

Energy Conservation, Sustainability and Use of Competitive Programs in Building Operations

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Sustainable Buildings

■ **The Business Case: Annual Return on Investment (ROI)** – Sustainable buildings (or green buildings) are often referred to as “high-performance buildings,” because they operate more efficiently than traditional buildings. According to the U.S. Green Building Council (USGBC), green buildings on average use 30% less energy, produce 35% fewer carbon emissions, use 30% to 50% less water, and save 50% to 90% in solid waste costs compared to conventional buildings. And there have been numerous studies that support this.

Adobe Systems, as one case study in point, has achieved similar results for the six buildings they manage in the U.S. To date, Adobe has completed a total of 180 sustainability projects, spending \$5.3 million in the process. They received rebates from local governments totaling \$1.1 million, and they effectively reduced annual operating costs by \$4.1 million. This is a 99% annual return on investment with a simple payback of just slightly over one year. Theirs is a diverse portfolio. It includes low-rise, mid-rise and high-rise buildings. The newest building was built in 2012, the oldest in 1904. Yet they have been able to replicate these results in each of these buildings.

■ **Increased Productivity in Green Buildings** – Studies by Carnegie Mellon, among others, have demonstrated that productivity in green buildings is from .4% to 18% greater than in conventional buildings. Sustainable operations include superior indoor air quality, reduced use of hazardous chemicals, improved lighting, and greater access to natural light. Green buildings are healthier, safer, and more comfortable than non-green buildings and employees respond accordingly. Some of this improved productivity is through reduced absenteeism due to improved health. Improved motivation and morale also contribute to improved productivity. Increased exposure to natural light is associated with increased levels of cortisol, leading to increased alertness. According to the USGBC, a 1% increase in productivity is worth more than the entire cost of utilities for most buildings.

■ **Larger Investor Market for Green Companies** – Socially responsible investing has become an important element of the investment strategies of many investment funds, and environmental issues are playing an increasingly important role within corporate social responsibility (CSR). Assets in socially screened portfolios climbed to \$3.07 trillion at the start of 2010, a 34% increase since 2005. From 2007 to 2010, SRI assets increased more than 13%, while professionally managed assets overall increased less than 1%. Government-controlled funds such as pension funds are some of the largest socially responsible investors and are increasingly adopting investment strategies which favor environmentally responsible companies. As of 2010, over 12% of the investor market only invests in socially and environmentally responsible companies. Socially responsible mutual funds counted by the 2010 Trends Report increased from 167 in 2001, to 250 in 2010.

■ **Greater Appeal to New and Existing Employees** – Per an article in *Knowledge @ Wharton*, “more than 8,000 businesses around the world have signed the UN Global Compact pledging to show good global citizenship in the areas of human rights, labor standards and environmental protection...a survey by Landor Associates found that 77% of consumers say it is important for companies to be socially responsible...65% of MBAs surveyed say they want to make a social or environmental difference through their jobs...According to a Deloitte survey conducted last year, 70% of young Millennials, those ages 18 to 26, say a company's commitment to the community has an influence on their decision to work there.”

■ **Preserving Natural Resources for Future Generations** – Finally, there is the impact of our practices on the planet itself. We have a responsibility to manage sustainably, to use our resources wisely, to protect and preserve them so that future generations can continue to enjoy them, and to pass them on unadulterated to those that come after us.

Additional Resources:

<http://www.sustainabilityprofessionals.org/system/files/Valuing%20Green%20Building.pdf>

<http://www.epa.gov/P3/success/michigan.pdf>

<http://www.institutebe.com/Building-Performance-Management/Productivity-Gains-from-Energy-Efficiency.aspx>;

http://www.cmu.edu/iwess/workshops/absic_dec_2007/BIDS%20ABSIC_FINAL%202007.pdf

http://www.usgbc.org/Docs/Archive/MediaArchive/207_Loftness_PA876.pdf

<http://knowledge.wharton.upenn.edu/article.cfm?articleid=3004>

http://en.wikipedia.org/wiki/Socially_responsible_investing

LEED Certification

Sustainable means managing in a way that preserves resources indefinitely into the future, and increasingly, within the building industry, it means managing to LEED standards. LEED stands for Leadership in Energy and Environmental Design. It is the standard developed by the United States Green Building Council (USGBC). The USGBC is a 501(c)(3) nonprofit organization committed to cost-efficient, healthy and sustainably operated buildings. It is made up of over 20,000 businesses and non-governmental organizations that service the building industry, including owners, architects, engineers, contractors, developers, manufacturers, real estate companies and service providers within the building industry.

