



GROWING YOUR GREEN ROOF SALES:

UNDERSTANDING OWNER MOTIVATIONS

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ABSTRACT

This paper will provide an important understanding of an owner's perspective in the decision-making process on implementing roofing services and systems, including green roofs and environmentally sustainable roofing systems. While the environmental benefits of a green roof receive much of the media attention, owners often base decisions on other criteria. If the goal is to send a message to employees and customers that the owner is committed to sustainability, a more attractive green roof with less environmental benefit may be preferred over a less expensive, more environmental system. If the sole motivation is to gain LEED® certification, then the system that helps the building gain the most points at the lowest cost will be the likely winner.

INTRODUCTION

The scenario plays out the same way dozens of times a week across the country: An owner undergoing a green retrofit or a new roofing project asks for a presentation on different possible systems; the consultant demonstrates knowledge of the latest technology and sells the environmental and energy benefits; and upon consideration, the owner decides against the installation of a vegetated roof.

What just happened? Either the consultant failed to dispel the owner's concerns about the additional risk and trouble of green roofs, or the benefits that the consultant was selling were not the ones the owner was buying. The expert consultant with the best products and processes will not be able to sell owners on the idea of a green roof until he or she knows which arguments will

resonate with owners and which will fall on deaf ears.

There's no question that the market for green roofs is expanding. The amount of green roofing installed across the U.S. during 2008 represented a 35% increase over green roof installations in 2007, according to Green Roofs for Healthy Cities (*Figure 1*). The numbers are still relatively small, with just 3.1 million sq ft of new installations in 2008. That is all the more reason for installers to capture more of this business as the trend toward greater sustainability in commercial buildings accelerates.

The focus on energy efficiency and sustainable features in buildings has been driven by their economic benefits as well as two distinct market forces (*Figure 2*). The first is public acceptance of the idea that greenhouse gases must be cut dramatically

