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Curved shapes and **strong** colours for revamped casino

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In the past couple of issues of *Lighting in Design* we have discussed intelligent lighting and the pace at which it is growing. When people talk about lighting becoming multifaceted, I think of sophisticated programs that adjust light automatically; dimming systems; colour changing (quite passé these days) and so on, and agree wholeheartedly.

I recently came across an article by Jonathan Weinert – who is involved in strategic content development for Philip Global Lighting Systems– and realised that this is just the tip of the iceberg. His article (which appears on page 15) makes the point that connected devices share information about themselves, the environment they are used in, and the people who use them. In a connected lighting system, luminaires and other lighting system devices merge with IT networks to allow for the collection, distribution and storage of large amounts of data. Once a connected lighting system is in place, at little extra cost it can serve as the platform for sensor networks, for distributed communications networks, and for real-time monitoring and historical reporting. Weinert outlines five ways in which connected lighting can use data to deliver value other than illumination and the article makes for good reading.

On the opposite spectrum and equally engaging is João Viegas' description of his work at Segera Retreat situated on the Laikipia Plateau in Kenya, an exclusive game lodge and art destination, and headquarters of the Zeitz Foundation. The lighting had to take cognisance of the guests, the art, and the surrounding wildlife, insects and plants. What struck me during the interview was the practical difficulty of lighting an establishment in Africa. All equipment is delivered from South Africa and because of a lack of local expertise in many African countries, it becomes the lighting designer's job to oversee the installation of the wiring and the products. At Segera, days were spent on this task and the night hours were used to check and test the installation and then adjust the light to suit the application. It was a lot of work but, given the environment, it is hard to feel too much sympathy for the team – it was, by all accounts, a wonderful project to work on and the end result is most impressive. The project also highlights the fact that much future trade lies north of our borders, which is exciting and offers interesting opportunities for local businesses.

As we move towards the last quarter of the year, remember that the Autumn Edition of the Hong Kong International Lighting Fair will take place from 27 to 30 October. With the total value of Hong Kong's exports of lighting products reaching US$417 million during the first four months of 2015, this event has become an increasingly important one in the annual calendar. In addition to the 2 500 exhibitors, the fair attracts close to 37 000 buyers from 135 countries and regions, and runs a series of seminars hosted by lighting trendsetters. Those of you who plan to attend the event must remember to register online and receive a free admission badge.

Till next time!

Karen

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INside ...

Curved shapes and strong colours for primary casino

The project team responsible for the lighting and interior design renovation of Sun City's primary casino worked against the odds to complete the project on time.

The casino upgrade to the Sun City Hotel is part of a large scale upgrade to Sun City's facilities, which includes the Vacation Club, Cabanas and Entertainment Centre. The upgrade was aimed at modernising the casino facility. The primary casino floor lies within the Sun City Hotel circulation, and the Jungle Theme of 1994 was replaced with an airier, lighter and more welcoming environment, designed and overseen by Gabriël Hugo and Clive Jeary of LYT Architecture. CKR Consulting Engineers were the electrical engineers in charge of the project.

In line with the casino refurbishment being centred on a design-based template rather than that of a theme, LYT Architecture researched shapes and their significance to provide a neutral platform for

the interior design and ultimately the luminaires that would be used.

"We wanted to produce elements that would be clean and timeless," explains Hugo. Research indicated that both circles and squares, in ancient times, symbolised good luck – but as they are commonly and generically used, this symbolic significance has eroded, leaving them, in today's terms, as neutral. Through experimentation the design team settled on a star shaped symbol – which was used as a distinctive design element in other areas as well, most noticeably in the carpet design (giving the impression of the luminaires being reflected below foot), star silhouette fittings for the wall lights and marble medallion inlays in the passages. It was also used as a pattern in decorative metal screens.

"The 'star' as a neutral symbol is significant, since patrons of the casino have their own views on 'good' or 'bad' luck. It was therefore important to create a symbol that couldn't be connected to either, but with time would become recognisable and singular to the casino," says Hugo.

The domed roof structure above the casino floor – 14 m above finished floor level (AFFL) at its peak – meant that there were a number of lighting challenges, i.e., the lighting levels over the gaming tables; hanging luminaires at heights that would humanise the volume above, but not obstruct views from the central bar level or hotel passages, as these look down onto the casino floor; and lastly, the challenge of precisely positioning 80 pendants by means of a cherry picker, 8 m AFFL, while the access floor was being installed at the same time.

The lighting design involved creating a sea of floating lights, with the domed ceiling above blacked out to disappear. However, the Perspex luminaires dispersed light in all directions, including onto the domed ceiling, so the lighting levels had to be carefully adjusted to find the balance between correct task lighting below, overall lux levels and general visual impact, and limiting light spill. The colouring – yellow, red and orange – was chosen to add warmth and ambience, and also for the quality of light emission of the specific Perspex.

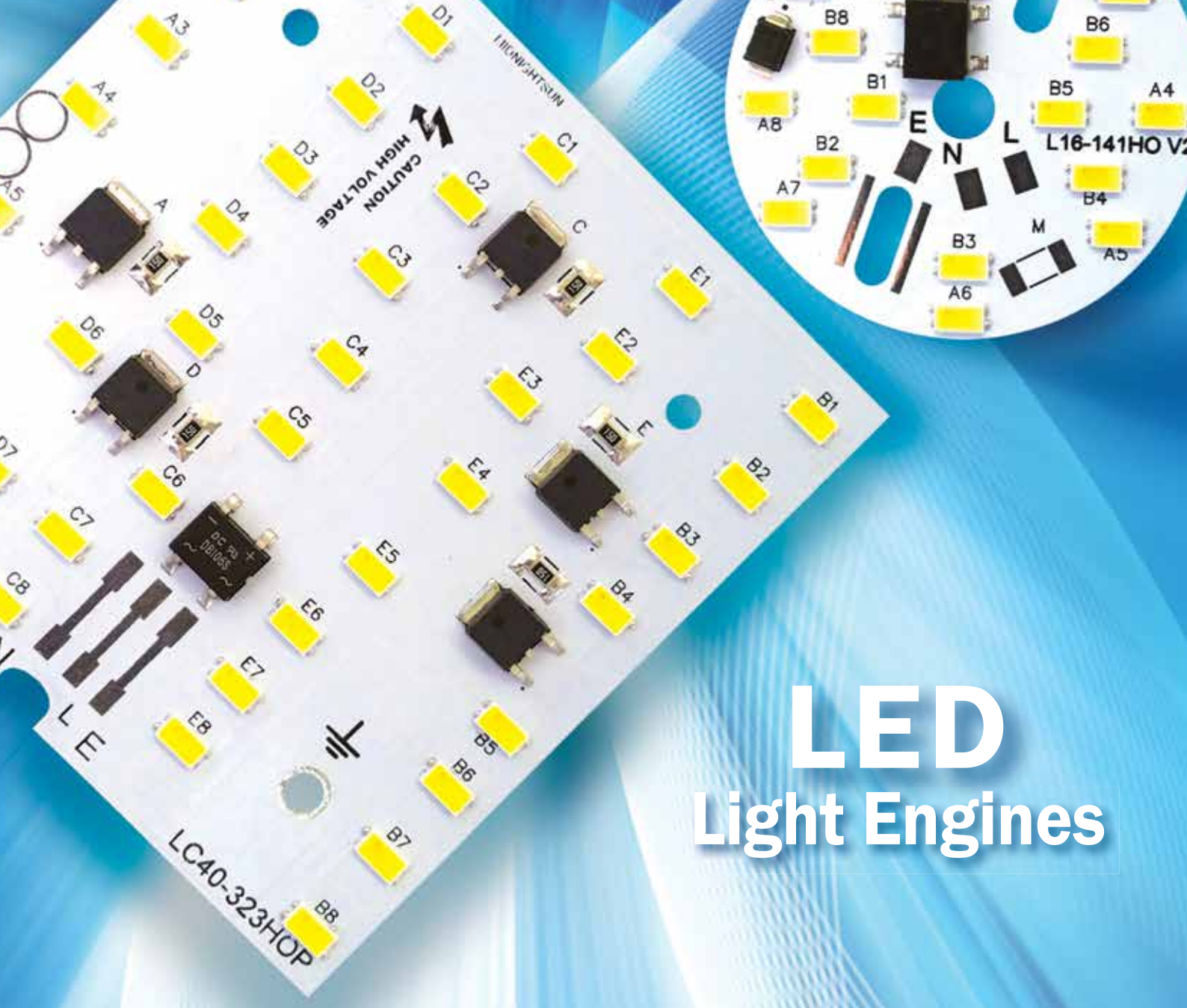
"The lighting portion of the project had a timeline of six weeks from design to installation and was always going to be challenging," says Otto Horlacher of Giantlight, who was responsible for manufacturing a large portion of the luminaires. "Evolving designs and revised numbers of installation units added to the pressure of completing the project on time."

The luminaires in question were originally going to be constructed from a light metal but this was changed to Perspex to allow for a translucent light. On the manufacturing front, Giantlight procured the material, made the moulds and sub-contracted Perspex fabricators. "Once we had everything and everyone in our factory space, a thermoforming oven was used for the actual moulding," Horlacher explains.

The fittings proved to be difficult to manufacture and production averaged two to three a day. Giantlight manufactured the figure-of-eight pendants (60) while Aqua Lighting was responsible for the manufacture of the 20 cubic pendants. Because of the fragility of the luminaires, a framework was specially constructed to house them inside the truck used to transport them to site.

The light fittings give 300 lux onto the casino floor. Colour that can be seen is the Perspex – the lamps within the fittings are white LEDs. The pendants also provide light for the gaming floor in the form of downlighters at the base of the pendant. The fittings are mounted 8 m up, weigh about 80 kg each and measure 2.8 m x 1.5 m.

