practices led to a unified vision of high-performance design. Even though individuals diagnosed the problem differently (environmental, financial, educational, professional), they all could support the high performance solution and were motivated to build better buildings or do “the right thing,” as many interviewees described it. The ability of individuals to see one unified vision focused on high performance design shows the importance of frame extension for sustainable building. As noticed by one operations leader: “Being able to bring everybody along and have a unified goal so you don’t have somebody out there in left field trying to sabotage what you’re doing.” The effective frame extension also dissuaded resistance, in terms of presumed associations, over-discounting the future, and mythical fixed pie mindsets. But, framing alone could not generate the district’s sustainability success. Organizational transformation to a new team atmosphere worked symbiotically with the framing processes to maintain support and further dissuade contestation of the framing.

Framing and Internal Structure

Frame extension is a continual strategic process (Benford and Snow 2000; Snow, Rochford, Worden, and Benford 1986) facing ongoing discursive practice and contestation both

internally and externally. As discussed previously, the high performance frame was broad enough to encourage support from individuals motivated by financial, educational, and professional concerns along with environmental concerns, but these individual motivations clashed when it came to particular choices in the design phase. The operations department created a team, at the beginning of the bond process, representing all facilities and maintenance departments, from project managers to electricians to janitors and included local utilities representatives. Internal structural reorganization to adopt a team approach created space for the continued “meaning work” of framing in two ways: 1) it held them accountable to the frame extension by attending to conflicting individual diagnostic frames with increased communication and enhanced environmental literacy (Al-Homound 2000; Bazerman and Hoffman 1999; Doppelt 2003b; Hoffman and Henn 2008; Kotter 1995), while also 2) generating support for the new building practices without explicit rewards or coercion often discussed in organizational transformation (Al-Homound 2000; Doppelt 2003b; Fernandez and Rainey 2006; Kotter 1995).

Frame Contestation and the Team

The team began as a research group, with each member assigned one hour per week of internet research on items related to green design, energy and water savings, and integrated design in his area of expertise. The encouragement to seek out information from the internet and, eventually, from other product users increased environmental literacy (Hoffman and Henn 2008), and the frequent group discussions about their findings increased communication, provided voice and participation (Al-Homound 2000; Doppelt 2003a; Kotter 1995), and ultimately led to what the department considered were the best choices:

So there's that freedom to explore what's best and make wise decisions as opposed to gut-level decisions...I keep bringing it back to our team, because from our energy manager to our directors, to our department heads, we'd all get together and show

and tell, if you would, where we'd sit down and talk about what they'd found out, what they'd learned, or bringing the rep back, the manufacturer's people in, where they could talk about this product and have everybody else be able to ask a few questions, not just take it at face value and then reach a consensus.

All members were encouraged to offer their opinions, thus the team environment was where conflicts between diagnostic frames, or gut-level values, played out. For example, environmentally-motivated individuals sometimes supported new, but unproven technology because of purported environmental benefits. Those motivated financially saw the same item as too risky because the unproven product may require more maintenance, cost, or be defective. These financially-motivated individuals were sometimes perceived as resistant to the change process when they expressed concern about the reliability of products – and some organizational transformation models would support such a conclusion (Doppelt 2003a), or interpret this difference of opinion as an obstacle (Hoffman and Henn 2008). By using the concept of framing, the desire for proof of product viability is not resistance, per se, but seen as a natural part of the discursive negotiations. To illustrate, the district sent an employee to learn about geothermal technology from another school district that was already using the technology. This individual considered geothermal an unproven technology:

We visited I think it was their facilities building that has geothermal, and then I also visited a school, that one scared me to death. At least with [our school], here again, my involvement in things, I may have been against the idea, or reluctant, to say the least, but at least when I was saying, 'If you're gonna do that, put these machines where we can get to them and work on them to maintain them.' Bless their hearts, they listened and did a very, very good job on 99% of them.

Sending this team member out to a site that had employed the new technology allowed him to identify necessary features of installation that would quell his concerns over maintenance access and costs. By generating increased participation in the design process, the team atmosphere

provided the avenue for the negotiation between different individual motivations inherent in frame extension in such a manner that ultimately led to improved design and the adoption of new technology that could be maintained in a cost-effective manner.

