

Efficient Operations And Maintenance LEED To Savings

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In January 2008, the U.S. Green Building Council (USGBC) released the Operations & Maintenance (O&M) component of its Leadership in Energy and Environmental Design for Existing Buildings (LEED-EB) green buildings rating system. According to the USGBC, the system is aimed at managers and others “who wish to drive down operating costs while increasing the occupants’ productivity in an environmentally responsible manner.”

The USGBC revised the existing LEED-EB system to address issues that have slowed the acceptance of the previous rating system for existing buildings since its 2004 launch. The slow acceptance of the first release of the LEED-EB standard can be linked to the system’s origins, that is, the New Construction standard (LEED-NC). That standard focuses so heavily on the physical characteristics of the building and its associated impact, that using it has made it difficult for facility managers with existing buildings to meet its prerequisites and requirements. To remedy the situation, the USGBC has developed standards for Operations & Maintenance (O&M) performance, which had been lacking in LEED-NC.

A Shift In Focus

The LEED-EB: Operations & Maintenance (LEED-EBOM) system covers the broad spectrum of services required to assure the built environment is available to, and will perform the functions for which they were designed and constructed. This shift in focus has allowed facility managers to concentrate on the efficient operation of their existing buildings rather than trying to meet standards more appropriate to new construction, as seen in the previous system, which was heavily influenced by the LEED-NC Standard.

The newly developed LEED-EBOM system offers:

- Streamlined reporting.
- Fewer prerequisites, in comparison with LEED-NC.
- An emphasis on operations, maintenance, and upgrades.
- Ease of scale for use in greening large portfolios of existing buildings.
- A high number of rewards for measured environmental performance.
- Green cleaning incentives.
- Strong commitment to performance.
- New water efficiency credits.

The LEED-EBOM system is divided into six categories:

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- Sustainable sites.
- Water efficiency.
- Energy and atmosphere.
- Materials and resources.
- Indoor environmental quality.
- Innovation in operations.

As of September 1, 2008, all projects registering for LEED for Existing Buildings must do so under the new LEED-EBOM version.

Energy Savings - The Primary Driver

As building owners and facility managers feel the pressure of increased energy costs and higher energy demands, they are turning to systems, such as LEED-EBOM, which offer a detailed analysis of where opportunities can be found. But their question remains: can LEED-EBOM deliver the savings needed to justify its costs?

While some buildings will require significant improvements, facility managers often can make progress toward certification with no- or low-cost steps, some of which offer relatively quick paybacks. The average cost per square foot required for LEED-EB certification was \$2.43, according to a 2008 white paper by Leonardo Academy. The report also found that the investment was quickly returned. Specifically, 60 percent of the buildings certified achieved lower operating costs when compared to the Building Owners and Managers Association (BOMA) average. In fact, two buildings in the study reported utility costs that were 60 percent less than the BOMA median. Further information on the report can be found at www.leonardoacademy.org.

The New Building Institute's March 2008 study reports savings ranging from 25 to 30 percent on LEED certified projects. In respect to LEED-EB, the study shows that LEED-EBOM projects reduce energy demand by 37 percent compared to the baseline ENERGY STAR 60 score used by LEED. Further information on the report can be found at www.newbuildings.org [1].

