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The Business Case for Green Buildings

The business case for green buildings rests on five legs: economics, risk management, marketing, government relations and employee relations. Most people look only at the economic benefit of savings on energy costs, neglecting the mounting evidence that green buildings return higher rents, offer faster letting, secure greater occupancy and generate higher resale value. In an economic environment where quality is foremost, green buildings offer higher quality at modest additional cost. Green buildings also reduce a variety of risk factors, including marketing, financing and securing political authorization to develop. They also offer greater public relations and marketing benefits, assistance with stakeholder relations and, perhaps most importantly, provide a positive story to tell to employees of development firms, thereby aiding in recruiting and retaining key employees. While the economic slowdown and global financial crisis is likely to affect overall commercial construction significantly in 2009 and 2010, the green building movement is likely to continue to gain market share over the next five years.

The business necessity for commercial green buildings in 2009 in Europe and North America is simply this: if your next project is not a green building, one that's certified by an established third-party rating system, it will be functionally outdated the day it's completed and very likely to underperform the market as time passes. An entire building portfolio could be at risk in this time of rapid market convergence toward sustainable building. This statement holds true, in spite of the severe economic situation affecting commercial property throughout North America and Europe. In my estimation, within two to three years, the business case for green buildings is going to be part of "business as usual;" a developer ignores this emerging market force at his own peril.

Incentives and Barriers to Green Development

Still, there are barriers to the widespread adoption of green building techniques, technologies and systems, some of them related to real-life experience and the rest to perception in the building industry that green buildings still add extra cost far in excess of their benefits. This is surprising because senior executives representing architectural/engineering firms, consultants, developers, building owners, corporate owner-occupants and educational institutions have long held positive attitudes about the benefits and costs of green construction, according to the 2008 Green Building Market Barometer, a survey conducted last year by the Turner Construction Company, among 754 construction and design industry executives.

Green Buildings Lead to Long-Term Cost Savings. In this survey, 84% of executives said that energy costs were lower in green buildings, and 68% said overall operating costs were lower. Green buildings create an attractive cost/benefit ratio, according to most executives, and are considered to be less expensive than non-green buildings for several key measures of cost.

The Further Case for Green. In addition to a reduction of energy costs, survey respondents cited most often the following benefits of green buildings: improved health and well being of occupants (76%) increased building value (72%) and higher asking-rents (65%). Survey respondents noted several other benefits to green building, including overall higher return on investment (52%), higher occupancy rates (49%), increased worker productivity (46%) and improved learning in schools (41%).

This survey reported the following extremely or very significant obstacles to green construction: the costs of LEED (third-party) documentation (61%), higher construction costs (61%), the length of the payback period (57%) and the difficulty quantifying the benefits of green building (43%). Although 54% of executives noted that the cost of LEED documentation is an "extremely" or "very significant" obstacle to green construction, 83% of executives said they would be "extremely" or "very likely" to seek LEED certification if they are planning to build within the next three years. Among executives who think the first cost of green buildings is higher, roughly 75% believed green buildings can pay back their higher initial costs, with this figure rising to 84% among those who would seek a higher-level LEED certification. The median estimated payback period cited by executives for sustainable features was 7 years.

Interestingly, these findings echoed a 2007 study by the World Business Council for Sustainable Development. In this study, the Council found that industry participants overestimated the cost premium for green buildings typically by 300%! Respondents to a 1400-person global survey estimated the additional cost of building green at 17% above conventional construction, more than triple the true cost difference of about 5%. At the same time, survey respondents put greenhouse gas emissions by all buildings at 19% of world total, while the actual number of 40% is double this.

Building the Business Case

The business case for green development is based on a framework of benefits: economic, financial, productivity, risk management, public relations and marketing, and funding. Table 1 presents an outline useful for understanding the wide-ranging benefits of green buildings, which are examined in detail in the following section. It's important to note that not all of these benefits accrue to all parties in the business of building development, design, construction, operations and management. For example, a building owner of leased space cannot directly benefit from productivity and health gains among office workers (but those gains, if documented, can be a powerful incentive to stay in the building.) On the other hand, a tenant cannot gain from increased building valuation owing to higher "net operating income," but can benefit from lower energy costs. Perhaps the major beneficiaries of almost all the business case benefits are long-term owner/occupants of buildings, such as government agencies, schools and universities and large corporations occupying their own facilities.



