

## **Construction News • FOCUS Article: Green Building Trends**

*By Bob Crittenden*

*Project Control, President & CEO*

### **Building owners, design-build community moving to energy-efficient, sustainable structures**

From your neighborhood grocer providing re-usable shopping bags to your dry-cleaner recycling wire hangers, it seems like just about everyone is “going green.” And recently, “building green” has become a primary concern with building owners and the design-build community. As many of you know, the U.S. Green Building Council (USGBC) has set standards for building structures that are energy-efficient, sustainable and socially-responsible with respect to the environment. The USGBC sets very particular guidelines with the Leadership in Energy and Environmental Design (LEED) Green Building rating system that allows a building to achieve various levels of certification.

The LEED system takes a holistic approach that potentially impacts the entire built environment and encompasses more than just energy conservation. LEED can be applied to any type of construction, so not only can we use LEED guidelines for new buildings, but as we renovate, we can also apply LEED to improve the environment within buildings that already exist. Additionally, the LEED system has guidelines for site development, water savings, energy efficiency, materials and resources selection, and indoor environmental quality to ensure that each construction project’s overall impact to the environment is minimized in every way possible.

Over the years, I’ve worked with building owners who were willing to design sustainable buildings and do a portion of the things that LEED requires for certification, but with today’s high energy prices and rising fuel and materials costs, more and more owners are interested in pursuing LEED certification. This is evidence that building owners want to be a part of the solution. Not only is building green the right thing to do, but it helps companies with employee recruitment and retention, as well as overall community perception. Additionally, building owners want to be more environmentally-responsible because it affects their long term maintenance and energy costs.

Now that the LEED building program has become more commonplace, the primary benefit of these guidelines is the uniformity of standards across all construction disciplines. Now that everyone can be measured by the same standards, there is a sense of understanding throughout the industry as to the cost and importance of building green, as well as a sense of accomplishment that the design and construction community can have a huge impact on energy use. The only challenge to certifying more buildings is the education of owners and industry professionals of what the standards are and what it takes to put them into practice.

San Antonio, like a lot of other cities across the country, has adopted energy codes that now provide guidelines for things like lighting levels and building envelope performance. The baseline for energy conservation is now for the most part codified. This is particularly important in San Antonio, where the citizens own the power company. The cost to generate and distribute power is immense, and the benefit of reducing those energy costs over time is equally great.

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What we're seeing today is that the additional investment in a project to earn LEED certification is reducing incrementally because municipalities are adopting codes in-line with LEED guidelines. A building owner might pay a premium of about two to three percent on construction cost to achieve certification - depending on the level of certification, but over the lifespan of that building, those costs are more than offset in the savings on utility bills, building maintenance costs and other economic benefits. While those savings won't be seen on day one, industry professionals are still working to quantify what applied LEED design elements mean to the environment for the people who occupy the building.

Innovative approaches are being introduced in some parts of the U.S. and particularly in Europe and Asia where geothermal energy is being drawn from deep foundations as a means of reducing overall energy requirements of a building. Buildings are incorporating wind turbines and photovoltaic cells to produce part of their energy. There are even efforts to design and build energy balanced or self-sustaining buildings which would require little or no outside resources to keep the building in operation. Undertaking this kind of effort is expensive, and it's not for everybody, but it's exciting that as a design-build community we are beginning to experiment with innovative ways to reduce our overall environmental impact.

One thing is certain – the world will continue to see billions of square feet of new construction in the years ahead. The materials and methods used as well as the people who will plan, design and construct those buildings will have an enormous impact on our environment. Utilizing LEED guidelines will help preserve our natural resources and improve our quality of life.