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SNOWMELTING For First Responders

At the West Friendship Fire Department, fire and ice are dealt with accordingly.



SNOWMELTING FOR FIRST RESPONDERS



Are you tired of hearing about “green”? Good. For this month, let’s talk about the *real* reason radiant heat is the go-to system for many commercial building owners: performance.

Our September hydronic showcase features a Maryland firehouse/first responder headquarters with an 18,000-square-foot snowmelt and radiant heat system. It is a perfect example of a design created not only for occupant comfort but high function as well, because when fire and EMS personnel need to make a quick break from base camp, the last thing they need is a battle against snow and ice.

During World War II, the Minutemen of Company 769 in Howard County, Md., organized to protect citizens from acts of sabotage. But as the war drew to a close, the group began to disband.

Mallick Plumbing technicians work toward completion of the snowmelt job. Above: Lines are sprayed over reinforcement wire grid before Onix tubing is attached prior to the concrete over-pour. Left: Tubing is attached to one of many radiant manifolds.

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At their final meeting Sept. 4, 1944, they instead chose to form a volunteer fire department. Today, several descendants of that group enjoy the new 40,000-square-foot, two-level headquarters of the West Friendship Volunteer Fire Department completed earlier this year — now one of the largest facilities of its kind in the Northeast.

The facility is the base operations for two full-time and 10 part-time personnel, and 85 volunteers. This new L-shaped building is home to EMS personnel and equipment on one side and large fire equipment bays on the other. Common areas were placed at the “L-bow” joint, providing room for food service, office and training areas. In the enclosed, radiantly heated bays, 10 pieces of equipment are kept in mint condition: two engines, two tankers, one tower truck, two ambulances, one brush truck (for brush and wild fires) and two utility vans.

The heating portion of the project was installed over nine months by Gaithersburg, Md.-based Mallick Plumbing and Heating Inc. This company has grown from a small light-commercial and residential plumbing outfit to a full-fledged mechanical contractor. The 58-person firm had revenues of \$18 million in 2008, with 95 percent of its earnings stemming from commercial and industrial work. From hospitals to schools, office buildings and museums, Mallick Plumbing and Heating is one of the Washington, D.C.-area’s most knowledgeable contractors, especially in terms of radiant heating experience.

“Many commercial contractors are inexperienced with radiant installations,” says **Jack Guilfoyle**, a manufacturers’



Above: Onix is supplied in pre-cut, pre-tested coil lengths, making an easier installation by the contractor. Left: A manifold is placed as tubing is attached to the wire grid before the first concrete pour.

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A Mallick technician performs prefire diagnostics on the system.

rep for Cummins-Wagner, which aided the engineers and designers of the heating systems. “They simply don’t know what’s involved, how much time is required, how much on-site support they could and should expect, etc.” It was the Mallick team’s comfortable familiarity with radiant, their installation techniques and their economical equipment choices that ultimately won them the firehouse bid.

Simplify The Installation:

According to **Mike Mallick**, general superintendent and project manager for Mallick Plumbing and Heating, his team (headed by jobsite foreman **Greg Green**) tapped the design and on-site expertise of Cummins-Wagner for, among other system components, 32,000 lineal feet of Watts Radiant EPDM synthetic rubber Onix tubing and manifolds; two pre-engineered, prepackaged HydroNex system panels from Watts Radiant for equipment bay radiant heating; and one larger, custom-built HydroSkid package built specifically for the project to control the snowmelting operation outside.

“Because Onix is supplied in pre-cut, pre-tested coil lengths, it makes for an easier installation by the contractor,” Guilfoyle says, who believes one of the chief design goals should be to make it as easy as possible for

the contractor to complete a perfect installation.

The factory-built and -tested components of the Watts HydroSkid further simplifies the system, since they’re installed rather than built on-site, and provide a single point of contact for design and servicing questions. “From a specifying engineer’s perspective, they are his best defense against the low bidder,” Guilfoyle states. The units are built entirely to specification with UL-listed components, custom engineered and manufactured in a factory-controlled environment to assure quality control. The number of zones, flow requirements and component choices determine overall footprint and height.

The manifolds, too, were quick to assemble and install. They also look great. “While appearance doesn’t seem like an important design criteria, it’s important to remember that these will live on the job for a long time and be looked at or serviced by a number of people. The better and cleaner the appearance, the better they’re likely to be treated, so a technician unfamiliar with the design will be able to diagnose and service the system,” Guilfoyle says.

Lochinvar CopperFin II boilers provide the heat with low-temperature valves in the supply and return piping

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At floor level, the large bay shows no sign of heat within the slab. An infrared photo at this angle, however, would reveal the "secret" of radiant warmth below. The network of tubing also extends into the large concrete pads outside, assuring safe and rapid exit any time of year.

so that it can't bring less than 70-degree F fluid back into the boiler, avoiding the risk of condensate accumulation. The system heats 660 gallons of 50/50 glycol mix for the exterior slabs. The 18,000 square feet of uninsulated, 8-inch con-

turn on the outside slab heat before the sensor would pick it up."

The three equally sized slabs are found outside the EMS bay (entry and exit), and on both sides of the drive-through fire equipment bays. Though

heated slabs provide warmth for the equipment bays, but not inside the facility's common and bunk areas, which is heated and cooled via forced air. "But around here we can now say that fire and ice are dealt with accordingly."

The West Friendship fire and rescue personnel recognize the need for 24/7/365 readiness, a mission that harks back to their early days of Minuteman soldiering. Their new building's high-performance heating system makes them more than ready to serve. **PM**

Keeping access areas free of snow and ice can't be overstated for a fire department.

crete slab — divided into three separate 6,000-square-foot slabs — operates off of one outdoor temperature-and-humidity-sensitive sensor.

"The snowmelt operation is actually quite simple," says Mallick. "When the snowmelt system is activated, all loops are warmed at once. There are two pumps on the HydroSkid: One serves six manifold sets and the other operates seven manifold sets." A facility manager can override the automatic activation of the system if he knows from weather reports that a winter storm is coming. "That way, he can

the exterior slabs are uninsulated, the interior bays (6 inches thick) are insulated from below and along the perimeter.

Higher Calling: With the nation's capital only 40 miles away, first responders from the West Friendship location have the added expectation that, should a large-scale need arise, their resources could be called upon. And keeping access areas free of snow and ice can't be overstated for a fire department.

"The equipment actually has it a bit better than the personnel do," jokes Fire Chief **Mickey Day**. The radiantly