Table 1 Major Business Case Benefits of Green Buildings

1. Energy and water cost savings
2. Increased building valuation from higher profits owing to such savings.
3. Possible incentive payments from government and utilities
4. Increased rent and occupancy
5. Productivity and health benefits for office occupants.
6. Risk management (economic, financial, market, legal, political, etc.)
7. Marketing and public relations
8. Increased in reputation value for public companies
9. Recruitment and retention of key personnel
10. Access to capital from responsible property investing funds

Economic Benefits

Increased occupancy and higher rents; greater resale value. The Holy Grail of green building for developers is securing good tenants and getting higher rents. A 2008 survey by the respected commercial

database provider Costar documented the results of a three-year study of some 1,300 properties, 960 of which were certified to the U.S. Energy Star standard and 340 to the LEED green building standard. Compared with similar properties within a quarter-mile (400 meter) radius, LEED-certified buildings had 4.1% greater occupancy and \$11.33 per sq.ft. (about 30%) higher rent. In addition, those buildings that were sold during the study period received about \$171 per sq.ft. (again, about 30%) higher prices. Similar results were found in a study conducted at the University of Maastricht in the Netherlands.

Reduced operating costs. With the real price of oil likely to stay high for the next 20 years, natural gas prices at near-record levels and peak-period (typically summer air-conditioning) electricity prices rising steadily in many metropolitan areas, energy-efficient buildings make good business sense. Even in "triple-net" leases (the most common type in the US) in which the tenant pays all operating costs, landlords want to offer tenants the most economical space for their money. For a small incremental investment in capital cost, green buildings will save on energy operating costs for years to come, typically with one to three year payback of the additional capital.

Reduced maintenance costs. More than 120 U.S. studies have documented those energy-saving buildings that are properly commissioned at \$0.50 to \$1.00 per sq.ft. (\$5.38 to \$10.76 per sqm) of initial cost (equal to one year of energy savings) show additional savings of 10% to 15% in energy costs. They also tend to be much easier to operate and maintain.

Productivity Benefits

In the service economy, productivity gains for healthier indoor spaces are worth anywhere from one to 5% of employee costs, or about \$3.00 to \$30.00 per sq.ft. (\$32 to \$320 per sqm) of leasable or usable space. This estimate is based on average employee costs of \$330 to \$500 per sq.ft. per year, or \$3550 to \$5400 per sqm (based on \$50,000 average annual salary and benefits and 100 square feet to 150 square feet per person). With energy costs typically less than \$2.50 per sq.ft. (\$27 per sqm) per year, it appears that productivity gains from green buildings could easily equal or exceed the entire energy cost of operating a building. Median productivity gains from high performance lighting of 3.2% in 11 studies were reported by Carnegie-Mellon University in Pittsburgh, Pennsylvania, or about \$1 to \$2 per square foot per year, an amount equal to the cost of energy. This is in addition to a reported average savings of 18% on total energy bills from proper lighting. For corporate and institutional owners and occupiers of buildings, that is too much benefit to ignore.

Considered this way, if a building owner can get a 10% improvement in productivity from a green building with exceptional daylighting and lighting quality, or about \$30 to \$60 per sq.ft. increase in output, it would always pay for that company to build a new building and put its employees to work there. In other words, the productivity increase would pay for the entire building! Even a 5% improvement in productivity would pay for half or more of the rent or cost of the new green building.

Risk Management Benefits

Green building certification can provide some measure of protection against future lawsuits (an especially important consideration in the US) through third-party verification of measures installed to protect indoor air quality, beyond just meeting building code-required minimums. With growing concerns about mold and its effect on building occupants, developers and building owners are focusing considerable attention on improving and maintaining indoor air quality.

Faster permitting, planning approval or special permit assistance can also be considered a type of risk mitigation. In Chicago, Illinois, and Los Angeles, California, for example, the city government has created the position of green projects administrator and is allowing these projects to receive priority processing. For large projects, above minimum requirements, the city waives fees for independent code consultants. Projects in Chicago with top-rated green goals are promised a 15-day permit review.



Health Benefits

Of course, a key element of productivity is healthy workers. By focusing on measures to improve indoor environmental quality such as increased ventilation, daylighting, views to the outdoors for everyone and low-toxicity finishes and furniture, people in green buildings show an average reduction in health-related symptoms of 41.5% on an annual basis, according to 17 academic studies analyzed by Carnegie-Mellon University.

