Looking ahead, it’s clear that delivering significant energy and carbon savings whilst continuing to grow, innovate and perform will be a key challenge for all businesses. Lighting is an obvious and rewarding area to start to make changes, whilst today’s advanced technology offers the potential to significantly improve built environments.

Controlling the right lighting is key to meeting these objectives. Specified alone, LED solutions are impressive. Coupled with intelligent control systems, they represent the future of highly efficient, highly functional lighting design.

Chris Bedford
Managing Director, Open Technology

Whether it’s providing the right working environment, protecting our security or complementing architectural design, lighting is one of the most fundamental components of our buildings. Lighting can make it safe to work at night, allow us to complete complex tasks, make us more likely to spend, make it easier to focus, or help us relax.

But this range of functionality comes at a price. Lighting is responsible for a whopping 20% of electricity produced. With businesses increasingly committing to ambitious carbon reduction strategies and energy bills heading in only one direction, lighting has become a quick and easy target for driving down consumption.

Looking ahead, it’s clear that delivering significant energy and carbon savings whilst continuing to grow, innovate and perform will be a key challenge for all businesses. Lighting is an obvious and rewarding area to start to make changes, whilst today’s advanced technology offers the potential to significantly improve built environments.

Controls are key to meeting these objectives. Specified alone, LED solutions are impressive. Coupled with intelligent control systems, they represent the future of highly efficient, highly functional lighting design.

Chris Bedford
Managing Director, Open Technology
Our innovative LiGO system is installed in buildings around the world and across a wide range of sectors, consistently achieving impressive cost and energy savings for our customers.

LiGO enables both full functionality and impressive energy savings through a solution that is simple and cost-efficient. LiGO is suitable for all types of building and can work alongside other building systems to ensure maximum energy savings and minimal maintenance requirements.

The LiGO web page allows you to set up the system, create reports and adjust settings. It gives you access to a range of features including: time zone control, emergency override, alarm reporting, energy graphs, and emergency reporting.

LiGO is based on the manufacturer-independent DALI standard that ensures interchangeability and interoperability of lighting system components. This makes it possible to create flexible, cost-effective and de-centralised lighting systems. DALI addressable solutions can function as a stand-alone system or as part of a Building Management System.

**Functionality**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
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<tbody>
<tr>
<td>Time Control</td>
<td>Lighting output and settings can be matched to your building's occupancy times, adapt to changes in daylight saving time and even accommodate public holidays.</td>
</tr>
<tr>
<td>Presence Detection</td>
<td>Lights switch on or off when presence or absence is detected. This delivers optimal energy savings whilst ensuring the building is always ready for use.</td>
</tr>
<tr>
<td>Daylight Balancing</td>
<td>External light not only allows you to create a more natural, enjoyable environment, it's also free. Automatic switching or dimming ensures light levels respond to maximise and complement the available daylight.</td>
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<tr>
<td>Dimming</td>
<td>Light levels can be controlled according to the building's changing uses, for example, lowering output when the building is being cleaned or students leaving for the day.</td>
</tr>
<tr>
<td>Ventilation Control</td>
<td>LiGO can also control heating and cooling systems, ensuring energy efficiency.</td>
</tr>
<tr>
<td>Scene Setting</td>
<td>Light levels and effects can be programmed according to the changing uses of a building.</td>
</tr>
<tr>
<td>Condition Monitoring</td>
<td>LiGO continuously monitors every component of the system and records thousands of hours of output level for each.</td>
</tr>
</tbody>
</table>
From museums and attractions to leisure centres and municipal buildings, intelligent control of lighting is crucial in meeting the changing needs of the environment whilst enhancing user experience. With considerations ranging from protecting precious artwork to recreating natural habitat, lighting must be precisely controlled and highly flexible to the varied needs of the building.

**Copenhagen Zoo**

Open Technology delivered an intelligent control solution for the new Flamingo and Polar Bear Houses at the world famous Copenhagen Zoo. The flexibility of our LiGO system allowed us to create an optimal living environment for the animals that also considered the needs of visitors.

