

hager

eco-ficient

using electrical energy more efficiently



environmental & cost saving solutions

eco-efficient energy

Saving energy – look global, act local

Since the introduction of the Kyoto Protocol Treaty, more urgency has been placed on the need for energy saving affecting individuals & business.

“Buildings account for roughly one quarter of all greenhouse gasses emitted into the atmosphere in Australia each year, and according to the 4th Assessment Report by the Inter Government Panel on Climate Change, more greenhouse gas abatement can be achieved in the built environment than the industry, energy and transport combined.”

Benchmarking standards

The Building Code of Australia (BCA) is the minimum standard for commercial buildings across Australia. Electrical installations must comply with Section J energy efficiency requirements covering many facets of commercial buildings; common areas, interior artificial lighting, interior power, HVAC, display and perimeter lighting.

Government incentives

Through direct incentives, strengthened energy efficiency regulations and targeted information, households and businesses are encouraged to use less energy while saving money.

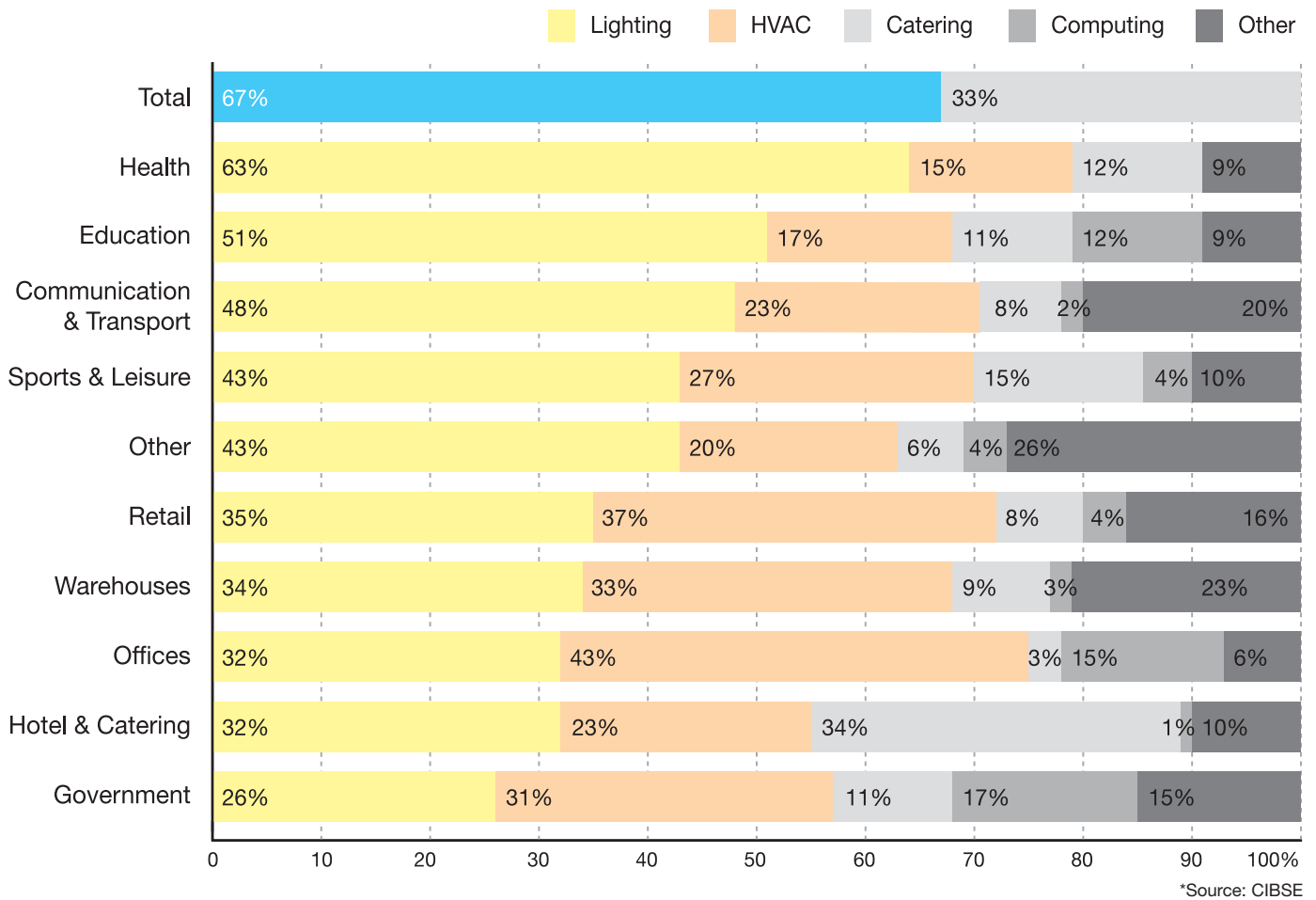
New and existing buildings can take steps towards becoming carbon neutral by including a range of initiatives and technologies such as:

- passive design
- smart controllers; dimmers, sensors & timers
- purchasing green power
- efficient appliances & light fittings
- energy efficient solutions for HVAC systems.



hager eco-efficient commitment

The energy-saving systems, products and services we offer all help reduce energy and the consumption of natural resources. All Hager products comply with the European RoHS and WEEE directives and **environment management systems** such as ISO 14001. Wherever Hager is active, we contribute to measures for **ecological efficiency** and **environmental protection** for a safe, clean and healthy environment for customers, users of our products, employees and the public at large.



Lighting control delivers significant energy savings

Extensive research has been conducted by the Chartered Institute of Building Services Engineers (CIBSE) on the role of lighting in energy consumption and has published in its **Energy Efficiency in Lighting** report:

“The total number of units of electricity consumed by the lighting installation will be affected by the length of time the lighting is switched on, which depends on the amount of daylight that is present and whether the room is occupied, but also whether there are suitable controls, either manual or automatic, to ensure optimum lighting conditions without lights being left on unnecessarily.”

In the service sector, up to 40% of electricity is used for lighting alone*. Automated management systems provide presence sensors, daylight sensors, pre-programmed light levels as well as totally automated management systems, which can be designed at the new build stage or installed later as a retro fit.

what is eco-ficient?

- 1 Using electrical energy more efficiently will reduce the impact of green house gases on the environment.
- 2 Hager has produced solutions that increase the efficiency of various electrical applications.
- 3 Hager eco-ficient solutions will help save you money and reduce your impact on the environment.

Lighting control delivers significant energy savings

Digital time switches

The hager range of **digital time switches** has been developed with more programmable flexibility for daily, weekly and yearly timing functions where a more varied level of control is required in domestic and commercial applications.

Simple and effective energy savings can be achieved by setting these devices so that the various loads are only switched on when they are actually needed, thereby saving unnecessary usage of energy.



4 Channel Digital Yearly Time Clock

HVAC & Lighting 250m² Office Space

Max. power density 10W/m ²	11 hours/260 days +1 night/mth +1w/end	9370 kWh/year
Eco-ficient solution utilising programable Time Switches to avoid wasting energy	11 hours/260 days	7150 kWh/year
	SAVING	2220 kWh/year 2.3 Ton CO₂



Simple energy saving solutions

Digital time switches can be used to control lighting and cold storage, air conditioning, external advertising or building signage to ensure appropriate use and deliver savings.

An optional programme key is available on selected models to provide easy backup to a PC and quick re-installation of the programme.

Programmable
Time Switches
with built in PC
interface-supplied

eco-efficient solutions

Detectors & dimmers optimise energy efficiencies



Presence detectors

Presence detectors are ideal for controlling lighting in office spaces as they detect large movements and also smaller, finite movements, such as people working at a desk. When the area is left unoccupied, the lighting will be switched off, minimising the energy usage of the area.