Dimming proved to be a challenge as the installation involved dimming multiple sources and different types of products within each light fitting. Solving this took a lot of behind the scenes work. The solution comprises pulse-width modulation



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Photographs supplied by LYT Architecture.

(PWM) dimming as well as leading and trailing edge dimming that operates simultaneously from the same control board.

"Our control system needed to create the best plan for lighting and lighting control that was attractive and affordable, and installation needed to occur within a short construction time frame," explains Ryan Ashford-Smit from Triac Lighting.

The refurbishment project features a high-quality Intellibus lighting control system that allows for the creation of a dramatic visual environment in a large space that is flexible enough to handle the rigorous LED dimming requirements.

"A job like this would normally take three months to complete," says Ashford-Smit. "We had to have the system designed and released in six weeks. We worked around the clock with three shifts, six days a week."

The client wanted a dramatic lighting effect for the casino. The large and colourful purpose designed pendant lights provide a bright and inviting visual environment. LED strips are dimmed through Intellibus PWM dimmers, and the downlighters through Intellibus 2 kW LED Pro LED dimming modules. This equipment is housed in bespoke pre-wired control panels, incorporating the LED drivers.

"The casino floor is a strong design element in its own right with slots, flashing lights and loads of colour. The luminaires add a playful element to this: the curved shapes and strong colours work in conjunction with the busy casino floor; not competing with it, but instead complementing the visual experience," concludes Hugo. LiD

Technical specifications

Casino floor pendants:

- There are 60 figure-of-eight pendants and 20 cube-pendants. Each has 6 x 10 W (figure-of-eight) and 4 x 10 W (cube-pendants) LED downlights that can be dimmed through the BID 208/ 800 VA dimming module.
- All installations are also fitted with 32 m of LED strip lighting, which can be dimmed via 10 amp three channel LED PWM dimmers. The dimmer panels were custom build to house the dimmer modules, the PWM dimmers and the LED drivers.
- There are eight quadrants that split up the pendants over the casino floor. These in turn needed eight custom dimmer panels which were mounted on the casino floor rooftop under specially built louvred doors that allow proper ventilation and weather protection.
- The casino floor was carefully set with lux level meters to achieve an easy flow of light around all the slot machines as well as bright but controlled light levels over the gambling tables, which is important for the security systems in place.

Casino bar and MVG desks:

- This area was split into two sections. Each panel contains BID 208/800 VA LED dimming modules and 10 amp three channel LED PWM dimmers.
- The panels control the bar LED downlights, along with the 'most valued guest' desks, the stairs and walk-way LED strip lights. The LEDs used were 10 W LED downlights and the LED strip used was measured at 5 W/m.

Casino passage and reception desk:

- The casino passage and reception desk area was split into three panels with each panel controlling a passage with 10 W LED downlights that can be dimmed though a BID 208/ 800 VA LED dimmer.

Cherry bar:

- The bar features an RGB colour-changing LED strip as well as downlights and LED strip on the bar and seating area. This was achieved by using a custom build dimmer panel with BID 208/800 VA LED dimmers, dimming the 10 W LED downlights. The RGB colour-changing booths are dimmed using a 10 amp three channel LED PWM dimmer which is capable of handling RGB colour mixing.

Source: Triac Lighting

Minimal light for **maximu**

m effect

Deborah Bell's The Crossing II, *illuminated from the water and the adjacent buildings. Photograph: David Crookes*

Imagine you get offered the opportunity to do work you love on a magnificent game lodge in Kenya that has on display some of the best art in Africa and an enviable wine collection. Imagine that you get to view game on camelback and choose where you would care to enjoy a meal made from ingredients grown on the property. Imagine dark skies and majestic views. João Viegas of Paul Pamboukian lightdesign did not have to imagine any of this, he got to live the dream. *Lighting in Design* spoke to him about an 'out of Africa' lighting installation.

Segera Retreat is an exclusive wildlife sanctuary situated at the heart of the Laikipia Plateau, overlooking Mount Kenya on the east, with the Great Rift Valley to its west. Six luxurious villas on raised wooden platforms look out over the surrounding savannah while Segera House and the Villa Segera offer similar views, greater privacy and even more gracious environs. Renovated stables, which feature regular exhibitions of the art of locally and internationally acclaimed African artists, form the core of the main area and striking sculptures dot the botanical garden.

Home of the Zeitz Foundation headquarters, Segera focuses on conservation, community, culture and commerce, or the 4Cs. The Retreat spearheads conservation while enhancing the livelihoods of its community through sustainable commercial ventures, education and the support of cultural activities. A solar farm supplies electricity, a waste water recycling process meets all water requirements, and waste and recycling programmes are in progress.

Life Interior was responsible for the interior design throughout the Retreat and Pamboukian lightdesign was contracted to illuminate the renovated stables, Segera House, the Wellness Centre and the Explorer lounge, pathways and wine cellar. The team also offered advice on the villas.

There was no clear brief for lighting Segera, other than a stipulated budget and the request that the impact of light on the environment be minimal, in line with the 4Cs and to limit

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The Stables house much of the artwork. Column lighting is used for effect and light onto the shards of glass on the ceiling make a striking 'chandelier'.

any negative effects of artificial light on the surrounding wildlife, insects and plants.

Light is a distinct area of design that can make a significant contribution to a project, and the challenge for lighting designers, as Viegas outlined, is that lighting has no set of rules. Every project is different, every problem is different. The designers find a custom solution for each job.

To underscore the luxury of this venue and in keeping with the overall environment, Viegas decided not to use blanket illumination, but chose instead to play with light and shadow and create a warm darkness that encourages guests to relax and enjoy themselves. Candles and lamps with low light levels ensure a welcoming ambience that is punctuated by spotlights on notable works of art. Warm white light is used in most of the space, with occasional flashes of cool white to accent the artworks and sculptures.

Downlights against the walls and columns highlight the textures and place pools of light onto the floor. There are lovely touches throughout, like light directed through shards of glass that serve as striking ornaments and create beautiful shadows – rather than chandeliers, which would have seemed out of place in the Stables or the wine cellar.

The idea being to create contrast and not to over-light any part of the installation, most of the sources are unobtrusive and strip lighting in the eaves has been used for an airy, spacious feel and to uplight the trusses of the rooves.

Since the venue is an art destination, each piece of artwork has been separately illuminated, which required an enormous amount of time and consideration. Viegas explains, "We installed 'Sunny' lights on tracks so the spotlights can be moved as required. Sunny lamps are fabulous because you can louvre them, frost them, snoot them and mask them – we used a lot!"

Moving to the wine tower, which is a silo shaped

All works of art are illuminated separately and warm light onto the basin and the saddles picks up the different textures to create an additional layer.

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building that is kept cool by a rainwater collection cistern and a solar-powered air-conditioning unit: the floor is made of champagne bottle tops and the cellar houses an extensive collection of quality African wines. "Here," says Viegas, "we used warm light to create the appealing ambience, but we gave the 'chandelier' a touch of 'glitz' from the applied light and the overall effect is exceptionally pleasing".

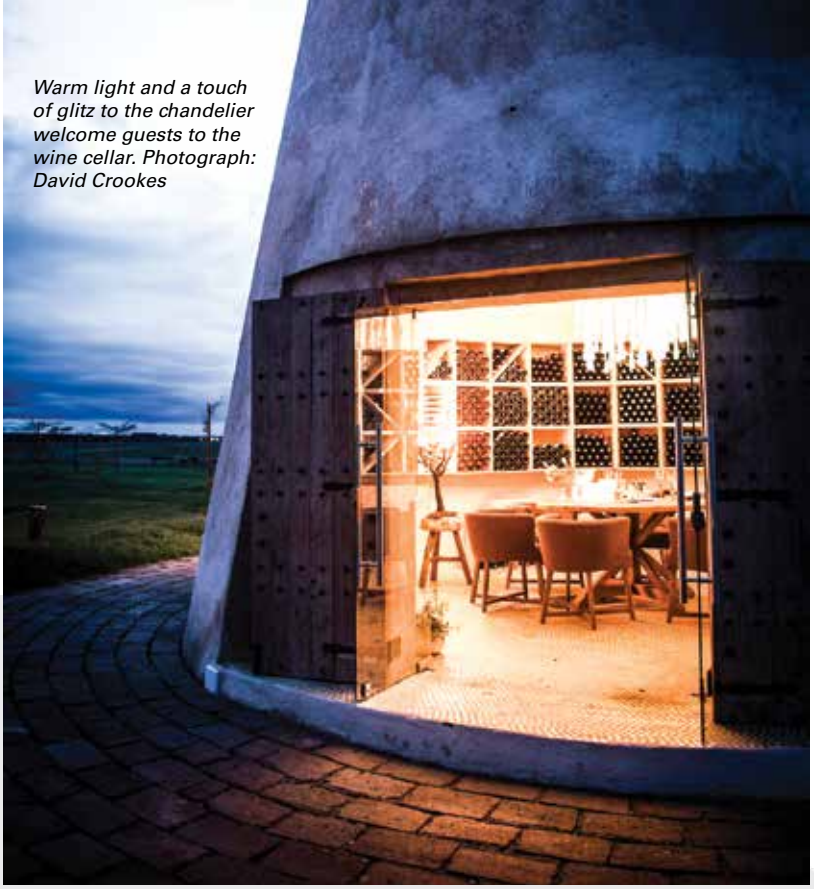
All the external lighting makes use of low intensity sources and most of the vegetation is illuminated by 1.2 W LEDs. The pathway linking the buildings is particularly appealing. "A number of people live at Segera permanently," says Viegas, "and we wanted an installation that would serve their needs even when there are no guests around. We designed a bollard that uses a 4 W LED to create a small pool of warm white light, just enough to see by, onto the pathway – these in combination with the lanterns that hang from shepherds' crooks, out of the line of the eye, illuminate the pathways, are in tune with the overall ambience and are Dark Sky friendly".

