

Concreting Sustainability: Renewing the cement industry through sustainability implementation

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While the cement industry had traditionally been linked to the concepts of modernity and development, the drive towards socially responsible and environmentally friendly business practices has required a revision of the industry mostly in relation to its sustainability programs. This paper examines the logics followed by employees when relating to the concept of sustainability as sustainability programs are implemented in the cement industry. The interaction with different stakeholders in combination with personal convictions about ethics, power, environment and participation in a team influence how an individual understands sustainability policies and makes them concrete.

Hard and Soft Beautiful Concrete The next time it rains, go out and touch some. Kingwell 2008, pp. 2-4

INTRODUCTION AND THEORETICAL SUPPORT

Sustainability, according to the United States Brundtland Commission (1987), has been broadly defined as "meeting the needs of the present without compromising the ability of future generations to meet their own needs." However, this broad definition is hard to grasp and the road to implementation requires far more detailed actions. How are the needs of the present and the future negotiated and defined by all interested actors in the traditional industrial sector? In the case of the cement industry, the transition towards sustainability has required finding specific pathways to make it concrete and palpable. This industry is located at a challenging crossroads where economic, environmental and social considerations seem to part ways while at the same time conform the triple bottom line of sustainability (Savitz & Weber 2006): Socially, concrete is positively linked to the concepts and practices of development and progress by providing materials for infrastructure building; economically it represents a very attractive market; and environmentally, it is responsible for significant negative impacts though potentially lower than other building materials such as wood and steel. The global cement industry accounts for about 6 percent of all anthropogenic emissions of carbon dioxide, which is a leading greenhouse gas involved in global warming (McCaffrey, 2002).

The research that supports this paper took place within Cemex, one of the largest cement companies in the world, between May, 2009 and December, 2010. My aim was to unveil the meaning making process that employees followed when faced with new policies regarding sustainability implementation. This paper shows how the ethnographic tracking of sustainability policies as they are negotiated and implemented in the cement industry allows for an understanding of the cultural change process that the introduction of sustainability requires. I describe the logics followed by employees

EPIC 2012 Proceedings, pp. 102-116, ISBN 13: 978-0-9826767-7-6. © 2012 by the American Anthropological Association. Some rights reserved.

when they give meaning to the abstract goal of becoming sustainable as it is implemented in Cemex in the context of competing interests. Stakeholders play a paramount role in shaping policies and their interpretation by different groups of employees influencing either the economic, social or environmental aspects of the triple bottom line that represents sustainability in business. At the same time, employees' personal priorities and experiences filter all of these.

For cement, the opposing forces that shape sustainability can be clearly identified: while the growth of the cement industry addresses the economic and social dimensions of sustainability, it has a negative impact on its environmental dimension (Owens & Cowell 2002). During most of the XX century cement construction represented the advancement of civilization through the expansion of the urban lifestyle symbolically expressing the strength of progress through the use of reinforced concrete in infrastructure as has been studied in the case of Mexican cement (Gallo 2005). However, there have been various calls for the adoption of sustainability measures to reduce the CO2 emissions that accompany cement production and for industry leaders to engage with their communities to tackle social challenges.

In 2004, Cemex subscribed to the Global Compact, a UN sponsored policy group which companies can voluntarily join to address the Millennium Goals that are heavily involved with sustainability broadly defined. Through this and other similar commitments, Cemex has engaged with sustainability initiatives for some time. However, its systematic implementation can be tracked as far back as 2000. The industry is undergoing a process of renewal that goes from reviewing the production process to modifying the uses of cement and the aesthetic propositions that it enables. Even the profile of new employees goes beyond the traditional bottom line concern to look for environmentally aware and socially responsible individuals.

Stakeholder theory (Freeman and Reed 1983)¹ states that the firm should be managed in the interests of the firm's stakeholders (Bowie 2008). Though it implies a normative guideline and an ethical position, stakeholder theory offers a particularly useful analytical framework for this research since it allows the introduction of multiple actors working together at the juncture of negotiation and/or domination. The stakeholder theory acts as a theoretical framework that explains the introduction of policy makers, experts, bankers, NGOs and others as important actors who participate in giving meaning to sustainability recognizing the potential capabilities of different publics (Warner 2002), which in this case are constituted as stakeholders. Hence, treating publics as stakeholders implies that they share a discourse regarding a particular interest regardless of how active the group is at a certain point in time. Similarly, in this paper it is assumed that stakeholders can be constituted, spatially and discursively, only in relation to sustainability concerns who derive their existence through the dominant narrative around it.

