

Ice Casino Roof Replacement at Historic Playland Amusement Park After Superstorm Sandy

Playland Ice Casino | Rye, New York

CHALLENGE

Superstorm Sandy barreled up the East Coast in 2012, causing record amounts of damage and destruction and becoming the largest Atlantic hurricane on record. Its powerful winds and torrential rains damaged countless businesses and homes along the Eastern U.S., including Playland Amusement Park and its iconic Ice Casino. The park sits directly on the Long Island Sound with nothing standing in the way of it and Superstorm Sandy. As the only Art Deco amusement park in the United States and a National Historic Landmark, it was critical that the storm-damaged roof that comprised a major part of the Ice Casino's building envelope be restored to its original historical character defining significance. Throughout its 85-year history, various roofing systems had been installed on the eight-sided, multi-angled and parabolic Ice Casino roof, none of which were original to the building. Damage to the Ice Casino included among other things asphalt shingle tear off and water entry damage that led to deterioration of the original tongue and groove wood decking. That damage compromised its role as a structural diaphragm/stiffener over the original structural 3"x16" Lamella wood arch members that exhibited lateral checking/splitting, requiring helix pins to repair-in-place. In addition, there was no insulation on the roof, causing climate control/humidity and safety issues that led to an uneven ice surface and related energy issues not limited to overworking air conditioning units.

SOLUTION

Rather than simply restore the Ice Casino roof to the condition it was in prior to the hurricane, Westchester County Executive Robert P. Astorino used the storm as an opportunity to not only preserve the historic nature of the building, but also to make it better than before. Anthony Ferrantello, associate architect for the Westchester County Department of Public Works and Transportation, was instrumental in restoring the iconic Ice Casino roof to its original 1930 Art Deco identity as originally designed by the genius of Walker and Gillette. Based on the time period of original construction and historical photographs, it was determined that copper roofing was likely a part of the original design. The original roof had long been removed and replaced with polyisobutylene (PIB) roofing on the very top, asphalt shingles at the midsection with architectural membrane fabric on the lower level.

Although various roofing materials were explored as options for replacement of the Ice Casino roof, structural standing seam metal was deemed the best solution due to its proven performance, energy efficiency, low life-cycle costs and little to no maintenance. It can provide 30 years of service or more and can withstand harsh marine environments, including hurricane strength winds. Ferrantello worked with Rich Kuhn, a local Garland representative, who recommended an industry-leading structural standing seam metal panel for the roof replacement. Through a public bidding process, Garland's R-Mer® Span structural standing seam roof system was selected for installation on the Ice Casino roof.

The existing roof was removed, 6,000-square-feet of water-damaged wood decking was replaced and the Lamella arch members were structurally repaired using helix pins. Before the metal panels were installed, they were coated with a heavy-duty coastal paint designed to protect them from the harsh marine environment. Due to the physical constraints of the property, Garland's engineering team developed a custom panel over-lap design, keeping each section of panels shorter and more manageable. The panels were roll formed and curved on-site. Kuhn coordinated the installation with Milcon Construction Corp. of West Babylon, New York.

In addition to the roof replacements, the renovation project included replacement of the original wire and glass skylights with impact-resistant translucent daylighting system around the perimeter of the skating/hockey rink (which visually and functionally restored the original means by which natural light filters to the spaces below through fixed ornamental glass laylites), replacement of tongue and groove wood decking to provide the structural diaphragm/stiffener requirements over the wood Lamella arch members, structural repair of lateral checking/splitting of hundreds of 3"x16" Lamella arch members, lead abatement, new lightning protection system, historic window repair, snow and fall protection, interior painting, and installation of a ground-mounted propane tank and rooftop dehumidification system.



Rich Kuhn

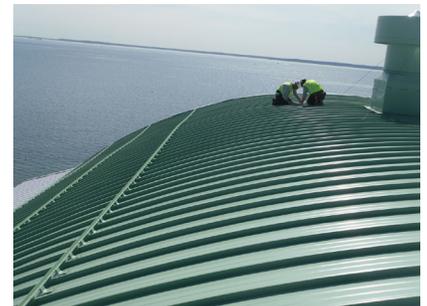
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RECREATION



Project: Playland Ice Casino

Location: Rye, New York

Garland Rep: Rich Kuhn

Contractor: Milcon Construction Corp.

Materials Used: R-Mer® Span