

Full-Spectrum Lighting

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Washington - In 1986, the U.S. Postal Service selected the main post office in Reno, Nev., for lighting improvements that would make the sprawling mail facility a "minimum energy user."

Immediately, the post office's energy savings hit \$50,000 a year, enough to pay for the \$300,000 renovation in just six years. But then something unexpected happened: Reno's mail sorters instantly rose from mediocre performance rankings to become the most productive sorters in the western states. Their improved productivity alone was worth nearly \$500,000 a year - more than the cost of the new lights.

In Seattle, aircraft manufacturer Boeing joined the Environmental Protection Agency's "Green Lights" program by installing energy-efficient lighting in more than 1 million square feet of its assembly plant. As expected, lighting costs fell 90 percent, enough savings to cover the renovation in just two years. But here, too, something unexpected happened: Assembly workers suddenly could see much more clearly. Up and down the line, quality of workmanship increased and flaws were being detected early, when they could be easily repaired.

In both cases, plant managers implemented energy-saving projects as a way to trim costs. But, as in other cases around the country, improved conditions led to a windfall increase in worker performance. "There are a lot of stories like this out there," said Joseph Romm, an energy-efficiency specialist at the Energy Department. "I think this is the tip of the iceberg." Romm joined William Browning of the nonprofit Rocky Mountain Institute on Thursday in releasing an RMI report, "Greening the Building and the Bottom Line" The two joined architectural and government energy specialists in touting what looms as the new trend in corporate environmental policies. By weaving "green" improvements into their buildings, from skylights to better heating and cooling and more natural lighting, companies not only are slashing utility costs but also are becoming more competitive with the help of a more productive work force.

"This is very new stuff," said Romm, author of "Lean and Clean Management: How to boost Profits and Productivity by Reducing Pollution." "It's just a matter of exposing people to it." Browning told the story of Wal-Mart, which in June 1993 opened a prototype "Eco-Mart" in Lawrence, Kansas, with the help of RMI. That store was built with environmentally friendly materials, landscaped with local plants, and when possible, uses energy and water-saving devices. Because the original costs were higher for the Eco-Mart store, Wal-Mart cut back on the more expensive skylights that allow natural lighting. But soon a trend developed: Not only were employees spending more time in the naturally lighted half of the store; cash register sales there were nearly twice as high as in the artificially lighted areas.

"Creating an energy-efficient environment is as critical to their business as any investments they are making," said Romm, citing the case of Lockheed Missiles and Space Co.'s "Building 157" in Sunnyvale, Calif. Lockheed's architects built a building in 1983 that used half the energy of a typical building its size, but the unique design and interior environment had a hidden benefit. Worker absenteeism fell 15 percent, and productivity rose 15 percent. While the building was more expensive, savings from less absenteeism alone covered the extra cost. "We knew energy efficiency was good for the economy and good for the environment," said Christine Ervin, former director of the Oregon Department of Energy and now assistant secretary for energy efficiency at DOE. "Now, for the first time, we have documentation on the kinds of benefits that boost labor productivity."