INDIA'S FOREMOST MAGAZINE ON THE LIGHTING INDUSTRY

Lighting India

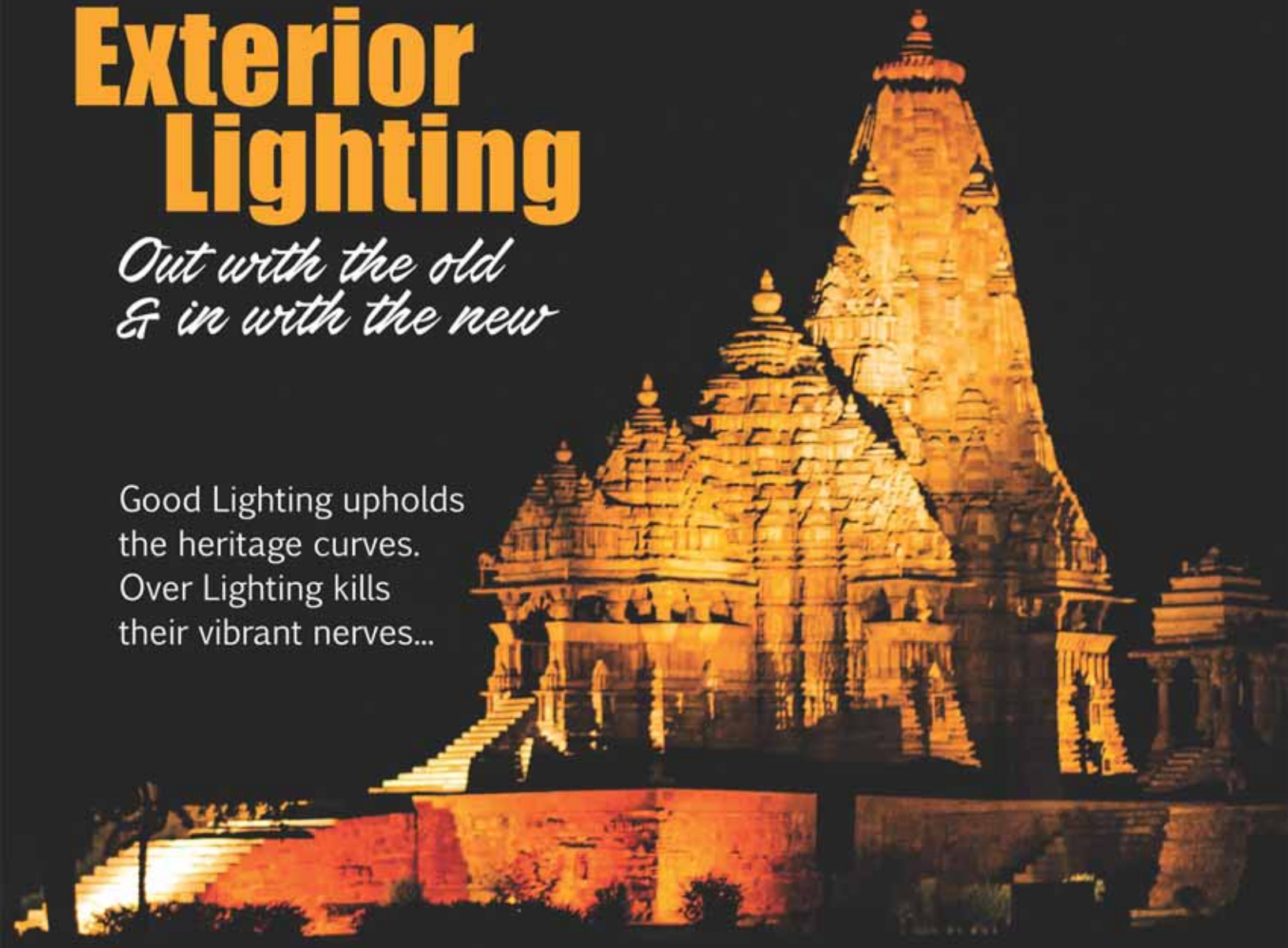
₹ 125

Vol. 11 No. 6 November-December 2016

Exterior Lighting

Out with the old & in with the new

Good Lighting upholds the heritage curves. Over Lighting kills their vibrant nerves...



Khajuraho Lakshman temple, Madhya Pradesh
Photo: Mahesh Bansode

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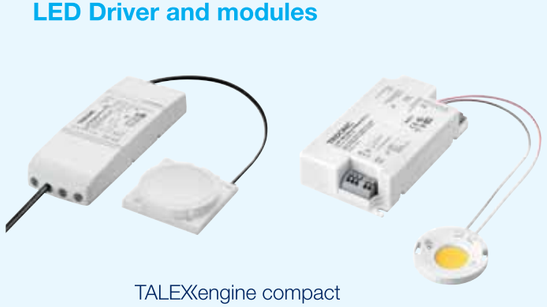
LED Driver and modules



TALEXengine compact

TALEXengine linear / area

OLED

OLED modules

Emergency lighting units

Single battery emergency systems

Batteries

Electronic components

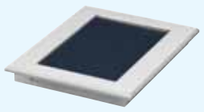
Electronic ballasts for fluorescent lamps

Digitally dimmable ballasts for fluorescent lamps

Electronic ballasts for high-intensity discharge lamps

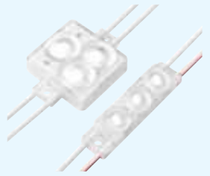
Controls

Sensors



Touchpanels

Signage



TALEXchain

TALEXdriver

TALEXcontrol

Embrace The Remote Control Light Switches

From the initial days of electrical lighting, we have been used to operate the lamps through mechanical switches. We have seen advent of different models in between and the trend of designing switches matching with the interior decoration of the room or office or parlour etc. However, with advancement of technology that trend is changing.

Yes, I am talking about the growing popularity of the remote control switches for lighting. Modern men and women want everything to be handy. The upswing phase of popularity of the remote control switches centres around that. The topmost advantage that these switches offer is you need not be near the switchboard to put the light-switch on or off. Even from outside the premises, for example from your car while on the highway, you can switch on/off or dim (LED lights) with the help of any simple device like a cellphone or a tab having Internet connection.

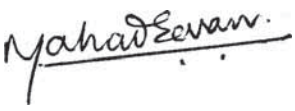
Also, looking at it from the safety angle, we find that these switches do not need you to touch the power supply board directly. Thus, there is no risk of electrocution, especially for the children or old people.

So far, I have talked about the internal lights, but use of remote control light switches is also increasing in the outdoor areas such as: LED-based street lights, tunnel lights, flood lights and wash lights.

Although considering the Indian scenario, the remote control light switches are still not ubiquitous – primarily because of lack of knowledge of their usefulness, they have already stepped in to many hotels and saloons. Also, because of low volume of demand prices of these light switches are little towards higher side, which is another reason behind their low market penetration.

However, to catch up with the global trend, we will have to adopt this type of switching system as soon as possible. Because in a power-hungry country like India, this switching technology offers tremendous potential for energy saving. Just think, how many times do you forget to switch off your room light while going out for a night party? Sometimes we purposely keep one light on while going out of home at night. All these habitual wastes of electricity can be prevented with use of remote control light switches. Won't you go for it?

Do send in your comments at miyer@charypublications.in



Mahadevan Iyer
Editor-in-Chief

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The article explores the differences in approaches and poses the question, where is the sophistication in the lighting of modern buildings?

Smart Lighting

LED Among the Stars

Understanding Relevance of LED Lamp

articles

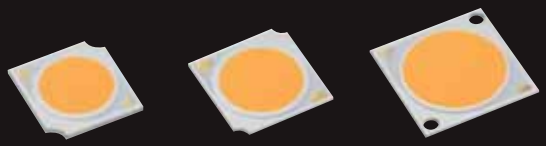
CITIZEN

CITILED Vivid Series New

CITILED Vivid Series expresses the subtle beauty of original color of objects.

Brilliant Type

Brilliant Type can bring out the original colors of an object more vividly. This type has increased vividness twofold.

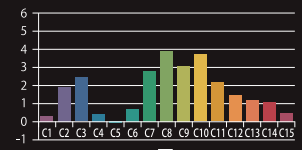


CLU028 CLU038 CLU048

Standard light

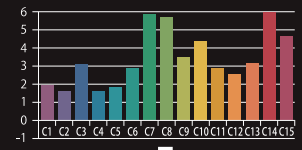
Brilliant Type

Conventional CITILED Vivid Series



ΔC*ab Ave (Ref.) 1.6

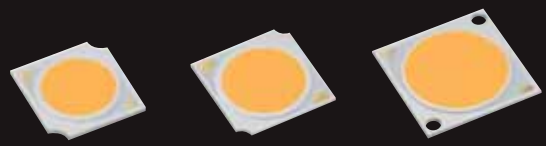
Brilliant Type



ΔC*ab Ave (Ref.) 3.2

Natural Type

Natural color and high chroma light.

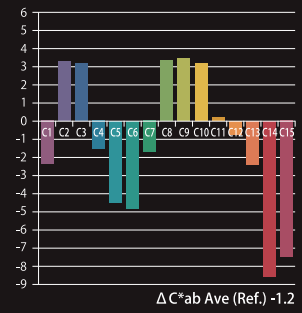


CLU028 CLU038 CLU048

Standard light

Natural Type

Standard light



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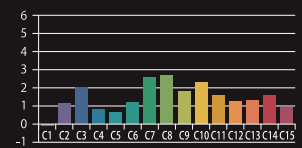
Natural Type



ΔC*ab Ave (Ref.) 1.6

Note ΔC*ab is an index that represents the chroma difference.

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Interview

– Sushant Surve
Principal Designer
Brainwave Designs

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"Lighting goes hand in hand with architecture..."

Relighting of the German Museum of Technology

Lighting up the Pavilion

department

HPL GLO LED Bulb

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LED Bulb

Downlighter

LED Panel

Highbay

Street Light

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EDITORIAL

The Expanding World Of Special Purpose Lighting

What is meant by special purpose lighting? How is its scope evolving? These are two very common questions to many lighting enthusiasts. Just to give an apparent answer, I may say that contrary to the very general types of lighting – such as ambient lighting or simple wash lighting, a special purpose lighting arrangement may be any lighting system that is specifically designed to serve a particular purpose. In the simplest form, it may be used for highlighting an object. A bit technically higher application of it may be seen in arrangements for looking objects through smoky or foggy atmosphere and so on. Sometimes, it is achieved through tactful application of very ordinary lamps, but in specific cases the lamps or their shades are also specially designed.

For example: purpose and construction wise, fog lights are specially designed to empower a cut-through vision through fog. In this case, flat and wide light beams are created. Again, in hazardous areas, enclosed and gasketed fixtures are used to prevent dust entry and keep temperatures low. All taxi lights used in aircrafts are designed for very low power consumption, long lifetime and high degree of reliability with special focus on their vibration resistance.

Product and application wise, we see: xenon lamps are used to light movie screens. Among Ultra Violet (UV) lights, mostly UV-C or germicidal UV lights are used for disinfecting or deactivating the DNA and RNA of bacteria, viruses and other pathogens in air, water and various other surfaces. Low pressure, cold cathode UV lamps are generally used for aquarium and pond sterilization. Yet in another application, presence of rodents and contaminations caused by them in warehouses is detected by using ultraviolet lamps. Interestingly, when UV rays fall on urine of a rodent, it glows yellowish white; and when the same rays fall on dry urine, it glows bluish white.

Thus, we find that with the scientific and technological developments, today the periphery of application of special purpose lighting is expanding in multiple directions, which obviously in the near future will call for much more sophisticated product technology and application skill.

Please e-mail me your views at pkchatterjee@charypublications.in

P. K. Chatterjee

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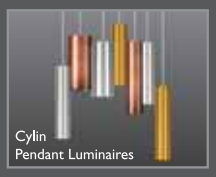
Editor: P K Chatterjee

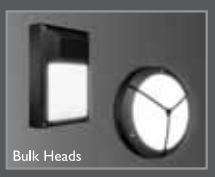
India's Lighting Company

Interior Luminaires

Landscape Luminaires

Environmental Luminaires





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UK LED Lighting partners with Glassiled AGC Europe

UK LED Lighting teams up with Glassiled AGC Glass Europe to offer groundbreaking LED Glass technology to UK Lighting Designers and Architects looking to advance the possibilities for Architectural lighting and Media Facade commercial promotions on office buildings, apartments, airports and shopping centres where there is a need for a functioning Glass panel and the desire to have a long lasting LED lighting solution to enhance and bring greater creativity and style whilst retaining the functionality of Glass Panels.

Light is not only a vital part of our everyday lives, but a major source of inspiration when planning workspaces, homes and commercial buildings.

It drives architects and designers to seek out innovative modes of expression.

Now you can harness the Light Emitting Diodes embedded inside Glassiled to open up whole new dimensions for your creativity.

The LEDs (Light-Emitting Diodes) – either monochrome or RGB (Red, Green, Blue) – are powered via a super-efficient, transparent conductive layer.

Vision is not obstructed and the glass retains its primary function: transparency.

And then, at the flick of a switch, you can illuminate your medium and transform it any way you wish. No longer a mere construction material, glass is now a vehicle for your unique creative powers. ■

LED bulbs procurement price falls to Rs 38 per unit

According to a recent statement by the Minister of State (IC) for Power, Coal, New & Renewable Energy and Mines, Piyush Goyal, the procurement price of LED Bulbs is reduced from Rs 310 per unit in February 2014 to Rs 38 per unit in August 2016 – due to the aggregation of demand and bulk procurement. This amounts to reduction of about 88% in procurement prices.

Highlighting the achievement of Energy Efficiency programme, he has informed that 17.89 crore bulbs have been distributed by Energy Efficiency Services Limited (EESL) under Domestic Efficient Lighting Programme (DELP) and 14.45 lakh street lights have been replaced by LED bulbs under Street Light National Programme (SLNP) as on 21st November 2016.

Progress of Implementation of National LED Programme as on 21.11.2016

Parameters	DELP	SLNP
Total number of bulbs/street lights replaced	17.89 crores	14.45 lakhs
Avoided capacity generation	4649 MW	47.69 MW
energy saved	23.2 billion kWh/year	512959 kWh/day
Reduction in carbon foot print	18.8 million tonnes CO_2 / year	435 tonnes CO_2 /day

Crompton Greaves Consumer Electricals teams up with Gooee

Crompton Greaves Consumer Electricals (CGCEL), India's well known supplier of Consumer Electrical Goods, Lighting and Lighting Automation Systems, has teamed up with Gooee.

Under the terms of the agreement, Crompton will become Gooee's launch partner in India, using Gooee's award-winning Internet of Things (IoT) lighting ecosystem to provide consumers with smart lighting solutions.

With this partnership, Crompton unleashes its plan to foray into the world of IoT and connected lighting in a big way. All the Gooee features and scalability combined with Crompton's design and execution capability will bring wonderful products and solutions to its customers with exciting features.

Jan Kemeling

Shantanu Khosla

The Gooee ecosystem provides sensing, control and communication components that integrate with an enterprise scale cloud platform. This offers a service-driven, scalable framework that can be integrated into LED lighting installations, significantly increasing control, monitoring and data analysis while driving performance and efficiency improvements.

Shantanu Khosla, Managing Director, Compton Greaves Consumer Electricals, said, "The Gooee system puts lighting at the heart of a building's IoT system, providing new opportunities to monitor LED performance, track footfall and communicate directly with occupants."

Jan Kemeling, Chief Commercial Officer of Gooee Limited, said, "We are very pleased having entered into this partnership agreement with Crompton. India is a very important, high-growth market and it is an honour for us to engage with such a forward thinking market leader, with such a clear focus on innovation." ■

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Halonix receives Certificate of BIS for LED Street Lights

Halonix Technologies, a well known Indian lighting company, has become the first lighting brand in the country to get Bureau of Indian Standards (BIS) certification for its spectacular range of LED Street Lights. The esteemed certification to Halonix was awarded by BIS after rigorous assessment of the performance, quality, safety and reliability of its superior LED Street Lights.


Rakesh Zutshi

By becoming the first Indian LED Street Lights manufacturing company to be certified by the BIS, Halonix has once again proven its commitment to produce superior quality product-line. The company's state-of-the-art LED streetlights with wattage ratings 25W, 45W, 60W, 72W, 90W and 120W have been awarded BIS certification and these will be bearing ISI marking henceforth.

The BIS Certification awarded to Halonix LED Street Light luminaries conforms to Indian Standard IS 10322(Part5/Sec3):2012, which means the functional performance, safety and photometry of the company's unique range of product-line in this segment meet the top standards set by the BIS. Notably, all the tests for this esteemed certification by BIS have been carried out and passed as per the requirements of Indian standard IS:10322(Pt.5/Sec.3)2012 at one of the world's best independent Labs. i.e., Underwriters Laboratories (UL).

Rakesh Zutshi, Managing Director, Halonix Technologies Limited, said, "Being the first again is a testament to our pioneering spirit, which further strengthens our commitment to deliver the highest quality products to our customers. BIS certification will be an added assurance to our customers towards quality consciousness and trustworthiness of brand Halonix." ■

Research report predicts growth of automotive lighting segment

A recent report from Intense Research states that the India automotive lighting market has witnessed significant growth in the recent past, owing to increased automotive sales and economic growth. In addition, the market is driven by increasing population and concerns about vehicle safety triggered by government regulations.

In the recent past, India has emerged as one of the fastest growing markets for passenger vehicles, and it is expected that this growth momentum would continue owing to the economy's growth prospects. Though the urban area dominated the sales of two wheelers, the rural area is expected to show increasing trend due to replacement demand – and the rising per capita income of the populace.

Among other vehicles, the sale of tractors is projected to rise owing to infrastructure development and increased mechanization of agricultural activities. This has boosted the demand for automotive lighting for both OEM and aftermarket products in India. ■

Cooledge Lighting finds place in Deloitte Technology's list

Cooledge Lighting, a provider of luminous surface products for architectural design, has won Deloitte Technology Fast 50 award, recognising the company as the second fastest growing technology organisation in Canada. The Deloitte Technology Fast 50 program is Canada's pre-eminent technology awards program. This award acknowledges entities that have demonstrated bold innovation, dedicated leadership and strong growth in their respective industries. Cooledge's 2nd place finish was achieved with revenue growth of 16.966% from 2012 to 2015.

COOLEDGE

50 Technology Fast 50 2016 CANADA Deloitte.

The award acknowledges entities that have demonstrated bold innovation...

The Deloitte Technology Fast 50 program celebrates leaders in the Canadian technology industry, and tracks the successful growth of Canadian-grown enterprises. The program augments the broader Deloitte North American Technology Fast 500 initiative with winners automatically eligible for this elite ranking.

