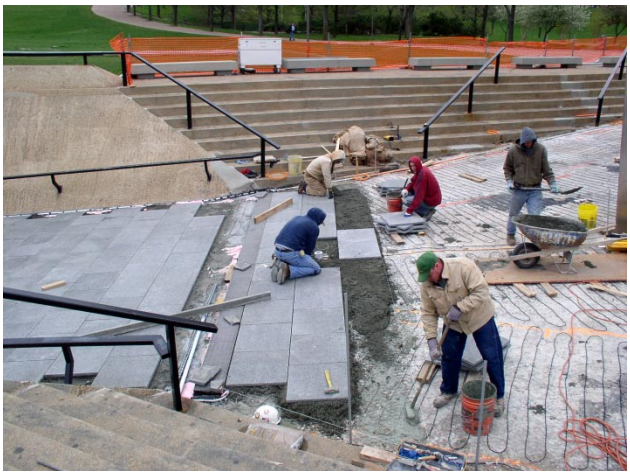
ST. LOUIS GATEWAY ARCH SNOW MELTING

Delta-Therm's embedded snow melting system creates a heated walkway for visitors to safely access the most visited man-made monument in the United States.

CHALLENGE: How do you keep snow and ice from accumulating on 3,160 square feet of sloped walkways that are seasonally bombarded by freezing winds and frigid temperatures? That was the question faced by park engineers at the tallest and most visited man-made monument in the United States, the St. Louis Gateway Arch. Sitting parallel to the mighty Mississippi River, its low-lying north and south side entrances had serious pedestrian safety issues during winter. In addition, the walkways also serve as a roof for the arch's museum and theater below, so careful treatment was imperative.



SOLUTION

In the spring of 2005, the National Park Service, which owns and operates the Arch, turned to Delta-Therm Corporation based on its long standing reputation for manufacturing reliable snow and ice melting systems. Delta-Therm was brought in to replace a competitor's existing snow melting system that had failed.

"I spoke very strongly about Delta-Therm and their 35 year history of designing snow melting systems," said sales representative Bill Strohmeyer of Engineered Process Equipment, Inc. in St. Louis, who took the request for the cables.

The project began with the north side ramp. A total of 26 mineral insulated snow melting cable assemblies were installed.

The paving contractor began by laying a waterproof membrane. Next, they spread a thick bed of mortar in which the cables would sit. Sachs Electric installed the snow melting cables and another inch of mortar was poured on top of the cables to hold them safely in place. Finally, granite pavers were installed.

"We had to drill through existing concrete and seal those holes very tight so that no water could get in through the roof," explained John Buback, of Sachs Electric.

In December, 2007, the south side ramp was fitted with the snow melting cables. Although the project is identical to the north side, each ramp is equipped with its own contactor panel and DTC120-S automatic control since weather conditions are different on the north side as compared to the south.

"The system is controlled automatically so when three things happen – ambient temperature drops below 40°F, slab temperature falls below 40°F and there is moisture present, the melting system turns on, and it stays on until until the slab can dry," explained Strohmeyer. "Either the slab reaches 60°F or ambient temperature rises above 40°F and the snow has melted."

Park engineers can choose to override the system manually using a remote switch, which is particularly useful if they know a storm is coming.

RESULTS

Pedestrians can enjoy a clear path to enter the St. Louis Gateway Arch, according to park engineer Dave Caselli. "It's a big load off. We don't have to worry anymore about whether we have to close the entrance or try to clean it with shovels," he said. "Clearing with shovels doesn't work well because then we have melting and freezing and lines of ice build-up."

Engineers at the park now have a reliable system. The former system was not operational due to damage and wear. "Basically, it had gotten to the point where they [cables] didn't work at all," said Caselli. The National Park Service had considered a hydronic snow melting system, but it wasn't feasible.

"We went back to electrical," said Caselli. "It was the simplest and most cost-effective way." ■

DELTA-THERM
PO Box 345
Wauconda, IL 60084
(800) 526-7887
www.delta-therm.com
info@delta-therm.com