

St Beuno's Jesuit Spirituality Centre has upgraded its heating control system. The advanced Priva Blue ID building energy management system improved the accuracy of heating control across the site.

- > **Priva BEMS replaces poorly designed PLC-based system**
- > **All controls now in a central panel with touchscreen**
- > **More accurate heating control throughout the building**

St Beuno's Jesuit Spirituality Centre has recently upgraded its heating control system to help boost the organisation's environmental credentials and lower its carbon footprint. Installed by Wren Electrical Services, the advanced Priva Blue ID building energy management system (BEMS) has replaced a poorly designed PLC-based system to improve the accuracy of heating control across the site, and enhance accessibility with a user-friendly touchscreen.

St Beuno's is a large 19th century building based in the pastoral Denbighshire countryside of north Wales. It was built in 1848 as a place of study for Jesuits on the lines of a small Oxbridge university college. Interestingly, in Victorian days there was a heat exchange system in place that allowed heat from nearby greenhouses to be brought into the main house, indicating an early fascination with heating innovation. However, oil-fired central heating was installed in the 1940s to replace open fires as the principal form of heating.

The heating challenge

The building features high ceilings, large corridors and many single glazed and stained glass windows. As a Grade II listed construction, changes to the outside and structural alterations inside are difficult to

implement and require local government approval. With this in mind, keeping such a building heated uses much energy and there exists an almost continuous process of trying to reduce rates of consumption.

Disillusioned with its PLC-controlled heating system, Birkenhead-based Wren Electrical Services was appointed, via main contractor Clovermead Construction, to devise a better solution.

“The existing building management system had been installed in the building’s plant room,” says Ben Johnson, Engineering Director at Wren Electrical Services. “It consisted of a PLC that was not fit for purpose, a number of separate time clocks for the pumps and a separate temperature controller to ‘control’ three oil-fired boilers. The inadequate design of the system made it almost impossible to obtain correct and energy efficient control of the heating system throughout the building. In addition, there was no user interface for staff on site to change times, set points or view alarm history, while the BMS panel was not up to current electrical regulations.”

Project objectives

During the planning phase, Wren Electrical drew up a number of project goals, which included obtaining correct control of the heating plant and making the system more user friendly. Further objectives focussed on having all of the heating controls in a central panel, at the heart of which would sit a Priva Blue ID BEMS.

“Our solution was to start from scratch with the building management system – to design, build and install a new control panel with a new BEMS,” explains Mr Johnson. “In addition, the panel was to have a user-friendly touchscreen display.”

To achieve this, the plant room’s new electrical control panel was designed to suit all existing plant equipment and manufactured and installed according to BS7671. The use of Priva Blue ID eliminated the need for separate time and temperature controllers as previously installed.

New BEMS strategy

Contained in the panel is a circuit breaker identification chart and the control panel drawings. In fact, the BEMS strategy had been completely rewritten to suit the purpose.

New space/air temperature sensors were fitted in the building to obtain better control of the variable temperature heating circuits. Furthermore, the touchscreen display provides site maintenance engineers with simple system access to change heating times, temperature set points, view any fault history, view temperatures throughout the plant and identify which plant equipment is running.

“Our client and the maintenance team at St Beuno’s were given demonstrations of the system and shown what information Blue ID could display, and they were very impressed,” says Mr Johnson. “Although this project was relatively straightforward, the support we receive from Priva on more complex installations is always fantastic and is a major contributing factor behind our ongoing use of Priva products.”

The project at St Beuno’s Jesuit Spirituality Centre was completed in November 2015, which means it is too soon to calculate annual savings in energy consumption. However, it is anticipated that the heating controls upgrade will achieve a rapid return on investment.