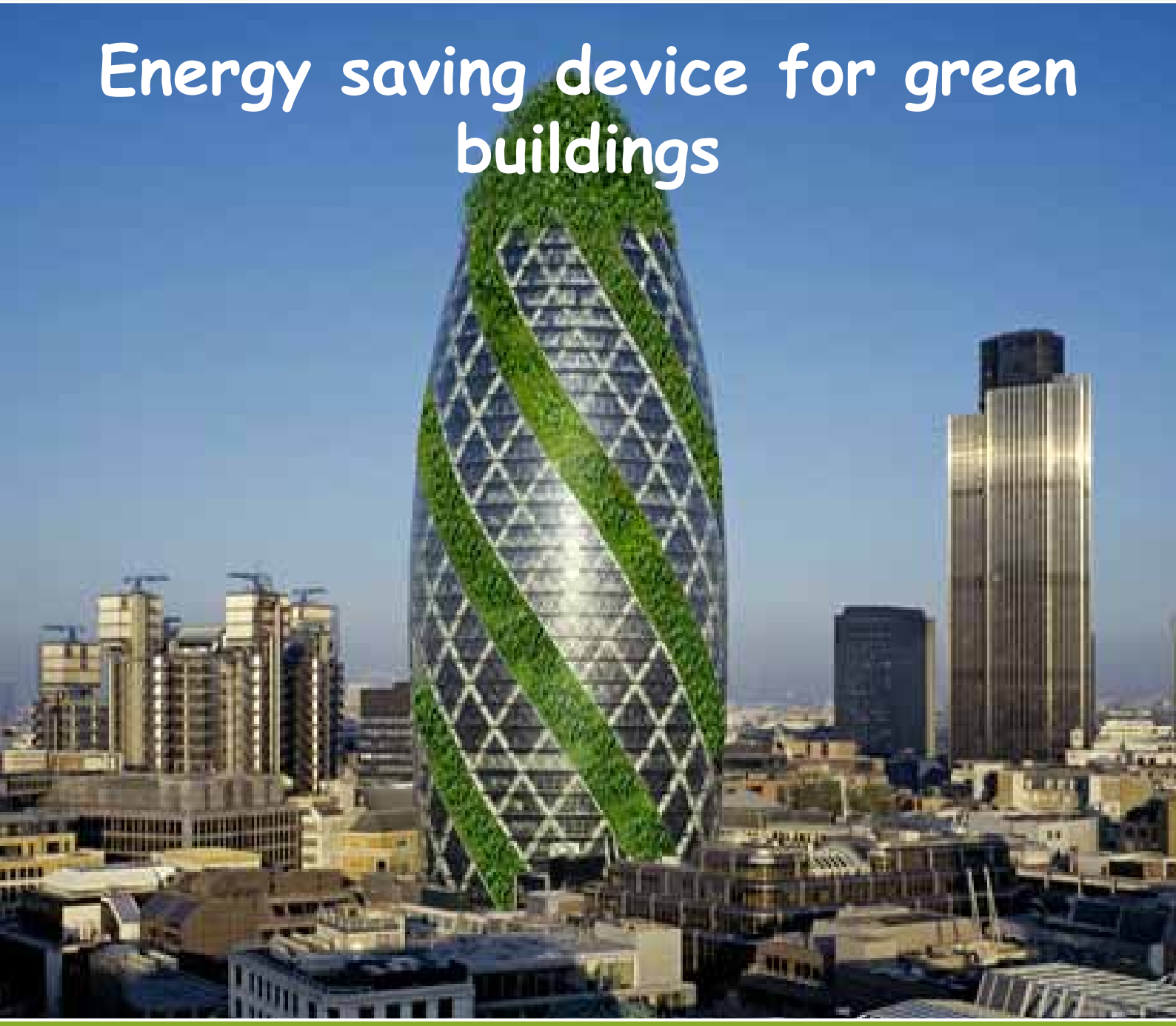
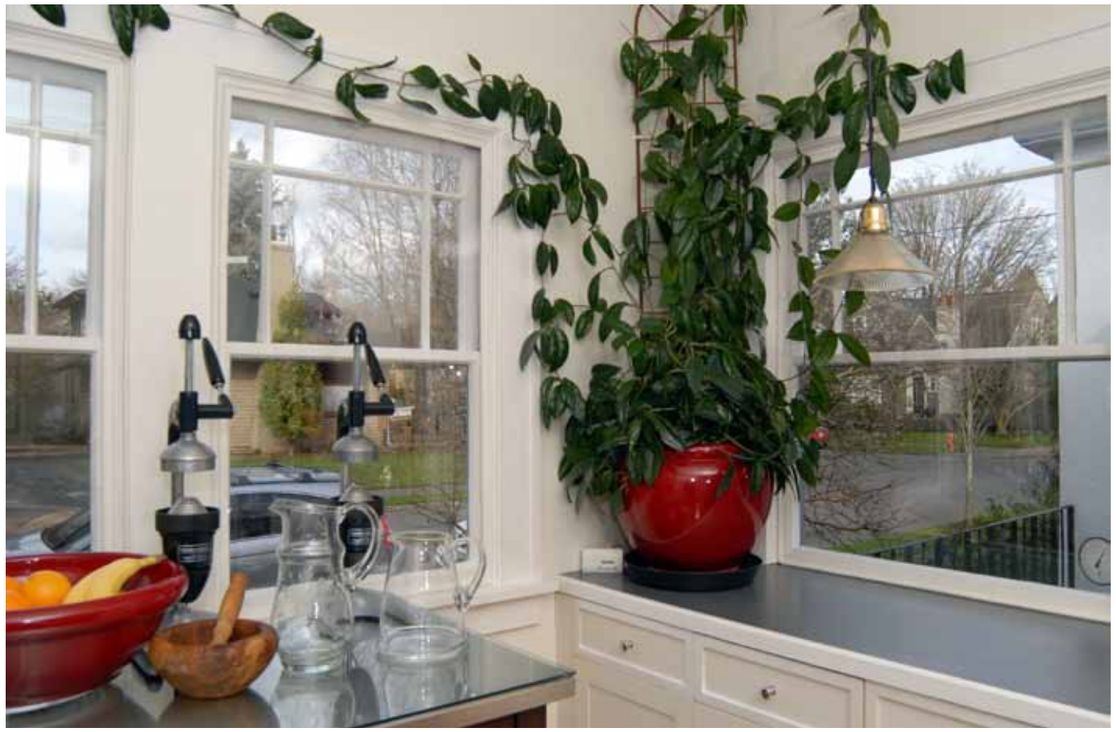
CR
Construction Review
www.constructionreviewonline.com

