INTELLIGENT LIGHTING CONTROL
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.

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

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.

Energy-efficient lighting technology has seen many advances in recent years, with LEDs in particular now able to offer significant energy and maintenance savings across a range of applications. However, however, we are only part of the solution. In such an installed new technology we are forgetting that if we want to drive the highest possible energy savings whilst creating comfortable, effective and responsive environments, we have to control it and control it correctly.

Control is an integral part of any lighting project. Without them, LEDs still waste in excess of 30% in unnecessary consumption, they cannot be monitored to verify savings, payback or lifetime claims; they cannot respond to the changing needs of a building, for example to match daylight levels, create different working environments or adjust to people’s presence.

The ability to do this is not revolutionary; in fact most buildings already control the vast majority of systems such as heating, ventilation and air conditioning through their building management system. We simply apply the same principles to lighting. In doing so, we achieve additional savings in the range of 30 to 40%, we also enable your lighting to create environments that respond to your exact needs.

Whether it’s providing the right working environment, protecting our security or complementing architectural design, lighting is one of the most fundamental components in our buildings. Lighting can make it safe to work at night, allows us to complete complex tasks, make us more likely to spend, make it easier to focus, help us relax.
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: timezone 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 decentralized lighting systems. DALI addressable solutions can function as a standalone system or as part of a building management system.

**Functionality**

LiGO can be scaled to suit all building types and functions and is cost-effective for retrofit, refurbishment or new build projects. Designed for use by the building user, LiGO needs no additional front and software and as many users as required are able to use the system without purchasing additional user licenses. Following online training, users can adjust times, and set points and occupancy profiles throughout their building.

**LiGO INTELLIGENT LIGHTING CONTROL**

- **LiGO**
- **Intelligent Lighting Control**
- **System**
- **Lighting Control**
- **LiGO stands for IntellIgent Lighting Control**

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**Time Control**

Lighting output and settings can be matched to building usage, occupancy times, and even to commute peak times.

**Presence Detection**

Lights switch on or off when presence or absence is detected. This ensures optimal energy savings whilst remaining the building is always ready for use.

**Daylight Balancing**

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 maximize and complement the available daylight.

**Dimming**

Light levels can be controlled according to changing use of the building, for example lowering output when the building is being occupied or reporting internal occupancy. This allows further savings whilst ensuring the building is still functional.

**Ventilation Control**

LiGO can also control heating and cooling systems according to time or occupancy. This control can be applied to ring main circuits in the building where, for example, large numbers of FCs are left switched on overnight.

**Integration**

Our control system can be easily integrated into Building Management Systems (BMS) to ensure that all systems work together to deliver full functionality and maximum savings.

**Emergency Lighting**

LiGO’s simple built-in “Test Scheduler” enables functional and identification tests to be setup that are executed automatically. Results can be stored in the system or automatically sent via email.

**Condition Monitoring**

LiGO continually monitors every component of the system and records the hours run and output level for each. A failure in a light fixture is automatically reported and can be used as hard evidence for resolving warranty claims.

**Reporting**

LiGO provides clear and accessible reports on status, emergency tests and energy use. These are timed reports and can be simply set up by the user.
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.

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 efficient, 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.

Public Buildings

National Gallery
The National Gallery prioritises the responsible use of energy in running its site and has committed to reduce carbon emissions 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 allows the natural light to be adjusted the light output from the LEDs. The project is one of the world’s first to use LiGO in conjunction with a system that automatically adjusts external roof 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 curatorship working alongside our engineer. These were then integrated onto the BMS so that lamps and ballast failure can be reported to the gallery’s facilities management provider. In between each pair of galleries, LiGO View Panel allows gallery staff to easily adjust the lighting environment in each gallery.

The project met with the National Gallery’s key objectives of reducing energy consumption and maintenance costs whilst achieving a superior quality of light. Open Technology delivered impressive energy and cost savings with minimal disruption to operations, and were able to move the gallery considerably closer to achieving their ambitious carbon reduction plans.

