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Refrigerating and Air-Conditioning Engineers), and CIBSE (Chartered Institution of Building Services Engineers) with the rising demand for high-quality, energy-efficient lighting and automated systems.

Anthony Seddon, Dynalite's NSW state manager, stresses that it is never too late to make dramatic improvements to lighting efficiency, whether dealing with new or old buildings. The ideal, he notes, is to install template configurations that have innate flexibility, and to make sure facility managers receive instruction in the use and customisation of settings at handover. Structured wiring in the ceiling will allow for the installation of lighting control modules, for instance, and other 'plug and play' technologies.

In addition, there are control mechanisms pertaining to individual types of rooms or spaces (such as toilets) that should be incorporated into basic fitouts.

Moreover, "there are three different types of controls for fluorescent [lighting], two for downlights, etc, and then you have to know how to group these fittings according to hours of operation and occupancy," Seddon says.

The other great aid in reducing energy wastage is sensor technology.

Both Annesley and Seddon agree that as modern facilities can change their occupancy characteristics significantly, even within six-month intervals, it is important to introduce adjustable devices such as occupancy sensing solutions that will dim or turn off lights when they are not required.

IFMA & ASHRAE COLLABORATION

Energy efficiency in buildings is more important than ever before, with buildings accounting for up to 40 percent of primary energy use in developed nations.

In a bid to help create more efficient buildings, the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) and the International Facility Management Association (IFMA) have entered in to an agreement to increase cooperation between the two groups.

Both groups have agreed to share resources and collaborate on projects, publications, sustainability research and educational offerings that will be beneficial to both groups' members and clients.

ASHRAE www.ashrae.org
IFMA www.ifma.org

"The right base will also allow for scalability," they emphasise, adding that the addition, relocation or removal of lights should not be a cause of undue stress or expense. Efficiencies begin from the moment systems are installed.

AN EYE ON SENSORS

Sensor technologies have moved beyond lighting systems to include full HVAC functions and associated automated systems.

Nowhere is sensor technology more valuable than in hotels, where client occupancy patterns are erratic and people's personal requirements unpredictable.

Doron Danon, managing director of Smart Hotel Solutions Pty Ltd, says his company represents the Energy Eye wireless energy management system in Australia.

Energy Eye is a sensor system linked to hotel room HVAC units.

"The Energy Eye system involves the use of two sensors, one attached to the door and another inside the room," Danon says. "The door sensor indicates that there has been a change to the occupancy, while the internal motion sensor registers whether there is movement. If no motion is detected, the system activates the energy saving setting.

"And once you have determined the occupancy, there is no need to keep re-activating the sensor - the process only kicks in again when the door is opened."

According to Danon, typical systems cost as little as \$400 or \$500 to install, resulting in immediate electricity cost savings of 10-20 percent, which is significant when one considers that HVAC units can account for up to 60 percent of all electricity consumption in hotels.

In addition, the life of HVAC units is enhanced through reduced workloads; running times can be reduced between 25 percent and 55 percent.

Being linked to HVAC power sources, the sensors do not activate HVAC power settings below or above normal operational ranges, so there is no chance of harming equipment.

Moreover, Danon says the wireless system can be linked to a range of other powered or automated functions such as lighting control, the lowering or raising of blinds and awnings, louvre activation, etc.



Energy Eye systems, produced by Smart Hotel Solutions Pty Ltd, involve the use of wireless motion sensors to activate or switch off HVAC units in rooms.

UNIT IMPROVEMENTS

Apart from sensor technologies, there are many supplementary ways to make the most out of HVAC systems.

One such system is EnviroTemp, which the manufacturer describes as a 'one time only' treatment that lasts for the life of an air-conditioning system, and, in most cases, reputedly cuts energy costs by an average 15-20 percent.

Enrico Sgarbi, whose family holds the worldwide patents for EnviroTemp, says the system "restores lost efficiency within the evaporative and condens-

ing circuits through improved thermo-conductivity by removing the stagnant layer of non-conductive oil, replacing it with highly charged thermo-conductive molecules that will accelerate the heat transfer rate and increase the refrigerant flow. This results in a better efficiency, lower energy consumption and lower cost."

EnviroTemp, he says, has a payback period of 12-24 months.

SKYLIGHT SOLUTIONS

Finally, for those managers who like the idea of close to 100 percent energy efficiency, the humble skylight is an often-overlooked solution, particularly in single or double-storey facilities with mainly daytime usage. These days, state-of-the-art skylights can be tailored to the precise needs of occupants, with unprecedented controllability and consistency levels.

Solatube Commercial, for instance, recently unveiled its Brighten Up series, which suits residential, retail and commercial applications. The system combines Solatube Commercial patented LightTracker™ reflector and Raybender® 3000 technology to capture light through a UV filtering dome and redirect low-angle light.

Installation is simple and the device provides natural light to any environment, from small spaces that are low on natural light such as bathrooms, corridors, laundries and staffrooms to large scale industrial and commercial structures.

The design features adjustable tubing with angle adaptors, allowing the device to be installed around obstructions while retaining optimum lighting performance.

In most commercial environments, including offices, warehouse and retail stores, lighting accounts for more than 40 percent of annual utility costs. Energy consumption can be reduced by as much as 97 percent using the Brighten Up series, which is designed to deliver optimum daylight while minimising heat gain during the summer and heat loss during the winter.

More information

Desert Knowledge Australia www.desertknowledge.com.au

Desert Knowledge Australia Solar Centre www.dkasolarcentre.com.au

Dynalite www.dynalite.com.au

EnviroTemp www.creativeair.com.au/envirottemp.html

Smart Hotel Solutions www.smartsol.com.au

Solatube www.solatube.com.au

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