



Case Study: The MediaWorks, White City



The project

The MediaWorks, located in White City, comprises 231,000 sq ft of open, flexible office space - a key part of the re-development of White City into a new and exciting business district, which is fast become an alternative creative hub to Shoreditch.

Guardian provides ongoing water treatment at MediaWorks through George Birchall Services Ltd., which oversees the site's Facilities Management.

The problem

Following routine sampling of The MediaWorks' Chilled Water (CHW) system, high levels of Pseudomonas were identified, forming layers of biofilm on the surfaces of the pipework and plate heat exchangers. If left, this biofilm would lead to corrosion.

Apart from the Pseudomonas, overall the CHW system chemistry was stable; particularly in terms of total and dissolved iron and copper levels. Traditionally, biofilm is dealt with using flushing, which in itself can cause issues. During the flushing process, large quantities of fresh water containing dissolved oxygen are introduced to the system, which will increase the corrosion rates of these metal components.



The solution

As an alternative solution, Guardian used in-line filtration, which removes the need for flushing, therefore retaining the stable chemistry of the system and preventing water wastage. Commonly, filtration takes place on a smaller side stream pipe, with water diverted through it. With in-line filtration, larger filters are placed on the main pipework, allowing more debris to be caught and less chance of blockage.

Preventing water wastage: Apart from de-stabilising the system, flushing is also extremely water wasting, involving dumping to drain the existing corrosion inhibitor present in the system, along with an estimated 100,000 litres of water (in this example). This would then need to be replenished in order to restore corrosion protection once the flushing process was complete, including around 650 litres of chemicals (1% of the system volume of 65 m³).





Using in-line filtration, existing water is retained in the system, eliminating chemical and water wastage. The in-line filtration system can also be left in place temporarily whilst fit out works are carried out, to ensure water quality is maintained throughout the process.

Ongoing treatment: Beyond the initial polish, the main advantage of inline-filtration in this application was the fact that adjustments to the treatment programme could be made over 3-4 weeks. Using ATP (adenosine triphosphate) monitoring, biological concentration is tracked - ATP is a molecule found around living cells.

ATP monitoring provides instant microbiological results, which Guardian identified trends for on a weekly basis. The results indicated improvements in system control, from the main circulation of water and terminal/remote locations.

If the observed trend slows or flattens at any point, BioBlock can be replaced, or extra biodispersant dosed into the system to assist in stripping away the biofilm from pipework surfaces. Additional focus can also be placed on problem sections of the pipework, by manipulating the Building Management System (BMS).

Traditional flushing only provides one opportunity to eliminate bacteria, with interim laboratory results not reported for seven to ten days – 21 days for final results. If further action is required following these results, significant time is added to the project completion.

Going forward, Guardian recommends the Hevasure monitoring system to provide real-time, 24/7 monitoring of a range of parameters; including oxygen and pressure, to get a true picture of the water system in order to act on any anomalies before they become big issues.

Ongoing savings:

Sectional flushing of the building would cost in the region of £65,000 compared with £17,166 for the in-line filtration system. In addition to this significant saving, Guardian's solution offers the following financial and environmental benefits:

- 3-4 week lead time, vs a 6 week lead time
- No need to waste vast volumes of water and chemicals
- Non-disruptive to water chemistry
- Reduced damage to pipework (flushing itself can cause corrosion)
- Reduced risk of blockage and consequent downtime

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