Green works better

Happier, more productive employees more than make up the costs

By Rosemary Winters
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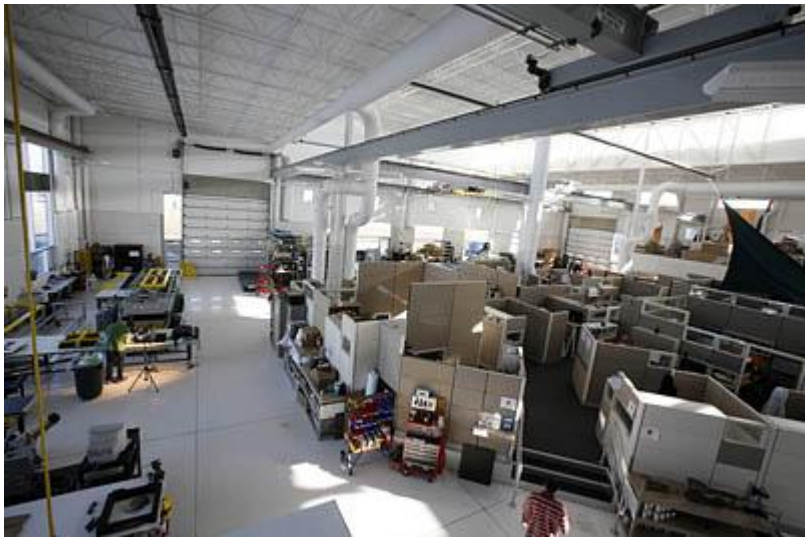

The Radius Engineering building was designed to be energy efficient as well as employee-friendly, employing things such as more efficient heating, cooling, lighting and use of space. The manufacturing area is not far from the office space, but is not crowded and is lit by indirect lighting with large windows.

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Utah's LEED-certified buildings

The Radius Engineering building is a large warehouse with office cubicles in the center and manufacturing around the perimeter.

The federal government is leading the way in green buildings, and the new OSHA Salt Lake Technical Center in Sandy is an example. Here OSHA's lead physical scientist Dan Crane works in the scanning electron microscope room.

Although his desk sits in the middle of a 15,400-square-foot manufacturing floor, Gary Aoki can spy peregrine falcons, bald eagles and red-tailed hawks through his binoculars.

Bird watching is one of many advantages of the engineer's work space at Radius Engineering. The 20-year-old company designed its new facility on the banks of the Jordan River to have panoramic mountain views, abundant natural light, clean air and a comfortable climate. The "green" building is also projected to use half the energy of a conventional building its size.

Green building has been touted as a way to cut operations and maintenance costs, but it's increasingly being adopted to provide healthier workplaces for employees and boost productivity.

Employers can boost productivity by 7.1 percent annually by improving indoor air quality, increasing sunlight and controlling office temperatures, according to a 2003 study of green building by the Massachusetts Technology Collaborative, the state's development agency for renewable energy.

Spending on green goods and services in the United States hit $7 billion in 2004, up 37 percent from 2003, according to the U.S. Green Building Council, which certifies green buildings with its LEED rating system, or Leadership in Energy and Environmental Design. The group has certified 113 green offices and 385 green buildings nationwide and reports that at least 3,000 more projects are in development.

The federal government is leading the movement, requiring that the General Services Administration find or build green buildings for government agencies. In Utah, only two office buildings - the Scocroft Building in Ogden and the OSHA Salt Lake Technical Center in Sandy - are LEED certified, and both were commissioned by the GSA, which leases the facilities on behalf of government tenants.

"In the building industry, change doesn't happen until the government makes it happen. Large corporations tend to follow suit," says Tammy Eatough, a realty specialist at GSA. "Our anticipation is that we will be spending fewer taxpayer dollars over time for LEED-certified buildings. . . . We've also noticed that people tend to be happier and take fewer sick days in these locations."

