FOREWORD for the book

365 Important Questions to Ask about Green Buildings

by Jerry Yudelson and Alan Whitson

(Intended audience: architects, engineers, contractors, building owners and clients)

QUESTIONS AS LEVERAGE FOR CHANGE

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The Role of the Question

It is often asked in various green design or LEED™ Green Building Rating System seminars, "How do you convince a client or a boss to use LEED or take environmental issues seriously?" The answer is you, on your own, can't convince anyone to do anything. People must be ready to question before they will listen to an answer. However, you can be proactive to help create a shift in thinking. This requires an appropriate facilitation process, patience, or both.

It is either necessary to offer new ideas to provide a context in which people can begin to question themselves and compare concepts, or, offer questions that allow the listener to see things in a different framework. In fact, new perspectives can not only be discovered they can be elicited - "elicited" in this context, means answers or viewpoints that may have been "there" but have never surfaced because of a particular, dominant, societal framework. Through this questioning process the listener may formulate a newer construct that can be tested (questioned) against past experience or with others to begin the process of assimilating a new framework and perspective on an issue. In general, people truly learn when they are curious enough to ask. They then become "available" to listen or find the answers themselves.

The role of the question is fundamental to learning. Few of us internalize anything of value until we are ready to ask a question. That is why our predilection of focusing on the technologies of green design is the slowest way to achieve market transformation. When a technology is proposed as a solution to a green building issue, we are in effect saying we have the answer for you. But do we? Have we made an assumption about the need? Have we asked the right question in the first place? Do we even have the expertise in place that can provide context to inspire the right questions?

The Role of the Mental Model

Some background: We, in the building business, are generally material oriented in our approach to design. This is understandable because we utilize a palette of **products and techniques** to produce our buildings. However products and techniques are of limited

value if seen only as things that are added to a building to make it green. In addition, the availability and performance characteristics of products are typically in a state of flux – especially in the current state of green market evolution. Concentrating on these alone as the knowledge base for green building we find ourselves in a continuous game of catch up, as well as spending more money to produce a building. Overcoming this challenge requires changing the design process to utilize **tools**, now widely available, that enable us to make decisions based on optimizing the performance and costs of the whole building, as a system, rather than focusing on the equipment, materials, and products that will be used. Energy modeling programs, Life Cycle Cost analysis, LEED – are examples of such tools. With these tools we can more adequately evaluate products, techniques, habitat health, water system health, and building massing/orientation/zoning at the conceptual phase of the design process; when opportunities are greatest for significant cost and performance improvements. To use the tools in a timely and meaningful way we must change the **process** of design. Changing the process to one that embraces the larger reaches of system design is the hardest.

While most of us feel we are "systems designers" by the nature of our work in delivering complex buildings – we usually are not. Sustainable design requires a different mindset or mental model. This model is able to look at systems in a more complex way. Instead of looking at just the physical elements of the building, the invisible connections between the elements need to be understood. These invisible connections and patterns, for example, may be manifest in the downstream impact of toxins in building materials, the multiple efficiency and cost relationships between the many variables in an HVAC system and the building envelope, or the impact on social systems due to logging practices or any raw material extraction. This level of analysis requires a rigorous level of enthusiastic and timely engagement from the participants and an understanding of tools used to make these evaluations. Since no one has all of this knowledge themselves, the role of the team takes on great importance; the role of the well-asked question takes on an equal importance in order to elicit answers beyond the conventional.

For teams to embrace this process a different **mindset or mental model** is required. One that has the desire to change the way things are done. A model that is **open and willing** drives the successful integration of green design.

By far, most successful green projects (i.e., projects that achieved the high environmental goals they originally set out to achieve, within budget) have done so, not because of adding technology and products to the building, but because they had the willingness to focus on the environmental issues – and the invisible and critical connections – as essential to the success of the design. They had the willingness to ask many questions about the potential beneficial relationships between ALL the systems in the building, site and region and explore the many different ways to reach toward better ecological integration. The environmental concerns were not secondary, nor were they dominant, just an integral part of the design.

Thus, it is essential to focus on the following four aspects from the top down, not bottom up:

↓	**Mental Model**	– design team - mindset, attitude, and will
	Process	– integrated, all parties engaged
	Tools	– metrics, benchmarks, modeling programs
	Products / Technologies	– stuff

Even though we must function on all four levels simultaneously, the most important questions to advance a green project to the highest level are built around discovering, "what will enable us to shift to a higher order of thinking?" This is the fundamental premise of any facilitated design charette process. No facilitator can "make" someone do the work in question. If someone tries, then it isn't facilitation, it's a lecture.

