Tech Guides Green's ROI

> The design and construction industries are well aware of the environmental needs for green building and retrofits, but they are less certain of the profitability of such projects.

The push to green retrofit construction is ubiquitous and inescapable. The reasons for this incredible surge of interest are numerous: cost reduction through energy efficiency, a genuine concern about carbon footprint and environment, and the positive public relations value of embracing green principles.

Yet no matter how well intentioned going green may be, firms that create green retrofit designs are keenly aware of the many and occasionally complex issues – especially those involving cost – that must be resolved long before deciding to bid on a project.

The concern is understandable since green projects, particularly retrofits, tend to have initial higher costs because the design process they require is relatively new. An even larger drawback, especially for all stakeholders (architecture and engineering [A&E] firms, building owners etc.), is the profitability of doing a green retrofit. Will the investment pay off in the long term? Are metrics available to measure profitability? For answers, building owners rely on advanced technology to help them chart their path to green profitability.

Building's Environmental Impact

The United States Green Building Council (USGBC) has become the standard bearer for green design and construction. Its advocacy is understandable in light of numerous statistics on its website that demonstrate what the organization calls "the profound impact" building has on the U.S. environment: "72 percent of electricity consumption, 39 percent of energy usage, 38 percent of all carbon dioxide emissions and 39 percent of raw materials use."

