

CASESTUDY

University College Dublin | UCD

Centralised control of 15,500 points across 300,000 m² campus



University College Dublin (UCD) is the largest third level college in Ireland. The main centre at Belfield consists of over 50 buildings on a 132 hectare site and there are additional buildings at a number of outlying locations.

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Projekt Overview

The treated floor area of approximately 300,000 m² is managed centrally by the Unitron Building Management System. An intensive period of construction in recent years resulted in an unprecedented increase in campus running costs. As a government funded body there is ongoing pressure to cut energy spending and this led to the establishment of the UCD Energy Unit. Its mandate is to improve energy efficiency, reduce overall energy costs, and improve unit cost estimates while promoting an environmentally friendly policy.

“The ABB Cylon® solution provides centralized control across the whole campus which means we have very effective management of our buildings right from the desktop” Brendan Robinson, UCD Energy Unit

Solutions Benefits

In the early stages many of the big wins for Energy Efficiency were in use of occupancy sensors linked directly to the BMS. In some buildings the Energy Unit managed to reduce energy consumption by up to 30% in this way. Timing schedules can also be changed remotely for any buildings which is very convenient. As a fully integrated BMS the ABB Cylon® solution is also used to capture occupancy information for utilisation reporting. The staff of

Project Summary

Applications:	TEC Systems
Number of Points:	New York, New York
Number/Type of Building:	September 2011
Network:	American Museum of Natural History
ABB Cylon® Hardware Installed:	LEEDS
ABB Cylon® Software Installed:	Design & Build

the Energy Unit can respond very effectively to queries from building users. Manageability is a key benefit as all information feeds are included in the Unitron Command Centre. The power of the system has dramatically improved troubleshooting capabilities before an inspection of plant is required. To achieve its mandate the Energy Unit has been even more creative in driving further energy savings. Daylight linking of lighting is an important project that has significantly reduced the “hours run” of lighting and reduced the amount of power consumed. The increased automation of the open/close procedure of the building also saves time for building custodians.

The full range of plant is controlled including heating, air handling, cooling, lighting, fire alarm, lift alarm, gas alarm, and water usage applications. The campus has an annual energy bill of almost €4m and over 15,000 points on the ABB Cylon® solution.

The Energy Unit has:

- Introduced a range of significant energy saving measures
- Dramatically reduced the time to troubleshoot and fix problems with a centralised monitoring and control system
- Established an online monitoring system to record individual building utility consumption against target levels of usage
- Raised awareness among facility managers, technical service and building users of the importance of energy efficiency

ABB Cylon® Solution

UCD has been an ABB Cylon® user for almost 20 years. As such it has each generation of Unitron controllers installed in different applications on campus but all available on the same integrated network and control system. This includes hundreds of UC32 and UCxx range of controllers.

The campus now has a dedicated Industrial Ethernet ring network for UC32.net controllers. This provides automated millisecond recovery in event of network segment damage. A sample application is advanced boiler control on main boilers which are rated at approximately 6MW.

The Energy Unit uses the BMS for induced draught fan control, burner modulation, relay of alarms and system integration. The ABB Cylon® solution utilises the entire system data to improve modulation rather than just acting as traditional on/off control. The set point is varied automatically and control is now based on a more suitable sensor. Interfacing with boilers is done with Modbus which also allows enhanced fault reporting. Alarms automatically sent by the Unitron Command Centre to the service engineer, as an SMS message now include the specific boiler fault code.