The design charette is a tool. It is the start of an integrated system design process. The stakeholders themselves will begin to move the expectations to a higher level if they are provided a context within which questions can be posed. The best facilitators are those who know how to set the context and ask questions that elicit the knowledge of the group. From this combined knowledge base and reciprocal intellectual energy transfusion, the group will move themselves to a higher level of engagement relating to environmental issues than could ever be achieved by telling them what to do.

If the client is not interested in environmental issues after this, don't force it – sneak it in – even though you will likely not achieve the most advanced green practices. A high level of LEED, for instance, typically requires the client to be an enthusiastic participant in design deliberation. This doesn't mean you should do bad design because the client doesn't understand the rationale – the typical client doesn't understand electricity either.

Even if you are not engaged early enough in the project or do not think you know enough to formulate the right questions, don't worry. By practicing group facilitation in this manner you will gain experience and so will the client and other participants. Tell them what you are doing and why and they'll even help you design the questions. Even if the answers aren't practicable for the immediate project, you and they will have learned much that can be carried to the next.

Some Questions to shift our Mental model

> *English does not contain a suitable word for 'system of problems. Therefore I have had to coin one. I choose to call such a system a 'mess.' The solution to a mess can seldom be obtained by independently solving each of the problems of which it is composed.*
>
> *Russell L. Ackoff*

. . . and the solutions to the larger objectives of green buildings are unlikely found by looking at buildings alone. So . . . at a basic level, what are the larger objectives of green building? What are the questions that will help move our professional practice and our clients to a higher or more integrated level of green design?

Let's put the current state of green building practice in context:

The USGBC definition of green buildings – *". . . Buildings that are environmentally responsible, profitable and healthy places to live and work."*

This is a somewhat limiting definition if one considers the absence of a qualifier for the word "environmental." Certainly metrics and performance benchmarks are necessary to help give focus to the word but are these enough?

Perhaps the following definition may expand the range of our thinking, design, and construction activities – *Design and Construction practices that support and improve the health of the systems that sustain life.*

This definition is more connected to the real reason we are engaged in green building design and construction.

We might start our investigation into the mental model of those engaged in the project by asking, "What is the Core Purpose of your project?"

If we try to help our clients understand the fundamental aspirations behind the purpose of a building they eventually end up with a statement "achieving a quality of life" as one of the core purposes of their work. Of course this is over simplified for this article, but think about it, there are few people, no matter what their profession or trade, that do not want quality of life as a result of their efforts – for their family, for them, for their community; at one level or another.

The "five whys" is a familiar facilitation device to get people to think beyond the common assumptions that are deeply part of each of us. "Unpacking" the reasons behind comfortable answers helps us move toward investigating the real reasons for anything we do – such as constructing a building.

The following questions are those we recently used at the beginning of an international headquarters project; this is a paraphrased dialogue with the Executive VP:

Why do you need this building? (Bear with me, I know this seems obvious.)

We need the space.

Why do you need the space?

To house our growing work force.

Why do you need to house the workforce?

To achieve a level of quality communication.

How often will they interact if present in this large building?

(Light goes on) You know? They are often on the road. When they are here they communicate electronically

Why do you need this building?

Maybe we don't need all of it, they can work from their home and come in for meetings once a week.

This isn't a bad way to begin a discussion about environmental building. We've likely opened the possibility to save the client a large amount of money. They are open to some more questions based on a larger scale of systems interconnections.

Everything is connected or integrated. When we speak of integrative design as the key to green building – and it certainly is – it leads to more fundamental questions:

1. What are the systems of problems we are engaged in addressing?
2. Can the act of building address these problems?
3. What additional resources and expertise are needed to help us to answer these questions as we select sites, and design our buildings?
4. Can buildings and human development participate in a healthy manner with the place they inhabit? Have they ever done so? Might those examples inspire and inform us?
5. How can humans interact with the "place" of this building in such a way that it catalyzes the health of this place or watershed?
6. What causes this place to maintain its health? (hint: it's more than just the absence of bad stuff or the reduction of energy use)
7. What are the key species and systems in this place that if disrupted, will reduce the watershed's viability?
8. How can the process of building engage this place in such a way that it leverages the health of these key species?
9. How can the activities in the building and the community become aligned in a way that greater understanding of the important connections of health are addressed on a larger scale than the site alone
10. What kind of feedback is required so that the people engaged in this place become aware of unintended consequences from any aspect of the design and construction process, and then can make appropriate responses or adjustments to their activities?
11. Once we have some direction from the above questions, how can this building and its activities become a participant in the system of life to catalyze the evolution of ongoing health and improve understanding of how to do this in other places?

This foreword is intended to help you think beyond your current level of green building practice; no matter what level. It is just the first step of a deeper process that is necessary if we are to reach the ultimate goals of green building. Is there any reason you can't begin asking questions about broader and deeper levels of systems on your next project?

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