



SUSTAINABLE

How Mortenson, Room & Board green up their HQs

Editor's note: The Sustainable feature runs the first Tuesday of each month. Go to finance-commerce.com to read previous installments.

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Special to Finance & Commerce

During the past decade M.A. Mortenson Co. has become a national leader in large-scale wind and solar installations on top of its construction and development business.

Six years ago, Mortenson decided to look at energy use at its own Golden Valley headquarters. As it turned out, the two-building campus had plenty of room to improve energy efficiency.

A strategy aimed at greening its headquarters has led to a 50 percent reduction in energy use since 2009, said Julianne Laue, senior energy engineer for Mortenson's Center for Energy Performance.

"We had a lot of old equipment that was replaced with energy-efficient equipment," she said. "We replaced air handlers and boilers, upgraded all the lighting and improved temperature controls."

Mortenson's story is a lot like many other companies in the Twin Cities. The pressure is on for building owners to become more energy-efficient because commercial and industrial structures represent a significant source of carbon emissions.

Federal government statistics show buildings – including residential – consume more than 43 percent of the nation's energy supply (roughly 16 percent for commercial, 27 percent for industrial), according to Energy Star data.

Existing buildings continue to be big en-



STAFF PHOTO: BILL KLOTZ

Julianne Laue, senior energy engineer for Mortenson's Center for Energy Performance, shows off a monitor in the company's Golden Valley headquarters that describes the company's progress in reducing energy consumption and offers real-time energy use data on different floors of the two building campus.

ergy consumers, yet replacing them is expensive and produce their own greenhouse gases during redevelopment, said Laue.

For many building owners, the best solution can be to hang on to what they have and begin making changes. It doesn't have to be costly and, in the end, may end up saving more money than the initial investment.

"There's a lot of inefficient buildings out there that have some pretty low hanging fruit in terms of improving their energy efficiency," said Craig Wilson, principal and managing partner at Sustology, a Minneapolis-based sustainability consultancy.

Wilson suggests improving efficiency by having an existing building "re-commissioned," a process by which the systems controlling heating, cooling and air handling are tested to ensure they work

efficiently and effectively. In many cases re-commissioning reveals inefficient boilers, poor air circulation and other issues that could be rectified with an appropriate investment.

The next step is to look at energy efficiency programs such as Energy Star and the U.S. Green Building Council's Leadership in Energy and Environmental Design certification for existing buildings, operations and maintenance. Those guidelines will inform retrofits, product purchases and other strategies for making buildings less energy intense and healthier workplaces, he said.

One of the Sustology's clients is the furniture maker Room & Board Inc., which like Mortenson is based in Golden Valley. Bruce Champeau, president and chief op-

50 PERCENT
Reduction in energy use at Mortenson's headquarters since 2009

erating office, said the retailer was building a 50,000-square-foot addition last year to the company's headquarters when it began a quest to improve the entire campus.

"We used the expansion as an opportunity to step back, to take a fresh look and really ask how things are working today or how they could work differently," he said.

Mortenson's next steps

Mortenson took a methodical approach to increase efficiency at the 185,000-square-foot campus at 700 Meadow Lane N., including installing occupancy sensors, LED lights and a daylight harvesting system. Then came the purchases of new HVAC and other equipment.

Now the energy reduction will come primarily from changing employee behavior. In Mortenson's lobby, a large flat-screen television gives real time energy data for each floor of the campus. The technology behind it comes from Lucid Design Group of Oakland, California.

Every electric panel in the two buildings has a sensor that measures energy use and then translates it into per-person per kilowatt hour data, she said. The company established a baseline of energy consumption in February before beginning a weekly contest in March that created competition among different floors to determine which one used the least energy.

Every Monday, the top performing floor

from the previous week receives an award.

"Employees have gotten competitive," Laue said.

They begin to turn off lights in empty conference rooms (beating automated occupancy sensors to the punch) and turn off computer equipment, printers and power strips on Fridays before they leave, she said.

That's about to get even easier with new plug-in strips that Mortenson is installing that have desktop on/off buttons, allowing employees to avoid the unpleasant task of crawling under desks to switch off power, she said.

The Lucid technology also allows the company to detect if lights have been left on over the weekend or whether a certain part of the buildings seems to be drawing more electricity or heat than usual. "It's been a great tool for understanding and implementing better maintenance practices," she said.

Mortenson is pleased with the progress. The "energy use intensity" in the offices -- a measure of annual energy use per square foot -- stood at 88 in 2013, down from 164 in 2009.

Lighting is 34 percent better than the state code. Daylighting controls shave 1.4 percent annually off energy costs. A planned 20-kilowatt solar installation will allow the campus to not just consume energy but also to produce it. Mortenson

wants to add another 20-kilowatt installation.

Room & Board's program

The furniture maker worked with Sustology on a sustainability program during its expansion last year.

Vance Olivier, retail facilities manager, said the company was almost half way to achieving LEED certification. The company, for example, had been an early adopter of LEDs and had the headquarters re-commissioned before focusing on LEED.

Perhaps the most noticeable new feature in the building is the skylights funneling sunshine into offices in the 235,000-square-foot campus, which reduced the need for artificial lighting in some parts of the building during the day, said Champeau.

Other changes did not directly involve energy consumption. Aerated faucets were installed to reduce water use. A new urban meadow now underway, one of the largest in the country, requires little water and maintenance to thrive.

At its stores, Room & Board has installed LED lighting and other sustainability elements. Champeau is proud of the company's environmental activities, among them being a founding member of the Sustainable Furnishings Council.

"We don't do these things from a marketing standpoint -- we do them because they are the right thing to do," he said.