Tracking the interactions of Cemex with the relevant stakeholders was thus a useful way for me to track sustainability that enriched and complicated the ethnographic approach. For ease of communication with the business audience and to establish rapport with informants as well, I framed the analysis as a case of stakeholder engagement where I take stakeholder theory as an analytic. In this

¹ A stakeholder can be defined in a wide or narrow sense; the wide sense of stakeholder is used in this research: "Any identifiable group or individual who can affect the achievement of an organization's objectives or who is affected by the achievement of an organization's objectives" (Freeman and Reed 1983).

way, the stakeholder approach acts as an analytical tool and at the same time, as a discourse that was deployed and performed to engage informants. Similarly, the engagement with policy makers, experts, bankers, NGOs and others can be facilitated through stakeholder discourse. Additionally, the triple bottom line's aim of meeting economic, social and environmental goals as explained by business authors (Savitz & Weber, 2006) is a relevant idea because it refers to how these can compete and merge at the same time; the concept of the triple bottom line influences policy and management strategies followed by informants.

The anthropological interpretation of how employees give meaning to the concept of sustainability, though framed by stakeholder theory and the triple bottom line as a business proposition, requires room for a wider interpretation that avoids normative standards. To this end, I consider the responsibility that sustainable behavior entails as one of the commitments that citizens face by being a part of a society. In this case, it is helpful to refer to the social contract (Rousseau 2003) to which corporations and individuals implicitly subscribe to by participating in society. Taking the social contract as the point of departure, my tracking exercise follows how the meaning of sustainability evolves within the organization from an abstract concept into very concrete and measurable parameters oriented to business performance. Furthermore, the emergence of the sustainable subject in Foucauldian terms (Agrawal 2005) along with the disciplining technologies which have become a part of neoliberal audit culture (Strathern 2000, Rose and Miller 2008) are helpful when analyzing how employees give meaning to sustainability. Applying stakeholder theory to sustainability helps the industry to transform and respond to current market requirements; it also transforms the meaning of sustainability to adapt to profitability parameters that can be expressed in measurable terms.

BACKGROUND AND METHODOLOGY

At the time the research was conducted, the cement industry was undergoing a process of transformation. The industry leaders had been participating in the Cement Sustainability Initiative (CSI) (http://www.cement.ca/en/WBCSD-Cement-Sustainability-Initiative.html) with the World Business Council for Sustainable Development (WBCSD). At the same time, Cemex was facing changing market conditions and financial trouble related to a recent acquisition; however, the Sustainability Director was interested in the potential benefits of qualitative research that would complement the information provided by established key performance indicators to better communicate the sustainability initiatives and engage employees and external stakeholders through it. Employees were faced with changing administration styles and with the introduction of new policies that sometimes changed the way their jobs had been done for a long time. These changes required adaptability from all the interested parties and provided a special showcase for organizational change that allowed me to gain insight into the sustainability implementation process. The project was made possible thanks to the open door policy of the company towards stakeholders, and specifically, to academics interested in it.

The company allowed me to conduct interviews, participate in meetings and observe daily tasks in multiple facilities located in three countries: Mexico, the United States, and the United Kingdom. These countries occupy important places in the corporate landscape; Mexico is where the company started and continues to be a relevant market, the American market is very attractive due to the

widespread use of concrete in infrastructure, and the British environment showcases the regulations that characterize the European markets. Each country has very different traditions that enrich the project. I replicated the methodological steps followed by Fortun (1999): tracking, triangulating, accounting for paradox and power in the three countries.

Cemex provided office space and meeting rooms endorsing all communications and providing me with technical and safety training to properly participate in all business areas. While my aim was to unveil the meaning making process that employees followed when faced with new policies regarding sustainability implementation, it was also necessary to balance this goal with the company's interests. In order to provide the company with measurable deliverables compatible with management expectations, I reported partial findings to each country's management team after spending time with employees in the different business units while maintaining continued communication with the corporate headquarters.