Of the most striking illuminations is that of Deborah Bell's *The Crossing II* placed just in front of the Centre for the 4Cs and alongside the Spa. From the water, the spotlights create a double silhouette of the imposing sculpture on the building. Added to this, thatch illuminated from the buildings alongside throw a shadow of what looks like foliage onto the top of the gallery building. Viegas believes that the beautiful part of light is shadow and this installation, which is quite lovely, proves his point.

Surrounds aside, lighting Segera was challenging. Kenya, no different from anywhere else in Africa, has a shortage of skilled electricians, and all equipment used was sourced and delivered from South Africa. For two weeks most daylight hours were spent overseeing the installations and at night Viegas, his team and the curator of the Retreat tested and viewed what had been installed during the day.

Each artwork was illuminated separately to best effect, often with profiles. LEDs were used throughout and most sources were less than 4 W. Dimming proved to be a huge challenge because of the lack of available skill. The result of the installation gives no hint of this and is a successful combination of light, darkness and contrast designed to enhance the experience of luxury on the Kenyan savannah. LiD

Unless otherwise mentioned, all photographs by João Viegas.



Warm light and a touch of glitz to the chandelier welcome guests to the wine cellar. Photograph: David Crookes

Warm white 5 W LED downlights illuminate the columns to create bounce light off the floor. This, with the under-counter strip lighting at the bar, makes a lively space for evening drinks.

Although most light throughout the installation is warm white, cool white light is used to highlight certain of the sculptures. Here, a Jane Alexander sculpture is profiled.

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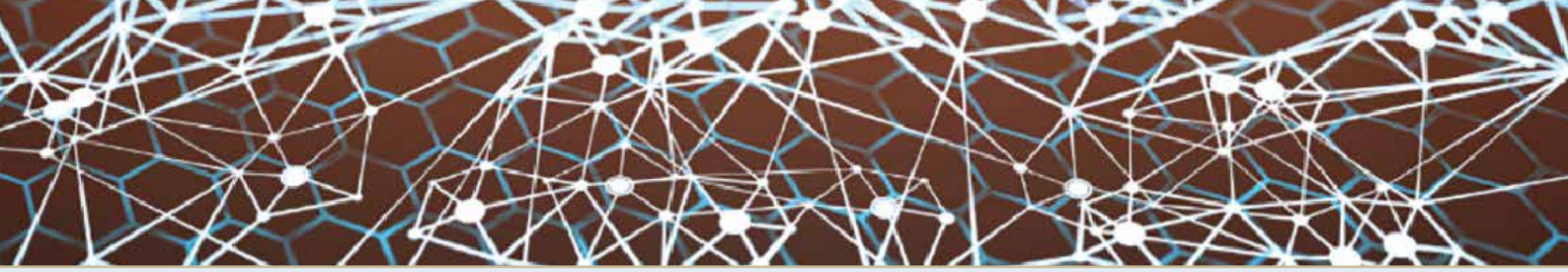

Delivering value beyond illumination

In the Internet of Things (IoT), it's all about the data. Connected devices are connected expressly for the purpose of gathering and sharing information about themselves, about the environment in which they're used, and about the people who use them. In a connected lighting system, luminaires and other lighting system devices merge with IT networks to allow for the collection, distribution, and storage of large amounts of data.

In this article, which was published by Philips Lighting on http://philips.to/1NhH7lc #FutureOfLight, Jonathan Weinert (Strategic Content Development, Philips Global Lighting Systems) outlines five ways in which connected lighting uses data to deliver value beyond illumination

1. Connected luminaires: data for operational insight

Connected luminaires are designed to make information about themselves available in standard or published data formats. Such information might include dimming level, energy consumption, time on and off, and internal temperature measurement, which can have an important effect on the performance and longevity of LED light sources.

With a database module, back-end lighting management software can store this information for historical analysis and reporting. Such information can serve as a critical part of enterprise-wide energy monitoring and management, especially as lighting often accounts for a significant percentage of an organisation's energy budget. When combined with other sets of data, for example, historical information on usage of and activities in an illuminated space, system managers can use this information to refine dimming schedules and light level targets, thus minimising light levels when spaces are unoccupied. The more managers know about how and when illuminated spaces are being used, the more energy efficient their lighting operations can become.

The ability to share operational data and connectivity with IT networks is built into a connected luminaire's electronics, so it comes at little or no additional cost. Lighting manufacturers that design a common luminaire electronics platform with connected capabilities, and who use this platform across their entire portfolio of luminaires, achieve economies of scale that can drive the cost of connected luminaires down.

2. Connected spaces: data for optimising environments

Sensor networks are getting a lot of play in the technosphere these days, and for good reason. Miniaturisation, high throughput, and cheap data storage make it possible and cost-effective to install sensors throughout public and professional spaces. Sensors can collect data about human activity – the flow of foot traffic, usage patterns, preferences; the environment – daylight levels, temperature, humidity, the presence of chemicals or other dangers; and things – the locations of items in a warehouse, traffic patterns.

Connected lighting systems are uniquely positioned to serve as platforms for sensor networks. Lighting is already installed everywhere that people go indoors and, at least in urban and residential environments, outdoors as well. Power is already available everywhere that lighting is installed. And connected luminaires already have the ability to send data 'upstream' to IT networks. By integrating sensors into the lighting system, you have a readymade, distributed grid; no need for a separate physical infrastructure, separate power runs, or separate data cabling.

3. Connected people: data for personalised experiences

Just as connected lighting systems can serve as a platform for distributed sensor networks, they can also serve as a platform for distributed communications networks, especially indoors. By outfitting connected luminaires with wireless communications, organisations can deliver in-context information and services to people in illuminated spaces – wherever they are and whenever they need them.

With a sufficiently dense network of communications nodes, organisations can create an indoor positioning network that works like an 'indoor GPS',

offering wayfinding and other services that can have a considerable effect on visitor experience in professional, retail, and hospitality environments.

Imagine a large food store with indoor positioning. A shopper can use a specially designed mobile app to register with the system, which precisely locates him in the store. The app maps out his best route through the store based on his shopping list, makes suggestions for related products not on the list, and even offers special coupons on selected items.

Personalised couponing can also have a profound impact in high-end retail stores. Shoppers regularly use smartphones to price-compare in store, sometimes purchasing an item on display for less money with a competitor. Retailers can combat this revenue drain by offering coupons at the point of sale – a proven in-store conversion method.

For security purposes, shoppers can register with the system anonymously. But shoppers may be able to receive special discounts and other incentives by agreeing to allow retailers to track their movements and shopping history in store. This would work like creating a personal profile on a retailer's website online, allowing the retailer to track visits, clickstream data and purchasing history in exchange for special deals. Retailers can benefit enormously from this hitherto inaccessible customer data, using it to improve traffic flows, floor plans, displays, and other aspects of the store's operations to enhance customer experience and loyalty.

4. Connected software: data for real-time monitoring and historical reporting

Connected lighting is all about two-way data communications. One of the biggest advantages that this bidirectional data flow supports is the ability to monitor, manage and maintain lighting systems in real time.

In standard lighting systems, little or no data is available on the current state of the luminaires and other devices. System administrators often have to take the lighting system offline to troubleshoot, to change luminaire configurations, or to display new light show content.

With lighting management software running in the IT network or the cloud, connected lighting systems offer a much richer environment for system administrators to oversee and optimise operations. Lighting management software systems that integrate tightly with connected luminaires give system managers the ability to see the current state of each lightpoint, and to act on lightpoints individually or in groups.

Map-based interfaces make it easy to change configurations, update dimming schedules, and swap out light shows just by pointing and clicking. Systems can be set up to send alerts when operations are disrupted or unusual events occur. Because luminaires can share data about themselves, these alerts can include all relevant information about the luminaire's location, type, settings, and so on – information that technicians can use to respond to and resolve any issues that might arise. This is especially powerful where luminaires are distributed over a wide area, such as street lighting in a city.

When combined with a database, lighting management software can allow organisations to store historical data on operations, along with any data streams aggregated from sensor networks and indoor positioning systems. It's hard to underestimate the value of the data-driven insights that can result from analysing and reporting on this data, especially when combined with valuable data from additional sources.

5. Connected landscape: data for the new digital ecology

Connected lighting systems can integrate with other systems in a building or city, creating new synergies and efficiencies, and making lighting an integral part of the new digital ecology. In the Internet of Things, this is called the system of systems.

Given that lighting accounts for a significant percentage of energy usage worldwide, the ability to manage lighting resources along with other critical resources promises to ensure the effectiveness of green initiatives and sustainability programmes.

Data aggregation and data mining, of course, exist well beyond the capabilities and concerns of lighting systems. So long as the data gathered from system operations, sensor networks, and individuals is structured in a standard or known format, it should be fairly straightforward to merge this data with data from other systems and sources. Published interfaces allow integration of lighting management software with other management software systems, such as energy management, building management, and traffic management.

Organisations that want to realise the true, game-changing value of the Internet of Things must partner with global technology experts, leaders in connected devices, and leasing software vendors and systems integrators. LiD

Shine Bright at the World's Premier Lighting Fair

The 17th edition of **HKTDC Hong Kong International Lighting Fair (Autumn Edition)** will be staged from 27-30 Oct 2015 at the Hong Kong Convention and Exhibition Centre (HKCEC). This must-attend event for the industry serves as an international marketplace for high-quality lighting products, solutions and services. Last year, the fair attracted some 2 500 exhibitors from 37 countries and regions and nearly 37 000 buyers from 135 countries and regions.

