



Wisconsin

BUILDER

June 2008



The
GREEN Issue

Sustainable solutions to overcome Wisconsin's winters, thriftiness

By Chris Rozof

In the last decade, I have worked with owners, designers and municipalities to apply sustainable principles to construction projects.

When applying those principles in Wisconsin, we face some unique challenges. First, Wisconsinites are known to be thrifty. Second, winter constitutes a significant portion of the year.

Fortunately, these challenges can be overcome with a little education and some thoughtful choices.

I find, all too often, clients look to use the traditional design-bid-build delivery method for projects because they perceive this to be the least expensive approach. I believe this to be a misconception for projects in general, especially when trying to provide the best value on a sustainable project.

The design and construction of a sustainable project requires a team approach. The client, designers and contractor need to be brought together at the start of the project.

Inclusion of the contractor upfront enhances the team's ability to analyze constructability issues and accurately budget various alternatives before the project goes to the subcontracting community for competitive pricing.

Measures of sustainability directly relate to how work in the field is performed by the contractor. Means and methods are a contractor's domain.

Having access to this kind of information as the design evolves will allow for better sustainable choices and fewer surprises and cost overruns while still giving a client competitive pricing through the subcontracting committee.

Even if a team approach is utilized from the design phase of the project, Wisconsin's weather still creates challenges in achieving sustainability.

Let's say a client bought into the team concept



but then says, "I want a LEED building built in Wisconsin."

What now? The Leadership in Energy and Environmental Design rating system is one of the most recognized methods in the country of documenting how to achieve a green building project. The U.S. Green Building Council developed a rating system that uses score cards to document the degree of sustainable elements in a project.

The owner sees a LEED score and the reference manual and thinks, "This sustainable thing looks fairly easy. Follow a few simple guidelines and voila, I have a green building."

Well, it's not that simple.

The USGBC designed the LEED rating systems to be flexible enough to be applied across the country. We live in Wisconsin. What is appropriate for Phoenix may not be appropriate for Madison or Milwaukee.

The challenge to the team is to select elements that provide the most logical sustainable benefits for their geographic circumstances.

Looking back at some projects, we discovered a few LEED options that do not translate well to our climate in Wisconsin. One owner, for instance, insisted on installing a white roof because LEED

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for new construction offers a credit for reducing the heat island effect on a building.

The building was a 500,000-square-foot, heated warehouse with no air conditioning. The specified white roof results in a \$1-per-square-foot cost premium compared to a similar light grey ballasted roof system.

Thinking about this for a minute, several attributes did not seem to make sense:

1. The building in question was in a rural area, so the cumulative heat island effect that is experienced in urban areas was not in play at this site.
2. This is Wisconsin, where we spend more time heating buildings than cooling them. Therefore, a slightly darker roof can be of greater benefit (when factoring in winter) than a white roof membrane.
3. This building is not cooled. No additional energy is expended in the summer due to having a slightly darker roof.
4. The white roof was a \$500,000 premium. Could that money not be better spent on other sustainable elements more suitable for our climate? If this building was in Phoenix, my analysis would have been different. But it was to be constructed in southeastern Wisconsin.

Sustainable building practices are increasing throughout our marketplace. To grow, it will take a better understanding that design-bid-build delivery needs to be set aside, and sustainable guides such as LEED must be reviewed and applied in the best way for the project location.

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