Given that Cemex executives and employees were not familiar with this kind of investigation, a research guide was created describing the nature of information that would be gathered through open ended interviews and participation in multiple operating activities. It was important to convince informants and colleagues to co-participate and co-produce the project (Beers, Stinson and Yeager 2011). Hence, the research design was a collaborative effort where the employees at the highest level would suggest which facilities, members of each team, and activities or meetings within the next few days would be particularly rich or representative of sustainability in their area of responsibility. From there, the employee in the following hierarchical level would do the same, and then the next one until ready mix truck drivers, kiln operators and quarry shovel drivers would be reached. The interpretation of sustainability that each person had become evident through their suggestions and their points of view shaped the direction of the research while minimizing the risk of the researcher shaping the results of the investigation. I was able to witness the key interests that drive a negotiation by conducting ethnography at the interface (Garsten 2010) beyond temporal and spatial definitions. I placed myself at the point of interaction of the employees with the stakeholders with whom they regularly deal where the negotiation between bottom line reasoning, markets and moralities (Garsten 2004) was taking place.

Overall, a total of 220 interviews were conducted. 60 employees were interviewed in Mexico in various locations around the city of Monterrey including those in the global headquarters of the company. Another 60 employees were interviewed in the US in several facilities, mostly around the Houston area where the US headquarters are located. 110 interviews took place in the UK, in multiple locations mostly in England and including some external stakeholders representing environmental organizations, journalists, government officials and neighbors though mostly focusing on employees. These were complemented through the participation in meetings and training sessions, informal conversations and detailed observations of the different sites.

FINDINGS AND DISCUSSION

The implementation of new policies and the introduction of concepts such as sustainability into global organizations require a complex strategy where cultural processes, geographical and legal contexts are taken into account. In the case of the implementation of Cemex's Sustainability Management System (SMS), a mix of administrative, communicational and training tools have been

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used to pursue an organizational transformation directed to embedding sustainability into the day to day operations of the company at all levels. The goal of the SMS is to contribute positively to diminish the social disparities where suitable, to operate respecting the environmental constraints of our planet while continuing to care for the interests of shareholders, and to consider the long term carrying capacity of the planet while also providing a platform for the continuing operation of the company. The tracking exercise included interviewing the people responsible for the introduction of particular initiatives related to five areas: Environmental, Community Relations, Conservation, Health and Safety and later following the channels for their distribution in the selected regions.

The sustainability communication strategy included sharing with employees in different business areas and regions how the five avenues would contribute to the important goal of transitioning to sustainability. Employees had to be trained by the company to learn that sustainability performance is an important business parameter not only due to regulatory frameworks but also to meet the challenge that socially responsible companies and individuals need to account for in the context of the Global Compact and the WBCSD Cement Sustainability Initiative (2009). In addition, investment and research decision making processes had to be adapted to reflect the company's commitment to sustainability. The goal of the SMS has been expressed in the Cemex sustainability model, called Smart World Together, which focuses in competitiveness, impact reduction and stakeholder outreach. In summary, their Smart World Together model portrays the adoption of the triple bottom line that adapts according to the interests of the multiple stakeholders.

However, the basic question remains: What does it mean to the employees when a company vows to be sustainable? While the company clearly follows a managerial approach to sustainability; the multiple interests at stake are weighted differently by the members of the organization. Figure 1 shows a sample of Cemex's employees' varying interests as they were mentioned during interviews. As can be appreciated in the figure, the mix of interests that an individual has can vary according to priorities and circumstances. Additionally, the interactions with other people, either as such or in their capacity as representatives of different groups, introduce additional complexity, since the saliency of interests can be related to their constant reference through social interaction.

Those interacting with employees have their own set of interests in addition to the interests of the organization to which they belong and represent, and both sets of interests influence the outcome of such interaction. It is through interests that a common ground can be established to engage in conversation and an empathic relationship can be developed. The space where the individual ratifies shared interests and membership of multiple stakeholder groups is thus flexible and strongly resembles the public sphere where it is difficult to distinguish a public from the public (Warner 2002) at the abstract level, though it also offers concrete spaces for negotiation.

Any exchange refers to the constant balance of everyone's interests, and implies their negotiation and communication. Figures 2 and 3 respectively show the set of stakeholders that employees and Cemex have according to the descriptions of employees throughout the company. As can be appreciated, many of them are the same; however, not all employees interact with all the company's stakeholders and each person has a particular set of experiences, beliefs and commitments that shape the interactions in which she/he participates giving more or less weight to different interests. A very personal process takes place when an individual gives meaning to a particular action or policy. There are three layers of meaning making mechanisms that overlap at the personal level which interviewees, usually unaware of the process in which they are immersed, followed: First, the



Figure 1 Individual interests

superstructure apparatus that informs the individual's context where constraints, regulations, paradigms and assumptions historically and geographically defined surround the person, enabling certain interpretations and not others. Second, the affective dynamics in which the person is involved including stakeholders near and far. And third, the ethical dimension that guides which interests will be weighted higher in each decision.

