Medical center parking structure is aesthetically pleasing, practical

The seven-story parking structure at St. Vincent's Medical Center demonstrates that precast concrete can solve the many logistical and aesthetic challenges that urban developers face.

For the St. Vincent Medical Center campus in downtown Bridgeport, Conn., the architects wanted a structure that would blend into the campus and neighborhood, no easy feat for a 180,000 ft^2 (17,000 m^2) parking structure. It had to be aesthetically pleasing but also fit a limited budget, and the project team had to be able to erect it quickly in a tight work site surrounded by buildings, streets, and a functioning hospital campus.

The St. Vincent's Medical Center parking structure in Bridgeport, Conn., met budget, time, and site constraints with precast concrete. Photo © Vince Streano www.streano-havens.com.

To meet these constraints, the architect and owner agreed that precast concrete was the best solution, says David Vander Wal, senior vice president of Walker Parking Consultants, the engineer of record. Architect Perkins Eastman created a building aesthetic using a preast concrete panel design that blended seamlessly into the surrounding neighborhood and compus. That design was implemented by Walker. "Precast concrete offered huge advantages for this project," he says. "It fit the neighborhood, it blended with the campus, and we were able to do it all cost effectively."

Project manager and parking consultant at Walker Jeff Smallidge says, "The precast panels were challenging to erect, but it gave the architect and the owners the look they were going for."

"Choosing precast concrete was (also) critical to schedule performance," says John Hawley, project executive with Gilbane Building Co., the project construction manager. The designers used precast concrete vertical wall panels instead of columns on the exterior of the building to mimic the designs of other hospital buildings. The panels were produced offsite by Blakeslee Prestress and inlaid with brick tile, thus eliminating time-consuming on-site masonry work.

Hawley notes that the team from Blakeslee worked closely with the architect to hone the aesthetic designs and to align panel production with the project schedule. As a result the structure was built in just four months, adding 614 parking spaces to the busy campus.

The cost of precast concrete fit nicely into the project budget. "It would have been more costly from a schedule and budget standpoint to construct a garage like this using cast-in-place," Smallidge says. "In the Northeast, labor costs are relatively

The Methodist Women's Hospital and Medical Office Building in Omaha, Neb., accelerated the project schedule by four or five months with the help of precast concrete. Photo courtesy of HDR Architecture Inc.; © 2010 Ari Burling.

high, and precast is usually less field-labor intensive than cast-in-place. That often means precast concrete construction is a more attractive option."

Concrete's durability further adds to the cost effectiveness because maintenance costs over the life of the structure will be lower than with other materials. "A big advantage with precast is that the rebar is a lot farther from the driving surface, which protects it as much as possible," Vander Wal says. "It's a lot more forgiving when it comes to deferred maintenance."

He says he's proudest of the aesthetics of the structure. "The owner wanted to avoid having this big stark structure, and precast helped us achieve that," Vander Wal says. "It's a normal parking garage on the inside, but on the outside it blends nicely into the surrounding neighborhood."

—Sarah Fister Gale

Women's hospital benefits from speed of construction

Speed of construction drove the decision to use precast concrete panels on the Methodist Women's Hospital and Medical Office Building in Omaha, Neb. The buff-colored panels were inlaid with thin brick, creating an attractive, durable surface.

"We were able to capture the essence of brick with the speed of precast," says Brian Halsey, architect at HDR Inc.

That speed was vital to the client, he says. The building enclosure coincided with the end of the construction season, and anyone who's ever lived through a cold Nebraska winter knows you need to have your shell finished before you can start doing interior work.

The Methodist Women's Hospital and Medical Office Building in Omaha, Neb., has the look of brick with the speed of erection of precast concrete.
Photo courtesy of HDR Architecture Inc.; © 2010 Ari Burling.

"We didn't want construction to slow or stop," Halsey says, but a cast-in-place concrete and masonry solution would have done just that. "Choosing precast gave us the flexibility to work through the winter."

The continued productivity accelerated the overall project schedule by at least four or five months, says Ron Sylvester, project manager for Coreslab Structures (OMAHA) Inc., the precaster for the project, based in LaPlatte, Neb.

That translated to bottom-line results for the hospital, which was able to open its doors sooner to start treating patients. "The faster you can get into a facility, the faster you can generate revenue," Halsey says. He says, though, that precast concrete did more than speed delivery. It gave the owners the quality, durability, and aesthetics they sought at a reasonable cost.

The warm color and brick design provided the owners with a traditional look and feel that fit the surrounding community, Halsey says. Initially the project called for metal panels on the exterior, but the project owner thought the design was too industrial looking. "When they asked us to find a more traditional design style, the first thing I thought of was brick-inlaid precast," Halsey says.

Because the panels were fabricated in a plant, quality control was high and labor costs were low. The embedded brick design eliminated the need for wall flashings and weep holes, which can mar the facade of traditional brick structures, and the use of a stack bond pattern made the vertical joints between panels less conspicuous. The precast concrete solution also added durability to the structure by removing the risk of moisture problems in cavities, which can happen in a typical brick design.

"We were exceptionally pleased with the way it turned out," Sylvester says. "It's one of the best-looking buildings I've been affiliated with in my entire career."

—Sarah Fister Gale