According to the USGBC, buildings in the United States are among the heaviest

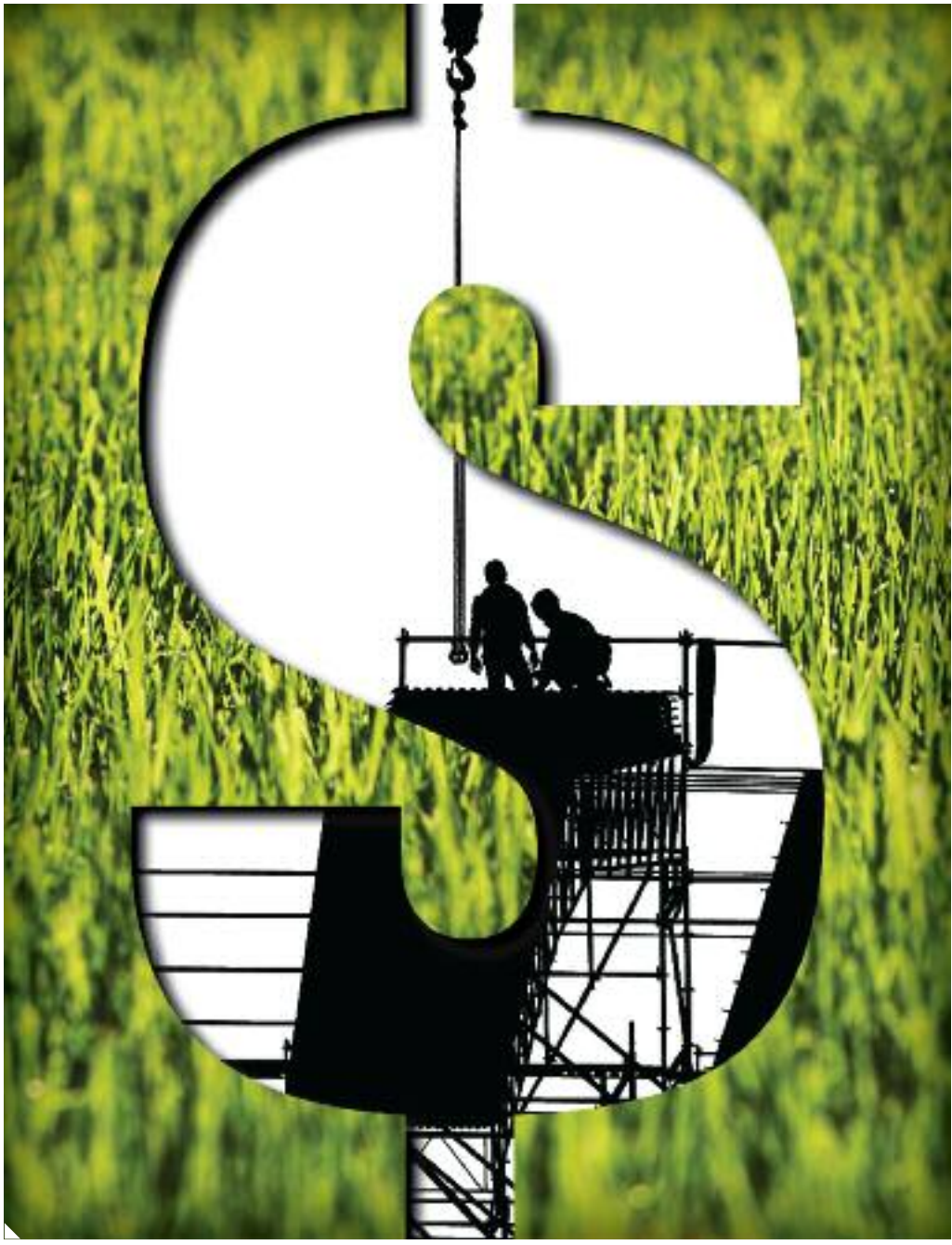

Photo Illustration: Bethany Vogelsberg

consumers of natural resources, responsible for a "significant portion" of greenhouse gasses. They also account for the use of more than 3 billion tons of raw materials annually, equivalent to 40 percent of the world's supply. Such evidence leaves few questions why environmental concern is one of the driving forces in the march toward retrofit construction.

The organization, however, views three other factors as major drivers spurring green building initiatives: "An unprecedented number of government initiatives, heightened residential demand for green construction and improvements in sustainable materials." Another factor is the increasing role of technology in solving the myriad issues associated with green building.

Technology has had to rise to the occasion, considering that green construction is expected to pump more than $550 million into the U.S. economy by 2013, according to the USGBC. That is a substantial investment considering that the green market for non-residential construction was a mere two percent in 2005 and is expected to grow to 25 percent by 2013. Just about every sector of the economy should be affected.

There are standards to help ensure that green building meets its promise and potential, and they apply equally to the technology that will help spur the direction of the green retrofit industry. This criteria will make it easier for providers and owners to decide whether a green retrofit can be profitable.

'A Concise Framework'

The standards are classified under the umbrella known as LEED, which USGBC developed to provide "building owners and operators a concise framework for identifying and implementing practical and measurable green building design, construction, operations and maintenance solutions." LEED is an across-the-board system designed to improve metrics in such green concerns as resource usage, energy savings and overall environmental impact. Since LEED has been developed to cover a building's lifecycle, it applies equally to retrofit planning and implementation. LEED issues certificates for contractors, architects and engineers who have met all requirements necessary to manage green projects. The organization strongly recommends that building owners retain only LEED-certified providers for green retrofits and other green-related planning.

Technology's Role

Highly advanced and integrated software now provides a viable solution for conforming with LEED requirements. This is especially good news for design professionals who often lack data to do a cost comparison with traditional construction. The fully integrated software available today can facilitate the designer's decision to bid on a project with calculations based on cost, efficiency and potential profitability.

Software does more than analyze and manage the entire project lifecycle for A&E firms. It enables the provider to find and bid on the right business, manage the project effectively and automate many of the project-oriented back-office tasks for the firm itself. In addition, these solutions excel at properly allocating and using the right resources and assigning the right personnel to the jobs that are the best fit. The latter cannot be understated. The database contains skill sets, experience and other relevant information about each individual associated with the project, allowing for the most effective personnel assignments to perform the green retrofit design.

Most attention is likely to be paid to the software's ability to project green retrofit profitability for both the design service provider and the building owner through analysis of lifecycle costs. Software can produce building models to analyze material quantities and energy performance for an accurate assessment of costs incurred during the building's lifecycle. In fact, in many instances knowledge of lifecycle expenditures is the most indispensable information from a building perspective because it is nearly impossible to render cost-effective decisions without them.

The Green Deal-Maker

Going green, by its very nature, requires metrics-driven solutions. It is important for any technology associated with green to provide those metrics through a cost/benefit analysis that weighs such factors as building and materials, labor and environmental concerns. It may well be the deal-maker or breaker in whether the project can be profitable to the satisfaction of all stakeholders.

Organizations such as the American Institute of Architects and the American Council of Engineering Companies have strongly challenged their members to take leadership roles to help reduce energy consumption while improving the nation's infrastructure. However, stakeholders will demand more than environmental conscience as a justification for retrofitting a building, and assuring them about the ROI for such a major project has never been easy or, until recently, readily accessible. With the incredible capabilities now available in software, all that has changed.

Recent market analyses have confirmed that cost-effective green building is a reality thanks to a combination of technological innovation and an emphasis on sustainability. These are two powerful arguments that can drive design firms and building owners to proceed confidently on pursuing green retrofits.

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