Sam Pobst: The LEED payoff

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Sustainability Desk

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Over the last year, U.S. Green Building Council (USGBC) West Michigan Chapter volunteers began measuring the energy savings provided by Leadership in Energy and Environmental Design (LEED) certified buildings in West Michigan to verify the energy saving benefits offered by the design standards. Among the over 130 LEED certified buildings in West Michigan we asked 40 LEED building owners who had been in operation for at least one year to participate in a study to measure their energy efficiency.

We engaged student interns from Aquinas College, Grand Valley State University and Kendall College of Art and Design to develop case studies. We trained the students in the use of the energy measuring tools, matched students to building owners and provided technical assistance.

Energy Star Portfolio Manager (ESPM) is a free online tool provided by the U.S. Environmental Protection Agency (EPA). It allows a building owner to insert utility data into a calculator, which then compares the information to similar buildings by climate zone, building use and size. The average Energy Star score is 50. A building may become an Energy Star Partner if it receives a score above 75.

LEED for Existing Buildings Operations+Maintenance (EB O+M) requires a minimum score of 69 as a prerequisite to certification, and awards points in the rating system for levels of achievement above a score of 71. The Energy Star system is not comprehensive, so the USGBC has developed an interim tool called the B/C Calculator that simulates an Energy Star score for buildings that are out of formula for the ESPM.

Of the 40 buildings studied, 20 qualified under the ESPM. The B/C Calculator was used for a comparable score for eight of the buildings. The remaining 12 were not classifiable for various reasons, including no reasonable means of comparison within the project parameters.

The study outcome demonstrated a very high level of efficiency, with an average Energy Star Score of 81.3. Seventy-five percent of the buildings scored above 75, qualifying them to become Energy Star Partners.

Almost all of the study participants are re-evaluating options to improve their energy metrics. For some, it requires that they accurately record appropriate building energy uses. For others, mechanical and electrical equipment requires examination to determine if it is operating as intended. For still others, it requires educating building occupants become better building stewards.

As LEED practitioners we often take it on faith that the work we do has merit. We believe that the energy-saving devices we design into our projects will provide the expected returns on investment. While this study only measures energy and water use, the results definitively support the effectiveness of the LEED rating system as an energy design standard.

Without benchmarking, building operating systems can neither be sustained nor improved. LEED EB O+M effectively measures building performance and provides for continuous improvement by benchmarking nearly 100 building operations best practices.

A copy of the results of the Energy Star Case Study is available to download at www.usgbcwm.org, along with an order form for a hardbound copy of all of the project case studies.

The U.S. Green Building Council is a coalition of leaders from across the building industry working to promote environmentally responsible, profitable and healthy places to live and work. The West Michigan Chapter provides and develops leadership through affiliations and education at all levels.

Please send comments and column proposals to chuck.otto1@gmail.com

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