In the first four months of 2015, the total value of Hong Kong's exports of lighting products reached US$417 million. The most important export markets are the United States (+9.8%), the Chinese mainland (+15.3%) and Japan (+0.4%); together accounting for more than 50 per cent of the total export value.

LED & Green Lighting In Demand

In light of environmental concerns, energy-efficient and long lasting products continue to see strong demand. The fair's **LED & Green Lighting Zone** showcases eco-friendly lighting for commercial, residential, advertising and outdoor applications.

A recent independent market research survey commissioned by HKTDC found that 33 per cent of respondents expect LED and 'green' lighting products to see the highest sales growth in the year ahead, followed by commercial lighting (27%) and household lighting (22%). With LED products becoming more widely used globally, buyers interviewed said they expected the retail price of LED lamps to decrease by eight per cent within a year.

Hall of Aurora: Manifestation of Elegance

Hall of Aurora provides an elegant space for branded collections of eye-catching, high quality lighting fixtures. With an increasingly affluent and sophisticated consumer base in emerging markets, such products are seeing growing demand. Leading brands include: BJB, Citizen, EGLO, Ford, Fulham, Fumagalli, Neo-Neon, Philips, Seoul Semiconductor and Viribright.

Smart Lighting & Solutions Zone offers state-of-the-art technology for smart homes, offices and commercial premises. Exhibited products will include switch/control panels and tailor-made smart lighting solution packages.

Other zone highlights in 2015 include **Advertising Lighting Zone, Household Lighting and Avenue of Inspiration**. Related product zones are grouped together in the fairground to ensure buyers find first-choice exhibitors easily and efficiently.

The fair will also host seminars that explore key issues affecting the lighting industry, with influential speakers sharing their expertise and insights on the latest technologies and designs in the marketplace. Also, **My Favourite Lighting Products 2015** will return this year to demonstrate innovative and creative lighting product designs. Award winning entries will be showcased throughout the fair period.

A one stop lighting solution for professionals

The Lighting Fair (Autumn Edition) has received strong support from stakeholders over the years. To maximise sourcing opportunities and exhibitors' exposure, HKTDC will re-locate the outdoor lighting, lighting accessories and parts and components product zone to 'World of Outdoor Lighting & Lighting Accessories' at Asia World-Expo this year. The new event will be held alongside the HKTDC International Building and Hardware Fair and the Eco Expo Asia at Asia World-Expo from 28-31 Oct 2015. This arrangement will generate a synergistic effect and create cross-sector collaboration opportunities. A shuttle bus service will run between the HKCEC and Asia World-Expo during the fairs.

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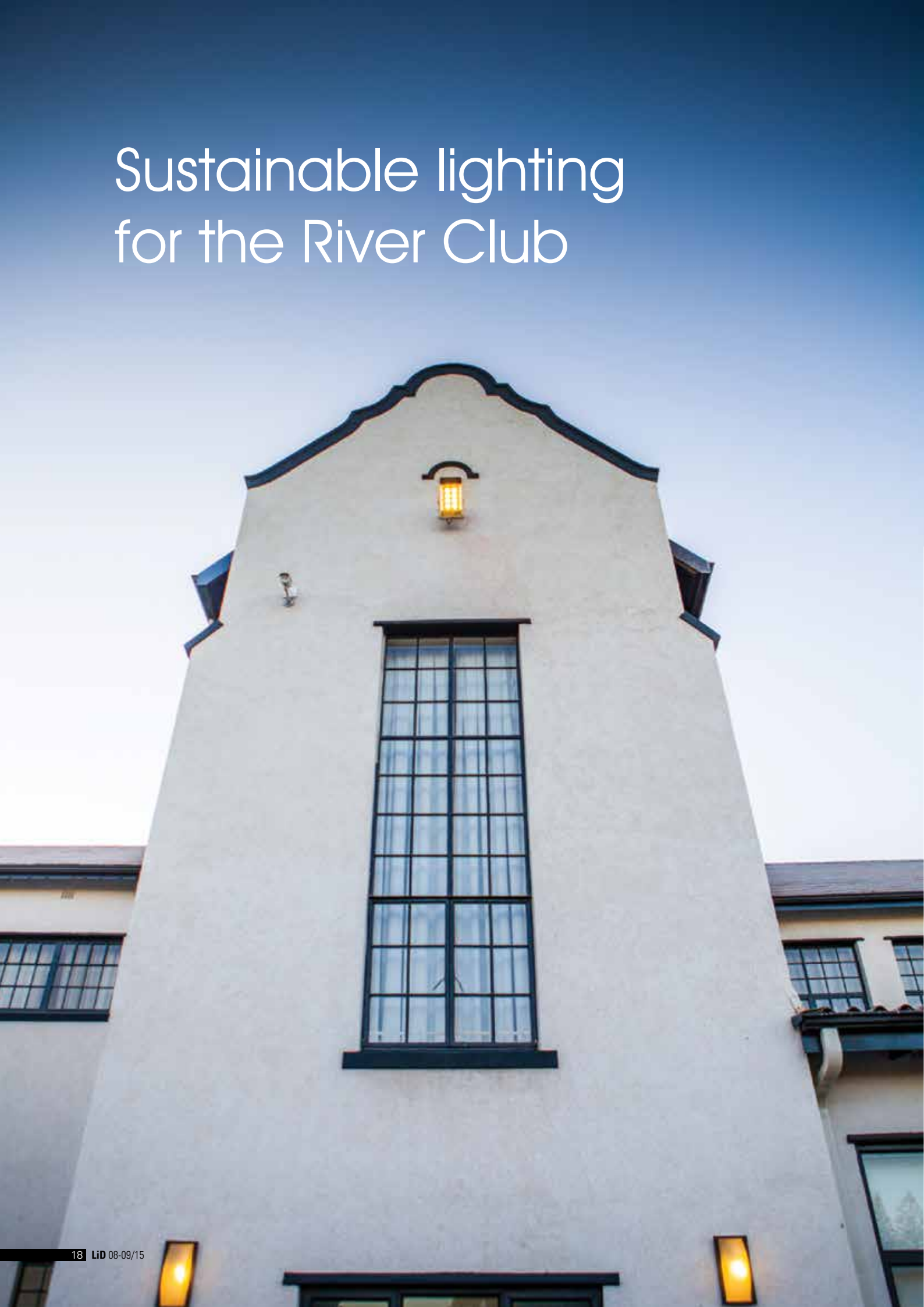
Sustainable lighting for the River Club



External lighting is critical to the comfort and appeal of the River Club, one of Cape Town's most celebrated golf and conference venues. When Pam Shaw, lead designer of Shaw & Becker Interiors, approached Eurolux to assist in the design and installation of additional exterior lighting, Eurolux elected to partner with lighting design specialist Blair Hammond & Associates. The result is a sustainable lighting design that delivers the aesthetics and security the River Club required.

The club wanted to illuminate certain building features, such as the main entrance, while the practice putting green and chipping green also needed additional lighting. "Being a golf and conference venue, these greens are often used at night so required sufficient lighting with just the right amount of lumens so as to enhance and not hinder visibility," explains Daniel Hammond, lighting designer at Blair Hammond & Associates. "The River Club also asked us to illuminate the deck, which is frequently used for entertaining before and after sunset."

Choosing the right design

Two lighting designs were completed and presented to the client, with the owners, architect and interior designers all weighing in on the final selection. "We believe," says Hammond, "in presenting our clients with options. In the lifecycle analysis report we provide initial lamp costs, fitting and component replacement costs according to the lamp/fittings lifespan, as well as the eventual return on investment of each of the

options, enabling clients to see where and when it would be best to spend the money."

The lifecycle analysis conducted by Blair Hammond & Associates showed that the first lighting design, which included high specification products, like Eurolux's ALT 92 W floodlights (F5157), would have a total cost of ownership of R635 275.97, over a period of 15 years. The second lighting design, on the other hand, would have a total cost of ownership of R772 798.90 over a 15 year period. However, the first design would have an initial procurement cost of R151 072.18, while the second design only required R87 595.28.

"To see these initial procurement costs in perspective you also have to consider the relamping cost, which in the case of the first design came to R35 760.43, while the second design came in at R84 099.53. The first design would also only require 157 222.30 kWh over a 15 year period, while the second would demand 211 843.21 kWh," explains

