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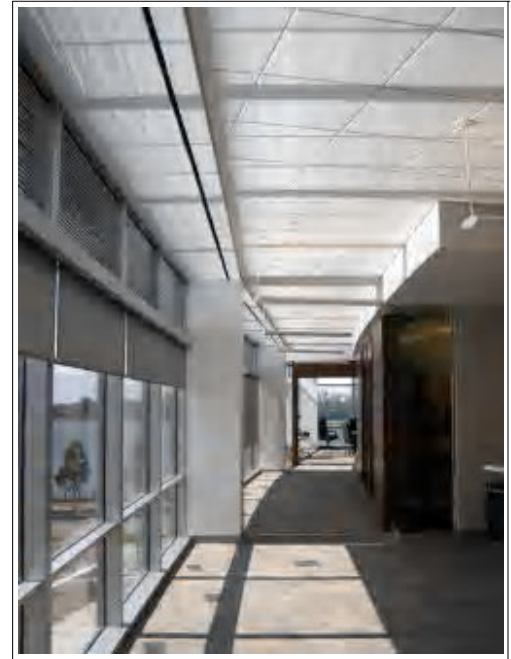
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## LightLouver Offers Low-Profile Alternative to Light Shelves

Product Review - *Environmental Building News* February 2007

As a daylighting consultant with Architectural Energy Corporation (AEC) in Boulder, Colorado, Zack Rogers, P.E., was frustrated by the limitations of conventional lightshelves. In order to effectively protect an indoor workspace from direct sunlight, they need to be quite wide, and they rarely reflect light deep enough into a space to daylight more than the perimeter zone. In response, he and his colleagues at AEC developed the LightLouver™ Daylighting System. This system consists of an aluminum frame housing highly reflective louvers shaped to redirect light from any incoming angle onto the ceiling plane. These units sit between the jambs of a window, above the vision glass, where they intercept incoming light and redirect it deep into the space. Following its introduction in 2004, LightLouver, LLC, has been gradually ramping up its manufacturing, sales, and distribution capabilities. Rogers now splits his time between AEC and LightLouver, as director of engineering for the fledgling company.

The LightLouver units look a bit like shiny dampers, but the louvers themselves are fixed, not operable. The units are not designed to go into windows that provide a view, because the louvers would block that view. Instead, they are installed, like lightshelves, on daylight glazing high on a wall. The units pivot inward so that the glass and the louvers can be cleaned, but the finish on the louvers is delicate and oils from skin would attract dirt, so they should be handled only with cotton gloves. The company is working on a new product—insulated glazing units with integrated LightLouvers—in which the delicate reflective surfaces would be



Photos: Zack Rogers

*The interior of the Old National Bank headquarters in Evansville, Indiana (top photo), clearly shows how effective the LightLouver Daylighting System is at reflecting direct sunlight onto the ceiling. Retractable blinds hanging below the LightLouver units provide shading for the vision glass. A sample LightLouver unit is shown in the lower photo.*

protected from dust and damage.

LightLouvers are designed for direct sunlight, so they work best in climates where the skies are typically clear. When the sun is high overhead, they redirect about 76% of direct sunlight onto the ceiling, an amount that decreases as the sun gets lower in the sky. Under overcast conditions, they transmit about 54% of the available light, according to Rogers. A retractable version that would work like horizontal venetian blinds, which can be moved out of the way to allow better light transmission under cloudy skies, is in the works.

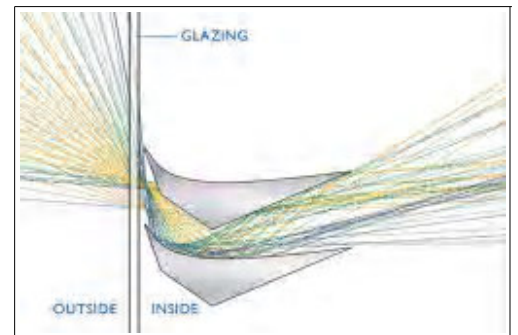
The units can be fabricated in any height from 14" (360 mm) to 48" (1,200 mm) and in any width up to 68" (1,700 mm). For larger glazed areas, multiple units can be combined. Under typical conditions, for each foot (300 mm) of unit height they provide usable daylight about 14 feet (4 m) into a room. They cost anywhere from \$30 to \$45 per ft<sup>2</sup> (\$300–\$450/m<sup>2</sup>), depending on the size and configuration (larger units are more cost-effective).

LightLouver now has about 25 installations, ranging from small demonstrations in architecture offices to a job with 350 units in the east, west, and south windows over multiple floors. One of those installations was for the engineering firm DuBois & King, Inc., in Randolph, Vermont. Mark Miller, director of marketing and business development for the firm, describes their effect: "You see a nice amount of light on the ceiling, and it reflects down into the workplace—they are doing what they are supposed to do." Miller also told *EBN* that the maintenance requirements have not presented any problems. Another dozen installations are currently scheduled for 2007, according to Rogers, suggesting that there is ongoing interest in these lightshelf alternatives.

– Nadav Malin

#### For more information:

Zack Rogers, Director of Engineering  
LightLouver, LLC  
Boulder, Colorado  
303-444-8773  
[zrogers@lightlouver.com](mailto:zrogers@lightlouver.com)  
[www.lightlouver.com](http://www.lightlouver.com)



Source: LightLouver, LLC

*Sunlight is reflected more or less directly off the louvers and onto the ceiling, depending on the angle at which it reaches the window.*

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