

Sidley builds nation's first Parksmart Gold structure

With the help of Sidley Precast, Pittsburgh, Pa., now has the first parking structure in the nation to be certified Parksmart gold. Parksmart certification provides a framework for creating parking structures that encourage more sustainable mobility and support the development of high-performance buildings, cities, and communities.

The 1000-vehicle structure, called the Gold 1 Parking Facility, sits on 5.6 acres (2.3 ha) adjacent to PNC Park, home of the Pittsburgh Pirates baseball team, and Heinz Field, home of the Pittsburgh Steelers football team.

Larry McCune, sales and quality control manager for Sidley Precast Group, based in Thompson, Ohio, says that the Parksmart gold certification for the structure is based on its amenities, such as charging stations to meet future demand for electric vehicle charging, 100 bike parking spaces and bike repair stations, and spaces reserved for fuel-efficient carpooling. The facility also incorporates living walls made of native plants to harvest rainwater. In addition, the precast concrete itself helped to contribute to the energy efficiency and resource conservation of the structure by using regional materials and diverting construction waste from landfills.

Besides being environmentally friendly, the structure is also visually friendly. "Due to the size and location of the parking garage, it is very much in the public eye," McCune says. "The exterior of the garage consists of custom random ribbed spandrels, light buff towers, and vertical column covers." This is in combination with metal fin accents, providing an aesthetically pleasing exterior that blends well with the surrounding structures.

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Overall, the job consisted of 369 pretopped double tees and a total of 780 precast concrete components. The total project size was 331,600 ft² (30,805 m²).

The project was not without challenges, though. "The design team was on a very tight schedule to get approvals through the planning commission," McCune says. On the production side, producing a consistent pigmented product is always a concern, McCune says. "However, using the Rheocolor Liquid Coloring admixture system located at our plant allowed us to keep control of the product and reduce variations in color."

Construction also proved challenging. Because the project was located between two major professional sports destinations, work stoppages ended up having to occur during scheduled events.

"Two cranes were used to expedite the erection," McCune says. "One crane erected the towers, while the other crane continued erecting the main structure of the garage."

—William Atkinson

Precast concrete contributes to ideal environment for Chicago medical facility

The parking structure at Swedish Covenant Hospital in Chicago, Ill., has spaces for 260 cars on the first five floors of the eight-story medical facility. The structure accommodates Chicago-area patients in a congested neighborhood, where street parking can be a challenge.

The medical center, which is a podium precast concrete building, is built on top of the parking structure. Precast concrete was used because of its ability to reduce vibration and noise transmission, providing a more soothing environment for patients and staff on the medical floors above the parking structure.

Jim Clapper, business development manager for Spancrete in Waukesha, Wis., says that the building designers selected Spancrete for the precast concrete work because of the reputation of the company's preconstruction design services and its ability to meet the rapid construction schedule.

The design flexibility of precast concrete also made it possible to create a building with personality. That is, the hospital wanted to create a building that fit in well with the nearby

retail establishments and residential neighborhood. Hospital, city, and neighborhood representatives worked together to express their desires to the building team so that a design could be created to complement the neighborhood.

“Designing a structure that worked for the low-vibration needs of medical, as well as integrated parking for over 250 visitors, was vital,” Wacker says. “The urban area has minimal parking options. Thus, creating a structure to serve multiple functions was a key design component.” The design had to incorporate the needs of parking, medical offices, and a lower-level retail office as a way to assist residents with easy walking access. “Spancrete precast building systems reduce vibration and decrease noise transmission, so the soothing environment created on the top three floors is not disrupted with noise and vibration from the parking structure below,” she says.

Challenges included working in an urban area and planning for the space restrictions, given the tight construction loca-

tion. “The urban setting presented unique challenges, but the inherent benefits of precast—quality, in-plant production, no on-site storage, and architectural design flexibility—allowed for a custom facade and a seven-and-a-half-week installation of the entire structure, resulting in minimal disturbance to the neighborhood as well as immediate interior work environments for all of the other trades,” Wacker says. In addition, because of the construction features, the medical center was able to be certified LEED silver.

The structure consists of 184 double tees, 48 columns, 338 linear feet (103 m) of beams, 17,000 ft² (1580 m²) of spandrels, 4400 ft² (410 m²) of ramp walls, 37,600 ft² (3500 m²) of interior/exterior wall panels, 4900 ft² (460 m²) of stairs, 1600 ft² (150 m²) of hollow-core, 2100 ft² (195 m²) of Formcast slabs, 4000 ft² (370 m²) of shear walls, and 200 linear feet (60 m) of architectural precast concrete for the retail area. —William Atkinson 



Spancrete provided precast concrete for the Foster Medical Pavilion, part of Swedish Covenant Hospital in Chicago, Ill. The facility took seven weeks to install, and precast concrete reduces vibrations in the medical offices from the parking structure. Courtesy of Spancrete.