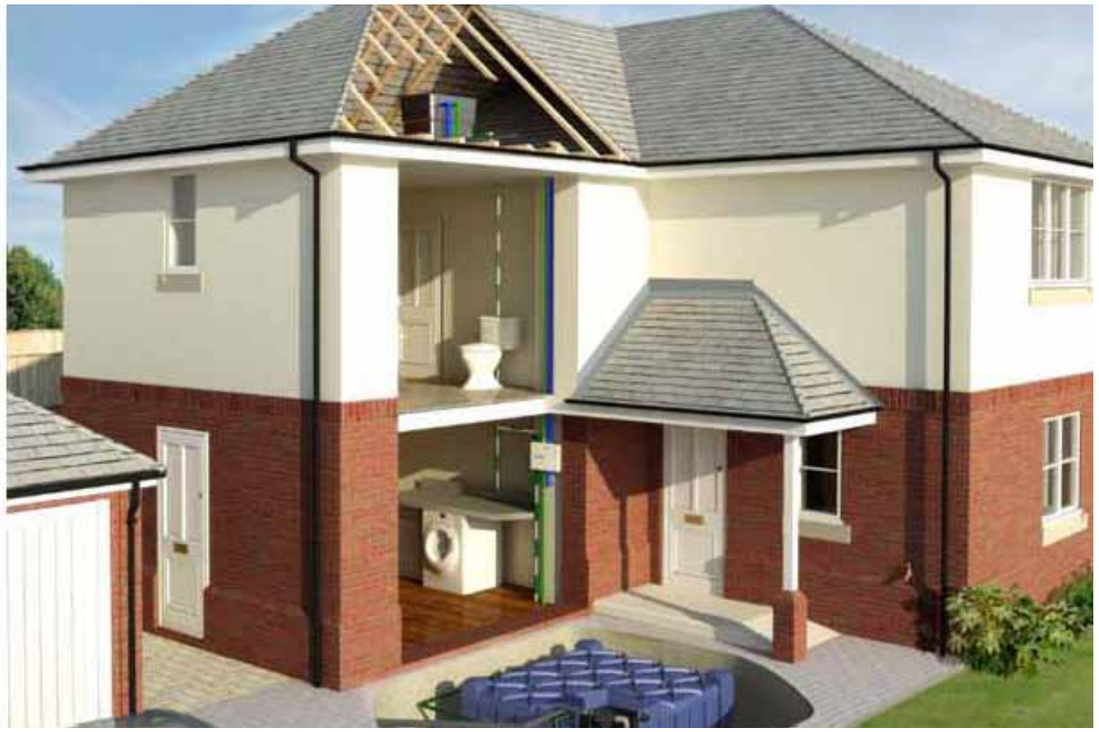
Energy saving device for green buildings