LEED certification is increasingly recognized as the standard for measuring building sustainability. Over 2.4 billion square feet of real estate has been certified through LEED. Over 40% of this has been in countries other than the U.S., over 130 countries around the world, with another 7 billion square feet in the process of being certified.

LEED is: 1) a set of standards to aspire to, 2) it is a roadmap for how to achieve these results, 3) it provides authoritative 3rd party verification of what was achieved, and 4) it is a recognition program for those that achieve this certification.

The LEED rating system offers four certification levels: certified, silver, gold, and platinum, with programs both for new construction and for the ongoing operation of existing buildings. Credits are achieved in each of five categories: sustainable sites, water efficiency, energy and atmosphere, materials and resources and indoor environmental quality.

Historically, the cost of certifying a new building through LEED adds about 1% to the total cost of construction. For existing buildings, the cost of LEED certification typically runs between \$35k and \$105k per site, depending on the size of the building. However, by bringing much of this work in-house, this cost can be reduced to \$10k-\$15k per site. Adobe Systems averaged \$11,000 per LEED certification for the 15 that were administered by in-house staff.

The value of LEED certification is that it demonstrates that a building is operated sustainably. It holds businesses accountable that what they say is true. Third-party certification also communicates a company's values in a tangible way, bringing recognition to the company that achieves it.

LEED for New Construction was initiated in 1998; LEED for Existing Buildings in 2005. Today, more than 2.2 billion square feet of office space has been certified through LEED, roughly 20% of all office space in the U.S., and the rate at which buildings have been certified is accelerating, with another 7 billion square feet in the process of certification.

- In 2005, 2% of all new projects in the U.S. were certified through LEED.
- In 2008, 12% of all new projects in the U.S. were certified through LEED.
- In 2010, 30% of all new projects in the U.S. were certified through LEED.
- In 2012, 71% of all new projects in the U.S. over \$50 million were certified.
- 25% of all existing building retrofit projects in the U.S. are now pursuing LEED certification.
- 40% of existing building owners have indicated that they are pursuing LEED certification for at least some of their buildings.
- LEED is also increasingly global; 40% of all LEED projects are outside the U.S.

LEED certification is rapidly becoming the standard worldwide for well-operated buildings.

The costs for certification are not high, and the return on investment is significant. And while it is possible to build out a building sustainably without certifying it through LEED; in the absence of 3rd party verification, there is no proof, and many feel this is a form of "green washing" – overstating what has been achieved with regards to sustainability without being able to back it up. Anyone can say they are operating sustainably, but LEED certification validates it.

Finally, the process of bringing the team together to accomplish a common goal, to work toward that goal together, to achieve it and be recognized for it and receive the plaque is a tangible result that has a very positive impact on team morale. It is a positive motivator, something that can be pointed to and celebrated.

LEED certification also is a blueprint for achieving significant sustainable operations. It guides the management team in assessing all of the areas LEED addresses, and ensures that they are being addressed as effectively as possible. When Adobe first went for LEED certification, they

had already completed 30 sustainability projects at a cost of \$888,912 with a 106% annual return on investment. They thought they had found all of the low-hanging fruit and were simply going for recognition of what they had already accomplished. In the process of going through certification, because it is such a rigorous and methodical process, they found another 34 projects at a cost of \$473,680 with an annual return on investment for those projects of 148%. Clearly going through the process of certification added significant value.

Cost: approximately \$15,000 per certification (in-house) per building every three years.

