



Constructing Efficient and Eco-friendly Buildings – How Green Can Help

By Payton Indermuehle, Vice President – Industrial Services

We live in a culture of buzzwords and the hottest buzzword of the day is “green”. Today you can’t get too far into your day without hearing the word “green” somewhere. It’s everywhere! Green cars, green light bulbs, green power, and of course green buildings.

In case you’ve missed this movement the green everyone is referring to isn’t greenbacks or being green with envy. Rather it’s all about our environment, natural resources, and how we can best steward them. Now I’m sure your first impression of this movement is that it comes from an environmental lobbyist in Washington, D.C. Well, to some extent you’re right. Although some of these groups have an interesting and realistic mission with practical approaches to improve the way we think, build, and operate commercial buildings.

According to the U.S. Department of Energy residential and commercial buildings consume 36% of the total energy in the United States. A more adequate breakdown would be 65% of the electricity, 30% of the greenhouse gas emissions, 30% of the raw materials, 30% of the waste output, and 12% of the potable water is all consumed by real estate structures annually.

A couple of organizations that have pioneered and expanded the green building movement are the U.S. Green Building Council (www.usgbc.org) and the Building Technologies Program of the Office of Energy Efficiency and Renewable Energy, a division of the U.S. Department of Energy (www.eere.energy.gov). These two organizations are the most prominent in fueling the green commercial building initiatives.

The U.S. Green Building Council (USGBC) is a non-profit industry led organization whose members are from all areas of the building industry. There are over 15,000 organizations working together to promote the development of structures that are environmentally responsible, profitable, and healthy places to live and work. Their mission is to transform the way buildings and communities are designed, built and operated. This should enable a socially responsible, healthy, and prosperous environment that improves the quality of life. The method the USGBC uses to promote this is thru their Leadership in Energy and Environmental Design (LEED™) Green Building Rating System, a third-party certification program.

The LEED Green Building Rating System has origins back to the late 1990’s. Since that time the system has grown and morphed as more environmentally friendly and energy efficient building components have become available. Now in version 2+ this point-based program focuses on six areas of design and implementation: Sustainable Sites (14 points), Water Efficiency (5 points), Energy & Atmosphere (17 points), Materials & Resources (13 points), Indoor Environmental Quality (15 points), and Innovation & Design (5 points). Currently an applicant can reach LEED™ certification by complying and earning 26 points. The more points earned the higher the LEED™ rating. The ratings start with Certified (26 – 32 points) then progress to Silver (33 – 38 points), Gold (39 – 51), and finally Platinum (52 – 69 points).



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A 2005 LEED report titled “The California Study” stated that 33 diverse buildings were built to LEED standards over a 10 year period and the additional cost of these standards came in at 1.8%. Five of these buildings incurred no additional cost above a conventional design approach. Generally, the green improvements paid for themselves within 3 years having annual return on investments of 25-40%. The perception of LEED by large corporations has been positive with many desiring LEED certified buildings as these facilities fit their environmental goals as well.

The other major organization promoting green buildings is the Department of Energy (DOE). Through their Office of Energy Efficiency and Renewable Energy’s (EERE) Building Technologies Program the building industry and manufacturers work together to conduct research and development technologies for energy efficiency. One of the Building Technologies Program’s efforts is to promote “high-performance buildings”. The goal of this program is to standardize commercial buildings with energy, economic, and environmental performance that is substantially better than standard practice. These buildings must become energy efficient which will save money and natural resources. A high-performance building is a healthy place to live and work for its occupants and has relatively low impact on the environment.

To design a high-performance building the EERE promotes a “whole building design” approach. Whole-building commercial design considers all building components during the design phase. It integrates all the subsystems and parts of the building to work together. Because all the pieces must fit together, it is essential that the design team be fully integrated from the beginning of the process. The building design team can include architects, engineers, building occupants, owners, and specialists in areas such as indoor air quality, materials, and energy use.

Many of the suggestions or recommendations from the EERE’s Building Technologies Program are just that, suggestions. Although, there are some incentives for taking action. On August 8, 2005 President Bush signed the Energy Policy Act (EPACT) which provides Federal tax incentives for owners and tenants that pursue energy efficiency and renewable energy. Eligible buildings include Office, Retail, Warehouses, Apartments, and Public Buildings. Owners or tenants who purchase and install energy saving products in their businesses and achieve a 50% reduction in annual energy costs (as compared to a base building) will qualify. The deduction may be taken against three energy using systems: Heating/Cooling and Water Heating systems, Building Envelope, Lighting Systems. If qualified a deduction of up to \$1.80 per square foot off the cost of the system is available. (For information see the EERE website <http://www.eere.energy.gov>)

So which program is best? I believe it takes a combination of both to create a sustainable, efficient, and eco-friendly facility. One thing is certain at this point. There is a paradigm shift



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coming in how we build real estate. It's not a theory or an idea anymore. Green buildings are coming to a street near you.

If you are interested in learning more about how Indermuehle & Co. can help you or your company with commercial real estate decisions, please contact Payton Indermuehle at 281-207-3708. Payton Indermuehle is a licensed Texas Real Estate Broker and Vice President of Industrial Services at Indermuehle & Co.

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