To qualify for the Deloitte Technology Fast 50 ranking, companies must have been in business for at least four years, have revenues of at least 5 million, be headquartered in Canada, own proprietary technology, conduct research and development activities in Canada and invest a minimum of 5% of gross revenues in Research & Development. ■

CIBSE, SLL seek bids for their project to study effects of flicker

Organisations are being invited to pitch for a ground-breaking research project into the perception of flicker by humans and to ascertain if there are detrimental effects on performance.

The Knowledge Management Committee of the Chartered Institution of Building Services Engineers (CIBSE), and the Society of Light and Lighting (SLL), are inviting researchers to submit proposals for a project that will carry out a series of controlled experiments on men and women of a range of ages in order to investigate the impact of flicker on their health and comfort.

The work follows on from a report published last year by Public Health England, the SLL and CIBSE into the effects of artificial lighting on humans. This new project will aim to confirm whether people of a range of ages are affected adversely by flicker from modern LED lamps.

Dr Anastasia Mylona, Research Manager at CIBSE, said "There have been reports of the adverse effects of flickering LED lights in the media, so this is not a new phenomenon, but there has never been any peer-reviewed research carried out on the subject before. This research will back up the speculation and anecdotal evidence with solid data, which will inform how we use LED lights and design lighting systems for decades to come."

Further information in this regard can be collected from www.cibse.org. ■

MEGAMAN goes beyond Lighting

MEGAMAN continued its previous successes and staged as a major exhibitor at the Hong Kong International Lighting Fair 2016 (Autumn Edition) in October with an inspiring range of innovative LED lighting solutions. They were showcased in three themed zones under one roof - INGENIUM Smart Lighting, TECOH LED Components and Retail Lighting which gave clarity and focus to the Stand and catered for different industry needs. The stand attracted thousands of visitors to experience the advantages and features of MEGAMAN's innovative LEDs.

MEGAMAN showcased their products in three themed zones under one roof...

INGENIUM Smart Lighting where visitors experienced the wireless control of MEGAMAN's INGENIUM BLU and INGENIUM ZB Smart Lighting Solutions, which are perfect for home and commercial applications, new build or retrofit. Using a smart device or one of MEGAMAN's remote controls, visitors can control on/off, dimming and scene-setting of the environment to create the desired ambience with the touch of an app. allowing them to pre-set or create the perfect ambience for different occasions from anywhere. ■

SDMC to install over 50,000 LED lights in South Delhi

The South Delhi Municipal Corporation (SDMC) plans to cover over 50,000 park lights, high mast lights, semi high mast lights and street lights. To install these LED lights, SDMC and BSES have signed a Memorandum of Understanding (MoU) with Energy Efficiency Services Limited (EESL), a joint venture company under the Ministry of Power.

EESL has completed installation of close to 200,000 LED street lights in the South Delhi area within 10 months. If 50,000 park lights and mast lights are installed, SDMC will be completely lit with LED lights, the first of its kind in the country.

The 1.98 lakh LED street lights installed will reduce energy consumption by 53%, which is annual reduction of 26.2 million kWh of energy during peak hours. SDMC will benefit by Rs 41.47 crores over 7-year period without having to invest any capital upfront.

The LED lamps installed in the street lights and mast lights conform to BIS specification and carry a 7-year warranty against technical defects. EESL conducts appropriate quality checks right from the bidding stage to the field level. This has resulted in the LEDs' overall technical fault being less than 2% in the 13.19 lakh lights installed by EESL in the country. The replacement of the conventional street lights will lead to over 4 lakh kWh energy saved per day, and reduction of over 397 tonnes CO_2 emissions daily. ■

Luxury automaker makes bold IS sports sedan even more expressive

To highlight the impressive styling of the new 2017 IS, Lexus has unveiled a custom vehicle wrapped in 41,999 programmable LEDs that turn the car into a screen capable of broadcasting dynamic graphics and videos. The car, which is designed to send a bold signal, is featured in UK chart-topping artist Dua Lipa's new music video for her hit song "Be the One." The first-of-its-kind collaboration pairs Dua Lipa's powerful vocals with an ethereal storyline, featuring the vehicle as a character and visual anchor in a story that also casts actor Ansel Elgort ('Divergent'; 'The Fault in Our Stars') as Dua's former love.

This unique collaboration between Lexus and Vevo showcases the Lexus IS as an incredible work of art, technology and design through the lens of a music video. The 2017 IS has a commanding design and Lexus wanted to amplify those styling cues like never before.

To create the LIT IS, Lexus used hand-applied LEDs to turn the vehicle into an eye-catching screen. In addition to broadcasting graphics, the LIT IS can also generate colourful, mesmerizing animations in response to gestures and music. Through this responsive technology and the animations, an expressive car was turned into an actual vehicle for expression, and the concept for a new Dua Lipa music video was born.

"A car as visually striking as the LIT IS required an equally dramatic debut. A music video was a perfect place to launch the LIT IS and working with Dua Lipa allowed the concept to come to life, putting a spotlight on the Lexus IS in an entirely new way," said Brian Bolain, Lexus General Manager of Product and Consumer Marketing. ■

Yield, Morphology are controllable by light: LumiGrow

LumiGrow Research, the research division of horticultural LED lighting manufacturer LumiGrow, Inc., has released seven scientific posters that reveal how crop morphology and productivity can be affected through the application of varied light spectra. LumiGrow research, conducted in partnership with commercial growers and universities, demonstrates breakthrough capabilities that adjustable-spectrum LED lighting now provides growers. Three key findings from the research are as given next.

"LumiGrow is taking LED research from theoretical to practical use, as demonstrated by the success of our growers," said Melanie Yelton, Director of Research at LumiGrow...

Crop height, flowering and bushiness can be controlled through the application of varied spectra. This capability is particularly important in the flower industry, where these phenotypes are currently controlled by Plant Growth Regulators (PGRs). A reduction in the use of PGR chemicals may be an unexpected benefit of spectrum control.

Light can be used to produce higher value food. Spectra have been shown to control flavour and nutritional value in every food tested including broccoli, lettuce, tomatoes and basil. Adjustable-spectrum lighting has been shown to be superior to traditional, fixed-spectrum lighting in the production and longevity of flowers suitable for market.

"LumiGrow is taking LED research from theoretical to practical use, as demonstrated by the success of our growers," said Melanie Yelton, Director of Research at LumiGrow. ■

Osram's DL 30 LED faultlessly illuminates towns, cities

The new, decorative DL 30 LED town and park luminaire from Osram radiantly illuminates towns and cities. Whether for squares, crossings, parks or residential areas, the new LED generation for illuminating urban areas meets the essential requirements of municipal authorities and architects: innovative functions in combination with a high quality design, providing modern, inspiring options for designing urban environments.

With diverse light distribution variants the new DL 30 LED is precisely the right solution for many different inner-city applications. A special feature is the new, asymmetric wide light distribution specifically for crossing zones. If the luminaire is mounted directly in the apex of the crossing, it emits light literally 'around the corner' onto both streets – thanks to its innovative light distribution.

The design of the DL 30 LED has modern, purist lines, enabling it to blend discreetly into its architectural context. In darkness the integrative luminaire functions as an unobtrusive visual guiding element. The luminaire head and therefore the light emission surface is slightly illuminated, meaning that the DL 30 LED as optical guidance is clearly seen along the street, contributing essentially to greater orientation and safety in urban contexts.

The intelligent control electronics of the DL 30 LED ensure that lighting intensity adapts to external conditions to enable especially efficient illumination. Osram has enhanced the previous luminous flux tracking function now to offer a new generation of constant luminous flux in the form of the patented CLO 2.0 version. This features new calculation parameters to contribute directly to the reliability and lifespan of the urban lighting. ■

Gareth John joins the Lighting Industry Association (LIA)

Gareth John

He is experienced in establishing and managing various laboratories...

Gareth John has recently joined the Lighting Industry Association (LIA) as Technical Lead - Photometry, this new position has been established to meet the lighting industry's expectations and future needs. The LIA is the largest trade association in Europe dedicated to serving the UK Lighting Industry and its supply chain. Located at the forefront of the industry and dedicated to promoting best practice throughout the sector, it shares knowledge and provide a wide range of services for its members and the wider lighting industry.

After graduating from Southampton University with a PHD in Quantum and Functional Matter Physics. Gareth has spent the past 10 years specialising in photometric/optical testing services for a variety of industries, with lighting becoming his forte. Already highly respected within the realms of academia, photometry and lighting, he is also experienced in establishing and managing various laboratories and centres of excellence, including Photometric and Optical Testing Services LLP and Birmingham Science Park Aston.

With an encyclopaedic knowledge and varied experiences, he brings a unique perspective to the Association and industry – and is looking forward to developing the LIA Laboratory photometric services and assisting with future Lighting Industry Academy courses and materials to ensure the industry's needs are met as the industry develops. ■

Unilux adds Rod Ambrose to their worldwide sales network

Rod Ambrose

He is known for his hands-on experience and good working relationships...

Unilux, a well known designer and manufacturer of strobe lights for inspection, has revealed the addition of Rod Ambrose to their Industrial Sales (worldwide) network. Ambrose will be the exclusive Unilux representative in Arizona, California and Nevada.

He brings many years of experience in the printing, coating and converting industries, aligning with Unilux manufacturing markets. He is known for his hands-on experience and good working relationships with his customers. Ambrose represents several manufacturers with complementary products. He said, "As a manufacturer's representative specialising in engineering systems, my focus is to deliver efficient, reliable and cost-saving solutions to my customers."

"The addition of Unilux inspection to my product offering enables me to complete the package by adding a crucial integrated quality control element," he further added.

Unilux inspection lights use the stroboscopic effect to freeze images of sections of webs moving at full production speed, making the smallest of defects clearly visible. This enables operators to use their knowledge of the product and printing process to determine the cause of the defect and take action to fix the problem or stop expensive, value-added processes to reduce waste. ■

Telensa appoints Will Franks as Chief Executive Officer (CEO)

Will Franks

He will lead the company's continued transformation – as it embarks upon the next phase...

Telensa, a key player in connected street lighting and Smart City applications, has appointed Will Franks as Chief Executive Officer (CEO). Franks will lead the company's continued transformation – as it embarks upon the next phase of its global growth strategy, building on profitable revenue growth of over 50% in each of the past two years.

The appointment comes at a time when Telensa is being recognised for its growing commercial momentum in the Internet of Things (IoT). The company currently provides connectivity, control and automation for over a million streetlights across the world, and has extended its reach to cover smart parking and multiple sensor applications.

Franks said, "Telensa is defined by technology innovation, commitment to customers and commercial acumen, and that is reflected in our strong record of profitable growth. I'm delighted to be joining Telensa to build on this success and drive the next phase of our IoT growth strategy."

W Gibson, who co-founded Telensa with CTO T Jackson in 2005, has unparalleled global experience as a pioneer of wireless smart streetlighting, and in particular how its economic model underpins new smart city applications. He leads all customer, partner, sales and marketing activity in new role of CCO. ■

Lighting Science inducts Jonathan Palé

Image courtesy: Business Wire

Jonathan Palé

At Hasbro, Palé led the development of several hundred unique product initiatives...

Lighting Science has appointed veteran product designer and inventor Jonathan Palé as Vice President of Engineering. Palé comes to Lighting Science from Hasbro, Inc., where he oversaw the development of the company's most technically-advanced consumer products, including Furby. He is the latest in a series of strategic new hires at Lighting Science as the company re-emerges as a truly innovative leader in the LED marketplace.

"Jon's extensive experience in high-volume product engineering, contract manufacturing and offshore product sourcing will greatly accelerate our ability to bring life-changing LED products to market. The right light at the right time has been scientifically-proven to provide benefits ranging from more restorative sleep to increased focus and productivity. Light's dramatic effect on human health and well-being makes it a critical component of both healthier homes and workplace wellness initiatives," said Lighting Science Chief Executive Officer Ed Bednarcik.

At Hasbro, Palé led the development of several hundred unique product initiatives, contributing over $1.3 billion to Hasbro's top-line revenue year-over-year.

His experience in state-of-the-art user experience technology – from virtual reality to wearable computing and embedded systems design – is expected to become a powerful asset to Lighting Science as the company continues to refine ground-breaking products, such as its award-winning circadian lamp, the Genesis DynaSpectrum, for broader application. ■

Elliet Jones takes over as UK Sales Director, Helvar

Elliet Jones

He has developed a vast amount of lighting controls knowledge...

Helvar has promoted Elliet Jones from UK OEM Sales Manager to UK Sales Director. He has developed a vast amount of lighting controls knowledge in his two and a half years at Helvar, and over 11 years within the lighting industry: "Building on my experience from the OEM sales channel, my new role as UK Sales Director puts me in a great position to promote the full range of Helvar products, which allow us to meet the customers' requirements," explains Elliet.

"Working with both the specification channel and the luminaire manufacturers allows us the ability to offer tailor made solutions, from simple magnetic and electronic ballasts and LED drivers, to developing unique self-learning standalone solutions and fully DALI addressable router platform based solutions," he adds.

Paul Wilmshurst, Managing Director of Helvar comments, "Elliet is a great asset to Helvar, he will continue to develop and grow the business across our range of lighting solutions. Elliet has a strong sales and marketing background, I'm sure he will carry on the great work he has been doing."

Helvar is a specialist in energy efficient lighting solutions. Its extensive range of products, including intelligent lighting controls, LED drivers, modules and ballasts, can be used as single components or combined into lighting systems to achieve smart solutions. ■

S Vedie becomes President & CEO of Varroc Lighting Systems

Stephane Vedie

He holds a strong understanding of automotive lighting innovation...

The Board of Directors of Varroc Lighting Systems has appointed Stephane Vedie as President and CEO. Vedie succeeds Jeff Stevenson, currently President, and will assume this position with immediate effect.

"Varroc Lighting Systems thanks Jeff Stevenson for his substantial contributions to our company, its employees and the local community. Under Jeff's leadership, Varroc Lighting Systems increased revenue, broadened its product line, and expanded innovation centers in the Czech Republic, India and Mexico. We wish Jeff success in his future endeavours," said Board Chairman, Tarang Jain.

"We are pleased to appoint Stephane Vedie as our new President and Chief Executive Officer. Stephane is a proven leader with a strong understanding of automotive lighting innovation and what our customers want and need. Our industry is rapidly changing and we see significant growth opportunities to help customers around the world meet the challenges of complexity. Stephane Vedie has the right skillset to lead the company into the future," continued Jain.

Vedie has extensive experience and a proven track record of growth with automotive lighting companies around the world. Most recently, he served as North America CEO of Magneti Marelli. Previously he served as President and CEO of Magneti Marelli's Automotive Lighting division in North America and France. ■

Osram Wins Global SSL Showcase Top 100 Award

Osram Lighting Solutions was distinguished with the Global SSL Showcase Top 100 Award by the International Solid State Lighting Alliance (ISA) for its spectacular LED solution in the "Wuhan – Two Rivers and Four Banks" project. The world's largest synchronised LED light show extends across 320 buildings, has a length of 20 km, and covers the banks of the two rivers Jangtse and Han that flow through the city.

Osram supplied everything from a single source for this unique project: all control systems, most of the luminaires and the requisite services for installation and programming. In total more than 6,700 components are used to regulate the LED screens on the buildings, including the e:cue Butler Pro, and over 2,800 architectural LED luminaires emit spectacular light onto selected buildings.

The ISA has been awarding the Global SSL Showcase Top 100 award since 2012 for innovative project solutions with SSL technology. The association is an international alliance of well known institutions, universities and leading companies in the SSL sector who share the aim of improving global cooperation and driving forward the long-term development of SSL.

Universal Lighting Technologies Bags Prestigious Awards

Universal Lighting Technologies, well known for its lighting and member of the Panasonic Group, has received two awards for marketing efforts in Canada from a major industry association.

Electro-Federation Canada (EFC), a national non-profit association representing more than 250 member companies that manufacture, distribute, market and sell a wide range of electrical products, has recognised Universal Lighting Technologies in its annual EFC Marketing Awards for two categories:

- For Merchandising and Display: Universal's "Driver On" initiative to educate installers and distributors about easy-to-use LED Driver replacement tools; and
- For Click and Order e-commerce: Universal's QuikCross mobile web app for technicians looking for LED driver replacement.

Susan Phillips

Susan Phillips, Universal's Director of Marketing, said, "As Universal continues to expand our EVERLINE LED offerings, we've committed our team to developing top-flight initiatives to support these products in the field and we could not be more proud to be recognised by a great industry partner like Electro-Federation Canada for this effort." ■

Vernon J Nagel Named Ey Entrepreneur Of The Year 2016

EY has recently revealed that CEO Vernon J Nagel of Acuity Brands; a well known provider of indoor and outdoor lighting and building management solutions; has received the EY Entrepreneur of the Year 2016 National Award in the distribution and manufacturing category.

Now in its 30th year, the award recognises outstanding entrepreneurs who demonstrate excellence and extraordinary success in such areas as innovation, financial performance, and personal commitment to their businesses and communities. Nagel was selected by an independent panel of judges, and the award was presented at EY's Strategic Growth Forum in Palm Springs, CA.

Vernon J Nagel

Nagel said, "I am honoured to receive this award on behalf of the 12,000 associates at Acuity Brands who demonstrate that the entrepreneurial spirit is alive well and continues to thrive at our company. We continue to build on our rich legacy of excellence, growth, and innovation to provide great returns for our shareholders, superior value for our customers, and growth opportunities for our associates. Our passion and intense focus continue to be centred on creating lighting and building management solutions that deliver superior quality, energy efficiency and performance. This award is a tremendous recognition of the success of our associates whose superior teamwork has generated industry-leading performance." ■

Varroc Receives F&S Automotive Lighting Technology Innovation Award

Varroc Lighting Systems India has been named the recipient of the 'India Automotive Lighting Technology Innovation Leadership Award' at the Frost & Sullivan's GIL 2016, India Awards banquet held in Mumbai on October 5, 2016. Award recipients were judged based on a variety of parameters that included revenue growth, market share growth, application diversity and impact of technology.

Representatives of Varroc Lighting Systems India are receiving the award...

Kaushik Madhavan, Director, Mobility Practice, Frost & Sullivan said, "Varroc Lighting Systems has shown remarkable performance in 2015, demonstrating excellence in implementing a proactive commitment to technological innovation, addressing the needs of its customers and leading the industry in breakthrough applications and products. Varroc has expanded its business with a perspective that has helped it retain its Indian customers while gaining several international customers through the expansion of its business globally."

Madhavan further added, "The company's emphasis on technological innovation looks set to continue. The company's acquisitions of recent years, and subsequent implementation of growth-oriented strategies, have enabled it to unleash its creative synergies and have resulted in the company becoming one of the top automotive component suppliers in India."

