

Portland Architecture

UO solar awning project reaches semifinals in national competition, seeks to bridge business-academic gap



Ihab Elzeyadi examines his solar awning (image courtesy University of Oregon)

A University of Oregon architecture program team has advanced to the semifinals of the Clean Tech 2011 Open Business Competition, keeping them in the running for the \$250,000 national grand prize and an opportunity to present before 2,000 attendees at The Cleantech Open's Global Forum in November.

The mission of the Cleantech Open is to find, fund and foster "the big ideas" that address today's most urgent energy, environmental and economic challenges. And Innovative Environments, a Eugene start-up company with collaborations from University of Oregon architecture and business school graduates, advanced to the semifinals with its solar awning, which was developed at the UO High Performance Environments Lab (HiPE) by professor Ihab Elzeyadi.

Known as SolarStream, the awning is described as a three-in-one green building product, with its indoor LED luminaire, daylighting reflector, and PV shade. Its modular system is comprised of conventional photovoltaic cells and shading that attach to a building's exterior, providing shade to windows while reflecting light back inside. Elzeyadi and team tested the awning's performance on the side of a university building and found that it generates approximately six to eight times the energy necessary to light the building. The awning also lowers temperatures inside, reducing stress on cooling facilities.



Solar awning on Onyx Bridge at UO (image courtesy University of Oregon)

“Our state and the entire region need new, innovative and high-growth companies now more than ever,” said Byron McCann, co-chair of the Pacific Northwest Cleantech Open. “It’s hard enough to start any kind of business, much less one in industries as complex and capital intensive as energy and sustainability. All of us involved are ready to roll up our sleeves and help these entrepreneurs and their innovations succeed.”

Semifinalists will present their final business plan and investor pitch to a judging committee of investors and experts, which will select the three finalists at the regional event in October in Seattle. Those finalists will compete with others from four regions around the U.S. for the national grand prize.

Besides the technical capabilities of the solar awning project, it also represents a potential new avenue of partnership between the University of Oregon and entrepreneurial efforts made by its professors and students.

“There is much uncharted territory between the scientific research that provides innovative new materials and the commercialization of those ideas into products,” writes Lee van der Voo of *Sustainable Business Oregon*. “But Elzeyadi and the university of Oregon envision another possibility for the eSolar Awning, a corporation representing UO and the laboratory, along with a commercial partner to manufacture products could lie ahead.”

“There’s a potential to have a company that would really specialize in these exterior treatments for the building and the building facades,” Elzeyadi told van der Voo. “It will take a little bit of two sides coming up with enough people who are interested to draft and design what that company would look like as an R&D company that would be tied to full scale production, and the university becomes part of that.”

Elzeyadi’s lab is in the process of converting into the Façade Innovation Technology Testing Facility, made possible with funding from Oregon BEST, the university, grants and donations. The facility will be actively testing a variety of sunscreens, windows, solar equipment and other building materials for commercial viability. “Essentially, it will provide a facility to practice on,” van der Voo adds, “one outside of an arena of live construction, where the price for failing can be high.”

Elzeyadi believes sustainable architecture remains rooted too much in best practices, without innovative thinking based in hard science. Many times people have done that to save them money” or simply because it’s been successfully done before. The Façade Innovation Technology Testing Facility will help engender the necessary market transformation to elevate not just solar technology but a range of products, materials and methods.

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