CASE STUDY

Commercial premises

CUSTOMER

A commercial organisation in South Yorkshire

SECTOR

Commercial

FOCUS

Encelium lighting management system

KEY SUCCESSES

- Up to 75% savings possible on electricity bills for lighting
- Greater visibility of lighting energy use with web-based dashboards and reports
- Alerts on lamp lifespan reduce the need for expensive ad hoc maintenance

Project overview

BG Energy Solutions has installed lighting energy management technology for a commercial organisation in South Yorkshire. Packed with class-leading functionality, such as smart time scheduling, daylight harvesting, task tuning, occupancy control and variable load shedding, the organisation is anticipating considerable energy savings as a result of the installation.

> **"INDUSTRY-LEADING ENCELIUM TECHNOLOGY PROVIDES EXACTLY THE RIGHT AMOUNT OF LIGHT, WHEN AND WHERE"**

Background

The South Yorkshire company headquarters operates from a 16,000 ft building. Its premises is comprised of half office space, half workshop space on the ground floor, with more or less the same on the first floor, as the workshop is double height.

Challenge

Before installing the solution, the building was operated by normal PIR (passive infrared) sensors that would trigger T8 fluorescent lamps at full brightness, regardless of whether there were high or low light levels outside. In addition, some areas were operated using simple on/off switches that were subject to being left on accidentally.

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Solution

Low energy lighting, in combination with the latest retrofit lighting control technologies, means it is now possible to illuminate premises in a way that's truly efficient. The newly developed BG lighting management solution, which uses industry-leading Encelium technology, provides exactly the right amount of light, when and where required.

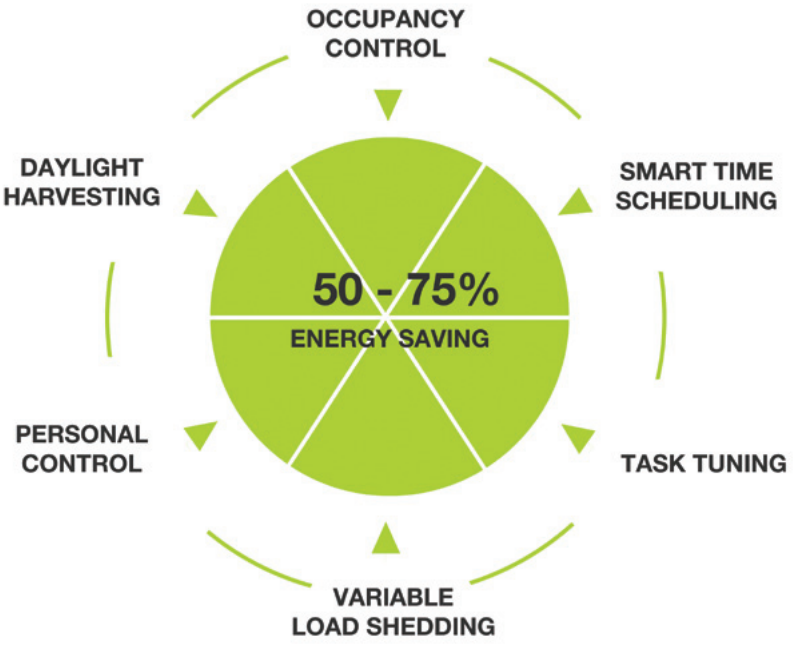
"We deployed PIR sensors throughout the building, with the advantages of daylight harvesting and the ability to throttle down the light levels between 0 and 100%," states Mike Dauris, Project Manager at BG Energy Solutions.

These sensors are now present in all rooms at the premises. Between four and 10 light fittings are located in each ceiling, each featuring four T5 fluorescent lamps, which are around 40% smaller than T8 lamps. A network cable runs between the sensors and DALI ballasts.

A single controller is located in the server room. This has four channels/ sub-networks: upstairs office; downstairs office; workshop; and one spare for future requirements.

"The system is also BACnet compatible, which means it can communicate with a BMS," says Mr Dauris. "Using the sensors, we can exploit the switching data to turn on other plant, such as air conditioning units, for example, without needing a separate PIR or wall switch."

"There are lots of clever touches to the system," adds Mr Dauris. "For instance, if you are working at a PC in an office with a sensor, it's not unheard of for the lights to go off. The sensor can't detect your fingers tapping away at a keyboard and so thinks the office is empty. However, with a simple App installed on your PC, the computer talks to the system, saying that someone is still in occupancy."



Results and Outcome

This harvesting feature uses daylight to offset the amount of electric lighting needed to properly light a space, in order to reduce energy consumption. This is cited by Mr Dauris as a big benefit of the system, along with variable load shedding, which allows time schedules to be set to load shed at certain times of the day, again helping to reduce energy costs.

"When the first staff member arrives in the morning, the lights come on in reception, as they move into the corridor, the lights come on there too, and then again when they reach their office," says Mr Dauris. "Importantly, however, they start at 100% brightness then ramp down if staff open the blinds, for example. Not that you would notice them ramping down; it takes place gradually."

In terms of analysis, the lighting energy management system allows authorised personnel to see energy savings for the whole site, as well as broken down into different categories, such as how much energy was saved by daylight harvesting, for instance, or by load shedding, or occupancy, or using T5 lamps instead of T8, and so on.

The system's web-based software also provides unprecedented visualisation and control of the lighting system, delivering real-life rendering of the installation to simplify management. Web-based dashboards and reports are available to monitor and adjust the effectiveness of energy management strategies. Depending on the installation, it is possible to cut electricity bills for lighting by up to 75%.

Beyond energy savings, the system can also be used to aid the maintenance function. For example, the system will show lamp-lit time and whether or not the lamp is coming to the end of its life. This means that maintenance teams can better schedule the purchasing of spares and replacement activities.

BG's lighting control system is non-proprietary, easily-scalable and wholly future-proof. The system can be retrofit-installed, making it suitable for both new and refurbishment projects.

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