Supplement

www.constructionreviewonline.com





By Yvonne Andiva

While green building covers a whole array of a buildings life cycle greater focus today is being directed towards energy saving and recycling activities even in existing buildings. New technologies to meet this trend are constantly being developed with the view of reducing the overall impact o the built environment on human health and the natural environment.

Reducing water consumption and protecting water quality are key objectives in sustainable building. One critical issue is that in many areas, the demands on the supplying aquifer exceed its ability to replenish itself. To the maximum extent feasible, facilities should increase their dependence on water that is collected, used, purified, and reused on-site. To this end grey water and rainwater is now used for toilet flushing and irrigating in the landscape outside buildings as a matter of course.Using solar power as a renewable source of energy is also gaining popularity while the means of reducing energy use have become the standard. In this area energy use areas such as lighting and air conditioning are enjoying attention as key areas to conserve energy and several new products are in the market to enable building owners to do just that.

Energy saving lighting controls

CP Electronics - have been developing and manufacturing electronic energy saving controls for lighting, heating and ventilation for almost 40 years. They have four different types of lighting control system, all are modular in nature and utilize simple connectivity making them very flexible and easy to install. The wide range of presence detectors, including PIR sensors and microwave sensors, in each system ensure optimum energy efficiency and user comfort. Whilst meeting all the legislative requirements now in place for new and existing buildings.

D-Mate - from CP Electronics gives you all the benefits of a scene setting lighting control solution at an economical price. Using a modular system with simple connectivity, it is easy to install, easy to configure, and has the flexibility you need to tailor solutions to the exact needs of the space. It also allows organizations of all sizes to enjoy effective scene setting, whilst benefitting from advanced energy saving functionality such as presence detection and automatic adjustment for daylight.

An-10 Wireless - Lighting Control Technology allows one to install a fully featured lighting control system easily and with minimal disruption. An-10 has been specifically created to allow us embrace the advantages of wireless technology, while at the same time offering all of the features and functionality demanded by modern day lighting control systems.

Vitesse Modular™ - is a state of the art lighting distribution system that can be used in a variety of applications, its modular design can be easily adapted for layout changes, future connectivity and control requirements. It is available in either switching or dimming variants. Plug in presence detectors, control devices and its modular construction make it a very simple system to install; and the reduced number of parts means that the stockholding of product is greatly reduced for the installer and wholesaler alike.

Vitesse Plus - is a fully functional lighting control system, designed for ease of installation, energy saving and functional usability. It is designed for buildings that have a fixed layout, such as schools, universities, healthcare and public sector. It is available in either switching or dimming lighting control systems.

A wide range of presence detectors (PIR sensors, microwave sensors) ensure that the lighting is controlled efficiently and without compromise. Although the Vitesse Plus lighting control system is designed to meet the demands of all modern lighting schemes it requires little or no commissioning making it the preferred choice for many lighting control applications.

The Rapid - lighting control system is ideal for lighting control installations which have demanding lighting needs owing to changing room configurations, or where there is a need to re-configure or monitor the lighting via a PC. Luminaires can be individually or collectively controlled, either across a floor or throughout an entire building. It is also easily integrated into the facilities management of a building, including the full monitoring and testing of the emergency luminaires.CP Electronics philosophy has been to design and manufacture reliable energy saving controls that optimise comfort for the user while minimising energy costs.