Todd Morgan, Senior Vice President – Global Product Development, Varroc Lighting Systems said, "We are delighted to accept this prestigious award for our efforts towards innovation in automotive lighting technology. This is a testimony of our sustained focus in offering innovative technology to our customers. Such awards and recognition motivate us further to keep doing our best." ■

In the last decade, Eaton has had 78 products and applications accepted in the Illuminating Engineering Society (IES) Progress Report...

IES Honours Eaton's Products

The Illuminating Engineering Society (IES) Progress Committee has recognized seven Light-Emitting Diode (LED) luminaires, controls and connected lighting systems of the power management company Eaton, which is also a 2016 ENERGY STAR Partner of the Year, for inclusion in the 2016 IES Progress Report.

The report showcases products that provide significant technical advancement in the art and science of lighting over the last year. In the last decade, Eaton has had 78 products and applications accepted in the report.

"The prestigious Progress Report provides customers with the industry's most innovative and technically advanced solutions for a broad range of markets and applications. It represents both the trajectory and the velocity of change that continue to advance the lighting industry. Eaton is proud that our products are being recognized for uniqueness, innovation and significance to the lighting industry," said Kraig Kasler, President, Eaton's Lighting Division.

The products submitted for evaluation in the Progress Report undergo a critical assessment process and are judged based on their unique qualities, visual and optical performance, efficiency, innovative features and overall significance to the lighting industry. Eaton's seven recognized products include lighting solutions designed for commercial, industrial, institutional, sports and outdoor environments. ■

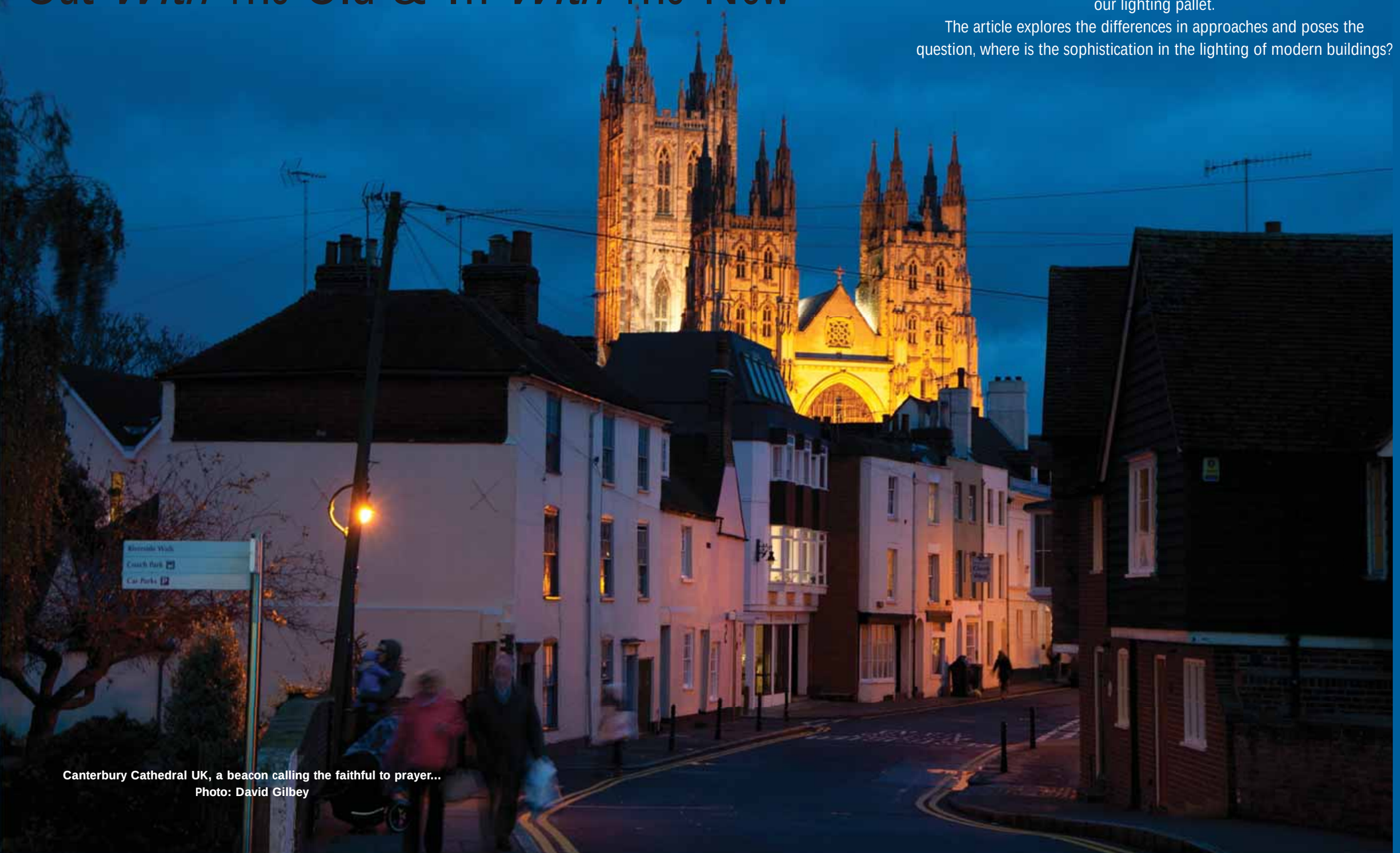
Exterior Lighting

Out *With* The Old & In *With* The New

Historical buildings lend themselves to light by the very nature of the architecture, buildings made of stone and brick with circular turrets, columns and buttresses and much exposed surface to illuminate allow for elegant beauty when lit at night.

Modern buildings made of concrete, steel and glass are more of a challenge, although technology has moved on considerably to increase our lighting pallet.

The article explores the differences in approaches and poses the question, where is the sophistication in the lighting of modern buildings?



Canterbury Cathedral UK, a beacon calling the faithful to prayer...
Photo: David Gilbey

It has always interested me as a lighting designer the sheer contrast between lighting historical buildings and monuments and lighting new modern structures of concrete, steel and glass. It seems at times that the difference in approach to the lighting task could not be more poles apart. It is an enlightening debate, as old heritage buildings lend themselves to light and the interest is more often than not the shadow as over lighting the structures tends to take away the shape and flatten the surfaces.

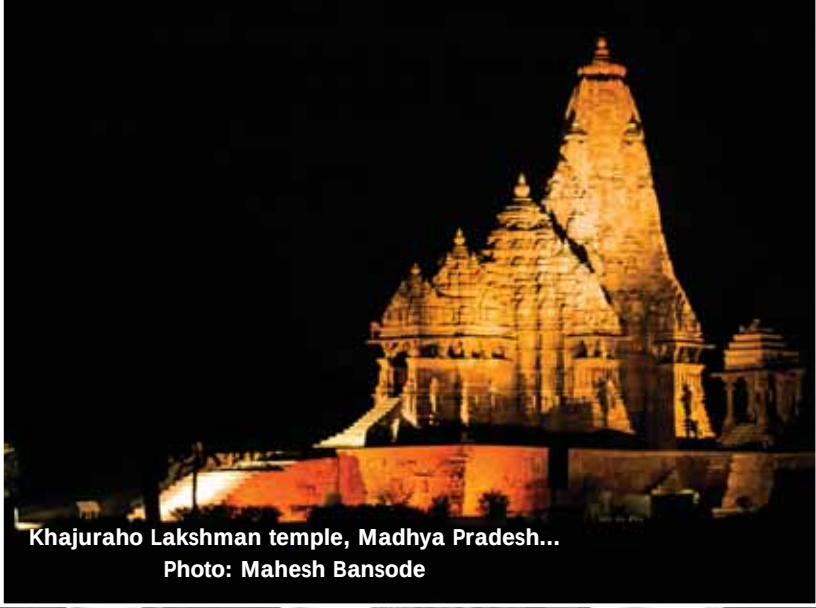
Being from the UK with its rich heritage, I have been lucky enough to work on many projects of local and historical importance and have been able to treat these buildings with subtlety and care and light them with an elegance and sophistication befitting their stature as local landmarks.

In the UK, we have The Heritage Society and listed protection of buildings backed up by strong local authority regulations with regards to lighting of old and important buildings, I do not see the same standard of care in all countries towards such buildings, although I see a growing trend globally to treat historical properties with respect.

India too has a rich heritage with temples and monuments that are jaw-droppingly beautiful, visiting India frequently I am lucky to be able to witness and admire this culture up close and see the respect and reverence for these shrines, though I also see small temples throughout India that are draped in cheap multicolour LED rope lights that do little to dignify the space within, though this is likely through local enthusiasm and lack of technical knowledge than any intended disrespect.

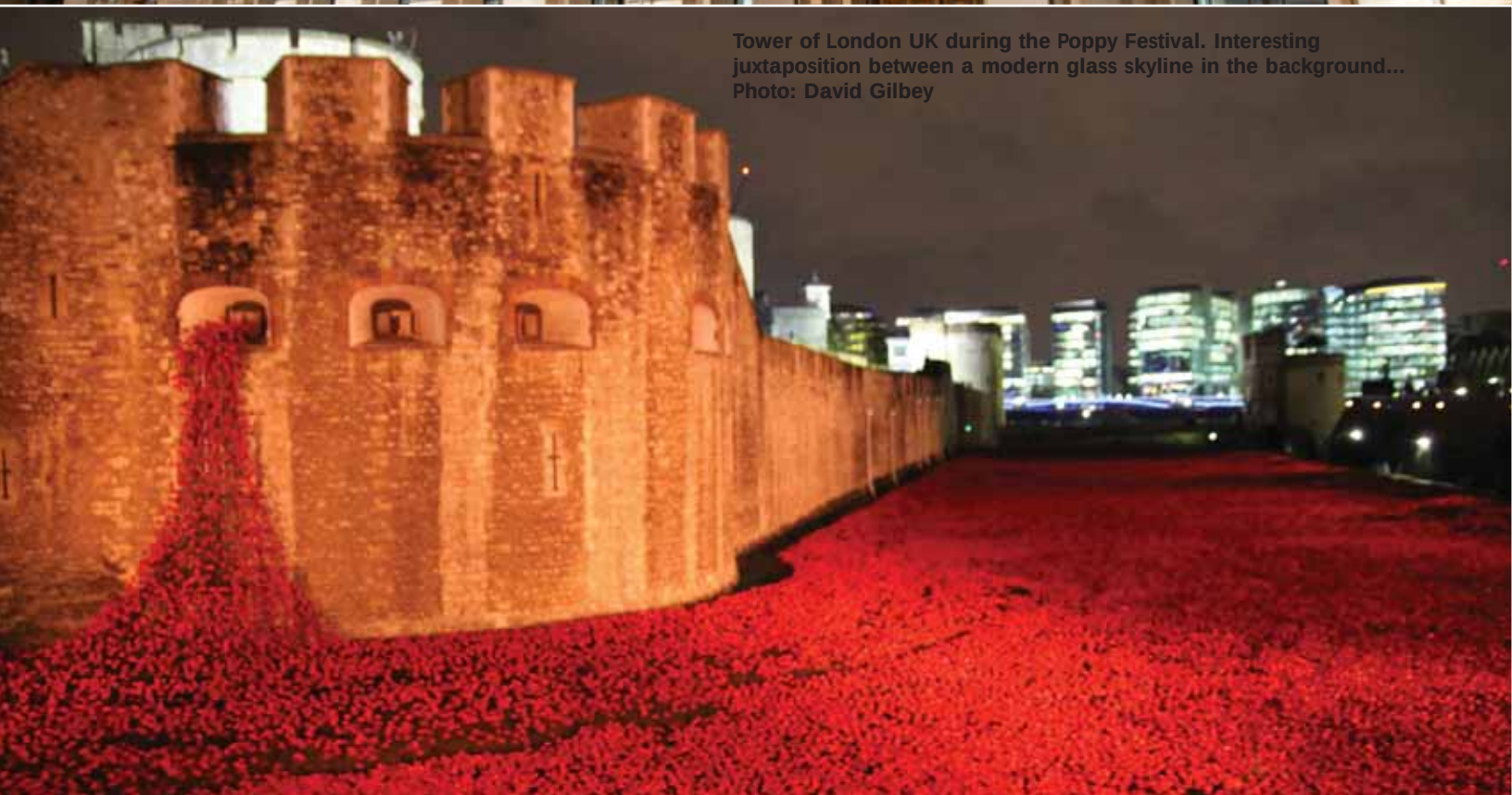
Technology has marched on both in terms of our construction expertise and our ability to build ever taller buildings and also in terms of the lighting technology we have at our disposal: where is the sophistication in modern

Golconda Fort, Hyderabad...
Photo: Aakash Shah



Khajuraho Lakshman temple, Madhya Pradesh...
Photo: Mahesh Bansode

The Science Museum London. Where modern LED luminaires were bonded to the exterior surface to protect the stone work...
Photo: Frank Simpson



Tower of London UK during the Poppy Festival. Interesting juxtaposition between a modern glass skyline in the background...
Photo: David Gilbey

Dubai. Another challenge to Lighting Designers, having no control on the patterns of internal lighting. Notice also failed lighting on the right hand tower... Photo: Benoit Canty

Sofitel Hotel, Riyadh KSA...
Photo: UMAYA Lighting

lighting schemes of these new mega structures and how do we use this contemporary equipment appropriately on older buildings?

Do we not as designers in the modern world have a responsibility to create buildings that people can become proud of, buildings that make the public go WOW as opposed to why did they bother, can we not achieve similar levels of refinement and simple beauty in new structures as we can in ancient monuments?

I am an interested observer as I travel the world looking at illuminated exteriors seeing both good and bad, but more often than not bad, especially on newer constructions. I see structures that have not been designed contextually and that do not sit well with neighbouring buildings. When you witness a well thought out external lighting strategy, it is a thing of beauty to be admired from both near and far, such places create local landmarks in a positive respect; though I have also witnessed landmarks that stand out through their awfulness.

Dubai is a modern city that I visit very often, as a lighting designer, I am so fed up with lines and dots that I see on the outside of buildings without any context or design narrative. It seems that these same poorly designed structures suffer from the same attention to detail in the procurement of the lighting fixtures as they often have failing luminaires all over their facades.

Buckingham Palace London used as a projection backdrop during National celebrations...
Photo: Jonathon Clarke

An example of using the same technology in context is the Middle East Light Award winning Prime Tower which uses white, turquoise and dark blue LED nodes in constellations to create a twinkly star effect, the building is a delight from both up close and far and sits well contextually with its neighbours.

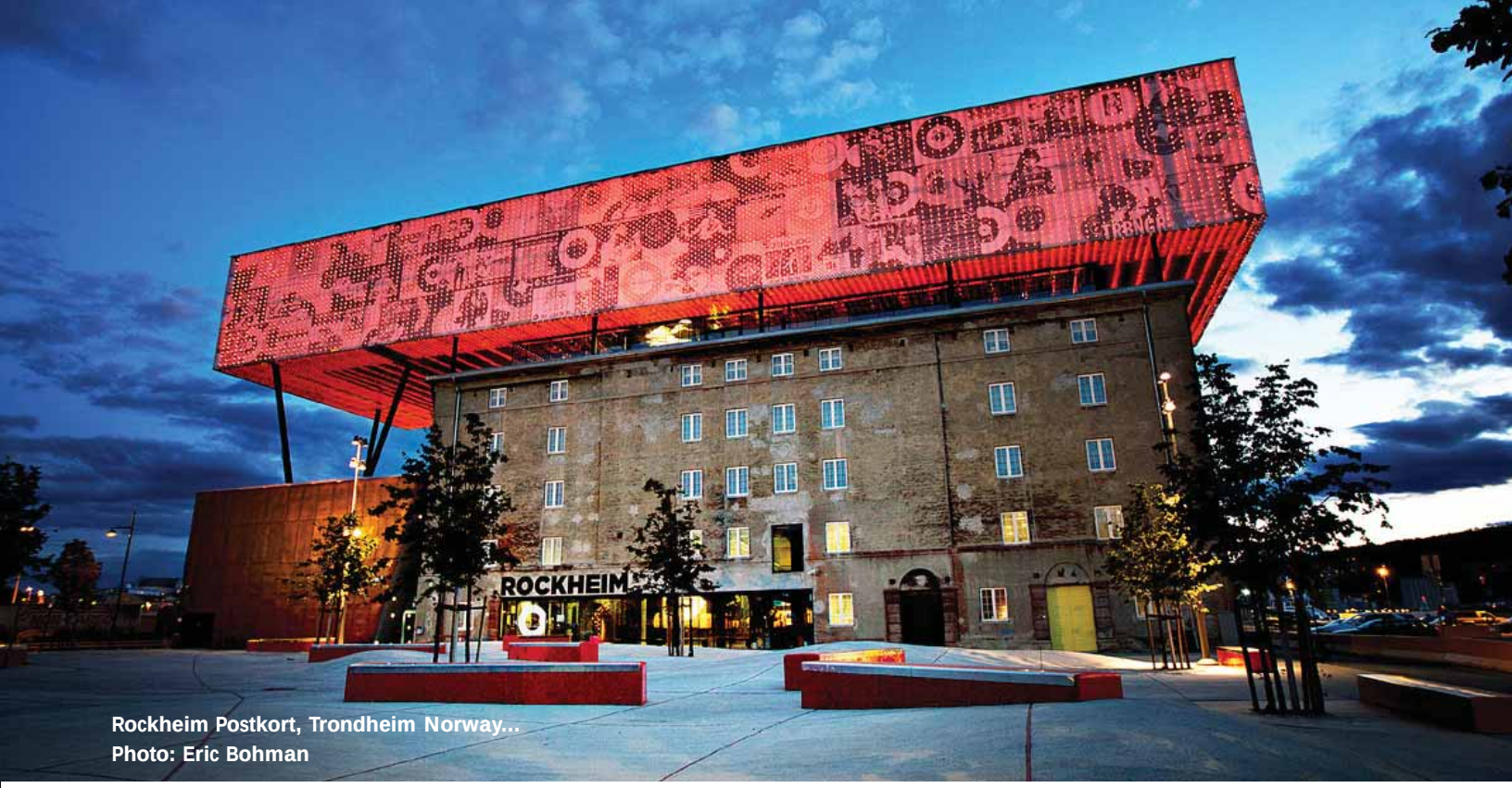
Other than a few energy directives towards lighting the exterior of modern buildings around the world, including The UK, designers seem to have free reign from a lighting perspective, a license for creativity maybe, but where are the checks and balances?

I feel that some of the answers lie in the power of ideas. As previously stated, old buildings lend themselves to light as there is generally more exposed surface area and structure to illuminate, the designs of modern buildings are usually much more unprotected glass – and we have to balance the needs of the consumers within the building with the desire to illuminate.

