Innovative use of precast for a university facility

A new building at the Catholic University of America in Washington, D.C., the Conway School of Nursing and Campus Gateway project, made innovative use of precast concrete.

The precast concrete portion of the project involved facade wall panels, the parking garage entrance, and the main stair entrance. "The precast facade was designed to contribute to the LEED gold standard for the facility," says Matt Krebs, project executive for High Concrete Group, based in Denver, Pa., the precaster selected for the project. An innovative portion of the project involved using reclaimed stone from a church in Philadelphia, Pa.

The precast concrete panels were produced in 2022 and 2023 and erected in 2023.

"The architects previously worked with High Concrete Group on numerous projects that had similar expectations in terms of the design that the Conway School was trying to achieve," Krebs says. "The aesthetics and logistics of the site, being in a city, made precast a perfect solution to the project."

The architects selected High Concrete Group for this project because of their past collaboration and project completion. "We succeeded with numerous projects that the architects worked on with us in the past," Krebs says. With that recommendation, the owners and the general contractor toured High Concrete Group's plant, became familiar with the previous jobs the company had done, and agreed that the precaster would be a great fit for the project. The project's contractor was Clark Construction Group, and the architects were Ayers Saint Gross with RAMSA.

In total, approximately 700 precast concrete pieces were used in this project. These included sandblasted finished precast concrete wall panels, thin veneer stone-applied precast concrete wall panels (flat and radius), thin veneer stone-applied precast concrete columns, accent-featured precast concrete types (balconettes and entry-way piers), and copings and stair treads.

Krebs says the ornate and intricate aesthetic design with building projections involved a lot of coordination with the cast-in-place concrete and steel work, as well as the other trades. "High Concrete Group was involved for three months in weekly multihour design assist meetings with the design team, GC, and owner prior to any other trades being awarded," he says. In addition, due to the thin veneer stone installation process, designing the pieces to be handled in numerous orientations was challenging.

In producing the precast concrete, most pieces used their own forms with minimal repetition. Production forming used combinations of wood and foam forming to achieve the complex shapes required. "The project also had to be scheduled precisely to ensure that we could produce and install the stone in time for erection," Krebs says.

Transportation and delivery, fortunately, did not pose any challenges. "Based on having to design for handling in multiple orientations, shipping was not a major hurdle," Krebs says. Installation and erection also went smoothly. "With the very involved engineering efforts and planning with our erector, the installation went smoothly, with minimal precast-related issues," Krebs says.

—William Atkinson

Incorporating reclaimed stone into thin veneer stone-applied precast concrete components contributed to the Catholic University's Conway School of Nursing's pursuit of LEED Gold certification in Washington, D.C. Courtesy of the Catholic University of America.