LED lights

Fortune CP Ltd - is a leading Renewable Energy company dealing with the design (research and development), manufacture, supply and installation of high quality and innovative solar products and systems both for residential and commercial customers. The company also carries out large projects on a turn-key basis, and operates as an Independent Power Producer (IPP). LEDs offer huge benefits on electricity cost savings and carbon emission reduction. The investment required is small as compared to other energy efficiency means.

LED lights have the same installation method as traditional ones, except that LED lights do not need starters and ballasts. LEDs have higher luminous efficiency compared to traditional ones. In addition, LED lamps save 50-80% of electric energy compared to traditional ones. LED lights also have a longer service period of around 50,000 to 80,000 hrs compared to up to 15000 for traditional ones.

Energy saving windows

DreamVu™- high performance window range

JELD-WEN UK

are one of the world's leading manufacturer and distributor of quality windows, external and internal doors, patio doors, garage doors and stairs. They offer one of the largest ranges in the UK and their products enhance thousands of homes across the country. With their superb appearance and long-lasting performance, they make sure their products are readily available, through their nationwide network of suppliers.

DreamVu™,- is a window for the carbon zero future, this range breaks new ground in volume produced, mass availability windows at prices to reflect JELD-WEN's highly competitive position in the market. An exceptional looking timber window, the new high performance DreamVu™ Range incorporates the best in traditional UK window design with the latest in window engineering technology.This type of window is designed to offer architects and developers a solution to meet the requirements for the Code for Sustainable Homes using a market leading UK manufacturer.

It also gives the self-builder an environmentally friendly energy saving solution to fit their design requirements. This range is designed to be made to specification, with a wide range of glazing options, giving high thermal and acoustic performance.

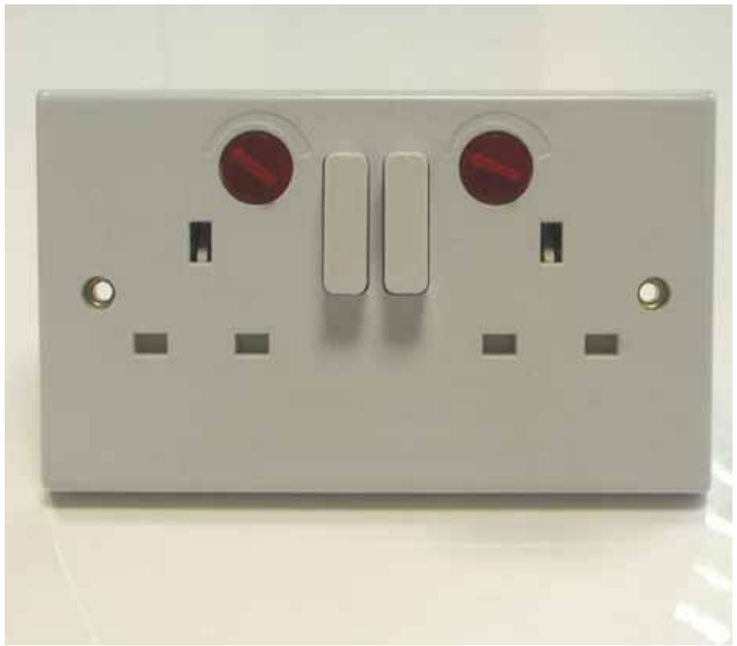
Green Building Store

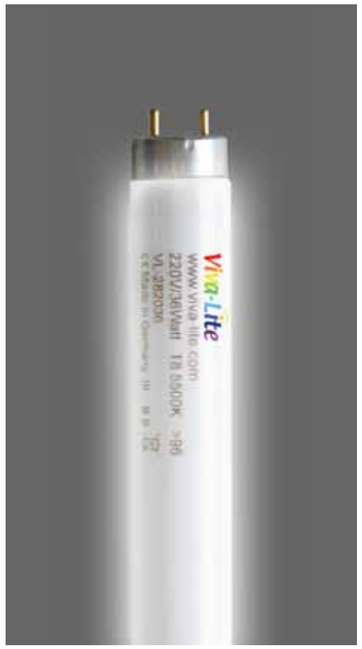
has been at the forefront of introducing Passivhaus products and design into the UK. Their pioneering and comprehensive range of Passivhaus products simplifies the job of Passivhaus specification by offering a wide range of Passivhaus compatible and certified windows, doors, MVHR systems, air tightness products and more. The Passivhaus standard and methodology can be also work well in hot climates, where its high levels of airtightness and insulation can protect buildings from overheating, provided there is adequate solar shading.

