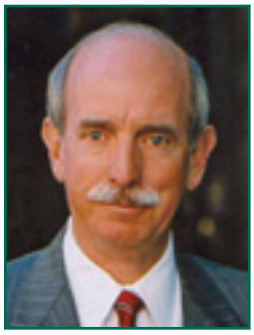
Business Case for Environmental Design



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By William Beck, SIOR

"Green" is a word that gets a lot of press these days. In some cases, the assumption is that Green is of interest to environmentalists only and has no practical economic advantage. This assumption is wrong. Green buildings are the wave of the future and are being built today with practical economic advantages. Studies show that total occupancy costs are reduced; thus the Green buildings have a competitive advantage over older office buildings.

An article by Charles Lockwood in the June 2006 *Harvard Business Review* addresses the future of this type of construction. Lockwood writes, "The owners of standard office buildings face massive obsolescence and they must act now to protect their investments. Soon financial institutions and investors will use new valuation methodology to quantify important Green building factors like productivity and long-term life cycle costs when determining real estate values." Lockwood dispels the notion that it always costs significantly more for Green. He quotes Turner Construction Chairman Thomas C. Luppert, who referred to four industry studies of more than 150 sustainable buildings across the United States to show that, on average, it costs only 0.8 percent more to achieve a basic Leadership in Energy and Environmental Design (LEED) certification than to construct a standard building. Lockwood concludes his article by saying, "The Green future is here. Like the dramatic, occasionally unsettling, but ultimately beneficial transformation brought by the introduction of electric lights, telephone, elevators, and air conditioning, Green building principles are changing how we build and use our workplace."

The governing body for the LEED certification is the United States Green Building Council in Washington, D.C. Based on the criteria they have established, building designs receive one of four ratings: Certified (the basic level), Silver, Gold, and Platinum, the highest level.

Banner Bank—a Case Study for Green

The Banner Bank Building, an 11-story, 180,000-square-foot office building in Boise, Idaho, offers a case study in the application of these new concepts. This building achieved the Platinum Leed rating. Since it is the greenest of the Green, one might think it was significantly more expensive to build than a traditional building. That was not the case. Bear in mind, though, that the development and design team understood and embraced the mindset of using new construction materials to achieve these lower costs. If a team is unfamiliar with these methods and adds a large contingency factor, it is unlikely to have a competitive shell cost.

Construction Costs

In many cases, Green buildings do not cost significantly more than conventional construction. For example, the contractor that built the Banner Bank Building was building a three-story, 40,000-square-foot suburban office building in Boise at the same time. Since the Banner Bank Building was downtown, the site was much tighter and required more elaborate staging for building materials. Nevertheless, the shell cost of the Banner Bank Building was only $2 per square foot more.

Can You Call it Green?

There are three specific areas that qualify a building to be called Green:

Energy

According to an article in the July 2006 edition of *National Real Estate Investor*, energy costs represent roughly 40 percent of a landlord's operational costs. Operating costs are significantly lower with Green design and construction. In its November 19, 2004 issue, *The Kiplinger Letter* stated, "If you want lower energy bills, conservation is your only real option." We can add another option—turning to a Green building design for new construction. Energy efficient buildings are tremendous cost savers from day one.

The landlord of a Green building can charge the same rent as his or her competitors and, with lower energy costs, has a more profitable building. Because of the energy efficiency of the building, the landlord has the option of lowering rental rates and leasing the space more rapidly.

The Banner Bank Building is designed to use 50 percent less energy than a similarly sized structure. The building's Green design and technology reduce operating costs in many ways. For instance, the Banner Bank Building has "pendant" light fixtures, which provide indirect lighting. This lighting requires 30 percent fewer tubes. The entire system is controlled by motion sensors. There are also photosensitive monitors that automatically dim lights on sunny days and brighten them on gray days. Moreover, in event of a brownout, the building can globally power down all lights on a percentage basis to help the local utility meet power demands.

The building uses an under-floor HVAC system rather than ducting in the ceiling. This allows the ducting to service specific office/work stations more efficiently. Each office has a thermostat. The cumulative effect is that the entire space requires less fan pressure, and since the air enters the room from the floor, it only has to be cooled to 63 degrees rather than 55 degrees from the ceiling. The result is lower energy consumption.

Air Quality

The greener the building, the better the indoor air quality. According to a 2002 study, "Health and Productivity Gains from Better Indoor Environments," by William J. Fisk of the Lawrence Berkeley Laboratory, a survey of 100 office buildings showed that 23 percent of office workers experienced frequent symptoms of "Sick Building Syndrome." The U.S. Environmental Protection Agency Web site (http://www.epa.gov/iaq/pubs/sbs.html) describes Sick Building Syndrome (SBS) as "the term used to describe situations in which building occupants experience acute health and comfort effects that appear to be linked to time spent in a building, but no specific illness or cause can be identified. The complaints may be localized in a particular room or zone, or may be widespread throughout the building." Complaints usually include respiratory ailments such as allergies and asthma.

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The Banner Bank Building uses low off-gassing materials, finishes, and paints and so is low in VOCs (Volatile Organic Compounds). Even when the building first opened, there were no strong odors of glue, formaldehydes, paints, etc. One large user's decision to occupy space in the Banner Bank Building was due in part to the problems they were having in a "sick building."

Recycled/Recyclable Building Materials and Water

To achieve Platinum status, the Banner Bank Building used recycled or recyclable materials wherever possible.

- Interior partitioning was used instead of gypsum board, which must be demolished and discarded for any modification. The partitions are a module system called Nordwall. Walls can be easily moved to accommodate a tenant's changing needs without the noise, dust, and inconvenience associated with drywall. Further, it is more effective than drywall in diminishing sound transfer. Available finishes include painted surfaces and a melamine finish that enhances the interiors. (It should be noted there are tax benefits of accelerated depreciation available on the movable interior partitioning system, the open plenum access floor, and the pendant indirect lighting fixtures).
- More than 75 percent of construction debris was separated, collected, and picked up at the job site for recycling.
- More than 40 percent of the construction material incorporated recycled content.
- The water supply incorporated an innovative water reclamation system that collects storm water, filters it, and recycles it as gray water to provide the majority of the water needed for sewage conveyance.

Holding the Future

Does anybody think energy costs are going to be lower in the future? As a broker with 30 years' experience, I think in the near future, tenants and landlords will have a new column on the spreadsheets that they use to compare competitive buildings in their area. In addition to the usual columns such as "Rentable sq. ft." and "Parking," there will be a column that refers to a building that is Green or energy efficient. This new column will allow tenants to easily compare buildings to determine, for instance, the impact of "pass throughs" during a lease on such items as energy consumption. An energy-inefficient building will obviously be more expensive for the tenant. Thus, tenants will be able to determine the real occupancy costs during the lease term. Landlords will want this column so they can determine how to price their buildings relative to the competition and how to weigh the economic benefits of possibly redesigning and retrofitting an existing building. The marketplace will drive this analysis. It is not a question of whether or not this will happen—it is happening.