

Implications

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LEED and the Design Professional

Sustainable design has been a growing concern within the design and construction industry during the past several years (See *Implications*, Volume 1, Issue 6). This interest is not limited only to designers and builders. The general public is becoming more aware that buildings and industry are the chief energy users. In fact, over 36% of total energy use in North America can be attributed to the operation of buildings alone (USGBC, Web site), meaning that they contribute greatly to the environmental degradation occurring on the planet.

Many state governments have led the charge to improve the way in which buildings are conceived and constructed. California, Iowa, Indiana, Maryland, Massachusetts, Minnesota, New Jersey, New York, North Carolina, Oregon and Pennsylvania have already adopted legislation requiring state-funded projects to be sustainably designed. However, private sector clients are starting to request that projects be designed sustainably as well. A recent survey of design professionals shows that 87% of respondents noted an increase in green building requests from private sector clients in the past two years (*Environmental Design and Construction*, 2004).

Benefits of Sustainable Design

Sustainably designed projects are better environmental, economic, and occupant-oriented performers than other projects of their type. They enhance ecosystems, improve air and water quality, reduce solid waste, and conserve natural resources. Besides the obvious environmental benefits, the bottom line is that sustainable design can save money while improving indoor air quality, increasing occupant comfort and productivity, and enhancing asset value while reducing operating costs. On average, a building's first costs—those costs required to build the building—represent only about 6-8% of the total costs that will be spent over the life of the building. The balance—92-94% of the cost of the building over a 35-year period, contribute to the ongoing operations and maintenance costs (Morton, 2002). Knowing this, it becomes clear that the best and most effective place to realize significant savings can be seen in the operations of the building.

A sustainably designed building—depending on the strategies employed—will allow savings of 30-50% or greater of a building's annual operating costs. These savings represent millions of dollars over a building's lifetime, capital that can be saved or spent elsewhere. These cost-savings can be easily predict-



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ed early in the design process and the performance measured during occupancy of the building.

Sounds great, how do we do it?

For those who are not familiar with or adept at sustainable thinking and design, there are some tools to help. Many states and cities have developed their own set of guidelines tailored to their specific region, microclimate, and needs. On a national level, the United States Green Building Council (USGBC) created the LEED Guideline and Rating System (Leadership in Environmental and Energy Design) in 1993 to provide a resource and common standard of measurement that would promote integrated, whole building design practices and transform the construction industry. While there is great danger in trying to make any standard fit every microclimate in every region, the success of the LEED program has been remarkable. It has quickly become the national standard for sustainable guidelines and offers application guidelines for new construction, existing buildings, multiple buildings, commercial interiors, laboratories, core and shell, and others. Membership in the USGBC has grown to nearly 5,000 with members from over 12 countries, a 1000% increase in the last four years (USGBC, presskit).



A high performance building that matches the architectural character of the capitol area, the new offices for the St. Paul Public Housing Agency (SPPHA, St. Paul, MN) uses 49% less energy than code requires.

Strategies increased the costs over traditional construction budgets by less than 2% and feature payback periods of less than six years (two years for most strategies). The SPPHA also anticipates gains and productivity and workplace efficiencies.

Benefits of LEED Certification for Buildings

So what is the value of obtaining LEED certification for a project and why is it important? If we design a building to be “green” isn’t that its own reward? To some extent, this is true, but in many ways it is not.

Sustainably designed, “green” buildings produce many returns to the building owner and/or occupants, including improved building performance. However, there are also a number of aspects of green buildings that depend upon the perceptions of the marketplace. These can only be realized if the building can be demonstrated to have been designed and constructed to meet certain green building standards, and certification under the LEED rating system is the one of the best ways to ensure this.



The SPPHA offices utilize exterior shading devices and proper glass selection to help harvest daylight for use on the interior and help reduce energy load.

There are several benefits that you get with LEED that you don't get without it: enforcement of complete implementation of designed green features; third-party rating of degree of sustainability (eliminates false or self-promoting claims); benefit of LEED “brand” association; and incentives from public agencies. Financial incentives, awards, streamlined permitting process or Energy Tax Credit Programs are available in many communities and are of great interest to developers.

Okay, so how do I get LEED Certified?

Well, you don't. Only buildings get LEED Certified. People become LEED Accredited. How does that work? To become accredited, you need to take a test.