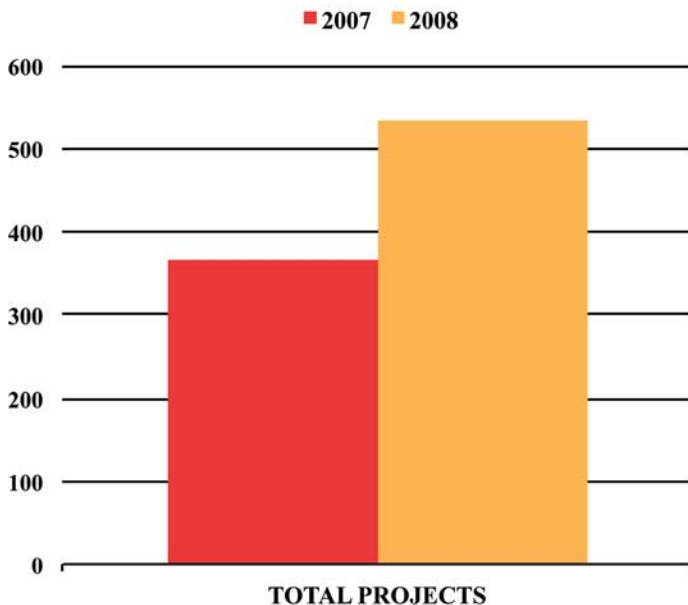


Figure 1

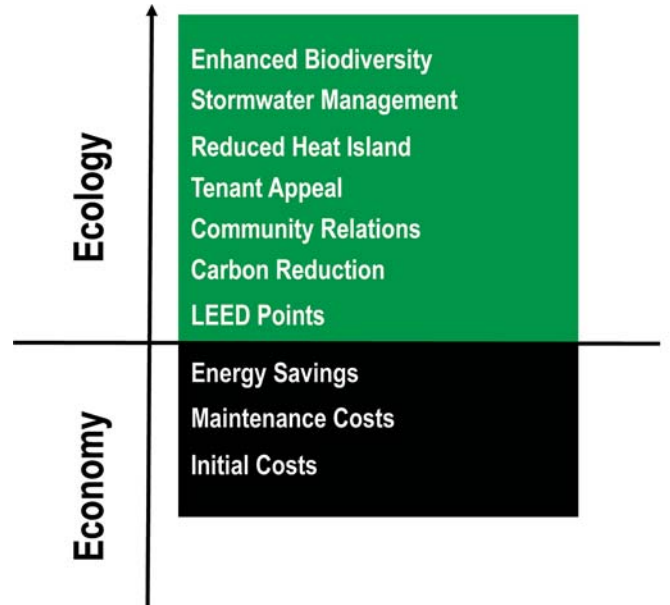


Figure 2

Figure 3

to avoid the environmental upheavals that come with global warming. The more consumers and knowledgeable workers gravitate to companies that demonstrate sustainable practices, the more companies will want to be—or at least appear to be—green.

The second market force is volatility in energy costs, which has prompted companies to look more closely at the efficiency of their operations. Corporate real estate directors view each expenditure in terms of its return on investment. Energy-efficiency measures are calculated in terms of their payback period—the length of time it will take to reduce energy expense equal to the up-front cost of installation.

The installation of a green roof has an appeal for both of these forces. A green roof can help reduce energy use and provide other cost benefits over time. It can also serve as a visual reminder of a company's commitment to sustainability. However, a green roof with the best demonstrable financial payback is very different from a green roof that will help position a company as environmentally conscious.

Green roofs typically fall into two categories—extensive and intensive—although there is some overlap between the two types.

An extensive green roof uses native vegetation that will require little maintenance and will withstand the elements, such as wind and temperature fluctuations, without too much maintenance. Extensive roof vegetation tends to consist of ground cover, hardy plants that make good homes for local insects and therefore promote biodiversity and are at the lower end of the cost spectrum.

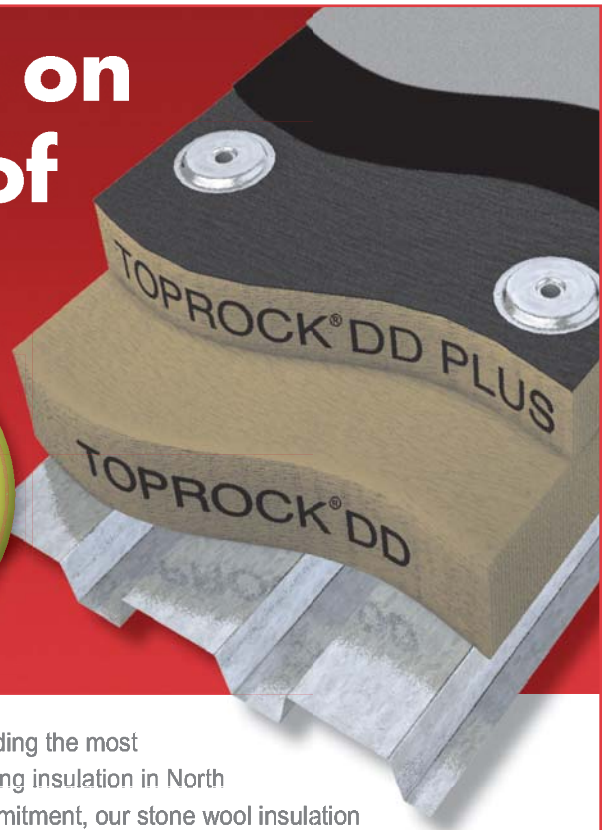
Intensive green roofs, with flowers and other attractive plants, are more for show. They require more maintenance, do less to help local ecological systems, may need to be replaced more often, and are more expensive to install and maintain; however, their attractiveness makes them more desirable in many situations.

