

The Logics of Sustainability Re-envisioned: Implications for Teaching and Research

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Introduction

In "Reinterpreting Sustainable Architecture: The Place of Technology", Simon Guy and Graham Farmer proposed what they termed "the six competing logics of sustainable architecture" (Guy and Farmer 2001, 141). The value of this proposition lies in its inclusive nature. In lieu of standardization, they acknowledge sustainable architecture as an "essentially contestable concept" (Cook and Golton 1994, 677-685) and find value in a multiplicity of approach.

Guy and Farmer outlined these "competing logics" in a table (Guy and Farmer 2001, 141). Although informative, the table does little to assist in understanding the parallels and distinctions between these "logics", which is where the essential value of the framework lies in the first place. Rather, I have re-envisioned this table as a graphic that highlights and clarifies the relationships between "logics" based upon the various approaches towards place and technology described in *Table 1* (Guy and Farmer 2001, 141).

This re-envisioned "competing logics" framework provides a lens through which to view and evaluate current architectural teaching and research related to sustainable architecture. As a starting point, I will apply this framework as an overlay to the teaching of environmental systems in architecture. Multiple "logics" are likely to emerge as appropriate frameworks for structuring the environmental systems curricula. Rather than fostering confusion, I believe this will provide a "means of raising an awareness of all the issues that can be considered" (Cook and Golton 1994, 684). Uncovering biases as well as unrealized potential will aid in implementing curricular adjustments and developing research opportunities to strengthen particular approaches to sustainable architecture.

"Competing Logics" Re-envisioned

Each "competing logic" is distinct in that it constructs a world based upon a particular context for environmental place making and a specific attitude towards technology. Using descriptions pulled directly from *Table 1* and elsewhere within the article, *Graphic 1* is an attempt to more effectively "illustrate how each logic prefigures technological choice within a broad design strategy premised by a specific form of environmental place making" (Guy and Farmer 2001, 141). Guy and Farmer acknowledge that the actual application of these "logics" is not so distinct. "In practice, logics may merge or simply be absent as exemplified by analysis of any individual building..." (Guy and Farmer 2001, 141). However, distinguishing between these "logics" can promote understanding and foster productive discourse.

In an earlier book chapter entitled "Contested Constructions: The competing logics of green buildings and ethics" (Guy and Farmer 2000, 73-87), Guy and Farmer grouped each "logic" under one of three headings. I mention this only in passing, as I did not find them particularly useful for gaining insight into the interrelationships between "logics." However, in *Understanding Sustainable Architecture*, T.J. Williamson, Anton Radford, and Helen Bennetts convincingly describe what they call the "...three contrasting images of architectural sustainability...the natural image, the cultural image, and the technical image" (Williamson, Radford, and Bennetts 2003, 19-41). They explicitly classify each of Guy and Farmer's (2001) six "logics" according to one of these three images and I have incorporated this classification into *Graphic 1*.

What is readily apparent upon initial examination of *Graphic 1* is the distinction between the "technical image/eco-technic logic" and the "cultural image" and "natural image" and their embedded "logics." Broadly speaking, each "image/logic" presents an internally consistent "interpretative framework" (Guy and Farmer 2001, 141). Unlike Kuhnian paradigms, although often antagonistic, these "interpretative frameworks" are not mutually exclusive. Yet, the gulf between the "technical image/eco-technic logic" and all other "image/logics" cannot be overstated. This gulf is best exemplified by David Orr in *Ecological Literacy* when he writes in Chapter 2 about the "two meanings of sustainability": "In effect, the commission hedged its bets between two versions of sustainability, the first of which I will call "technological sustainability," the second, "ecological sustainability." In the most general terms, the difference is whether a society can become sustainable within the modern paradigm through better technologies and more accurate prices, or whether sustainability requires the transition to a postmodern world that transcends, in David Griffin's words quoted in the introduction: "individualism, anthropocentrism, patriarchy, mechanization, economism, consumerism, nationalism, and militarism..." (Orr 1992, 24). Similar to the social-constructivist approach of Guy and Farmer, Orr does not view these approaches as "mutually exclusive", although he does differ in that he explicitly states that they can be "regarded as successive stages" (Orr 1992, 24). For Orr, "technological sustainability" may be necessary for near-term stabilization, but "ecological sustainability" is the long-term search for alternative approaches (Orr 1992, 24).

These two approaches denote markedly different attitudes toward technology as shown along the "technology" axis in *Graphic 1*. Although differences in approach to technology do exist among the "logics" of the "cultural" and "natural images," the differences are often a matter of emphasis. However, in the case of the "eco-technic logic," the attitude toward technology stands apart. In their description, Guy and Farmer (2001) conclude, "This approach therefore, while borrowing much of its symbolic language from ecology, places its optimism and faith in the potential and possibilities of technological development as a panacea for our environmental ills." All other "logics" take a far more skeptical position in relation to technology. This is not to say that they are opposed to technology per se, only that they seriously question this instrumental viewpoint. As Orr states near the conclusion of Chapter 2, "The question then becomes what kind of technology, at what scale, and for what purposes" (Orr 1992, 39).

