

PINDERFIELDS AND PONTEFRACT HOSPITALS

PROJECT DETAILS

Client:	Mid Yorkshire Hospitals NHS Trust
Location:	Wakefield and Pontefract, England, UK
Completion Date:	November 2009
Contract Scope:	Design, supply, installation, on-site commissioning and set-up support
Applications:	Hot water temperature maintenance and frost protection for pipes
Technology:	nVent RAYCHEM HWAT-M, WinterGard cabling with HWAT-ECO controllers and RayClic connection systems



KEY CHALLENGES

This large scale new build project comprised a new acute inpatient hospital in Wakefield and new diagnostic and treatment centre in Pontefract, each spread over a number of multi-storey buildings. Given the high profile nature of this major project, a smart engineering solution to the hospitals' domestic hot water system (DHWS) needs was under close scrutiny. The need was for a quality hot water solution to a large distribution network, with precise temperature control across the entire network. With the project time-driven, the system had to be capable of prefabrication off-site in modules for easy connection on-site. Frost protection of exposed water-bearing pipework was also a necessity.

SOLUTION

nVent provided the ideal solutions to meeting all of the project's needs for hot water distribution and frost protection through its RAYCHEM product range.

Single-pipe, electrically heat-traced distribution systems were designed for both sites with heating provided by the company's RAYCHEM HWAT-M self-regulating heating cables supported by RAYCHEM HWAT-ECO controllers. The single-pipe design and flexibility of the RAYCHEM cabling dramatically eased the modular fabrication process with fully traced and insulated pipe modules assembled off-site and delivered to strict schedules for connection to minimise installation times.

On-site installation was also speeded considerably through the use of complementary RayClic connection systems to connect the 25 kilometres of HWAT-M cables. Once installed, the complete single pipe system has provided a constant temperature across the complete network of pipes ensuring quality hot water delivery all the way to the point of use. In addition to providing an effective,



energy-efficient solution, the systems have also provided the capability to boost temperatures to 65°C periodically during legionella prevention cycles.

Frost protection for external pipework is provided by some 10 km of RAYCHEM WinterGard self-regulated heat-trace cabling.

PRODUCTS

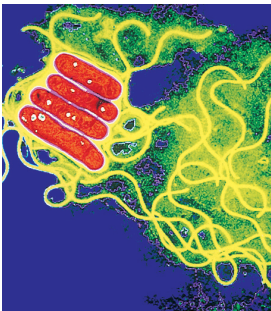
RAYCHEM HWAT are self-regulating heating cables that adjust their power output to compensate for variations in water and ambient temperatures. They replace supply-pipe heat losses at the point where the heat loss occurs, providing continuous, energy-efficient hot water temperature maintenance and eliminating the need for a recirculation system.

The HWAT system maintains hot water temperature continuously at every point along the supply pipe. Unlike conventional recirculation systems, they do not require overheating of supply water to allow for cooling. The HWAT system reduces the energy requirements of typical hot water systems with reduced heat loss from supply piping, no heat loss from recirculation piping and no pump to run.

The HWAT-ECO electronic controller provides flexible temperature control, energy savings, heat-up cycle function, BMS interface, and nine predefined programs that can be customized by the user.

The RAYCHEM RayClic connection system is a simple, fast and reliable set of connection kits which requires no wire stripping because the insulation displacement connector makes the electrical connection.

RAYCHEM WinterGard heat trace cable is a self-regulating electrical cable that can be used for pipe freeze protection on small and medium pipes. It offers a number of benefits; it can be overlapped, cut to length, will not burn out and saves energy.



BENEFITS

- Faster and more economical system to install than recirculation systems
- Overall reduction in running and maintenance costs
- Balancing issues eliminated
- Particularly compatible with modular prefabrication methods
- Robust and reliable frost protection

Central to the reconfiguration of health services in the local area, the new Pinderfields Hospital includes 46 departments, 708 beds of which 50% are single en-suite rooms and a stand-alone new build pathology building. The new Pontefract Hospital includes 33 departments and 66 beds. The design and construction teams for the project comprised BDP Architects, Buro Happold, Balfour Beatty Haden Young Joint Venture (BBHJV). The heat-trace systems were supplied by nVent' distribution partner Jointing Technologies.

A quality hot water solution to a large distribution network, with precise temperature control across the entire network.

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