

NEW YORK CITY DEPARTMENT OF TRANSPORTATION

BROOKLYN BRIDGE RECOAT PROJECT

SSPC 2014/2015 STRUCTURE AWARD NOMINATIONS





As one of New York City's top 10 landmarks, the Brooklyn Bridge is an indelible member of the iconic skyline surrounding Brooklyn and Manhattan.

Despite its 3,455 feet in length, the Brooklyn Bridge belies a much more substantial footprint on the New York metro area. Since opening in 1883, both its pedestrian promenade and later its roadways have not only endured constant usage, but also bore witness to a wealth of events over the last 131 years.

So, when the nation's infrastructure came under enhanced scrutiny in 2008, immediate action to refurbish the bridge was deemed necessary and the bridge was deemed one of the worst on a long list, immediate action was necessary, specifically, the application of a new coating system.

In 2010, a \$508 million renovation began, with **Skanska Koch** emerging as the winning bid. Woodside, New York-based **Ahern Painting Contractors** was enlisted to handle the massive logistics and execution of the \$152 million coatings portion of the project. Incorporated in 1962, Ahern is a family business with about 200 full-time and part-time employees. With multiple major projects in progress year-round, Ahern has been recognized as a substantial contributor to the coatings industry as a whole.



As the oldest suspension bridge in active use in America, the Brooklyn Bridge recoating project required a complex strategy to match the complex conditions of the task at hand.



Approximately 4.2 million square feet (390,193m²) of steel beams, braces and cables of the bridge, as well as the Manhattan and Brooklyn ramps – essentially the structural “bones” – were specified for a coatings overhaul.

5-year effort on behalf of the New York City Department of Transportation involving a crew of 40 – 100, all proud members of Bridge Painters Union Local 806.

- Coatings Supplier – **Devoe High Performance Coatings**
- Platform Partner – **Safespan Platform Systems**

MATERIALS / PROCESSES

- Abrasive blast with recyclable steel media to SSPC-SP-10: Near-White Metal Blast Cleaning
- Spray-apply a single 3-to-5 mil (76 – 127 microns) pass of Devoe Cathacoat organic zinc-rich epoxy primer
- Spray-apply a single 1-2-mil (25-51 microns) pass of Devoe Pre-Prime 167 sealer coat
- Spray-apply a single 3-to-5 mil (76 – 127 microns) pass of Devoe Bar-Rust 231 epoxy maintenance coating
- Spray-apply a single 2-to-3 mil (51 – 76 microns) pass of Devthane 359H allphatic urethane gloss finish coat

AFTER



BEFORE



AFTER



OVERCOMING CHALLENGES



Late 19th century bridge construction made up of a myriad of smaller pieces of steel, which made coating application extra challenging.

Not 1 complaint in 5 years regarding the promenade protection.



Non-stop vehicular and pedestrian traffic were a major factor to contend with for abrasive blasting and coatings application crews, as well as the need for a “no drop zone” which could not be breached throughout the project’s entire “footprint.”



Extensive coordination with a multitude of city and private organizations/businesses in both boroughs (Parks Department, NYSDOT, NYCDEP, NYCEDC, NYCEPA).



On/off ramps in close proximity to City Hall and 1 Police Plaza, required enhanced security protocols.

OVERCOMING CHALLENGES



Lead-based paint removal required complete “cradle to grave” handling of hazardous wastes, with equipment situated over 1,200 feet away from the class 1A containment due to weight limitations of the structure and roadway closure limitations.



Superstorm Sandy struck midway through the project, severely challenging the CPM (critical path method); shut down the adjacent area for over a year.

OVERCOMING CHALLENGES



A non-project associated barge and the crane it was transporting struck the under-bridge platform, fortunately causing no injuries, but created a 50-foot-wide (15m) gash which snapped numerous platform support cables, again causing an adverse effect on the CPM; removal of the platform for repair was done as an emergency condition under coordination with the Office of Emergency Management and in conjunction with the SafeSpan design engineer.



An undertaking of this size and scope truly required the exhaustive efforts of all key stakeholders. Along with **Ahern Painting Contractors**, **Skanska Koch**, **GPI** and the **New York City Department of Transportation**, countless workers joined together to create the finished product.