The Passivhaus approach to low energy building enables designers and builders to create homes and buildings that are comfortable, warm and use a fraction of the energy of conventional buildings. Passivhaus is a quality assured standard and methodology for low energy building, which can help create buildings which use around 90% less energy than standard UK buildings. Based on well researched and proven building physics, Passivhaus is based on the principle that reducing heating loss to a minimum is the most robust – and cost-effective – way of achieving a low carbon building

Pilkington energiKare™

Pilkington United Kingdom Limited - is proud to have been a leader in the development of glass solutions since 1826. The combination of unrivalled technical expertise and innovative





thinking has enabled them to develop ideas into world leading glass solutions, where they continue to be recognized as a world-class brand. Their product range offering consists of over 50 technologically advanced glass products, including; high quality float glass, energy saving glass, structural glazing, self-cleaning glass and decorative glass.

Pilkington energiKare™ differs from basic double glazing as it works in two ways. It reduces the amount of heat lost through your windows, but also allows more heat (energy) from the sun in through the glass. This effect is known as solar gain and you'll benefit from its effects all year round, for free. Pilkington energiKare™ contains two special types of glass: Pilkington Optiwhite™ – a special 'extra-clear' type of glass.

It increases the degree of solar heat gain to help make your home feel warmer and one of the following from the Pilkington K Glass™ range, the UK's leading low-emissivity (low-e) glass: Pilkington K Glass™, Pilkington K Glass™ OW and Pilkington K Glass™ S filling the double glazed unit with either argon gas or air combined with a warm edge spacer, reduces the amount of heat escaping from the windows. This helps to further improve the thermal performance of your window.

Pilkington energiKare™ is more than twice as energy-efficient as older uncoated double glazing. The Window Energy Rating (WER) scheme has been put in place to help make choosing windows easier. Incorporating a low-e glass from the Pilkington K Glass™ range in windows is recognized by the Energy Saving Trust as a means of reducing heat loss; enabling the windows to be eligible for Energy Saving.

SALTO XS4

Guardian Security SW Ltd - provides professional security solutions across the South West and the UK from their head office in Exeter, Devon. One of their energy saving products is the Salto XS4. The SALTO in room energy saving device (ESD) helps to save up to 65%* of a hotel room or student dorms electricity consumption and unlike standard (magnetic stripe) energy savers, only authorized SALTO key cards will switch on the lights. Any other card (frequent flyer, business card etc) or other SALTO cards belonging to other rooms will not activate the lights.

It is also available in a connected on-line version, which as well as energy saving indicates in real time the presence of guests or staff in a room, logging the information directly into the hotel PC.

When a guest enters the room and inserts their card into the ESD it switches on all electrical equipment. When staff enters the room for cleaning or maintenance, the ESD recognizes their staff card and switches on only the electrical equipment they need to do their work.

