

Ice Arena Improvements Include High-Performance Metal Roof System

New Hope Ice Arena | New Hope, Minneapolis

CHALLENGE

Like many community ice arenas across the country, the New Hope Ice Arena in New Hope, Minnesota, needed some major renovations. The facility, built in the 1970's during a nationwide boom in the construction of community ice arenas, still had its original ice rink. In addition to installing a new rink, the city also wanted to improve the efficiency of the building by replacing its current Freon-based refrigeration system with a more energy conscious and environmentally friendly ammonia-based system. On top of that, the facility's roof was more than 25 years old and had been deteriorating for several years due to various puncture holes, severe UV damage, fastener back out, and wet insulation. Snow and ice had also damaged the roof considerably. Jim Corbett, the city's recreation facility manager, knew replacing the roof was critical to avoid potential structural damage that may have occurred due to the condition of the original roof membrane.

SOLUTION

In an effort to save the city money, administrators partnered with McKinstry, an independent design-build and energy management firm that allows the city to use the money they are guaranteed to save each month in utility costs to pay for the improvements. McKinstry provided the city with options for replacing the ice arena's roof, which included installing another single-ply system or installing a high-performance standing seam metal system. Greg Ackerson, business development manager at McKinstry, provided the city with the performance characteristics of each system, as well as the life-cycle costs based on each roof's expected service life. "Even though the initial cost of the metal system was higher, we were sold on the fact that the standing seam system is guaranteed to last longer and its overall life-cycle cost is dramatically lower than the alternative," explained Corbett.

McKinstry agreed that a metal roofing system would provide the city with the best value in terms of overall performance and energy efficiency and, therefore, recommended Garland's R-Mer® Span structural standing seam roof system, which leads the industry in wind and water penetration resistance. Brian Skoog, a representative of The Garland Company, Inc., an Ohio-based high-performance roofing manufacturer, helped develop the technical specifications to achieve the project's performance objectives.

The 24-gauge, 16-inch wide Suede metal panels provide the durability and strength needed to achieve a long-term, high-performance waterproofing solution. In addition to its strength and unsurpassed watertight protection, R-Mer Span offers the functional diversity needed for unusual or complex roofing projects. The 150-foot Galvan-coated metal panels were roll formed and curved on site to create continuous panels that fit seamlessly onto the 36,000-square-foot barrel roof. "It's great knowing that we were able to provide the city with a solution that not only improved the aesthetic value of their building, but one that will provide them with long-term, leak-free protection," Skoog explained.

The ice arena's original roof system was removed and additional polyisocyanurate insulation was installed to achieve an R-value of approximately 40, helping to maximize the energy efficiency of the facility. An ice and water shield underlayment was then installed over the insulation. Bearing plates and one-piece clips were secured to the arena's wooden deck and the 150-foot metal panels were attached to clips, eliminating the need for exposed fasteners and allowing for thermal movement. As an additional measure of protection, metal edge fascia and soffits were installed around the entire perimeter of the facility. A high-performance snow retention system that meets the severe requirements of the harshest of snow loading was installed on the roof, providing protection from the nearly 50 inches of snowfall the Minneapolis area receives on average each winter. Skoog coordinated the project with Berwald Roofing Company, Inc., of North St. Paul, Minnesota, to ensure proper installation.

All the improvements to the ice arena, including the installation of the standing seam metal roof system, are expected to save the city about 30 percent annually in energy costs. Additionally, the metal system and its components are backed by a 30-year warranty. Corbett was impressed with the overall success of the project and with the fact that the metal panels were essentially engineered on site. "So far, we're very happy with the outcome. The whole building looks great," Corbett said.

R-Mer is a registered trademark of The Garland Company, Inc. and Garland Canada Inc.



Brian Skoog

Phone: (612) 810-4336

E-Mail: bskoog@garlandind.com

RECREATION



“... we were sold on the fact that the standing seam system is guaranteed to last longer and its overall life-cycle cost is dramatically lower than the alternative.”

Jim Corbett
Recreation Facility Manager
City of New Hope

Project: New Hope Ice Arena
Location: New Hope, Minnesota
Garland Rep: Brian Skoog
Contractor: Berwald Roofing Company, Inc.
Materials Used: R-Mer® Span (Suede)