At the same time, we have the technology available to us to balance this dichotomy of interest between the comfort of the user inside and our desire to showcase our creativity, this level of equipment allows us to harness our ideas and create elegant and sophisticated towers and buildings that can still excite at times of festivals or celebrations, that can sit comfortably in the neighborhood but equally as comfortable in a Hong Kong style lightshow.

So, we have a duty as lighting designers to strive for greatness, to create the monuments of the future, illuminated structures that will stand the test of time and become both way points, visual milestones and add value and a feel good factor to communities.

Electrabel Tower, Brussels Belgium...
Photo: Nicolas Gurnay



Rockheim Postkort, Trondheim Norway...
Photo: Eric Bohman

The striking crisscross steel cladding of the façade at The Sofitel Hotel in Riyadh allows inspiration to be taken from birds in flight. The idea to illuminate only one part of this detail, a collaboration between façade manufacturer, lighting manufacturer and lighting designer creates this highly visual and inspiring vertical exterior, a new landmark in the Riyadh skyline.

But we also face challenges as lighting designers as we have to work as comfortably as media designers and 3D projection mappers as we do architectural lighting designers and I see work of merit in this regard in exterior architecture the world over, whether as temporary event or permanent installations. But are we to turn our architecture into a billboard for the commercial world we live in today or can we use the content such installations for art, culture or the community in general?

Again we are back to context especially when using Media screens as there can often be fully justifiable reasons for commercial usage in the likes of shopping malls, convention centers and sports stadia.

So it is again in our hands to strive to manage creative content by having the ideas that inspire our clients to the greater good of the community. Moreover, whether the lighting designer is creating the media content or not, I feel we have to be the driver of the creative discussion.

We have to educate our clients as great technology by its very nature is more expensive than standard or inferior technology – and there is a temptation by the client in many areas of the world, including India, to value engineer these expensive items. It is my contention in such circumstance that we should communicate well with our clients, as by not using high quality products in areas of humidity or high or low temperatures we fail them and there is a good chance their building will shortly be wearing its façade like gapped teeth from the failing luminaires.

So it is essential as lighting designers to choose your battles, some specifications or lighting decisions will be to the detriment of the project – if not carried through, but usually on a project as a whole there are less critical decisions where sacrifices can be made – and it is essential to have the strength of character to both understand and communicate these decisions. These design decisions are usually of a more critical nature outdoors than on interiors.

I personally feel that the budget should not be the limiter to creativity, if we have tighter budgets then we need better ideas, more creative use of less lighting, and used appropriately less can certainly be more.

As an example of this, by today's standards the Highcross Shopping Centre in the UK's Midlands is very inexpensive – and proves the case in point regarding budgets and creativity: it celebrates the region's textile industries by representing fabric, but is simply a mesh with some laser cut shapes and RGB colour changing luminaires.

I hope that this article is thought provoking and encourages more responsibility and debate within both the lighting and architectural design communities – as I would love to see more sophistication in the lighting of modern buildings, more great buildings, more modern classics, more designing in context and less like buildings are Lego bricks and more WOW from the lighting industry on new structures. ■

David Gilbey
Associate Lighting Designer
UMAYA Lighting Design

Smart Lighting

Future lighting solutions are looking towards solid-state lighting technologies, engineering expertise and online simulation and design tools to meet the growing needs of society not only in terms of lighting but also lighting for comfort, pleasure, peace, safety and control etc...

In a 24x7 light controlled living, working and business activities, lighting devices and lighting systems with qualities like cost effective, efficient (less energy consuming), long lasting/durable, robust are always desired by the users. Even as the popularity of Light-Emitting Diode (LED) lighting grows, the vast majority of end users still have simple needs towards lighting systems like turn it on, turn it off; light and dark. But that's changing, and the change is coming fast and lighting systems need to be intelligent and efficient. Therefore, with these pre-requisite qualities of a lighting system, users are further looking towards more intelligent lighting systems, which can work as having their own minds for the benefits of the users. Future lighting solutions are looking towards solid-state lighting technologies, engineering expertise and online simulation and design tools to meet the growing needs of society not only in terms of lighting but also lighting for comfort, pleasure, peace, safety and control etc.

Being able to adjust the light – not only the brightness but also the colour – is very important. Customers also want networking, so the lights can talk to each other. This is happening everywhere, in cameras, refrigerators, streetlights, and machine vision systems. In medical, physicians, for example, want to raise and lower the illumination or even change colours in examination rooms and operating rooms. Automakers want to be able to tweak the colours of their vehicles' interior lighting. And they want smart headlights. Only electronic lighting can make satisfy these needs, and we need intelligent control. Suppliers say they can provide smart electronic lighting capabilities with analog circuitry or with a combination of analog and digital.

Growing lighting desires

The customers want good current regulation, so that once they calibrate the light source; it stays the same over a long time.

For many LED users, the main goal is to have good current regulation over time. In automated factories, for example, LEDs are being applied in conjunction with machine vision systems. To make sure these systems can always read the markings on parts, users employ drivers that can precisely control the current of the nearby light sources. In some cases, however, the new breed of drivers is enabling LEDs to do things that couldn't have been done previously. A case in point is the 'matrix headlight,' which enables the vehicle to work with sensors to 'see' oncoming traffic and then dim the brights so as not to blind drivers. The key is that it does so selectively, dimming specific blinding LEDs while maintaining the light on the roadway. Many of the newer vehicles already have the sensors and the information needed to make that happen. Now they're just feeding it to the headlamps. The list of automakers now employing such capabilities is long. In fact, Ford Motor Co. had an LED-based feature called MyColor back in 2006, which allowed customers to choose between 125 interior colours.

LED-based car interior lighting has appeared in the Ford Mustang, Focus, Fiesta, Fusion, and F-150, as well as in assorted BMW, Audi, Cadillac, Lexus, and Mercedes-Benz models. In such applications, there's usually a mixture of digital and analog technology involved.

Lighting the buildings

The problem is that nearly all buildings on earth that have electricity also have conventional light bulb sockets. That's why, the first LED light that most people will own, will be shaped like a bulb, even though squeezing essentially flat LED lights into a round shape is absurd and leads to problems like overheating.

But laser lights could solve the problem of how to bridge the gap between traditional light sockets and

more radical configurations of new lighting technologies. That's because with just a few point sources of laser light installed in a building, their illumination can be redirected throughout a structure via plastic fiber optic cables that could be run along ceilings and around corners, just as the cable company runs its wires into buildings and through rooms without having to tear holes in walls or interface with the electrical system of a building.

It's potentially easier, in other words, to pipe light from one place to another in a building than to re-configure its electrical wiring.

Researchers point out that it would even be possible to channel light through 'free space,' without any fiber optic cables at all. That is, a central laser light source could shoot across the ceiling or down a hallway, into some kind of glass or plastic waveguide, and from there it would illuminate an entire room.

Lighting for a party

Lighting can be extremely important for any event. Depending on our affair, lighting can set the mood of our theme and motivate guests to dance.

There are different types of lighting that can make this magical colour spectacle happen. Intelligent lighting is a term used for an innovative type of party or stage light. Their automated mechanism allows the lights to move and create complicated and colourful effects. For celebrations, intelligent lighting can create lighting arrangements of desired colour to match the theme. For theatricals, they can change the stage from daylight to dusk. Moving heads and scanners are the most up to date technology in the intelligent lighting spectrum.

Business with smart lighting

Maturing technology and growing demand are revolutionizing the lighting industry. In addition to lighting, businesses could soon begin to offer their customers smart applications and comprehensive service concepts.

Integrated information technology and electronics are becoming more and more common in products, which can now 'talk' to each other and share info. The Internet of Things (IoT) is changing not only the daily lives of consumers but also many business sectors.

Forecasts suggest that smart lighting will become one of the key trends in the context of the Internet of Things. It is important that we identify new applications for this technology now and begin to build new business around them. Demand for smart lighting is expected to boom over the next ten years. Lighting currently accounts for approximately one fifth of the world's electricity consumption.

Smart lighting is a lighting technology designed for energy efficiency. This may include high efficiency fixtures and automated controls that make adjustments based on conditions such as occupancy or daylight availability. Lighting is the deliberate application of light to achieve some aesthetic or practical effect. It includes task lighting, accent lighting, and general lighting.

Laser lighting

Steven DenBaars, a research scientist at UC Santa Barbara, has been

working on LED lights for 20 years. He has been instrumental in pushing them to the point that they are the true heir to Edison's electric bulb. But, DenBaars is already onto the next big thing: replacing a substantial portion of indoor lights and the archaic bulb and socket infrastructure on which they depend, with lasers.

If the thought of illuminating an office, airport or even home with lasers conjures up images of rock concerts, dance clubs etc. the results with the use of lasers could be much more accessible, even naturalistic and experts say we could get there within 10 years.

At first blush it seems like there's nothing in common between the warm glow of an incandescent light bulb, which creates light by heating a filament until it's white-hot, and a laser, which generates light in a single wavelength and shoots a focused beam at a minuscule target. The common ground is LED technology – it turns out that the kind of lasers DenBaars is working on are based on existing light emitting diodes, and are called 'laser diodes.' It's very similar to an LED lightbulb. It's the same materials, but we put two mirrors on either side of the LED and it breaks into a laser. Once we get reflection back and forth, we get an amplification effect, and it goes from regular emission to stimulated emission – it's like an avalanche.

The best laser diodes are about as effective at turning electricity into light as a store-bought LED, but with one major difference: We can pump more than 2,000 times as much electricity into a laser diode. In theory, that means per square centimetre, a laser diode can produce 2,000 times as much light. Simply replacing the light emitting diodes in a typical LED bulb with a laser diode wouldn't work. For one, this hypothetical laser lightbulb would catch on fire from all the waste heat it would generate. Also, it would produce an ungodly amount of light, more than enough to blind anyone who looked at it.

DenBaars imagines using just a handful of tiny but powerful lasers, and then redirecting their light into fiber optic cables and other types of light-transmitting plastic that could take that light and evenly distribute it into a warm, diffuse glow. One way to evenly distribute laser light would be through what's known as a waveguide.

Waveguides are what allow the even illumination of the entire surface. In this way, it would be possible to take a single point source of light and use it to create a diffuse glow that seems to be emanating directly from the materials of a ceiling or wall, or floor, or light fixture of any conceivable shape.

DenBaars points to at least one real-world example of laser-based lighting technology that's about to be available to the general public: the headlights of BMW's 'hybrid supercar,' the i8. Using blue laser diodes, BMW's engineers were able to create a focused (but not too focused) beam of white light. Like all lasers re-appropriated for conventional illumination, these are aimed at a phosphor that transforms the blue laser light into more diffused white light. The result is headlights with such a long working life that they could 'easily outlive the automobile' in which they're installed. Other forthcoming applications for laser illumination include IMAX movie theater projectors, televisions and

computer monitors, head-mounted displays like Google Glass, and miniaturized 'pico' projectors.

Lighting controls

Lighting should provide maximum performance coupled with maximum efficiency, but with a minimum of fuss and complexity. Systems should be designed to be installed and commissioned quickly, to operate intelligently and seamlessly, and to deliver long-term benefits. Microcontrollers, used in conjunction with analog parts, can add to the intelligence of the system. Microchip technology engineers, for example, have worked with customers on the concept of daylight harvesting. Using sensors, MCUs, and LEDs together, they can enable a room to find its own bright and dark spots and adjust the light from LEDs accordingly.

In most rooms today, if the lights are on, they're on but if we can make the lights smart enough to know how bright the room is, then we can illuminate all parts of the room equally and still use less power.

When it comes to such applications – talking to sensors and dimming the LEDs, MCU-based drivers is the best solution. The technology to create buildings that can self-optimize their energy performance, ensure user comfort, and diagnose maintenance needs is here. Now, the lighting industry is catching onto the vital role that this networked future will play, as the potential stretches beyond singular buildings to encompass entire cities.

For the past decade, the buzzwords Internet of Things (IoT) and Industrial Internet of Things (IIoT) have been floating around, as smart products such the Nest thermostat and wearable fitness devices captivated consumers. In the IoT, everyday objects are outfitted with sensors, microprocessors, and the ability to talk to other machines over a local system. In the IIoT, objects networked together collect swaths of data for analytics, information management, and knowledge transfer to optimize large-scale systems, such as buildings, factories, highways, and cities.

Intelligent lighting systems are designed to provide light only when & where it's needed, and also at only the minimum level of brightness required. When correctly configured, both of these factors can drive significant energy savings, particularly in locations that're frequently unoccupied. All intelligent lighting products feature an integrated PIR motion sensor to detect the presence of human beings, forklift trucks etc.

When movement is detected the LED light will immediately illuminate. Neighbouring light units will simultaneously illuminate at a dimmed level to provide further convenience, comfort and safety. In areas where there is a degree of natural light or light from other sources, the intelligent system will automatically provide only the minimum amount of additional light necessary to maintain an appropriate level of illumination in the area where used. Where no motion is detected the lighting can be switched completely off, or set to remain on at a dimmed level, thus providing a comfortable level of constant illumination whilst still yielding significant energy savings.

All features of the system can be configured quickly and easily using the hand-held infra-red remote control unit. No computer, complicated software (or lighting consultant) required. Intelligent lighting product features a built-in RF (radio frequency) transceiver, allowing it to communicate wirelessly with neighbouring units to form an intelligent lighting network. The network is easily configured upon installation by simply 'walk testing' the area where the units are located – no complicated manual settings to worry about. Once set up, the network ensures that when a specific LED luminaire is activated by motion, neighbouring LED luminaires also illuminate simultaneously at a dimmed level (30% or 15%) to enhance the comfort and safety of the user.

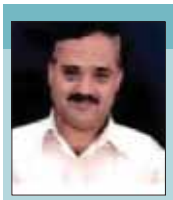
Future lighting systems

The lighting systems of the future could be multi-purpose devices not dissimilar to smart phones. In the future, lighting will not just allow us to see but could also be used to survey surroundings, transmit information, reflect moods and make our lives more comfortable. Smart lighting could also save as much as 80% of energy compared to traditional lighting solutions. As more applications become available, the smart lighting industry will also be revolutionized. In addition to lighting, businesses could soon begin to offer their customers smart applications and comprehensive service concepts of smart lighting devices. The smart lighting industry is undergoing a major transition. Different kinds of smart lighting solutions are expected to become increasingly popular in homes, public buildings and offices. In the future, smart lighting technology will enable the direction, power and colour of lighting to be adjusted automatically according to whether a room is being used for watching television or eating dinner and according to where people are in the room. Lights positioned near windows will change colour according to outdoor temperature.

Wall-mounted light switches will detect when a person enters the room. New smart features for light fittings will be available to download from the internet. In office buildings, smart lighting technology will help shift-workers to adapt to changes in their circadian rhythm.

Smart lighting systems are becoming increasingly popular in both new builds and renovation projects. Technologically speaking, the next major step will be to integrate better sensors and new functions into lighting systems, which will allow the occupants of a room to adjust lighting with increasing accuracy and flexibility.■

Acknowledgement: The use of information retrieved through various references/sources of internet in this article is highly acknowledged.



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Understanding Relevance Of LED lamp

We are aware that an LED lamp is more efficient at low power level. It means that instead of using 6W LED single lamp, we can use 3 lamps of each 2W or two lamps of each 3W rating. In this fashion of LED lamp distribution in a given room will provide is a comparatively uniform illumination in given room surface...

Figure 1: LED Lamp...

LED lamp is regarded for its energy efficiency, long life span, high Colour Rendering Index (CRI) and wide Correlated Color Temperature (CCT) range. Unlike incandescent bulbs, LEDs produce heat but do not dissipate, it makes them as cooler lamp. LED lamps are most inexpensive lamps considering their energy payback period over the useful life period. These lamps are more sustainable as nearly 90% of material used for manufacturing it is recyclable. This article discusses these facts in detail to make LED lighting as an attempt for energy saving in India.

Efficiency of LED lamp

Each lamp has its own physics of working to produce light from heat generated. The energy efficiency of CFL and LED are shown in Fig-3. The graph is based on power rating of lamp i.e., energy level. The graphs shows us that at lower energy level (low power rating), LED lamp is more efficient than CFL counterpart.

The graph from Figure 2 helps us to confirm that for lower power rating (below 8 W) LED is more efficient than its

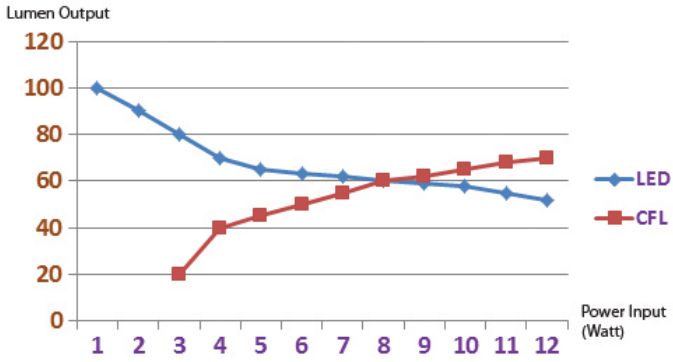

Figure 2: Lumens (Light Output) Vs Power Input (Watt)...

equivalent CFL. e.g. - If we would compare a 5 W CFL with LED lamp, then LED shows that light output is 5*65=325 lm and CFL lamp output is 5*45=225 lm. The LED lamp here is 1.5 times more efficient.

LED Lamp saves energy during dimming

It is a well known fact that when we require lesser light output, then lamp may be operated at lower power level. It can save energy. This may not hold true for all lamps in a linear relationship. Refer to Fig-2. It shows that when 60 W GLS lamp operates at 30 W [50% Dimmed], then its light output actually reduces to 20% of its rated lumens. Hence, we won't get any saving. The quality of light output is deteriorated from yellow/orange to orange/red colour rendering. The other lamp CFL also gets less efficient when dimmed because they become cold and result in less light output. But in case of LED lamp, dimming will result less operating temperature (hot), so their efficiency increase. This provides us more light output for same power input compared to other lamps.

It includes that LED lamp may be more efficient at dimmed condition than at full load.