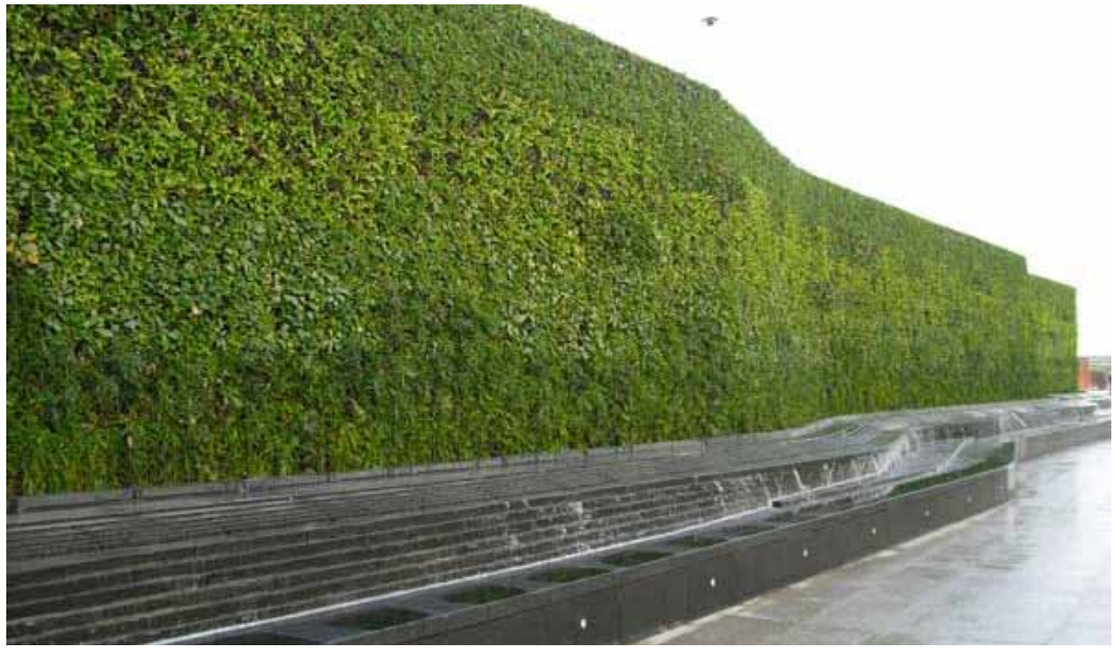
Main features and benefits are; 2 different finishes for different room styles, Available with 1 or 2 relay outputs, Window detector input. If window is left open, the system will switch off the air conditioning. It has a flexible exit time delay by software, Modern Blue LED indicator which indicates the location of the device in the dark, and blinks as a courtesy indicator after retrieving the card when leaving the room, and it is available in i-Button and RFID(Mifare, DESfire, Vicinity) on-line version available in RFID models.

Water saving device.

Hippo the Water Saver - is the simple, proven and low cost water saving device to help conserve water in toilet cisterns. The typical family uses 70% of their water in the bathroom, with toilet flushing accounting for 30% of the household water use. Every time a toilet is flushed the Hippo not only saves up to 3 litres of water, but it will also reduce your carbon footprint and save you money.

The carbon footprint of unheated water is relatively small, around 0.003 kg per litre. However over time and multiplied by millions of households, the savings can be quite significant. There are estimated to be in excess of 45 million toilets in the UK, using 2 billion litres of water every day and only around a tenth of these are water-efficient models using 6 litres of water or less.

The average toilet uses around 9 litres of water per flush and 1.64 kg CO_2 would be saved per year by fitting a Hippo the Water Saver. Collectively in the UK this could save around 600 million litres if water a day and over 65 million kg (or 65,000 tonnes) of CO_2 each year.



Low Energy Rain Director®

RainWaterHarvesting.co.uk -specializes in rainwater harvesting tanks and equipment, especially in complete kit form, with lower prices and better customer service. The Low Energy Rain Director® rainwater management control system delivers rain water collected by a rainwater harvesting system to washing machines, toilets, the garden and other uses where mains quality water is not required.

The Rain Director® makes the best use of rainwater from a rainwater harvesting system so you can use rainwater from your roof to flush toilets, wash clothes and water the garden. Rainwater harvesting reduces the environmental impact and the Rain Director® goes further in safely reducing the energy and mains water consumption of a typical rainwater harvesting system.

The Rain Director® simply directs the flow of rainwater in the home. The 12v control panel intelligently directs the rainwater from your rainwater storage tank via the header tank to your toilets, washing machine or garden tap.

The Rain Director® program settings ensure that the header tank water is fresh and that the pump in the rainwater tank works for the minimum amount of time. The result is cleaner water, lower running costs and greater control on your mains water use. And now, we can harness the energy of the sun to drive your Rain Director® system with the new Solar Rain Director®.

The Rain Director® manages and delivers clean rainwater at constant pressure for use around the house and garden.

