

Barclays Center

Brooklyn, New York

Client/Owner

Forest City Ratner Companies

Architect

AECOM Ellerbe Becket

Façade Design Consultant

SHoP Architects

General Contractor

Hunt-Bovis, Joint Venture

Steel Erector

James F. Stearns Co, Inc.

Completion Date

September 2012

Construction Cost

\$706 million

Total Area

675,000 sf

Seating Capacity

18,103

Number of Suites

101 Luxury Suites



Thornton Tomasetti provided structural design and construction support services including connection design, delivery of a Tekla model and erection engineering services for the new Barclays Center, home of the NBA Brooklyn Nets. The design-build project features 18,103 seats, 101 suites and an ice floor for hockey and other events. The steel superstructure consists of two levels of concourses and two levels of suites. The project is designed to achieve LEED Silver certification.

A weathered steel exterior lattice wraps around the structure and the entrance canopy that cantilevers 85 feet over the plaza. The façade design with 12,000 pre-weathered steel panels and the canopy were added during the design phase of the project, requiring the structural design to be modified. Thornton Tomasetti provided Tekla models, connection samples and full connection design, which allowed us to produce models quickly, store large quantities of information, and coordinate with the entire team.

The distinctive arched roof is supported by a pair of 350-foot tied arch trusses spanning the long direction of the arena. The building lateral system and diaphragms were designed to resist thrust forces from the roof arches, which were minimized by use of the tension tie.

The arena is set in a tight urban setting near a subway station and train terminal, presenting unique challenges for the foundation system. The building was designed with a pair of truck elevators feeding a below-grade loading dock with a large truck turntable to facilitate turning. Building columns in this region were transferred using large plate girders spanning over the dock.

Using our innovative delivery methods, Thornton Tomasetti successfully integrated structural design and construction support services and project teams from various Thornton Tomasetti offices.



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