

LEEDS CASTLE

PROJECT DETAILS

Client:	The Leeds Castle Foundation
Location:	Kent, England, UK
Completion Date:	February 2012
Contract Scope:	Design, Supply, Installation
Applications:	Roof and gutter de-icing
Technology:	nVent RAYCHEM IceStop GM-2X cable with SBS EV-10 control panels



KEY CHALLENGES

Dating back to the early 9th century, Leeds Castle has been developed and extended over hundreds of years and now occupies a number of interlinked buildings on three islands surrounded by an artificial lake. During a 'winter audit', to identify current and potential problems associated with specific weather conditions, damage caused by the melting and re-freezing of ice and snow to the historic castle's extensive roofs were highlighted. Once aware of the potential on-going problem, the castle's facilities management team sought an energy-efficient, long-term solution that could prevent ice build-up and provide drain paths for the roofs, gutters and downpipes.

SOLUTION

The solution is being provided by nVent with the phased installation of its IceStop GM-2X self-regulating heating system to the gutters and downpipes on each of the castle's substantial plain tile-clad roof areas. The core of the IceStop GM-2X heating cable protects the roof and gutter materials by automatically increasing its heat output in ice and snow and decreasing its output in dry air to maintain water flow.

Several kilometres of the self-regulating cables are being installed. They are controlled by two smart heat management, multi-circuit control systems which trigger the heating process only when it is necessary, resulting in additional energy saving benefits. Whereas a traditional ambient sensing thermostat would start the heating process based on the surrounding temperature alone, the SBS EV-10 intelligent control panel will activate the heaters only after the detection of both low temperature and either ice or snow. The heating cable is then deactivated when the air temperature rises above the set value ensuring that it is only in use for the minimum period, enabling power savings of up to 80% to be achieved.



PRODUCTS

RAYCHEM IceStop GM-2X is a self-regulating heating cable specifically engineered for roof and gutter de-icing. Its heating element consists of a continuous core of conductive polymer extruded between two copper bus wires. As current flows through the core, the heating cable regulates its own heat output in response to ambient conditions. This self-regulating effect saves energy by automatically increasing its heat output in icy water and decreasing its output in dry air. Simple to install, the cable can be closely spaced in gutters without the risk for overheating or burn-outs.

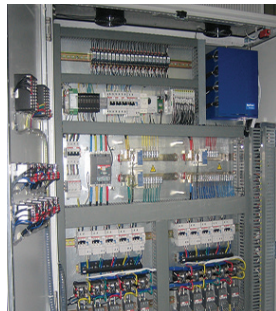
The SBS-EV-10 is an integrated, electrically-protected multi-circuit control panel that is purpose built for the control and monitoring of GM-2X self-regulating heating cables. It incorporates the energy-efficient RAYCHEM EMDR-10 control and monitoring device and has multi-sensory input for both moisture and temperature control.

BENEFITS

- Long-term protection against snow and ice formation
- Fast and economical to install
- Highly energy efficient
- Reduced capital, maintenance and energy costs

Described as 'the loveliest castle in the world' the 'modern' Leeds Castle was built by a Norman baron during the reign of William the Conqueror's son Henry I, on an island in the River Len. Today it is one of the most visited historic buildings in Britain. The products were supplied and installed by nVent' distribution partner Jointing Technologies.

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