

Making light work

There's more to cutting lighting energy costs and carbon emissions than simply the luminary technologies themselves. Brian Tinham sheds some light on what matters when, where and why



Lighting often accounts for a high proportion of a plant's electricity costs, and is one of the easiest and fastest payback routes to energy savings. However, it is also frequently overlooked, despite the existence of low power retrofit technologies that eliminate the time and expense associated with 'rip and replace' projects.

That said, there's more to lighting improvement projects than simply choosing the latest low energy luminary technology to cut electricity costs and carbon emissions, important though each of these goals remains. Other considerations for plant engineers should include the new units' maintenance requirements, their environmental compatibility, warm-up times, lux output, light quality – and also what might be achieved by investing in additional peripheral equipment for the facility.

Maintenance, repair and overhaul firm Brammer chose energy-efficient Virolux-HLF high bay lighting for its automated National Distribution Centre in Wolverhampton. However, the project team also installed occupancy sensors and a system that 'harvests' daylight, using engineered reflectors to maximise lighting levels and minimise energy.

The luminaries themselves achieve what's described as "significant" energy savings, compared, for example, to metal halide and fluorescents – but we're not talking about LEDs. In fact, these harness 4 x 55W compact fluorescents and the expectation is a saving of almost £18,000 in the first year alone. That equates to annual CO₂ emissions savings of 66.2 tonnes. Incidentally, the plant also reports that its new lighting requires no warm-up time, and points to additional benefits, such as increased lamp life and reduced maintenance costs.

Meanwhile, temperature control specialist 1Cold did select LED high bay lighting for a new beer keg store at logistics specialist Tradeteam's food and drink distribution centre in Enfield. With Tradeteam being part of DHL, 1Cold had to satisfy that company's green agenda and hence the move to long-life, low maintenance 100W LED lighting, supplied by Surrey-based LED Eco Lights.

Simon Gumery, operations director at 1Cold, explains that the retrofit system consumes around 75% less energy than metal halides, and adds that lifespan is between five and 10 times better – up to 50,000 hours. He also points to the fact that they switch on instantly and can simply be plugged into existing fittings, so reducing installation costs.

Seeing the light

Beyond that, Gumery observes that internal lighting in potentially harsh environments, where temperature has to be strictly controlled, can be a challenge, but says that LED lighting has scored well. The system is also more reliable, he says, because LED lamps have no starter or control gear.

"Choosing the LED Eco Lights option for this installation was not a difficult decision," he says. "Their green credentials were obviously important ... but it was clear from our research that they were also more efficient and more reliable than the existing lamps, as well as providing a better quality of light." He now expects the initial investment to be recouped within 12 months.

One more point: some of these projects attract interest free loans from the Carbon Trust. Scania trucks dealer TruckEast, for example, used Vita Energia to survey its Wellingborough facility for a carbon reduction project. TruckEast site manager Graham Broughton reports that initially a test light strip was set up, following which the mostly retrofit system was rolled out across the site, including the firm's 14-bay workshop, body shop and offices.

"Initially, I was sceptical, but the implementation proved very smooth and the results are extremely satisfactory," comments Broughton. "Not only are we saving CO₂ and cost, but the quality of light has also improved. We're now looking into implementing the solution on other sites, if the result after 12 months is as positive as it looks at the moment."

He reckons the system is now saving just over £20,000 and 40 tonnes of CO₂ emissions annually. And, with an interest free loan from the Carbon Trust, payback will be just 13 months. **PE**

Above: Hadar HDL106 replacement lighting
Below: LED high bay lighting at the Tradeteam food and drink distribution centre in Enfield