LED lamps are less hot

It is known that LED lamp converts only 10% of the electrical energy input into light energy. It means that now still 90% of energy is turned into heat. But the power consumption

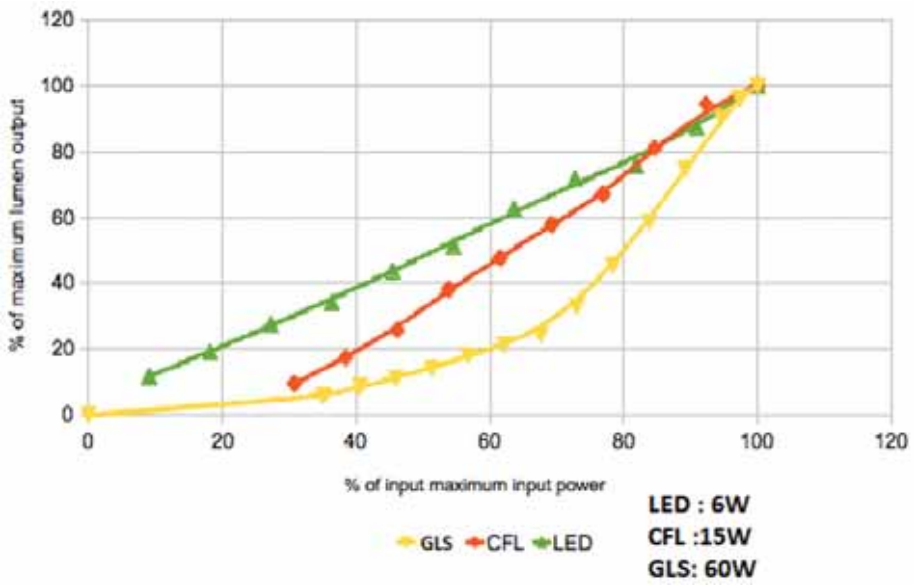

Figure 3: Performance of lamp during dimming...

of LED lamp is much lesser than that of incandescent lamp/CFL, so the amount of heat developed is also less. For a well designed LED lamp will have heat sink to take the heat generated to outside. Incandescent lamps convert only 1.5% of electrical energy into light energy output. The absolute amount of heat in LED lamp is 90% of 6W while for incandescent lamp it is 98.5% of 60W. [6W LED lamp light output = 60W Incandescent lamp].

Non-uniform light output

We are aware that a LED lamp is more efficient at low power level. It means that instead of using 6W LED single lamp, we can use 3 lamps of each 2W or two lamps of each 3W rating. In this fashion of LED lamp distribution in a given room will provide is a comparatively uniform illumination in given room surface.

So, the disadvantage of non-uniform light / concentrated light output of LED lamp may be overcome. It is essential because in India the domestic market is asking for a 60W replacement solution. A preferred lamp for rural India will be of LED lamp of 120 to 160 lumen output for 2W rating or 210 lumen output for 3W LED lamp. By using more lamps simultaneously will be much more convenient. In European countries a house has now average of lamps is 42 today as compared to only 3 lamps in 1950.

Cheaper for useful life period

At present, customer may view that LED lamp is expensive because he consider lamp as a product rather than a utility device. When we purchase a lamp, we are not only buying a piece of hardware, but requirement of light. i.e., combination of hardware and energy.

The LED lamp has lumen efficiency of 12% more than that of the incandescent lamp of 1.5% and CFL has 5-6%. Another factor is that the average life time period of the incandescent lamp is 1000 Hrs while LED lamp has 25,000 Hrs.

Consider that a 6W LED lamp replaces a 60W Incandescent lamp for a given installation. The energy calculations for 6 hrs daily use are:-

A) Incandescent lamp:

1. Power rating (P) = 60W
2. Daily Energy used = 60*6=360 Wh
3. Annual Energy consumption
   = 360*365
   =131400 Wh
   =131.4 kWh
4. Annual Energy Bill @ Rs-5 per kWh = 131.4*5 = Rs 657/-

B) LED lamp:

1. Power rating (P) = 6W
2. Daily Energy used = 6*6 = 36 Wh
3. Annual Energy consumption
   = 36*365
   = 13140 Wh
   = 13.14 KWh
4. Annual Energy bill Rs-5 per KWh
   = 13.14*5 = Rs 65.7/-
   Therefore saving in annual energy bill
   = Rs (657-65.7)
   = Rs 591.3/-
5. Percentage saving in annual energy bill = (591.3/657)*100
   = 90%

This saving shows that 6W, LED lamp cost is earned back in a year approximately.

Conclusion

From the above discussion we can deduce that though the initial replacement cost of LED lamp is high but its payback period is only one year. So, for entire next 18-23 years, customers will have benefit of energy saving through bills.

This will result in reduction of connected load for a given installation, thereby reduction in Maximum Demand on Power system network and Average power requirement. It is necessary at this stage that the lamp manufacturing companies to provide an LED lamp fitting to replace the India's mostly used 60W incandescent lamp particularly for rural regions. ■

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Osram crowned the celebrations commemorating the 110th brand anniversary with a spectacular event at the top of the Zugspitze, attended by some of Germany's best ice hockey players. Eight members of Germany's championship winning team, EHC Red Bull Munich, played an evening ice-hockey game against a stunning alpine backdrop, with the help of high-tech lighting provided by Osram...

LED Integrated Into Fabrics

The rink and its surrounding area were illuminated by floodlights and effect lighting from Osram, turning the event into an impressive peak-top spectacle. With the game taking place in the background, the Munich lighting company unveiled its latest world first to a broader public.

In 2017, the company will be introducing LED lighting integrated into fabrics. Compared with passive elements such as reflectors and signal colours, active lighting considerably improves the visibility and conspicuousness of safety clothing and sportswear. In the ice hockey game on the Zugspitze, at an altitude of just under 3,000 metres, this technology was exposed to extreme conditions. The modern LEDs from Osram, integrated into the clothing, helmets and puck, showed how they can cope with tough sports and freezing temperatures.

During the course of its birthday festivities, Osram has already completed two spectacular lighting projects – the commemorative video projection at the German Patent Office in Berlin and the illumination of the facade of the Westin Excelsior Hotel in Rome, also celebrating its 110th birthday in 2016.

The company has now brought its gala activities to a worthy conclusion by turning the spotlight on this high-vis ice hockey game featuring stars from the EHC Red Bull Munich club. Osram has been the lighting partner of the German ice hockey champion since 2014. ■

"Lighting goes hand in hand with architecture..."

Brainwave Designs is an independent architectural lighting design practice in Mumbai with a team of architects and interior designers – working towards building beautiful lighting environment and ambiences. In an exclusive e-interview with Lighting India, Sushant Surve, Principal Designer of the firm, is fielding questions from P K Chatterjee. Excerpts...

Architecture, people and objects are all made visible by the lighting sensibilities. Light impacts our well-being, the aesthetic effect and mood of the space...

Q How do you visualize the inherent link-up between good architecture and lighting?

A Architecture can be analyzed in any dimension whether as a space, material or as an entity but at end is essentially perceived by the lighting environment, that encompasses both the object and the observer. Light plays a crucial role in the design of visual environment.

Architecture, people and objects are all made visible by the lighting sensibilities. Light impacts our well-being, the aesthetic effect and mood of the space.

It is, in fact, the lighting that enhances and extenuates the architecture; one cannot exist without the other. Light defines zones and boundaries of various spaces. It creates links and delineates the spaces from one another. There is no singular approach to aesthetic values, but light is one expression that conveys the intent and characteristics of design.

Q How is the Indian market absorbing this concept?

A Indian market is absorbing this concept in an optimistic manner, but still have a long way to understand and appreciate the concerns from a lighting designer's perspective.

Q What are the basic elements of effective lighting?

A
- Customization and implementation w.r.t the given architectural elements (like texture, main features, dimensions and so on.)
- Lighting products (portfolio-indoor, outdoor w.r.t CCT, CRI, GAI, COU and so on.)
- Lighting controls (dimming, on/off, DMX, RGBw and so on.)

Q What are the differences between the lighting schemes conceived in European countries and those designed in India?

A Lighting goes hand in hand with architecture. Its about analyzing architectural elements irrespective of the continents. It would only be unfair to compare lighting solutions, which may depend on various factors like topographical conditions, weather, climate and language.

Q How is the demand among the Indian customers changing? What are the latest trends here?

A The demand has already shifted towards

a. Sustainable design
b. Balancing between renewable and non-renewable resources like, solar panels integration, global warming consideration and so on.
c. In indoors, tunable white is getting a good awareness as a starting tool for a lighting designer w.r.t. the behavioural management of the employees.

Q Does high project cost often stand as a stumbling block in delivering the best to the customer?

A It is a cause of concern in most scenarios.

Q Do you feel that cost and quality-wise at least at present we invariably need to depend on Chinese products?

A No, we need not be dependent on China as a country, since many Indian manufactures are bridging the gaps in delivering similar products.

Q How do you go about designing a new project? How does the customer benefit in the process?

A

Processes:

- For any conceptualization, the first essential parameter is PROBING rather immediately putting up a solution or any recommendation. This is the MOST important activity of BWD.
- Then, it all starts taking inputs like final budgeting, defining the core areas, understanding the challenges if imposed, like carbon rating, LEED certifications contribution towards non-global warming processes, ESCO systems and so on.
- Once we arrive with a consensus, with all the clarities, our design department acts accordingly, various activities like in-house sampling, adhering to the parameters to be recommended for that need for the project begins.
- Then Mock up etc while choosing the right products & vendors are initiated…

Benefit to the customer:

Since, the time is an essence for us all, the customer without wasting time and energy gets RIGHT VENDORS, PRODUCTS with an appropriate / desired lighting design to be chosen for his/her further purchases & implementation.

Q How do you manage to give service all over India?

A We have a drawing standard and system in place, which is explained to client's project team and architects during our concept meetings. This makes life easy for any client and his/her team to communicate with us from any desired location.

Q What is your suggestion to the decision makers of the new projects?

A

a. From the very beginning LIGHTING CONCEPTUALIZATION along with a Lighting designer / consultant must be initiated.
b. The flexibility for a lighting scheme must be given so that at the initial stages lighting consultant along with PMC, Architect, Electrical consultant, Façade consultant and so must be frozen for the FINAL outputs as conceived initially without wasting revenue, time and people's energy. This helps in yielding much creative & desired lighting schemes for any customer to own the PRIDE of the space. It really assists to even lower the overall Operational & maintenance budget of the client. ■

LED Among The Stars

Aviation signal lights are a crucial element to the safety of pilots and their passengers and cargo. As lighting technologies for signal lights evolve through the increased use of Light-Emitting Diodes (LEDs) over less efficient and shorter-lived incandescent lamps, their colour, electrical and life characteristics are changing. Now, limitations of earlier technologies might no longer apply to aviation signal lighting...

Aviation lights play a vital role for the safe operation of the aviation system. It can be segregated as per their function and location, like interior light, exterior light and warning lights. Interior lights are installed inside the plane, exterior lights are mounted on the aircraft while warning lights are mounted on structure or tower. Every light has some important characteristics as per its function. The characteristics and complexities of the lighting systems of a particular aircraft vary in accordance with its size, role and normal flight environment. In the present scenario of aviation, conventional lights also are being replaced by LED lights.

Why Led Lighting In Aviation?

LED lights have several advantages over the conventional lights. LED lights have multidimensional features.

Interior LED Lighting

Interior lighting impacts every single passenger with the power to influence their perception of the entire flight. From feeling safe and secure to enjoying the food, better cabin lighting makes everything better.

Area, where the LED lights influence to the passengers are highlighted below.

Sections Belong To Passengers

In the planes, most of the sections are belonging to the passengers. Therefore, to improve their comfort, some specially designed LED lights are installed in the passenger's Cabin, Galley, seating and special monuments and lavatory.

Passenger's Cabin

LED lightings provide for white ceiling and sidewall lighting, mood lighting, reading lights, or signage.

Galley

LED provides bright and efficient task lighting in the ceiling and under cabinetry for a clean look.

Seating & Specialty & Monuments

LED lighting provides as a strong differentiator in first class seating pods or accent lighting integrated into lounge areas and walkways.

Benefits of Led Lighting

Quality	Safety	Aesthetics	Nature
• Long life • Easy installation • Fewer man-hours • Less time down • Reduced inventory	• Shock resistant • Low heat • No bulb breakage • Less current draw	• Color consistency • Accurate color choice • Continuous lighting • Bright & even illumination • Step or variable dimming • Easily customized	• Environmentally • Friendly • Weight savings • Less fuel usage • Less waste

Lavatory

Crisp LED lighting for lavatory ceilings and mirrors help passengers feel comfortable before, during, and after the flight.

Exterior LED Lighting

The characteristics of the exterior lights are designed as per requirements of their respective functions. It can be differentiated in accordance with their function into four categories, as Aircraft visibility, Pilot visibility, Specific purpose light and Warning lights.

Aircraft Visibility Lights

Navigation Light

A navigation light, also known as a running light, is a coloured source of illumination on a waterborne vessel, aircraft, and some spacecraft, used to signal a craft's position, heading and status. Commonly, their placement is mandated by international conventions or civil authorities.

Navigation lighting systems include: Right-of-way lights – A Red navigation light located on the left wingtip leading edge and a Green light on the right wingtip leading edge. In a situation where the paths of two watercraft or aircraft cross, these lights help each crew determine the other craft's direction and who has the right-of-way. When two craft has crossing paths, each sees a red or green running light. The craft on the port side, which must yield the right of way, sees the red light on the other, while the craft on the starboard side, which has right of way, sees the green on the other.

These navigation lights are most useful at night when it is more difficult to tell the direction the plane is going without them.

A white navigation light is as far aft as possible on the tail or each wing tip.

For navigation light, dual systems are often installed to provide redundancy in the event of a lamp failure. Aircraft equipped with a beacon, the navigation lights normally kept on – whereas Aircraft without a beacon, the navigation lights will flash continuously.

In civil aviation, pilots must keep navigation lights on from sunset to sunrise.

Position Lights

Airlines also fitted with another steady state lightings on the trailing edge of each wingtip. These lights are also sometimes placed along the trailing edges of the horizontal tail. Another popular location is at the very aft end of the fuselage or at the top of the vertical tail. Whatever the location, the purpose of these steady white lights is to improve the plane's visibility from behind the aircraft.

Position lights are always on, day and night. When pilots see another aircraft's white position lights, he can understand another plane is flying away from him.

When a pilot sees a red and green light in the sky, he can understand another aircraft is heading towards him. These lights help to determine aircraft position and direction, therefore they're also named as 'position lights.'

Beacon Lights

These lights are also used to increase the visibility of Aircraft. The aircraft's beacon lights are red in color and either flash or rotate to provide a pulsating warning light. They are normally installed in pairs with one on the top of the fuselage and the other on the bottom.

Walking near an operating jet engine or turboprop is dangerous. To warn the ground people these lights are turned on just before engine start and are turned off after the engines are shut down.

When ground personnel sees those red lights flashing, they know the engines are running and the area is unsafe.

Strobe Lights

Strobe lights are very bright, flashes a white-coloured light with a regular interval. It intended to increase the visibility of Aircraft during flight.

These lights are located on each wingtip. Smaller

planes are only equipped with one of these strobes near the leading edge just behind the red or green navigation light. Larger airliners may be equipped with an additional strobe at the trailing edge as well. They are normally turned on when entering an active runway for takeoff and turned off when leaving the runway after landing. In many cases, the strobe light switch will have an AUTO position, which will result in activation and deactivation of the lights based on weight on wheels.

Anti-Collision Lights

There are a lot of airplanes flying around; especially near large cities. It's important that pilots can see other aircraft in the sky and on the ground. To judge the location of other nearby airplanes, all aircraft have anti-collision lights.

Anti-collision lights is a flashing light assembly of high-intensity white strobe lights as well as the red rotating beacon. It is installed on the upper and lower fuselage of aircraft.

All aircraft must have to turn on an anti-collision light system for all flight activities in poor visibility.

Historically, this item employed rotating incandescent bulbs or flashing xenon flash tubes. Recently, LED anti-collision lights have been developed. Therefore, it is being replaced by the LED-based anti-collision lights.

Yehudi Lights

The utility of Yehudi Lights is based on lamps. These are placed on the underside or wing leading edge of an aircraft. These are used to raise the aircraft's luminance to the average brightness of the sky. They were intended to disguise the aircraft by preventing it from appearing as a dark object against the sky.

Wheel Well Lights

The primary function of these lights to assist ground personnel in making pre-flight inspections of a plane at night. These lights are fitted in the nose and main gear wheel wells.

Pilot Visibility Lights

Landing Lights

These lights are used to enhance the visibility outside the plane for the pilots. These are high-intensity white light sources usually mounted on most of the planes. These are used to illuminate the runway surface for takeoff and landing and also to facilitate the aircraft being seen by other pilots. These are often required for night landings but also used during the day to illuminate the runway at poorly lit airports. Although the usage of these lights is common but their location of mounting on the plane may differ from plane to plane. These may be located in the wing root, in the outboard wing, or somewhere along the forward fuselage. Some aircraft have multiple sets of landing lights in more than one of these locations. According to the regional norm, landing lights are either switched on when entering the active runway or on getting clearance for takeoff. Landing lights normally turn on or turn off before landing or after takeoff at the height of 10000 feet of the plane.

Landing lights are so bright, they also make great anti-collision lights. When planes are climbing or descending near airports.

Taxi Lights

Taxi lights are used during ground operations. These lights are typically turned on whenever the aircraft is in motion on the ground for greater visibility during taxi, takeoff, and landing. These are medium intensity lights. These may be mounted on the nose landing gear strut, in the aircraft nose or at the wing roots of most of the planes. Landing and taxi lights intensity are very high for human eyes. Ground personnel have to be careful with them, especially at night. Turning on the lights when ground personnel are nearby can cause serious retinal damage.

Runway Turn Off Lights

Turn off lights are similar to taxi lights. They are mounted on an angle pointing to the left and right of the aircraft nose or leading edge of the wing root. These are bright white lamps intended to provide side and forward lighting during taxi and when turning off the runway. These lights are most useful at poorly lit airports. The lights can also be used in flight if greater visibility is required.

Wing Inspection Lights

Wing inspection lights are mounted in the fuselage. These lights are used to make the plane more visible during takeoff, and landing or to inspect the wings for damage in flight. These are also aimed to illuminate the leading edge of the wing and the engine pylons. They are often used during hours of darkness for aircraft preflight inspection and for illumination during engine start. They can be used in flight on an 'as required' basis. Pilots can also use the same to inspect the wings and slats for any ice accretion that might build up when flying through clouds.

Ice Detection Probe Light

Ice Detection Probe Light is used to see any ice accumulation occurring during hours of darkness. It is mounted between windshields.

There are some utilities common between pilot and aircraft visibility, as landing light enhances the pilot's visibility as well as aircraft visibility for ground people.

Specific Task Lights

Civilian commercial airliners also have some non-navigational lights as:

Search Lights

These lights are utilized during rescue and search operation. The intensity of these lights is very high. These are mounted on Enforcement aircraft, police helicopters, and search and rescue aircraft.

