New York Construction

New Home

Red Bulls Start the 2010 Season in a New Venue Built by Hunter Roberts

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By Debra Wood

Photo: New York Red Bulls

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After nearly 15 years playing on turf at the Meadowlands in East Rutherford, the New York Red Bulls' new $200 million facility in nearby Harrison will allow them to play on natural turf - Kentucky Blue Grass.

The 380,000-sq-ft, Rossetti-designed, 25,000-seat stadium is a soccer-specific facility that sits along the Passaic River in North Jersey.

Since their inception in 1996, the New York Red Bulls soccer club has been a team without a real home. The Major League Soccer franchise has been forced to play at Giants Stadium, a sprawling, cavernous facility built for American football that never gave off that "home field" advantage you look for in a permanent home.

But with construction completed on the nearly $200 million Red Bull Arena in Harrison, N.J., all of has finally changed. In March, the Red Bulls kicked off the 2010 season in brand new digs, playing on Kentucky bluegrass, close to fans.

"Red Bull Arena was designed with the soccer fan in mind," said Red Bulls spokesman Andrew McGowan.

Owned by Red Bull GmbH, parent company of the New York Red Bulls, the stadium sits on land owned by the Town of Harrison. Hudson County oversaw construction of the parking garage, located at the Harrison PATH station. And officials are banking on the stadium being the centerpiece of a re-development of tiny Harrison, which is said to include a 250-acre, $1.5 billion revitalization project along Harrison's waterfront, which promises a mixed-use development that will combine retail and retail space.

Distinctive Design "The design is in the spirit of a European soccer venue," says Rob Barbera, senior vice president of Hunter Roberts in New Jersey, the project's general contractor. "The stadium is built around the soccer field, with the event seating close to the field, and every seat is covered from the elements."

Renowned sports facility architects Rossetti of Southfield, Mich., designed the 380,000-sq-ft, horseshoe-shaped, soccer-specific stadium, which sits on a 12.5-acre site near the Passaic River. Three sides of the building and a lower bowl on the fourth side contain approximately 25,000 seats. The west-facing, long side of the building features 30 luxury suites, a 100-seat press box and support space.

"[The stadium has] a very distinct look," says Jan Szupinski, lead designer with Rossetti. "The building is compact and was part of a desire to create an intimate and close space to enhance the game experience. Vistas are limited and focused on action on the field."

Hunter Roberts mobilized in December 2007 and began pile driving in January 2008, before final design documents were completed.

More than 3,000, 40-ft to 50-ft long timber piles, driven to a hard till, support the stadium.

"For the loads that had to be supported, the soils were too soft," says Glenn Kustera, an associate principal with the structural engineering firm Paulus, Sokolowski and Sartor (PS&S) of Warren, N.J., about the choice of using timber pines. Without them, "there would have been too much settlement."

The front row sits within 21 feet of the touchlines. All seats enjoy good sightlines. Diagonal steel beams support the precast concrete structure onto which the lower-bowl seats are mounted.

"The upper bowl is aluminum, which is supported by a galvanized secondary steel structural system," Waldron says. "It is supported by rakers, which run off of the primary structural-steel truss system."

A structural-steel frame, with trusses spaced 32-ft apart, and additional steel hold a Teflon-coated fabric that forms a roof, cantilevering out 120 feet over the seating bowl. Barbera considered that the most challenging aspect of construction and says it required "an abundance of coordination."

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"Erecting that structure was tricky," adds Bob Waldron, project executive with Hunter Roberts. "Forty-two trusses start at the ground and make their way up, then curve over the seating area."

The design team minimized the weight of the roof, so the steel structure could be less substantial yet still withstand necessary wind loads.

"The shape of the stadium is why the steel was so important to the project," Kustera says. "We had to figure out a way to make that work economically." The cantilever length and roof height changes in various parts of the building, with an arch at midfield. PS&S used Autodesk Revit to visualize the steel on a 3-D model.

Birdair of Williamsville, N.Y., engineered, fabricated and installed the 322,276-sq-ft tensioned membrane roof and façade cladding system, with three different types of architectural fabric: a fluoropolymer of tetrafluoroethylene-coated polytetrafluoroeethylene (PTFE) on the roof's leading edge, a silver metallic-colored PTFE glass on the roof and upper façade, and a silver metallic-colored glass mesh on the lower façade. The woven PTFE can withstand temperatures from -100°F to 450°F and is flame resistant and waterproof.

"There is a very contained, enclosed feel to the seating bowl," Szupinski says. "The front edge is translucent and the back is an opaque material."

The west side, clad in three different types of metal panels, contains five levels. An 8-ft tall glass wall looks into the players' corridor and the vomitory for players to enter or exit the field. A flash interview zone is provided for media to gather and talk with players.

Locker rooms and offices are located on the ground level. A press box is on the second floor and the main clubroom is on the third. The fourth floor features 20 luxury suites and a club area. An additional 10 suites are on level five, which also boasts a private club area. Club windows face out at a planned mixed-used development with offices, retail and housing.

"The club area is open to all the suite holders," Szupinski says. "What we see in European stadiums is suite doors open, and people go in and out more than in [the United States]. It promotes interaction."

Barbera reports the company completed the job without on-site safety incidents.

"We were able to deliver the project safely and do so in a timely fashion," Barbera says. "We held comprehensive safety preplanning meetings before each task occurred, and the project benefited."

Hunter Roberts completed the project early this year.

"This is a marquee project," Waldron says. "It's in a soccer-rich area and will be the cornerstone of Harrison's redevelopment."

Key Players:

Owner: Red Bull GmbH, Austria
Contractor: Hunter Roberts Construction Group, Newark, N.J.
Architect: Rossetti, Southfield, Mich.
Structural Engineer: PS&S, Warren, N.J.
Specialty Roofing Contractor: Birdair, Williamsville, N.Y.
Steel Fabricator: Canam Group, Quebec, Canada