The light measuring properties of **presence detectors** are far superior to those of **motion detectors**. They can be used to control lighting during periods of high ambient natural light levels, avoiding the use of unnecessary energy.

Businesses wishing to better manage heating, ventilation, air-conditioning (HVAC) and security can achieve significant energy savings with the use of **hager presence detectors**.

Motion detectors

Motion detectors are designed to detect large movements such as a person walking through a building, stairways and corridors. **Motion detectors** are particularly effective used in low traffic areas such as bathrooms, toilets and storerooms. Lighting will only be activated when the area is occupied, saving energy.

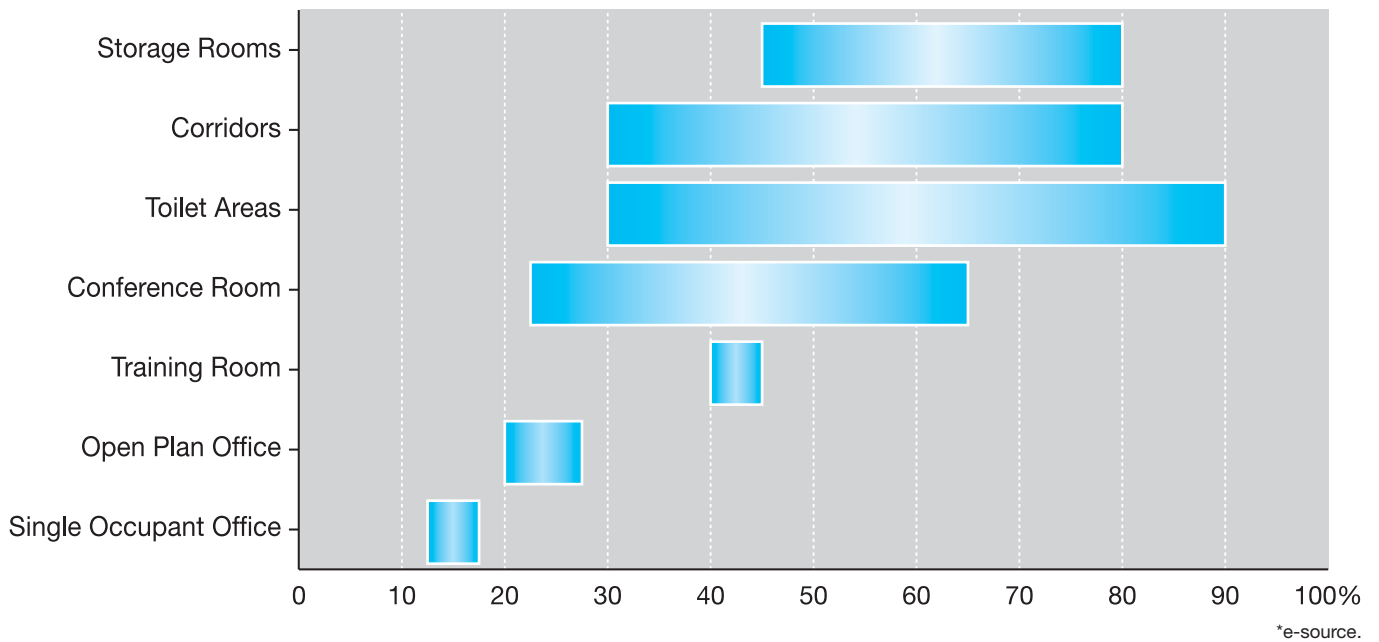
Lighting Typical 400m² Commercial Carpark area

Low level 3W/m ²	24 hours/365 days	10512 kWh/year
Eco-ficient configuration, plus improved lighting level of 3.33W/m ² utilising presence sensors & dimmers	18 hours/365 days	8751 kWh/year
SAVING		1761 kWh/year 1.8 Ton CO₂



IP55
Motion
Detector

Typical examples of savings by area*



Measure the savings

Kilowatt hour meters are a simple cost effective method of measuring energy consumption. Initial, or installation start-up readings can be used as a baseline for determining energy usage. Subsequent readings can be useful in identifying energy saving or wastage. These values can also be important for calculating payback times.