The Intensity And Flash Rate Of The Awl Along With Tower's Height Are Highlighted Below

Type of Warning Light	Structure/ Tower height	Aircraft Warning Lights			
		Flash rate	Intensity		
	Feet	Flash / Minute	Daytime	Twilight	Nighttime
			Candela	Candela	Candela
Medium-intensity white strobe	200 to 500	40	20,000	20,000	2,000
If a medium white strobe is used on a structure greater than 500 feet, the structure must be painted by red and white paint at equal lengths on the antenna tower or mast.					
High-intensity white strobe light	above 700	40	270,000	20,000	2000

Structure using a white strobe...

Aircraft Warning Light on top of a high-rise building...

Structure using a red/white strobe...

A transmission station with red warning beacon...

Warning light at 216 feet (66 m) atop the WRLF FM antenna...

Formation Lights

Some military aircraft have variable intensity lights installed on the upper surface of the wings to facilitate night formation flights.

Logo Lights

Logo lights are generally mounted on the upper surface of the horizontal stabilizer which illuminates the company logo on the tail fin. These lights are optional to turn on, though most pilots switch them on at night to increase visibility from other aircraft.

Aircraft Warning Lights

Aircraft Warning Lights (AWL) are lighting devices installed on any permanent or temporary structure. The main function of these lights is to make tall structures more visible to aircraft during daytime and nighttime. These lights need to be of sufficient brightness in order to be visible for miles around the structure. The important features of these lights are defined in terms of intensity, beam pattern, and colours.

Recommendations on AWL systems may vary according to terrain features, weather patterns, geographic locations and the overall layout of the structures. In general, there is no single standard to define AWL. The most common standards set by ICAO (International Civil Aviation Organization) and FAA (Federal Aviation Administration) are usually adopted worldwide.

There are several types of lamps that are employed for the warning light, like:

- Red lamps that are either constantly illuminated or turned on and off in a cycle of a few seconds
- White xenon discharge flashers
- Obstruction lights (that are constantly illuminated)
- Red beacons/red strobes
- High-intensity white (strobe) lights
- Medium-intensity white (strobe) lights

Recent developed LEDs have a lot of good features to overcome the problems as faced with traditional lamps. Therefore, traditional lamps are being replaced by latest developed LED lightings. However, with the advent of LEDs, white strobes are still somewhat desired.

For redundancy, the dual lighting system is adopted with white strobes for daytime use and red lights for nighttime use. In the United States and Canada, red incandescent beacons are being replaced with red strobes or red LEDs. ■

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The Alexa-enabled GE lamp has drawn inspiration from GE Lighting's real-world living labs, whereby the company tests lighting and connected home features and functionality with real-world consumers to learn and iterate – based on their feedback. Introduction of GE's C by GE table lamp with Alexa in early 2017 will fetch a new era in home automation...

Initiating A Hands-free Journey

The voice controlled light source with microphones and a speaker is the first announced use of AVS embedded within a lighting product, bringing the skills you'd find in a traditional Amazon Echo product without the need for a stand-alone Echo unit, hub or even a smart phone. Homeowners need only plug in the C by GE lamp and connect to Alexa to unleash a whole new world of tech functionality and smart device interoperability throughout the home.

"This integration is so much more than connecting lighting to voice integration.It's really about simplifying and extending an experience for consumers, allowing them to add smart capabilities throughout the home through a really simple form factor Consumers don't need a cell phone, a special switch or a hub. They just need their voice," says Jeff Patton, General Manager Connected Home Products, GE Lighting.

The company is incubating a suite of connected products, through GE Lighting's C by GE brand, and working with ecosystem partners to create a seamless connected experience that elevates what you can do at home, helping you free up time, add security, enable broader control and have fun doing it.

The connected home market is expected to grow threefold over the next few years, and consumers expect a seamless experience as part of that process. This introduction springboards that by leveraging something ubiquitous in the home today – lighting.

"We're excited to work with GE Lighting to bring Alexa to their LED lamp and enable new types of voice experiences. Voice is the future of home automation and the combination of Alexa with the GE LED table lamp, provides people with a simple and frictionless way to interact with their homes," said Aaron Brown, Director of Alexa.

To propel the connected home experience, GE is not only relying on inventors within its own walls, but drawing inspiration from companies like Amazon, real-world homeowners it's learning from and incubating with everyday inventors. The Alexa-enabled GE lamp drew inspiration from GE Lighting's real-world living labs, whereby the company tests lighting and connected home features and functionality with real-world consumers to learn and iterate based on their feedback.

GE integrates Amazon Alexa inside Sleek Table Lamp...

The concept also was influenced by a recent crowdsourcing challenge where GE, MAKER MEDIA and Hackster partnered to solicit makers, from college students to data scientists, to bring LEDs to life in new and unexpected ways. The winning ideas, which will be considered as part of future connected lighting designs, included lighting that notifies you when you are sitting idle for too long and encourages you to get moving; lighting-based motion detection that syncs with security services; a lit crib mobile that detects a baby's heart rate and oxygen levels to protect against SIDS; and lighting that tracks activity in the home to know who is home and where they are to customize lighting based on an individual's preferences and habits.

The Alexa-embedded lamp will be designed in part by Richard Clarkson, famed designer of The Cloud, a cloud-shaped ceiling fixture that produces a motion-triggered lightning and thunder performance. GE's C by GE table lamp with Alexa will be available for pre-orders as part of GE's C by GE connected lighting products in early 2017 on www.CbyGE.com with product availability in the second quarter of 2017. ■

Relighting Of The German Museum Of Technology

The German Museum of Technology (Deutsches Technikmuseum) is one of the largest museums of its type in Germany. ERCO recently upgraded the lighting to LED technology. The project demonstrates how improvements in efficiency and the optimisation of light go hand-in-hand...

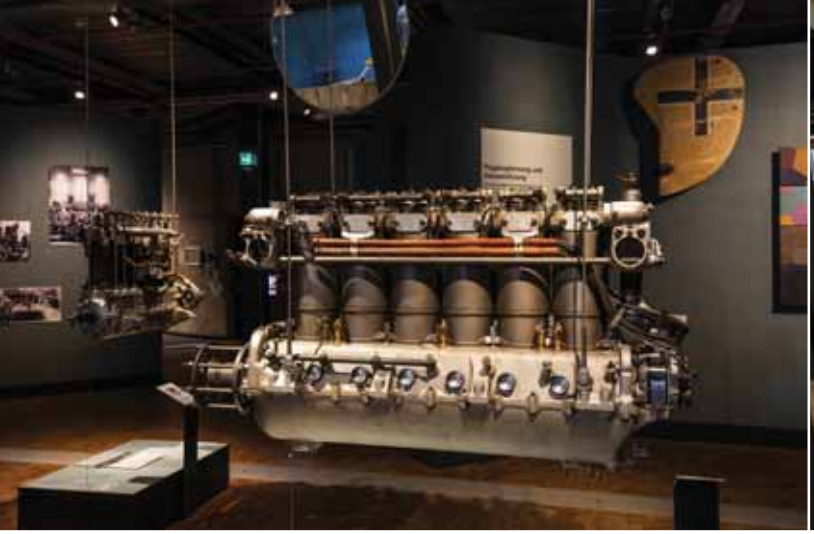
With around 600,000 visitors annually, the German Museum of Technology in Berlin is a genuine crowd-puller in the German capital city's multifaceted museum landscape. The museum with both permanent and special exhibitions and space of around 26,000 square metres exhibits a wide spectrum of themes ranging from aviation and shipping to rail and road traffic and far beyond.

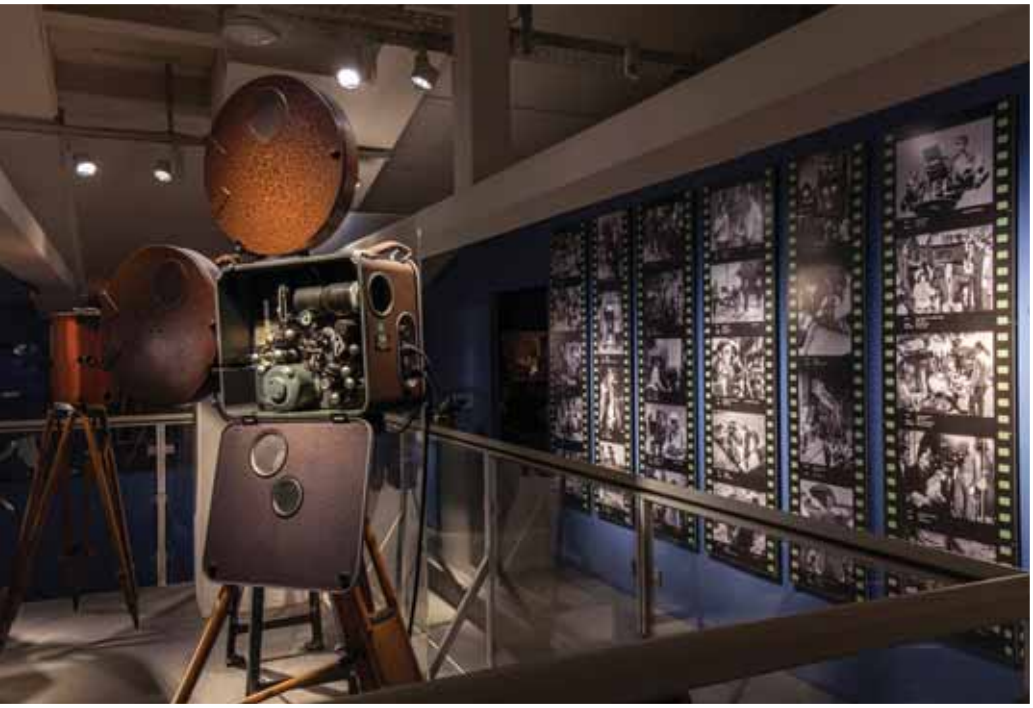
Energy savings as the motivating factor

The relighting of the museum was primarily motivated by the desire to achieve an improved energy balance, stated Professor Joseph Hoppe, Deputy Director of the museum. Awarding the contract to ERCO through a tender procedure was carried out on the basis of a consumption analysis and sampling. Besides energy efficiency and brilliance of light, ERCO also scored points with the durability and reliability of their products.

A qualitative quantum leap in museum lighting

The museum relighting, technically supervised by the lighting designer Karsten Krause, gained favourable reactions both internally and from the public. The savings are impressive: by converting to LED technology the museum is able to save annual energy costs of 125,000 euros. This corresponds to a reduction of CO_2 emission of 395 tonnes. Museum manager Hoppe sees a further aspect as being just as important – the quantum leap in quality with the museum lighting. "The new light allows both us and the public to discover things we never saw before." Hoppe praised the ERCO Spherolit lenses and the corresponding variability and flexibility of the





luminaires: the easily exchanged lenses mean that the museum team can also fine-tune and readjust the light at a later date.

The photometric challenge

No room resembles another in the German Museum of Technology, either in relation to the architecture and daylight situation or regarding the items on display and the exhibition design. The objects themselves differ enormously in terms of size, materials and surfaces, with some suspended in the space and others displayed in cabinets. Despite the extremely diverse lighting requirements as a result of this, only three ERCO luminaire families with power consumption of between 4 and 48 watts are needed for the lighting tasks: Optec, Parscan and Pollux. Optec spotlights with 12 and 24 wattages and narrow spot, spot, flood, wide flood and oval flood light distributions provide the high-performance basis of the museum lighting. Parscan with 48 watts are used in high rooms where light needs to be projected over long distances, while Pollux contour spotlights emit precise light onto pictures, information signs and text panels.

With its relighting the German Museum of Technology in Berlin sets standards for contemporary museum lighting that will remain in use for many years. ERCO once again demonstrates its expertise in a photometrically highly challenging area. The project also illustrates the variable and diverse application options of ERCO lighting tools. ■

Credits

www.chauvetlighting.com

With its 1000th installation of Ambient Experience solution, Philips has been successfully creating patient-friendly hospital environments globally...

Creating A Patient-friendly Environment

Royal Philips has crossed another milestone with its Ambient Experience solution with the 1000th installation at the St. Claraspital hospital in Basel, Switzerland. With Ambient Experience, the Swiss hospital created a calming and reassuring patient-controlled ambient environment for patients undergoing Computed Tomography (CT) imaging procedures. Since its commercial introduction in 2006, Philips has incorporated Ambient Experience solutions in medical imaging rooms, imaging preparation rooms, treatment rooms, and emergency departments.

The 1000th installation of Ambient Experience on its tenth anniversary is also Philips' first installation of the solution in conjunction with its IQon Spectral CT imaging system. This imaging system is the world's first spectral detector based CT scanner that provides clinicians with multiple views of a patient's anatomy within a single, low-dose exam.

"It is amazing to see the initial positive impact that the Ambient Experience environment has on our patients undergoing CT imaging procedures in the room. Rather than being stressed, these patients are visibly much more relaxed during their scans, which makes it better for them and more efficient for our hospital staff. Combined with the unique capabilities of Philips' IQon Spectral CT imaging compared to conventional CT imaging, I am looking forward to delivering a whole new standard of care for our patients," said Professor Hoffmann, Chair of Radiology at St. Claraspital, Basel.

"We can all relate to the fear and stress that patients may have when they visit a hospital for an imaging procedure or treatment. As a pioneer, we introduced the Ambient Experience concept in 2002 and we have seen a growing global awareness of the importance of the patient experience ever since. In the past ten years, we have installed 1,000 Ambient Experience solutions in radiology departments, emergency departments and treatment rooms in more than 50 countries. We have seen that a purposefully designed patient-centric environment can make a real difference to patients' experience and state-of-mind," said Werner Satter, Business Leader Healthcare Experience Solutions at Philips.

Ambient Experience solutions feature the use of dynamic light, video and sound to place patients in a calming, reassuring and relaxing environment. By giving patients personalized control of the theme that defines the colour and intensity of the ambient lighting as well as the video and sound in the room, their involvement and engagement in procedures is enhanced. By adopting specialized 'patient-centric' design strategies, examination and treatment rooms are de-cluttered so that patients feel less overwhelmed by technologically complex medical equipment and procedures. Philips' Ambient Experience not only benefits patients. The company's Ambient Experience environments have been shown to decrease the duration of procedures, while also helping caregivers to work more efficiently and with more satisfaction.

The first Ambient Experience room was installed in 2005 at the Advocate Lutheran General Children's Hospital in Chicago, US. The commercial Ambient Experience program was launched in 2006 in the US, and was gradually expanded to Europe and growth geographies such as China and the Middle East. Philips Ambient Experience designs are already supporting radiology, cardiology, oncology, and emergency departments, and are increasingly being deployed in new areas such as NICUs and ICUs. Ambient Experience solutions can be extended from the procedure room to the control room, waiting areas and whole departments. ■

Lighting Up The Pavilion

The 2016 edition of the annual Serpentine Pavilion is a 14 metre high complex sculptural structure designed by Copenhagen/NYC based architecture firm Bjarke Ingels Group (BIG). As daylight fades the pavilion is enhanced by specialist lighting from the Zumtobel Group, tapering away softly from the bottom up to reveal the beautiful undulating form. The design delivers the light levels required for functional use of the space, while keeping the visual presence of the lighting equipment to an absolute minimum...

For many years, Zumtobel has been a sponsor of the Serpentine Pavilion. They are long-term partners of the Serpentine Gallery and also BIG, who is a part of their network of international architects. Having joined the Zumtobel Group in 2015, the lighting solution for this year is provided by U.K. based acdc Lighting.

BIG's Serpentine Pavilion takes the form of a wall created from stacked, open-ended rectangular boxes. The wall appears 'unzipped' to form two sinuous strands that bulge apart to form a central cavity. It is a fascinating three-dimensional environment, featuring many apparent dichotomies that allow the space to be experienced in many ways. Fabricated from pale green toned translucent fiberglass, it appears linear and yet curvaceous, modular and yet sculptural, and substantial yet insubstantial, depending on the vantage point. As the sun tracks across the sky it creates dynamic shadow play, with the movement of people adding to the beguiling optical effects.

Inside, the Pavilion hosts a café and a bar, with bench seating at the perimeter to facilitate daytime activities and the Serpentine Park Nights programme, an annual series of live events by artists, writers and musicians.

For the night time image BIG envisioned a glow from the base, the light grazing up the walls to emphasise the curvaceous textural form, and then gradually fading out to dissolve the structure into the dark sky. To preserve the purity of the lines, BIG requested all lighting equipment to be concealed – ideally positioned on the floor behind the perimeter seating.

Lighting approach remains faithful to the BIG's vision

The Zumtobel Group's lighting approach remains faithful to the vision, while meeting the practical and technical requirements for the space. As local advisors to the Serpentine Gallery, multi-disciplinary firm Aecom provided the technical brief for the lighting. A minimum of 100 lux was required on the floor and 200 lux on the bar, with an average of 10 lux on a clearly designated exit route needed for emergencies.

The Zumtobel team in Dornbirn produced several simulations and calculations to clearly define their design challenge. Material samples of the cubes were measured to evaluate how light would interact with fiberglass material. The transmission proved to be less than 5% for the base layers. This meant that there would not be enough light passing through the cubes to create the external 'glow' that BIG envisioned. In addition, the open cellular nature of the structure naturally reduced the amount of reflected light back onto the concourse and bar, while the inward sloping physical form increased the likelihood of glare affecting visitors. Following trials of several different arrangements of floodlight locations and optics it was clear the vision could not be achieved by uplighting alone.

In consultation with BIG, it was agreed that some supplementary high level lighting was necessary. The challenge evolved into determining the best possible combination of equipment and design that would limit the visual impact of this on the structure.

acdc PLAZA solution creating the 'glowing effect' of the Pavilion

The final solution uses acdc PLAZA fittings in two sizes with 3000K warm white LEDs. PLAZA 20 fittings with elliptical and wide beam angles are distributed at the perimeter behind the bench seating. The elliptical beam helps to create an even wash on the structure while limiting glare. The wide beam uplights are positioned to point back outwards towards the structure to smooth and extend the effect. These also provide light to the inside faces of the cubes, which creates the illusion that the Pavilion is glowing when viewed externally.

The careful design of the uplighting achieves 70 lux on the concourse, and is boosted by a series of acdc PLAZA 10 spotlights mounted at 4.3m. Eight of these provide the required supplementary general lighting and concentrated extra light on the bar. These are maintained in emergency, to which a further 5 pieces are added to achieve the required 10 lux and boosting the levels at the exits. The scheme is competed by 25 low level PLAZA 10 spots beneath the bench seating that boost light at the perimeter.