Green roofs and living walls

Beginning in 2001, ELT EasyGreen consulted and installed a variety of green roof systems enabling us to identify reoccurring obstacles in the green roof industry – flexibility, cost, and weight.

Specializing in living, sustainable building technologies such as green roofs and living walls; Designing their green roof system to address these issues provides the end user a system with maximum benefits in the most cost effective manner possible. ELT has since developed living wall system to deal with the barriers associated with steep slopes and vertical applications.

Green roofs and living walls provide a number of private and public benefits that reduce the impact of urbanization and contribute to the sustainability of ecosystem services and energy conservation in large cities around the world.

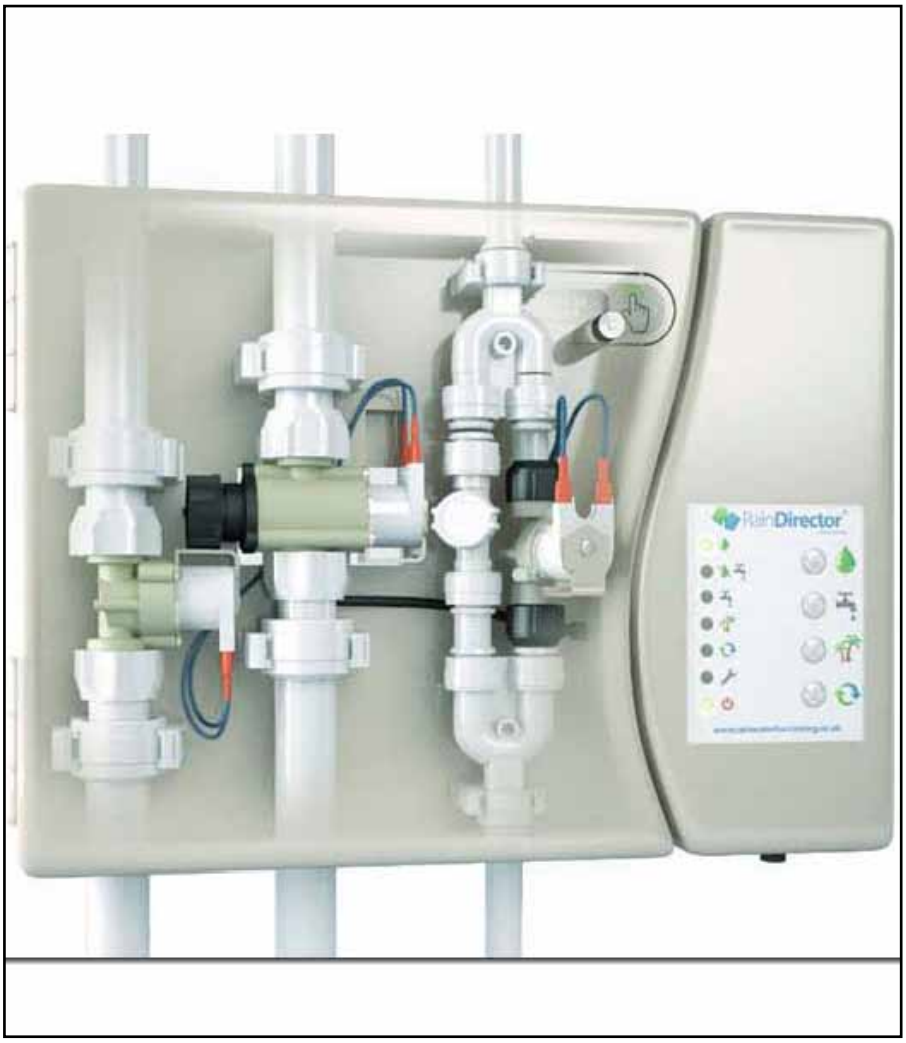
Logicor Green Wall Socket™

Logicor (Group) Ltd - specializes in the supply or creation of patents across a wide range of industry sectors. Logicor is an established R&D company whose solutions to problems often result in the creation of companies with independent funding and workforces to take those ideas into the market place. Logicor's Green Wall Socket™ complements the Green Plug™ energy saver range and is designed to save electricity in new build homes or as retro-fit to existing buildings. Each Logicor Green Wall Socket™ will fit into the same space as standard deep back socket boxes and looks just like a standard wall socket.