At the Occupational Safety and Health Administration's new lab in Sandy, scientists analyze air-quality samples and materials from workplaces around the country. Before moving in two years ago, the employees worked in an old warehouse where only a few management offices had windows.

"Everybody lived on anti-depressants because we were in a cave," says Lynn Kenison, a senior chemist at the OSHA Technical Center.

Salt Lake City firm Architectural Nexus designed the 72,000-square-foot building to have natural light in 75 percent of all occupied spaces. The building also used materials with recycled content, an energy-efficient HVAC system and automated lighting. The improvements boost the building's energy performance by 47 percent and result in annual savings of $43,853, according to Architectural Nexus.

If Radius Engineering is able to achieve LEED certification for its building, it could become the first private employer in Utah to do so. The company has registered for certification, but only a fraction of the projects that apply gain approval because of stringent requirements. LEED buildings are rated at four levels: standard, silver, gold and platinum. Chris Bachorowski, lead architect for the Radius project, expects the building to be rated silver, which is the same rating Utah's other two green workplaces earned.

Dimitrije Milovich, founder and president of Radius, says he built green because he wanted to have a minimal impact on the environment and provide a high-quality workplace for employees. The biggest hurdle was financing - the building's special features added about 15 percent to its price tag. Milovich approached several banks before securing loans from Utah First Bank and the U.S. Small Business Administration.

"They could see the payback," Milovich says. "It's not easy to go to conventional lenders and say 'I want to do something unusual.' Banks don't want to hear that."

The Radius building's enhanced design was more expensive than most. Green buildings typically cost 2 percent more initially, but they recoup 20 percent of construction costs over 20 years through lower energy costs and other savings, according to a study released in 2003 by California's Sustainable Building Task Force.

Milovich expects the biggest savings to come in labor costs. In a 10-year period, a building and its operation represents only 8 percent of a company's primary costs, but workers account for 82 percent, according to BOSTI Associates, a workplace research firm in Buffalo, N.Y.

"If you can improve the satisfaction of employees and their performance on the job [by providing a better work environment], every percent benefit you get is enormous. It's worth 10 times the cost," Milovich says.

Milovich combined green building with high-performance work space design in the facility, which houses about 20 aerospace engineers and technicians. "Cool daylighting" - natural light without the heat - almost eliminates the need for artificial lighting during the day and reduces the building's heat load. Displacement ventilation and use of paints and materials with little or no Volatile Organic Compounds provide better air quality and more efficient cooling than a conventional building. Vents and task lighting in each office cubicle allow occupants some temperature and lighting control.

"You feel like you've got a lot of breathing space here. It's just more comfortable" than the old building, Aoki says.

Plus, employees generally are more productive simply because the space is designed better. San Francisco-based work space designer Phyl Smith interviewed employees before they moved and designed work spaces suited to their needs. The company's former location in Millcreek was so small that other projects would have to be moved out of the way to accommodate a larger one. It was an inconvenience that employees dubbed "the Radius shuffle."

The new South Salt Lake building is basically a one-room warehouse with office cubicles in the center and manufacturing around the perimeter. Virtually all surfaces have acoustic treatments to muffle the noise. The unusual design allows engineers to walk a few steps from their desks and see their designs being made. There's still a view to the outside from every desk.

"In a traditional manufacturing plant, administration is in the front and production is in the back - often, without windows. You get this really distinct hierarchy," Milovich says. "We feel like we're all in this together. . . . The model I had in mind was a campfire."

The design also improves communications among employees, who bump into one another more often, says human resources manager Barbara Boehme. She's seen a boost in morale since Radius moved to its new building. "It does a lot for employees' attitudes and emotional and psychological well-being to come into a building with this much natural light. As employees, we all know that Dimitrije put the time, the energy and the money into creating a building that we would enjoy working in. When the owner's goal is not to save as much as he can, but to create a healthy environment for employees, a lot is said."

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The Boston Globe contributed to this article.