Not only is the employee making a decision based on his/her interests, but considering those of others following an intricate process which resembles the expectations and considerations framed by adherence to an imagined public and affinity with a stakeholder group. Warner (2002) describes that though some have tried to define a public in terms of a common interest, a public is also self-organizing by its own discourse, uniting strangers through participation that reshapes subjectivity around co-membership. Similarly, employees as individuals affectively engage and participate with various stakeholder groups interacting with multiple sustainability discourses that impact their subjectivity, leading to interpretations of what a sustainable subject is according to the perceived membership of a group and their shared interests.

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Figure 3 Stakeholders with whom Cemex interacts

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At the company level, Cemex implements the SMS strategically responding to key stakeholders through the offering of sustainability-related concrete commitments tailored to their interests, hence transforming the broad promise of becoming sustainable into context-specific measures. While all the areas of sustainability are being developed in all countries, some important differences emerge as a consequence of this adaptation. Cemex Mexico prioritizes social programs such as the sponsoring of community centers and promoting the program "Patrimonio Hoy" within the sustainability umbrella recognizing the interests of neighbors and the housing needs of low income groups. Cemex US focuses mostly in energy saving efforts partnering with the EPA through the *Energy Star* program; and the UK establishes new accreditation mechanisms such as the "Carbon Label" that account for low carbon emissions given the importance of carbon reduction for the regulatory agencies and the environmental groups in that region.

For employees, these concrete promises are sometimes directly related to the working environment but also to the community's quality of life at a more general level; employees are members of the community and at the same time, they deal with external stakeholders on behalf of the company. Similarly, Cemex employees also are impacted by the needs of the corporation, the fading hope in a supportive welfare state, the uncertainty of the conditions of the future regarding their jobs, and also their life expectancy, as even the planet is undergoing rapid deterioration. The desire to trust others and to establish reliable relationships, the drive to improve one's condition and surroundings, and the anxiety of not being able to control any of these are some of the facts that are faced by both Cemex and its employees. In addition, the increasing adoption of auditing and accreditation mechanisms that privilege quantification and metrics in the context of business management and government policy shape not only sustainability implementation but the employees' subjectivity, leading to the emergence of an accountable and transparent sustainable subject.

According to the nature of the interests that prevail when giving meaning to sustainability, six meaning making logics were identified through the analysis of the data as described in Figure 4. Only four of these logics effectively result in sustainability becoming meaningful to the person: the market, hope, relationship and conscience logics which will be described below. However, two other logics emerged from the data showing how people who reject sustainability policies follow a denial or pessimistic logic.

The same practices are often interpreted and given meaning in various ways even by colleagues in the same department. Similarly, not only one meaning making logic is followed by any person all the time; according to the sustainability initiative being discussed and to the particular circumstances that the individual faces at a given moment, the meaning making logic used varies.

POSITIVE LOGICS

I refer to the meaning making logics that result in the employee effectively relating to sustainability related initiatives and engaging with them as positive logics.



Market oriented logic - "Sustainability makes business sense"

This logic was found widely across the organization, mostly at the managers' level, though it was also displayed by operators at times as in the example below. Employees who follow this logic consider that sustainability is relevant as long as it is profitable. These persons have naturalized market dynamics to the extent that they filter their decisions through this lens without hesitation; they generally consider that if sustainability makes sense in business terms, then it must be adopted or that it is the reason for implementation. Economic considerations seem to mediate sustainability transactions and they are used to translate sustainability actions among stakeholders or organizational levels. For example, an operator in a cement factory explained after being asked about the new environmental policies being implemented in the plant: "The environmental programs make us more efficient, we take care of the environment but the company saves, and this is important in busines." Similarly, following a market oriented logic, the perceived need of conforming to competitive market standards regarding sustainability acts as a driving force in combination with the need to comply among many executives. For example, one UK manager stated the following: "Though sustainability used to be mostly about compliance, there has been a huge cultural shift towards green building in the market, and that has also become a driving force."