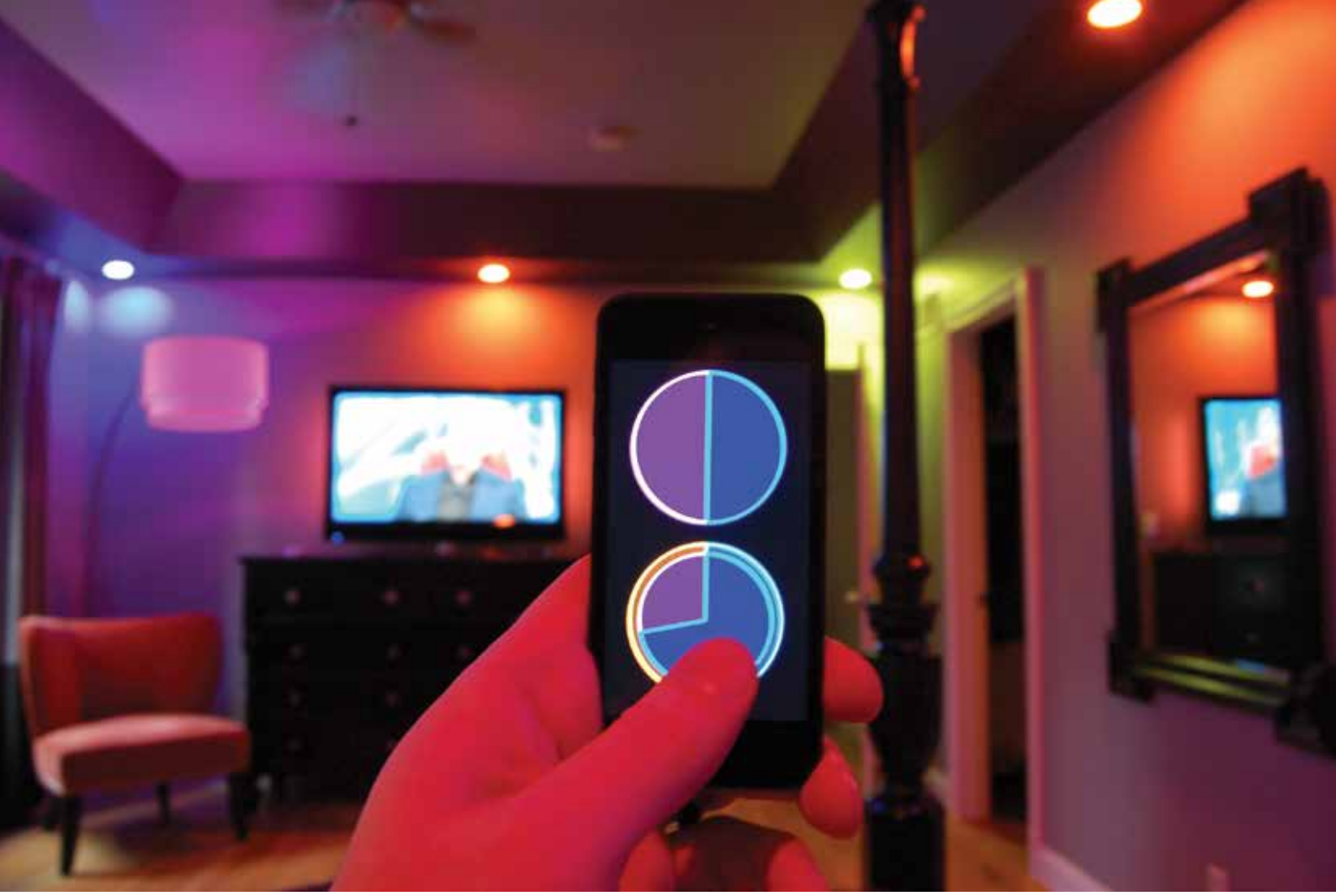
Hammond. "By not investing in the best product upfront, clients inevitably spend more money in maintenance, replacement and electricity costs. It is up to them to decide which option works best for them."

The River Club selected the first design, which featured the highest specification products.

A range of Eurolux products were used to create the right light levels and ambience around the club, including some Aeon Lighting Technology (ALT) products of which Eurolux is the sole local importer. The ALT 92 W floodlight (ES157) was used to illuminate the entrance, surrounding parking areas, as well as the putting and chipping greens. "The River Club required powerful, bright lighting in robust designs in these areas, which is exactly what the ALT 92 W floodlight (FS157) gives them," says Shaun Bouchier, director at Eurolux. He adds that effective heat dissipation, colour stability and a long lifespan made the Eurolux 25 W ALT LED floodlights (FS154) the ideal choice for creating focus points around the building.

Hammond says that sustainability is an important objective in all his company's designs. "In the case of LED products, clients want merchandise that lives up to its claimed lifespan and is backed by a good product warranty. Aeon Lighting Technology products have a three year warranty and in many cases a five year warranty, which is also backed by an international US $2 million product liability insurance cover. In addition, Eurolux offers its own product liability insurance cover which is valued at R100 million. Such guarantees help to reassure customers and add confidence – an important factor in a large scale installation such as the River Club – in the product."

The project was recently completed and Shaw said that working with the Eurolux team had resulted in the correct lighting being installed with all products delivering the promised functionality. LiD



Adaptive lighting can save lives and lower energy costs

by Gavin Chait

It's coming on winter in the UK, which means the days get shorter and shorter until it's lunchtime before I see the sunshine. As darkness sets in, so does my inability to rouse myself from the depths of slumber. This winter, I have a plan.

I bought myself an Arduino microcontroller board, along with kits for controlling a digital light. There are numerous open-source bits of code to create a sun-rise clock, one which gradually turns on the light at a given time.

I'm taking mine a bit further. The UK has a terrestrial longwave radio signal at Anthorn, maintained by the National Physical Laboratory, which broadcasts the precise time. It is also automatically corrected for daylight savings.

My clock, when complete, will require of me no more than that it be powered up. After that, the sun will rise at precisely the same time every day. If I want, I can add in some sensors and have it respond only when it is truly dark in the room.

Et Voila (I'm learning French), an adaptive clock that should help me through my winter dissonance. I'm not the only engineer who ever contemplated the inefficiency of sunshine (which is only on during the day, when we can see, and off at night, when we can't) and wondered if it could be improved.

Some of the most sophisticated microcontrollers are now available in motorcars.

I spent two years driving from Oxford to London and the single most terrifying part of my day was during winter when – at 6 am – I would enter the M40 motorway from the dual-carriage A40. It was at that point that I realised how little depth perception existing lighting systems offer.

Driving with static headlights can be astonishingly dangerous. Reaction time is limited to the extent of your headlight beam. High-beams are useful on the highway but risk blinding oncoming traffic and causing exactly the sort of accident you're trying to avoid. Turning into an intersection, your lights are lagging where you actually need to see. Following a curving road presents similar orientation issues.

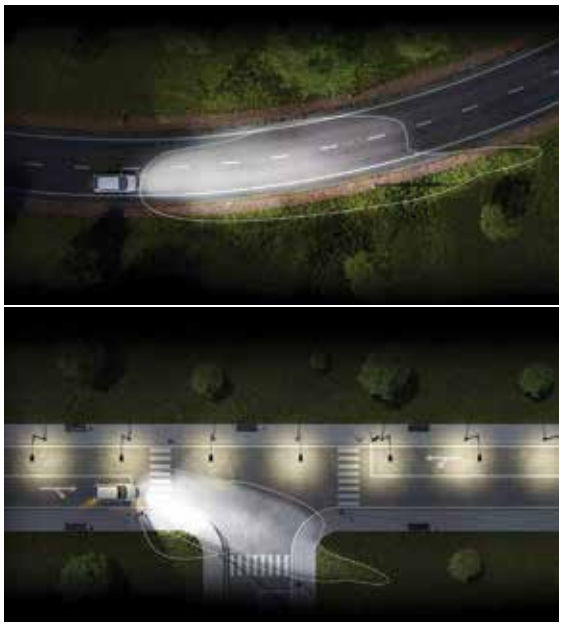
And doing all of these things at speed reduces your reaction time to fragments of a second. The hazard has to become visible, be processed, and you need to respond physically. As if South Africans need more help killing ourselves on the road. Some 15 000 people a year lose their lives on our roads. That's 32 people per 100 000 population, placing us seventh worst in the world, after such places as Eritrea, Libya and Nigeria.

Overall, 1.25 million people a year lose their lives in car accidents, of which around 46% happen as a result of low visibility.

It's not as if this problem wasn't known from the beginning of automotive manufacturing. GM introduced the first automatic headlight dimmer in 1952. The response time was so slow and so erratic that, until recently, US law forbade the introduction of automated systems.

About 15 years ago, the EUREKA intergovernmental organisation in Europe tasked with focusing R&D priorities, set up a team comprised of leading European auto manufacturers, including BMW, Toyota, Skoda and Vauxhall (Opel). They released a set of performance and technology specifications for what is now called Adaptive Front-lighting Systems (AFS).

Released in 2003, the lighting systems use integrated sensors, transducers and actuators to respond to a range of driving requirements. The first of these is a low-beam to high-beam automatic response, which turns on when required and off for approaching traffic.



Dynamic curve lighting was first introduced by BMW on its 3-series, and developed by Automotive Lighting. Sensors measuring yaw, steering angle and vehicle velocity all contribute to horizontally swivelling the low beam light to follow the road curve. More recent systems take advantage of in-car GPS navigation to calculate road conditions in advance.

Cornering lighting illuminates into intersections as you slow down and prior to a turn. Such lighting can be integrated directly into the headlamp or into the outer bumper, and offers an increased angle of illumination of between 30 to 60 degrees.

Motorway lighting offers an increased range, up to 160 metres ahead, by physically raising the angle of the beam. Self-levelling systems assess the pitch of the vehicle: as the vehicle tilts going up or down hills, the beam is adjusted to ensure it remains pointing at the road.

The future of vehicle lighting is leading to adaptive brake lights. These will allow you to see how hard the car in front is applying the brakes. This is progressive lighting, becoming brighter the harder the driver in front stomps on the brakes.

These adaptive lights will certainly help with driving safety, although they are likely to be eclipsed by self-driving vehicles soon after they become ubiquitous. And self-driving cars are going to do more for safety than anything in the history of motorised transport.

Yet adaptive lighting is not only for improved safety. It can also make buildings more liveable, and more energy efficient.

As a child, my memory of leaving any room is that it would inevitably be accompanied by the words, "Turn off the lights!" Apparently, this is true of others. The rise of ubiquitous cheap sensors has given lazy folk like myself the opportunity to build integrated adaptive lighting systems.

At their most basic, intelligent lighting systems simply turn them on and off with a timer, or use movement sensors to figure out whether anyone is in the room before turning off the lights (don't sit still while watching television).

I remember consulting late at a company in Germany when the entire building lighting went into sleep mode. We had to creep out and retire to a nearby pub to continue our meeting. Clearly, simple sensors can be too simple for such applications.