You can register online through the USGBC Web site—find a testing facility near you and take the exam at your convenience. The test itself takes only a couple of hours. Taking the exam is one thing. Passing it is another. You will fare well if you have a deep knowledge of the construction industry and the requirements and processes of the design professions. You will fare better if you already practice environmentally sound design. You will fare best of all if you also take a workshop and study the reference guide. Workshops are offered in every region of the country throughout the year and nearly every major metro area has at least one testing site available for taking the exam. As of mid-summer 2004, more than 19,000 professionals have taken LEED training workshops and over 10,000 professionals have become LEED Accredited. Those are impressive numbers.



University of Wisconsin Barron County Student Housing. Environmentally responsible student housing features strategies that will reduce energy load by 60-70%.

Benefits of Accreditation

So you've taken the exam and you're accredited—what good does that do? Well, beyond the additional certificate you get to hang on your wall and the new set of initials you can add after your name on your resume and business cards, accreditation does give you some measure of credibility and leadership within the profession. This is good marketing power. It also helps you get involved further and deeper into

the sustainable design community. Above all, LEED accreditation and the LEED process helps forge a common and shared language and approach to design between disciplines. Engineers find it easier to talk to architects and interior designers. Landscape architects become a more integral part of the process. Builders, developers, and contractors all participate in the design process and become stronger partners, advocates, and team members. Like all good things in life, none of this comes for free. Go to the USGBC Web site (<http://usgbc.org>) for costs associated with accreditation and certification.

I've passed the test, now I'm an expert?

Not so fast buddy. It is true that once you've passed the exam—you're a LEED AP. But just like in driving a car, or visiting your favorite doctor, experience matters. Familiarity with the concepts and ideas at hand can only get you so far. The adroitness with which one handles the design concepts comes with time and experience of having applied these principles to projects over and over again. You'll learn what it takes to make buildings 30-50 % more energy efficient than code and their brethren. You'll learn the trials and tribulations of trying to use a photovoltaic array or a green roof on a building and not quite being able to make it pay back within its lifecycle, or get the client interested enough to do it regardless of the cost. You will learn that you won't be able to do everything on every project every time.

Above all you will learn ways to educate and interest your clients. After all, everyone is interested in saving money and finding ways to accomplish many of the strategies—the low hanging fruit—on nearly every project, even if the client hasn't expressed an interest. This isn't magic. Much of this is simply good design. It is up to us as professionals to incorporate these principles into the most common aspect and practices of our work.



The Cedar Rapids Iowa Federal Courthouse team discusses sustainable design issues at their monthly project team meeting.

Caution—There be dragons ahead

Like anything else, designing sustainably as an inherent aspect of your approach to design is easier if you are passionate about the work and love finding simple, creative solutions to complex issues and problems. Great buildings are made through thoughtful and carefully considered design decisions. Design is not done by blindly following a checklist or guideline—no matter how good. Perhaps you've had the experience of going to a restaurant for a fine meal and then trying to make it again at home but it doesn't quite taste the same. That's because cooking is more than just lumping a bunch of ingredients together in a bowl and popping it all into the oven. It matters how much of each ingredient is used, in what order they're combined, where it's being made, and quite often, who is doing the cooking.

Nor can sustainable design be achieved by single strategies alone. Chocolate chip cookies are wonderful things unless the only ingredient used is flour. Likewise, you can't simply put a few more windows in a building and call it a "daylighting strategy." You can't do just daylighting and hope to reduce a building's energy load and operational costs. Single strate-

gies are usually not effective in and of themselves. Rather, it is the collection and interdependence of a wide array of strategies both small and large that make the difference. This is the real lesson and goal for the design profession—the need to recognize the interdependence our buildings and bodies have with the natural world and to begin to design with that interdependence in mind.

References

—United States Green Building Council (USGBC), <http://www.usgbc.org/AboutUs/whybuildgreen.asp>

—Editor's Note: "Survey Says: Green Building is on the Rise." (2004, May). *Environmental Design and Construction*.

—Morton, S. (2002, November). "Business Case for Green Design," *Building Operating Management*.

—USGBC Presskit, <http://www.usgbc.org/AboutUs/whybuildgreen.asp>

What Do Clients Expect?

