



Efficiency + Renewables = Green Jobs

Congressional Sustainable Energy EXPO 2010

Potential Economic Impact of Daylighting

The potential economic impact of a national daylighting initiative is staggering. The energy savings from daylighting would greatly reduce the expenditures of companies that utilize this design strategy to eliminate the need for electric lights during the day. This would allow those companies to invest more money in expanding their core business, thus providing more jobs. Daylighting has also been proven to reduce absenteeism, improve morale, and increase productivity. Increased retail sales have also been attributed to daylighting, potentially creating more jobs for those that implement daylighting. All of this would lead to increased demand for skylights and create green jobs including: design, engineering, production, packaging, shipping and installation.

- "(Daylighting) energy savings technical potential, assuming complete penetration of all floor space directly below a roof in the four building types examined, **equals about 0.4 quads.**"

0.4 Quad = 1.17×10^{11} kWh = 117,000,000,000 kWh or **117,000,000 Megawatt-hours**
CO2 emissions from 195,407,000 barrels of oil or Carbon sequestered by 17,916,000 acres of pine trees
- "Studies have repeatedly found that daylighting has the potential to realize **very large reductions in lighting energy consumption. (Up to) 40 – 60%.**"
- "**There exists a real, immediate, opportunity for national energy savings in buildings with high, open ceilings. We recommend action to exploit this potential**, including ensuring that codes do not stand in the way of energy-saving toplighting solutions, increasing awareness of benefits through training, and making appropriate resources available to practitioners to achieve effective designs with limited risk and cost. In the case of buildings with low, drop ceilings, the long payback will be very difficult to overcome."
"Commercial Building Toplighting: Energy Savings Potential and Potential Paths Forward" June 2008, DOE
- "The value of energy savings from the daylighting is far overshadowed by the value of the predicted increase in sales due to daylighting. By the most conservative estimate, **the profit from increased sales associated with daylight is worth at least 19 times more than the energy savings, and more likely 45-100 times more than the energy savings.**"
"Skylighting and Retail Sales", Heschong Mahone Group, 1989, PG&E Detailed Report
- Carnegie Mellon University 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 five percent saves more than \$10 per square foot.**

The non-profit Center for Energy & Climate Solutions, 2002

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