As another operations employee motivated by cost discussed, environmental literacy helped the team overcome “gut-level” resistance to green products while also generating other “literacy” especially financial and educational:

...it was uncomfortable to look at just the way we were changing. A lot of that is—energy saving. You had heard that the maintenance was probably not worth it, but we tried it and it’s proved to be true that the maintenance part of it went up. Energy savings probably didn’t help that much, and the maintenance went up and we think, ‘OK, we might have went too far ahead on that, let’s back up a little bit.’... I learned from that experience that I’d have to do better preparation... I can think of other times since I had everything on paper, they agreed with me and we didn’t—we changed from what the architects, the engineer and everyone wanted, to this way, and it still has proved to be a better solution. It was a learning experience for me. If I’m gonna find something, I can’t just say, ‘I know.’ I’ve got to have facts and numbers. Everybody here’s smart enough, if they look at the facts and the numbers, they’re gonna go the right way... I’ve had to back off, too, because I see the numbers and I’ve had to go [with others’ ideas], too. It sort of goes both ways.

These discursive negotiation processes led to winners and losers on each issue, but because the team approach encouraged participation, employees continued supporting the prognostic high performance frame. One operations leader noted the importance of team participation to buy-in:

So there’s several individuals—they’re a little resistant, but then all of sudden, ‘It’s OK.’ But their body language is a wonderful thing. You watch people and you kind of know you’ve got somebody on board. Now in the background, if people fully agree with it or not, some may say, “I’ll maybe compromise.” But I think in the end, staff are better aware of why we’re doing what we’re doing and on board with at least the fact that this is collaborative.

Without true collaboration and communication about green building choices, the high performance frame could easily have become a facade for environmental motivations. As one district leader noted, “we need that, somebody looking over our shoulder and going, ‘Why are you doing this?’ You can either answer that intelligently or take a step back and be honest and go, “Good question.”” The team provides an avenue for proof and for complaints – a safe space to bring in work orders as evidence or to just say, I told you so, and then they learn from those mistakes. As organizational researchers have noted, genuine participation and communication are necessary for successful organizational change (Doppelt 2003b; Fernandez and Rainey 2006; Kotter 1995). Noting that in bureaucracies the typical method of change is top-down, if it occurs at all, one operations leader stated the importance of genuine participation:

I wasn't going to go say, ‘We are building high-performance building whether you like it or not.’ People would sabotage that. It would not work. You have to say, ‘Here’s some interesting things. Go find out about them. I trust you enough. You’re the experts. Go out and find out about them, and you tell me what we should be doing.’ ...That’s a big part of this job, that relational—I think that relational facet where people’s relationships—without that, this collaborative effort doesn’t happen, and without that, the empowerment doesn’t occur.

Team leadership was particular insistent that all members had the opportunity to voice their opinions, and the above quote highlights that the high performance frame alone would not have generated change without this participation. If the team approach had been insincere or just for political purposes, members would not have maintained the internal support necessary for high performance buildings: “So many times you just go ‘words, words, words’ I’m kind of paying attention to you but really not. I definitely feel that this group, our operations group, pays attention to people and what they say.” Without the team, maintaining buy-in from the frame extension would have been difficult and resistance from conflicting motivations and a lack of

participation would have increased. The new framing and team atmosphere in the district accomplished Doppelt's (2003a: 80) objectives of generating ownership, personal responsibility, motivation, commitment, and "overcoming resistance and unleashing the potential of people to work toward sustainability."

Framing, the Team, and Rewards

Some organizational researchers discuss the role of rewards in generating change (Al-Homound 2000; Doppelt 2003b; Fernandez and Rainey 2006; Kotter 1995). Cebon (1992) stated that environmentally motivated managers have two options: align the projects with the values of their employees or coerce them to change their behaviors through rewards or punishments. Our interviewees never discussed explicit rewards or disincentives – participation in building decisions were seen as rewards in themselves to these professionals. The workload increased, but few complained:

It definitely did affect workload in the sense that you had to take time out of your everyday routines that had to get done, code issues, tests, procedures that you've got to continue working to go to these meetings, to do the research, to take a trip to take a look at something. But nobody complained about that, because they were involved. They felt like they were being heard.

Employees noted how lucky they were to be in a district that supported input and was focused on the professionalization of the tradesmen –

...just from talking to people I know that work in other school districts, they're surprised and jealous that we get to do what we do... I feel fortunate. I like waving it in front of these other guys when I see them. 'Look what I do.' It's been good. Out of the 100 things that have been good, there might be one or two that weren't. There's no comparison. It's the right thing to do.

Discussion

Some school districts say they care about energy conservation and being green, but from electricians to plumbers to kitchen staff to

custodians to principals to teachers, I mean district-wide, they have buy-in and expect everybody to participate in that. I think that's the big thing that is different. (A new operations employee)

Our case study shows how organizational transformation—institutionalizing a team approach that supported continued communication, professionalization, and participation—worked with the frame extension process to eliminate obstacles to organizational sustainability, *while* managing motivational clashes and removing the need for employee rewards or coercion. In the late 1990s, this school district wanted to change their building operations but faced contestation over the lexicon and the diagnosis of the problem. The high performance frame became a solution to many diagnoses of the problem and motivated district staff to pursue “the right thing,” which was “better schools.” Frame extension and complimentary internal structure changes increased internal support for green building and combated resistance and barriers. These two processes, frame extension and structural changes, became the foundation for the district's success in integrated design (Hoffman and Henn 2008) and their continued integration of sustainability into routine maintenance and operation after construction concluded. Knowledge about the high performance frame and the team supporting it has extended beyond the operations department; the integrated team is known throughout the district as the place to go for questions about sustainability, as rest of the district moves to sustainability in everyday functioning.

