

UO building will honor Native American traditions

By: Beverly Corbell in Architecture and Engineering September 16, 2016 3:11 pm



A new residence hall at the University of Oregon will be able to accommodate 531 freshmen. (Courtesy of Mahlum Architects)

When **Mahlum Architects** team members took on the design of a new 145,000-square-foot residence hall for freshmen at the University of Oregon in Eugene, they encountered a particular challenge: preventing the building from casting a shadow on a specific area.

Construction of the five-story, 531-bed, not-yet-named building is under way near the **Many Nations Longhouse** on the UO campus. The longhouse, dedicated in 2005, is used as a gathering place for Native American students at the university and for ceremonies by area tribes. The facility's planned **Expression Place**, an outdoor circular courtyard, will be used for tribal observances and celebrations; openness to let in sunlight will be essential, particularly during the winter solstice.

To respect those cultural traditions, Mahlum principal Kurt Haapala said, the design team used 3-D modeling software to pinpoint the planned location of the Expression Place and then developed a "solar net" to test multiple building configurations. By overlaying this information on the site plan, he said, Mahlum was able to create a unique building form that fell beneath the path of the sun during the winter solstice. It wasn't easy, he said.

"It was an unusual design and took an unusual approach," he said. "That added to the complexity and character (of the project) – kind of fun and hair-pulling at the same time."

The whole idea behind the design was to ensure that the residence hall would be a good neighbor, Haapala said, to not only the longhouse, but also two campus child care centers and the adjacent Fairmount neighborhood.

But there was one problem: the Expression Place wasn't built yet, he said.

"We had to take all of our best guesses to pinpoint where it would be," he said.

In addition, the Mahlum team had to consider the aspect of the sun on the horizon and even factor in the future growth of a hillside's trees that could block sunlight, Haapala said.

Designing a five-story building with shadow constraints was a significant undertaking, he said. The design team performed dozens of siting studies for the building massing before they could even use the 3-D tool.

"We almost boxed ourselves into it," he said. "But the building form became a product of constraints and also added to the richness of the layout."

The term "solar net" is one that Mahlum used to describe a virtual net that was placed over the building with the 3-

D software to show where shadows would be cast, Haapala said.

"This 3-D model sort of draped a net over our building and said you can't go above this net in any space we've created," he said.

In the final design, the residence hall's three wings will have glassed-in lounge areas over a 10,000-square-foot ground floor featuring classrooms, lecture halls, seminar rooms, offices and study spaces. The first floor will also have an open lounge, an open hearth kitchen and a maker space.

Landscaped areas and green zones between the new building and the child care centers helped soften the building's scale, Haapala said, and created shareable outdoor areas. Also, a walkway between the residence hall and the child care centers will help keep children safe.

Being a good neighbor to Fairmount residents meant carefully considering the building's size, scale and street plantings to meet both city and university goals of promoting green streets and open space, Haapala said. A formal street entry will be located along the building's south side to greet the neighborhood.

"We used appropriate setbacks and street trees to give a positive face to the Fairmount neighborhood, which also marks the edge of campus," he said.

UO residence hall

Location: Eugene

Anticipated construction completion: fall 2017

Cost: \$32 million

Owner and developer: University of Oregon

General contractor: Walsh Construction Co.

Architect: Mahlum Architects

Landscape architect: Walker Macy

Mechanical, electrical and plumbing engineer: Interface Engineering

Structural engineer: Froelich Engineers

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