

Solatube International

Daylighting Facts & Figures

Worker Productivity

Green buildings bring green (money) to companies

Carnegie Mellon University's Intelligent Workplace design studio found that improved lighting with an extra up-front cost of \$370,000 saved almost \$700,000 in energy and operating costs for a typical workplace. However, the resulting gains in productivity were worth as much as \$14 million. Here's why: In a typical building, energy costs average \$1.50 to \$2.50 per square foot, while salaries exceed \$200 per square foot. Cutting energy use in half typically saves \$1 per square foot per year, while boosting productivity just 5% saves more than \$10 per square foot.

(2002). Energy Savings Often Bring Improvements in Productivity and Product Quality *The non-profit Center for Energy & Climate Solutions' Cool Companies*. Retrieved from <http://www.cool-companies.org/profits>

Daylight reinforces natural circadian rhythms and other worker benefits

Higher occupant productivity and satisfaction are likely to result from the better visual quality that is provided by good daylighting design. Daylight provides the truest and most vivid color rendition of all available light sources. There is also evidence that the high concentrate of blue wavelengths in daylight help the eye to see more detail with greatest precision, especially at lower light levels. Mental stimulation is perhaps the biggest benefit of natural light. Daylight reinforces natural circadian rhythms and the production of neural transmitters, such as serotonin. Higher illumination levels have been associated with greater mental acuity and the simple variability of daylight may be key to mental stimulation. Studies show that lab animals learn and remember better when they are kept in a naturally variable and stimulating environment.

Heschong, L. (2002). Productivity and Satisfaction: Daylight Makes the Difference *Northwest Energy Efficiency Alliance*. Retrieved from <http://retired.betterbricks.com/default.aspx?pid=article&articleid=98&typeid=10&topicname=increasedvalue&indextype=>

Worker compensation cases drop 2,000% in new daylit facility

When subsidiary Prince Street Technologies, a subsidiary of Interface Carpet, built a new 160,000- square-foot factory in Cartersville, Georgia, they used extensive natural daylighting. Daylight streams into the factory through 32 skylights - a big help for employees making richly colored carpets. A company official brags theirs is "the only carpet factory with a 60-foot picture window. The workers love it . . . It's made an immense difference in attitude." In the first three years after moving into the new building workers' compensation cases dropped from 20 per year to under one per year for savings worth an estimated of \$100,000 to \$200,000 a year - more than the value of the energy savings.

(2002). Energy Savings Often Bring Improvements in Productivity and Product Quality *The non-profit Center for Energy & Climate Solutions' Cool Companies*. Retrieved from <http://www.cool-companies.org/profits>

Energy bills reduced by 50%, absenteeism drops 40-45% in Hewlett-Packard subsidiary

VeriFone, a subsidiary of Hewlett-Packard in Costa Mesa, Calif., upgraded its 76,000-square-foot building to include a series of roof skylights and other energy-efficient features. On sunny days, workers used only natural daylight and small task lights. Workers no longer complained about end-of-the-day headaches or end-of-the-week sluggishness. As a result, absenteeism dropped 40 to 45%, employee productivity increased 5 % and energy bills were slashed 50%, for a payback time of under one year.

(2002). Energy Savings Often Bring Improvements in Productivity and Product Quality *The non-profit Center for Energy & Climate Solutions' Cool Companies*. Retrieved from <http://www.cool-companies.org/profits>

Company increases worker productivity by 15% after adding daylighting to its facility

Lockheed Martin reports that after daylighting its facility in Sunnyvale, Calif., the company achieved 15% higher worker productivity. Additionally, the company won a \$1.5 billion defense contract based on increased productivity, profits which paid for the entire building. As an added bonus, the company saved \$300,000 to \$400,000 a year on energy bills.

Romm J. and Browning W. (1994, 2002). Greening and the Bottom Line: Increasing Productivity Through Energy- Efficient Design. *Rocky Mountain Institute*. Retrieved from http://www.columbia.edu/cu/alliance/EDF-2012-documents/Reading_Fox_3.pdf

Furniture manufacturer employees reaps the benefits of daylighting design

A pre- and post-occupancy analysis of the new facility for Herman Miller, a furniture manufacturer in Holland, Mich., found the following:

- Sustainable features of the building included extensive daylighting

- Occupants experienced the following:
 - o Increased sense of well-being, belong and work spirit
 - o Increased job satisfaction
 - o Increased feeling of looking forward to work and being in good spirits at work
 - o Higher satisfaction overall with the building, especially the daylight
 - o The daytime workers responded most positively

Herman Miller improves worker satisfaction and productivity. *U.S. Dept. of Energy*. Retrieved from http://www1.eere.energy.gov/femp/pdfs/buscasest_section3.pdf