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Making sustainable construction process cost effective

By DAVID P. CALLAN, P.E., CEM, LEED AP,
DIRECTOR OF SUSTAINABLE DESIGN
AND HIGH PERFORMANCE BUILDING TECHNOLOGY,
SYSKA HENNESSY GROUP

New York City's new "green" buildings have been getting a lot of media attention of late, suggesting that sustainable construction is moving into the mainstream. Yet despite the receptive attitude of the real estate market and the general public towards sustainable building practices, there have been a

number of projects that have lowered their LEED certification expectations or simply deleted the LEED option altogether during the past two years. The culprit: high construction costs.

Since 2004, the cost for construction materials in the U.S. has steadily been on the rise. Lumber and plywood took the lead due to a surprising decline in supplies and high demands from foreign markets like China, India,

and Brazil.

Rising oil prices caused concrete and gypsum to quickly follow suit. And steel, suffering from both high energy costs and increased foreign demands, has topped the list with prices rising by 80 percent over the past two years.

In response to resulting financial pressures as well as a lack of alternative resources, many building owners, real estate investors and state officials have decided to put their sustainable aspirations on the back burner.

As a major New York real estate investor put it,

"Any additional costs are simply out of scope and can't be afforded in any way." This attitude, while prevalent, is not always correct.

The widespread notion that sustainable building practices have to be sacrificed to keep costs in check derives from the current market's practice to prioritize first cost over long-term savings. Whenever a project owner or owner's representative requests a back-up plan for priorities based on sustainable strategies, the focus is primarily on first cost and first cost only.

Some do seek to create a balance between first cost and proposed payback strategies. But only a few give priority to environmental benefits such as indoor environment quality (IEQ) or optimal water or energy use.

Furthermore, when it comes to "green" projects, there is a tendency to rely solely on the design team to estimate the cost impact of sustainable solutions. Often in these cases, the project's construction managers do not have the familiarity with a proposed technology, or are brought on board too late to make a contribution.

Construction managers with sustainable building experience can aid the architect and engineer in the development of cost-effective, constructible, "green" alternatives. This will help ensure that the LEED certification process is on the right track.

Unfortunately, some in the industry have been making a serious effort to decrease "Green Premium Costs" in an attempt to mitigate the recent construction cost increases. While it is imperative that a project team meet its first cost financial obligations, it is short sighted to develop real property that does not meet the increasingly commercially viable standards embodied in a sustainable building.

Interestingly, these cost increases sometimes have the effect of moving the market to more sustainable practices.

For instance, with steel construction, recent raw material price increases have actually encouraged a global effort to recycle structural steel, scrap, and even steel cans for the eventual reformation of new structural steel.

In fact, the recycling rate for steel increased to 75.7 percent in the United States in 2005. Moreover, this kind of recycling reduces the solid waste generated during the construction process — after all 2.5 pounds of waste per square foot of floor space for the average North American commercial building is not cheap to remove.

We know that the environmental footprint of the construction industry is considerable. Beyond the fact that 40 percent of the total solid waste stream in the U.S. comes from construction waste, the building industry consumes three billion tons of raw materials annually, accounting for 40 percent of the total material flow in the global economy.

We must also recognize that the manufacturing of new materials is water and energy intensive and contributes to environmental degradation and pollution.

Therefore, with steel as an example, we should challenge ourselves to search out the sustainable opportunities that exist in a high cost bidding environment rather than abandoning these goals altogether. Any contribution — no matter how small — that we can make to render construction practices and buildings more sustainable is a worthwhile investment in the planet and in our future.

Done carefully, the sustainable construction process can be cost effective, especially when calculated over the life cycle of a facility. ■

