

Case study

Borough of Telford and Wrekin

United Kingdom



Web based system enables Council to manage energy using existing IT network

The brief

The Borough of Telford & Wrekin annually purchase £2.5m of energy for its portfolio of 300 operational buildings. The Council is committed to managing energy costs as well as reducing energy consumption to meet government targets – a difficult task as energy requirements are on the increase.

The success of individual monitoring systems, installed to help measure and reduce energy consumption, prompted the Council to seek a more progressive approach. Its vision is to create a networked solution, leveraging the comprehensive IT network within the Borough.

Johnson Controls integrated, tailor-made solution utilizing the Metasys® building automation system not only met the Borough's two main criteria, remote monitoring and ease of reporting, but offered a range of future benefits.

Challenges

- To provide a networked system enabling remote access and real time information
- To replace the need for separate monitoring systems using a DOS operating system on stand alone computers, which relies on local operators for effective management
- To deliver best value energy management solutions, which demonstrate innovation and ease of use
- To overcome internal barriers to share the Council's IT network for engineering applications
- To achieve 'buy in' from consultants, designers and engineers to embrace change
- To develop environmentally sustainable, reliable and competitive energy sources as well as reducing green house gas emissions by 20% by the year 2010



- To increase awareness amongst all stakeholders about energy conservation
- To deliver off-site monitoring and the ability to prepare comparison tables that can be communicated to managers and other employees using the Borough's broadband network

Solution

A compelling demonstration of a web-based solution was crucial to raise awareness and support for a more progressive approach to energy management across the Borough. An opportunity was presented with the installation of a demonstration wind turbine at Ladygrove Primary School.

Johnson Controls in partnership with the Council designed and developed a system capable of monitoring energy generated from this alternative source. Using Johnson Controls' groundbreaking hardware and software, the Council is able to obtain real-time data on wind speed, energy generated by the wind turbine and estimated energy savings.

Johnson Controls Metasys technology was installed in the main Council offices and network access is available across all 84 schools and other buildings including libraries, sports centres, offices and various operational buildings in the Telford area. The Metasys system enables remote access and monitoring from any web enabled device, be it a PC, PDA or even mobile phone.

The wind turbine is monitored by a power meter and anemometer connected through an ethernet link to a web enabled server located in the Civic Centre office. A simple display screen developed by Johnson Controls was set up on the server, allowing any school in Telford to display this information in real time on interactive white boards in the classrooms through their web browser.

Benefits

The Metasys system is capable of allowing remote monitoring and management of energy to meet the council's objectives. Real time information is now accessible from any location and is easily communicated to managers and other employees using the broadband network within the Borough. There are many other potential benefits that will arise from this technology:

- Manage costs - the water, gas and electricity meters in Newdale primary School have also been connected to the network, which allows access to the meter readings and half hour energy consumption data
- Energy saving - data can be downloaded and graphs of energy usage against time produced to pin point wastage and equipment left on unnecessarily
- Remote readings - obtaining utility meter readings on-line, avoiding site visits
- Remote diagnosis and control of equipment - sending emails and/or SMS text alarms; automatic call out of contractors on the failure of equipment
- Integration - new opportunities to control and monitor a diverse range of associated building services equipment over the network, including for example, heating and boiler controls, access systems, temperature monitoring and alarms. Therefore avoiding the need for a range of separate monitoring and control systems.

"Johnson Controls played a major role in achieving what seemed at times impossible. Their support, technical expertise, commitment and enthusiasm has made our vision a reality."

MIKE WEBB
ENERGY CONSERVATION OFFICER
BOROUGH OF TELFORD & WREKIN

