

New York Construction™

Best of 2008



BEST OF
2008
AWARDS

Prudential Center

the Centerpiece of an All New Newark

PROJECT OF THE YEAR: Overall Winner

Despite a young, charismatic mayor, a rich history, and close proximity to New York City's business districts, Newark has been long considered a textbook example of urban blight. Newark's biggest construction project in decades – the \$375 million New Jersey Devils hockey arena, completed in October 2007 – is now seen as a symbol of the city's rejuvenation, not least of all by the people directly involved with it.

"We're all hoping it will be a catalyst for the redevelopment of Newark," says Chris Christoforou, the project manager and principal at New York's Thornton Tomasetti, the structural engineers on the job.

The new Prudential Center, nicknamed "The Rock" in reference to Prudential Financial's corporate logo, is the first sports arena completed in the tri-state area in over a quarter century. The Devils share the arena with Xtreme Soccer League's New Jersey Ironmen and the Seton Hall University Pirates basketball team, and the 850,000-sq-ft, 17,625-seat venue has already staged shows of everyone from New Jersey's native sons Bon Jovi to teen boppers The Jonas Brothers.

The arena's exterior, designed by New York's Morris Adjmi Architects, is clad in red and gray brick panels, meant to evince Newark's bricklaying past, and glass along the interior's Grand Concourse, which will provide views of downtown Newark. The entrance that's flanked by two all-glass entrance towers, named the Verizon Tower and the PNC Tower, that measure 75 ft in diameter





and 130 ft in height. The towers feature exposed steel, which meant that all the bolts and connections required extra attention, according to Christoforou. Also at the entrance is a 4,800-sq-ft LED

The arena wowed this year's judges panel for the Best of 2008 competition not only for the quality of work on a project that encountered its share of obstacles.

screen – one of the largest in the world – visible from the New Jersey Turnpike and the Pulaski Skyway. A new Ironbound Bridge connects the arena to the Newark Penn Station, and a 3,500-car parking area is two blocks away.

Inside at ground level is the 2,600-sq-ft Devils Team Store and a ticket office. The arena also holds 76 luxury suites, the largest in North America, according to the Devils. The suites come with their own

touch-screen for order service, wide screen TVs and granite counter tops, as well as Wi-Fi. In addition, there are two club lounges (named Fire and Ice), a 350-seat restaurant and bar with a terrace area overlooking the rink, and five concourses

for concessions and restroom access. Inside the arena are five LED ribbons and an eight-sided scoreboard, and the seats were designed with a "bigger is better" approach: they are wider, have more leg room, and are upholstered and cushioned. The arena's interior was designed by HOK Sport of Kansas City.

Despite the fanfare the arena received upon completion, getting the project to the finish line was fraught with obstacles.

The first challenge was the site itself, which included several abandoned three- to six-story buildings, a roadway that had to be relocated off-site before any foundation work could start, a previous mall project left incomplete, a former rail yard and terminal, and even a cemetery. The ground condition, as discovered during

preliminary work, was in poorer shape than estimated.

"It would have required piles, which are too expensive and too noisy," says Christoforou. "So we came up with dynamic compaction of the site: dropping heavy equipment, foot by foot, compacting the soils under the site so that we could put the site on regular spread footing."

This program helped the team achieve appropriate bearing capacity of three tons per sq ft.

"The interesting stuff is often the stuff you don't see," Christoforou says.

Ted Domuracki, president of MAST Construction Services, the project's owner's representative, agreed. A large aspect of the job the average arena-goer will never see is the amount of infrastructure work the team had to perform on the site, including realigning the streets, sidewalk and landscaping work – and relocating 14,000 pairs of fiber optic cable in addition to the electrical network, which was all performed on a schedule that had to be coordinated with a myriad of effected parties.

"We had to go take out one cable at a time because of service interruptions – each one served a user," Domuracki explains.

Then, even though work had already begun in Oct. 2005, opponents of the arena filed a lawsuit against the city's financing scheme; it wasn't until 2006 that a State Superior Court judge ruled in the city's favor.

Then, following a disagreement on fees, the original construction manager, a joint venture between Hunt Construction of Indianapolis and New York's Bovis Lend Lease, was let go. Gilbane Building, of Providence, R.I., was invited on board instead in July 2006.

"Gilbane took the job over in less than one and half years into it," recalls Christoforou. "You don't see this often, the CM switching in the middle of construction, which meant dealing with a different set of



criteria, different set of priorities, different sequencing. It took the CM a few weeks to get up to speed." The design team, according to Christoforou, "had to play CM for a while," and an interim CM was also brought in to oversee the change – Wm. Blanchard Co. of Springfield, N.J., New Jersey's oldest construction company.

An added level of complexity came

from the team's decision to work on circulation (deliveries and access for about 8 million lb of structural steel, 9 tons of additional steel, 25,000 cu yd of concrete, and 3 mi of refrigeration piping for the rink), roadway completion, and infrastructure work in parallel with work on the interior.

"We had close to 750 [personnel at



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peak," Domuracki recalls. "We probably had close to 150 on the circulation, so there were close to 1,000 people [on the job site] during the last three-four months of the project."

According to Domuracki, this required regular meetings at the executive level between all the stake holders, including the city of Newark and the Mayor's office -- which meant that, despite several setbacks, the arena was completed on time.

Structurally, perhaps the most impressive element of the project is the roof: spanning 375 ft, it required 10 trusses to be constructed in sections and lifted 150 ft up, requiring temporary shoring towers for each section.

It seemed only appropriate that a project of this scale hold an opening ceremony of similar stature. The arena opened on Oct. 27, 2007, with a series of concerts by the arena rock stalwarts -- and New Jersey's best-known export since baseball - Bon Jovi. The first game for the Devils, however, was not a crowd pleaser: in the Oct. 27 game against the Ottawa Senators, the Devils lost 4-1. It was, however,



an undeniable win for Newark: all 17,625 were sold out.

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"To build a purposeful arena in a place that really needs it is fantastic," one judge said. "What [the Prudential Center] has done for the city of Newark is incredible."

Key Players

Owner: Newark Downtown Core Redevelopment Corporation

Owner's Representative: MAST Construction Services, Little Falls, N.J.

Construction Manager: Gilbane Building, Providence, R.I.

Exterior Architect: Morris Adjmi Architects, New York, N.Y.

Arena Architect: HOK Sport, Kansas City

Mechanical Engineer: Binsky & Snyder, Piscataway, N.J.

Structural Engineer: Thornton Tomasetti, New York, N.Y.

HVAC: Bonland Industries, Wayne, N.J.

Steel: Cives Steel Co., Gouverneur, N.Y.

Rink Refrigeration: CIMCO Refrigeration, Mobile, AL



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