ANNUAL SAVINGS
765,00 kWh
£36,600
417 tonnes
Energy Consumption
Energy Bills
Maintenance
CO₂ Emissions

£53,600
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 Kings 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 2 years but, with over 2000 DALI points over 13 LiGOs, this refurbishment was one of the largest we have undertaken to date. Comprising 6 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 whenever 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 their 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.

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The Quintiles Research Facility is part of the world famous Guy’s Hospital in London, providing clinical research services for biotech and pharmaceutical clients all over the world. Open Technology installed a control panel that integrated control of not only the lighting but also the fire control, SMS and door control via touch screen control located at the nurse’s station.

Staff can control their lighting and air conditioning to ensure maximum comfort levels for their patients while keeping a close eye on energy use. The screen also allows staff to set the internal doors to open, closed or automatic operation and shows the exact level of energy saved.

The system can also control the clinical grade lighting to ensure that the correct level of lighting is provided whenever possible and at the required times. This ensures that the hospital remains a safe and comfortable environment for patients and staff alike.

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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. Control is 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.
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 this has created a more consistent, calmer, more enjoyable working environment whilst delivering considerable reduced 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.

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.

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 maintaining competitiveness.

The LiGO system is able to assume full control by setting lighting scenes 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.

OFFICES AND RETAIL
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 timetable 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
As part of a major electrical rewiring project undertaken at Woking Station, Open Technology was chosen to provide safe and energy efficient lighting control across the station's five platforms and staff areas.

LiGO's small size and flexibility meant fewer controllers than originally specified were installed. The flexibility of the system allowed the exact location of lights across different networks in different controllers, they could also be arranged into virtual groups that mirror the station's layout, reducing the cost of installation.

The project uses a mixture of dimmable linear fluorescent for the platform canopies, public and staff areas and dimmable metal halide, column lights on open platforms. Each platform's lights are switched on in a dimming operation, which ensures that the dim light level can be controlled to the level of available natural light, achieving further savings. The station never closes but in the early hours the lighting reduces to a minimum level, preventing light pollution.

The system has a simple display panel capable of looking across the whole building, looking at it and identifying any faults on fittings or making adjustments. LiGO tests the emergency lighting and stores records in the system which can be easily downloaded when required. South West Trains' maintenance team can remotely access the system and Open Technology is also able to help with fault diagnosis to ensure that any issues are identified and resolved quickly.

There are now over 25 stations with LiGO installed, which are all connected to South West Trains IT infrastructure making the system accessible to all stakeholders.

Danish State Railways
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 track care depot in Copenhagen. The use of DSB's LiGO provides flexible control and ensures the 300 metres long building is only lit when required. Planned maintenance takes place at night so the lights will only come on during the day if presence is detected. The system is connected to the depot's Trend Building Management System.

Shudehill Interchange
Located close to Manchester’s Victoria train station, Shudehill Interchange is an integral part of the city centre. Open Technology replaced the obsolete LED Philips system in just 3 days with a new LiGO installation ensuring that the lights are only used when required. Any adjustments to the system can easily be made through an Internet browser. A similar project at Shudehill Interchange, an important rail Midlands transport hub, uses the LiGO system to control the lighting to provide a safer environment for passengers whilst reducing light pollution in the surrounding area.
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. 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.

No upfront costs
LiGO is based on DALI, the lighting industry open protocol designed to provide exacting control by making every device addressable. DALI does not lock customers to suppliers. Choose LiGO and you retain choice; there are no on-going 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 on-going 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 upon request. Our after-sales service is not about fixing your system but improving – 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 on time, scope and budget. All too often buildings are not correctly commissioned and set to work. We always provide post-installation resource to tune and correct the system, ensuring the system 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 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
With businesses increasingly committing to ambitious carbon reduction strategies and energy bills heading in only one direction, understanding, controlling and reducing consumption is crucial to effective and sustainable building management.

Our sister company, Synapsys Solutions, is a leading provider of energy monitoring and control solutions for the built environment. Their innovative SIPe product range provides real-time energy data that allows you to understand your consumption, effectively target reductions and monitor results.

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