The benefits include: Electrical appliances automatically switched off completely after a user-set duration, Adjustable timer delay between 15 minutes and 24 hours, Carbon emissions from standby energy drain are reduced, Money saved from unnecessary standby energy drain and safety switch-off control for potential fire risk devices such as electric blankets or hot-irons in the home. Where Logicor Green Wall Socket™ differs is its adjustable air-driven timer function that switches off the power supply completely and automatically after a user-set duration.

Because the timer device is air-driven you can be sure that the Logicor Green Wall Socket™ and any connected appliances consume zero electricity when switched off. Standby energy drain is now a thing of the past and your carbon emissions are reduced.

Whilst the Logicor Green Wall Socket™ will work with almost all appliances, there are some appliances that are not designed to be shut off in an abrupt manner or not at all. These include projectors, PC towers, bedside clocks, fridges, freezers etc. when deciding to use a Logicor Green Wall Socket™ with that appliance. The timer function can also be disabled when necessary to act just like a normal wall socket, switching on and off as and when required.



Underfloor heating

Warmup -specializes in the creation and delivery of underfloor heating solutions (electric, hydronic and hybrid – mix of electric and hydronic). Underfloor heating provides high efficiency heating whilst requiring significantly less energy to heat a room than traditional radiator heating systems. Radiant heat is energy-efficient as the air temperature is lower than conventionally heated rooms to achieve the same level of body comfort.

Energy usage is also reduced as you are not heating the ceiling area and it enables the temperature of each room to be controlled as needed, allowing end users to heat the rooms they want – when they want, with no energy wasted.

Warmup underfloor heating used in conjunction with its 3iE energy-monitor thermostat allows end-users to monitor and control energy usage and costs, saving up to 10% on energy bills, depending on their energy supplier.

Underfloor heating offers flexibility and floor finish options to satisfy the most demanding of customers: stone, ceramic, wood, carpet and vinyl. It is the perfect choice for new build, retrofit and renovation projects, from older homes to large apartment schemes and affordable housing. Warmup underfloor heating is a cost effective solution, a one-off supply cost with no need for maintenance. It also offers the best warranties and guarantees – Warmup was the first company to offer a lifetime warranty on its heating systems and the only company to offer a unique SafetyNetTM installation guarantee – should a system be accidentally damaged during installation, Warmup will replace it free of charge.

Furthermore, Warmup EN442-2 research and development facilities in Germany and various post monitoring houses in the UK, including the BRE Renewable House, has enabled the creation of an all-encompassing product performance research database to ensure that full knowledge of how a system will operate and function at optimum capacity along with energy usage and running costs is available at design stage.

To maintain quality and consistency of service, all Warmup products are CE compliant and approved by leading institutions. In fact, Warmup products have more accreditation approvals than any other competing product – its mark of security and quality assurance.

List of collaborators

Logicor Ltd

David Bowen

david.bowen@logicor.co.uk

www.logicor.co.uk

Guardian Security SW Ltd

Edward Hanlon

e.hanlon@gsecsw.com

www.guardiansecuritysw.co.uk

Hippo Water Services

Paul Adshead

pkadshead@gmail.com

www.hippo-the-watersaver.co.uk

Green Building Store

Chayley Collis

chayley@greenbuildingstore.co.uk

www.greenbuildingstore.co.uk

JELD-WEN UK

Woodhead, Lucy

Lucy.Woodhead@jeld-wen.co.uk

www.jeld-wen.co.uk

Fortune CP Ltd

Philip Savieli

sales@fortunecp.co.uk

www.fortunecp.com

CP Electronics

Sophia marazzi

Sophia.Marazzi@cpelectronics.co.uk

www.cpelectronics.co.uk

Elt Easy Green

Greg Garner

greg@elteasygreen.com

www.elteasygreen.com

Pilkington Building Products UK

pilkington3@respond.uk.com

www.pilkington.co.uk

Rainwater Harvesting Ltd

Jarred Lester

jarred@rainwaterharvesting.co.uk

www.raindirector.co.uk

Warmup Plc.

Maria Rubio Alonso

mariarubioalonso@warmup.com

www.warmup.co.uk/comuk