HVAC: Art Gallery Liquid to Air Cooling & Heating System

Protection of Heat Exchangers & Pumps with Automatic Filters

Operator

The Hepworth Gallery. Wakefield, United Kingdom.

Background

The Hepworth Gallery is a busy UK tourist attraction and houses work of world-renowned artist Barbara Hepworth (1903-1975). Paintings and other delicate artworks require critical atmospheric management. The River Calder location provides an ideal renewable energy solution for this building, rather than the usual gas or oil-fuelled boiler typically found in the basements of such buildings. A “Liquid to Air” water cooling and heating distribution HVAC system with under floor heating was designed for this location. The system works via an array of pipes, heat exchangers, pumps, control units and the Estate Management Team who oversee all these operations.

The Hepworth Gallery, Wakefield

Description of the solution

For this application, a dual bank of duty pumps each with a BOLLFILTER Automatic Type 6.18 were fitted to filter the river water down to 500 micron to protect the heat exchangers. The BOLLFILTERS prevent blockage of the heat exchangers to ensure the required flow is maintained, resulting in efficient heat transfer and therefore efficient cooling and heating of the building. The BOLLFILTERS are a fully automated, robust units which backflush the accumulated debris to waste, controlled by timers with DP override.

Two x BOLLFILTER Type 6.18 Filters in parallel

Advantages and benefit for the customer

The water quality has improved substantially due to the performance of the BOLLFILTERS, which has reduced the contamination in the system to a minimum and ensures smooth operation. It has gained in thermal output and therefore improved the operability and regeneration of the system. Installing BOLLFILTERS for solid removal will extend the lifetime of a typical HVAC system. The BOLLFILTERS require minimal maintenance and will operate for many years.

Left: The System Right: BOLLFILTER 6.18 in Operation

Testimonial

Alan Lovett, Estates Manager of The Hepworth Gallery said; *"The Hepworth uses river water to heat and cool the building. Pre-filtered river water passes through two automatic BOLLFILTER filtration units before transferring to the heat exchangers. The Bollfilters are an important part of the system, preventing minute debris particles entering the exchange units, which have the potential to shut the system down. The filters are maintained to a high standard by way of regular planned maintenance by BOLLFILTER engineers."*

System

2 x BOLLFILTER Automatic Type 6.18 DN150
Housing: Made of EN-GJS-400-15 (internal painted)
Filtration Level: 500 micron
Flow Rate: 216 m^3/hr (for each unit)
Operating Pressure: 3 bar

BOLLFILTER Protection Systems

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