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Santa Barbara Student Center Seeking Silver Status

An $18-million building at UC Santa Barbara was designed to exceed Title 24 standards by up to 40 percent. Key sustainable elements include daylighting, windows and sun shading.

By Greg Aragon

The top is closing on UC Santa Barbara's $18 million, energy-efficient Student Resource Building.

The 69,500-sq.-ft. structure was about 65-percent complete in December, with roof work and water sealing under way.

When the new facility is completed in the summer, it will house student services departments that are currently located in more than six temporary, overcrowded facilities. The building will include the Office for Student Life, Educational Opportunity Program, Women's Center and Campus Learning Assistance Services. A day-care center, library, computer labs and multipurpose rooms also will be in the complex.

Designed by the San Francisco office of Sasaki Associates, the three-story building includes many sustainable energy principles and will seek a silver LEED rating from the U.S. Green Building Council.

"I think it is going to be a demonstration building in terms of its energy conservation," said Sasaki's Scott Smith, the project's principal designer. "We were looking to exceed Title 24 by 30 to 40 percent."

Title 24, which was signed into law in 1978, is a California regulation that sets energy-efficiency design and construction standards for new residential and nonresidential buildings in California. The law ensures that buildings use components that have been certified by the state, including insulation, windows and doors, and energy-efficient furnaces and air conditioners. It is updated every three years.

To achieve the goal, the design team is extensively using green features such as daylighting, natural ventilation and sun shading.

"By using daylighting and natural ventilation we reduced the need for air conditioning and [other] mechanical systems by anywhere between 30 and 50 percent," Smith said.

He said the building's high number of operable windows, which make up about 40 percent of all glass on the project, work for both daylighting and natural ventilation.

In addition, Smith said the cast-in-place concrete facility's main forum area is actually an atrium space in the middle of the building.

"This acts as a chimney to exhaust hot air, so that when you open a window on the edge of the building, the air comes through the building and goes out the top through the forum space."
The resource building is being constructed on 1.5 acres on the southwest side of the campus, near the Events Center and adjacent the Isla Vista student housing community.

Bonsall-based Rogers-Quinn Construction Inc. is serving as the general contractor.

"I've worked here 35 years and I have been dreaming about this for 35 years," said Yolanda Garcia, UCSB's executive director for student academic support services.

"We're trying to create a facility that will promote community across departments, students, staff and generations.

"The building is structured in such a way that everybody has common areas that they have to walk through and be a part of to get where they are going."

Garcia said the new building is replacing older structures that are "pretty substandard" and that are actually old cargo containers or outdated "World War II barracks."

The showpiece of the resource building is the forum, a spot designed to attract visitors in a central, gathering space.

Sustainable in Santa Barbara

Several sustainable systems have been incorporated into the Student Resource Building at UC Santa Barbara. They include:

- Highly transparent metal and glass curtain wall on the north wing to maximize daylighting
- Lightweight masonry tile rain screen with small, deep-set windows equipped with sunshades on the south wing
- Grove of 50 shade trees planted south of the building to help reduce heat island effects
- Mechanical ventilation is limited to internal spaces
- HVAC system is connected to the campus chilled water loop, eliminating the need for cooling towers
- Interior has an exposed structural concrete frame to reduce the need for finish materials
- Flooring consists of rapidly renewable rubber and carpet tiles manufactured of post-industrial nylon
- Walls are finished with low volatile-organic-compound paints and post-consumer, nylon fabric-wrapped panels

"The building focuses on a central forum, and then the various offices and meeting rooms occur around this forum and overlook it," Sasaki's Smith said. "In some spaces you can look through the entire building. It's a building in which we dissolved the walls to make it as open and transparent and interactive as possible."

It was on the northeast side of the forum that Frank Peters, project manager for Rogers-Quinn, said that his crew had the task of filling a 28-ft.-tall wall with about 50 cu. yds. of concrete.

"The design called for a single pour, [and] the density of the reinforcing steel made it impossible to place and vibrate the concrete to assure a high level of consolidation," Peters added. "The finished spec for this wall only [could have been] achieved with a high concrete consolidation. We had a situation where physics and specs were in conflict."

To overcome this hurdle, Peters said the concrete contractor, Newbury Park-based Falcone General Engineering, created places where the concrete could flow through the forms to increase the likelihood of reasonable consolidation.

The construction team also utilized external vibration on the wall and modified the mix by adding a "super-plasticized" substance to help the concrete flow smoother, Peters added.

The project, which broke ground in February 2004, was funded by an increase in...
student fees, which students voted for and approved in 2001.

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