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## Solar awning an energy triple threat

POSTED: Friday, April 30, 2010 at 02:35 PM PT  
BY: Nathalie Weinstein  
Tags: Ihab Elzeyadi, Oregon BEST, solar



Ihab Elzeyadi has developed a prototype for a window awning that can save, generate and redirect energy for better lighting and energy efficiency in buildings. (Photo courtesy of Oregon BEST)

Professor Ihab Elzeyadi thinks building systems have it too easy.

That's why the University of Oregon professor and researcher has been testing a prototype solar photovoltaic window awning able to perform triple duty.

"We can use **photovoltaics** to some degree on roofs," Elzeyadi said. "But up there, they are generally doing one function: generating electricity. Generating energy is good, but saving it in the first place is better, and cheaper. We're trying to develop products that help us to save energy use in the buildings in the first place, as well as generate it."

The awning, Elzeyadi said, has three functions: it saves energy by reducing the amount of sunlight heating the building through shading, it generates energy through integrated solar photovoltaic cells, and it transmits energy by redirecting daylight using a light shelf. A light shelf is a reflective overhang used inside a building's window to reflect daylight onto the ceiling and deeper into a space.

A local manufacturer, **Image King Signs** of Eugene, built the initial prototypes for Elzeyadi's project. Those prototypes, installed at the University of Oregon's Onyx Building, allow Elzeyadi to track how the awning affects the building's energy use. Information on the building's energy use is available at a website.

"Some people had said the light-redirecting devices are not going to work," Elzeyadi said. "Now, it's easy to bring them in to the space and say, 'How do you like the lighting in here?' It has become a living, learning lab for the students, and also a good mock-up for building owners to see it in motion."



The solar awnings redirect light from the outside using a light bar that reflects sunlight onto the building's ceiling. (Photo courtesy of Oregon BEST)

The professor's next challenge is to shepherd the product to the marketplace. The **Oregon Built Environment & Sustainable Technologies Center**, a nonprofit focused on boosting Oregon's reputation as a place to do green business, is working to connect Elzeyadi with a business for commercialization of the awning.

"Compared to other products, like computers and cell phones, there is not a lot of research and development funding available for building sciences," Elzeyadi said. "That's a huge challenge for us. New ideas are always susceptible to failure and



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“The same device that is harvesting daylight could emit electric light at night with LEDs,” Elzeyadi said. “I’m trying to combine green products in buildings that benefit one another.”



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*Posted on 05/02/10 at Sunday, May 2, 2010*

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