Get smart, harvest your natural light



DIN Mounted
Dimmer

Energy saving dimmer systems

Presence sensors are the 'eyes' of an installation to monitor movement, and **dimmers** are the engine room that provide the functionality.

The use of **dimming systems** is increasing as designers seek benefits of greater flexibility and energy savings. More and more, dimming is perceived as a '**green**' **technology**, and daylight harvesting is becoming an important factor in energy-saving strategies.

When **presence sensors** and **dimmers** are used, energy savings are quickly realised.

A large restaurant has dimmable lighting installed to allow each dining area to be individually adjusted, to the required light ambience. During daylight occupancy, the areas nearest the windows are adjusted to use the benefit of natural daylight.



Detect the darkness - but don't waste the light

Energy saving twilight switches

Light detection products such as **twilight switches** operate by sensing ambient light and switching on or off against a preset lux level.

The **twilight switch** can be programmed to ensure that the exterior building display activates at dusk and switches off later, at a preset time.

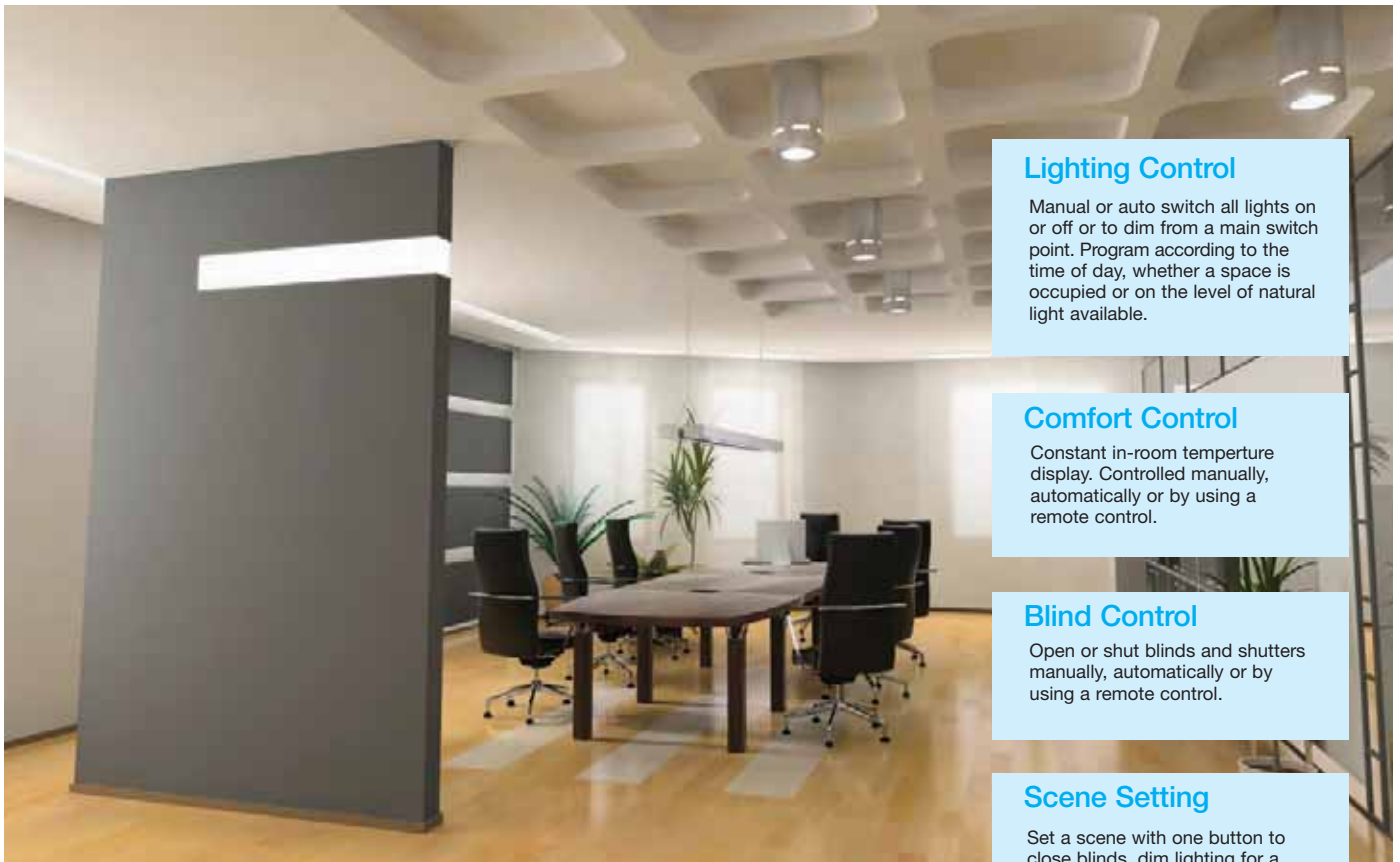
The device can then be programmed to switch back on to catch passing traffic. The **twilight switch** will detect dawn and switch off all lighting, compounding the energy saving.