In both enclosures the lighting controls ensure a smoother, more natural transition from day to night and allow light levels across internal and external areas to be more closely matched. The controls were integrated with the existing site-wide BMS system, allowing the lighting to work alongside previous BMS innovations designed to keep the animals comfortable.

**Inspire Luton Sports Village**

This brand new £26 million sports and leisure complex offers state-of-the-art facilities for the local community, including an 8 lane swimming pool and diving facility, a large multi-purpose sports hall and a 100 station gym. LiGO has been instrumental in supporting the centre’s business objectives of generating revenue, providing first-class facilities and ensuring that the complex is sustainable by controlling lighting to deliver impressive energy savings.

LiGO is increasingly being used in sports and leisure complexes to create highly effective, responsive and enjoyable environments. Open Technology has delivered similar projects at Worthing Leisure’s ‘Splashpoint’, Brentford Fountains Leisure Centre and Northolt Leisure Centre and Swimming Pool.

**National Gallery**

The National Gallery prioritises the responsible use of energy in running its site and has committed to reduce carbon emissions by 43% by 2015. Open Technology designed and executed a project to combine highly efficient LED technology with an intelligent, digital control system to achieve 85% energy savings whilst maintaining a precise and consistent lighting environment.

The gallery wanted to make good use of the daylight provided through skylights that are controlled via external louvers and indirect sensors connected to the Building Management System (BMS). Our control system is able to slowly augment the natural light by adjusting the light output from the LEDs. The project is one of the first in the world to use LiGO in conjunction with a system that automatically adjusts external light blinds according to the amount and angle of sunlight.

Our LiGO control system was integrated with the gallery’s existing BMS in order to save costs and extend the life of their existing infrastructure. Groups of lights were set up under the scrutiny of the curatorial team alongside previous BMS innovations designed to keep the animals comfortable.

**ANNUAL SAVINGS**

- **765,000 kWh**
- **£53,600**
- **£36,000**
- **417 tonnes**
- **30% CO₂ EMISSIONS**
King's College London

After 18 months of extensive refurbishment, the East Wing of the landmark Somerset House became the new front door to King's College London. The building was refurbished to the highest standard with public access improved, new lifts installed and the basement floor lowered. Original features were restored alongside a modern interior suited to a contemporary working building. The East Wing provides an extension to King's College's Strand campus and includes high quality accommodation for teaching and research.

Open Technology has delivered 13 projects for the university over the last two years and, with over 2000 DALI points over 13 LiGOs, this refurbishment was one of the largest we have undertaken to date. Comprising six floors and the roof, LiGO controls the lighting and the testing of emergency lighting throughout the area. Teaching spaces, offices and corridors are controlled to ensure that artificial light is only used at the required levels and daylight is used wherever possible.

LiGO shares the status from the PIR sensors in each room with the Trend Building Management System so that the heating and ventilation systems can also be controlled by this information and used only as required. This removes the need for further unnecessary wiring and the purchase of additional occupancy sensors. The sensors can also be controlled from the PC so that nuisance tripping and incorrect trigger times are eliminated from the PIRs.

The university uses a Trend 963 Supervisor across the campus to monitor and control its buildings. The LiGO system ensures that lighting faults and adjustments to times and light levels can be made through the same system that the maintenance staff use every day.

Quintiles Research Facility

The Quintiles Research Facility is part of the world famous Guy’s Hospital in London, providing world-leading research services for biotech and pharmaceutical clients all over the world. Open Technology installed a LiGO panel to integrate control of not only the lighting but also the fire control panel. The system is controlled from an Ethernet network running on the college LAN, making it possible to view and control the lighting and make system changes from anywhere on the campus. The system is also designed to allow touch screen control of the lighting directly from the lecterns.

Universities, colleges and hospitals have to contend with a wide range of user requirements as well as frequent changes of use over the lifetime of the building. Controls are crucial in accommodating these changes with minimal disruption to students, staff and patients. Working environments in particular can be enhanced through the maximum use of available daylight.

