Snowmelt System Exceeds Expectations

J. B. Hunt, one of the largest trucking companies in North America, takes transportation seriously. Their reputation for safety and efficiency played into a decision they made in 2006 to install an extensive snow melt system for their new headquarters building in Lowell, AR.

The 22,000 s.f. snow melt system has been hard at work for the trucking firm for the past two winters, easily dealing with rigors of Midwestern ice and snow. Yet, in a sad irony that hit them hard, founder Johnnie Bryant Hunt slipped on ice at a nearby restaurant in early December, 2006, and died in the hospital five days later. Had the restaurant installed a snow melt system to protect its patrons, perhaps he'd be alive today.

Today, the large circular driveway, sidewalks and entryway are easy to navigate all winter long. Customers and employees alike now enjoy safe passage to and from the building even when ice and snow accumulate just inches beyond the melt zone.

The largest part of the snowmelt system lies under a bed of asphalt. Just below it, **32,000 lineal feet of 3/4" RadiantPEX** tubing from Watts Radiant carries a heated 50/50 glycol solution to and from a large plate-to-plate heat exchanger connected to a 2,500 MBH steel tube boiler.

The 11-zone hydronic system has a liquid volume of almost 1,000 gallons and requires 175 GPM to accomplish the mission of melting snow and ice before it has time to accumulate. During times of winter precipitation, only a gentle mist is seen by the most observant person, evidence of the warm solution below, heating the hard surfaces above to just 35°F, sufficient to keep surfaces clear.

"Radiant systems - and particularly large snowmelt systems like this one - typically have low return water temperatures which are a challenge for long term boiler operation," said Cary Pestel, president of Boone and Boone Sales Company, Inc., a manufacturer's rep firm based in Tulsa. "So we recommended that a bypass mix loop be installed that allows some of the supply water to mix to the return side of the boiler; this holds the returning water temperatures high enough to keep the boiler from condensing."

About . . .

Location: Lowell, AR
Installer: Action, Inc.
Products: RadiantPEX®, Copper Manifolds, HydroSkid™

Installing the system required the work of a team of technicians from Fort Smith-based Action, Inc. the 160-employee mechanical contracting firm that won the installation contract. Ron Wright, vice president of the firm, said that "Though we hadn't installed a snowmelt system previously, we've completed many radiant heat projects and have a passion for large-scale hydronic systems. The snowmelt project at J. B. Hunt was a challenge that we enjoyed."

Though the "heart" of the system may be the commercial boiler, it's the large, **skid-mounted HydroSkid package** built for the job by Watts Radiant that serves as the "brain" and "pulmonary system."

The HydroSkid quietly performs its duty from within a discreetly-placed, prefabricated structure not far from the driveway. Inside, the 4,200-pound control system includes a bank of circulators, pipes and valves, and the bypass loop that protects the boiler from the inrush of cold water at startup. Essentially, all of the system's hydronic functions are here, or interact with the unit.

"The HydroSkid was very well designed," said Gerald Jewett, Action's jobsite supervisor. "It saved us a lot of piping strategy and field time. Had we built the control unit ourselves, we'd have put hundreds more man hours into the job."

RadiantPEX is installed in a compacted sand bed prior to the asphalt application.

Project Profiles