As a 1,200-person nationwide project management operation, Jones Lang LaSalle has represented hundreds of corporations, government agencies, public-sector institutions, and private investment owners in evaluating and implementing capital projects. In the company's experience, roof consultants who promote green roofs the same way that they suggest other appropriate roofing systems probably will not be

Cities Pushing for Green Roofs

Toronto	Mandatory green roof requirements
Chicago	Fast-track permitting, grants
Milwaukee	RFP: Regional Green Roof Initiative Program
Minneapolis	Reduction in stormwater usage fee
New York City	Property tax abatement
Philadelphia	Tax credit
Portland	FAR bonus, grants, requirements for public buildings
San Francisco	Fast-track permitting, stormwater requirements
Seattle	FAR bonus, requirement in some zones
Washington, DC	Federal Green Roof Rebate Program, local grant

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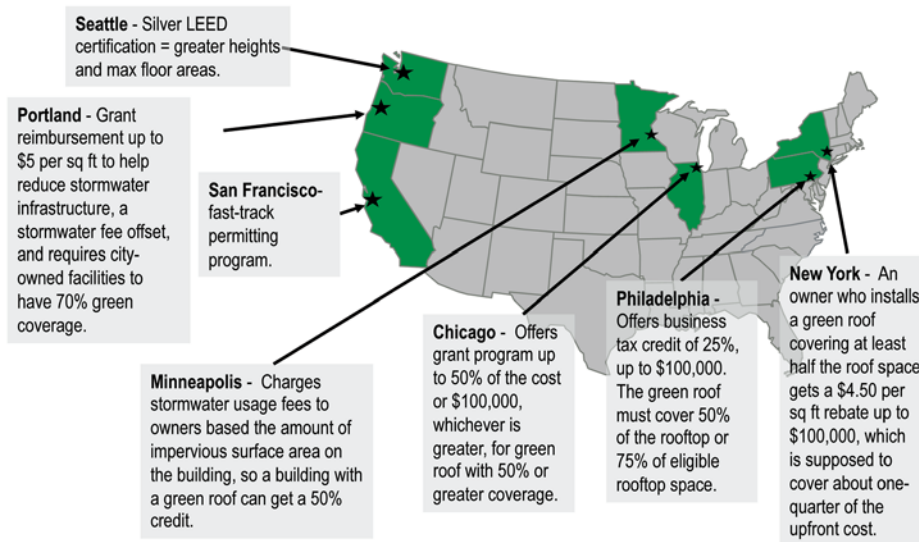


Figure 4

very persuasive. Rather than the straightforward bid process of a typical roofing job, where price, reliability, and longevity are key, success in promoting green roofs requires the ability to sell based on emotional appeal.

THE ECONOMICS OF GREEN ROOFS

In May 2009, Toronto became the first city in North America to require green roofs on all new multiunit residential buildings over six stories, as well as commercial and industrial buildings of more than 21,500 sq ft (Figure 3). Developers complained that the bylaw would be a drag on new construction by adding substantially to the cost while providing relatively modest benefits to building occupants. Certainly, some environmental benefits of green roofs, such as stormwater management (an important benefit, particularly for dense urban areas with aging or insufficient sewer systems), habitat conservation, and biodiversity preservation, accrue to the community as a whole rather than to anyone associated with the building (Figure 4).

There are direct financial benefits to the owner and occupant as well, including lower energy costs and a longer roof life because of the extra insulation and protection from weather extremes provided by a vegetated roof. Although these factors can make a significant difference to the life-cycle cost of single-story and low-rise buildings, they will not have as great an impact on the cost of mid- and high-rise buildings. Considering that an extensive green roof system in the United States is likely to cost

\$15 per sq ft and the cost of an intensive system can exceed \$30 per sq ft, an annual savings of less than \$1 per square is not going to have a favorable payback period. The fact that intensive systems also require regular maintenance further undercuts the return-on-investment argument.