The acdc PLAZA features an IP66 protection level making it suited to the non-permanent open structure. It is also ultra-compact, low powered and is available with a wide range of optics and accessories. The PLAZA 10 used at high level measures a tiny 100mm x 138mm for a truly minimal presence, yet delivers a punchy 731 lms while consuming only 10W of power. The wide selection of beam angles and distributions available with the acdc PLAZA 20 was essential to customising the design to suit the complex geometry as well

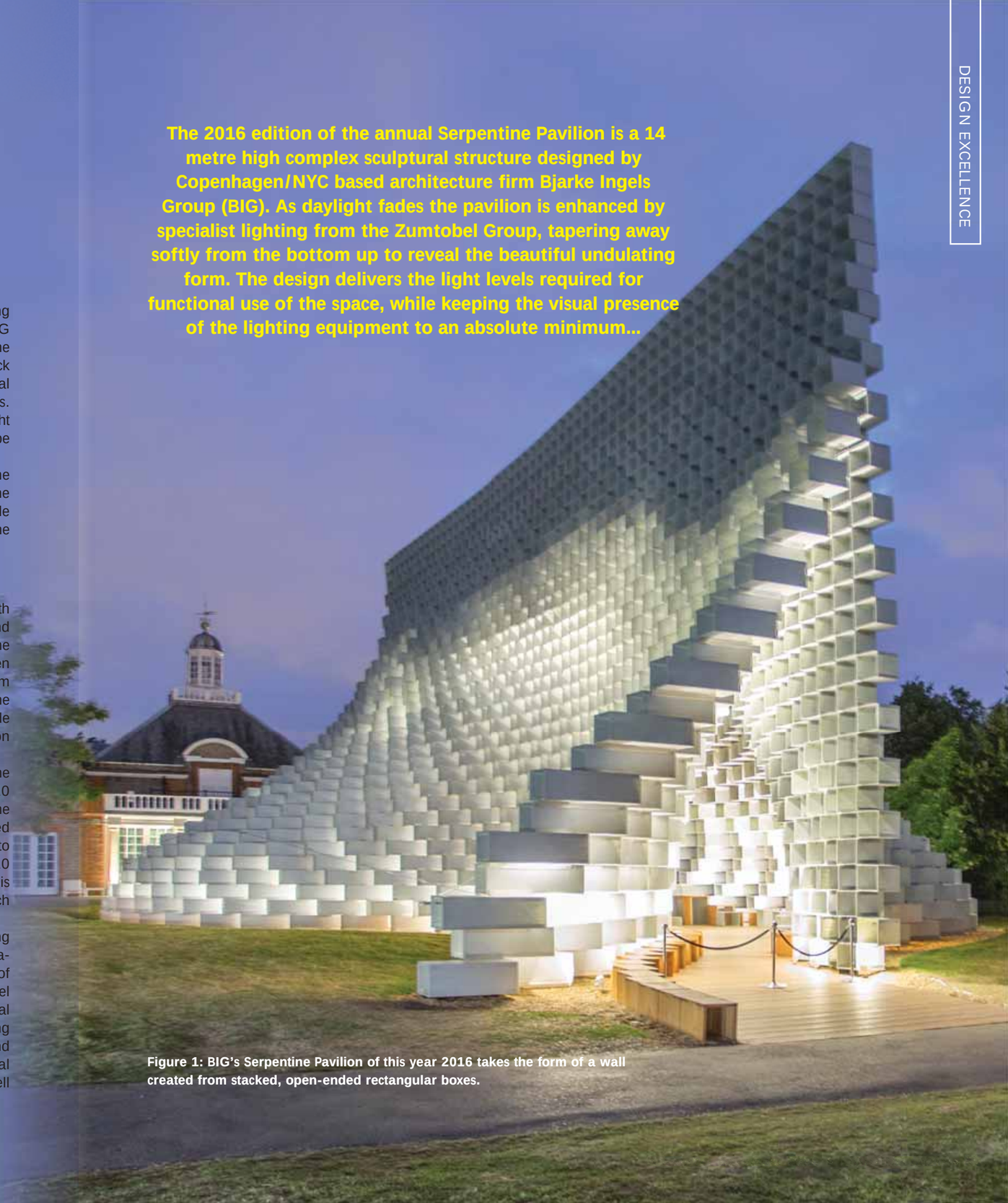


Figure 1: BIG's Serpentine Pavilion of this year 2016 takes the form of a wall created from stacked, open-ended rectangular boxes.

DESIGN EXCELLENCE

as taking care of the comfort of visitors. The lockable bracket with marked angle increments was also invaluable for onsite focusing and adjustments, ensuring that once commissioned the lighting would remain fixed in place.

The lighting enhances the geometry of the structure

The final result of the lighting approach is striking. In line with BIG's vision, the lighting enhances the sculptural nature of the Pavilion beautifully, while providing the necessary functional light to create a safe and pleasurable visitor experience.

Maria Sole Bravo, Senior Designer, BIG said

"It was important for us that the lighting at night would enhance the geometry of the structure and be coherent with the perception of the pavilion during day time. The fibreglass boxes become thinner higher up in the building, making the structure lighter and more translucent. Following that same expression, the lighting from the ground makes the lower boxes brighter and allows the top of the structure dissolve in the darkness. Zumtobel and acdc's installation achieved that effect successfully by carefully placing and orienting each one of the luminaires." ■

Credits:
Zumtobel

Taiwan Beckons You

Many globally accepted and well acclaimed companies are expected to display their latest technologies in the upcoming lighting show...

A view of TILS 2015...

LED Taiwan and Taiwan International Lighting Show (TILS) will be collocated and held on April 12-15, 2017 at Taipei Nangang Exhibition Centre, Hall 1, showcasing a wide range of technology innovations and solutions across from high-brightness LED to LED components, sapphire, smart-lighting, IR and UV LED, laser and lighting applications. It is also a great chance to meet potential partners, industry elites, and over 300 leading companies from the LED supply chain, giving visitors insights into the latest technologies and opportunities to explore new businesses.

Many globally accepted and well acclaimed companies are expected to participate and display their latest technologies in the upcoming lighting show. Lighting India took an initiative to meet some such companies and gather information about their latest capabilities, R&D and product offerings. Following section of this article will present an overview of some such companies.

Welcome to All

At a point of time, when the entire world is moving towards creating excellence with LED lights, the technical, manufacturing and application-related challenges are increasing for the product suppliers, procurement managers and other decision makers. Considering those emerging challenges, the organisers of TILS have planned the event to offer sufficient scope to the attendees to watch the new developments, to interact with the technology-vendors, and to bring forward their challenges for open discussion to find out solutions.

LED Taiwan will consist of a number of pavilions such as High-Brightness LED Pavillion, IR+UV Pavilion, Laser Pavilion, LED Components Pavilion, Sapphire Pavilion, Smart Lighting Technology Pavilion and Academia & Research.

Thus, every attendee in the event will definitely be benefitted with knowledge, product exposure and opportunity to share his/her emerging challenges to the community. ■

Mean Well

MEAN WELL is a well known standard power provider with advanced manufacturing facilities in Taiwan, GuangZhou, and SuZhou as well as sales offices in China, USA, and Europe. Since 2006, they started to endeavour the development for waterproof LED power supplies. They are into different types of LED power supplies, which are very suitable for all kinds' outdoor or indoor LED lighting related applications such as LED street lighting, LED tunnel lighting, outdoor electronic display, office lighting, LED decorative lighting, LED architectural lighting, etc.

New products overview

ODLC-45/65 Series (45W/65W Plastic Housing Flicker Free Constant Current Output LED Driver with PFC): MEAN WELL keeps working on enlarging the product line of flicker free function and is pleased to unveil the new ODLC family (cable type) ~ ODLC-45(45W)/65(65W) series. This product is the co-design work with IDLC and IDPC family— they all adopt constant current output mode, equipped with built-in active PFC function, offer the same electrical specifications for models with identical output wattage, operate with the up to 86% highest working efficiency and comply with UL8750, ENEC EN61347-1,-2-13 and GB19510.1, .14 international safety regulations of LED lighting.

IDLC/IDPC-65 Series ~ 65W Plastic Housing/ PCB Type Flicker Free Constant Current Output LED Driver (with PFC): The company decided to raise the output wattage from 45W to 65W, and has unveiled the 65W IDLC-65 (plastic housing) and IDPC-65 (PCB type) series.

In order to meet the design and the installation requirements of the indoor luminaires, these two series adopt co-design work (like IDLC-45 and IDPC-45 series) that the differences are merely in the appearance and the mechanism. They both have the same electrical specifications like accepting 180~295VAC input, with built-in active PFC function, providing various models with 700mA / 1050mA / 1400mA / 1750mA constant current output and the highest working efficiency up to 89%.

MechaTronix

MechaTronix was formed in 2007, it comprised five successful manufacturing companies, with each of them in excess of a decade of continuous operation. The company provides a wide variety of mechanical and electromechanical parts as well as assemblies for the international Original Equipment Manufacturers market.

Starting off with the production of metal and plastic enclosures for electronic applications and the assembly of half-products and elaborate cables, it utilised several production processes, amongst which die casting, forging, extrusion and plastic injection.

The application of secondary processes such as CNC grinding and cutting and finishing such as anodising, painting and silk screen printing enable the company to offer a very high degree of customisation and personalisation to our customers.

It was through the expertise in these processes that MechaTronix found its stride as a serious contender in the market of heat sinks and cooling engines. What started as a one-off venture into the extrusion of aluminium heat sinks resulted in a very comprehensive package of cooling solutions for the booming international LED market.

Mastering LED cooling:

With the evolution of LED lighting over the last years, the demand for professional thermal solutions has grown exponentially. And now that the company no longer remain in the realm of low power LEDs, thermal management becomes a critical factor within LED fixtures. ModuLED and IceLED are precursors of a complete range of dedicated and highly effective LED coolers for professional deployment in spotlights, downlights, high bays and a further score of architectural and utility LED applications.

Delta Group

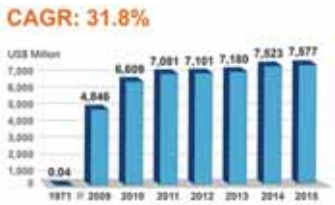
Delta, an energy efficient power product company in the industry, offers switching power supplies with efficiency over 90%, telecom power with up to 97.5%, and PV inverters with up to 98.8% efficiency. It has also developed the world's first server power supply certified as 80 Plus Titanium with over 96% efficiency. The company was founded in 1971 – and has been the global leader in switching power supply solutions since 2002 and DC brushless fans since 2006.

The company is a frequent recipient of international awards and related recognition for innovation, design and corporate social responsibility. Since 2011, it has been selected each year for the prestigious Dow Jones Sustainability World Index (DJSI World). In 2015 it was also included in the DJSI Emerging Markets Index and ranked first among 45 leading companies in the Electronic Equipment, Instrument and Component sector.

Delta Electronics' subsidiary LOYTEC electronics GmbH has won the LUX Awards 2016 in the category 'Industrial and Transport Lighting Project of the Year' from over 200 nominations with its DALI Lighting System (L-DALI) at Manchester Airport in the United Kingdom. The international jury awarded LOYTEC's Manchester Airport project, which implements a modern DALI lighting system with constant light control, presence detection and monitoring of energy consumption. Combining the replacement of existing luminaires to a full LED solution, with energy reduction of up to 89%, LOYTEC demonstrated what intelligent building management systems can achieve in terms of energy efficiency.

Worldwide revenues

Delta delivers a strong and stable financial performance, achieving a compound annual growth rate of 31.8% since 1971. The company's consolidated worldwide sales revenue in 2015 was US$7.577 billions.



Lighting solution offerings

With the company's 45 years of technical expertise fusing successfully with its manufacture quality, automation capability, and vertical integration strength from material to global logistic delivery, the Lighting Business Unit (LTBU) continues to offer global customers a trustworthy partnership by advanced technologies, reliable quality, on-time delivery, competitive cost and active service.

Product category

- LED Driver: Indoor and outdoor LED driver, smart control
- Industrial Lighting: High Bay/ LowBay, Canopy, Flood Light, Crane Light, Projector, Explosion-proof Light
- Road Lighting: Street Light, Tunnel Light, Parking Light

TetradLux

Delta's TetradLux series provide ideal solutions for various locations such as warehouse, gymnasium, gas station, crane and big box retailer.

Features

- Easy and quick installation
- Frosted cover (except CPDN), less glare
- IP65, suitable for outdoor application
- 50000+ hours life, operating temperature -40~50°C
- High surge protection: ICE IEC61000-4-5 10KV
- IECEx / ATEX Zone 2 recognition (pending)

Staccato

Delta's Staccato series is a functional LED high-bay luminaire that can directly replace HID and fluorescent fixtures of up to 400W. Its rugged, low-profile design and IP66 rating offer great versatility in applications, including warehouses, industrial, big-box retail, gymnasia, transportation, and other high-ceiling indoor facilities. All Delta LED luminaires are driven by our industry-leading power electronics.

Features

- Ultra high efficacy, up to 160lm/W
- Wide range of lumen output from 10,000lm to 30,000lm
- Excellent optics design for high spacing criteria (~1.5)

HKTDC Repeats Its Success Story

The eighteenth HKTDC Hong Kong International Lighting Fair (Autumn Edition) had organised buying missions with more than 7,000 buyers from over 4,900 companies, to seize new business opportunities during the fair period. It also provided a professional sourcing platform for the lighting industry by gathering exhibitors from around the world...

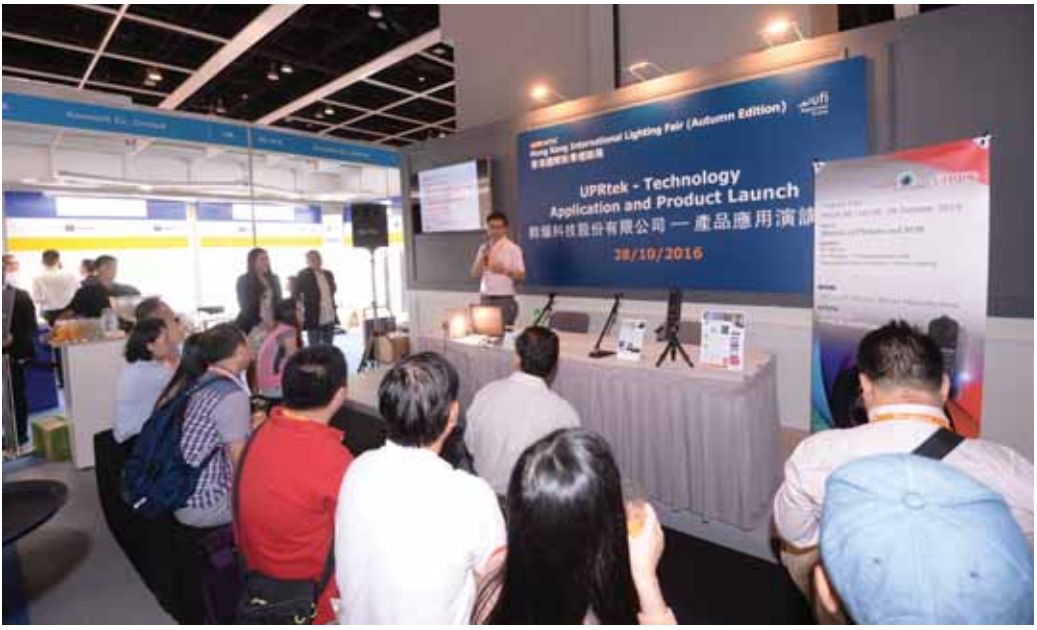
Seminars and product launches held during the fairs enabled industry players to exchange market intelligence and showcase the latest technological products...

The Hong Kong Trade Development Council (HKTDC) organised its 18th HKTDC Hong Kong International Lighting Fair, which took place from 27th to 30th October 2016 at the Hong Kong Convention and Exhibition Centre (HKCEC). To encourage cross-sector business opportunities, the HKTDC had also launched the brand new HKTDC Hong Kong International Outdoor and Tech Light Expo, which ran from 26th to 29th October at the AsiaWorld-Expo. Both the fairs together formed the world's largest lighting marketplace that welcomed over 3,000 exhibitors from 37 countries and regions to show their state-of-the-art lighting products and solutions.

The HKTDC had organised 77 buying missions with more than 7,000 buyers from over 4,900 companies, to seize new business opportunities during the fair period. It also provided a professional sourcing platform for the lighting industry by gathering exhibitors from around the world to present new energy-efficient and creative products as well as the latest technologies to potential buyers.

Outdoor and Tech Light Expo made its debut

The Outdoor and Tech Light Expo at its inaugural fair gathered about 380 exhibitors from Hong Kong, the



Chinese mainland, Malaysia, Korea and Taiwan.

It comprised four major zones: Outdoor Lighting, Lighting Accessories, Parts and Components, Professional and Industrial Lighting, as well as Advertising Lighting.

A wide range of unique professional and industrial lighting products for different working environments were displayed, including the LED Down Lights by Hella Marine made of high-grade 316 stainless steel, which is popular among the automotive, marine and industrial sectors, and the APOLLO 2 Series LED Street Light, which is made of die cast aluminium and equipped with a lightning and surge protection system.

Market survey

During the Lighting Fair and Outdoor and Tech Light Expo, renowned industry experts were invited to explore technological breakthroughs and analyse the latest market trends.

To better understand the views of industry players regarding the business outlook, the HKTDC commissioned an independent market research agency to conduct on-site surveys during the Autumn Lighting Fair and Outdoor and Tech Light Expo, interviewing 654 exhibitors and buyers. The survey found that over 60% of the respondents regard North America and Western Europe as the traditional markets with the highest growth potential, while the industry considers the Chinese mainland (64%) and ASEAN countries (42%) as the most promising emerging markets.

The renowned German brand BJB specialises in the production of connections for LED products.

Philipp Henrici, President and General Manager of BJB GmbH & Co KG, said that the Autumn Lighting Fair is very international and is one of the most important shows for their company. The fair attracts a lot of global buyers every year and enables their brand to showcase new products. He added that the emerging markets such as Chinese mainland and South America have rich growth potential for LED products due to their large populations.

Russian buyer Anton Korolev said, as one of the biggest shows in Asia, the Autumn Lighting Fair is more international than other similar shows in the region. He said, "Russia is an emerging market for smart lighting because consumers find smart products very convenient. I have already found several potential suppliers from the Chinese mainland and France and we are in talks about supplying home lighting products and smart lighting solutions. I plan to place orders next month."

Great potential for LED and green lighting products

The on-site survey found that 40% of the respondents consider LED and green lighting to have the greatest growth potential in 2017, and they expect indoor household lighting and smart lighting systems to have the highest growth among all LED application areas. Japan's Citizen Electronics Co has been exhibiting at the Autumn Lighting Fair for many years. Edmond Wong, General Manager of C-E (Hong Kong) Ltd, a subsidiary of Citizen, said, "The Autumn Lighting Fair is one of the most influential fairs for the industry. It provides an important launch pad for our new products. This year, we are introducing the second generation of our LED Vivid Series. Our new products have attracted many new buyers from the Chinese mainland, Europe, India, Southeast Asia and the US."

