

CSU's Warren Hall employs multifeature panels for aesthetic, construction, sustainability benefits

Warren Hall, a five-story, 67,000 ft² (6200 m²) building on the campus of California State University–East Bay, houses administrative and faculty offices, as well as support space and the university's Welcome Center. The facility was built to replace a 13-story building that was demolished after it was determined to be seismically vulnerable.

The designers wanted the new building to blend contemporary and traditional materials in a way that would establish a cohesive architectural language, as well as include environmentally friendly features. To achieve this goal, they specified precast concrete panels and selected Clark Pacific for the project.

Clark Pacific designed, fabricated, transported, and installed 113 insulated C-CAPP (Clark Composite Architectural Precast Panel) panels totaling 34,182 ft² (3176 m²) that run horizontally along the building's facade. The panels not only add to the aesthetics of the exterior but also provide sufficient insulation to help the building achieve LEED gold certification.

"C-CAPP panels feature architecturally exposed aggregate finish in a really white mix," says Nick Smiderle, senior project manager for Clark Pacific. "We were also able to cast the panels in a way that provided four different 'steps' to the facade, with each panel varying in thickness from 9 in. to 12 in. thick."

Another benefit that drew the designers to precast concrete was the fact that the workspace was tight and the campus was active during the project, so having panels that could be fabricated off-site was a benefit.

"We also installed spray foam insulation on the backs of the panels during fabrication so the panels would already be insulated when we installed them," Smiderle says.

Another feature the designers liked was that the construction crews could utilize the C-CAPP panel frame system on the backs of the panels to mount the drywall. "They didn't have to build additional stud walls," he says.

Given the many detailed features of the panels, the project was not without its challenges. "The first challenge was the shape," Smiderle says. "Again, panel depths needed to



California State University–East Bay's Warren Hall features insulated C-CAPP (Clark Composite Architectural Precast Panel) panels, which were designed, fabricated, transported, and installed by Clark Pacific. One hundred thirteen of the panels run horizontally along the facade and provide sufficient insulation to help the building achieve LEED gold status. Photo courtesy of Costeaphoto.com.

vary from 9 to 12 in. in one-inch increments, so it was a challenge to pour a 2 in. skin that was originally designed to be flat."

The Clark Pacific team had to be a bit creative with the mesh reinforcement in its forming system. "We also used some unique back-forming systems that could work around the frames," he says.

Transportation also posed a challenge because some of the panels were 16 ft (4.9 m) tall, which is one of the maximum dimensional limits allowed by the California Department of Transportation on the road.

Finally, the mitered corners were a challenge. "We had to utilize 3-D modeling for this in order to ensure full closure," he says.

Despite these challenges, installation went smoothly and efficiently. "It only took about two weeks to install the panels and another two weeks to line and weld them," Smiderle says.

—William Atkinson

Jersey Shore redevelopment project uses composite precast concrete cladding

A new five-star multifamily development in Long Branch, N.J., has two eight-story luxury glass towers containing 47 condominiums on 1.7 acres (6900 m²) of oceanfront property. The development features three-sided panoramic views; gardens; penthouses; rooftop terraces; and glass-enclosed, climate-controlled loggia designs. It also features the latest in energy efficiency and safety.

The developer (FEM South Beach Urban Renewal), the architect of record (Shore Point Architecture), and the construction manager (Cornerstone Construction Services) all agreed that they wanted precast concrete panels for the towers. Together, they selected SlenderWall precast concrete building panels, manufactured by Smith-Midland Corp. of Midland, Va. They opted for SlenderWall for a number of reasons, including its visually appealing features (gleaming white, acid-etched panels), its light weight (which makes installation faster, safer, and easier), its strength (to stand up to strong East Coast winds and storms), its durability in the ocean air, and its energy efficiency (to meet the state's new energy and thermal code requirements).

SlenderWall, an Easi-Set Worldwide-licensed product, is a composite cladding system that is 66% lighter than traditional 6 in. (150 mm) thick precast concrete. The light weight is

achieved by integrating a galvanized interior steel stud frame with a 2 in. (50 mm) thick precast concrete panel. Each panel has its stud wall cavity filled with 3.5 in. (89 mm) of factory-applied closed-cell foam insulation, which is able to achieve an *R*-value of 24. Despite their light weight, SlenderWall panels are able to withstand winds up to 226 mph.

In all, Smith-Midland manufactured 451 SlenderWall panels (28,578 ft² [2654.9 m²]), as well as 88 traditional architectural precast concrete panels (4637 ft² [430.8 m²]) for the project. Smith-Midland not only manufactured and delivered the panels but also installed and caulked them.

"The SlenderWall panels are placed around the living areas," says Chris Grogan, business development manager for Smith-Midland. "The architectural panels are placed in the parking areas, as well as in other locations where there is not a need for stud-wall backup."

One challenge of the project, Grogan says, was that the shape of the building was not regular. "There were a lot of different angled corners," he says. "Not all of them were 90 degrees, so we had to take these into account during the layout. However, the panels tend to be very flexible in terms of manufacturing different sizes and shapes, so we were able to address these concerns."

The key to success, Grogan says, was working closely with the owner, architect, and construction manager to maximize the efficiencies of Smith-Midland's system, and at the same time ensure that there would be as much open window area as possible on the building.

—William Atkinson **J**



This new five-star, oceanfront, multifamily development in Long Branch, N.J., designed by James Monteforte of Monteforte Architectural Studio, uses Smith-Midland Corp. SlenderWall precast concrete building panels for their aesthetics, light weight, strength, durability, and energy efficiency. Courtesy of Costea Photography Inc.