Any adaptive lighting system must also recognise, and take advantage of, ambient lighting. The term increasingly being used to describe such systems is circadian lighting.

The philosophy is that lighting should support your body's natural sleep-wake pattern. Lighting should be more subdued (and warmer) in the mornings and evenings, and brighter (and bluer) during the day. Lighting is not only about LEDs, or other synthetic light sources, but also about controlling daylight.

Sensors, actuators and various controllers can determine ambient light, as well as the number and location of people in a room, as well and can choose the best way to deliver a required light colour mix.

Philips Hue, Belkin WeMo, GE SmartLink and LIFX all offer LED 'smart' lights which go into existing sockets and link to wireless hubs, controlled by the inevitable smartphone app. When paired with additional actuators (for instance, controlling window blinds or ventilation), these systems can follow a 'script' chosen by the user to deliver lighting that helps you wake up, work, and relax at the end of the day.

For the truly ambitious, Honda has demonstrated a circadian system that provides floor-level subdued lighting to help you navigate to the bathroom or kitchen for those late-night emergencies without forcing you to adjust to bright light. For home-use, many of these systems are still quite costly. You also need to consider how easily you're going to wire things in, or end up using wireless sensors taped all over. Three Philips Hue lamps costs about R3 000, for starters.

However, if you're tasked with improving efficiency at an office, lighting plays a tremendous role in enhancing the work environment. Similarly, ensuring lighting is only on where needed can save a business much money.

Integrated sensors and controllers are becoming big business.

Nest, started in 2010 by former Apple engineers Tony Fadell and Matt Rogers, developed a thermostat which required minimal user interaction while

Philips Hue

optimising building heating and cooling based on software and clever algorithms. Google bought the company in 2014 for $3.2 billion.

Google is now to produce a more integrated home system called Brillo, while Apple is developing HomeKit. The sensors and systems, though, are relatively low-cost and have spawned numerous Kickstarter projects. LIFX, for example, received $1.3 million during its Kickstarter in 2013.

Smart systems are hackable. Smart systems generate behavioural data that are valuable. These two things pose major potential privacy issues.

Amazon has already developed tags that allow you to reorder household items at the touch of a button. Google will want to learn home behaviour and sell that information to advertisers. And you might get home to discover that the neighbourhood hacker has turned on all the heating in the middle of summer and cost you a fortune.

But at the same time, systems that can monitor whether a person is in a room and is moving to figure out whether the lights should be on, can also call for help if it is known that person is frail and might need medical attention.

Like my sunrise light, systems only need be moderately 'smart' to provide impressive benefits to businesses and people in terms of lower costs and an improved living experience.

The first interior lighting had the potential to burn down the house. We still took it inside. Speaking for myself, with my new little gadget, I'm rather looking forward to winter. LiD

GE SmartLink

Belkin WeMo

LIFX

McGill University's Faculty of Dentistry

The Faculty of Dentistry at McGill University in Montreal was designed by the architectural firm NFOE. The architectural concept, conceived by DFS Inc., was developed and completed by NFOE, which also prepared the construction documents and provided the building owner – Cominar – with architectural services during the construction. The lighting, staged by the architects in collaboration with LumiGroup, holds a leading role in the architectural concept.

The space is bright from an abundance of light and the omnipresence of white. The overall effect, however, is still warm, owing to the punctuation of red elements and a smart choice of lighting. The red on white background is reminiscent of McGill University's symbolic colours.

The ground floor front entrance, for students and patients, opens to a grand black reception desk, contrasting with the glass wall in the background and its integrated diffuse lighting. The white pendant light, with blunt edges, adds to the minimalist concept of the space.

In the entrance and the rest area, the atmosphere is relaxed, with playful dynamic staging of recessed fluorescent strips in the ceiling, randomly arranged and crossing over each other. Each crossing angle, from one section to the next has been executed with care for a clear and precise continuity of lighting. This attention to detail and custom staging gives the project its unique and slick character. The architectural lighting, the star of the student lounge, along with the irregularity of the walls, create a lively and upbeat atmosphere.

As one heads towards the imposing red stair-

Photographs by Yoshino Aoki.

way, guiding visitors to the upper floor waiting room, an anthracite-coloured overhanging ceiling welcomes everyone and continues its path against the wall. This architectural element, framing the donors' panel, serves as a defining attribute to the waiting area. The four fluorescent strips embrace and accentuate this L shape component, while giving the impression that the narrow space is larger.

For McGill University's Faculty of Dentistry, the choice of fixtures with pure and simple lines articulate and support the project's minimalist architectural concept while meeting the comfort needs of the team, students and patients. The lighting unifies the different areas and guides the occupants. The light, more than a simple addition, is a true complement of matter and space. LiD

Ancient bronzes and marble sculptures in *avant-garde* ambience

ERCO lighting tools feature in one of the most dramatic museum projects this year. The lighting supplied by the company for the exhibition and outdoor areas of the new *Fondazione Prada* in Milan demonstrates how sophisticated lighting solutions are implemented efficiently in visionary museums.

The expansive complex, designed by Dutch star architect and Pritzker Architecture Prize winner Rem Koolhaas (OMA, Rotterdam), arose from the transformation of a distillery dating back to around 1910, in the south of Milan. The exteriors and the exhibition spaces of the *Fondazione Prada* are equipped with a range of Erco LED lighting tools. These were selected by the cultural foundation, spearheaded by Miuccia Prada and Patrizio Bertelli with consistent support from Erco, as a result of many years of experience in museum lighting. The lighting tools offer an ideal solution for the varied and complex lighting tasks required in a museum context – with a not untypical combination of uniform, glare-free ambient lighting and exact accent lighting for prized exhibits.

In the 'Podium' that forms the central museum section of the *Fondazione Prada* with glass façades on three sides, Parscan spotlights,

Optec contour spotlights and Pantrac lens wallwashers are combined to deliver an excellent combination of highly professional LED lighting tools. Parscan 12 W with Spherolit lens with spot and flood distributions complement Parscan 4 W with narrow spots to illuminate and accentuate the ancient masterpieces, bringing out the finest details of the bronzes and marble sculptures in sharp contours for a three-dimensional effect delivered with photometric precision. On the first level of the 'Podium', Pantrac LED lens wallwashers 24 W, 4000 K, illuminate the wall surfaces uniformly in neutral white light resembling daylight – a lighting concept that produces a wide and spacious impression of the room.

The permanent exhibition in the 'Haunted House', a renovated four-level section of the old distillery designed by Rem Koolhaas with gold leaf cladding, displays masterpieces from the collection. Parscan spotlights 24 W, used here with wide flood distribution, achieve uniform ambient lighting in the exhibition spaces, while Parscan 12 W with spot and flood lenses allow the exhibits to come to the foreground of attention. The minimalist design of the black Parscan spotlights blends unobtrusively into the structural steel work of the existing building, thereby directing the focus entirely onto the illuminated exhibits. Finally, the flanking picture galleries feature Parscan spotlights 12 W and lens wallwashers 12 W for uniform illumination of the paintings on the wall, and emphasise their expressive colours.

Where Erco LED lighting tools in the exhibition spaces are used with neutral white light, the exterior sections between the individual buildings of the complex are illuminated using warm white light. Beamer projectors in 36 W with flood and wide flood distributions set off the paved pathways, while the special outdoor floodlights of the Lightscan range provide lighting for the ground around the entrance areas. Excellent glare control of the Erco outdoor luminaires ensures a high level of visual comfort and makes certain that the light shines only, and precisely, where it is needed. LiD

Photo credits: ERCO GmbH, www.erco.com
photographer: Dirk Vogel.

Innovative modelling

Synopsys, Inc. has announced the availability of Version 8.3 of its LightTools® illumination design software, which offers an Advanced Design Module with robust capabilities for modelling freeform optics for a wide range of applications. The new capabilities enable users to easily incorporate freeform surfaces in illumination designs to produce optical systems that have increased energy efficiency, superior light control and innovative design forms. In addition, LightTools 8.3 delivers new features for highly accurate design and modelling of phosphor based LED systems.

The LightTools Advanced Design Module introduces a set of specialised tools to enable fast, robust modelling of reflective and refractive freeform optics in single surface and segmented configurations for a diverse set of illumination applications. Freeform optical surfaces provide many advantages over conventional optics for meeting complex illumination requirements, such as precise light control, innovative styling, compact system dimensions and energy efficiency.

In addition, the Advanced Design Module leverages proprietary algorithms from Synopsys' LucidShape® products that automatically calculate and construct optical geometries based on user-defined illuminance and intensity patterns. This approach gives designers the freedom to focus on overall design objectives rather than the implementation details of complex optical components.

Key features in the Advanced Design Module include:

- Freeform Design features for modelling freeform reflective and refractive surfaces that are automatically shaped to form the resulting light pattern. Freeform design features are especially advantageous for systems with small light sources, such as LEDs and halogen lamps.
- MacroFocal Reflector tool for designing multi-surface segmented reflectors, with different spreads for each facet. This tool is useful when designing lighting systems for applications that need precise control of the light pattern or sharp intensity cutoffs at one or more sides of the beam. Applications include street lights, outdoor and architectural lighting systems.
- Procedural Rectangle Lens tool for designing surfaces with pillowed optical arrays, which enable precise light distribution control in LED luminaires and signal lighting, as well as in applications that require superposition of optical distributions.
- LED Lens tool for creating various types of freeform LED collimator lenses, which are effective for producing efficient, highly directed light distributions.

Synopsys, Inc: www.synopsys.com

Energy efficient lighting for attorney offices

Magnet recently completed the design and installation of an energy efficient lighting solution at the new offices of Woodhead Bigby Attorneys in Umhlanga, KwaZulu-Natal.

The design objective of the lighting system required the selection of low energy fittings that would enhance the aesthetics of a professional office environment and ensure the right amount of light when and where it was needed.