Joy Jia, Overseas Sales Manager of Fonda Technology Co, Ltd from the mainland, said, outdoor and tech lighting are part of the smart city concept. There are potential business opportunities in solar street lighting as governments around the globe, especially in India, Indonesia, South America and the Middle East are looking for such solutions. ■

Interesting Products From The Exhibitors

Advance Bright launches Stellar

Advance Bright's Stellar is an innovative design that combines two fundamentals elements of happiness- light and sound- into one.

The product specifications are as follows:

Twist-to-use; Flashlight distance up to 20 meters; Lantern offer 360 degree light distribution; Play quality music via Bluetooth or Line-in; Solid and outdoor-friendly design; IP-65 (pending); Wireless, Portable.

Email: tim@advancebright.com.hk

Ever Bright introduces Smart LED sensing lights

Ever Bright Trading Development's product CAT110 LED Lighting has two designs, Infrared Sensor and Tact Switch. It could be used on wardrobe, corridor, etc. It does not need a wire, charging with USB. Three hours of charging could light up 12 hours continuously.

Email: outliers0006@sz-outliers.com

Kingsun displays its products at Hong Kong lighting fair

Kingsun recently showcased its APOLLO 2 Series at Hong Kong International Outdoor and Tech Light Expo 2016. The company is a total lighting solution provider with diversified business models in the fields of LED outdoor, indoor and landscape lighting as well as LED display, transportation, medical and speciality lighting. The company possesses strong innovative capabilities in LED technology development, and industrial and product application design.

The features of APOLLO 2 Series LED Street Light are as follows:

Material: Die cast aluminium
Easy to install and maintain with modular design
Lighting and surge protection system
Arc-shaped module with surface self-cleaning effect
Optimum light distribution, high utilisation of light

Website: www.kingsunlights.com

AZ E-Lite unveils its first generation smart light

AZ e-lite Bluetooth LED Ceiling Light and LED Downlight are AZ E-Lite's first generation smart light, which will transform one's light into life. The BDR412 and BCR1930 are dimmable to save energy and provide an amount of light that is right for the user. To set the mood one can tune a light colour between warm, white and daylight, ranging from 2700K to 6500K. One can even set the light to bright daylight. These features can be controlled with smart phones.

Email: camy.wong@aztech.com

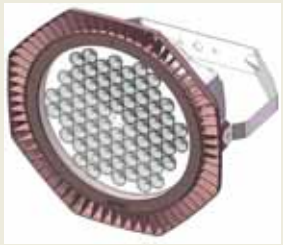
Elegant and simply wireless speaker with dimmable led lighting

Green First Corporation has thoughtfully crafted 100% wood or bamboo NFC Bluetooth speaker LED lighting with a natural vibe is designed to make life more convenient. One can use it together with a powered device such as your tablet, smart phone, laptop, computer or mediaplayer with a Bluetooth compatible device. It is adjustable and has ergonomic design that gets light just where one needs it.

Email: ray.greenfirst@gmail.com

Gruppe launches its new range of LED luminaires

For nearly 30 years since establishment, Gruppe's new range LED luminaires employs a highly flexible light module that is designed to be aesthetic, stylish and sound. This new range of LED lights is a re-innovation of high performance, competitive and affordable lights complying with international standards and regulations. The company believes that its momentous achievement of making sustainable, high-quality and affordable lights will mark a major change for the industry. The product is designed to meet recommended luminance requirements for every application need.



Website: www.gruppelighting.com

Commercial Sector Upholds The 15th Edition Of LED Expo

With programmes and policies to stimulate the adoption of LED lighting in the country on the rise, LED Expo proved to be a massive business success for the 270 exhibitors showcasing the latest technologies at the fair. However, as most of these programmes target government and public sectors, focus remained on the adoption by the commercial sector...

The 15th edition of LED Expo confirmed that growing number of private sector players are now moving towards the implementation of LED lighting and technologies. The three-day trade fair witnessed the attendance of decision makers from real estate, industrial houses, retail and automotive sector apart from government and association heads who are actively looking at LEDs for their public and private projects.

One such visitor travelling from Ahmedabad was Vijay Vaghela, Manager-Projects, Claris Lifesciences Ltd who said, "Everyone is switching to LEDs and going by the trend it is the future of lighting. We plan to replace all our existing lights to LED lights in our Gujarat factory and what better platform than LED Expo to source it!" Another visitor from Delhi involved in several commercial projects, CM Chopra, Proprietor, CM Chopra & Co., said, "LED Expo is a phenomenal platform for companies like us to source in bulk for our turnkey projects. It has established a reputation of a very business friendly event that satisfies the needs of the visitors."

Positive about the meetings and discussions held at the fair will lead to good post-fair business, Praveen

Mahajan, Director, KORE, said, “We are showcasing new LEDs with better lumens and better wattages and a range of automotive lights that have received a very good response. We are already working on deals, which will soon materialise after the exhibition. LED Expo has become an essential platform for the sector’s business and for the country to determine power-saving solutions.”

With the Indian government’s make-in-India gaining importance among the manufactures, several international players are now looking at setting up factories within the country. Harry Libby, Chief Operating Officer, Fulham Co Inc., remarked, “The growth and amount of commitment to LED in the entire infrastructure by the government is motivating us to drive more investment and capital in our company here in Pune and towards product development and research. We have seen quite an excitement around our new wireless driver technology products and have already closed deals at the fair.”

The next edition of the fair, scheduled in the financial capital in April 2017, has now drawn strong backing from the exhibitors, many of whom have confirmed larger space bookings. Meetika Malik, Department Head, LedLux-VOS Technologies India Pvt Ltd., said, “The visitors this time are very educated and are aware of the technicalities and specifications while looking for products. Going by last year’s response, we are expecting good business from the contacts acquired here again. Our association with LED Expo goes a long way and we will continue to support this one-stop platform.” ■

Unprecedented Success Of The Dual Exhibition

Light India and Electrical Building Technology India 2016 have marked a successful first co-located edition. Soon smart technologies to make a headway in Indian market through business discussions at the fair...

Press Meet with Minister of Power Shri Piyush Goyal...

With the festival of lights round the corner, the first unified edition of Light India and Electrical Building Technology India (EBT India) 2016 made a significant impact on the business of lighting and smart technologies for the industry players. The three-day business event, held from 5th – 7th October 2016, was not only successful in bringing new technologies to the fore but also created an optimistic furore in the market of smart lighting and building automation with a host of new and creative solutions on display.

The business fair attracted 277 exhibitors and 10,514 visitors over three days leading to effective discussions, meeting with new associates and trade tie-ups. Raj Manek, Executive Director and Board Member, Messe Frankfurt Asia Holding Ltd', said, "We are pleased with the response received for the first unified edition of Light India and EBT India. The outlook for India's entry into the smart building technology space is very promising and the launch perfectly complements the existing product portfolio, giving visitors a larger spectrum of choices for their business needs."

Shyam Sujan, Secretry General, ELCOMA, said, "Light India & Electrical Building Technology India 2016 held together this year was another feather in the cap of Messe Frankfurt, the organisers of the exhibition. The theme of smart technologies in lighting and building was rightly depicted. Most exhibitors demonstrated the intelligent light that mesmerised visitors and building technologies was a fascinating addition. I wish that the next edition in 2018 will move further ahead in its goal to bring in futuristic lighting on display."

Piyush Goyal with Marzin, CEO, Messe Frankfurt GmbH...

While leading brands in the industry including Anchor Panasonic, Havells India, Surya Roshni, Bajaj Electricals have a long-standing association with this important fair and presented their newest solutions, a lot of first time participants were also seen this year. One such exhibitor was Opulus who introduced its new brand at the show. Samay Choksi, Director, said, "We decided to introduce Opulus at Light India because this is the largest platform where a company can showcase its products. Being the largest fair in the country, there could have been no better platform to introduce our brand and products. The response has been great and it gives us a lot of conviction to come back in 2018 with a larger stall. We are very hopeful of closing deals with all the inquiries generated in the coming months. "

The co-located launch of Electrical Building Technology (EBT) India 2016 was much appreciated by the industry as well as visitors who got an extended choice of smart solutions in the building automation product segments. Rupinder Singh Sachdeva, Co-Chairman Punjab & Member Managing Commitee, PHD Chamber of Commerce and Industry, said, "I must appreciate the fact that this show has given us an opportunity to connect with some of the top brands in industry and we are amazed to see the kind of technological advancement showcased by some of the companies exhibiting here. It is my second day at the show and there is still a lot to explore. The show is indeed a treat to be at, we eagerly look forward to see the next edition of the show."

Also supporting the event was the leading global body, KNX association who are the makers of the KNX technology – the worldwide standard for all applications in home and building control. Bhavesh Doshi, Secretary, KNX National India, said, "KNX is an association of more than 400 manufacturers worldwide making standards for home and building controls. Here at EBT India, we are showcasing solutions from different members at the KNX booth. We have been partnering with Messe Frankfurt for many years as part of their flagship show Light + Building and decided to extend this partnership in India through EBT India. Even though this is the first show, we have been getting a very good response and I'm sure the participants have collected a lot of inquiries. I believe we might go bigger next time and some of the members should have their own booths next time."

While Power Minister of India, Piyush Goyal lauded the industry on putting up smart and consumer friendly innovations on display at the exhibition, Sukesh Kumar Jain, IRS, Power Secretary, Government of NCT of Delhi commended Light India Summit for the technical insights presented at the forum. He said,

"Government plans to make Delhi a solar city and we have finalised the solar policy, with plans targeting 1000 megawatt in five years and 10,000 megawatts in 10 years. The conference along with the exhibition was useful in providing enough information in this regard, and the speakers also discussed about the industry insights in detail."

Some of the exciting innovations seen at the fair:

1. Wi-fi bulb controlled with the use of an app by Bajaj Electricals
2. Inverter bulb which can function in the absence of electricity for up to 4 hours by Sukam-Fiem
3. Money-saving bulbs with dimming facilities by Surya Roshni &Havells India
4. Smart Control Panel which works as a bluetooth router by Silvan
5. Video door phones and internal lighting controls by Legrand
6. Street light operations that can be controlled sitting in a remote place by Orient Electric
7. Dimmers, Controllers and power to integrate light curtains with AV devices and security systems like access control, video systems by Creston Electronics India
8. Intelligent lighting like dimming, automation, sensors and controls thereby saving energy by Halonix Technologies Pvt Ltd
9. A direct dimmable product that can fit into any retrofit solution in existing homes by Raylogic Control Systems Pvt Ltd
10. Bluetooth furniture lock for homes, an RFID lock for offices and motion sensors with dimming facility by Acetech Technologies (P) Ltd

The unprecedented success of the two trade fairs has already led to several booking confirmations on the show floor. Organised by Messe Frankfurt Trade Fairs India Pvt Ltd and ELCOMA (Electric Lamp & Component Manufactures' Association), the next co-located edition of Light India and Electrical Building Technology India is slated to take place in 2018 autumn. ■

Divergent Rays From **Guzhen**

Compared to previous exhibitions, this time the trade fair was much more organized. Ambience of the entire show enticed buyers, designers and decision makers. The widest plethora of lighting products catered to all visitors...

A view of the inauguration ceremony...

Maintaining its well acclaimed trait and capturing the latest global trends in lighting, from October 22-26, 2016, the 18th China (Guzhen) International Lighting Fair once again displayed the amazing creations of the manufacturers from the Lighting Capital of China, Guzhen. There were manufacturers from other places too. Presence of people from all over the world in the Guzhen Convention and Exhibition Center in Zhongshan, China, once again proved the growing importance of the innovative products designed and developed by the Chinese manufacturers.

Compared to previous exhibitions, this time the trade fair was much more organized. It had a new floor plan and clear zoning. Hall A, hall B and hall C presented finished products, which included decorative lighting, household lighting, commercial lighting, LED lighting & technology, outdoor lighting and electrical & electronic products. Machinery & Equipment, Lighting Accessory & Components, Raw Material, 3D Printing etc., were displayed in Hall C to cover the upstream supply chain. In terms of export trade services such as Design, Circle, Finance etc. were collectively showcased in Hall C.

Inauguration of the event

Presence of several government representatives, lighting community members from Guzhen and other dignitaries marked the grand opening of the 18th China (Guzhen) International Lighting Festival – 2016.

In his speech, Yang Wenlong, Vice Mayor, Zhongshan Municipal People's Government informed, "Centering Guzhen and covering three cities and 11 towns around, 'Zhongshan Lighting' has formed an industrial cluster featuring a complete industry chain and salient competitive advantages. To quicken the speed of seizing high-end industries and advanced technologies of relevant industries, Zhongshan will expedite the implementation of the 'Internet + advanced manufacturing' and big data strategy, and vigorously promote the transformation of advantageous traditional industries like decorative lighting and home appliances to modern industrial clusters such as new light source, smart home appliances and fashion design."

The President of the China Association of Lighting Industry, Ms. Liu Shengping said, "China is a large country manufacturing, exporting and consuming lighting products. According to an incomplete statistics, China has exported

A view of the launching ceremony of www.denggle.com...

A view of the award distribution ceremony...

Award winning innovative products are on display...

lighting products to 218 countries and regions, and the Chinese lighting market accounts for over 20% of the global lighting market. There are over 20,000 lighting manufacturers in China and the largest has registered annual sales of some four billion yuan. China's lighting industry chain has become increasingly mature and specialized, breakthrough has been achieved in marketing means and brand building, and the concept of industrial design and creativity has been deepened and improved. With a high degree of industrial agglomeration and strong R&D capacity, Guzhen, known as the 'China Lighting Capital,' owns strategic resources for lighting industry development such as intellectual property and creative design, as well as the core elements of international competitiveness of business brands. On both ends of 'smiling curve', Guzhen Lighting is advancing the transformation of Guzhen into a new professional town under the model of Industry 4.0."

The inauguration ceremony also included the launch of online China (Guzhen) International Lighting Fair B2B Official Website: www.denggle.com.

Some of the achievers from the Guzhen lighting community were recognized in the gala for their excellent contributions in the field of lighting. Besides, Guzhen Cup Chinese Writer Literary Awards Ceremony became a part of the programme.

Lighting is not only beauty, but also it is human convenience, that was reflected through the award winning products.

Beautiful chandeliers are spreading soothing rays...

Aligned with global trend

Ambience of the entire show enticed buyers, designers and decision makers. The international lighting fair successfully assembled lamps and luminaires for all walks of life. Although the obvious focus on higher efficacy and energy efficiency was reflected in most of the products displayed in the exhibition, the stress on beauty was also reflected through the innovative designs of the luminaires.

Many of the displayed LED-based lamps were found of good quality and flicker–free. As Chinese light sockets or bulb-bases are of E14 or E 27 type (mostly), those are not directly usable in India. When I asked for the Indian type B22 bases, most of the manufacturers assured of supplying that without any extra charge.

While talking with the outdoor luminaire manufactures, I noticed the high quality protective coatings on the light shades. Those are good fits for harsh environments.

Products in the exhibition

Guzhen International Lighting Fair was an 'all under one roof' kind of source point for lighting products, components, controllers and accessories. A major section of the manufacturers, who were displaying their products were reasonably quality conscious.

Innovative designs with eye-catching beauty of the products appealed to customers from all over the world. Art of curving and overall aesthetics of the chandeliers with amazing reflectivity prove the Chinese manufactures' capability in creating illusive ambience anywhere.

Use of wall lights is not a new concept, however an attempt to make them more attractive with eye-catching design and models of natural objects (to attract children's interest!) is an appreciable idea.

As it is well known today that lights are not just for showing objects, but to enhance their appeal to the people, decorative lights come into the picture. The exhibition presented varieties of decorative lamps. Skillful use of colour-changing LEDs within different fixtures often deserved credits.

For good lighting schemes mere lamps are not enough. Lighting control systems are the vital components in this area. The Guzhen lighting exhibition assembled different lighting

Mistifying decorative lights in the exhibition…

Different kinds of lighting controller devices were displayed …

A ceiling fan with light on display…

control systems and their components.

Modern lifestyle trend is towards using combo products. Guzhen's recent exhibition contained several such products, which were not only visually appealing but also offering multiple services. For example, there were Fans with Lights, Table Lamps with Bluetooth Speakers and so on.

Varieties of warm white lamps and colourful table lamps were yet another attraction of the recent exhibition. Some of the lamps were quite aesthetically appealing, and almost unparallel in creating ambience.

Besides small machinery for lighting manufacturers, the Guzhen exhibition also hosted complete LED manufacturing machines.

Business perspective

As far as sourcing of lighting products is concerned; Guzhen exhibition had enough to give each and every visitor from any part of the world. The organizers created special arrangements for business discussion. Although Indian importers are nowadays too cautious about the ensuing compliance laws, their presence in the exhibition did not thin away. What particularly makes the Chinese lighting capital

Amazing bulbs for creating highest level of ambience…

different from the other lighting hubs of the world is the innovative thoughts and their applications in designing products. Indirect lighting through an age-old wall clock or from the abdominal part of a cockroach can only be conceived in Guzhen. ■

P K Chatterjee
Editor
Lighting India

All photos were taken by the author.

Pharos range of Remote Devices now includes BPS

The Pharos Button Panel Station (BPS) is a versatile 8-button station with integrated button LEDs that works with any Pharos Controller. The stylish BPS is accessible in a range of finishes and there are two variants for compatibility with either US or UK back boxes. Installation is easy and convenient as the BPS only requires a single Power-over-Ethernet (PoE) network connection.

The function of each button is freely programmable, and each button has a white LED indicator with fully user-controllable brightness and a variety of flash effect options for giving visual feedback. In addition a learning infra-red sensor is included, allowing any standard remote control to be used to trigger button presses.

The BPS is part of the Pharos range of Remote Devices, which allow the fully scalable Pharos system to be tailored to the needs of each individual project. Multiple Pharos Controllers can be used together with up to 200 Remote Devices and will synchronise automatically. The Controllers are programmed using the free Pharos Designer 2 software. ■

Website: www.waclighting.com

GM Lighting introduces its new series of Downlight

GM Lighting's 120VAC 6W IC and Damp Location Rated Mini LED Adjustable Shallow Recessed Downlight packs a lot of performance in a compact, easy to install dimmable luminaire. 3-3/4" O.D. optional trim ring included with each fixture. It is approved for damp location and ideal for both residential and commercial limited space applications with insulated ceilings including niches, bookshelves, entertainment centres, elevators and other installations that require shallow mount lighting.

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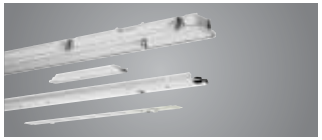

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