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# UCC – Boole Library

## AHU-06 and BMS Energy Optimisation

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UCC Boole Library is located within the main University campus and forms a key part of academic life. Although construction of the existing five floor building was completed in 1981, the library dates as far back as the opening of the college in 1949.

The library and associated lecture theatres are served with conditioned air from seven roof and plant room mounted air handling units (AHU). The largest of these, AHU 6, provides supply and extract air to three large open plan floors of the 'old' library. Occupancy levels can vary dramatically due to the time of day, week or year. Although the library is open all year round, occupancy levels drop off dramatically during the summer months. AHU 6 was designed and installed to meet max demands conditions; however this is an event which normally occurs for short periods of time across the year.

Therefore AHU 6 was predominantly oversupplying the space with conditioned air in order to meet design set points. By enabling the system to react and adapt to actual demand conditions, through the use of the BMS, fan motor VSDs and air quality sensors, SIRUS engineers have been able to optimise the system for energy performance whilst prioritising the comfort of library occupants. The BMS operates the AHU according to a pre-set time schedule. Within that time schedule the AHU is controlled predominantly by internal space temperature sensors and secondly by occupancy or air quality sensors. This arrangement offers an optimum balance between energy efficiency and comfort.

**sirus**

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“SIRUS, through BMS and System optimisation, brings energy savings to UCC’s Boole Library air-conditioning system...”

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The final aspects of the air handling system optimisation were completed in late 2011, the benefits of which were instantly recognisable using the AHU 6 electrical sub-meter. It is estimated that optimisation works on AHU 6 will lead to an estimated overall annual financial saving greater than €26,000. Whilst the environmental benefit of this work should also lead to an annual reduction of 107 tonnes of carbon.



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### FINAL CLIENT

UCC Building & Estates

### LOCATION

Cork, Ireland

### SERVICES PROVIDED

Initial Energy review;  
Temperature Mapping;  
BMS optimization;  
Installation of VSD, Air Quality and CO2 sensors;  
Re-commissioning.

### DURATION

Year 2011

### REFERENCE CONTACT

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### PARTNERS

ASC Ltd.

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