Croydon College

Over recent years Croydon College has undergone an extensive £3 million refurbishment programme including the visually striking Rotunda extension, which houses state-of-the-art learning and social facilities. Open Technology delivered a tailored control interface to allow swift and simple alteration of lighting levels to create the optimum environment for staff and students alike.

The daylight linking capabilities of the system ensure the best possible use of this daylight that is available from the glazed exterior, creating a more natural ambience. The system uses sensors that ensure that artificial light is only used at the required levels and daylight is used wherever possible.

The controllers are linked by an Ethernet network running on the college LAN, making it possible to view and control the lighting and make system changes from anywhere on the campus. In the classrooms, daylight and project-friendly lighting scenes can be chosen as required and are even integrated to allow touch screen control of the lighting directly from the lectern.

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EDUCATION AND HEALTH
Allianz Insurance
Allianz Insurance is one of the largest general insurers in the UK. The group believes that climate change is the most serious threat to the insurance industry and society at large, and has committed to reducing the carbon footprint of their internal business operations. Their goal is to reduce carbon emissions by 55% per employee by 2015.

The Milton Keynes office had proved particularly problematic in terms of lighting maintenance and operational lighting efficiency. With approximately 100 people working in the office, each with their own lighting likes and dislikes, the whole space appeared gloomy in places and overlit in others. With highly efficient LED panels replacing the recessed fluorescent modular fittings throughout the office, the introduction of an intelligent lighting control system became a must. Using the DALI protocol to individually control each light fitting, our system has allowed Allianz to tailor light levels to suit individual work stations and maintain an operational load that is 65% of full power.

A single LiGO panel controls the open plan office and two meeting rooms. The system is connected over a 3G modem supplied as part of the LiGO panel. The system has 118 lights, 24 combined light level and PIR sensors and switches. The lights operate on a time profile that reflects working times, switching on and off with occupancy. They are also responsive to daylight levels and, in the meeting rooms, can be set to various scenes to match the activity of the room. Overall the system has created a more consistent, calmer, more enjoyable working environment whilst delivering a considerable reduction in energy consumption. The LiGO control system has reduced the energy consumption of the office lighting by an additional 35% on top of the 60% energy reduction achieved through the introduction of LEDs.

At the start of trading, the store goes to daylight control with the LiGO sensors controlling each aisle to the desired level. With the roof lights this can mean that the lighting can be set back to only 30% on a bright day and still maintain an attractive environment in which to shop.

Quick and easy emergency lighting tests can now be carried out from the panel ensuring that fittings are working correctly. In the event of a fire or intruder alarm being detected, an appropriate scene can easily be set. Performance is constantly checked and the use of the 3G modem ensures that faults can be acted upon swiftly.

By installing new energy-efficient light fittings controlled by the LiGO system, B&Q has seen a dramatic reduction in energy consumption that corresponds to a financial saving of around £130 per day per store.

OFFICES AND RETAIL

Commercial buildings are increasingly taking advantage of the savings to be made from the adoption of low-energy, high-performance LED lighting, but often overlook the additional savings (often 30-40% extra) that controlling your lighting can achieve. Doing so saves money and reduces carbon footprints whilst creating environments that are responsive to the needs of your staff and customers.

B&Q
Our intelligent control system is now installed in over 50 B&Q stores across the country. Lighting is one of the major operating-costs and managing consumption is crucial to maintain competitiveness.

The LiGO system is able to assume full control by setting lighting scenarios according to time of day, time of year, by aisle and or by product area within the store. The lights are automatically configured to switch off from the time the last person leaves and sets the burglar alarm, until the first person un-sets the alarm and the lights come on to a fixed level which is safe for cleaning or stocking the store.

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B&Q
Delivery of a safe environment is of paramount importance in the transport sector. LiGO is able to provide the exact light levels required across transport infrastructure and match lighting use to timetables and varying use. Setting levels to make full use of daylight ensures maximum savings throughout the year and reduced light pollution in the surrounding area.