Hope-human oriented logic - "Trust in human capacity to solve problems"

This logic was followed by employees in all geographic regions. Employees who follow the hope logic seem to believe in the capacity of humankind to successfully address the social and environmental challenges of our time. They trust authority and institutions such as the government, giving the public

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sector an important role in enacting policy; or top management, placing the private sector as one of the key forces to put policies in place and evaluate their effectiveness. When people have this kind of confidence in institutions, they often support the managing technologies that emerge from audit culture, considering them the manifestation of the effective controls that can guide us towards sustainability. In relation to this, a top executive explained how: "We need to figure what credentials we need as an organization beyond the license to operate." Their engagement with sustainability derives from their respect of these superior forces. Members of various stakeholder groups sympathize with these views, since they share similar interests with regulators or the environmental groups RSPB and Conservation International. Interestingly, many employees in the UK mentioned the state as a capable entity that not only could and should enforce sustainability measures, but that was already achieving a positive change. A UK union representative explained: "Through the years, there have been changes in regulations and we do things differently. We then got the training and became aware and changed the mindset." In contrast, in the US and in Mexico, it was more common to listen to employees referring to the positive changes that society could accomplish through the activities of the private sector. For example an operator in Mexico said: "The cement from our company has always been known for its good quality, but then, it is not that we were polluting, but we got the ISO 14000 certification to put procedures in place that avoid risks of pollution" which was a voluntary company effort.

Hope-divine oriented logic - "God will help us get out of this problem"

Another stream of hope oriented employees followed a logic that placed the power to attain sustainability in divine hands. Under this logic, the employee trusts God to solve current challenges while adhering to its mandate as a religious commitment. Mostly, it was employees in Mexico who followed this logic, though there were also a few in the US but not in the UK. The interests of the church as a stakeholder group are compatible with those who follow this logic.

There is an important contrast between the two hope oriented groups given that the first one reflects a belief in the spirit of modernity where man is able to achieve progress and improve quality of life for all through either the private or public sector, while the second one displays the importance of God and his intervention to attain better living conditions on earth.

Relationship oriented logic - "My peers would not accept differently"

For the employees who followed the relationship logic, the belonging to a community is important and defines the way they give meaning. This logic was shown by employees across the organization. They talked as members of a group and considered themselves to be responsible; in addition, they often expressed an expectation of reciprocity or recognition from their peers as well as a sense of ownership. The belonging to a community referred here to being a part of the working unit at times, but also to being a part of the surrounding neighborhood, or to mankind. For example, another kiln operator explained the changes in the kiln operation and his participation in it: "See, I started working in the kiln, and we were looking for ways to be efficient. Today, we try to be productive and do it by saving energy when operating the kiln." Neighbors, media representatives and environmental organizations as stakeholders who promote the interests of the community are satisfied when this logic is displayed during interactions with them.

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Conscience oriented logic - "It is the right thing to do"

The conscience logic is followed where normative thoughts take precedence for the employee. This means that sustainability actions 'ought to be done' because of ethical reasons and these employees interact with others who relate to sustainability without expecting something in return besides a shared responsibility and recognizing the intrinsic value of some initiatives. Though this logic was not as frequently followed as the others, it emerged throughout the entire organization. For example, an operator who was describing the benefits of alternative fuels said: "We have changes, now we are burning tires, and that is good because the tires are not biodegradable and they stay there forever if we don't burn them." Among stakeholders, this principled stance is valued when it can endorse their interests.

Most of the examples given in this section were taken from the kiln operator interview pool, and their close connection with environmental issues is evident. Their constant exposure to environmental control systems and the training which they have undergone shapes their views. At the same time, it is possible to appreciate the diverse interpretations and priorities that this group has. Other groups of informants would offer different examples and their closeness to environmental issues would probably be different. However, the diversity of logics that kiln operators followed resembles the diversity found among the other groups.

In many instances, employees used several logics when explaining the relevance of a sustainability initiative. For example, an employee in a cement factory who was referring to the installation of energy saving devices in a kiln said: "When they came to install the new equipment, they trained us and then the new materials started arriving. And, you know, it is good that they came because it is better for the planet if we use tires, and it is all right because the kiln works and it cost less," mentioning a conscience logic and a market logic argument that support his appreciation of the change being considered "good," it is possible to appreciate how all priorities and interests are being assessed simultaneously.

