

PSU Shattuck Hall awarded Engineering Excellence Project of the Year

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Portland State University's Shattuck Hall was named Engineering Excellence 2010 Project of the Year by the American Council of Engineering Companies of Oregon. Built in 1915, the building now has an energy-efficient HVAC system. (Rendering courtesy PAE Consulting Engineers)

To some people, a heating, ventilating and air conditioning system is just a necessary, boring element of a building. But for Portland State University's Shattuck Hall, the HVAC system helped it become an award-winning work of engineering.

Shattuck Hall, home to the university's Department of Architecture and Public Safety Office, on Wednesday was named Engineering Excellence 2010 Project of the Year by the American Council of Engineering Companies of Oregon.

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The award was presented at the Multnomah Athletic Club in downtown Portland, at a banquet co-sponsored by the Daily Journal of Commerce.

Shattuck Hall, built in 1915, underwent a 13-month, \$9.5 million renovation before it reopened in fall 2008. PAE Consulting Engineers of Portland designed its mechanical, electrical and lighting systems.

Ray Miller, a retired structural engineer and one of five judges for the contest - the panel included DJC publisher Rynni Henderson - said Shattuck Hall's new HVAC system was one reason it received the top award.

The system includes approximately 1,000 aluminum, 3-foot-by-5-foot, radiant ceiling panels laced throughout the building. Serpentine tubes connected to the back of the panels circulate some of the building's hot and cold water, helping to cool or heat rooms where panels are located, said project manager Nick Collins of PAE Consulting Engineers.

The three-story, 66,000-square-foot building still has heating and air conditioning, but the panels help limit their usage, lowering total energy costs, Collins said. He noted that in a seminar room, the panels are flipped upside down, allowing students to examine the tubing network.

Miller said he also liked Shattuck Hall's seismic and fire-exit upgrades.

"They came up with some good and unique solutions," he said.

Skip Stanaway, a principal with Portland-based SRG Partnership, the architect and interior design firm for the renovation, also praised the HVAC system. In a letter dated Nov. 23, 2009 and enclosed in the contest entry packet, he described the system as "one of PAE's greatest contributions" to the renovation.

Shattuck Hall's original ductwork, he wrote, was too small to heat and cool the building, but PAE Consulting Engineers kept it anyway, for ventilation purposes. He also cited the radiant ceiling panels.



Shattuck Hall reopened in fall 2008 after a \$9.35 million renovation. Built in 1915, the building's mechanical, electrical and structural systems are now exposed. (Photo courtesy PAE Consulting Engineers)

"Not only did this enable us to preserve some of the building's historic fabric and the dramatic form of the original ducts, but also reduced construction costs and waste," he wrote.

Located near the intersection of Southwest Broadway and Southwest Hall Street, Shattuck Hall was originally built as an elementary school. It now has digital and materials labs, a metal foundry and workshops for plaster casting, woodworking and model making.

According to the contest entry packet, the exposure of Shattuck Hall's mechanical, electrical and structural systems make the building "a teaching tool for the architects of the future." It also has an open floor plan, large windows, skylights and light wells.

In addition, the packet says Shattuck Hall consumes 45 percent less water and 19 percent less energy, and provides 30 percent more fresh air, than required "by national standards."

Shattuck Hall received Built Honor and Sustainability awards in 2009 from the American Institute of Architects' Portland chapter. It also placed third in last year's Daily Journal of Commerce Top Projects "Renovation - \$5 million to \$15 million" category.

Project partners, all based in Portland, are listed as: Portland State University, owner and developer of Shattuck Hall; SRG Partnership, architecture and interior design; Catena Consulting Engineers, structural engineering; and Howard S. Wright Constructors, general contractor.

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