Energy Star

Energy Star is a free benchmarking tool hosted by Department of Energy through the Environmental Protection Agency. It allows buildings to compare their buildings' energy efficiency with other commercial office buildings, taking into account local climate, square footage of the building, total number of occupants, total number of PCs within the building, whether or not the building has a kitchen, data centers, garage, and so on. The building score is actually a percentile ranking of building energy efficiency, compared with all other commercial buildings in the U.S. It is one of the best energy bench-marking tools available and it is free.

No cost.

Energy Star Label

The Energy Star Label is a certification for buildings that achieve an Energy Star score of 75 or higher. The only cost is to have the Energy Star score verified by a 3rd party engineer.

Cost: approximately \$850 per building per year.

BOMA 360

The BOMA 360 Performance program is a relatively new program that seeks to drive minimum standards for effective building management within the building industry. Our job as property and facilities managers is to create neat, clean, safe, healthy, productive, sustainable, and uninterrupted work places at the lowest cost possible, and to communicate this effectively. The BOMA 360 program looks at practices within seven strategic areas of building management that include 52 key components of building management. These include: administration, operations, life safety, security, risk management, training & education, energy, environmental & sustainability issues, and tenant relations & community involvement. A building must meet minimum requirements in each of these areas in order to be certified through the BOMA 360 Performance program. The program has been embraced by larger real estate owners and management companies, including CBRE, Cushman & Wakefield, Jones, Lang LaSalle, Brookfield Properties, Hines, Transwestern, Cassidy Turley, USAA, LBA and Equity Property. In many respects, these firms set the tone for the industry as a whole. Typically, practices adopted by these firms become the standards for our industry. Just four years old, BOMA 360 has become a very successful program in the U.S. with over 2000 buildings totaling 180 million square feet certified to date, and it is now expanding internationally, with certified buildings or buildings in the process of being certified in Australia, Canada, China and India.

Similar to what was said of LEED certification, the process of bringing the team together to accomplish a common goal, and ultimately to achieve it, is motivating and cause for celebration.

Working to meet the requirements of a comprehensive, 3rd party program raises the overall level of performance of that team, and the quality of the building's operations.

Cost: \$1,000 per building every three years.

BOMA TOBY Awards

The BOMA TOBY (The Building of the Year) awards program is a competition within BOMA that looks at the same cross-section of management activities as the BOMA 360 program, but rather than simply certifying that the building has met the minimum standards in each of the seven areas, it pits buildings against one another in a competition to determine which building has achieved the highest scores in each of the seven key areas of building management. The competition begins at the local chapter level. Winners at the chapter level then go on to compete at the regional level, and regional level winners then go on to compete at the international level.

Similar to LEED and BOMA 360 certification, working together to achieve certification and recognition through all of these programs tends to be a positive and productive team-building experience, and it improves overall building operations and performance. It is a positive and effective enhancement to the periodic walking of the site with an inspection form in hand.

Cost: approximately \$2,500 for each building entered, once every three years.

Summary

Operating sustainably is, at its basic level, simply operating efficiently. Each specific sustainability project should be looked at individually and assessed on its own merits. Where value is demonstrated, it should be implemented.

Certifications – LEED certification, Energy Star certification, BOMA 360 Performance certification and participation in the TOBY awards program – are different. Generally, there is no simple payback that can be clearly demonstrated as there is when you replace a 100 Watt light bulb with a 10 Watt bulb. There are studies that strongly support them, and there is much anecdotal evidence, too, but no simple payback that can be entered into a spreadsheet.

However, there is no easily demonstrated payback for building inspections, nor team-building events, nor good management practices, for that matter. But we all accept them at face value. We know that most people, effective people, like to compete. And we know that it brings out the best in us. We like to win, to achieve, to succeed, and we like to be recognized for it.

And we know that positive recognition enhances performance. These programs encourage us to work harder, to work smarter, they result in better building operations and performance, and they enhance both our own brand and Oracle's brand. And they are cheap compared to the overall cost of building operations.

We should pursue these programs, starting with those that are easiest to achieve, the low-hanging fruit of management recognition programs, if you will, and then continue to move up into the more complicated and expensive programs as we master the easier ones.

Working hard to embrace best practices and to achieve We can only get better.