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## Evaluating the green premium of a sustainable design project

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Invariably, one of the first questions asked when discussing whether to incorporate sustainable design or pursue LEED Certification for a project is "How much extra will it cost?" Although recent studies have shown that the average premium for building green, and obtaining LEED certification, has decreased in recent years, it can still be difficult to persuade decision makers of the value of spending more to develop a green project - especially if the cost savings promised are not immediately apparent. To keep the drumbeat going, let's take this opportunity to say again that incorporating sustainable design from the start of project development is one of the most important steps to reducing the added cost of a green project. Among other strategies, it allows for "right sizing" of infrastructure and mechanical equipment and dimensional planning to reduce material use. To calculate the green premium of a sustainable design project, the clear, tangible benefits typically evaluated through life-cycle cost evaluation should be included. Other, less tangible benefits are not as easily quantified; however, these can also result in significant indirect offsets to even the seemingly sunk costs of going green on a project.

Addressing the cost of capital investments and tangible benefits, the often cited report *The Costs and Financial Benefits of Green Buildings: A Report to California's Sustainable Building Task Force*, found that "an upfront investment of less than 2% of construction costs yields life cycle savings of over ten times the initial investment." This is the appropriate approach to evaluating the capital outlay for obtaining LEED certification: conducting a life-cycle analysis that includes initial design and construction costs, operating costs, and maintenance, repair and replacement costs.

Although more difficult to quantify, the indirect benefits of building a more healthy work space are measurable. As data on the topic accumulates, recent studies are showing that healthy buildings can decrease worker illness costs, and improve productivity, recruitment, and retention. The cost of labor averages about \$150 per s/f in the United States, and one study suggests a 1% improvement in worker productivity can lower labor costs by \$1.30 per s/f per year.

Other studies have shown that better climate control and improved air quality can increase employee productivity by 11% to 15% annually. Applying these numbers to employee salaries, which can be as much as 75% of an organization's total costs, represents a significant return on investment. A study of the U.S. Post Office in Reno, NV after lighting and other green improvements were made indicated increases in the amount of mail sorted per hour and decreases in sorting errors. These productivity gains were estimated to result in cost savings that paid back the green investment in less than one year. Buildings designed to LEED standards will have lower volatile organic compounds emissions, resulting in better indoor air quality for employees, which has been shown to result in a reduction in absenteeism. In light of rising healthcare costs, these avoided costs can be significant. Business owners that are aware of these benefits, grasp the concept that green design, and resulting improvements in employee productivity, should be factored into the cost

analysis for a sustainable project. Other less tangible benefits to be considered in the cost analysis include potentially increased asset value of the property, which can benefit the owner both in terms of borrowing capability and resale value.

Project owners should also be cognizant of not overshooting the mark in terms of the size of the green investment and its marketing value. Where cost is factor (i.e. always), developers should seek the appropriate level of greenness or certification. Clearly there are marketing benefits to embracing sustainable concepts in the construction, operation, and maintenance of facilities. However, it is incumbent upon the owner to understand their target market, as there may be diminishing returns on increased green investment.

Amy McDonough, LEED AP is a senior environmental scientist at Tighe & Bond, Inc., Westfield, Mass.

New England Real Estate Journal - 17 Accord Park Drive #207, Norwell MA 02061 - (781) 878-4540