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Washington D.C. Nationals Parking Structures – Case Study

The D.C. Nationals Ballpark Parking Structures project included two parking structures that would provide 1,250 parking spaces to D.C. Nationals' patrons. Both garages were scheduled to be built during construction of the Washington Nationals new baseball stadium, Nationals Park. The original concept specified an underground parking garage; however, complications in the design process made this concept impractical.

With only 12 months remaining in the project schedule, Clark Construction approached parking consultants, Desman & Associates, of Washington, D.C., to redesign the project. The urgency of the project made the use of precast concrete particularly desirable, and Desman & Associates recruited The Shockey Precast Group as a design-build partner. The design-build nature of the project translated into significant estimating, design, schedule, and coordination challenges, but these were issues Shockey was determined to work through to help the owner construct the high-profile project and meet an aggressive completion date.



Shockey assisted the team with development of the overall layout of the garages so that the owner's construction completion deadline of April 2008 could be met. On-time completion was essential, as April 2008 marked the start of the 2008 baseball season and opening day of the Nationals' new stadium.

For Desman & Associates, the site itself presented significant challenges. Since the D.C. Nationals Ballpark is set below grade elevation, it was necessary to include a retaining wall between the ballpark and the garages in the design of the parking structures. Parking access controls were included as well to accommodate the future possibility of commercial use of the garages by the owner.

Shockey produced a total of 308,000 square feet of precast double tees for the project. Both garages consist of three framed levels and are three bays wide. The East garage features 170,000 square feet of double tees and the West garage includes 138,000 square feet of double tees. Design development was an ongoing process, and the Shockey team's coordination efforts included development of the drawings and matching the parking structures' precast finishes to those of the ballpark. Shockey had to allow for retail and ticket sales on the first floor of both parking structures. Since these retail areas had cast-in-place concrete around them, it was necessary for Shockey to include coordination and interaction with CIP in its planning and design. Because of the surrounding retail areas, the first floor of the garages was unusually tall, adding to the coordination considerations incorporated by the design team.

The architectural design features on the parking structures presented Shockey with the opportunity to showcase its architectural precast expertise. Complex reveals and two different sandblast patterns increased the overall intensity of the project, but the use of architectural precast made it possible for the designer's vision to be realized well within the project timeline and budget. Another unique aspect of the project for both Desman and Shockey was that the precast design had to accommodate the hanging of artwork on the exterior of the garages. The precast shear walls were incorporated into the exterior "window dressing," and a tower effect was added to the façade to create visual interest.

NATIONALS PARKING STRUCTURES CONSTRUCTION TEAM

Owner

DC Sports and Entertainment Commission

Developer

DC Sports and Entertainment Commission

General Contractor

Clark/Hunt/Smoot JV

Architect

Desman and Associates

Engineer

Desman and Associates

Design/Detailing

TRC/CEG

Precast Erection

Chesapeake Contracting Services (E & B)

Precaster

The Shockey Precast Group

Erection of the parking structures began in July 2007 and was completed just four months later. Some of the most difficult challenges faced during the project were erection coordination issues. During erection, the D.C. Department of Transportation was in the process of reconstructing the roads parallel to the job-site, which made it necessary to work around the road construction. Additionally, multiple projects were being constructed in the area, which contributed to a congested site and difficulties in getting the precast components to the crane.

In addition to a congested site and limited access, Shockey's erection crews also had to contend with a small site footprint and lack of adequate drop site locations. These issues not only made it difficult to maneuver trailers but forced precast components to be shipped directly to the erection site. Erection of the parking structures was completed on November 21, 2007 and follow-on trades began work inside the building footprint. The finishing of the structures was completed on March 1, 2008 and on March 30, 2008.

The project team consisted of Desman and Associates, structural engineer and architect; Clark/Hunt/Smoot, A Joint Venture, general contractors; HOK Sports, architect; DC Sports & Entertainment Commission, owner; and The Shockey Precast Group, precaster.

Nationals Parking Structures Construction Timeline:

January 16, 2007	Contract Received
July 23, 2007	Erection start
November 21, 2007	Erection Complete
March 1, 2008	Finishing Complete
April 15, 2008	Walk-through with architect