LIVE**STRONG** Sporting Park

Kansas City, Kansas

Owner
Sporting Club of Kansas City

Team
MLS Kansas City Wizards

Architect
Populous

General Contractor
Turner Construction

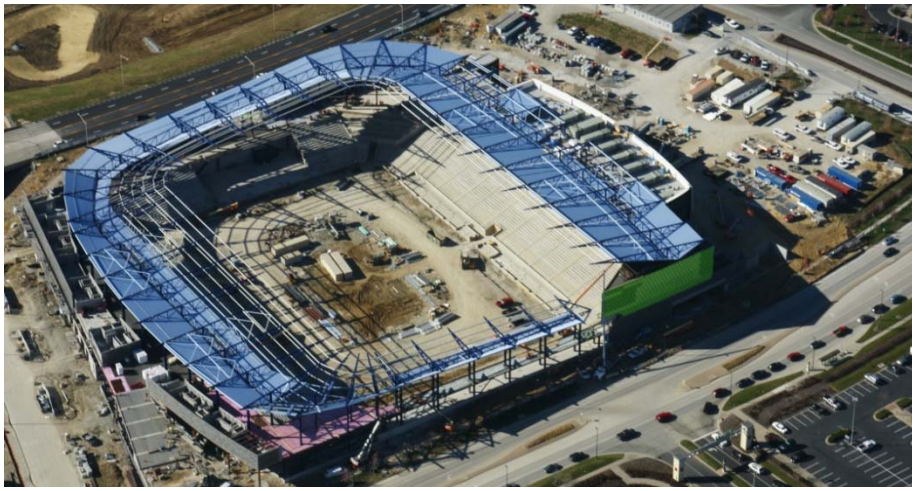
Completion Date
2011

Construction Cost
$147 million

Total Area
340,000 sf

Seating Capacity
18,500

Award
New Building Greater than $100 Million Award, Structural Engineers Association of Kansas and Missouri, 2011 Awards Program



Courtesy Turner Construction

The new award-winning LIVE**STRONG** Sporting Park soccer stadium is home to the Major League Soccer team Sporting Kansas City. The 340,000-square-foot, $147 million, state-of-the-art stadium accommodates 18,500 seats, 36 luxury suites, and has the flexibility to host rugby, lacrosse and outdoor concerts. The stadium is designed for a future upper deck that will add 7,000 seats to the south and east stands. The facility features a helical-shaped, partially translucent, 145,000-square-foot canopy that covers all seating sections. The project was executed on an ultra-fast design and construction schedule in a close partnership between the design and construction teams.

The site is bound on all four sides by major traffic and utility corridors and has a subsurface profile primarily composed of bedrock. In a corner of the site, prior construction led to the deposit of backfill material that was not adequate to support the proposed stadium. As a result, drilled piers socketed into competent bedrock were utilized to support the structure. The tight site is further complicated with a 40-foot elevation change across the stadium footprint. The significant change in elevation required cutting into the bedrock to make the field level with a majority of the structure supported on shallow foundations. Top-down construction methods were incorporated and improved the sequence of construction, eliminated the need for temporary shoring, avoided the excavation of existing utilities, and eliminated unbalanced lateral earth pressures on the stadium structure.

The owner's decision to move up the stadium's opening day by four months was the basis for the project's extremely aggressive 22-month design and construction schedule. This required close collaboration within the team to meet the deadline. Thornton Tomasetti's use of a 3D BIM platform enabled it to share the Revit model with the construction team and meet the requirement for early mill-orders. Thornton Tomasetti performed the connection design of all critical joints. Providing fully detailed connections for use in pricing and fabrication sped up the RFI and submittals review process.