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## **Wessling Architects and Sika Sarnafil complete TD Garden roofing system for Delaware North Companies-Boston**

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The project team of Wessling Architects, Shawmut Design and Construction, Greenwood Industries and Sika Sarnafil has completed a new roofing system for the TD Garden. Delaware North Companies - Boston (DNC-Boston), owner and operator of the TD Garden, had commissioned Wessling Archts. to design the new roofing system. Both owner and architect selected Shawmut Design and Construction as general contractor and Shawmut hired Greenwood Industries as the roofing contractor. Wessling specified Sika Sarnafil as the manufacturer to provide both the liquid applied and PVC membrane roofing systems.

Wessling's senior project manager, John Karman said, "Shawmut's extensive resources, in collaboration with Greenwood, Sika Sarnafil, OMG Roofing Products, and United States Gypsum Co., resulted in a highly successful project."

The existing roof systems on the 16-year-old arena had reached their serviceable life expectancy and required replacement. The roof project began in August 2010 and was completed in November 2011.

Under Shawmut's direction, Greenwood replaced the various roof and gutter systems in a two-year phased project. Workers removed 156,000 s/f of existing roofing from the arena's roof and gutter systems. The salvageable total of the existing roof membrane was recycled in conjunction with the new roof manufacturer Sika Sarnafil. 113,000 s/f of insulation was recycled in conjunction with Disposal Alternatives. The existing systems were replaced with 132,047 s/f of Sarnafil 72 mil Rhinobond PVC roof membrane and 23,747 s/f Sikalastic RoofPro Liquid Coating (in Phases 1 and 2).

There were many challenges presented in executing the total roof and gutter replacement of a building with 12 roof levels. This includes a barrel roof totaling 113,000 s/f and 10,317 s/f of gutter in conjunction with parapet wall reconstruction and masonry thru-wall flashing replacement/coordination. Given the TD Garden's status, the aesthetic appearance of the barrel roof system was paramount. The barrel roof design has visible truss caps spaced 40 feet apart. Sika Sarnafil custom manufactured 72 mil membranes to 80 foot lengths in order to minimize the exposed seams and insure that the vertical seams joined under the truss caps. Greenwood also custom fabricated the truss caps using .080 inch aluminum and installed a 2- piece flashing to insure the water tight integrity of the truss cap system.

Numerous improvements were integrated into the new roof design such as a self-adhered air/vapor barrier, Sika Sarnafil's EnergySmart white reflective roof membrane that reduces building energy usage for cooling and minimizes the building's contribution to the urban heat affect in Boston. The Rhinobond system improves the wind performance of the roof and reduces sheet flutter lending itself to a long lasting aesthetically pleasing installation.

The TD Garden stands as a monument, museum and home to NBA and NHL Champions. Similarly the TD Garden also stands as a monument to teamwork and excellence in the roofing industry. The project team including Delaware North Companies-Boston, Inc., Wessling Architects, Shawmut Design and Construction, Sika Sarnafil, Sikalastic RoofPro and Greenwood Industries combined to design and install a custom product under demanding conditions. Innovative building products in conjunction with Green building solutions, all locally sourced, combined at the TD Garden to provide an environmentally friendly and aesthetically pleasing product to the arena on time and on budget.

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