

NOVEMBER/DECEMBER 2007

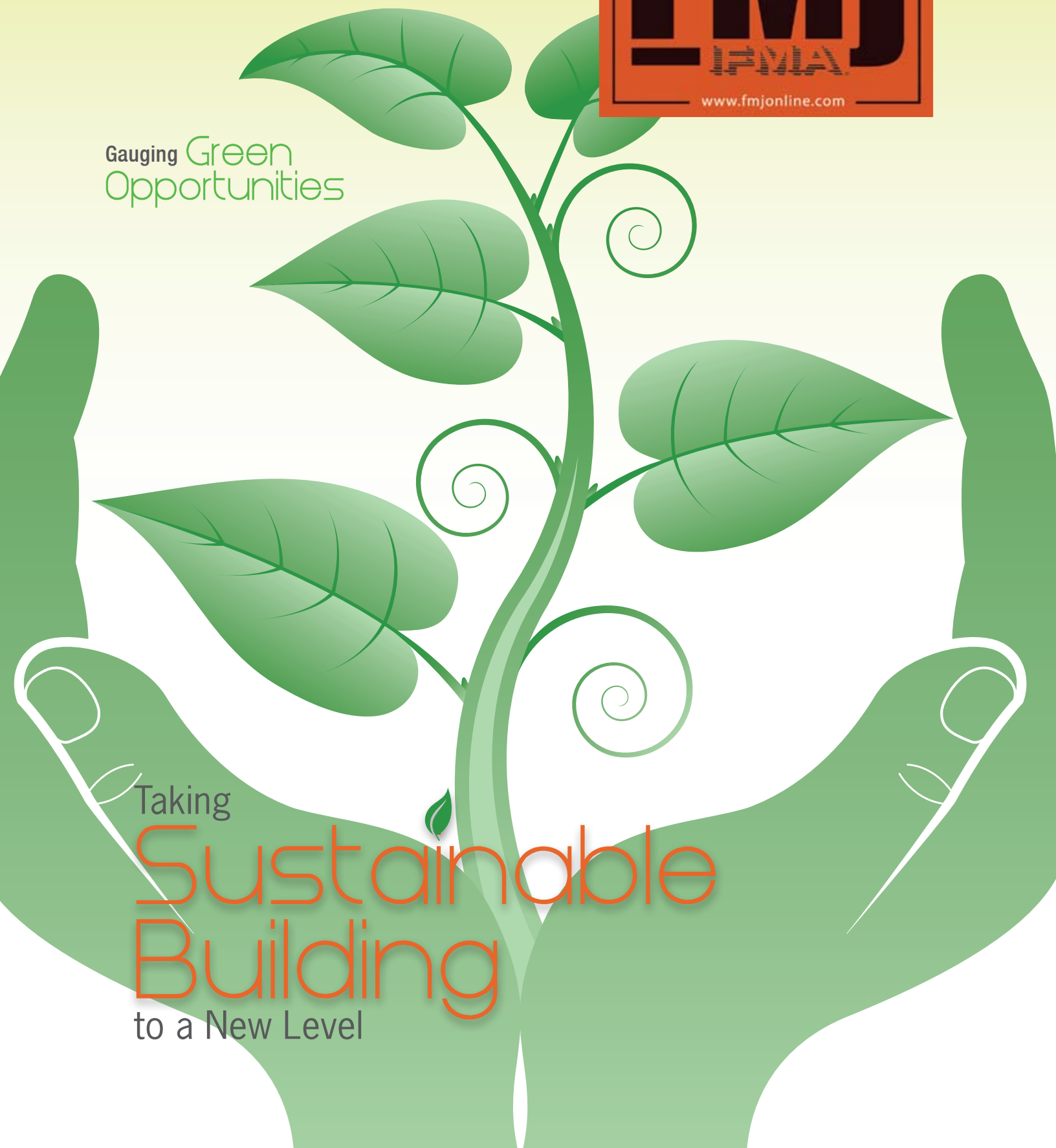


Gauging Green Opportunities

Taking

Sustainable Building

to a New Level



Gauging Green Opportunities

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The progress of green building initiatives is becoming increasingly evident and generating more interest by the day. Once gaining only marginal attention in mainstream building circles, sustainable facilities are becoming a growing reality for many forward-thinking organizations. This trend is evident in the manufacturing and corporate sectors as well as in government and higher education. Businesses are discovering that being a good corporate citizen embraces all of their resources, not just the financial bottom line or how green their products are. Schools and universities, for their part, are becoming more interested in making sure that their facilities and campuses reflect good stewardship and environmentally conscious building practices. The United States Government now requires that all new federal construction meet sustainability standards set forth under guidelines for Leadership in Energy and Environmental Design (LEED®), requiring a minimum level of LEED® Silver certification for public buildings that are larger than 5,000 square feet.

While there is still no single standard for sustainable building, the LEED® standards for both new construction and existing buildings are emerging as nationally recognized benchmarks for high-performance green buildings. Developed by the U.S. Green Building Council (USGBC), the LEED® Green Building Rating System provides building owners and operators with standards to reference in promoting the sustainability of their facilities. LEED®'s rating system provides four certification levels—Certified, Silver, Gold and Platinum. These levels are awarded based on the number of credits a project receives for satisfying specific performance benchmarks within various categories of sustainability, such as energy efficiency, water conservation and indoor air quality.

