

Clear vision

Selecting the right lighting for a plant or building requires some understanding of current options. Brian Wall explains

With government and regulators calling for industry to consider environmental issues, selecting commercial lighting has become more than just a simple 'cost versus illumination' equation. So what are the key factors when it comes to making a choice?

Keith Wyatt, efficiency expert at low-energy light specialist Somar International, believes the starting point has to be weighing up the costs associated with any new lighting project. But not just the capital costs of the light fittings: one of the biggest mistakes, he argues, is to focus predominantly on these and forget the ongoing running costs.

"I dread to think how many specifiers decide to install, say, £30,000 worth of SON [sodium lamps], MH [metal halide] or HID [high-intensity discharge] floodlights without budgeting for the £150,000 or so it will cost to burn them 24 x 7 every year," says Wyatt. "Energy-efficient lights might cost two, three or even four times more to purchase, but then £50,000 less per year to run," he adds.

Another pitfall that too many organisations fall into is delegating new lighting projects to individuals who don't have a clear understanding of the technologies or the maintenance issues. "Lighting projects require consideration of a number of aspects: financial, technical, environmental, disruption to production etc," states Wyatt. "Failure to appreciate these can at best delay a decision or, at worst, mean arriving at the wrong decision."

Green pretenders

But there's another problem: not all so-called 'green' lighting technologies actually deliver. "Some may have 50% connected load of a conventional high bay light. But, if you require twice as many fittings to deliver existing light levels, then it's not an energy-saving solution. Companies must take time to assess products' credentials," advises Wyatt.

That said, one innovative lighting system that does cut emissions by up to 50% comes from Manchester-based sustainable power firm Ener-G. Its technology uses 'smart' electronic ballasts – the equipment that controls HID starting and operating. These deliver only the energy needed to ignite an HID lamp – in contrast with magnetic electronic systems that can damage electrodes by delivering excessive voltage and hence also waste energy.



Lighting rules

Most organisations find that a hefty 20–40% of electricity costs are associated with lighting, according to the Carbon Trust. These costs can be cut by up to one third, while also reducing carbon.

1. Use energy efficient lamps: if you have fluorescent tube lighting, changing from T12s to T8s will bring savings of 10%. Upgrading lamps and fittings to T5 brings even greater savings.
2. Install occupancy sensors: switching off lights when a space isn't being used cuts costs by 30%.
3. Install daylight sensors: photocells can switch off or dim artificial lighting in daylight hours.
4. Check sensors and controls: dust can prevent efficient operation, and light switch timers need to be checked for time and program settings.
5. Review replacement: blackened, flickering, dim or failed lamps need to be replaced quickly, as some still use energy.
6. Maintenance needs to work for you. For example, if you have several high ceiling-mounted lights, the schedule needs to suggest replacing all at once. Also, bulbs shouldn't only be replaced when they fail – output deteriorates, so they should be replaced at about 50% below the initial value.

Go to: www.carbontrust.co.uk/energy/startsaving/tech_lighting for more.

Ener-G's 'soft' ignition method can preserve the condition of lamps, even after 20,000 hours.

Meanwhile, replacing old fluorescent lamps with new-generation, long-life, flicker-free T5 and T8 tubes has been given a useful feasibility boost. "Until now, swapping to energy-efficient Triphosphor tubes has required a complete overhaul of both tubes and fittings, which is not feasible with today's budgets," explains Aidan Salter, managing director of Energys. "Fortunately, it is now possible to make this switch while retaining existing light fittings, via our retrofit e-ballast technology, 'Save It Easy'."

And he adds. "The relatively straightforward task of retrofitting also largely eliminates plant downtime, while their long life means they only need to be disposed of half as often." **PE**