Because the demand for sustainable design is relatively recent and still growing, many people do not have experience with the process, methods, and ideas that sustainability requires. Because of this, clients are looking even more to us as design professionals to lead the process. Peter Kilde, Director of the non-profit group WestCap—whose mission to eliminate poverty is supported in part by its development of low-income and affordable housing—states, "We know our mission. Environmentalism is simply part of that mission. Part of what it means to be a good company includes behaving in a socially and environmentally ethical manner. It has also proven to be the right thing to do economically too. Designers must adopt the ethic—not just talk about it, and find ways to make the practice of it as affordable as possible. We know where we want to go, we

really expect design professionals to tell us how to get there. We need you to lead.”

Being LEED accredited is a good start but it isn't always enough. Elements founder Jason McClennan, a nationally recognized leader in the sustainable design movement opined in the January/February 2004 issue of *Environmental Design and Construction* that “LEED accreditation isn't a measure of sustainability expertise...it's too easy and it isn't enough. The test does not provide a good indicator of a person's ability to make difficult decisions during the design process to maximize the environmental performance of the project while evaluating its costs.” McClennan's statement reminds me of something my janitor father used to tell me, “you can't talk your way through cleaning a toilet”—not even a composting one. “At some point you have to get your hands dirty.” I suppose the same goes for design of any kind, but especially when talking about sustainable design.

To truly lead and make change we must begin to approach our work differently. We can't simply use LEED or sustainability as an added filter or an additional service we offer clients. We need to have it be our point of departure and basic method of working. John Knott, CEO of the Noisette Company, a sustainable development group located in South Carolina, feels that “Design professionals have completely abrogated their responsibility to lead the profession and the process. Architects and landscape architects are the best trained professionals at systems thinking out there—but are not bringing those skills and leadership that they owe the rest of the world to bear on projects. All too often all they bring are their pencils.” Clearly, that isn't enough. Knott goes on to state that developers are “desperately in need of design leadership. But it requires leadership that is not arrogant to move the process forward.” Indeed!

There is a clear need and opportunity for design professionals to do better. We must lead the process and to do so must be willing to work as partners with other disciplines to create true and mutually dependent teams. Likewise we must begin to treat buildings as systems—inherently interdependent to and part of other natural systems and laws. Design cannot be a way to make clever end runs around those systems and laws. If we seek to do this and yet try to call our buildings green we are essentially practicing “green-washing”—and making false or exaggerated claims about a building's performance. This does the building, the environment, and the design profession harm. Brothers and sisters, pick up your pencils, put away your fears, and start doing the work. It will be good.

About the Author:

Kevin Flynn, AIA, LEED AP, is president of EcoDEEP, an architectural firm with an acute focus on sustainable, high performance design. EcoDEEP combines idealism with practicality and works to balance environmental performance and economic concerns



through careful and thoughtful design with the promise that good design and environmental betterment are inherently interdependent. Kevin is a LEED Accredited design professional, a founding member of the Minnesota Chapter of the USGBC, writes, and lectures nationally relative to sustainable design.

Related Research Summaries

InformeDesign has many Research Summaries about sustainable design and related, pertinent topics. This knowledge will be valuable to you as you consider your next design solution and worth sharing with your clients and collaborators.

“Retail Applications of Sustainability and Historic Preservation” —*Journal of Interior Design*

“Local Communities and Sustainable Tourism” —*International Journal of Sustainable Development and World Ecology*

“Conserving Energy in Homes” —*Family and Consumer Sciences Research Journal*

“Conserving Native Landscapes” —*Landscape Ecology*

“Daylighting in Athens” —*Lighting Research and Technology*

“Residential Development Threatens US Coasts” —*Population and Environment*

“Information Impacts Recycling Levels” —*Journal of Sustainable Development and World Ecology*

“Impact of Drafts in a Warm, Humid Environment” —*Indoor Air*

“Inclusion of Daylighting Saves Energy” —*Lighting Research and Technology*

“Prefabricated Homes Save Money” —*Housing and Society*

“Life Cycle Assessment of Air-Conditioning Systems” —*International Journal of Sustainable Development and World Ecology*

“Sustainable Rural Communities” —*Landscape Journal*

“Environmental Programs Implemented by Hotels in Mexico” —*International Journal of Hospitality & Tourism Administration*

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Facades of SPPHA (p. 1 & 2). Designed by Kevin Flynn while at HGA, Minneapolis, MN. Photos by Kevin Flynn.

Sketch of Student Housing (p. 3) by Kevin Flynn.

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