

PROJECT SPOTLIGHT

Expansive windows enhance city skyline views across the Hudson

The Towne Centre Mixed-Use Complex in Cliffside Park, N.J., is a 15-story building featuring 314 residential units and 52,000 ft² (4830 m²) of retail and office space, as well as underground parking and a 190-space municipal parking lot.

The structure includes almost 800 SlenderWall architectural precast concrete panels, totaling 35,600 ft² (3300 m²) and featuring closed-cell foam insulation with an *R*-value of 21 that is manufactured by Smith-Midland of Midland, Va.

Although the project was a success, it was not without its challenges, says Stephen Demas, vice president of project management, for Smith-Midland.

“The selling point for these units was the view to the city across the river,” he says. This meant that the building ended up having very large windows, with 7 ft 4 in. by 8 ft 0 in. (2.2 by 2.4 m) openings on average. “This did not leave much section for the cladding system that was required to support them,” he says. “With the designers, we developed an M-shaped panel that included two punched windows in each.”

To support the frame during stripping, handling, transportation, and shipping, the Smith-Midland team developed a lightweight cross brace system attached with screws that could

easily be removed after being installed to ensure that the panels remained square and plumb for window installation.

Another challenge was that the owner/designer was also seeking an affordable way to vary the appearance of some of the elements of the facade. “We were able to meet this design need by using one mix design in the panels and applying two different exposure finishes to the panels, a light acid wash to just expose the sand and a heavy sandblast to expose the coarse aggregate,” Demas says. “This treatment gave them the subtle change in appearance that they were seeking.”

Installation also posed some challenges. For example, there were limitations on access for erection equipment in and around the site. “We developed a plan to work nights, where a large crane was brought in to sit on one side of the building and shared with the steel erector, so the facade could be installed simultaneously with the superstructure,” he says. “This not only saved time but also cost.” The combined cost credit compared with using two separate cranes, one for steel and one for SlenderWall, was an advantage to the owner.

Traditional heavy precast concrete was used only in key areas where the designers wanted high-profile bump outs from the face of the panels. These areas were designed to be at locations that the crane could reach within its capacity. “The further and higher reaches were all designed using SlenderWall to avoid having to upsize the crane,” Demas says.

—William Atkinson

The 15-story Towne Centre Mixed-Use Complex in Cliffside Park, N.J., used nearly 800 SlenderWall panels from Smith-Midland. Courtesy of Terry Wieckert.





Gate Precast and Precast Erectors Inc. were part of the team that collaborated on the 2020 PCI Design Award-winning Mt. Sinai Medical Center Skolnick Surgical Tower in Miami Beach, Fla. Courtesy of George Nikolajevich.

Sleek compound curves in precast concrete provide stylish, safe medical facility

The Mt. Sinai Medical Center Skolnick Surgical Tower in Miami Beach, Fla., was a co-winner of the 2020 PCI Design Award for Best Healthcare and Medical Building. The project included precast concrete as a way to ensure that the architect and engineer could deliver an artistic vision while also accommodating many other project goals, including the ability to withstand hurricanes and other natural disasters.

There were a number of challenges for Gate Precast of Kissimmee, Fla., which was selected to be the precaster for the project. These challenges occurred primarily during the design and manufacturing phases.

The biggest challenge during design related to the size of the panels, which were 60,000 lb (27,240 kg) and more, with a 3 to 4 ft (0.9 to 1.2 m) lip on the front of some of the panels. “As a result, there was a lot of weight that was cantilevered out, with a 30-foot base span,” says Bruce Bartscher, vice president of operations.

Manufacturing also posed some challenges. “There are three elevations on the building with the ‘eyebrow’ panels on them, only four per elevation where you could utilize a mold,” Bartscher says. “As a result, every four days, we were having to

do a mold change to change out the radial stringers. This, of course, ended up being very labor intensive.”

Fortunately, there were no significant challenges with delivery. “The panels all fell under 10 feet, so we were able to ship them vertically,” Bartscher says.

There were also some challenges for Precast Erectors of Hurst, Tex., which was responsible for installing the panels on the building. In all, 295 pieces were erected. The largest piece weighed 63,800 lb (28,965 kg), was set at a radius of 208 ft (63.4 m), and required 74% of the crane’s capacity. The farthest pieces were set at 237 ft (72.2 m) and weighed 37,600 lb (17,070 kg), which required 71% of the crane’s capacity.

“The sweeps and arcs of the pieces changed from piece to piece, allowing for very little repetition in the casting or erection of the pieces,” says Paul Turley, project manager for Precast Erectors. “As the cast-in-place [CIP] had similar conditions, we were challenged to account for tolerances between the CIP and the stricter precast tolerances.” In addition, pieces had to be erected out of a swing stage, which required a precise erection sequence and coordination with Gate Precast, as well as with the general contractor and the hospital.

One key to success, Turley says, was that Precast Erectors and Gate Precast have a long history of working together to successfully complete complicated and challenging architectural precast concrete projects. “That partnership was critical in making this a successful project,” he says.

—William Atkinson 