As Shwom (2009) notes in her review, literature on organizations and the environment has often focused on environmental impacts rather than organizational processes. Innovative research, such as Al-Homound (2000), Bazerman and Hoffman (1999), Doppelt (2003a, 2003b), and Hoffman and Henn (2008), have extended the research on organizational transformation to theorize ways that organizations can overcome the numerous obstacles to sustainability. The

implications from our findings speak to this literature and provide a novel application of social movement framing to address issues related to individual buy-in and resistance. While green construction has financial, environmental, and social benefits, individual values affect environmental behavior and motivation for sustainability (Hulme 2009) making organizationally appropriate framing of these benefits crucial to generating broad support for change. As this case study illustrates, social movement frame extension is applicable to organizations – as a method to align proposed changes to many individual values, thus gaining support and overcoming resistance. But, our findings also show that framing in organizations needs organizational restructuring to support participation, communication, and accountability.

With over 80% of schools responsible for their own operations (U. S. Green Building Council 2010), our findings could help many other districts as they move towards protecting the environment, saving money, and helping students learn. Since our case study was of a single large school district, future research is needed to determine how processes might work in smaller districts, corporations, or other public institutions. Also, important for future research is the effectiveness of framing and internal restructuring for organizations further removed from their building operations. Although the benefits of sustainability apply to organizations that do not own or operate their own facilities, the ability to generate such successful transformation in these organizations needs further research. Framing provides a general tool to think about the importance of language in defining problems, solutions, and motivations that could effectively encourage sustainability in other organizations.

Works Cited

- Al-Homound, Mohammad S. 2000. "Total Productive Energy Management." *Energy Engineering* 97:21-38.
- Armenakis, Achilles A. and Arthur G. Bedeian. 1999. "Organizational Change: A Review of Theory and Research in the 1990s." *Journal of Management* 25:293-315.
- Bagdonis, J. M., C. C. Hinrichs, and K. A. Schafft. 2009. "The emergence and framing of farm-to-school initiatives: civic engagement, health and local agriculture." *Agriculture and Human Values* 26:107-119.
- Bazerman, Max H. and Andrew J. Hoffman. 1999. "Sources of Environmentally Destructive Behavior: Individual, Organizational, and Institutional Perspective." *Research in Organizational Behavior* 21:39-79.
- Benford, Robert D. and David A. Snow. 2000. "Framing Processes and Social Movements: An Overview and Assessment." *Annual Review of Sociology* 26:611-639.
- Berkhout, Tom and Ian H. Rowlands. 2007. "The Voluntary Adoption of Green Electricity By Ontario-Based Companies: The Importance of Organizational Values and Organizational Context." *Organization & Environment* 20:281-303.
- Bresnen, Mike, Linda Edelman, Sue Newell, Harry Scarbrough, and Jacky Swan. 2003. "Social Practices and the Management of Knowledge in Project Environments." *International Journal of Project Management* 21:157-166.
- Cebon, Peter B. 1992. "Organizational Behavior, Technical Prediction and Conservation Practice." *Energy Policy* 20:802-814.
- Charmaz, Kathy. 2001. "Grounded Theory." Pp. 335-352 in *Contemporary Field Research: Perspectives and Formulations*, edited by R. M. Emerson. Prospect Heights, IL: Waveland Press.
- Cornfield, Daniel B. and Bill Fletcher. 1998. "Institutional Constraints on Social Movement "Frame Extension": Shifts in the Legislative Agenda of the American Federation of Labor, 1881-1955." *Social Forces* 76:1305-1321.
- Creswell, John W. 2007. *Qualitative Inquiry & Research Design: Choosing Among Five Approaches*. Thousand Oaks, CA: Sage Publications.
- DeCanio, Stephen J. 1993. "Barriers within Firms to Energy-Efficient Investments." *Energy Policy* 21:906-914.