Meanwhile, owners have a range of highly cost-effective strategies for reducing energy and enhancing a building's sustainability profile. A large number of credits toward certification under LEED's new EB-OM standard require little or no upfront premium, to the point that Silver or Gold certification can have an attractive return on investment.

Consider the Empire State Building, perhaps the world's most famous office building (Figure 5), which is currently undergoing an energy retrofit. Tony Malkin, one of the owners, worked with the Clinton Climate Initiative to assemble a team that analyzed more than 60 possible energy strategies to select the ones that would produce the greatest energy benefits at the lowest cost. As program manager, Jones Lang LaSalle led the collaborative team that also included Johnson Controls and Rocky Mountain Institute.

Using the Department of Energy's eQUEST and other modeling tools, the team eventually selected eight projects with an initial cost of \$20 million that will reduce annual energy use by \$4.4 million, resulting in an EnergyStar® score of about 90. Once the retrofit analysis was complete from an energy standpoint, Jones Lang LaSalle calculated that LEED® Gold certification under



Figure 5 — Empire State Building, New York City. Photo by Ad Meskins at Wikimedia Commons.

the EB-OM standard would carry an incremental cost of just \$600,000, less than 25 cents per rentable square foot.

In examining energy strategies, the Empire State Building team considered the cost and benefit of vegetation on the building's flat, mid-rise roof surfaces. The analysis showed that the strategy was not cost-effective, and it was rejected on that basis.

But another iconic building to recently undergo a green retrofit—the Willis (formerly Sears) Tower (Figure 6) in Chicago—a green roof initiative was prominently featured in a July 2009 announcement. How could two sustainability teams reach such different conclusions about the effectiveness of green roofs?

Figure 6 — The Willis (formerly Sears) Tower in Chicago. Photo by Knutaril at Wikimedia Commons.



The answer is that the two teams had very different goals. At the Empire State Building, Malkin's vision was to establish a model process that other building owners could follow in attempting to make financial sense of energy retrofits. Any strategy that did not produce a strong energy-efficiency result at an affordable cost was rejected. Installing a green roof would serve as a visual reminder that energy reduction also reduces carbon dioxide emissions, to the tune of about 105,000 metric tons over 15 years. But including a green roof would have extended the payback period for the overall initiative without making a strong contribution to energy or carbon dioxide reductions. Consequently, the strategy would have diminished the impact the retrofit is having on other building owners, many of whom are, in fact, using the Empire State Building process as a model for their own portfolios.

By contrast, ownership of the 3.8-million-sq-ft Willis Tower has announced a \$350 million green retrofit—more than 17 times the cost of the Empire State Building program—for a building about 50% larger. The program features energy-efficient windows; upgraded, high-speed elevators; environmental improvements to mechanical and lighting systems; and a rooftop garden. That kind of outlay—nearly \$100 per rentable sq ft—cannot be repaid through energy savings alone. Only by attracting more tenants to the building at higher rents than they could otherwise gain can the owners hope to recoup the cost of the retrofit. In this case, the marginal cost of installing green roofs on the building's large, highly visible, flat surfaces is well worth the reputational value the building will gain for being sustainable. Indeed, the Willis Tower Web site emphasizes that this monumental undertaking is being implemented to serve as a symbol of the owner's commitment to environmental sustainability.

The same pattern can be seen wherever green roofs are installed (Figure 4). A list of high-profile green roofs in the United States will include many public-sector buildings, such as Chicago's City Hall, USDA's headquarters building, and the U.S. Postal Service's New York City processing center, as well as elementary schools and state universities across the country. The list will also include institutional buildings, such as Baltimore's National Aquarium, and headquarters buildings for companies with a strong desire to demonstrate their green credentials, such as paper company Weyerhaeuser and utility PECO. What they all have in common is a focus on the value of green roofs as a symbol of their commitment to sustainability, rather than as green strategies that will produce a lot of bang for the buck.