The gulf between the global and local context for environmental place making is no less profound. In discussing the differences, Williamson et al., highlight the distinction: "This (local environment) is not just a narrower or more selected version of the global view. It is a quite different perspective based on knowing from within that environment, and can never be fully appreciated from the 'outside'" (Williamson, Radford, and Bennetts 2003, 20). Again, referring to the "place making" axis in *Graphic 1*, the "technical image/eco-technic logic" resides within the global context, while all other "image/logics" emphasize, in various ways, the importance of locality. These "image/logics" do not deny the global nature of environmental problems. They simply seek solutions to these problems grounded in a local environmental context, be it bioregion, local community, site-specific ecosystem, or interior.

"Without attending to operation, environmentally 'sustainable' architecture fails to qualify as sustainable at all. Without considering expression as well, it will remain, at its least reflexive, 'sustainable building', and at its more reflexive, the by-product of various environmental devices..."⁵

"...technologies can be divided into two categories: material technology - the thing itself, and socio-cultural technology - how the thing is constituted by and constitutive of socio-cultural conditions and practices. These are large overarching categories that can inform the teaching of technology in architectural education in a number of ways."⁶

"...technology should be taught as multiple material, local, and global practices rather than only as immutable black boxes."⁶

Graphic 2: Enriching Environmental Systems

⁵Williamson, Radford, and Bennetts (2003)
⁶Wright (2003)
⁷Hagan (2001)
⁸Allen (2007)



Graphic 1: "Competing Logics" Re-envisioned

¹Guy and Farmer (2001)
²Williamson, Radford, and Bennetts (2003)
³Orr (1992)

Implications for Architectural Teaching and Research

Prior to applying this re-envisioned "competing logics" framework to the evaluation of current architectural teaching and research, a broader understanding of how to integrate sustainability throughout the architectural curriculum must be established. James Wright wrote about three possible approaches in "Introducing sustainability into the architecture curriculum in the United States" (Wright 2003, 100-105). "These approaches include the assumption that sustainability already permeates the curriculum by its nature, expansion of the existing courses concerning environmental systems, and the revision of the entire curriculum to fully integrate the subject" (Wright 2003, 102).

While describing the benefits of each approach as well as the impediments to implementation, Wright implies that these approaches are mutually exclusive. Rather than viewing these approaches as options from which to choose, I see implementation of two of the approaches over time as eventually leading to the third. The introduction of sustainability must begin with the "expansion of the existing courses concerning environmental systems". In this way, it begins with those individuals who are already deeply committed to sustainable architectural practices. Secondly, when the validity of this approach is evidenced through design, "the revision of the entire curriculum to fully integrate the subject" can occur. Finally, "the assumption that sustainability already permeates the curriculum by its nature" becomes the inevitable result of these earlier efforts. My modest intention at this point, however, is to confine myself to the first point and uncover some of the limitations to the dominant approach to teaching environmental systems in architecture with recommendations for enrichment.

This "competing logics" framework (*Graphic 1*), when applied to environmental systems teaching across the curriculum of any given architecture program, would likely reveal a hybrid of multiple "logics" dependent upon programmatic emphases and faculty expertise. Although a survey of architectural programs would be revealing in this regard, it is beyond the scope of this poster. Rather, *Graphic 2* posits a generalized framework using the "three contrasting images of architectural sustainability" proposed by Williamson et al. Note that the "images" are now placed in a nested relationship progressing from the "natural image" to the "cultural image" followed, lastly, by the "technical image". Although Williamson et al., do not specifically write about these "images" as expanding frames of reference, they emphasize the same priority. In discussing Warwick Fox's concept of "responsive cohesion", they state, "Fox argues that upholding the principle of responsive cohesion in sustainable architecture entails responding to ecological, social and built contexts, in that order of priority (Fox 2000, 240). Similarly, architect Paul Pholeros characterizes architecture as concerned with place, people and stuff, in that order, which shows agreement about priorities between architect and philosopher...The emphasis on order is important...the orthodox anthropocentric position in both architecture and philosophy would have put the social context ahead of the ecological context. Putting ecological first illustrates the degree to which environmental concerns have moved to the forefront. Architecture is most obviously manifested in the third concern, the stuff or built context, including the aesthetic tectonics of space and form as well as building and landscape materials. Indeed, conventionally architecture would put concern about stuff first, and placing this last in the order corresponds to a view of the issue as what can architecture mean for

sustainability rather than vice versa; in other words how can the stuff of architecture be mobilized to advance our sustainability objectives for the environment and society" (Williamson, Radford, and Bennetts 2003, 128-130). The argument, then, of the proposed nested framework in *Graphic 2* is that technology teaching must be properly situated within environmental and socio-cultural realities. The purpose here is to enrich, rather than replace, environmental systems curricula that take an instrumental, "black-box" approach to technology teaching. In this way, what is taken into consideration in the teaching of environmental systems properly mirrors that which should be taken into consideration in the making of sustainable architectures. Barbara Allen advocates for a similar, expansive approach to technical teaching in "Cyborg Theories and Situated Knowledge: Some Speculations on a Cultural Approach to Technology" when she writes, "Architecture schools need to teach the social, cultural, and political nature of technology as it shapes and is shaped by the built environment. Students should be given the basic tools of analysis needed to assess technology in more than instrumental terms thus becoming more effective designers and citizens in the complex world in which we live" (Allen 2007, 85). Ultimately, the goal is to teach students in such a way that they are capable of making appropriate technological choices when immersed in various and specific environmental and socio-cultural contexts in the studio and, eventually, in practice.

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