

GLASGOW GAELIC SCHOOL

PROJECT DETAILS

Client:	Glasgow City Council
Location:	Glasgow, Scotland, UK
Completion Date:	May 2008
Contract Scope:	Design, Supply, Installation
Applications:	Hot water temperature maintenance and frost protection for pipes
Technology:	nVent RAYCHEM HWAT-M with HWAT-ECO controllers, WinterGard FS-A-2X with AT-TS-13 thermostat and RayClic connection systems



KEY CHALLENGES

When specifying the M&E services for this prestigious new build primary school, Glasgow City Council engineers recognised the need for an energy-efficient, easy to install and balance hot water distribution system that could also save space. It quickly became evident that a conventional recirculation system would not do. User safety was also a key criterion. Ensuring temperatures are maintained above 50°C throughout the system was imperative in ensuring legionella prevention. The system also needed the capability to interface with the BMS for greater control and monitoring. A pipe frost protection solution was also required for external pipework. Solutions for both aspects would need to be available with a quick project turnaround.

SOLUTION

nVent was able to provide ideal solutions for both aspects of the project to meet the tight timescale.

The demand for an energy-efficient hot water distribution system was met by a single-pipe system electrically heat-traced by RAYCHEM HWAT-R self-regulating heating cables. Some 850 metres of cabling was installed throughout the building to maintain water temperatures above 50°C and deliver instant hot water on demand. The system is managed by nine RAYCHEM HWAT-ECO smart controllers which interface seamlessly with the building management system.

Eliminating the need for the secondary pipework of a conventional recirculation system saved space and achieved cost savings of between five and ten percent in material and installation time. In addition, the single-pipe system is expected to achieve energy savings of up to 50% in comparison with a traditional system.



For frost protection of external pipes, 80 metres of RAYCHEM WinterGard self-regulating cables were deployed via a fast track installation enabled by the use of RayClic connection devices. The system is supported by an AT-TS-13 surface-sensing electronic thermostat which ensured energy efficiency, when combined with the self-regulating benefits of the 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-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.

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.

The RAYCHEM AT-TS-13 is a surface sensing electronic thermostat with an adjustable temperature range suitable for either line sensing or ambient control.

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.



BENEFITS

- Faster and more economical DHWS to install than recirculation systems
- Overall reduction in running and maintenance costs
- Smart control
- Highly efficient frost protection
- Energy savings of up to 50%

Glasgow Gaelic School teaches through the medium of Scottish gaelic and serves the whole of south-west Scotland. The new primary school was created to meet increased demand for a primary 1 intake of 100 pupils. The M&E contractor for the project was L-Tec and the systems were supplied by nVent distribution partner Smith Electrical

An energy-efficient, easy to install and balance hot water distribution system that also saves space.

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