SELLING SYMBOLISM

Roof consultants are accustomed to presenting hard benefits. Owners don't

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often replace roofs for aesthetic reasons; they do it to keep the rain out. Convincing owners of the value of a green roof requires a different approach from the one that has worked in the past. But how can consultants use this knowledge to develop a case for green roofs when corporate and investor owners are looking for return on investment? Some suggestions follow:

Play Up the Marketability Angle

For multitenant buildings, return on investment is really about getting rent premiums and enhancing tenant attraction and retention. A competitive leasing market raises the stakes, forcing building owners to consider how they can differentiate themselves. A green strategy is important, but to shout sustainability from the rooftop—literally—nothing beats a green roof. For corporate owners, a green roof is a relatively inexpensive way to make a powerful visual statement—and a way for corporate real estate directors to remind senior management of the strategic value the facilities group can bring to operations.

Address Concerns With Solid Answers

In addition to upfront cost issues, decision makers on green roofs may have heard scary stories: roofs that had to be supported to accommodate the crushing weight of green roofs, systems that leak, or the need for increased fire insurance to cover the possibility that an untended green roof might turn brown, creating a fire hazard.

Look for Maximum Visual Impact

A green roof that can't be seen by building occupants loses its most valuable benefit. Many high-rise buildings have terraces or roof sections that can be seen from within the building, even from C-suite offices. A


decision maker who is unsure about a full-scale green roof may be more receptive to a smaller initial project with strong visual appeal. That initial success will lead to additional projects.

Consider Engaging Building Employees

When Cook + Fox Architects created a 3,600-sq-ft green roof on the penthouse level of its New York headquarters building in 2006, the company enlisted employees in installing the modular roof. The exercise saved on installation costs but, more important, helped participants feel connected to the firm's sustainability commitment. Not all green roof projects will lend themselves to such employee engagement, so the possi-

ble safety and liability concerns and ensuring work quality must be considered. But even suggesting some form of employee participation as an option demonstrates creativity and shows that the consultant understands why a company would invest in a green roof.

CONCLUSION

Environmental sustainability is not a passing trend but a wave of the future for building design and construction. Green roofs are a way for owners to generate positive community response while providing occupants a more desirable workplace. 

Peter T. Belisle II



Peter Belisle, president of Energy and Sustainability Services (ESS) at Jones Lang LaSalle, oversees more than 70 professionals whose teams in 2009 documented \$100 million in energy savings on behalf of clients. The firm also has been instrumental in the LEED® certification of more than 100 new and existing properties and has earned the U.S. Green Building Council's Leadership Award in 2009, Urban Land Institute's Sustainable Cities Award in 2008, and the EnergyStar® Partner of the Year award in 2007 and 2010.

Prior to taking the reins at ESS, Mr. Belisle oversaw more than 1,500 project managers across the country with responsibility for delivering assignments totaling \$5 billion in annual construction value. Under his leadership, Project and Development Services led a companywide drive to hire and train more than 550 LEED® Accredited Professionals. He continues to oversee project management of several specialized product types and integrates with the larger group on projects such as the Empire State Building energy retrofit.

Prior to joining Jones Lang LaSalle, Mr. Belisle served as director of development and program management for The Walt Disney Company. He received an MBA from The Anderson School at UCLA, as well as a BS in civil engineering from UCLA. Mr. Belisle is certified as an engineer in training (EIT), is a council member of the Urban Land Institute (ULI), and a member of the American Society of Healthcare Engineers (ASHE) and CoreNet Global.

SMALLEST STATE FIRST TO ADOPT IGCC

Rhode Island has adopted the International Green Construction Code (IGCC), becoming the first state to do so. It prescribes that all public agency major facility projects be designed and constructed as green buildings. It applies to new and existing traditional and high-performance commercial buildings and requires compliance with ANSI/ASHRAE/USGBC/IES Standard 189.1, *Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings*. In August, Richland, WA, became the first city to adopt IGCC as a nonmandatory document for commercial buildings.