- Diekmann, Andreas and Peter Preisendorfer. 2003. "Green and Greenback: The Behavioral Effects of Environmental Attitudes in Low-Cost and High-Cost Situations." *Rationality and Society* 15:441-472.
- Doppelt, Bob. 2003a. *Leading Change Toward Sustainability: A Change Management Guide for Business, Government and Civil Society*. Sheffield, UK: Greenleaf Publishing Limited.
- . 2003b. "Overcoming the Seven Sustainability Blunders." *The Systems Thinker* 14:2-7.
- Dunlap, Riley E. and Araon M. McCright. 2008. "A Widening Gap: Republican and Democratic Views on Climate Change." *Environment* 50:26-35.
- Energy Star. 2010. "ENERGY STAR Labeled Buildings & Plants: ENERGY STAR Labeled K-12 Schools."
- Etzion, Dror. 2007. "Research on Organizations and the Natural Environment, 1992-Present: A Review." *Journal of Management* 33:637-664.
- Fernandez, Sergio and Hal G. Rainey. 2006. "Managing Successful Organizational Change in the Public Sector." *Public Administration Review* 66:168-176.
- Galpin, T. J. 1996. *The Human Side of Change: A Practical Guide to Organizational Redesign*. San Francisco, CA: Jossey-Bass.
- Gottlieb, Robert. 2005. *Forcing the Spring: The Transformation of the American Environmental Movement*. Washington, DC: Island Press.
- Hoffman, Andrew J. and Rebecca Henn. 2008. "Overcoming the Social and Psychological Barriers to Green Building." *Organization Environment* 21:390-419.
- Hulme, Mike. 2009. *Why We Disagree about Climate Change: Understanding Controversy, Inaction, and Opportunity*. Cambridge, UK: Cambridge University Press.
- Johnson, Scott D. 2000. "The Economic Case for "High Performance Buildings"." *Corporate Environmental Strategy* 7:350-361.
- Judson, A. S. 1991. *Changing Behavior in Organizations: Minimizing Resistance to Change*. Cambridge, MA: Basil Blackwell.
- Kotter, John P. . 1995. "Leading Change: Why Transformation Efforts Fail." *Harvard Business Review* 73:59-67.
- Kulakowski, Susan L. 1999. "Large Organizations' Investments in Energy-Efficient Building Retrofits." Energy Analysis Department Ernest Orlando Lawrence Berkeley National Laboratory, Berkeley, CA.
- Lincoln, Y. S. and E. G. Guba. 1985. *Naturalistic Inquiry*. Beverly Hills, CA: Sage.

- Lofland, John, David Snow, Leon Anderson, and Lyn H. Lofland. 2006. *Analyzing Social Settings: A Guide to Qualitative Observation and Analysis*. Belmont, CA: Wadsworth/Thomson Learning.
- McCright, Aaron M. and Riley E. Dunlap. 2000. "Challenging Global Warming as a Social Problem: An Analysis of the Conservative Movement's Counter-Claims." *Social Problems* 47:499-522.
- Myers, G. and P. Macnaghten. 1998. "Rhetorics of Environmental Sustainability: Commonplaces and Places." *Environment and Planning* 30:333-353.
- Patton, M. Q. 1990. *Qualitative Evaluation and Research Methods*. Newbury Park, CA: Sage Publications.
- Pearce, Annie R., Jennifer R. Dubose, and Sheila J. Bosch. 2007. "Green Building Policy Options for the Public Sector." *Journal of Green Building* 2:156-174.
- Rohlinger, D. A. 2002. "Framing the abortion debate: Organizational resources, media strategies, and movement-counter movement dynamics." *Sociological Quarterly* 43:479-507.
- Shwom, R. 2009. "Strengthening Sociological Perspectives on Organizations and the Environment." *Organization & Environment* 22:271-292.
- Smith, Stephen W. 2006, "4 Indicted in 1998 Vail Resort Fires", Retrieved April 1, 2010 (<http://www.cbsnews.com/stories/2006/05/19/national/main1637034.shtml>).
- Snow, David A., E. Burke Rochford, Jr., Steven K. Worden, and Robert D. Benford. 1986. "Frame Alignment Processes, Micromobilization, and Movement Participation." *American Sociological Review* 51:464-481.
- Stake, Robert. 1995. *The art of case study research*. Thousand Oaks, CA: Sage Publications.
- Stern, Paul C. 2000. "New Environmental Theories: Toward a Coherent Theory of Environmentally Significant Behavior." *Journal of Social Issues* 56:407-424.
- Strauss, A. and J. Corbin. 1990. *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. Thousand Oaks, CA: Sage Publications.
- Yin, R. K. 2003. *Case Study Research: Design and Method*. Thousand Oaks, CA: Sage Publications.
- U. S. Green Building Council. 2010. "Green School Buildings." Retrieved March 1, 2010. (<http://www.greenschoolbuildings.org/Homepage.aspx>).
- Yin, R. K. (2003). *Case Study Research: Design and Method*. Thousand Oaks, CA: Sage Publications.