Twilight
Switch



eco-efficient automation

A system approach delivers significant outcomes



Lighting Control

Manual or auto switch all lights on or off or to dim from a main switch point. Program according to the time of day, whether a space is occupied or on the level of natural light available.

Comfort Control

Constant in-room temperature display. Controlled manually, automatically or by using a remote control.

Blind Control

Open or shut blinds and shutters manually, automatically or by using a remote control.

Scene Setting

Set a scene with one button to close blinds, dim lighting for a presentation, or schedule blinds to close nearing the end of the day.

Touch Screen Displays

Control the installation with one-touch, monitor different rooms, play your favourite music, surf the internet.

Remote Control

Convenience at your finger tips. control lighting, HVAC, blinds, etc from any location in the room.

Energy saving automation - Tebis KNX

Tebis KNX, the building automation system from hager achieves **genuine energy savings** via high end technology.

Configuring the system for both lighting / HVAC plus predetermined timed settings is an easy first step. Combining the system with additional **sensors & dimmers** that respond to natural lighting, maximises your energy savings. **This alone has been proven to cut lighting energy consumption by up to 70%***.

Tebis KNX a highly flexible and can accommodate changes during installation and even after commissioning. Coupled with real potential for energy saving, this makes Tebis KNX a truly future proof system.

*Source: Building Energy Research Group, Dep't of Building & Construction, City University of Hong Kong.





Homeplus automation case study

Hager distribution boards provide both circuit protection and a simple energy saving control solution for new Homeplus stores. **Distribution boards** provide all the circuit protection including RCBO's, MCB's, contractors and time switches. Photo-electric cells also provide lighting control.

The **master key switch** turns on 40% of the lighting at the beginning of the shift and then turns off all the lighting at the end of the day. **Digital time switches** activate the remaining lights when the store opens and also turn off 60% of the lighting when the store closes to the public, for shelf stacking and cleaning. Finally the remaining circuits are turned off at the end of the day.

Photocells turn the lighting circuits on or off in response to natural daylight levels. Roof lights maximise the amount of natural light available.

Andy Collinge, Contracts Manager:

"Using Hager's digital timers saved us a lot of installation time. Not only do they have a weekly cycle option to account for different opening times, but they also have an intelligent key that can be pre-programmed with the desired settings removing the responsibility from the staff and providing energy efficient solutions."





www.hagerbr.com.au/eco-ficient

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