

High-wire Act: Delivering Green Projects on Conventional Budgets

Jerry Yudelson, January 2008

I've been doing a lot of research lately on how project teams are delivering high-performance projects, those that save 30% or more energy against the ASHRAE 2004 standard, with lots of daylighting and other green features. Consider that LEED-Platinum projects, currently the highest attainment in green building, represent less than five percent of all LEED-certified projects in the U.S., and you'll see that there's a lot of projects that don't get to the very highest levels. Here are a few lessons learned:

1. It's not easy doing it within budget.
2. It probably won't happen the first time.
3. It takes a village to raise a building.
4. Building is a team sport; the owner's active leadership is critical.
5. LEED is the best roadmap we have for sustainable building.

Let's explore them, one at a time.

It's not easy. There is no "instant green building" powder you can stir into your morning orange juice. High-performance projects take skilled team members, strong communications skills and a willingness to take calculated risks. In my discussions with architects, I've found the biggest gap is with engineers, particularly mechanical engineers, who are unwilling to learn new techniques and technologies. As a result, HVAC systems are typically over-sized, with multiple redundancies. Engineers, on the other hand, are unwilling to risk fees on projects where they're not involved in setting initial goals and expectations and where architects don't respect or invite their early and ongoing collaboration. (Does this sound like a dysfunctional family?)

It probably won't happen the first time. Like good sex, partners have to get used to working with each other in a new way. Each green project represents both a risk and an opportunity. Project teams need to learn new design methods and new forms of collaboration. To expect a LEED Platinum project on a typical budget, the first time out is unrealistic. People make design errors, costs escalate beyond expectation, the owner changes the rules in the middle of the game; if you're a working architect or engineer, you've seen it all. Instead, try to advance your own state of the art with each project; at some point, the stars will be right and it will all come together in one project.

It takes a village to raise a green building. Building ownership, design, construction and operations are team efforts all the way. Unless the entire team is on board for the high-performance green building, it's hard to make it happen. I worked on one college competition project a few years ago that was aiming at LEED Gold. As a design/build project, the general contractor brought on board a very large mechanical subcontractor who proceeded to throw out all the carefully considered engineering design in favor of its typical solutions. The result was a conflict between engineers and contractors that led to a

very sub-optimal design. GCs and owners need to be prepared to step in early and mediate such disputes.

Building is a team sport, and the owner is the coach. Without an owner's active and continuing involvement, teams tend to revert to the tried and true. In one LEED Platinum project, the owner set audacious goals for the engineers: high performance at 10% less upfront capital budget, forcing the entire team to get really creative. The result was a project that created LEED Platinum with very little initial cost increase (for the entire building.) Without BHAGs – big, hairy, audacious goals (a technical term from management consulting) – teams just can't move ahead. Without a knowledgeable and committed owner, it's hard to overcome all the inevitable "bumps in the road" that every large project encounters.

LEED is the best roadmap we have for sustainable building. Despite the claims of some "starchitects," who say that LEED is too restrictive a definition of a green building, LEED is still a very good guide to designing and delivering a high-performance green building. As the saying goes, "if you don't know where you're going, any road will take you there." Without some ability to monitor performance all along the way and to measure outcomes after project completion, how does a design, construction and ownership team know what they've accomplished? So, an integrated design team needs a guideline to follow, and LEED serves very well in this regard.

There's a lot more to say about integrated design and the growing ability of design and construction teams to deliver high-performance buildings on conventional budgets, but that will have to wait for another day.

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