There were also a few employees who would express the balancing of competing logics and interests of multiple stakeholders. One of them, a manager who had just been told that he had to reduce the working force of his area, explained: "They (upper management) need to improve their financials, but now I need to face the guys in my team and let go a couple of them. How can I explain that we as a company care for the well being of the community and the environment when we cannot even retain these good people who have been working together for so long?" This kind of statement rarely came up during the interviewing process, but it clearly shows how it is not always possible to satisfy all the competing interests and priorities at play.

NEGATIVE LOGICS

There were two meaning making logics followed by a few employees who refused to engage with sustainability initiatives and I refer to them as negative logics.

Denial logic - "Climate change is a hoax"

The denial logic was only followed by a few employees in the US. Given that climate change has become a political issue in the US, it is understandable that this logic was only shown there. These employees would not recognize the existence of social or environmental problems requiring action. As

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an example, there was a truck driver who said: "You know, it is only the media that talk about climate change, but what climate change are they talking about? There is no need to stop driving or saving gas, it has been the same forever."

Pessimistic logic - "The world is about to end"

Similarly, a few US employees believed that sustainability measures are not helpful in overcoming the current planetary challenge. For them, it is too late to avoid the consequences of humankind's historically bad environmental behavior and they do not accept the possibility of a positive outcome through sustainability implementation. For example, an old employee in the maintenance department in a US plant talking about the environmental alternatives that society had said: "The only thing we can do now is to pray; we are beyond redemption and we need to just stop and ask for forgiveness, since the end is near." This position contrasts sharply with the widespread belief that most people expressed about the possibility of achieving sustainability through committed stakeholders working together in the US and elsewhere.

CONCLUSIONS

This paper provides help in achieving an understanding of sustainability implementation as an example of organizational change and its obstacles when a company engages in a process of renewal; namely, the importance of communicating about sustainability to multiple groups not only according to their context, but to the multiple meaning making logics that are followed. The shaping of sustainability in Cemex is being influenced by various stakeholders with whom different departments throughout the company interact. While market policies are strong in this case, and the market logic is often used as a translation device, the green-cultures are also widespread.

By considering the meaning making logics, it is possible for the company, the advocacy groups, and all stakeholders to tailor communication strategies about sustainability to promote their interests, expressing them in terms of meaning making logics. Stakeholders might take different approaches to influence implementation and to spread a particular view, tailoring communication to the identified logics. In the future, the human resources department might select candidates who display positive logics about sustainability. The stakeholders that benefit from audit culture such as regulators, inspectors and experts are currently in an advantageous position to impose their construct of sustainability given the business structure that privileges measurable key performance indicators when coping with sustainability challenges.

The audit culture mechanisms have transformed the understanding of sustainability through their introduction into the business culture as shown here for the cement case. They have taken sustainability from an ideal abstract stance that refers to general guidelines of caring for the planet and future generations and made it tangible. Through audit culture, sustainability has become concrete, allowing for the triple bottom line to be met and for the socially responsible sustainable subject to emerge. Measurable referents and concrete goals are privileged over philosophical discussions on how to better take care of the planet or what the basic needs of those living on it are. As an adaptation of the promise of modernity, sustainability today offers a manageable future that makes the improvement of living conditions and eternal growth possible when respecting certain parameters, while also preserving the market economy through its naturalization. The discussions about the viability of the

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consumption society and market economy are postponed while the car culture and the fossil fuel economy continue to be a part of the landscape. At the same time, the built environment begins to show the new standards that align with sustainability definitions. Sustainable subjects are emerging; they make new environmental and socially responsible practices a part of their daily tasks, populating the industry according to their own interpretations. Whether market oriented, hope oriented, conscience oriented or relationship oriented, most employees affectively engage with the sustainability policies being introduced as defined by widely accepted mechanisms such as the Global Reporting Initiative.

ACKNOWLEDGMENTS

The author would like to thank Cemex and its employees for generously allowing access and providing the organizational support to make this project possible; to the Cemex UK Foundation and the Sustainability Vice-Presidency for the partial economic support provided to conduct this research. Also, the author is grateful with the Department of Anthropology, the Humanities Research Center and the Center for the Study of Women, Gender and Sexuality at Rice University for their academic and financial support. In addition, the author thanks the blind reviewers of the 2012 EPIC Conference for their helpful feedback.

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