Magnet has extensive experience in identifying energy saving opportunities and implementing appropriate eco-friendly solutions to reduce wasted electricity. To ensure low power consumption and maximum comfort for the occupants of the revamped building, over 100 low energy internal light fittings and lamps along with occupancy sensors, which save hours of wasted lighting each day, were installed throughout the building.

Philips 30 W and 60 W SmartBright troffers were used in the office spaces and 10 W and 17 W SmartBright downlights were installed in other areas to achieve the required lux levels and colour temperature.

The reduced lighting consumption lowers operating costs, and helps to decrease Green House Gas (GHG) emissions. Additional savings include reduced lamp replacement and maintenance requirements and lower power demand during peak hours.

Scott Bigby of Woodhead Bigby Attorneys says that the company is "thrilled with the lighting solution provided by Magnet". He also makes the point that because "… power consumption on lighting is extremely low it is therefore also generator-friendly during outages".

Magnet: +27 31 274 1998

Low energy fittings enhance the aesthetics of this professional office environment and ensure there is exactly the right amount of light when and where it is needed.

Magnet recently completed the design and installation of an energy efficient lighting solution at the new offices of Woodhead Bigby Attorneys in Umhlanga, KwaZulu-Natal.

Lightify Garden Spot Mini

Lightify Garden Spot Mini RGB, an intelligent chain of lights for outdoor use, is available from Osram. The Lightify lights are controlled via an app using a smartphone or tablet (iOS or Android) and can illuminate gardens and terraces in around 16 million different colours.

The Garden Spots are part of the Lightify lighting system, which allows users to tap into the huge potential of light. Once the system has been installed its brightness and colour ranges from unobtrusive to eye-catching. The spots can illuminate terraces and paths, with removable ground stakes enabling the lights to be secured in the ground, and they can be attached to any smooth surface by integrated adhesive strips.

The Garden Spots are dustproof and waterproof owing to their IP66 protection. A chain of lights consists of nine LED light sources. Extensions, each with three light sources, are also available. A maximum of three extensions can be added to each chain of lights, increasing the number of light sources to a maximum of 18. Thanks to opto semiconductor technology and Lightify controls, Garden Spots, in addition to an almost unlimited number of colour variations, also offer energy savings.

Osram: +27 11 207 5600

Yoa matches design and performance

BEKA Schréder has launched Yoa in South Africa. Designed for urban applications, the round, slim and decorative luminaire introduces a subtle and refined presence in the city landscape. With its elaborate crown and the patterned glass protector associated with an embellishment plate, the luminaire offers a detailed, aesthetic finish.

The luminaire is equipped with the second generation LensoFlex®2 photometric engine, which offers a high-performance photometry, optimised for each application with minimum energy consumption.

The Yoa has an IP 66 tightness level for long lasting performance, and the photometric engine and electronic assembly can easily be replaced, ensuring the luminaire can be upgraded to newer generation LEDs and keeping the BEKA promise of FutureProof. It is manufactured from sustainable and recyclable materials (aluminium and glass).

Yoa offers flexible combinations of LED modules, driving currents and dimming options to provide a cost-effective lighting solution whilst improving the well-being and safety of people. It is available for side-entry, post-top or suspended mounting.

For more information contact:
w.ludwick@beka-schreder.co.za

Yoa: Round, slim, decorative.

Artist's impression of the Yoa luminaire.

Light + Building 2016

Planning for Light + Building 2016 is in full swing. The world's biggest trade fair for lighting and building-services technology brings all market leaders together at the Fair and Exhibition Centre in Frankfurt am Main. From 13 to 18 March, everything at Light + Building 2016 will revolve around the latest trends and innovations in the sector. Around 2 400 companies are expected to present and launch their latest products for the fields of lighting, electrical engineering, and house and building automation during the six-day event.

'Modern Rooms' will be brought to life at the fair using future-oriented new products. The leitmotif 'digital – individual – networked' outlines the way modern commercial, industrial, public and residential buildings are designed. These three aspects are the keystones for creating 'Modern Rooms' that also provide a high standard of living.

Light + Building is the world's biggest platform for the lighting market – a market dominated by the current transition to LED technology. National and international manufacturers present a broad spectrum of products – from technical, via design-oriented and decorative lighting for the home and contract sectors, to street lighting. The integrated presentation of lighting and building-services technology makes Light + Building in Frankfurt am Main the world's leading trade fair with a product range unrivalled worldwide in terms of depth and breadth.

In addition to exhibitor product innovations, which are spread over 21 exhibition halls, Light + Building 2016 will be distinguished by an extensive programme of events. The main themes at the coming fair will be safety and security technology, building information modelling, smart powered buildings and trends in the lighting market. A themed programme, some of which has already been implemented, is being prepared for all trade visitors, e.g., architects, engineers, planners, interior architects, designers, craftspeople, retailers and the industry.

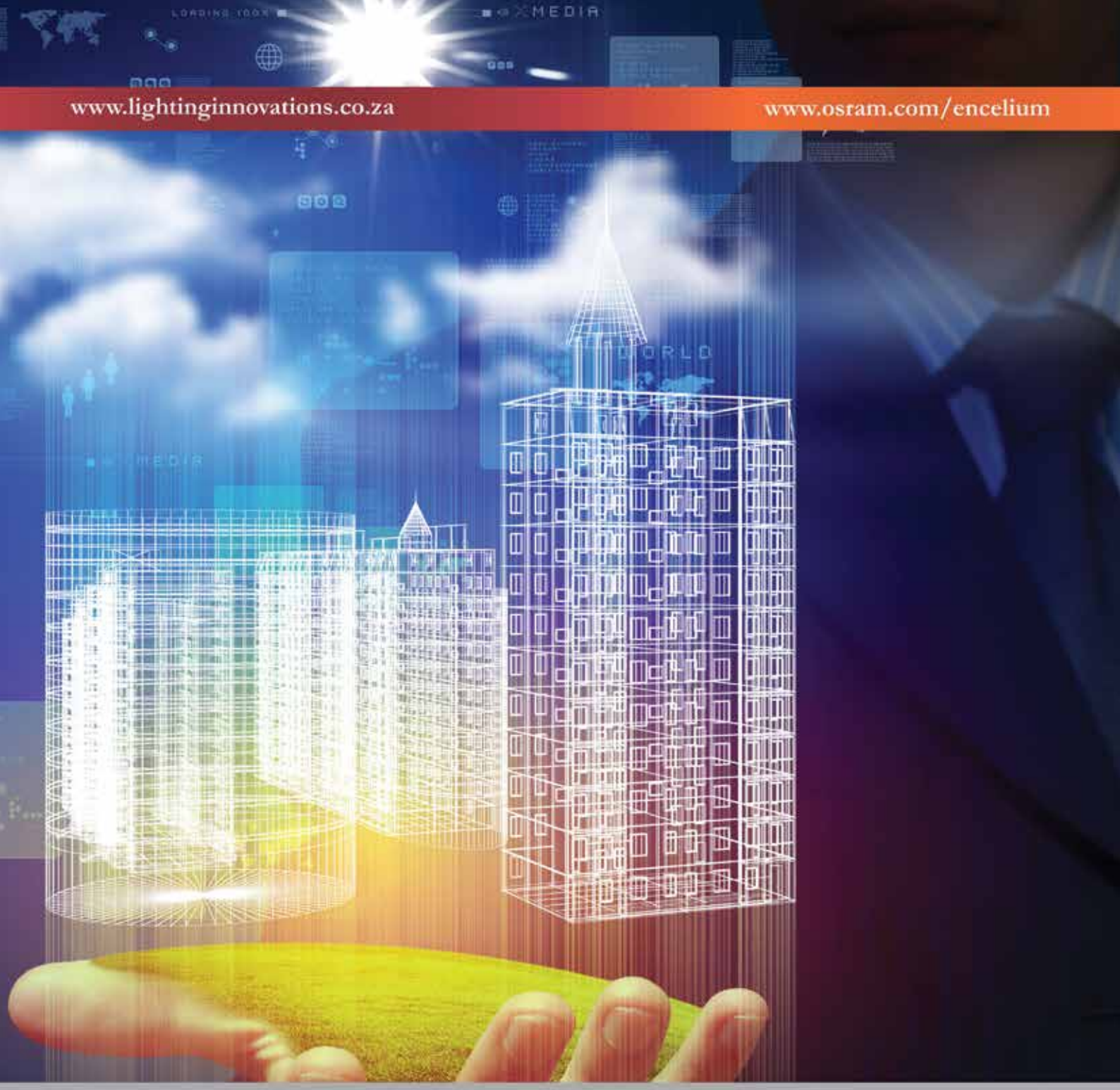
'Building Performance' lectures and seminars will give trade visitors the chance to gather information around the subjects of lighting and integrated building-services technology. In these lectures, renowned experts will explain the latest developments and hold discussions around them.

The 'Design Plus powered by Light + Building' competition presents innovative and future-oriented products of Light + Building exhibitors from the lighting, electrical engineering and house and building automation sectors. The award-winning products are chosen by a jury of international experts in accordance with the criteria technology, ecology and design. The competition is organised by Messe Frankfurt in cooperation with the German Design Council (*Rat für Formgebung*), Germany's centre of excellence for design.

A cultural highlight during Light + Building is 'Luminale'. The biennale for lighting is held concurrently with the fair in Frankfurt am Main and constitutes the evening programme for Light + Building visitors.