A Cleaner Environment - The Long-Term Benefit

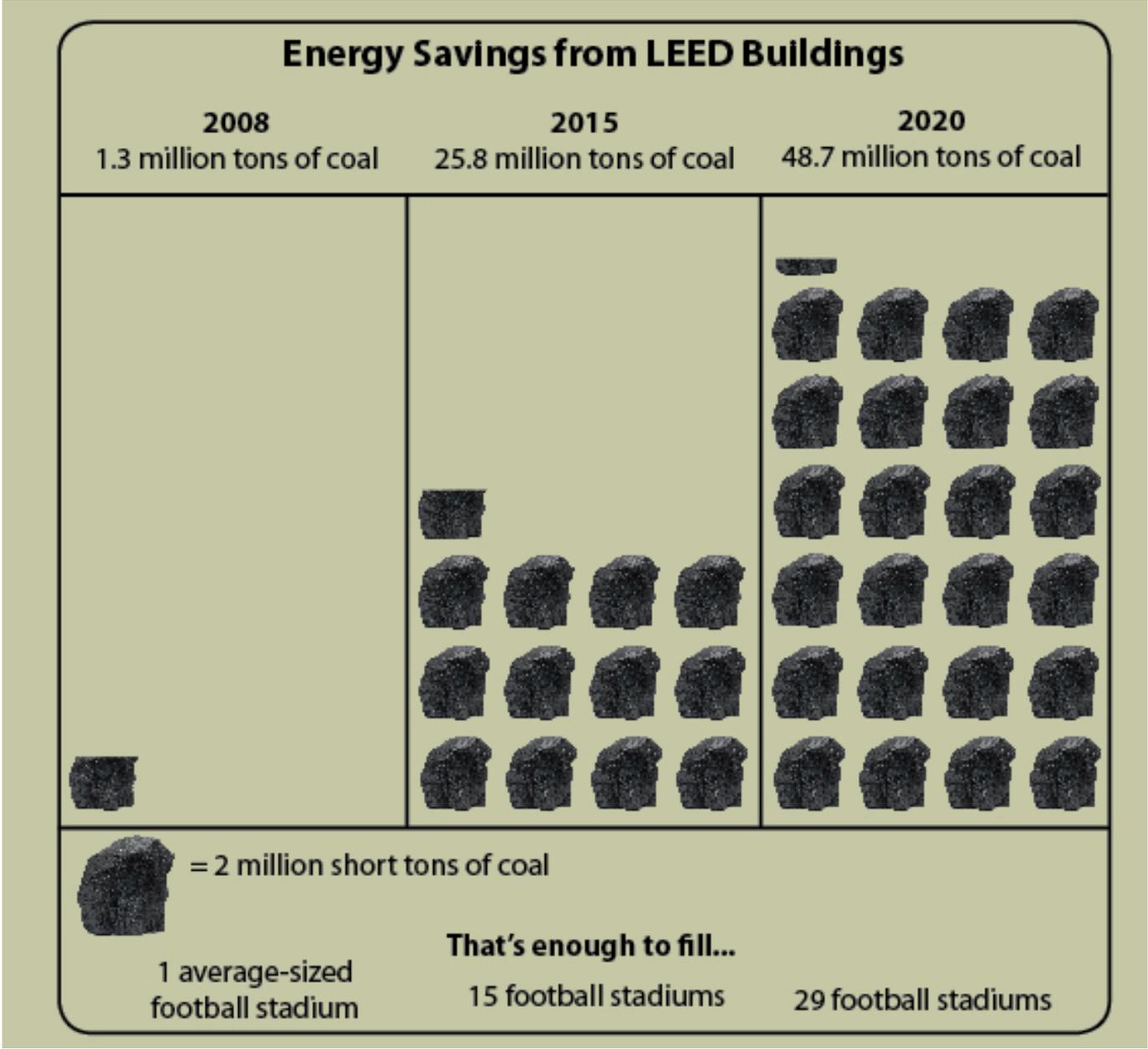
According to the newly released Green Building Impact Report, released by Greener Buildings, LEED saves energy on many different levels, including energy related to operations, commuting, water treatment, and the lower energy embodied within materials. Collectively, these savings can have a significant positive impact on the quality of our environment.

In operational energy terms, LEED buildings consume approximately 25 percent less on average than comparable commercial buildings. This reduction in energy resulted in a savings of more than 1.3 million tons of coal equivalent nationally, for 2008, representing approximately 78 million tons of carbon dioxide (CO₂) avoided emissions. At this current rate, by 2020, acceptance of LEED building practices will result in a cumulative savings over 12 years of more than 48.7 million tons of coal equivalent.

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In addition, the principles of LEED address the need for efficient and reduced water use in buildings, foremost through conservation. Plumbing systems, cooling towers, and landscaping are the main areas where green design can effectively minimize a building's demand for treated water. Since the inception of LEED, more than half of New Construction and Core & Shell projects have delivered at least a 30 percent water reduction, with 20 percent savings from LEED-EBOM. This combined effort has already saved an estimated 9.5 billion gallons of water in 2008, and by 2020, is expected to realize a savings of 245.5 billion gallons.



Growing Acceptance of the Green Imperative

As testament to the belief that LEED and efficient building design can have a positive impact on our environment, California Governor Schwarzenegger's Green Building Initiative requires all existing state buildings larger than 50,000 square feet to meet LEED-EBOM standards to the maximum extent that is cost effective by no later than 2015.

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The program involves the three branches of the Department of General Services (DGS): The Real Estate Services Division, the Construction Services Branch, and the Building and Property Management Branch. The Real Estate Services Division branches are working to attain LEED EBOM certification for facilities owned and managed by DGS. In doing so, they are setting standard policies that will assist other state agencies in attaining LEED-EBOM certification for the buildings they manage.

In addition to an increased awareness at the state level, there is a growing acceptance of efficient building techniques on the local level. For example, when the facilities department of Dublin City Schools in Columbus, OH looked to improve the energy efficiency of the district's Scioto High School, they used LEED-EBOM as their guide.

When the facilities team was challenged to replace a failing roof system, they chose to balance energy performance and environmental impact. To accomplish their goals, they improved the buildings insulation and added a highly reflective and emissive roof system. With these improvements they estimate that Scioto High School will reduce the costs of their summertime cooling up to 30 percent. In addition to these energy-saving improvements, they met other LEED EBOM standards by incorporating high amounts of recycled content in the roofing system and mandating a regional manufacturer. This combination of energy performance and reduced environmental impact speaks directly to the mission of the USGBC and the development of LEED.

With the release of the revised LEED-EB system geared to operational and maintenance performance, the USGBC is well poised to remain the leading force in sustainable building design. More importantly, facility managers will continue to have the opportunity to use a system that evaluates efficient building operation, thereby highlighting opportunities that reduce operational costs and the environmental impact of a building's operation.

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[1] <http://www.newbuildings.org>