Network Rail and South West Trains
Clapham Junction is the latest in a series of projects that has seen Network Rail and South West Trains work in partnership with Open Technology to introduce intelligent lighting controls across its infrastructure. For the first time, Europe’s busiest train station will be able to automatically dim the lights down to a minimum level when the station is not in use or turn the lights off when the station is completely closed. On average, this would amount to savings of 35% of usual lighting use.

Following an initial installation at Woking Station in 2010, LiGO has now been installed at 25 stations and train maintenance depots across the Wessex Route. Installing lighting control is one part of the South West Trains/Network Rail Alliance’s climate change and energy reduction strategy that is estimated to achieve total annual savings of £7–12 million and a payback period of approximately six years.

“An automatic control keeps it simple for us. It enables us to save as much energy as possible, by dimming down and turning off automatically when not in use. It also helps us to enhance energy efficiency by comparing the amount of light being used with the actual passenger presence.”

Amy Dickinson, Environment Manager, South West Trains/Network Rail Alliance

Transport

Shudehill Interchange
Located close to Manchester’s Victoria train station, Shudehill interchange/aviary site of the HS2 facility serving the vibrant city centre. Open Technology replaced the obsolete ECS Philips system in just three days with a new LiGO installation ensuring that the lights are only used when required. Any adjustments to the system can simply be made through an internet browser. A similar project at Shudehill interchange, an important Viaduct Rail facilitate transport hub, used the LiGO system to control the lighting to provide a safer environment for passengers whilst reducing light pollution in the surrounding area.

Danske Statsbaner (DSB) is the largest train operating company in Scandinavia carrying more than 195 million passengers every year. LiGO has been installed at DSB’s train care depot in Copenhagen. The use of DAI and LiGO provides flexible control and ensures the 300 metre long building is only lit when required. Train maintenance takes place at night so the lights will only come on during the day, presence information is provided by the DSB site wide alarm system. The LiGO system connecting to the depot’s Trend Building Management System.

Danish State Railways

ANNUAL SAVINGS
(PER STATION)

Up to 60%

ENERGY SAVINGS

18 tonnes CO2 E

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Open Technology is a leading specialist in the design, manufacture and installation of intelligent lighting control systems that are tailored to the exact needs of your building. We have the engineering expertise and capability to bring together lighting controls and communication technology to deliver owners and operators maximum benefit in terms of savings, efficiency and functionality.

No upfront costs
LiGO is based on DALI, the lighting industry open protocol designed to provide exacting control by making every device addressable. This does not lock customers to suppliers. Choose LiGO and you retain choice. There are no ongoing licence fees and the system comes with everything you need to manage the way your lighting works.

Training
We firmly believe you know your building best and your innovations are what will deliver ongoing improvement. That’s why we offer training on your system to meet your requirements. Your LiGO system comes with everything you need to manage your building’s lighting and gives you the confidence to try new things.

Ongoing support
A key requirement for any system is that the relevant supporting documentation is readily available and easy to follow. A full suite of technical support documentation can be downloaded from our website or is available on request. Our after-sales service is not about fixing your system but improving it. LiGO’s reliability is second to none and comes with a 2 year warranty.

Design and engineering expertise
We offer close support from concept to design through to quotation. Once in contract we have fully trained engineers who can deliver the project to time, scope and budget. All too often buildings are not correctly commissioned and set to work. We always provide post-handover resources to tune and correct the system, ensuring it delivers the expected performance.

Systems integration
Simple interactions between your building systems can deliver major benefits at minimal cost. Open Technology understands how the whole of your building works, not just the light fittings. LiGO can easily be integrated into Building Management Systems (BMS) to ensure that all systems work together to deliver full functionality and maximum savings, improving how your building can work for you.

HOW WE WORK WITH YOU

Our partner company Synapsys Solutions develops innovative products that assist the building user to integrate the building controls, HVAC and metering components and then visualise the energy and power usage in real time. This insight helps customers understand, improve and optimise how their building performs.

Synapsys Solutions products offer simplicity of use and ease of engineering, and by putting the users in control, help to create more efficient, sustainable and functional buildings.

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Call us today to discuss your requirements, arrange a site visit or simply find out more about the benefits of intelligent lighting control.

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