

The people problem: taking ownership of energy

Intelligent use of modern building control technology can help achieve true energy efficiency through behavioural changes, says Anders Norén, managing director of Priva Building Intelligence

ANYONE RESPONSIBLE FOR the management and control of the electrical and mechanical features in a building will be only too aware of the energy challenges that lie ahead. The introduction of the Carbon Reduction Commitment in April next year will add an additional layer of complexity to the way in which many organisations report on energy use and are held accountable for it.

Legal requirements, coupled with the commitment of many businesses, at boardroom level, to a low carbon future put building managers under more pressure than ever to deliver significant carbon savings and quickly, too.

Across the built environment sector – from heating engineers to architects – there has been a very positive move towards sustainability. So much so, that it's now difficult to believe that even a low-energy building, which has been accredited, according to BREEM standards, can still use an excessive amount of energy. And yet – this is exactly what is happening.

So, what more can building engineers do to deliver energy savings? The answer lies in making a building's occupants more engaged in and accountable for the energy they use.

There appears to be a disconnect between the way in which people think about their energy use when they are at home, compared with their attitude to environmental best practice in the workplace (or school or university). The key is to engage a building's users with their environment, making them into active energy users, not just passive inhabitants of the space. Research shows that in order to motivate people to change their behaviour, it is necessary to capture their attention – and technology is at the heart of the solution.

Building Management Systems (BMS) have already established a place in helping to achieve energy efficiency, through their programmable building controls. Today, such systems are being taken a step further. BMS solutions such as

those available from Priva, allow data from the BMS to be not only collated but also illustrated prominently for all to see.

In this way, it becomes possible for the estate's management office and the building's occupants to access and view energy consumption information in an easy-to-understand, web-based format from the PCs on their desks.

This can be achieved by installing wall-mounted screens, running dedicated web applications that can import any relevant data from the BMS. Such systems can also be placed in common areas for all staff to access. When information is made public in this manner, it is much easier for users to engage with its meaning.

Direct Feedback

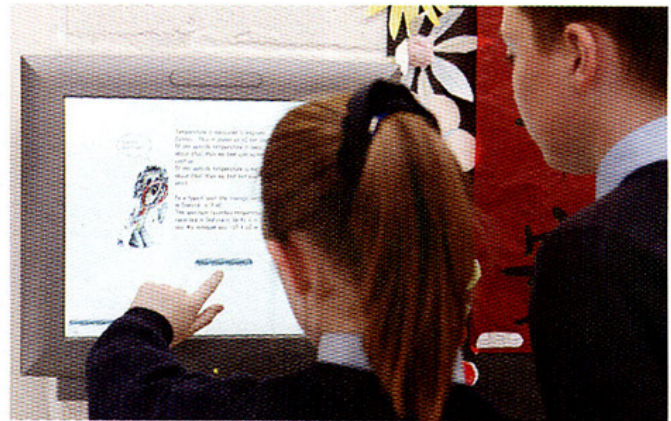
Using technology that can provide building managers, owners and users with direct feedback on how much energy they use, can produce energy savings of between 5% and 15% (according to Defra's 2006 Darby Report).

The benefits are multi-layered. For the estates department it is easier to identify branches or outlets that are using more energy than average and it is then possible to find the cause of the problem and correct it. For the building's occupants, there is a greater sense of involvement with the overall low-carbon challenge and a sense of personal achievement for those whose actions and advocacy deliver the greatest savings.

Carbon Competition

Universities and schools are increasingly providing a blueprint for how businesses and other organisations may respond to the energy-reduction challenge.

A good example can be seen at Lancaster University. Here, Priva and Keep Keen Controls (one of Priva's approved partner companies) have worked with the university to help facilitate its "Carbon Competition". Students living in the university's town-house-style halls of residence (dubbed "eco-residences") compete to achieve the lowest CO₂ equivalent foot-



Catch 'em young: schoolchildren monitor the use of energy in Archbishop Ryan School in Dublin

print, with cash prizes of up to £600 awarded each term to the top three performers.

In order that students can easily monitor their energy use, the Priva BMS technology gathers metered data on energy and utilities' usage in the houses. The data is then collated and made available to the university's facilities management team. This in itself is not unusual; however, what does set this project apart is that the data is then presented to the students via a dedicated area of the GreenLancaster website.

This successful initiative allows students to monitor the impact of their energy consumption and to

monitor it against their peers. This award-winning initiative has been very successful and in many ways is direct proof of the fact that once you make energy consumption visible and easily-accessible, it motivates people to change their behaviour.

With sustainability campaigns *de rigueur* in organisations, BMS technology provides an all-important transparency to workplace energy use. Not a mysterious, unseen force anymore, energy is something that end users can connect with, empowering them to make informed decisions about their carbon footprint.

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RDM adds expansion modules

Hvac controls company RDM has launched a product that dramatically expands the capability and application range of its plant and building control technology.

The new PRO 600 expansion modules provide an expansion for its Mercury Plant Controller – giving an extended number of inputs and outputs that open up new possibilities for its use.

The system can be used to control and monitor any kind of plant – including refrigeration, hvac, lighting, security, process and so on – on any scale, from the level of single items of equipment up to complex, estate-wide distributed systems.

Its arrival enables RDM to compete with established fully-fledged building

control systems, such as those made by Trend and Honeywell but without the need for them to be installed and commissioned by system houses specialising in proprietary technology.

For the first time it offers the ability to control bi-polar stepper motors, often used to govern the action of incrementally operated devices such as air dampers in VAV systems.

The PRO 600 expansion boards connect to a master plant controller, with each additional module adding extra analogue and digital inputs and outputs, output relays and bi-polar stepper drives.

It can be used as a stand-alone system, or linked into an RDM Data Manager as part of a wider network.