



*The success of the BT Cork project demonstrates the depth of fresh thinking Sirius has to offer, not just technically but in its ability to devise appropriate finance packages to suit different situations. It also illustrates the confidence it has in its ability to deliver results. The project model as devised by Sirius is one that the entire industry should note.*

## Sirus uses unique financing model, coupled with technical excellence, to deliver massive savings for BT Cork

As a long-term provider of BMS and HVAC maintenance services to Brown Thomas (BT), Sirus were ideally placed to identify and realise energy saving opportunities in the large retail store located on Patrick Street, Cork.

**T**he energy project team comprised Sirus HVAC engineers, who provided integral knowledge of system operations; Steve Gamble, Head Of Property & Facilities Brown Thomas Group; the BT Cork Facility Department, who provided guidance on the HVAC performance demands in the high-end retail store; and the Sirus Energy Team, all of whom contributed to the identification and subsequent realisation of viable energy opportunities.

Analysis of the store utility bills also showed that, although the facility was being well operated and maintained,

scope existed to reduce energy consumption through the upgrade and optimisation of existing plant and controls.

Installation of variable speed drives (VSD) on all air handling units' (AHU) motors proved to be the single most effective plant upgrade for energy efficiency. The operational hours of AHU plant mean they are often the largest energy consumer in a HVAC system. VSDs allowed the energy team to maximise the energy savings available with BMS optimisation. A full building controls optimisation and tuning was also carried out on other plant such as chillers,

## Sirus Building Energy Solutions

On foot of the BT Project Sirius Group – who this year celebrates its 25th anniversary – just recently won the SEAI Energy Award for the Small Business Sector (see page ●●). The Sirius Group of companies now comprises a BMS Projects Division, a HVAC and BMS Maintenance & Commissioning Division, an Energy Consultancy Division and a Health & Safety Division. It operates nationwide and has over 70 employees.

boilers, circulation pumps and AC units. Optimisation was achieved by maximising the use of free cooling, introduction of temperature dead-bands, and prioritising demand-based operation.

### Unique financing model

Sirus provided the initial energy survey and proposal at no cost to the client, the results of which were eagerly received. Confident of their energy survey findings and having recently attended the 2012 SEAI Energy Show Seminar "Energy Performance Contracting (EPC) – The Necessity for all Future Energy Saving Projects", Sirus began actively investigating alternative financing models for the BT opportunity.

As the Better Energy Workplaces Fund 2012 was also available at the time, Sirus applied for and secured grant funding, which proved invaluable to project progression. Firstly, the grant fund provided enough risk-free capital in order for Sirus to secure internal Group funding for the entire project. Secondly, it provided the rubber stamp approval by SEAI that imbued the client with the necessary confidence in the project and the new contracting model.

Once grant funding was in place, the project moved on quite swiftly. A simplistic contract type agreement was drafted and agreed by both parties. The contract relied on trust and understanding, that firstly the total capital funding would be provided by Sirus to start and complete the project, and secondly that BT would provide project payment on a monthly basis, based on the energy reduction achieved in each period.

The monthly savings are identified using electrical sub-metering on HVAC

plant and verified using the current bill, benchmarked against previous years. Met Eireann temperature data is also collected and referenced for degree-day analysis. Monthly financial savings are shared between the client and service provider.

### Findings

The biggest barriers for an energy solutions company are the adoption of all up-front project risks and the securing of capital funding. At a project level the contractual agreement can also hamper, or even stop, progress. However, as proven by Sirus and BT, these obstacles are not insurmountable.

Although the technical aspects of the project were by no means groundbreaking for Sirus, the means by which they were financially delivered was a new and challenging concept for the Group. Nonetheless, the results have been

entirely successful for both Sirus and BT. The project has resulted in an annual energy reduction of over 60% in HVAC electrical consumption and an overall building energy reduction of 17%. This equates to an annual reduction of 300,000kWh and approximately 150 tonnes of CO<sub>2</sub>.

Building control system energy-optimisation is an area of huge potential in the field of building energy demand-side management. This is especially the case in relatively new buildings where optimisation can reap large savings with very little upgrade works required. The challenge with BMS optimisation is predominantly in the maintenance of energy savings over the long-term.

The greatest energy impact on BMS optimisation normally comes from non-skilled building users or maintenance personnel adjusting system operation to meet an immediate need. As building energy demand varies with seasons and temperature conditions, the control system should be fine-tuned to deliver optimum building conditions while still achieving energy savings. Sirus found that the installation of the sub-metering system and remote BMS monitoring was the most effective way of achieving this balance.



Tony O'Keeffe, Energy Engineer, Sirus Building Energy Solutions receiving the SEAI Energy Award from Minister Pat Rabbitt, TD, Minister for Communications, Energy & Natural Resources recently. Also in the picture is James Byrne, Director, Sirus Building Energy Solutions.