

## Significant Savings Achieved via Chilled Water Optimisation Project – Energy Services Team, UK and Ireland



As a provider of turnkey energy management solutions, we have a proven track record as a leading provider of turnkey energy management solutions, we have a proven track record in helping our clients achieve significant improvements and efficiencies through a bespoke range of 'end to end' energy supply and demand services, from procurement, compliance and energy management to project identification and implementation.

We provide tailored services and solutions to organisations operating within all industry sectors, the following paragraphs explain how we overcame a particular challenge faced by a customer operating within the data centre market.



### The Challenge: Reduce Energy Consumption by Optimising a Critical System Without Affecting Resilience

A global IT company has a 3 MWth chilled water system serving its data centres, with the system consisting of three chillers, two dry air coolers and associated primary and secondary pumps. A site survey indicated that the system was running without adequate automatic

control or effective sequencing and the free cooling loop was not installed in an optimum manner either. The main challenge was to implement these recommendations without compromising availability and the day to day operation of the European data hub.

## The Solution: Turnkey Design and Installation

Johnson Controls developed an integrated solution, at minimal cost following an agreement to invest should the payback criteria be met. The technical solution included the following elements:

- ▶ Perform pipework modifications (live via hot tap in) of the free cooling circuit to act as a pre-cool and controls optimisation of the dry air cooler circuit; the client complained the flow temperatures increased significantly when free cooling was in operation prior to our works
- ▶ Install two-port shut off valves within the chiller circuits to enable effective sequencing, controls modifications and additional sensors installations
- ▶ Installation and optimisation of variable speed drives on the primary and secondary pumps to enable sequence control
- ▶ Installation of new secondary pumps to replace the failing sets already installed



## Benefits & Results

The client was presented with a clear business case at the outset, which was a guaranteed fixed price solution with accurate energy saving projections. These included:

- ▶ A four year payback achieved against a maximum five year requirement
- ▶ The cost of the replacement secondary pumps was also blended within the business case, therefore the client's reactive budget was not affected as these pumps were 'end of life'
- ▶ 380,000 kWh of electricity savings per annum
- ▶ 204 tonnes of carbon avoided

## Contact

At Johnson Controls we have a wealth of experience in energy-focused services and solutions for all buildings types and are fully committed to providing a premium service to our customers.

For more details please contact Johnson Controls' Energy Services Team:

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