While much of the buzz around green buildings has centered on new construction, the inventory of existing buildings far exceeds that of new construction. According to the USGBC, existing buildings account for 36 percent of total energy use and 65

percent of electricity consumption in the United States. They make up 30 percent of greenhouse gas emissions and 30 percent of waste output, totaling 136 million tons annually.

Making these buildings more sustainable is a critical element in pursuing large-scale environmental benefits. Fortunately, sustainability initiatives in existing buildings also promote significant business benefits for organizations, ranging from enhanced employee productivity to operational savings. But how can an organization effectively evaluate its many sustainability investment options and focus its green dollars where they will have the greatest impact?

The five areas of green assessment

The first step in identifying the best investment strategy for sustainability is an objective evaluation of an organization's current state of sustainability and its options for change—including estimated costs and potential benefits. Such an assessment should address key categories consistent with



industry standards, such as guidelines for Leadership in Energy and Environmental Design for Existing Buildings (LEED®-EB), an internationally recognized standard for high performance green buildings and other emerging green technologies. These categories address energy efficiency, water conservation, indoor air and environmental quality, materials and construction, and site sustainability.

Examining all of these areas holistically—ideally within the context of overall facility improvement need—can allow organizations to realize economies of scale and how to most cost-efficiently bundle resulting projects. However, for organizations looking to roll-out green programs incrementally, the initial focus is often on energy efficiency—since more effective energy use can deliver the greatest cost savings. An evaluation of energy performance, including electrical and mechanical systems and the potential for renewable energy sources, should target recommended actions to reduce operating and consumption costs. It should also decrease emissions. Such actions may take

the form of installing lighting controls and energy efficient lights or retrocommissioning a building's HVAC (heating, ventilation and air-conditioning) system.

With water costs rising in many municipalities, water consumption, treatment, the impact on discharge systems and water use practices should also be assessed. These could identify opportunities to increase efficiency, reduce waste and support enhanced water conservation. The installation of water flow controls on faucet and flush systems (the capture of rainwater and distribution into landscaping for irrigation) are some examples of water-saving initiatives.

Indoor air quality, lighting quality and thermal comfort are also important elements of building sustainability. Enough fresh air provided through the building HVAC system is important to the health of building occupants. Reducing the use of materials or processes that emit toxic fumes is also important to air quality and occupant health. Eliminating ozone depleting gases from HVAC, refrigeration and fire suppres-

sion systems is critical to the integrity of the atmosphere. Enhanced daylighting can also provide the joint benefits of decreased energy use and enhanced productivity for those who work in the affected area.

Materials and construction is another area where organizations may find short-term savings opportunities from green investments. Such savings can often be realized by reducing waste associated with building operations and maintenance. One example is through recycling and conservation programs and enhanced waste management practices. An analysis of cleaning products can also provide insight on more environmentally friendly options that promote greater environmental safety. The availability of construction materials that have recycled content or that are harvested from sustainable sources is growing significantly. Products such as flooring, wood products, furniture systems, structural steel components and roofing materials can be increasingly obtained at prices equitable to their traditional counterparts.

Finally, organizations can identify opportunities for promoting a more sustainable building site by assessing ways to employ exterior lighting more effectively—alter landscaping to promote native species and reduce erosion, and make better use of storm water run-off. Transportation alternatives to and from the site can also provide opportunities for reducing energy usage and pollution. The reduction or protection of

large surface masses, such as parking lots and roofing systems that absorb and concentrate large amounts of heat and affect a site's microclimate, is also important.

Integrating sustainability programs into the capital planning process

With detailed information about the costs and benefits of potential green investments, organizations can effectively evaluate which

initiatives will ultimately provide the greatest results over the short- and long-term. Based on its overall business goals, each organization will have different values and therefore different strategies. For instance, one organization may focus on investments that will deliver the greatest improvements to the quality of the work environment, while another may make its top priority those that provide operational cost savings or most significantly reduce environmental impact.

The many potential greening initiatives an organization can undertake compete with a myriad of other capital and operational investments. This includes systems renewal, building renovations and new construction. While organizations may single out opportunities to improve building sustainability for analysis, ultimately those investments will need to be assessed in the context of other building requirements.

Organizations that are early in the process of integrating green programs into their capital plans may choose to focus initially on relatively low-cost initiatives. These can deliver short-term paybacks by reducing energy and natural resource consumption—with the priority based on cost savings and other desired benefits. As they make progress, and see results, they may go on to evaluate greening opportunities that can provide both short- and long-term environmental, social and economic benefits. Such assessments may be conducted, for example, in support of major building renovations, large-scale master planning programs or the acquisition of a long-term property holding. By combining this information with detailed data about overall requirements across a building portfolio, organizations can get a holistic view of facility needs—allowing them to maximize operational efficiency while promoting a sustainable built environment. **FMJ**



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