

USGBC-WM, students compile landmark green building study

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The U.S. Green Building Council West Michigan chapter enlisted the help of interns and local talent in a study of how the region's green buildings are performing. Above, from front, architecture professional Victor Tvedten, GVSU facilities project manager, Scott Whisler, Eco Metrics founder Sam Pobst, USGBC-West Michigan chair Renae Hesselink and Aquinas College sustainable business student Sean Fahey discuss the upcoming study. Below, Pobst talks strategy for the green building tour.

PHOTOS: JOE BOOMGAARD

Effort documenting success of building energy efficiency will debut at next month's green building tour

By Daniel Schoonmaker | Knowledge
dschoonmaker@mibiz.com

WEST MICHIGAN – Working with the West Michigan Chapter of the U.S. Green Building Council, a group of local design and sustainable business students are putting the finishing touches on a months-long performance study of 40 commercial and residential buildings certified to the USGBC's Leadership in Energy and Environmental Design protocol.

The Green Buildings of West Michigan study will be published in advance of the chapter's September Tour of Green Buildings and is being used as the model for other chapters nationwide to promote the council's new Building Performance Partnership, a data-gathering initiative that will eventually lead to improved green building metrics and analytical tools.

“This is the largest study of its kind, so the volume of information we've gathered is going to be particularly useful,” said Sam Pobst, a Grand Rapids-based LEED faculty member, co-chair of Green Buildings of West Michigan Tour, and founder of Eco Metrics LLC. “We have an understanding of some of the things that are going on with the building's Energy Star scores and expect this to provide a body of evidence that will allow us to develop more effective tools.”

Each of the buildings was benchmarked against the EPA Energy Star Portfolio, a key component of the BPP initiative and the LEED for Existing Buildings: Operations & Maintenance protocol that Pobst has been working hard to promote through his role with the council. He has become concerned with the growing number of instances in which LEED buildings have received Energy Star scores below the EPA's certification threshold. The study, Pobst explained, would help the council “get to the bottom



of it.”

“That LEED buildings are not meeting the minimum Energy Star score does not mean that the buildings were not designed to be energy efficient,” Pobst said. “It means that something changed so that they’re not working right. Perhaps there are more people in the building than it is designed for. Maybe there is a whole lot of process (manufacturing) energy being used in the building and you’re measuring that as part of the building performance. Maybe it’s maintenance.”

In preparation for the Green Buildings of West Michigan Tour, student volunteers from Aquinas College, Grand Valley State University and Kendall College of Art and Design worked with building owners to gather the necessary data to populate the Energy Star Portfolio Manager, which benchmarks each facility’s energy and water usage against comparable buildings. Energy Star labels are awarded to buildings that earn at least a rating of 75, meaning that it outperforms 75 percent of similar buildings nationwide.

Initial results of the study revealed that some local buildings were indeed not scoring as high as expected or were encountering other difficulties in the analytical process. A recurring problem was an inability to separate the specific building performance data from non-building uses, such as from the manufacturing operation or from other buildings in a campus environment that are not built to LEED standards. Other problems emerged in instances where the local facility had no apples-to-apples comparison sample – there is no applicable category in the system for a facility such as the Grand Rapids Art Museum, which is literally one of the only green-built facilities of its kind in the nation.

Pobst indicated that discussions were already underway within the council’s governing bodies to address some of the disparities identified by local students.

“When we were putting together the tour, we began asking the building owners what kind of performance tracking they were doing,” said Renae Hesselink, co-chair of Green Buildings of West Michigan Tour, chair of USGBC-WM and VP of sustainability for Nichols Paper & Supply. “The majority of them were not. They didn’t have the staff capacity to keep it up.”

Roughly a third of the buildings participating in the tour were already tracking their energy and water usage at the level of sophistication required for the Energy Star analysis. The students worked with the balance of building owners to gather the necessary year’s worth of information. They also worked with the building owners to write case studies of each facility for use on the tour and in a 112-page coffee table book that will be available later in the fall.

Hesselink hopes that the building owners will continue the work of the student monitors on their own.

“One of our goals was to demonstrate to building owners that this is an ongoing thing,” she said. “You should not be building a LEED building and then not tracking it for performance beyond that point.”

According to Gayle DeBruyn, an assistant professor of design studies at Kendall College and current chair of the West Michigan Sustainable Business Forum, that type of understanding will prove incredibly valuable to the students involved in the study.

“This project offered them an opportunity to engage in a situation where they can see the metrics and

measurement tools at work,” she said. “The more we can bring a metric into the assessment of good design, the more valuable good design will be. Too often students go into a design session thinking it is all about the aesthetic situation or user-based design or an identified need. Metrics are considered, but they’re a hypothetical.”

DeBruyn said students need exposure to post-occupancy reviews and the evolving usage issues of large facilities for them to create better design solutions. She cited the LEED protocol as a solid example of that model, as performance metrics are taken into consideration from the very start of the design process. The study was largely an exercise in checking those initial assumptions.

The Green Buildings of West Michigan Tour is Sept. 10 and 11. Ten tour tracks have been developed including government, nonprofit, furniture city (Steelcase, Herman Miller and Haworth), bridges and brews, small buildings, healthcare and many others. Tour registration and details are available at www.usgbcwm.org/green-buildings-of-west-michigan. The event corresponds with the jointly occurring GreenTown: The Future of Community and Future Cities: Climate Strategies for Sustainable Communities, to be held in Grand Rapids on Sept. 9 and 10.

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