

At KC Airport's Marriott, It's IntelliStation to the Rescue

Most hotel managers have learned through experience that their toughest, crankiest customers are unhappy guests at 5 am or midnight.



They've either just woken up and have to move out post-haste, or, after a long day of travel, they need to turn in immediately. But the "hatchet's in hand" if there's insufficient pressure – or hot water – for a shower.

According to Greg Brinkerhoff, director of engineering at the Kansas City Airport Marriott, there's a steady flow of guests at all hours at the 384-room hotel. Late arrivers and early risers can push the limits of a hotel's hot water heaters and plumbing systems.

"The highest demand for hot water comes between 5 and 6 am and again between 10 pm and midnight," added Brinkerhoff. Before the hotel addressed the problem, it wasn't uncommon for hotel managers to get several calls a week from guest rooms without hot water. "Unfortunately,"

said Brinkerhoff, "The best we could tell them was that hot water was on its way."

Hot water woes

For more than two years, the hotel battled domestic hot water issues. As it turns out, a large hydronic valve was used for the original system. The valve had a 120-second response time and couldn't actuate quickly to keep up with the hotel's changing water pressures.

Because of the valve's sluggish response time, whenever something went wrong with the pumps, heat exchangers, or storage tanks, the entire domestic hot water system would require a time-consuming recalibration. Maintenance was required routinely – a constant source of disruption for the engineering staff.

Last winter, facility managers decided to fix the problem. Brinkerhoff called on Ian Walters at Kansas City, MO-based Lexington Plumbing, a mechanical contracting firm, for recommendations. Walters already had a solution in mind.

"The Powers IntelliStation™ was built for challenges exactly like this one," said Walters. "We had specified the system at several different facilities and it exceeded facility manager expectations every time."

Case Study

Digital mixing + recirculation

Designers of large plumbing systems are now discovering that a digital mixing system is the most effective way to deliver properly mixed water throughout a hot water recirculation loop.

Digital water mixing represents a significant leap in the technology used to control hot water delivery. The approach incorporates a programmable valve or system to quickly process temperature, flow, and pressure data, which is obtained from the hot and cold water inlets, mixed outlet, and sensors on the mixed-water return. High-speed, responsive electronic actuation modulates a simple valve that allows the setpoint to be electronically controlled and maintained.

Digital mixing allows engineers or facility managers to select a desired hot water temperature and to control and monitor the entire water distribution system. For even greater control, these systems can be installed as part of an ASSE-compliant water distribution system, including point-of-use mixing valves at each fixture in the plumbing system. This ensures that hot water storage temperatures can be kept at levels lethal to pathogens, then mixed to safer temperature levels both at points of distribution and use.

In addition, digital mixing:

- Supports energy conservation through more efficient water temperature management—and in turn reduces energy costs
- Integrates with building automation systems to support integrated building management
- Supports consistent delivery of hot water on demand wherever and whenever it is needed, in accordance with building codes



Most systems are also field-configurable without the need for a laptop or special software. Digital water mixing and recirculation can easily be integrated into a building automation system (BAS) to allow facility managers to remotely monitor and control water temperatures.

The right decision

Four months in with the new IntelliStation digital mixing system, Brinkerhoff says guests are happy.

“And when guests are happy, building owners are happy,” he concluded.