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Project Profile: Monroe Mall Renovation
Location: Grand Rapids, Michigan, USA

The city of Grand Rapids, MI has returned a downtown pedestrian mall, closed to traffic since November 1970, back to a street. The project called for snow melting from store front to store front, including the street. There are many benefits to snow melting, such as no more need to plow snow, or the need to use salt (both would be very damaging to the decorative brick pavers used in the street and sidewalk areas). Cleaner, dryer streets and walks benefit store owners by having safe, clean, and easy access to their businesses.

Steam from the County's trash incinerator was delivered to a unique heat transfer system that provides the energy required. Part of the uniqueness of the system is that is utilizes two heat exchangers. The first heat exchanger converted energy from the incoming steam to the water/glycol fluid circulating through the system. The second heat exchanger utilized the condensate from the first heat exchanger to preheat the system return fluid, extracting additional energy that was normally wasted.

The project design criteria was based on zero degrees Fahrenheit outside temperature with 10 mile per hour winds, and melt snow at the rate of two inches per hour. The system is totally automated and is designed to maintain a standby (idle) surface temperature of 39 Degrees. The surface temperature is automatically increased to a maximum of 45 Degrees when moisture is detected by the special sensors. When moisture is no longer detected by the sensors, the system returns to the idle mode. The total project encompassed 66,000 square feet, and utilized 124,000 feet of 5/8" PEX UV resistant tubing set 6" on center. This required approximately 400 loops of pipe at 310 feet each on 70 manifolds.

Selection of materials for this project posed additional challenges for the contractor Andy J. Egan Company. The project was to be completed in stages; first the side walks, then the streets. Decorative brick pavers were used in both areas over a concrete slab. HeatLink® was chosen to be the supplier for three critical reasons.

1. HeatLink® manufactures UV stabilized PEX Pipe that was specifically designed for this type of application. Ultraviolet stabilization was important on this project because pipe would be exposed to direct sunlight, and for long periods of time.

2. HeatLink's TwistSeal™ manifold with 1-1/2" inlet and outlet could provide up to 3.2 gallons per minute through each loop and a maximum of 24GPM per manifold.

3. The TwistSeal™ manifold provides the ability to individually balance each loop within the system. Manifolds were installed in planter boxes every forty feet on both sides of the street. One manifold controlled the sidewalk portion of the 40 feet section, and a second manifold controlled the street.

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