Public Relations and Marketing Benefits

Stakeholder relations and occupant satisfaction. Tenants and employees want to see a demonstrated concern for their well being and for that of the planet. Intelligent developers and building owners are beginning to realize how to market these benefits to a discerning and skeptical client and stakeholder base, using the advantages of green building certifications and other forms of documentation, including support from local utility and industry programs. This is more than just “greenwashing,” it is a positive response to a growing public concern for the long-term health of the environment. A good indication of how corporations have embraced this concept is the explosion in green building and associated four-fold increase in news stories from 2006 through 2008.

Environmental stewardship. Being a good corporate neighbor is appropriate not just for building developers and owners, but also for the larger community. Developers, large corporations, universities, schools, local government and building owners have recognized the marketing and public relations benefits (especially in their branding) of a demonstrated concern for the environment. Green buildings fit right in with this message. A good example is Adobe Systems, Inc., a major software maker based in San Jose, California. In 2006, Adobe announced that it had received three LEED for Existing Building Platinum certifications for its headquarters towers (1 million-sq.ft. of space); not only did the certification reap great publicity, but the firm showed that it had garnered a net present value return of almost 20-to-one on its initial investment.

Green buildings also reinforce a company's brand image. A consumer products company such as Wal-Mart, Starbucks and Aveda can improve or maintain their brand image by being associated with green buildings, and so they are moving in this direction. Large corporations, including those that issue sustainability reports every year – and there are more than 1,000 of them – are beginning to see the benefits of building green to demonstrate to their employees, shareholders and other stakeholders that they are “walking the talk.” In 2008, KPMG reported that 200 of the 250 largest global corporations issued such reports.

More competitive product in the marketplace. Speculative commercial and residential developers are realizing that green buildings can be more competitive in certain markets, if they can be built on or close to a conventional budget. Green buildings with lower operating costs and better indoor environmental quality are more attractive to a growing group of corporate, public and individual buyers. Greenness will not soon replace known real-estate attributes such as price, location and conventional amenities, but green features will increasingly enter into tenants’ decisions about leasing space and into buyers’ decisions about purchasing properties and homes.

Recruitment and Retention Benefits

One often-overlooked aspect of green buildings is their effect on people's interest in joining or staying with an organization. It costs \$50,000 to \$150,000 to lose a good employee, and most organizations experience ten to 20% turnover per year, not all of it from people they wanted to see leave. What if a green building could reduce turnover by 5%, for example? Taken alone, the value of that would be \$50,000 to possibly as much as \$300,000, more than enough to justify the costs of certifying a building project.

Getting and keeping key employees will tax the ingenuity and resources of most companies; green buildings can help show that the company or organization and the key employees share the same values.

Working in a company that rents or owns green buildings give employees another reason to tell their friends and spouses why they are staying with an organization. Many observers expect Western Europe and Japan to have even more severe problems with an aging labor force, perhaps even more severe than in the US and Canada, since both nations still have high levels of immigration.

Investing in Green Projects

For private developers, raising both debt and equity capital is a continuing challenge. The rise of socially responsible property investing worldwide promises to reward those developers building green. In this respect, many European developers are ahead of their American counterparts, with a stronger program of corporate social responsibility. Here's one US example, however. The largest property developer in Portland, Oregon, GerdingEdlen Development, that built nearly \$1 billion of new projects annually from 2004 through 2008, has a strong commitment to building LEED Silver (or better) certified buildings in each project. In 2006, the firm completed the world's largest LEED Platinum-certified project, a major new building in Portland for the Oregon Health & Science University.

Conclusion

The business case for green buildings is solid, no matter whether one builds directly for a corporate client or construct speculative office or commercial space. By 2012, certified green buildings will hold the dominant market share of new commercial buildings. Now is the time to begin getting experience with this type of project.

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Jerry Yudelson heads the consulting practice of Yudelson Associates, Tucson, Arizona, USA, dedicated to “growing the business of green building.” A unique combination of professional engineer and professional marketer, Jerry Yudelson was a board member of the U.S. Green Building Council and served for eight years as a LEED® national faculty member. Since 2001, he has trained more than 3,500 people in the U.S. LEED green building rating system. For five years through 2008, Jerry chaired the USGBC's Greenbuild international green building conference and expo, the world's largest, to be held in Phoenix in November 2009.

Jerry Yudelson is the author of ten books on green buildings, including Sustainable Retail Development (2009, in press), Green Building Trends: Europe (2009, in press) and Green Building through Integrated Design (2008).