

Solatube International

Daylighting Facts & Figures

Retail Sales and Building Energy Efficiency

Sales increase significantly in daylit departments at WalMart

The WalMart store in City of Industry, California, uses half the energy of a typical new California store, thanks to advanced lighting and efficient, downsized climate control system. In place of ordinary opaque roofing, the store has an 18-kilowatt solar photovoltaic canopy. Annual energy savings are estimated at \$75,000 to \$80,000, which means a three-year payback of the added cost of the equipment. Southern California Edison, the local utility, provided a \$170,000 incentive that shortened payback to less than one year. But rewards are much greater than that: WalMart's decision to use skylights was sparked by the stunning success of its "Eco-Mart" store in Lawrence, Kansas. In a cost-cutting move, the company installed specially- designed skylights over just half the store, leaving the other side without daylighting. Managers using Wal-Mart's famous real-time inventory system quickly found that sales per square foot were significantly higher in the daylit half of the store, and higher than the same departments in other stores.

(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>

Daylighting delivers 40% increase in sales

Research indicates that people prefer to work, buy and recreate in spaces illuminated with glare-free daylight. A recent investigation into the relationship between Daylighting and Human Performance indicates that sales are 40% higher in stores with skylights. The study analyzed sales performance data for 108 nearly identical stores of a chain retailer - the exception was the skylights in some of the stores. The Bottom Line: If a typical non-skylit store were averaging sales of \$2 per square foot, then its sales might be expected to increase to somewhere between \$2.61 and \$2.98 with the addition of a skylighting system.

The Benefits of Daylighting. *Northwest Energy Efficiency Alliance*. Retrieved from <http://www.betterbricks.com/design-construction/daylighting-overview>

Store reports 10 to 15% increase with use of daylighting

Outpost Natural Foods, a three-store co-op in the Milwaukee area, opened a new store in 2000 that was designed from the ground up to include daylighting as part of an overall "green building" approach. "We saw a big difference in sales per customer," said Pam Mehnert, Outpost's general manager. "That store continues to be our highest sales per shopper of the three we have. And it was that way right from the beginning.

"People are taking more time and spending more money. Our sales per customer at the State Street store is around \$30; in our other stores, it's 10% to 15% less."

Ellis, G. (2007, June 25). Let the Sun Shine In. *Supermarket News*. Retrieved from <http://supermarketnews.com/retail-amp-financial/let-sun-shine>

Daylighting positively impacts retail sales up to 40%

An independent study conducted for the California Energy Commission by Lisa Heschong of Heschong Mahone Group found:

- Although further research will be required to uncover the mechanisms of daylight's importance, this study reinforces the finding that daylight does truly increase retail sales. We have presented evidence from a second retail sector that daylight can increase retail sales on average for the chain by up to 6%, or for individual stores by up to 40%, depending on the daylight design, parking lot size, and other store variables
- There is a second possible effect of the spectrum of daylight, due to its greater richness in the blue end of the spectrum. One current theory suggests that people perceive a space to be more brightly lit, and that the resulting size of their pupil is smaller, under so-called "scotopic" sources of light, those rich in the blue end of the spectrum. The smaller pupil size is likely to increase the depth of field of the viewer, allowing a shopper to see greater detail over a wider range of focal distances.
- Daylight has the greatest range of spectral wavelengths of any of our light sources, and is the source our eye has naturally adapted to through millenniums of evolution. With a continuous spectrum of light, all colors will be more vivid and have a more naturally rendered appearance under daylight. Any store which sells products distinguished by color, or where color is a key selection criteria, is likely to benefit from improved color rendition.
- During the California power crisis of 2001, when almost all retailers in the state were operating their stores at half lighting power, the stores in this chain with daylight were found to benefit the most, with an average 5.5% increase in sales relative to the other non-daylit stores within the chain (even while all stores in this chain increased their sales compared to the previous period).
- The value of the 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, may be worth 45-100 times more than the energy savings.

Heschong, L. (2003, October). Daylight and Retail Sales. *California Energy Commission*. Retrieved from http://newbuildings.org/sites/default/files/A-5_Daylgt_Retail_2.3.7.pdf