Light + Building: www.light-building.com

www.lightinginnovations.co.za www.osram.com/encelium



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Innovative companies to join forces

Fagerhult has signed an agreement to acquire the assets of Lighting Innovations, including its subsidiary companies Beacon Lighting and Arrow Lighting. The three companies manufacture light fixtures and solutions primarily for the indoor commercial sector, which includes typical application areas such as offices, retail, shopping malls, hospital and educational buildings. Lighting Innovations is also involved in stadium and sports field lighting and provided the lighting solutions for three of the 2010 World Cup soccer stadia.

The Fagerhult Group, which employs around 2 370 people in over 15 countries, achieved sales of R5.9 billion in the 2014 business year. A key element of its strategy is to increase its market position to emerging markets and, with the acquisition of Lighting Innovations and its subsidiaries, Fagerhult will gain access to the South Africa market as well as several growth opportunities within the sub-Saharan region.

"Craig Waddell will remain with the company in the position of managing director and continue to build on the strong platform that he, and especially his father, Bruce Waddell, have established since founding the company," says Johan Hjertonsson, CEO Fagerhult.

Fagerhult has nine production units throughout the world with operations in more than 15 countries. It has eight strong key brands i.e., Fagerhult, Whitecroft Lighting, Designplan Lighting; AteljéLyktan; LTS; Eaglelighting (Australia); Ivalo and Arlight. Lighting Innovations will become its ninth brand.

Lighting Innovations will benefit from Fagerhult's experience and expertise in the design and manufacture of energy efficient LED fixtures and its focus on combining design with technical innovation, and the move will open up additional export opportunities. The company will keep its name and the business will continue to operate independently with the same management team. All facilities including its branches and factory will continue unchanged.

Both Lighting Innovations and Fagerhult have strong core values of customer focus, a performance culture and an innovative mindset.

Lighting Innovations: +27 11 444-1168

Osram's first full retrofit headlight

Osram has developed and produced the LEDriving Xenarc headlight, its first full retrofit headlight. The front lighting on the Audi A4 is equipped with a combination of xenon and LED technologies. Osram is the only manufacturer so far to offer the option of a legal upgrade to xenon light without the need for costly reconstruction of the front of the vehicle.

LEDriving Xenarc is suitable for the Audi A4 B7 manufactured between 2004 and 2008. The light output from the new headlight is much higher than that of the halogen headlight originally fitted by the manufacturer.

Compared with standard halogen lamps, modern Xenarc technology from Osram provides up to 110 percent more light on the road, ensuring that drivers can see and be seen much better.

The light beam from the retrofit headlight is up to 60 m longer and has up to 40 percent whiter light that is more uniform and more energy-efficient than that of standard halogen headlights. In addition, the Xenarc headlight offers daytime running light based on LEDs.

With compact dimensions of 53 x 51 x 19 cm (L x W x H), the halogen headlights on the Audi A4 type B7 (2004 to 2008) can easily be upgraded with the xenon retrofit headlights. There is no need to install an automatic beam adjustment system or headlight cleaning system as the new headlights are supplied with the xenon lamp D8 with 25 W, which requires neither of these systems.

Osram: +27 11 207 5600

SAIL: a new forum for professionals interested in lighting

The South African Institute of Lighting (SAIL), recently launched in Cape Town, represents all that is new and at the forefront of lighting in the built environment in South Africa. The initiative was formed when patrons of the lighting industry recognised the need for an organisation that provided a variety of tangible and intangible benefits including:

- Up-to-date legislative information from SABS, the NRCS and government that is relevant to a variety of areas of focus in the lighting industry.
- Focus on individual lighting career path development.
- Access to online lighting courses based on a building block principle to advance lighting knowledge and proficiency, i.e:
  - Online courses without time away from the office
  - Courses registered with professional bodies for CPD accreditation
  - Practical photometry courses
  - Workshops
  - Masterclasses
  - Course qualifications that will be recognised within the built environment, including a Diploma of Illumination Engineering
  - All available at affordable prices
- Membership status and qualifications will be recorded on the membership card, which can be presented out in the field where it matters.
- Access to an array of industry events that will provide valuable exposure to a variety of professionals within the built environment, including: monthly meetings, monthly breakfasts, Q&A sessions, educational panels sessions, professional speakers, satellite events, golf days, network events, online seminars, showcase events as well as affiliate organisations events.
- All this will be achieved through a modern framework making use of a variety of digital touch points including a members' portal on the website, peer-to-peer social media (Facebook and LinkedIn), access to downloads, email notifications, meeting invitations, access to current information and international happenings in the lighting industry.
- Members will also have free access to a range of relevant built environment publications.

SAIL's main goal is to provide benefits to its members. Membership is open to all professionals working in the built environment including lighting professionals, contractors, architects, electrical engineers, interior designers, facility managers, students, artists and others. The primary focus of the organisation is to provide current information in a variety of areas including but not limited to: Exterior lighting, Interior lighting, Décor lighting, Artistic lighting, Stage lighting, Commercial lighting, Retail lighting, Industrial lighting, Hazardous area lighting, and Street lighting.

The main objective of the committee is to provide transparent objective comment and information that adds benefit to the career paths of the members. At only R500 a year for membership, the free publications alone more than make up the expense. Group membership is recognised for companies where three or more individual members apply for membership, each individual member then receives a R20 discount.

SAIL believes that success is born from networking within the greater built environment rather than solely within the lighting industry. From initial efforts, it appears that SAIL is set to transform the way professionals see lighting in the built environment and, indeed, how lighting practitioners execute professional lighting projects and designs.

For further information contact
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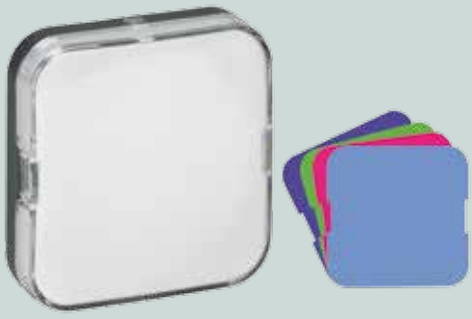
Andrew Wex: Andrew.Wex@eurolux.co.za

Light sensitive LED night lights

Included in Legrand's range of 'special' plugs are night lights with a light sensitive sensor for automatic lighting control.

The 230 V devices have been designed using the latest LED technology and a light sensitive sensor that automatically controls lighting levels according to pre-set light level thresholds. The night lights, which ensure that the right amount of light is available when needed, are ideal for use in hotels, hospitals and frail care establishments.

Legrand SA: +27 11 444 7971



Legrand's night lights, with LED technology and light sensitive sensors, enhance comfort in hospitals, hotels and frail care establishments.

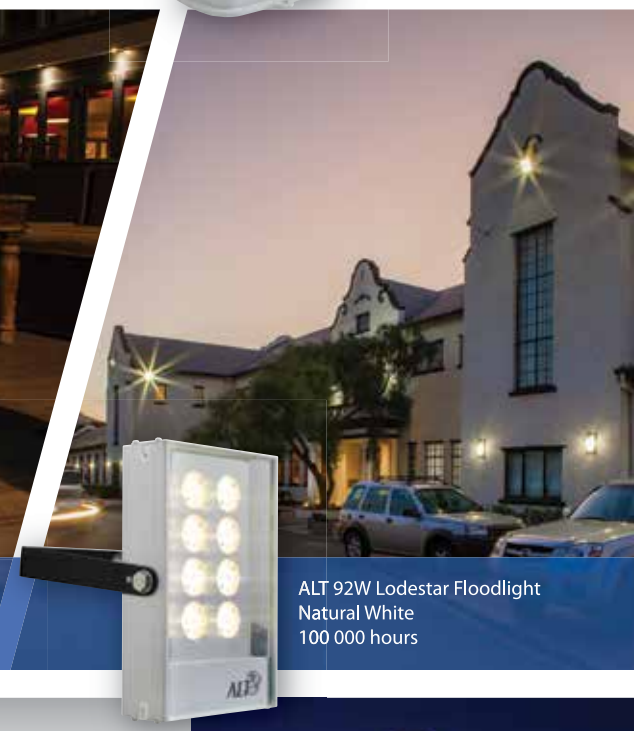
Vapour Proof T5 Fluorescent
Cool White
20 000 hours

ALT 7W V3 GU10 LED
Warm White
30 000 Hours

40W LED Wall Washer
RGB DMX
30 000 hours

ALT 38W Growlight
Red & Blue
50 000 hours

7W GU10 Dimmable LED Lamp
Warm & Cool White
30 000 hours



ALT 92W Lodestar Floodlight
Natural White
100 000 hours

EUROLUX PROJECT SOLUTIONS

Enhance your commercial and industrial environments

Eurolux Project Solutions offers a variety of energy efficient lighting solutions. Recent projects include Caxton Publishing House, Namibia Breweries, Hyundai Showroom, the River Club, the renowned Hotel Verde: The greenest hotel in Africa; as well as the Agulhas Marine research vessel.

Eurolux offers a comprehensive lighting design and specification solution to its customers – all completed by a qualified lighting engineer.

- A project begins with the initial site inspection and customer briefings.
- A detailed lighting design, with full 3D simulation and energy efficiency report, to comply with SANS and OHS, is then presented to the client.
- Detailed cost-of-ownership and lifecycle cost analysis is presented to the client, thus allowing for informed easy decision making.

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eurolux
Lighting your way

Light is Style

OSRAM PrevaLED® Core Style.

"The 'feeling of contrast' of object colors under illumination is affected significantly by changing color rendering property of light source used. Though the feeling of contrast is considered one of the most important characteristics on color rendering properties of light sources, it cannot be estimated adequately by using the present Ra method." (cf. Kenjiro Hashimoto et al.)

Benefits:

- Brilliant white and vivid colors due toe optimized feeling of contrast index (FCI)
- Optimized OSRAM true color technology to achieve high FCI values
- High driver flexibility allows cost-effective and intelligent systems

Light is OSRAM

OSRAM